Victorian Environmental Assessment Council

Assessment of the values of state forests in eastern Victoria

Assessment report

April 2025

Victorian Environmental Assessment Council

The Victorian Environmental Assessment Council (VEAC) was established in 2001 under the *Victorian Environmental Assessment Council Act 2001*. It provides the State Government of Victoria with independent advice on protection and management of the environment and natural resources of public land.

The 5 Council members are:

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Acknowledgement of Aboriginal Victorians

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices. We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support self-determination, the protection of Country, and the maintenance of spiritual and cultural practices in the 21st century and beyond.

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Cover image

Rainforest along creek, by Bonang Highway, Ida Streubel

Foreword

The members of the Victorian Environmental Assessment Council (VEAC) are pleased to present this assessment to the Minister for Environment for his consideration. This assessment of the values of the state forests in eastern Victoria has been compiled to inform the work of the Great Outdoors Taskforce (the Taskforce) and to assist the government in its decisions on the future of the state forests.

With the cessation of native timber harvesting, the future of these Victorian forests is at a critical juncture. Decisions made today will determine the health of the forests for decades ahead and will directly impact how future generations will experience these rare ecosystems.

These forests have generated enormous economic value for Victorians for over a century and for the communities that exist in and near them. However, this has come at significant cost to the fundamental health of the forests. VEAC hears and affirms the aspirations of First Nations to commence a journey of Healing of Country. Over the previous 2 centuries, Gunaikurnai, Taungurung and Yorta Yorta First Nations have had their cultural practices impacted by a focus on generating economic value and a western understanding of conservation. First Nations guidance for healing Country is essential for the forests to thrive again and for generations to enjoy.

Reconciling the diverse ways of experiencing and understanding the forests is an aspiration the Council has sought to engage with. This report provides VEAC's assessment of the values of the forests as its Terms of Reference required. However, Council recognises that First Nations view the forests differently. Healing of Country, building the health and resilience of the rich biodiversity of the forests, alongside the ability for all Victorians to use and enjoy these ecosystems are aspirations that are not irreconcilable.

The challenge for all land managers is to provide cultural, recreational and economic opportunities for the communities that exist in and near the forests and visitors who come from afar to experience their majesty. For First Nations, we must support opportunities for self-determined economic and cultural practices. This while ensuring the places we all love retain the values that draw people there in the first place.

The Council thanks the VEAC staff for their commitment and hard work to bring complex data together in this report and commends the assessment to the Minister and the Great Outdoors Taskforce.

Mellissa Wood

VEAC Chairperson, on behalf of Council

At a glance

- The state forests of eastern Victoria cover approximately 2.1 million ha. About 1.5 million ha was previously managed for timber harvesting. Native timber harvesting in Victoria ceased on 1 January 2024.
- This VEAC assessment provides information on the nature, values and threats to these forests to inform the work of the Great Outdoors Taskforce (the Taskforce) which is undertaking public consultation and considering the future uses and management of these forests.
- This assessment does not include essential Aboriginal cultural values which are being provided directly to the Taskforce by Gunaikurnai, Taungurung and Yorta Yorta Traditional Owners.
- Eastern Victoria contains magnificent unique forests of great geological, ecological and climatic diversity. These forests have significant cultural, social and economic values.
- This report summarises our current understanding of the nature of these forests' mutually dependent biodiversity, ecological, water, heritage, recreation, economic and other diverse values.
- These forests contain exceptionally high biodiversity values, and this report identifies areas of highest habitat value in key locations. The region's forests provide habitat for several hundred threatened species, including the long-footed potoroo, greater glider, powerful owl, Orbost spiny crayfish and numerous rare plants.
- The forests of Eastern Victoria are highly valued by a diverse range of users who enjoy being in nature and underpin the economy of the region including through recreation, tourism, mining, water for farming and apiculture and provide important social and wellbeing benefits.
- The report also outlines key threats to these values including the legacy of logging, climate change as a risk accelerator, inappropriate fire regimes, weeds and pests and poor management.
- VEAC believes the region provides many opportunities for Traditional Owners to Care for Country, for collaborative stewardship and multiple-use, and active and adaptive management to restore the health and build the resilience of these forests for future generations.

Executive summary

Background

The Victorian Environmental Assessment Council (VEAC) was commissioned by the Minister for Environment to assess the values of state forests in eastern Victoria, covering approximately 2.1 million ha across the North East, Gippsland and East Gippsland Regional Forest Agreement (RFA) areas. This assessment will inform the work of the Great Outdoors Taskforce (the Taskforce) in providing recommendations to the Minister on the future use and management of these forest areas following the cessation of native timber harvesting in January 2024.

This report is largely based on desktop assessments that identify biodiversity, ecological, geological, geomorphological, non-Aboriginal historic heritage, social and economic values of these forests, as well as current and likely future threats to these values, including climate change. The assessment builds upon VEAC's 2017 *Conservation Values of State Forests* report and includes additional, detailed commissioned information, providing a more up-to-date and localised assessment.

This values assessment does not include Aboriginal cultural values, which are being represented to the Taskforce through direct participation of Traditional Owners. VEAC acknowledges that while not part of VEAC's terms of reference, our assessment is incomplete without considering these values. VEAC recognises the eastern Victorian forests as cultural landscapes as well as ecosystems, and ecological, social, economic and cultural values together must inform decision-making.

The assessment area includes the lands of three Traditional Owner groups – Gunaikurnai, Taungurung, and Yorta Yorta.

Regional context

The North East, Gippsland and East Gippsland RFA areas encompass a very large and diverse region of 6.172 million ha, of which 3.873 million ha (61%) is public land. The assessment focuses on approximately 2.1 million ha of state forests, including 1.5 million ha previously managed for timber harvesting.

Eastern Victoria contains magnificent, unique forests with great geological interest and diversity. This significant geomorphological variation underpins the region's abundance of different ecosystems and rich biodiversity. The Great Dividing Range is the dominant geographical feature, dividing the region into north and south and strongly influencing weather and fire conditions. The assessment area includes a remarkably diverse range of ecosystems, from grassy woodlands and riverine swamps along the Murray River floodplain, and from alpine meadows and heathlands to rainforests and coastal ecosystems. Historically significant forest types include ash forests dominated by alpine ash, mountain ash or shining gum; low elevation mixed species forests with silvertop, mountain grey gum and messmate; and high elevation mixed species forests in East Gippsland.

Major fires have shaped the landscape over the past century, with the 2019–2020 Black Summer fires burning over 1.5 million ha. The assessment area encompasses the entire Victorian extent of 6 river basins and parts of 7 others, including major waterways that contribute to the Murray-Darling Basin and the Gippsland Lakes. It also contains 11 heritage rivers, and 56 reference areas protected for their significant nature conservation, recreation, scenic, or cultural heritage attributes.

Summary of forest values

Biodiversity and ecological values

Eastern Victoria's state forests contain exceptionally high biodiversity values. Areas of highest habitat value for conservation are found in 3 key locations in East Gippsland: around Errinundra Plateau, between Coopracambra and Croajingolong national parks, and the Colquhoun State Forest area. The region's forests provide habitat for many hundreds of threatened species, including the long-footed potoroo, greater glider, powerful owl, Orbost spiny crayfish and numerous rare plants.

The forests contain several hundred Ecological Vegetation Classes (EVCs), many inadequately represented in Victoria's protected area system. The ecosystems that most require conservation include Lowland Forest in the Mullungdung State Forest, Montane Grassy Woodland on the Monaro Tableland and numerous patches of Blackthorn Scrub, and other threatened vegetation communities, particularly in the Monaro Tablelands, Gippsland Plain and Northern Inland Slopes bioregions.

Geological, water, and heritage values

Eastern Victoria is an area of great geological diversity, with formations spanning from the Cambrian period to recent times. Eight documented sites of state geological significance exist in state forests, including the Walhalla goldfield and Murmungee Basin granite erosion features.

Water catchments in the area are essential for irrigated agriculture, domestic supplies, energy generation and supporting riparian environments. The North East Catchment Management Area provides 38% of the Murray-Darling Basin system's water while occupying only 2% of the basin area. Victoria's 3 largest water storages – Lake Hume, Lake Eildon and Lake Dartmouth – lie within this region.

The area contains 224 recorded non-Aboriginal cultural heritage sites in state forests, including 31 Victorian Heritage Register sites and 193 Victorian Heritage Inventory sites. These sites primarily relate to gold mining and reflect the region's post-colonisation history.

Recreational and economic values

Victorians value and benefit from these forests and want them to be healthy for future generations. State forests in eastern Victoria offer diverse recreational opportunities, with nearly 16 million unique visits estimated between September 2023 and September 2024. Popular activities include camping, mountain biking, horse riding, bushwalking, recreational prospecting, fishing, paddling, four-wheel driving, trail bike riding, hunting and nature appreciation. These activities contribute significantly to regional economies and provide important social and wellbeing benefits.

Beyond recreation and tourism, state forests support various economic activities including mining and quarrying operations (6 current mining licenses in state forests), firewood collection, grazing (multiple license types covering substantial areas) and apiculture (1,315 licensed apiary sites across the assessment area). Timber harvesting was historically significant and ended in January 2024.

Diverse values

These forests hold varied significance for different people, communities, and Traditional Owners. Understanding these diverse values and identifying both synergies or conflicts is essential for effective local management and action to achieve positive outcomes for people and the environment.

Summary of forest threats

The cessation of native timber harvesting has removed a major threat to forest values but leaves a legacy requiring careful management and restoration. The shift away from timber production necessitates new approaches to forest management focused on conservation, recreation and Traditional Owner aspirations.

Victoria's temperature has increased by approximately 1.2°C since records began in 1910, with over half of this warming occurring in the last 3 decades. Future climate change is likely to lead to total increases in temperatures in the assessment area of 1.9–2.9°C by 2050 and up to 3.6–5.4°C by 2090. Climate change is a risk accelerator with compounding impacts on other threatening processes. Increasing temperatures, more frequent extreme weather events, declining rainfall, and changing fire regimes exacerbate existing threats through frequent fire impacts, reduced river flow, increased impact of invasive species and plant diseases, and loss of genetic diversity in susceptible populations.

Inappropriate fire regimes significantly impact biodiversity when too frequent, intensive, or extensive for ecosystem recovery. Historical evidence indicates that recurrent wildfires threaten fire sensitive ecosystems (e.g., 'obligate seeding' eucalypt forests) and can cause a shift to non-forest states when successive fires occur within the trees' primary juvenile period (1–20 years). Loss of Traditional Owner cultural fire practices has significantly altered key ecosystems such as grassy woodlands.

Numerous invasive pest plant and animal species threaten multiple forest values, including introduced animal species (e.g., deer and foxes), environmental weeds (e.g., blackberries), and pathogens (phytophthora, myrtle wilt, chytrid fungus).

Victoria's growing population (projected to reach 10.3 million by 2051) will likely increase use of our state forests for recreation and economic uses. Without careful management, increased use can threaten both social amenity values and biodiversity through inappropriate access, erosion, litter, spreading of weeds and disease and increased fire ignition.

Conclusion

Eastern Victoria's magnificent forests reflect tens of thousands of years of Traditional Owner caring for Country. Current transformations in public land management – including modernised legislation, timber harvesting cessation, and Treaty negotiations with First Peoples – present opportunities to build collaborative governance and management partnerships with communities to restore and maintain healthy forests.

Climate change represents the most significant overarching threat to these forests, requiring adaptive management strategies and landscape-scale approaches that address its interactions with other major threats including fire, pests and diseases, invasive species, and inappropriate human activities.

While these threats are significant, they also present opportunities for improving forest stewardship and management. The cessation of timber harvesting creates a unique opportunity to rethink forest management for multiple values, with priority given to conservation, recreation and tourism, Traditional Owner self determination and the aspirations of local communities. VEAC recognises that having people in the forest is critically important to care for and look after the forests, and greater use and enjoyment of forests by the broader population will ensure their importance to society is celebrated and supported.

Partnerships with Traditional Owners should be central to future management. Their deep cultural connections to Country and intergenerational knowledge offer invaluable perspectives on forest stewardship. Weaving Traditional Owner expertise with contemporary scientific approaches creates

powerful possibilities for ecological restoration and sustainable management; guiding healing of Country while maintaining use within limits that ensure forest health.

Partnerships with local communities, conservation and user groups, and experts are also needed to ensure all forest users and managers are working towards a shared understanding of healthy forests, that conflict is minimised and forest values are enhanced for everyone. Recognising and incorporating the diverse values that different communities and cultural groups hold for forests can lead to improved decision-making and reduce land management conflicts.

Active and adaptive management will build forest resilience amid uncertainty, particularly climate change impacts. Population growth and increasing recreational demand will necessitate careful planning to balance access with protection of sensitive environments. Building ecosystem resilience should be prioritised through strategies such as landscape connectivity, diversity enhancement, and fragmentation reduction. Innovative monitoring systems will be needed to track forest health and assess the effectiveness of adaptive management interventions in the face of uncertainty.

Despite the significant challenges facing eastern Victoria's state forests, thoughtful, collaborative management approaches that emphasise conservation, resilience and respectful use, can ensure these magnificent forests continue providing vital ecological services, recreational opportunities, enjoyment and cultural connections for generations to come.

Abbreviations

ARI	Arthur Rylah Institute for Environmental Research
asl	above sea level
the Biodiversity Plan	Protecting Victoria's Environment – Biodiversity 2037
CAR	Comprehensive, adequate and representative (protected area system)
CBD	Convention on Biological Diversity
CES	Commissioner for Environmental Sustainability
CHL	Commonwealth Heritage List
CMA	Catchment Management Authority
the Council	Victorian Environmental Assessment Council
CRA	Comprehensive Regional Assessment
DEECA	Department of Energy, Environment and Climate Action
DELWP	Department of Environment, Land, Water and Planning
ECC	Environment Conservation Council
EIIA	extractive industry interest area
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
EPCE	Eminent Panel for Community Engagement
EVC	Ecological Vegetation Class
FFG Act	*Flora and Fauna Guarantee Act 1988*
GMA	Game Management Authority
GSV	Geological Survey of Victoria
historic heritage	non-Aboriginal heritage values
IPA	Immediate Protection Area
IPBES	Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services
IUCN	International Union for Conservation of Nature
LCC	Land Conservation Council
LGA	local government area
mya	million years ago
NHL	National Heritage List
NRS	National Reserve System

NRSMPA	National Representative System of Marine Protected Areas
the Panel	Eminent Panel for Community Engagement
RAP	Registered Aboriginal Party
RFA	Regional Forest Agreement
the Taskforce	Great Outdoors Taskforce
Treaty Act	*Advancing the Treaty Process with Aboriginal Victorians Act 2018*
TSCRA	Threatened Species and Communities Risk Assessments
VEAC	Victorian Environmental Assessment Council
VEAC Act	*Victorian Environmental Assessment Council Act 2001*
VFA	Victorian Fisheries Authority
VFP	Victorian Forestry Plan
VGF	Victorian Geomorphological Framework
VHI	Victorian Heritage Inventory
VHR	Victorian Heritage Register
VIF2023	Victoria in Future 2023
WA	work authority
WHL	World Heritage List

Contents

1. Introduction

This report is an assessment of the values of state forests in eastern Victoria, specifically the 2.1 million ha of state forests in the North East, Gippsland and East Gippsland Regional Forest Agreement (RFA) areas. The assessment area is shown in figure 1.1 and figure 1.2 shows the component RFA areas.

On 25 October 2024 the Victorian Environmental Assessment Council (VEAC; the Council) was requested by the Minister for Environment Steve Dimopoulos MP to assess the values of state forests in eastern Victoria. The assessment will inform the work of the Great Outdoors Taskforce (the Taskforce) in its provision of advice and recommendations to the Minister on the future use and management of state forest areas. The Minister's terms of reference for VEAC's assessment are in box 1.1.

This report is based on desktop assessment of environmental, non-Aboriginal heritage, social and economic values and threats; and discussions framed around data and knowledge with DEECA land managers and scientific and policy researchers, and other government agencies such as the Game Management Authority (GMA). Section 1.6 provides details of additional work commissioned for this report.

VEAC's terms of reference do not require it to undertake stakeholder and community engagement. These functions are being undertaken by the Taskforce. VEAC's role is to provide expert advice to the Taskforce.

1.1. About VEAC

VEAC provides the Victorian government with independent and strategic advice on matters related to the protection and ecologically sustainable management of the environment and natural resources of public land. VEAC was established under the *Victorian Environmental Assessment Council Act 2001* (VEAC Act). VEAC is a successor to the Land Conservation Council (LCC), established in 1971, and the Environment Conservation Council (ECC), which replaced the LCC in 1997.

VEAC carries out its investigations and assessments and provides advice at the request of the Minister for Environment. Together, the VEAC Act and terms of reference provided by the Minister describe how an investigation or assessment must be conducted, including the number of reports to be prepared, matters to be considered, timeframes and extent of public consultation.

Public land is defined in the VEAC Act and includes Crown land and land owned by state government public authorities. It excludes private freehold land, land owned by local councils and Commonwealth land.

The VEAC Act was amended in 2016 to allow the Minister to request the Council to conduct an assessment or to provide advice in relation to a matter that, in the opinion of the Minister, does not require an investigation, having regard to the matter's limited scale or scope or its technical nature. Assessments do not require formal public consultation unless specified by the Minister in the terms of reference.

This assessment of the values of state forests in eastern Victoria was requested in accordance with section 26B of the VEAC Act.

The current 5 members appointed to VEAC are Mellissa Wood (Chairperson), Dave Kendal, Marcus Stewart, Nicola Ward, and Jennifer Wolcott. Brief biographies of the current Council members can be found on VEAC's website at veac.vic.gov.au. The Council is supported by a small research, secretariat and policy team.

1.2. VEAC's Terms of reference

Box 1.1 VEAC's terms of reference for the assessment of the values of state forests in eastern Victoria

Pursuant to section 26B of the *Victorian Environmental Assessment Council Act 2001*, the Minister for Environment hereby requests the Victorian Environmental Assessment Council (the Council) to carry out an assessment of the values of State forests within eastern Victoria (the assessment). This includes the 1.8 million hectares of State forests subject to the timber harvesting allocation order and relevant adjacent State forests within the North East, Gippsland and East Gippsland Regional Forest Agreement Areas. The approximate assessment area is shown on the accompanying map.

The assessment will inform the work of the Great Outdoors Taskforce in its provision of advice and recommendations to the Minister for Environment on the future use and management of state forest areas. The Great Outdoors Taskforce is tasked with making recommendations to government about the use of land within the assessment area. Recommendations may consider areas of high conservation value, areas suitable for enhanced tourism and outdoor recreation experiences, and opportunities for Traditional Owner management. In making its recommendations the Great Outdoors Taskforce will consider the findings of the assessment, as well as input from Traditional Owners, a range of stakeholders at a local and regional level, and the general community.

The purpose of the assessment is to identify:

a) the biodiversity, ecological, geological and geomorphological values of the specified area

b) the historic heritage, social and economic values of the specified area

c) the current and likely future threats to those values, including climate change.

This assessment will build upon the Council's *Conservation values of state forests – Assessment report (2017)* by providing a more localised assessment of the values of these areas. The Council is not required to consider areas recently covered in its *Assessment of the values of Immediate Protection Areas in the Strathbogie Ranges and Mirboo North (2022)* and the *Assessment of the values of the Immediate Protection Areas in the Central Highlands (final report in preparation)*.

The Council is required to consider the values referred to above at the relevant state, regional and local levels, including the occurrence in existing protected areas and on other public land.

This request is for an assessment and report on the above values. The Council is not required to undertake public consultation or make recommendations.

The Council will share information with the Great Outdoors Taskforce as the assessment progresses and keep the Taskforce updated on the progress of developing its report.

The Council must publish its assessment of the matters specified in paragraphs (a) to (c) above within six months of making of this request.

1.3. Scope of this assessment

The terms of reference request VEAC to assess the values of state forests in eastern Victoria, and the current and likely future threats to those values, including climate change.

Figure 1.1 Map accompanying VEAC's terms of reference

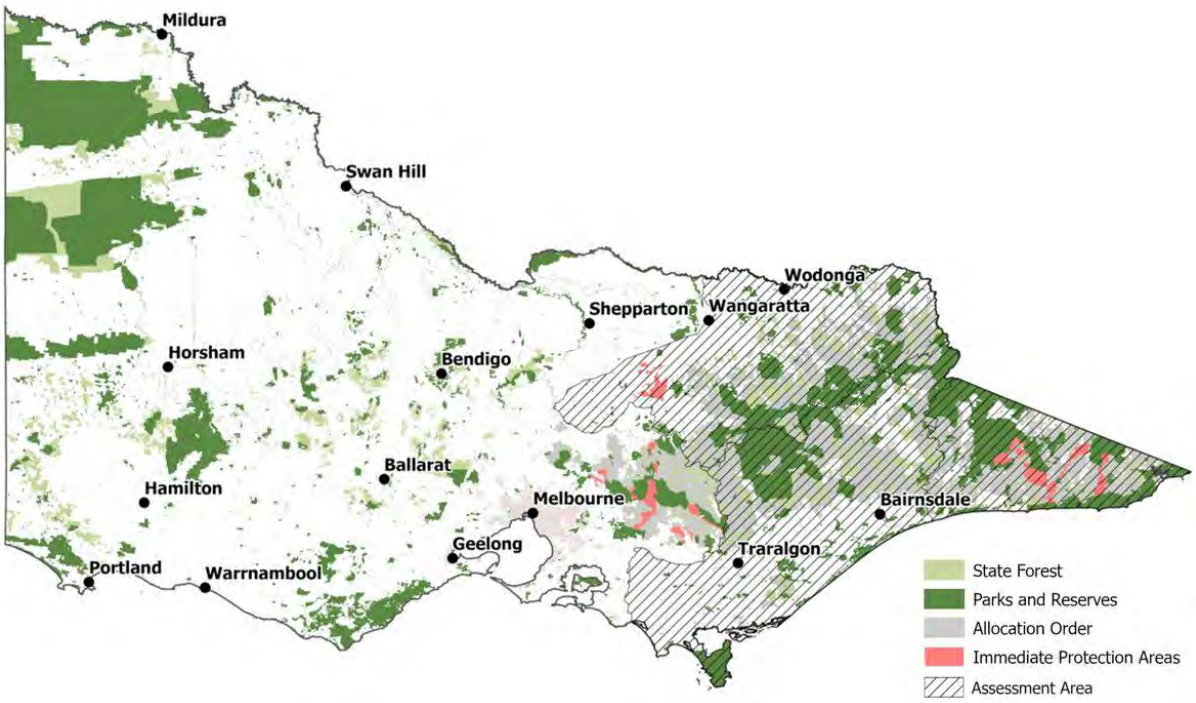
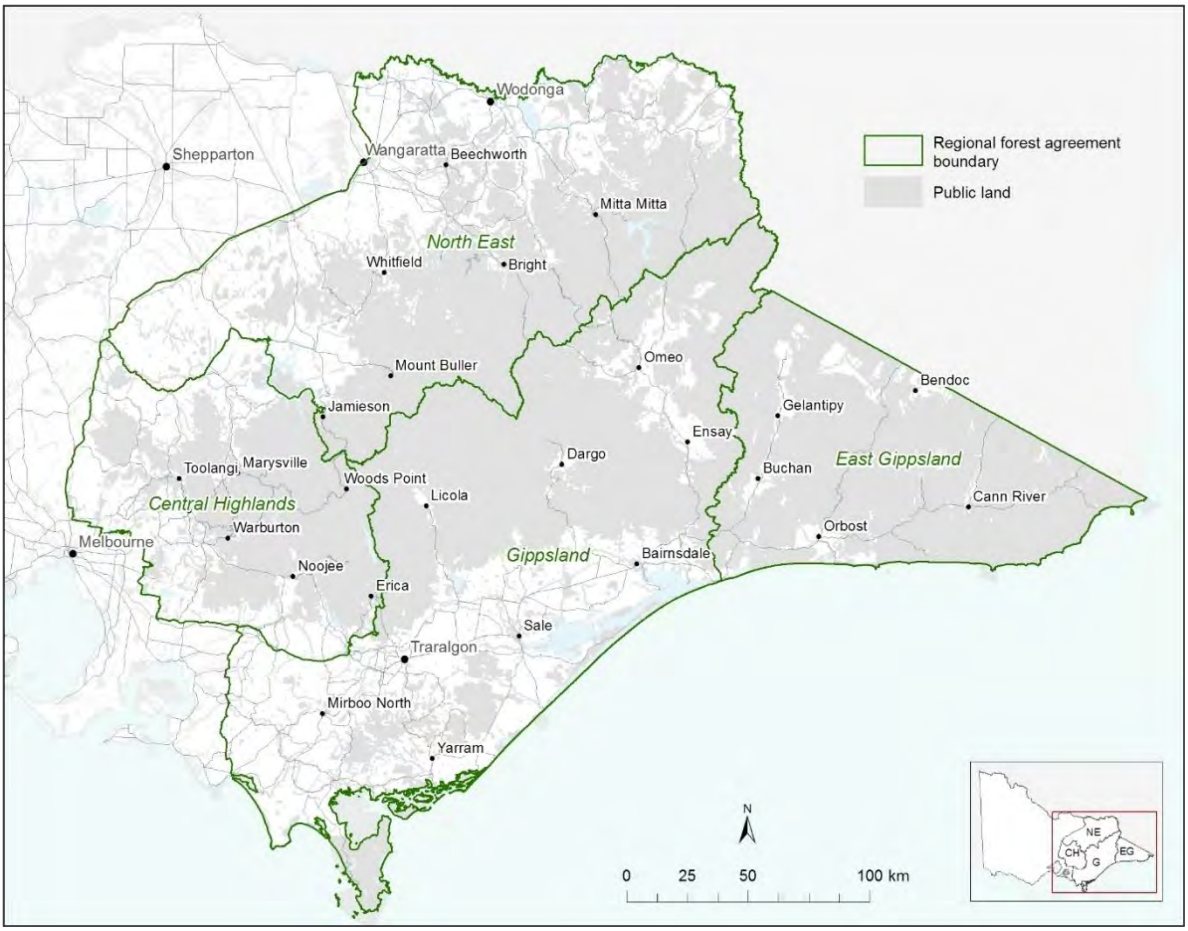


Figure 1.2 RFA areas east of the Hume Highway



1.4. Victorian Traditional Owners

This values assessment does not include Aboriginal cultural values, which are being represented to the Taskforce through direct participation of Traditional Owners. VEAC acknowledges that while not part of VEAC's terms of reference, our assessment is incomplete without considering these values. VEAC believes the eastern Victorian forests are cultural landscapes as well as ecosystems, and ecological, social, economic and cultural values together must inform decision-making.

Traditional owners have a critical role in shaping the future of the eastern forests through reestablishing cultural practices to heal Country after extensive logging, changing fire regimes and the growing effects of climate change. VEAC recognises the intrinsic connection that Traditional Owners have to Country – the inseparable land, water and sky, people, cultural practices, ancestors, spiritual beliefs, traditional knowledge and law. This relationship comes with obligations to care for Country, to create and maintain healthy Country. Traditional owners have been caring for Country for tens of thousands of years, and this care has helped create the diverse ecosystems and the rich biodiversity present in the forests of eastern Victoria.

Separation of Aboriginal people from Country, and the associated removal of cultural practices, has been a devastating outcome of colonisation for both people and the environment that continues today, and has contributed to the decline and degradation of many ecosystems in Victoria.

Council is committed to Traditional Owner self-determination and recognises that Aboriginal-led and co-led governance, planning and management of Victorian ecosystems is a key pathway to achieving VEAC's mission of the 'protection[1] and ecologically sustainable management of the environment and natural resources of public land'. VEAC acknowledges that effective Traditional Owner Caring for Country will lead to improved biodiversity, ecosystem services and cultural values, better nature experiences for all Victorians and economic development for Traditional Owner groups.

As shown in figure 1.3a and b, state forests in the assessment area occur within the boundaries of three Registered Aboriginal Parties (RAP):

- Gunaikurnai Land and Waters Aboriginal Corporation
- Taungurung Land and Waters Council
- Yorta Yorta Native Aboriginal Corporation

[1] Council notes that the language of protection in the *Victorian Environmental Assessment Council Act 2001* is not consistent with First Nations relationship with the environment. We interpret this language to broadly refer to environmental management that promotes healthy and biodiverse ecosystems.

Figure 1.3a Registered Aboriginal Party areas

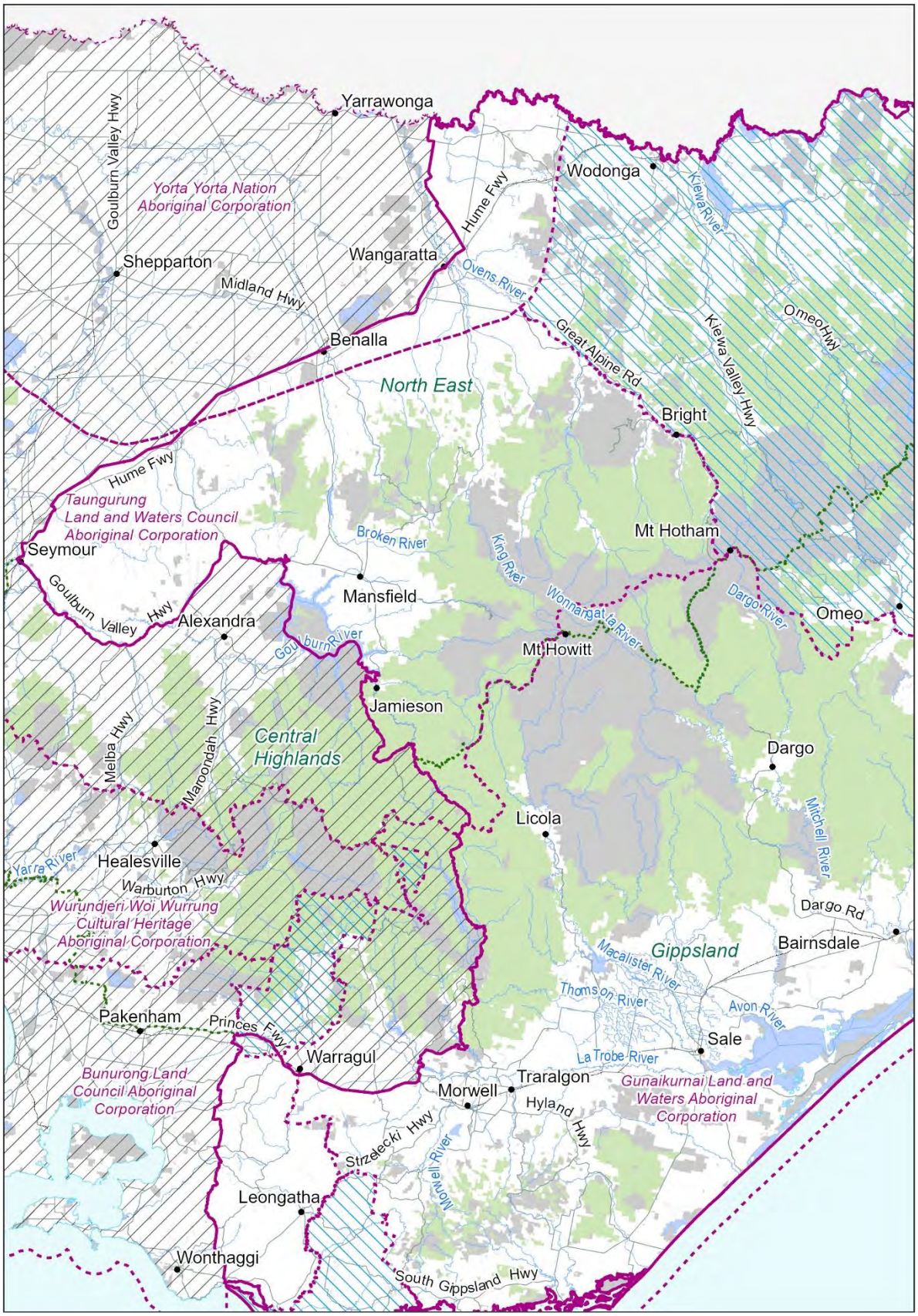
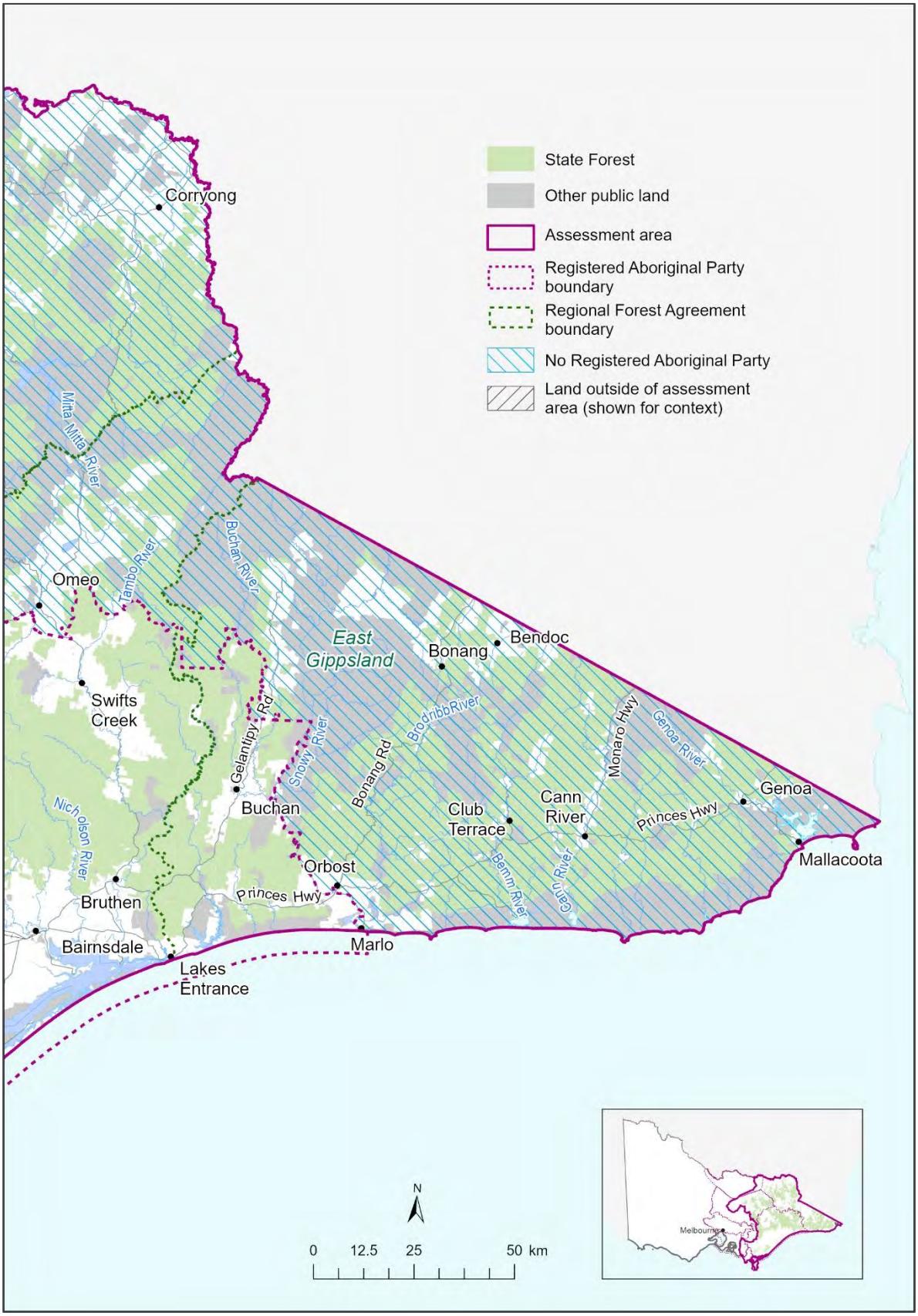


Figure 1.3b Registered Aboriginal Party areas



1.5. Background to the assessment

Native forests announcements in 2019

In November 2019 the Victorian government announced that timber harvesting would end in Victoria's native forests by 2030. The Victorian Forestry Plan (VFP) was developed to assist the industry as it managed its transition away from native forest harvesting.[2]

Alongside this announcement the Victorian government announced environmental protections including cessation of commercial timber harvesting in 96,000 ha of state forest in Immediate Protection Areas (IPAs). The IPAs supported the protection of critical habitat for more than 35 forest-dependent species, including the greater glider (*Petauroides volans*) and Leadbeater's possum (*Gymnobelideus leadbeateri*). The greater glider Action Statement, released with the announcement of the VFP, outlined conservation measures for the greater glider, listed as threatened in 2017, and included an indicative map of the IPAs. The IPAs were located in the Strathbogie Ranges, Central Highlands, East Gippsland and near Mirboo North (see figure 1.1).

At the time of the VFP announcement, the Victorian government made a commitment to a community engagement process to determine the permanent protection and reservation of the IPAs.

Assessment of IPAs

In August 2021 the Victorian government announced that VEAC would undertake a scientific assessment of environmental, biodiversity and other values in areas identified as IPAs, and that the assessment would be made available to the public and would provide advice on existing land use categories commensurate with the documented values for the IPAs. The government also announced that community engagement would be undertaken by an Eminent Panel for Community Engagement (EPCE; the Panel) on the future uses of state forest to be chaired by Karen Cain and including the Chair of VEAC, Mellissa Wood.[3]

Representatives of the RAPs (Traditional Owners) for the relevant Country were also appointed to the Panel as sessional members during the engagement process for each IPA on their Country. More information about the Panel is available at Eminent Panel for Community Engagement.

The assessment of the IPAs was delivered in two phases:

phase 1 – IPAs in Mirboo North and Strathbogie Ranges (2021 –2022)

phase 2 – state forest in the Central Highlands RFA area (2023–ongoing).

For the phase 1 assessment, VEAC published separate reports in March 2022 for the Mirboo North and Strathbogie Ranges IPAs. These informed the community consultation undertaken by the Panel for the two areas from April to June 2022. The assessment reports included the direct input from the Traditional Owners of the Country that included the IPAs, and VEAC's identification of the typical existing land use categories commensurate with the documented values.

VEAC provided its completed assessment, including an economic assessment of the Panel's recommendations to the Minister on 31 July 2022. The reports for the IPAs in phase 1 are available at Victorian Environmental Assessment Council. The Panel's report to the Minister was released in August 2022, with its recommendations on the future uses of the Mirboo North and Strathbogie Ranges IPAs and two engagement reports (available at Latest news).

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[2] DJPR (Department of Jobs, Precincts and Regions, now DJSIR) (2019) DJPR-Inclusion-Forestry-Plan-1.pdf accessed April 2025

[3] Media release Protecting Victoria's Threatened Species – Lily D'Ambrosio MP accessed April 2025

The phase 2 process is still underway. VEAC published its Interim Report in December 2023, informing the Panel's subsequent community engagement in 2024. The report, available on VEAC's website, extensively documents the values and uses of the 390,000 ha of state forest in the Central Highlands RFA area and identifies the typical existing land use categories commensurate with those values and uses. VEAC will prepare and publish its Final Report for the Central Highlands, including an economic assessment of the Panel's recommendations, after it has received the Panel's recommendations and report.

Announcement of the end of native forest logging in Victoria

In May 2023 the Victorian government announced a revised timeline for Victoria's native timber industry transition[4]. Native timber harvesting in Victoria's state forests ended on 1 January 2024, with support for transitioning businesses, workers and communities brought forward and scaled up.

In May 2024 the government established the Taskforce to inform the future use and management of Victoria's forest estate in the absence of native timber harvesting on public land. The Minister for Environment Steve Dimopoulos MP provided terms of reference which, together with other information about the Taskforce and its operations, are available at Great Outdoors Taskforce. The Taskforce is chaired by former Victorian Minister for Environment Lisa Neville. Members of the Taskforce include:

- Karen Cain, Chair of the EPCE
- Mellissa Wood, Chair of VEAC and member of the EPCE
- Graham Dear, Chair of the Victorian Fisheries Authority (VFA)
- Terry Robinson, Chief Executive Officer of Destination Gippsland.

The Taskforce also includes a flexible model of Traditional Owner representation, allowing each Traditional Owner group to determine its involvement.

Figure 1.4 is a flowchart summarising the overall process and the respective roles of the government, VEAC and the Taskforce. The flowchart shows VEAC's two key roles in the process as specified in both its and the Taskforce terms of reference:

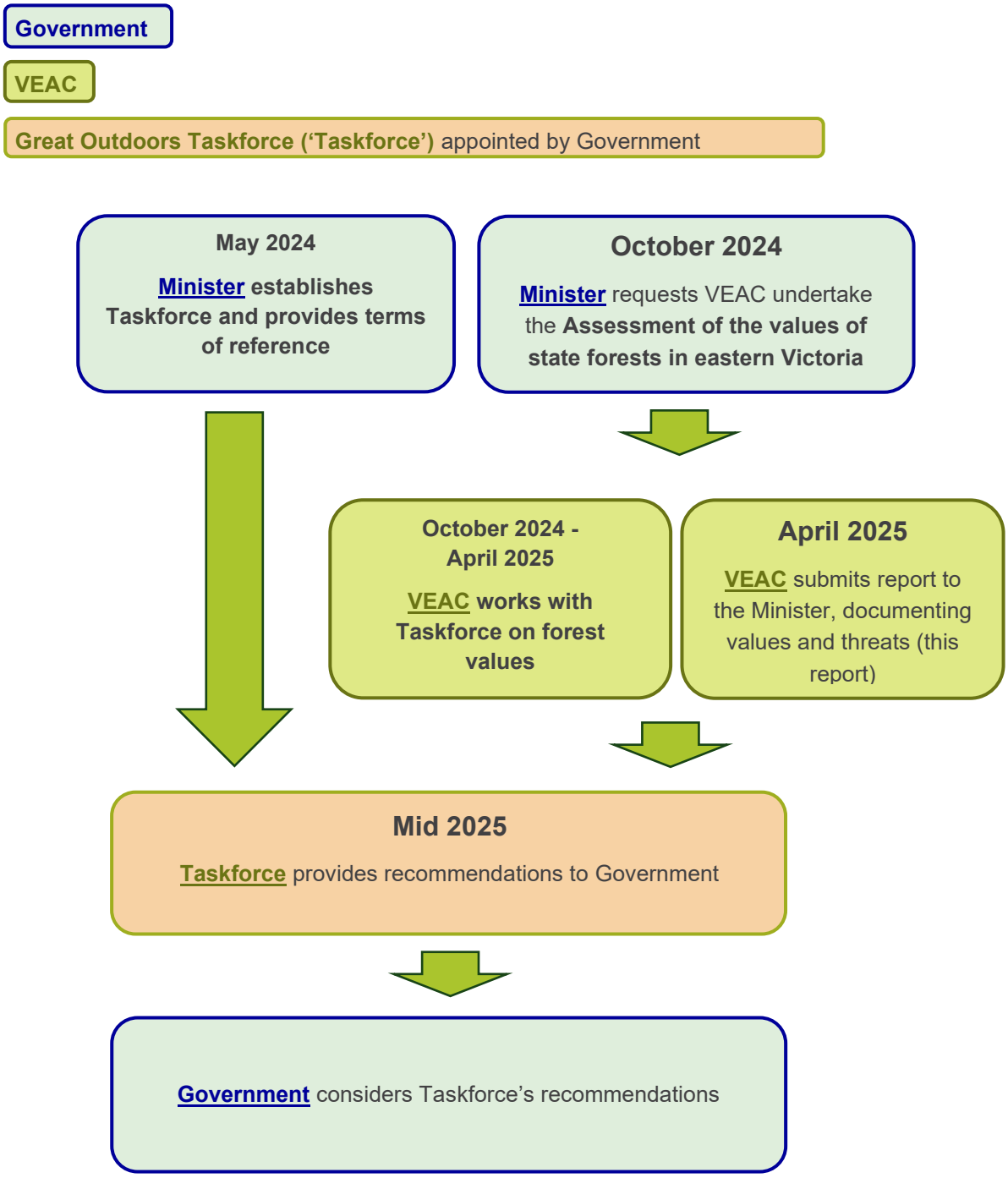
- **from the start of the assessment**: VEAC has – upon request – shared interim data and information with the Taskforce and kept it regularly updated on progress with the assessment.
- **at the end of the assessment:** VEAC has submitted this report to the Minister for publication 7 days thereafter.

VEAC has sought to work proactively and consistently within its legislation and terms of reference, to support the Taskforce in fulfilling its terms of reference.

[4] Media release Delivering Certainty For Timber Workers Premier of Victoria accessed April 2025

Figure 1.4 Assessment process for the assessment of the values of state forests in eastern Victoria

Different colours indicate separate responsibilities for different roles



1.6. Information sources

In preparing this report, information was sourced from various government datasets such as the Department of Energy, Environment and Climate Action's (DEECA's) NatureKit (biodiversity information tool) and More to Explore app (user guide to forest visitor information), published reports, external publicly available datasets such as the Atlas of Living Australia, meetings with DEECA land managers and scientific and policy researchers, and other government agencies. Much of the information provided in this report on topics such as apiary sites, wildfire history, planned burn history and logging has been sourced from departmental records and can be viewed using the publicly available online mapping tool at MapshareVic.

The extent and nature of assessments of biodiversity and other values are shaped by the size of the assessment area, the time provided, and the available data and expertise. For VEAC's 2017 *Assessment of the conservation values of state forests*, VEAC commissioned specialist modelling and spatial analysis expertise through the then Department of Environment, Land, Water and Planning (DELWP, now DEECA) Arthur Rylah Institute for Environmental Research (ARI) and utilised the best available biodiversity data at the time. Since then, a considerable amount of additional information has been collected and compiled associated with last update of the Victorian Regional Forest Agreements and the development of action statements for protection of threatened species such as the greater glider.

For this assessment, updated specialist modelling and spatial analysis was commissioned from DEECA's ARI for the assessment area. A report on geological and geomorphological sites of significance in the assessment area was commissioned from Wakelin Associates. The Geological Survey of Victoria (GSV) provided reports and analyses on the minerals and extractives potential and the geological and geomorphological value of the state forests utilising publicly available datasets and de-identified data provided by the Earth Resources Regulator.

VEAC's unique role has been to integrate these data and in analysing the products, to provide high quality, evidence-based advice to government.

Details of information sources are provided in the relevant sections of this report and in the supplementary material available online.

1.7. Past studies

LCC, ECC and VEAC investigations and assessments

For more than 50 years the role of VEAC and its predecessors, the LCC and ECC, has been to analyse, synthesise and make public scientific and other research, consult with the community and make recommendations to the government on the protection and management of Victoria's public land.

The recommendations, as accepted by successive governments, form the framework for the way in which public land is used and managed in Victoria.

Government-accepted LCC/ECC/VEAC recommendations are binding on government departments and public authorities. The recommendations govern how the public land is used and managed, regardless of the underlying legal status. To enable the orderly investigation of public land, the LCC initially divided Victoria into 17 study areas. The study areas for the 13 most recent LCC, ECC and VEAC investigations and reviews in the assessment area are shown in figure 1.5a and b.

Since it made its first recommendations to government in 1973, the LCC and its successors have conducted 49 separate regional studies, reviews and statewide or special investigations on most public land in Victoria. The area-specific recommendations of Council identify land use categories

and, for each category, specify its purpose, nominate the suitable uses and list the uses that are not permitted.

Current state forests in the assessment area are the result of recommendations in 11 of the 13 most recent investigations covering the assessment area. These areas were variously recommended as 'state forest', 'hardwood production' or 'uncommitted land' but are now all in the state forest category under the simplified system of categories in VEAC's 2017 *Statewide assessment of public land*. The state forest recommendations were accepted or varied by governments through various subsequent Orders in Council and other actions. The 11 investigations in the assessment area which recommended state forests are:

- LCC *South Gippsland District 1* (1973)
- LCC *North-eastern Districts 3, 4, 5* (1977)
- LCC *Stradbroke special investigation* (1977)
- LCC *South Gippsland District 2* (1982)
- LCC *Gippsland Lakes hinterland* (1983)
- LCC *Alpine special investigation* (1983)
- LCC *North-eastern Benalla – Upper Murray review* (1986)
- LCC *East Gippsland review* (1986)
- LCC *Latrobe Valley special investigation* (1987)
- LCC *Melbourne District 2 review* (1994)
- ECC *Box-Ironbark investigation* (2001)

VEAC investigations and assessments relevant to the assessment area include the *Remnant Native Vegetation investigation* (2011), *Statewide assessment of public land* (2017) and the *Assessment of the conservation values of state forests* (2017). The terms of reference for the present assessment of the values of the state forests in eastern Victoria specify that it will build upon the Council's *Conservation values of state forests* – assessment report (2017) by providing a more localised assessment of these areas.

Figure 1.5a Most recent LCC, ECC and VEAC investigation areas, districts and reviews

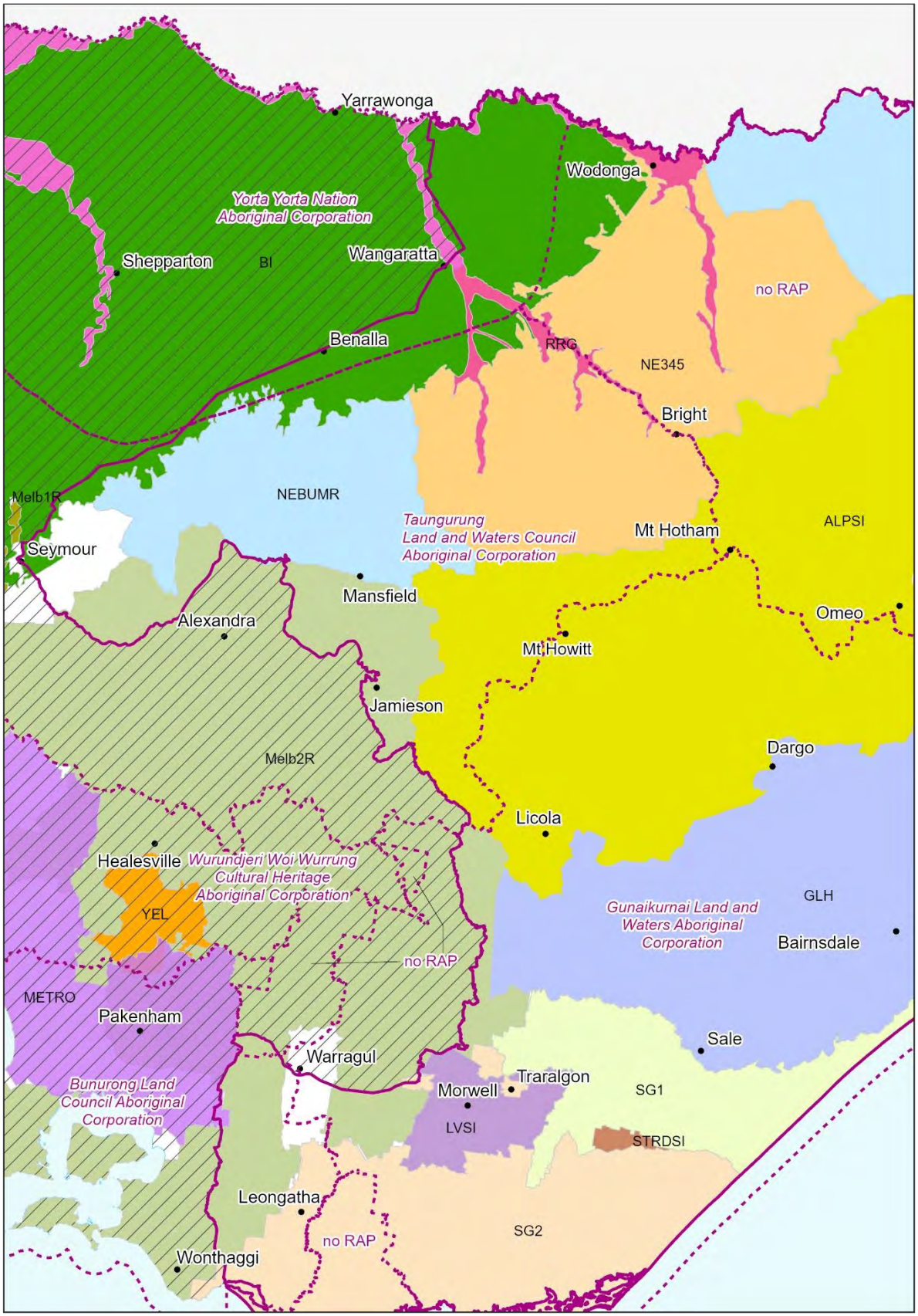
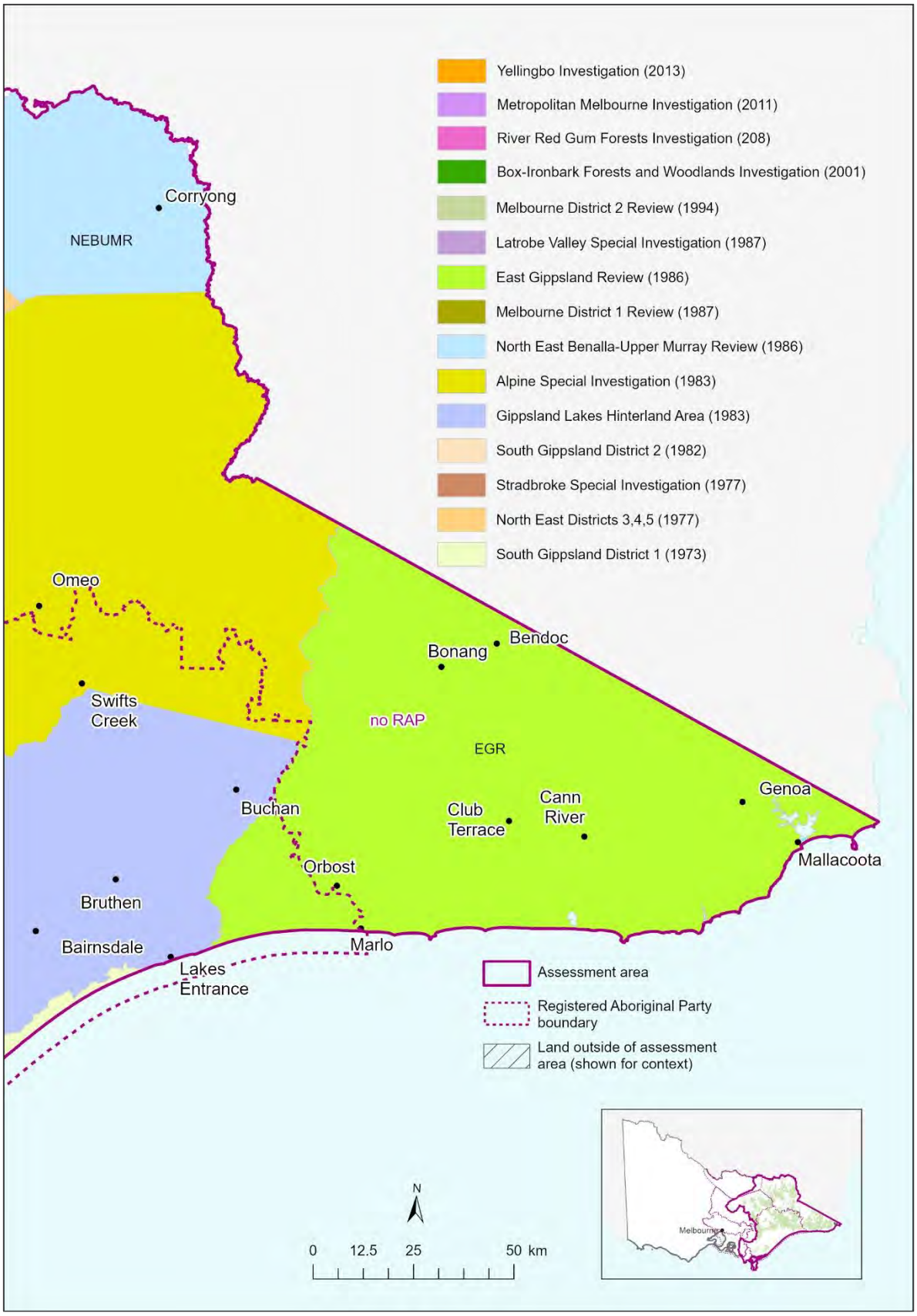


Figure 1.5b Most recent LCC, ECC and VEAC investigation areas, districts and reviews



Regional Forest Agreements

At the national level, the National Forest Policy Statement, first published in 1992, set out a nationally shared vision for the ecologically sustainable management of Australia's forests.

Regional forest agreements (RFAs) between the federal, state and territory governments were a key outcome of the National Forest Policy Statement. Victoria had five such agreements, signed between 1997 and 2000. These agreements were terminated on 31 December 2024 as part of Victoria's transition out of commercial native timber harvesting on public land.

Each RFA in Victoria was developed following a comprehensive regional assessment (CRA) within each relevant region. The CRAs considered timber production, regional employment, biodiversity conservation, wilderness, water catchment protection, tourism, recreation and cultural and heritage values.

Eastern Victoria's RFA areas are shown in figure 1.2.

As part of 2020 extensions to RFAs, the Australian and Victorian governments undertook a further assessment of forest-related environmental, social and economic values in the Victorian RFA areas.[5] These extended RFAs included commitments to undertake Threatened Species and Communities Risk Assessments (TSCRA) for species and communities listed under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that occur within an RFA area and are, or have the potential to be, impacted by forestry operations.

TSCRA reports released in September 2022 build upon existing protections for forest-dependent threatened species and communities.[6]

2019–20 Major Event Review

Following the 2019–20 bushfires, the Commonwealth and Victorian governments agreed to undertake a major event review to assess the impacts of the fires and identify if future remedial actions need to be taken. The major event review was overseen by an independent panel. A summary report was published in 2021 presenting known data about key impacts of the 2019–20 bushfires on Victoria's RFAs, to inform public consultation and the review process.[7] The major event panel completed its deliberations and submitted its final report to the Victorian and Commonwealth Governments in March 2022. (see The Major Event Review of Regional Forest Agreements).

1.8. Victoria's protected area system

Protected areas – such as national parks, wilderness areas and nature reserves – are the cornerstone of biodiversity conservation. Effectively managed systems of protected areas are recognised as critical instruments in achieving the objectives of the United Nations Convention on Biological Diversity (CBD) and the Sustainable Development Goals.

Protected areas are defined by the International Union for Conservation of Nature (IUCN) as:

> *'A protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values'.*

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[5] State of Victoria and Commonwealth of Australia (2019) Further Assessment of Matters Report accessed April 2025

[6] DEECA (Department of Energy, Environment and Climate Action) (2023) Threatened Species and Communities Risk Assessment accessed April 2025

[7] DELWP (Department of Environment, Land, Water and Planning, now DEECA) (2021) Summary_Report_May_2021_-_Accessible_Version_002.pdf accessed April 2025

All the state and territory governments and the Australian government have agreed to adopt international standards for the definition of a protected area used by the IUCN, for example in Australia's Strategy for the National Reserve System 2009–2030.

Through the CBD the Australian and Victorian governments are committed to establishing a representative protected area system. For terrestrial areas, this is largely achieved through the National Reserve System (NRS). The NRS is a formally recognised, national network of protected areas which cover terrestrial and inland freshwater ecosystems. It is complemented in marine environments by the National Representative System of Marine Protected Areas (NRSMPA). The NRS and the NRSMPA processes incorporate the broad requirement for a comprehensive, adequate and representative protected area system. This is commonly referred to as the 'CAR' system. Protected areas also include areas outside the CAR system where their primary purpose is to protect particular features of the natural environment.

National targets have been set in agreements between the Commonwealth and state and territory governments to help establish a comprehensive, adequate and representative terrestrial protected area system. The first of these were developed in 1996 for forests and is widely known as the JANIS criteria.[8]

Historically, there was a different definition of CAR areas used in Victoria's former RFAs from that described above, which also incorporated 'informal reserves' and areas where values are 'protected by prescription'.

'30 by 30'

The Kunming-Montreal Global Biodiversity Framework was agreed internationally in December 2022. It includes the flagship '30 by 30' target: to ensure and enable that by 2030 at least 30% of terrestrial and inland water areas, and of marine and coastal areas, are effectively conserved and managed.[9] The Australian Government is a member of the High Ambition Coalition for Nature and People and a member of the International Steering Committee established to drive the implementation of the 30 by 30 target globally.

Australia's environment ministers met in June 2023 and acknowledged the significant outcome in the adoption of the Kunming-Montreal Global Biodiversity Framework. Ministers agreed to take shared action to address the biodiversity crisis by setting ambitious national targets, in line with the Global Biodiversity Framework, by mid 2024, and by 2024, to develop a roadmap to protect and conserve 30% of Australia's land.[10]

While protected areas remain overwhelmingly the most widespread, effective, enduring, well-known and widely-supported mechanism to protect nature, thinking on the issue continues to evolve as shown by the '30 by 30' target. Another key area of innovation is in Indigenous Protected Areas, which are well-established in many jurisdictions overseas and interstate – see, for example, Country Needs People. In Victoria, there are active discussions about the potential roles of the recently developed Traditional Owner Cultural landscapes and Caring for Country plans (for example) in protecting nature.

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8 JANIS (1997) Nationally agreed criteria for the establishment of a comprehensive, adequate and representative reserve system for forests in Australia. Commonwealth of Australia, Canberra.

9 Convention on Biological Diversity (2024) 2030 Targets (with Guidance Notes) accessed April 2025

10 Environment Ministers' Meeting Communique 9 June 2023 (dcceew.gov.au) accessed April 2025

1.9. Policy context

Management of state forests in Victoria is carried out within a complex legal and policy framework. An overview of Victoria's forest management system was published by DELWP in late 2019.[11] This document provides an overview of Victoria's forest management system at that time and its various components, including legislation, policies, codes, plans and management practices and processes. This system is undergoing significant reform with the cessation of native forest logging.

Key policies and programs recently developed or currently underway and of relevance to forest management or this assessment are listed below.

Aboriginal self-determination

Aboriginal self-determination refers to the right of Aboriginal people to make decisions around issues that affect their lives. In practice, this means transferring decision-making power from governments to Aboriginal peoples. In December 2015, the Victorian Government committed to Aboriginal self-determination as the central policy principle for guiding Aboriginal affairs. The Victorian Government Self-Determination Reform Framework guides public service action to enable self-determination in line with the government's commitment.[12]

DEECA's commitment to self-determination – *Pupangarli Marnmarnepu* 'Owning Our Future' Aboriginal Self-Determination Reform Strategy 2020–2025 – is its 5-year roadmap that enables self-determination at DEECA by honouring the rights and dignity of Traditional Owners and Aboriginal Victorians.[13]

Treaty with Aboriginal Victorians

In 2016, the Victorian Government committed to pursuing Treaty with the State's First Peoples. The *Advancing the Treaty Process with Aboriginal Victorians Act 2018* (Treaty Act) became law in June 2018. Under the Treaty Act, the First Peoples' Assembly of Victoria was established. The Assembly has negotiated and agreed Treaty elements with the Victorian Government, including the creation of the Treaty Authority to oversee Treaty negotiations. Statewide Treaty negotiations opened in November 2024.

Yoorrook Justice Commission

The Yoorrook Justice Commission was established in 2021 and is the first formal truth-telling process into historical and ongoing injustices experienced by First Peoples in Victoria. Yoorrook was set up by agreement between the First Peoples' Assembly of Victoria and the Victorian Government and operates independently of both.

As part of its examination of all aspects of the State's operations, from March to May 2024 Yoorrook held public hearings to gather evidence from Traditional Owners, government ministers, churches and academics on injustices against First Peoples related to land, sky and waters. These hearings are of particular note for VEAC given its role in providing advice and making recommendations about public land. Yoorrook will deliver its final report in 2025.

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[11] DELWP (Department of Environment, Land, Water and Planning, now DEECA) (2019) Att 6 - Overview of Victoria's Forest Management System accessed April 2025

[12] DPC (Department of Premier and Cabinet) (2019) Self-Determination Reform Framework | firstpeoplesrelations.vic.gov.au accessed April 2025

[13] DELWP (Department of Environment, Land, Water and Planning, now DEECA) (2019) Pupangarli-Marnmarnepu-Owning-Our-Future-Aboriginal-Self-Determination-Reform-Strategy-2020-2025.pdf accessed April 2025

Victorian Traditional Owner strategies

Cultural landscape strategy

Victorian Traditional Owners developed the Cultural Landscapes Strategy to set out a framework to systematically enable and empower Victorian Traditional Owners to lead planning and activate cultural knowledge and practices to manage Country.[14]

Game management strategy

The Traditional Owner Game Management Strategy sets out how Victorian Government departments and agencies will partner with Traditional Owners to deliver practical actions to build Traditional Owner participation in hunting, land management and conservation.[15]

Cultural fire strategy

The strategy articulates the aspirations of Traditional Owners to practise cultural burning and ensure knowledge about fire is sustained through generations.[16]

Water is Life: Traditional Owner Access to Water Road Map

The roadmap, released in September 2022 provides a framework to understand and work towards realising over time Traditional Owner's aspirations for cultural water including flows. The roadmap is supported by the Water, Country and Community Program designed to better include Aboriginal people in water management and to reconnect communities to water, while recognising existing water rights and entitlements.[17]

Renewing Victoria's public land legislation

VEAC welcomes the Victorian Government's development of renewed public land legislation, including the creation of a new Public Land Act with simpler and clearer public land categories, and the modernisation of the *National Parks Act 1975*.[18] These initiatives follow government acceptance of VEAC's recommendations in its 2017 *Statewide assessment of public land*.

Much of Victoria's current public land legislation is outdated and does not reflect contemporary views and values of public land. It is also complex and does not adequately support efficient and effective public land management. A new Public Land Act will assist in overcoming the barriers and issues posed by the current legislative framework.

Biodiversity 2037

Released in 2017, Protecting Victoria's Environment – Biodiversity 2037 (Biodiversity 2037) aims to ensure that Victoria has a modern and effective approach to protecting and managing our precious natural environment. It presents a long-term vision for Victoria's biodiversity supported by two overarching goals:

- Victorians value nature, and
- Victoria's natural environment is healthy.

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[14] Federation of Victorian Traditional Owners (FVTOC) (2020) Cultural Landscapes - Federation of Victorian Traditional Owner Corporations accessed April 2025

[15] Federation of Victorian Traditional Owners (FVTOC) webpage Animals - Federation of Victorian Traditional Owner Corporations accessed April 2025

[16] Victorian Traditional Owner Cultural Fire Knowledge Group (2020) fireplusstrategyplusfinal.pdf accessed April 2025

[17] DELWP (Department of Environment, Land, Water and Planning, now DEECA) (2022) Water is Life Roadmap accessed April 2025

[18] DELWP (Department of Environment, Land, Water and Planning, now DEECA) (2021) Renewing Victoria's public land legislation | Engage Victoria accessed April 2025

Wildlife legislation review

In May 2020, the then Minister for Energy, Environment and Climate Change announced a comprehensive review of the *Wildlife Act 1975*. The first stage of this review was led by an independent Expert Advisory Panel, appointed in 2020. The review is part of a wider examination of Victoria's legislative framework for protecting and managing biodiversity.[19] The panel delivered its report to the Minister on the findings of the review in December 2021. This report will be made publicly available at a later date, together with the government response.

Commissioner for Environmental Sustainability (CES) Reports

The CES produces a series of reports at the request of the Victorian Government. Of relevance to this VEAC assessment are the *State of the forests 2018* report and the *State of the environment 2023* report.

Climate change adaptation action plans

Adaptation Action Plans have been prepared for 7 essential systems in Victoria, including the natural environment, that are vulnerable to climate impacts or critical to our climate resilience.[20] A stocktake document supporting the Natural Environment Climate Change Adaptation Action Plan 2022–2026 provides a brief look at some of the programs, policies and strategies currently being undertaken across the natural environment sector that contribute to climate change adaptation.[21]

Bushfire emergency – biodiversity response and recovery

The bushfires of 2019–2020 were exceptional in size and impact. Guided by initial and subsequent reports, DEECA has worked alongside species experts, academics, and land managers to prioritise actions for fire-affected threatened species and habitats. The Bushfire Biodiversity Response and Recovery Program has several focus areas and associated actions, including applying a cultural landscape lens to species renewal and resilience using cultural knowledge and practices.

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[19] DELWP (Department of Environment, Land, Water and Planning, now DEECA) (2021) The Independent Review of Victoria's *Wildlife Act 1975* | Engage Victoria accessed April 2025

[20] DELWP (Department of Environment, Land, Water and Planning, now DEECA) (2022) Natural-environment-Climate-Change-Adaptation-Action-Plan-2022.pdf accessed April 2025

[21] DELWP (Department of Environment, Land, Water and Planning, now DEECA) (undated) Natural environment climate change adaptation action plan 2022-2026 Supporting document - Stocktake accessed April 2025

1.10. Management arrangements and administrative areas

Table 1.1 outlines land management and administrative areas within the boundaries of VEAC's assessment of the values of state forest in eastern Victoria.

Table 1.1 Administrative areas within the North East, Gippsland, and East Gippsland RFA areas

RFA area	Local Government Area	DEECA Region	Forest Management Area	Catchment Management Authority
North East	Mitchell, Strathbogie, Mansfield, Benalla, Wangaratta, Indigo, Mount Buller Alpine Resort (unincorporated), Alpine, Wellington, Mount Hotham Alpine Resort (unincorporated), Towong, Falls Creek Alpine Resort (unincorporated), East Gippsland	Hume Gippsland	Central Benalla-Mansfield North-East	Goulburn Broken, North East, East Gippsland
Gippsland	Bass Coast, South Gippsland, Cardinia, Baw Baw, Latrobe, Wellington, Mansfield, Alpine, Mount Hotham Alpine Resort (unincorporated), East Gippsland, Towong	Port Phillip Gippsland Hume	Central Gippsland Tambo	Goulburn Broken, West Gippsland, North East, East Gippsland
East Gippsland	East Gippsland	Gippsland	East Gippsland	East Gippsland

2. Regional and landscape context

This section provides an overview of the region and landscape of the North East, Gippsland and East Gippsland Regional Forest Agreement (RFA) areas that comprise the assessment area.

2.1. Regional overview

The North East, Gippsland and East Gippsland RFA areas encompass a very large and diverse region of 6.172 million ha. Of this total, 3.873 million ha is public land, including 1.5 million ha of state forests previously managed for timber which is the subject of the Great Outdoors Taskforce (the Taskforce) assessment that this VEAC report informs. Beyond the previous timber allocation area, the Taskforce has also been asked to consider relevant adjacent state forests (about 590,000 ha), where assessment of these areas supports a cultural landscapes approach for Traditional Owners, or will help with management continuity.

At its closest, the assessment area is located around 100 km north and east of metropolitan Melbourne, extending from Jamieson in the North East RFA and just east of Erica in the Gippsland RFA, to the southern and eastern Victorian coast and the New South Wales border. As shown in figure 2.1a and b, the overall area includes the townships of Wangaratta, Bright, Beechworth, Wodonga, Whitfield and Jamieson in the North East RFA area; Licola, Omeo, Dargo, Mirboo North, Yarram, Traralgon, Sale, Bairnsdale and Ensay in the Gippsland RFA area; and Gelantipy, Bendoc, Buchan, Orbost, Cann River and Mallacoota in the East Gippsland RFA area.

The 3 RFA areas overlap with 12 local government areas: Alpine, Bass Coast (marginally), Baw Baw, Benalla, East Gippsland, Indigo, Latrobe, Mansfield, South Gippsland, Towong, Wangaratta and Wellington.

The Great Dividing Range is the dominant geographical feature in the region. Running east-west, it divides the region into north and south, strongly influencing weather and fire conditions and leading to generally drier conditions in the north of the region, where mixed-species forests and woodlands are more prevalent.

Covering a broad area of Victoria, the assessment area includes a very wide range of vegetation types from grassy woodlands and riverine swamps of the Murray River floodplain to alpine meadows and heathlands along the ranges to coastal mangroves, saltmarshes and heathlands in the far south. However, while some of these vegetation types occur in the state forests that are the subject of this assessment, most of the assessment area consists of forests on the slopes, ridges and valleys between alpine ranges and lowlands.

Historically, timber harvesting has focused on 3 broad forest types as follows:

Ash forests in the assessment area consist of tall open wet forests dominated by alpine ash (*Eucalyptus delegatensis*), mountain ash (*E. regnans*) or shining gum (*E. nitens*). Generally, these forests are naturally dominated by a single, even-aged overstorey species but may be mixed with other species, most commonly messmate (*E. obliqua*) and manna gum (*E. viminalis*).

Low elevation mixed species forests occupy extensive areas across the assessment area, and comprise much of the coastal and foothill forests of Victoria. They are generally located at elevations less than 700 m and contain key indicator species such as silvertop (*E. sieberi*), mountain grey gum (*E. cypellocarpa*), messmate, yellow stringybark (*E. muelleriana*) and white stringybark (*E. globoidea*).

High elevation mixed species forests occupy extensive areas of East Gippsland. They are generally located at elevations greater than 700 m and contain species mixtures of messmate, cut-tail (*E. fastigata*), Errinundra shining gum (*E. denticulata*), mountain grey gum and/or manna gum.

Within and adjoining these forest types there are very many variations and more localised distinct types, for example:

Peppermint and stringybark forests are perhaps the most widespread forest type in the assessment area, occurring on the mid-slopes over large areas and characterised by narrow-leaved peppermint (*E. radiata*), red stringybark (*E. macrorhyncha*), broad-leaved peppermint (*E. dives*), messmate and blue gum (*E. globulus*).

Drier forests and woodlands can be found in state forests on lowest slopes and foothills adjacent to cleared private farmland further downslope. These forests become drier, shorter, and more open and grassy grading into woodlands in many places. On the northern side of the divide a distinctive band of box and ironbark forests occurs before giving way to grassy grey box (*E. microcarpa*) woodlands on the northern plains. Other typical eucalypts of these forests and woodlands include mugga ironbark (*E. sideroxylon*), red box (*E. polyanthemos*), red ironbark (*E. tricarpa*), yellow box (*E. melliodora*), red stringybark and long-leaved box (*E. goniocalyx*).

Grassy forests and woodlands on the plains of Gippsland and the Murray Valley with river red gum (*E. camaldulensis*) in both regions, together with Gippsland red gum (*E. tereticornis*) on the Gippsland plains.

Subalpine woodlands cover large parts of the assessment area downslope from the snowline. Snow gum (*E. pauciflora*), mountain gum (*E. dalrympleana*) and black sallee (*E. stellulata*) are the typical eucalypts.

Rainforests – cool temperate and warm temperate rainforest occur on the southern side of the Great Dividing Range. Cool temperate rainforest generally occurs in gullies in the southwest part of the assessment area where the dominant trees are myrtle beech (*Nothofagus cunninghamii*), southern sassafras (*Atherosperma moschatum*) and blackwood (*Acacia melanoxylon*), but also on slopes and flatter areas in the East Gippsland Uplands near Errinundra where black oliveberry (*Elaeocarpus holopetalus*) and southern sassafras dominate.

Limestone box forest is an example of an unusual and unique vegetation type of particular scientific interest and value. It occurs in the area roughly between Lakes Entrance and Orbost on terra rossa soils derived from limestones that outcrop around coastal streams, gullies and lakes. Character tree species are blue box (*E. baueriana*), southern mahogany (*E. botryoides*), coast grey box (*E. bosistoana*) and red ironbark. It is one of several vegetation types in the assessment area that is closely associated with limestone-derived soils, some of which are listed under the *Flora and Fauna Guarantee Act 1988* as threatened communities and some associated plants are listed as threatened species.

Detailed information on the values and uses of the forests is provided in chapter 3.

2.2. Public land

The assessment area covers 6,172,100 ha, of which 3,873,505 ha (61%) is public land (including 96,479 ha of road reserves, within the utilities and government services reserve public land use category) (table 2.1, figure 2.1a and b). The remaining area is private, local government and Commonwealth land.

State forests make up approximately 55% of public land use categories, followed by national, state and wilderness parks (31%). The remaining public land includes various reserves, plantation leases, regional parks and uncategorised public land (table 2.1, figure 2.2).

Figure 2.1a Public land use categories in the assessment area

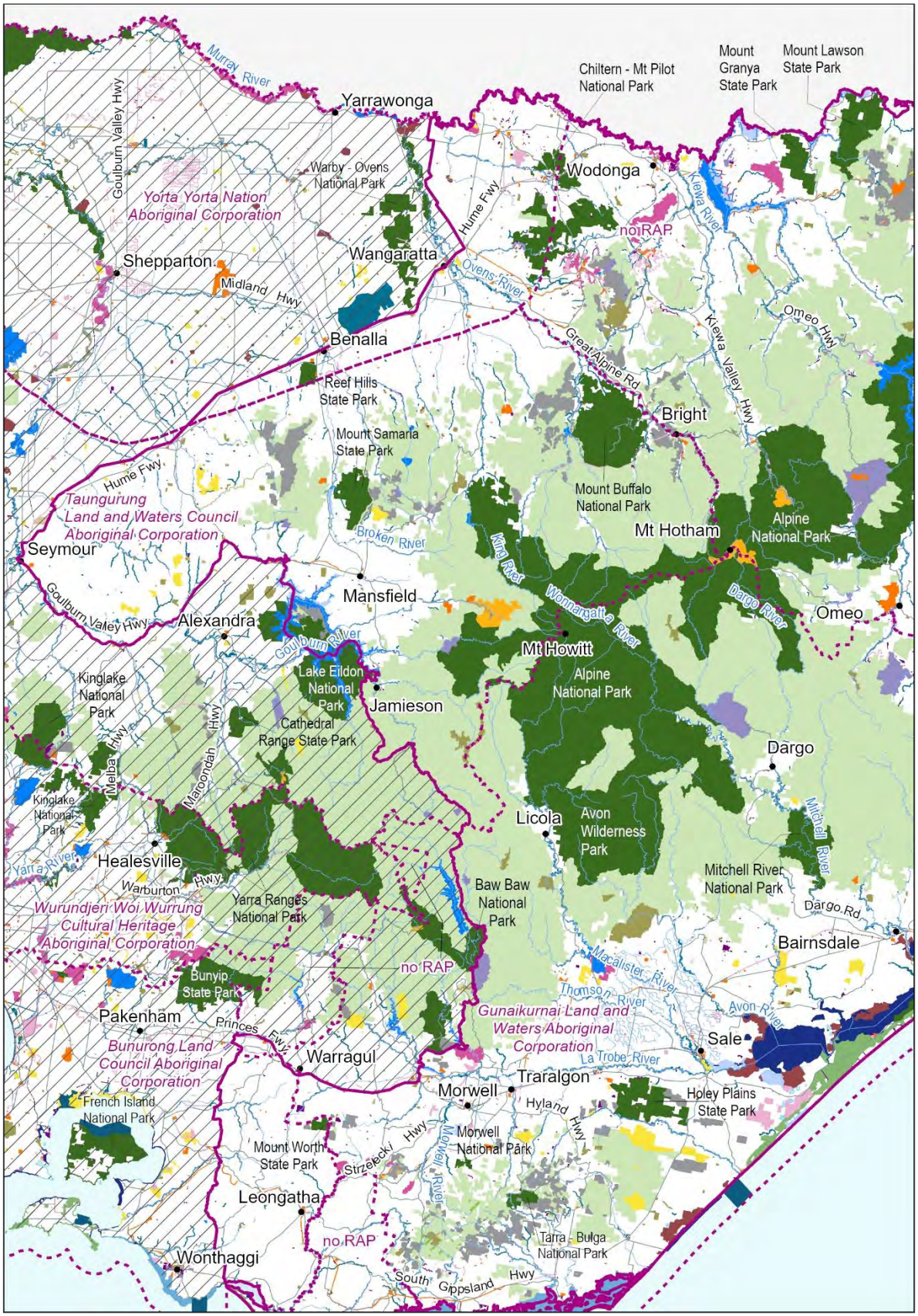


Figure 2.1b Public land use categories in the assessment area

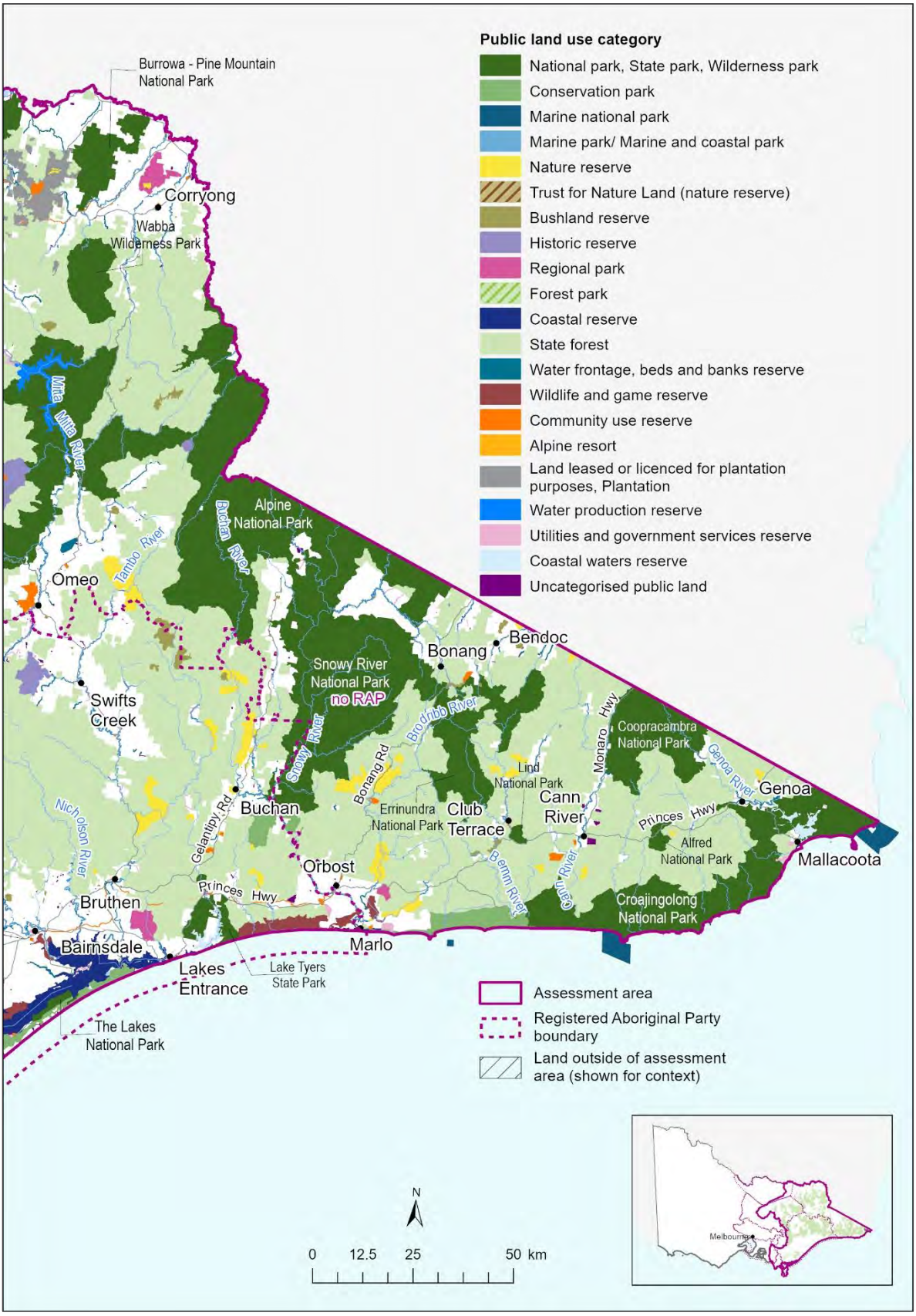
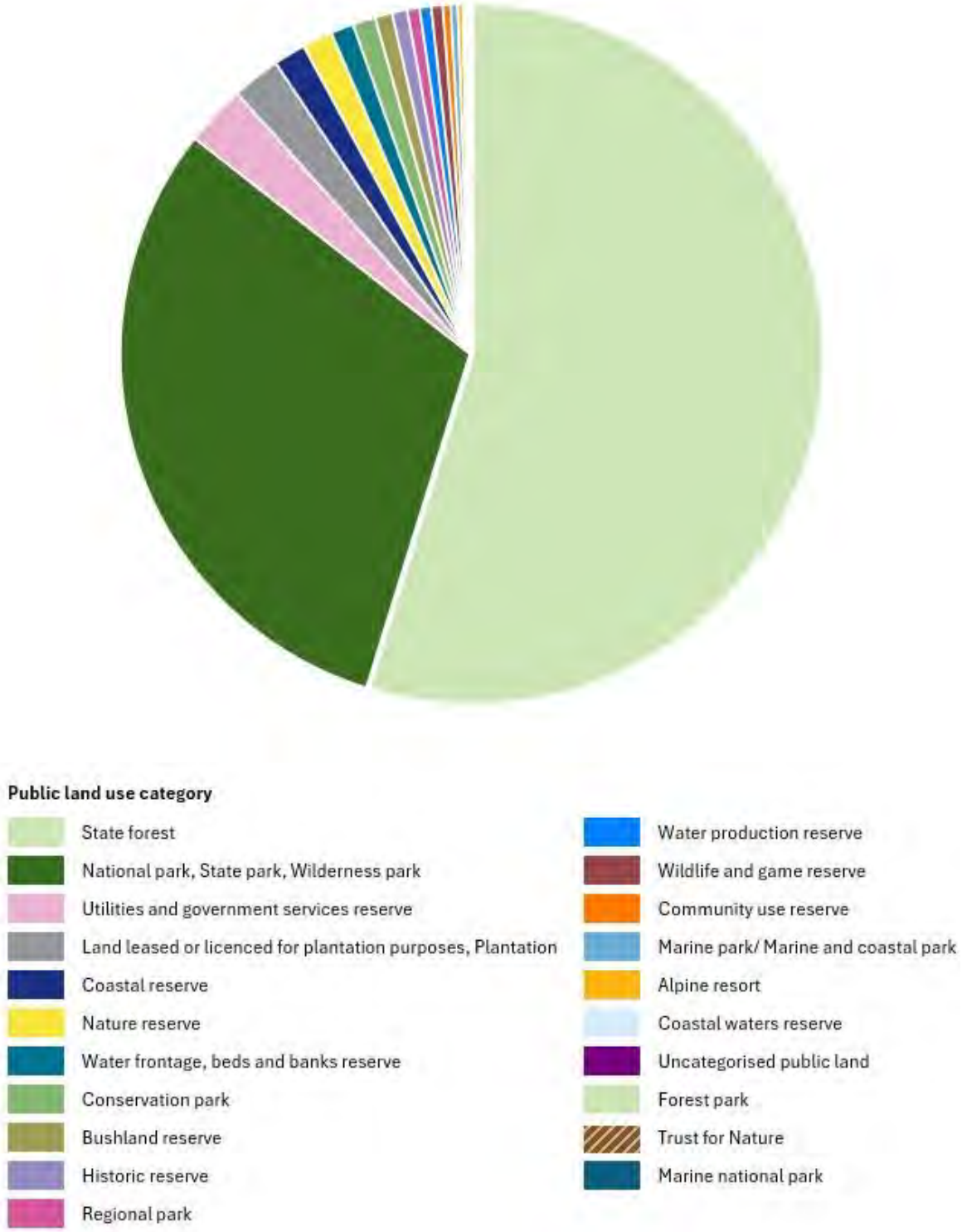


Table 2.1 Extent of public land use categories

Public land use category	Area (ha)	Per cent of total
State forest	2,111,117	55%
National park, state park, wilderness park	1,199,601	31%
Utilities and government services reserve	110,033	3%
Land leased or licenced for plantation purposes, plantation	86,991	2%
Coastal reserve	58,019	2%
Nature reserve	54,526	1%
Water frontage, beds and banks reserve	41,351	1%
Conservation park	41,107	1%
Bushland reserve	31,092	<1%
Historic reserve	27,470	<1%
Regional park	22,240	<1%
Water production reserve	20,744	<1%
Wildlife and game reserve	20,615	<1%
Community use reserve	14,145	<1%
Marine park / marine and coastal park	12,651	<1%
Alpine resort	9,293	<1%
Coastal waters reserve	4,347	<1%
Uncategorised public land	4,325	<1%
Forest park	2,560	<1%
Trust for Nature land (nature reserve)	1,027	<1%
Marine national park	68	<1%
Total	**3,873,322**	**100%**

Figure 2.2 Proportional extent of public land use categories in the assessment area



2.3. Landscape and Climate

Bioregions are a landscape-scale classification of the environment delineated by physical characteristics such as geology, natural landforms and climate, which are correlated with ecological features, plant and animal assemblages and landscape-scale ecosystem processes. Eleven of the 89 Australian terrestrial bioregions occur in Victoria. Victoria has been further subdivided into 28 bioregions (equivalent to national sub-regions) suitable for finer scale analysis.

The assessment area intersects 13 Victorian bioregions (table 2.2, figure 2.3a and b). The state forests of eastern Victoria are particularly important for bioregions that are completely or largely restricted to the assessment area, and where much of their extent of occurrence is in state forest. For example, the East Gippsland Uplands occurs only in the assessment area with much of its occurrence on state forest. Other bioregions that score highly on these measures are the East Gippsland Lowlands, Highlands - Northern Fall and Victorian Alps.

The assessment area contains the entire statewide extent of 5 bioregions: the East Gippsland Lowlands, East Gippsland Uplands, Highlands - Far East, Monaro Tablelands and Wilsons Promontory (see column 3 in table 2.2). The first 4 of these are in East Gippsland – the only area of the state of this size to fully encompass so many bioregions (noting that these four bioregions effectively extend into New South Wales). The assessment area also contains at least 70% of a further five bioregions. The 4 most extensive bioregions (East Gippsland Uplands, Gippsland Plain, Highlands - Northern Fall and Highlands - Southern Fall) cover 56% of the assessment area (see column 4 in table 2.2). Five bioregions have a much higher proportional representation in state forests than the other eight in the table: East Gippsland Lowlands, East Gippsland Uplands, Highlands - Northern Fall, Highlands - Southern Fall and Victorian Alps (see column 6 in table 2.2).

More details about bioregions and their associated vegetation types can be found in the Discussion Paper for VEAC's Remnant Native Vegetation Investigation and in the Biodiversity section of DEECA's website.

Landscape and climate diversity in East Gippsland

The southeasternmost corner of Australia – East Gippsland and nearby New South Wales – has been called a 'Corner of Contrasts' for the unique diversity of environments and bioregions found in a relatively small area. The confluence of several landscape and climate factors is responsible for this diversity:

- The rapid transition from the Snowy Mountains – the highest in Australia – around Mount Kosciusko to the sea barely 150 km to the south and east
- The elbow of the east-west alignment of the Great Dividing Range in Victoria and the north-south alignment in New South Wales and Queensland
- The meeting of the northern end of the west to east circumpolar currents and winds of the Southern Ocean and the south-flowing East Australian Current bringing warm water from the Coral Sea. Both currents can be accompanied by moisture-laden winds – generally at different times of the year.
- The Coast Range (called the South Coast Range in New South Wales) and a kink in the Great Dividing Range (see figure 2.4) effectively doubling the topographic diversity of the 150-km traverse from the Snowy Mountains to the sea.

These features and the interactions between them have produced a number of very different and unique environmental features in unusually close proximity, including:

- The high elevation and relatively dry Monaro Tablelands from Bendoc to Cooma (NSW).

- A great variety of vegetation types from alpine bogs and heaths above the treeline to swamps and heaths on coastal flats and plains, with dozens of different eucalypt forests and woodlands between. A particularly unusual feature is the occurrence of extensive Cool Temperate Rainforests at high elevation on the Errinundra Plateau only a few kilometres from Warm Temperate Rainforests in dense riparian ravines.
- In the upper Snowy River Valley near MacKillops Bridge, rainshadow White Box (*Eucalyptus albens*) woodlands more similar to those on the inland slopes of the Great Dividing Range near Wodonga than anything on the coastal side of the Range.
- Less than 40 km further east of the rainshadow woodlands are the rainforests and wet montane eucalypt forests of the Errinundra Plateau. The proximity of the plateau to the moisture-laden winds along the coast makes this southern edge quite different from the immediately adjacent Monaro Tableland to the north.
- Many valleys, gorges, mountain tops and other features creating topographic diversity on the descent from the mountains to the coast, and many rivers in a small area (see section 2.5).
- A diverse range of plant and animal species and ecosystems taking advantage of these diverse and specialised landscapes and climate.

Table 2.2 Bioregions in the assessment area

1	2	3	4	5	6
Bioregion	**Assessment area extent (ha)**	**Assessment area extent as proportion of statewide extent**	**Bioregion as proportion of assessment area total**	**Extent in assessment area state forest (ha)**	**Bioregion state forest as proportion of assessment area state forest total**
Central Victorian Uplands	405,080	33%	7%	36,880	2%
East Gippsland Lowlands	536,830	100%	9%	275,372	13%
East Gippsland Uplands	791,031	100%	13%	374,849	18%
Gippsland Plain	844,988	70%	14%	34,777	2%
Highlands - Far East	70,018	100%	1%	44,297	2%
Highlands - Northern Fall	1,143,818	81%	18%	585,673	27%
Highlands - Southern Fall	655,876	55%	11%	415,798	19%
Monaro Tablelands	74,821	100%	1%	26,989	1%
Northern Inland Slopes	440,773	78%	7%	43,139	2%
Strzelecki Ranges	314,910	92%	5%	27,444	1%
Victorian Alps	618,168	87%	10%	270,479	13%
Victorian Riverina	256,302	14%	4%	13	0%
Wilsons Promontory	40,361	100%	1%	0	0%

Figure 2.3a Bioregions in the assessment area

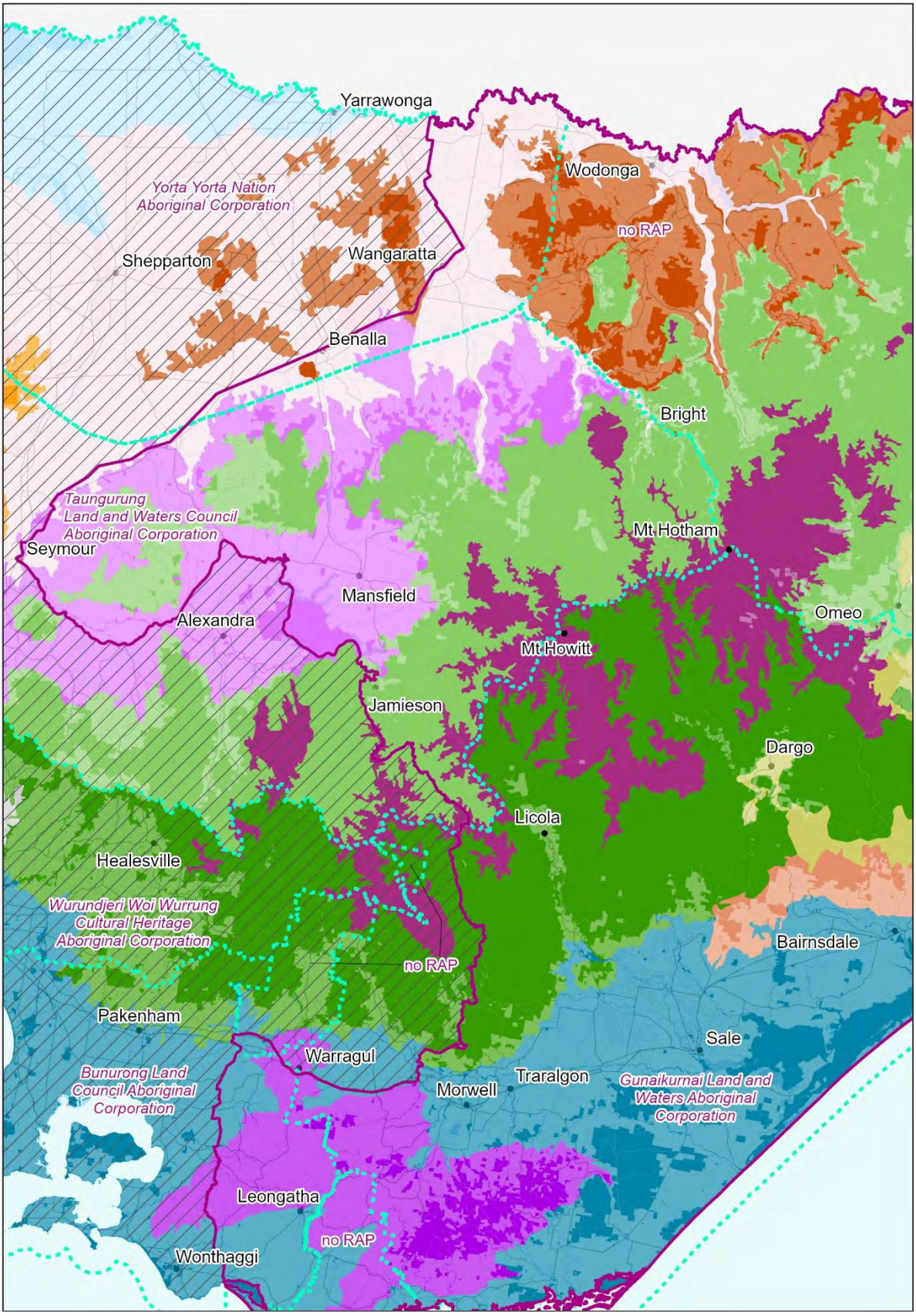


Figure 2.3b Bioregions in the assessment area

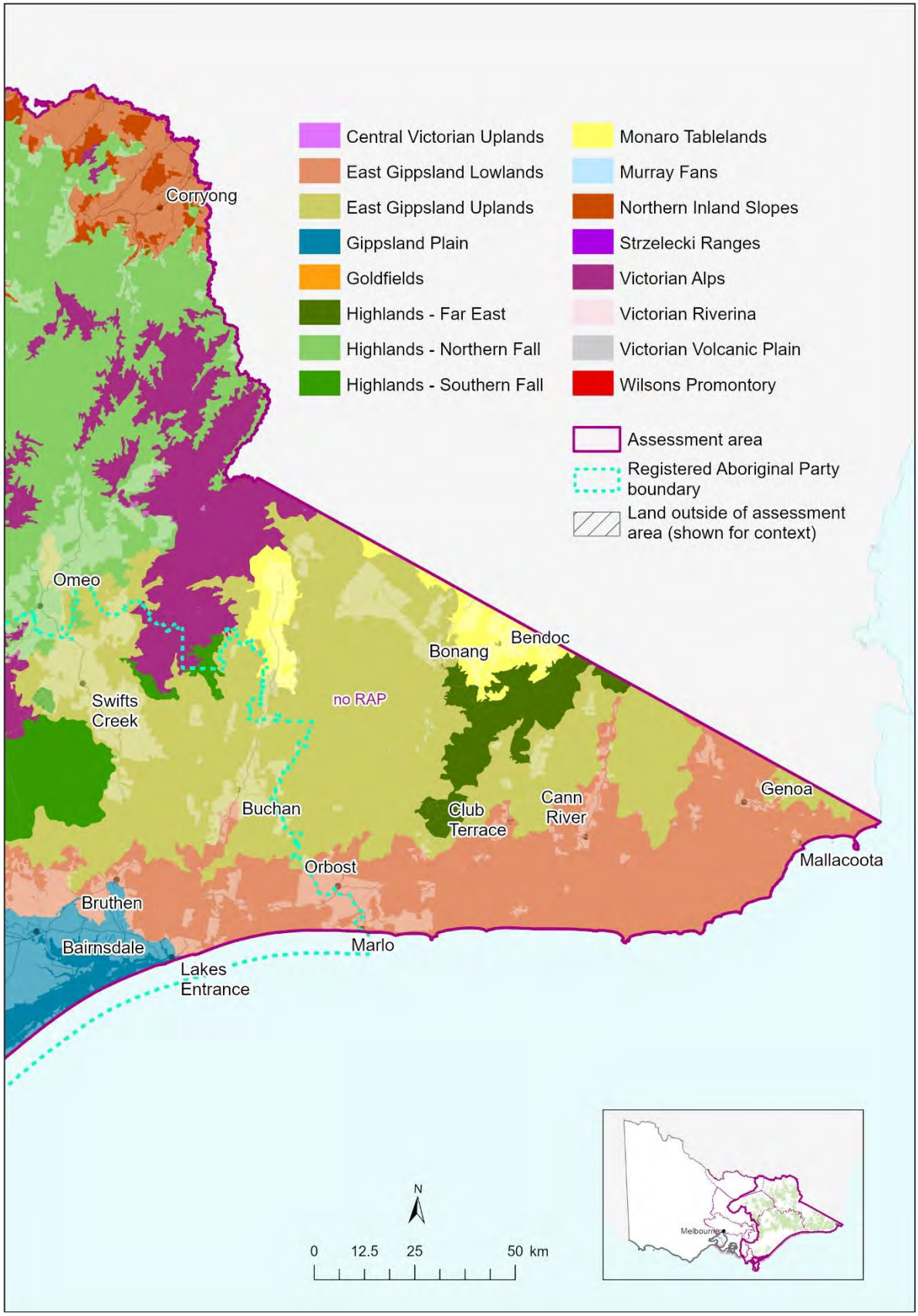
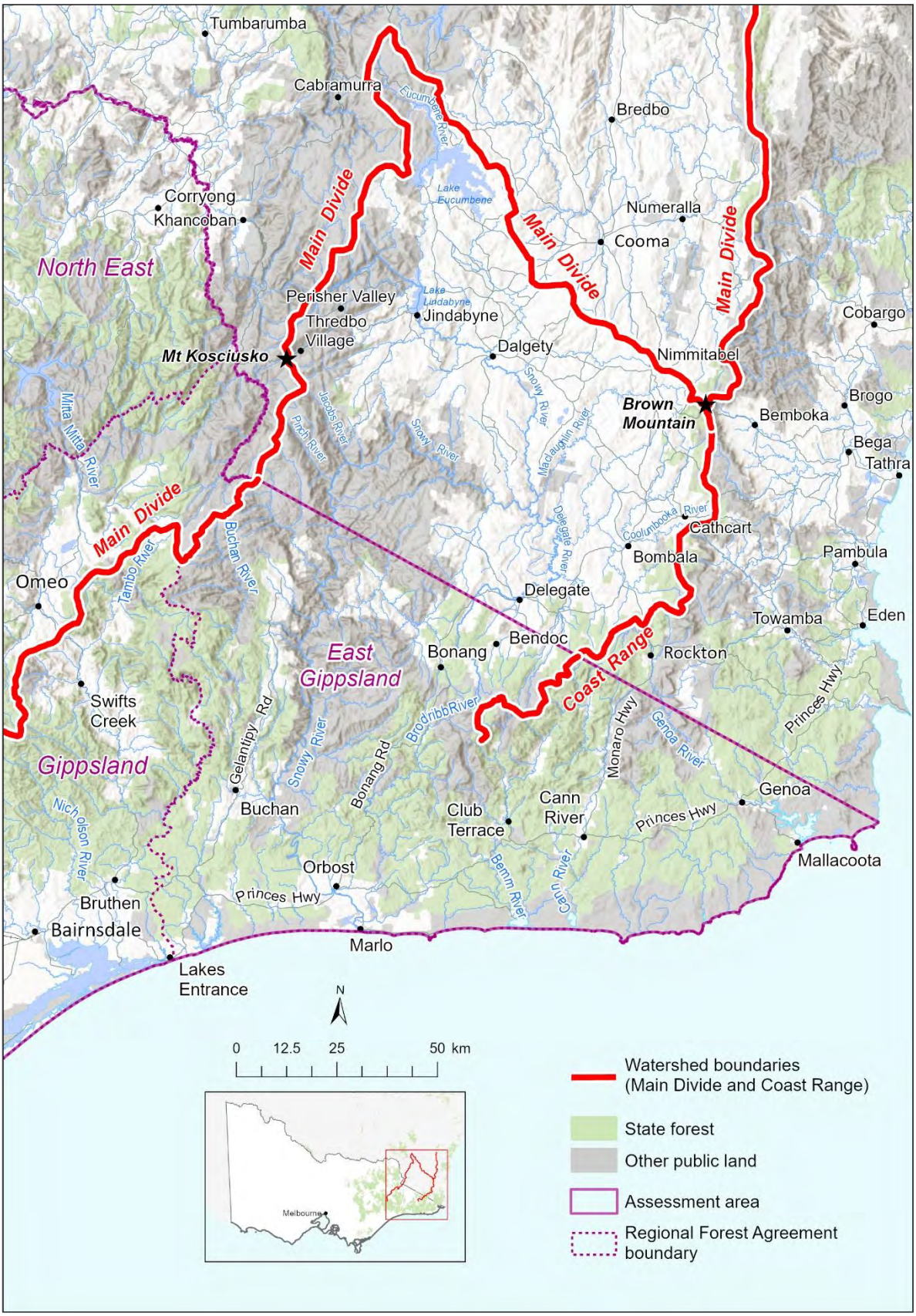


Figure 2.4 Coast Range and the Great Dividing Range in East Gippsland and southeast New South Wales



2.4. Fire History

DEECA records show fires occurring on public lands in Victoria since 1903. A history and maps of bushfires in Victoria from 1851 to 2020 is available at Past bushfires.

Major fires in the assessment area are shown at figure 2.5a and b. As outlined in Chapter 4, climate change is exacerbating the threat and frequency of bushfires, which may lead to potential for structural changes if capacity of forests to regenerate is compromised.

Black Summer fires 2019–2020

This fire season saw 2 large fires, in the northeast and across east Gippsland, which had separately burnt south into Victoria from New South Wales. There were also several smaller fires around Mount Buller to Bright and Hotham Heights. These fires were characterised by extreme conditions and burned through over 1.5 million ha. Not only did the fire season start unseasonably early, fires also burned more intensely and over a larger area than had been seen since 1939.

An inquiry into the 2019-2020 bushfires was conducted and can be found at Inquiry into the 2019 20 Victorian Fire Season.

Great Divide fires 2006-2007

There were many fires in this summer from mid-December to mid-March. The largest was the Great Divide North fire covering a very large area of the northern slope of the alps and the Great Divide South fire south from the alps into Gippsland. Other major fires include the Tawonga Gap fire and the Tatong-Watchbox Creek Track fire. In places, these fires are especially significant as they reburnt some of the area that was previously burnt by the 2003 Alpine fires, leaving the ecosystems little time to regenerate between two severe fires, while in the middle of the Millenium Drought.

Alpine fires 2003

The Alpine fires burned for 59 days in January to March 2003. Ignited by over 80 lightning strikes across the area, the fires combined to cover the largest area since the 1939 fires. They burned across most of the alpine area of northeast Victoria, from Myrtleford west of Bright to Bonang in the east and across the border into New South Wales.

1983 fires

As well as the well-known catastrophic Ash Wednesday fires west of the assessment area, in the second week of February 1983, extensive areas of East Gippsland were burnt in fires that extended from January to March that year.

1939 fires

While the precision and accuracy of fire mapping from the 1930s and 1940s are unlikely to be as high as more recent mapping, the broad picture is beyond dispute. The Black Friday fires from February 1939 were the most extensive and among the most devastating in recorded history. The mapping indicates that these fires burnt nearly all the forests in the northern part of the assessment area but were more patchy and less extensive south of the Divide and east of Dargo.

Figure 2.5a Major wildfires in the assessment area

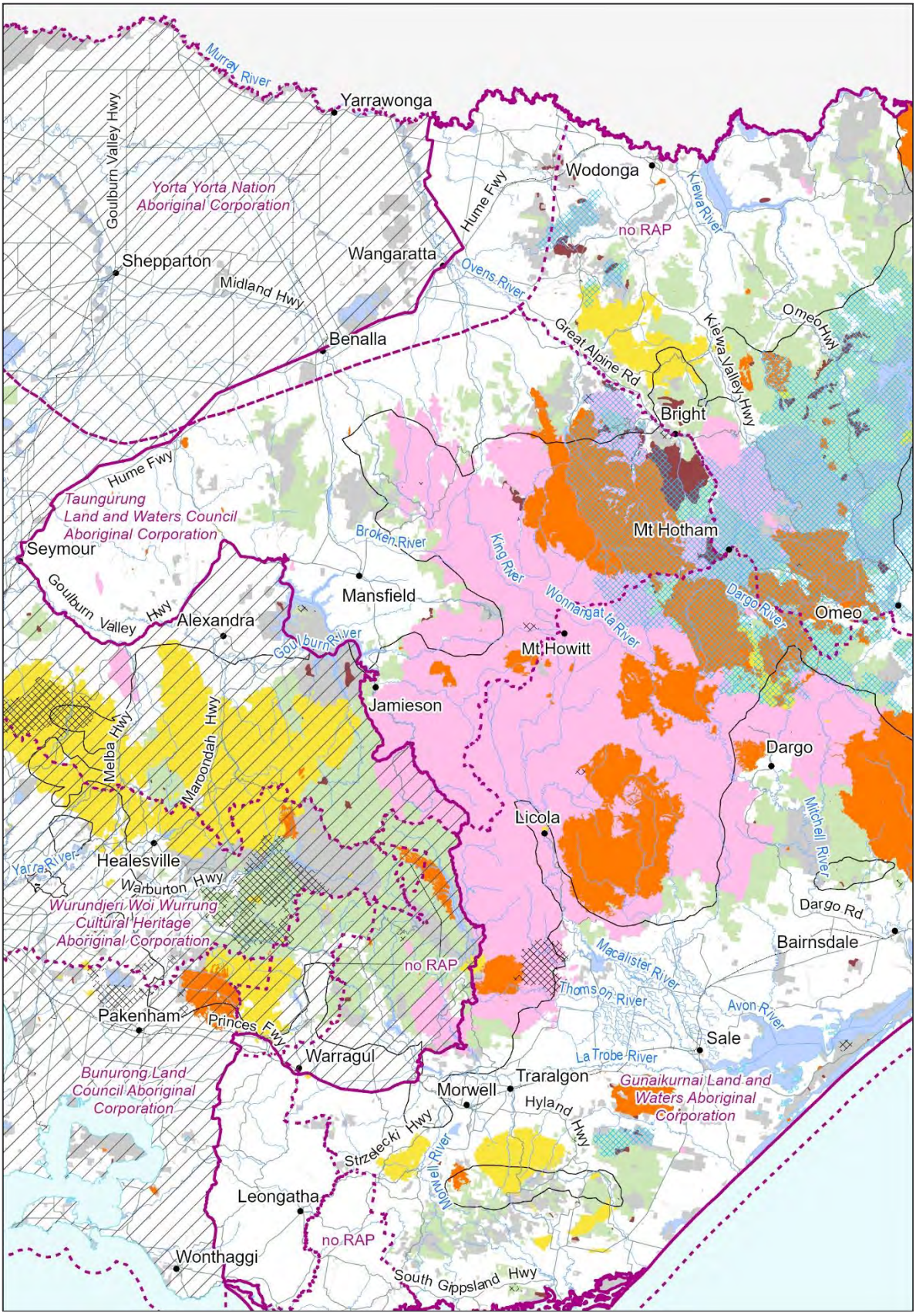
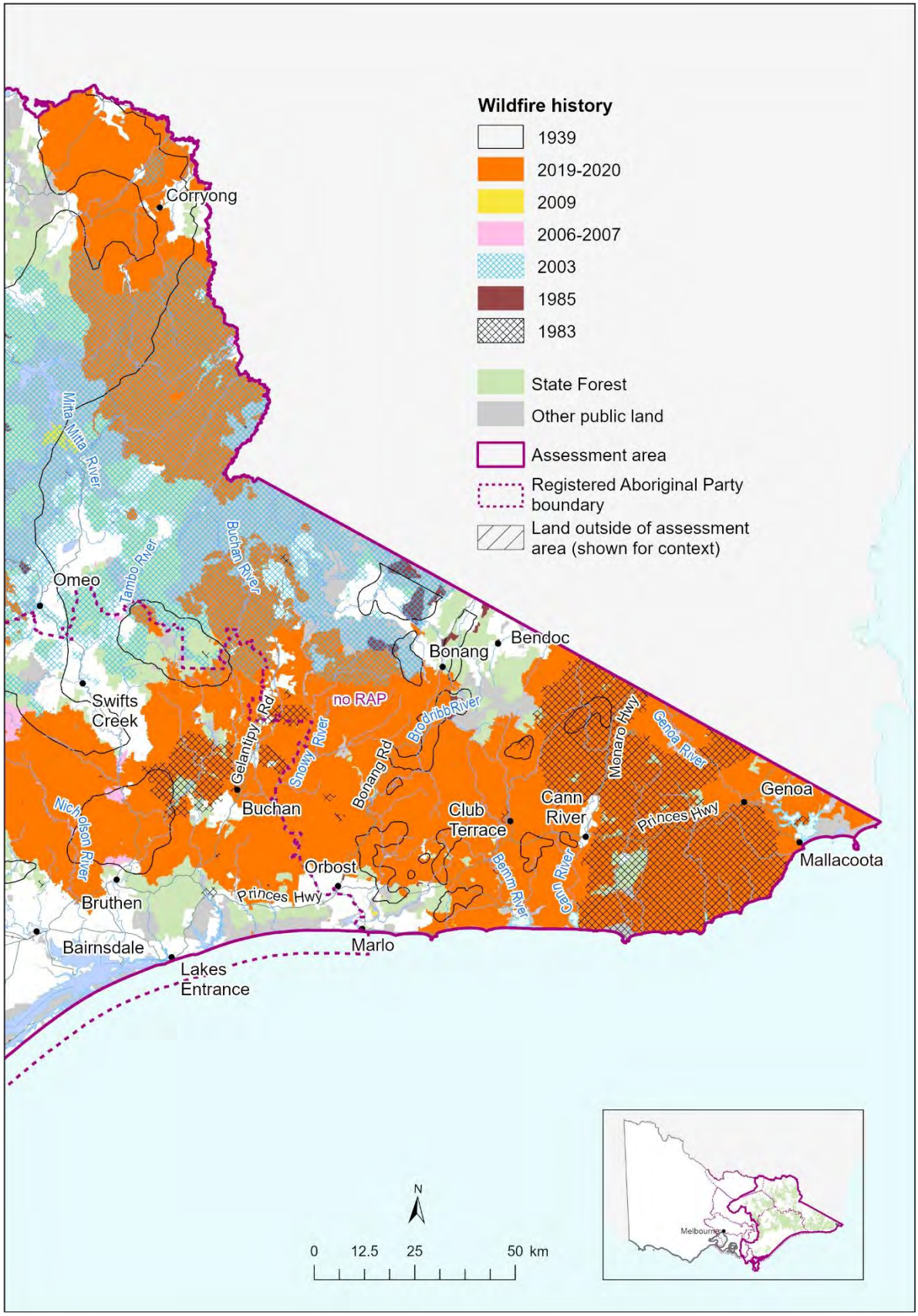


Figure 2.5b Major wildfires in the assessment area



2.5. Rivers and Waterways

River basins

As shown in figure 2.6a and b, the assessment area covers a large part of Victoria that encompasses the entire Victorian extent of 6 river basins and parts of a further 7.

The northern river catchments are part of the Murray-Darling Basin – the major tributaries providing water to the River Murray are the Goulburn, Broken, Ovens, Kiewa and Mitta Mitta rivers, along with the Murray itself.

On the south side of the Great Dividing Range, the Latrobe, Thomson and Mitchell rivers deliver water to the Gippsland Lakes which flow into the sea at Lakes Entrance. In the Tambo basin, that river and the Nicholson also discharge into the Gippsland Lakes, but there are also small creeks that flow into the separate Lake Tyers which discharges into the sea a little further east.

Water in the small part of the Bunyip River basin in the southwest of the assessment area flows into Western Port, while in both the South Gippsland and East Gippsland basins, a number of relatively short rivers and streams flow more or less directly to the sea from the Strzelecki Ranges and the Coast Range. In the East Gippsland basin, many of the larger rivers discharge into inlets (e.g., Sydenham and Mallacoota inlets) before the water reaches the sea. The main rivers flowing into Mallacoota Inlet – the Genoa and Wallagaraugh – have headwaters in New South Wales.

The Snowy River basin is of interest in that, near Bendoc, the Delegate River flows north out of Victoria and into New South Wales where it joins the Snowy which eventually, flows south back into Victoria about 40 km northwest of where the Delegate River left the state. Upstream of the Delegate confluence, storages on the Snowy in New South Wales (e.g., Lake Jindabyne) were built as part of the Snowy River Scheme which – via underground tunnels – diverts much of the water captured in those storages into the Murray and its tributaries. That is, water flowing south off the Errinundra Plateau reaches the sea some tens of kilometres to the south, while some of the water flowing north off the plateau meets the sea several weeks and thousands of kilometres later in the Coorong of South Australia.

The responsibility for catchment management in the assessment area reflects these river basins:

- Goulburn Broken Catchment Management Authority (CMA) for the Goulburn River basin
- West Gippsland CMA for the Thomson, Latrobe, Mitchell and most of the South Gippsland River basins
- North East CMA for the Ovens, Kiewa and Upper Murray River basins
- East Gippsland CMA for the Tambo, Snowy and East Gippsland River basins
- Melbourne Water for the Bunyip and a small part of the South Gippsland River basins.

Major waterways and reservoirs

Major waterways and reservoirs within the assessment area are listed in table 2.3 and illustrated in figure 2.6a and b. More details on the reservoirs are provided in the description of water supply catchment values in section 3.3.

Figure 2.6a River basins, major waterways and reservoirs of the assessment area

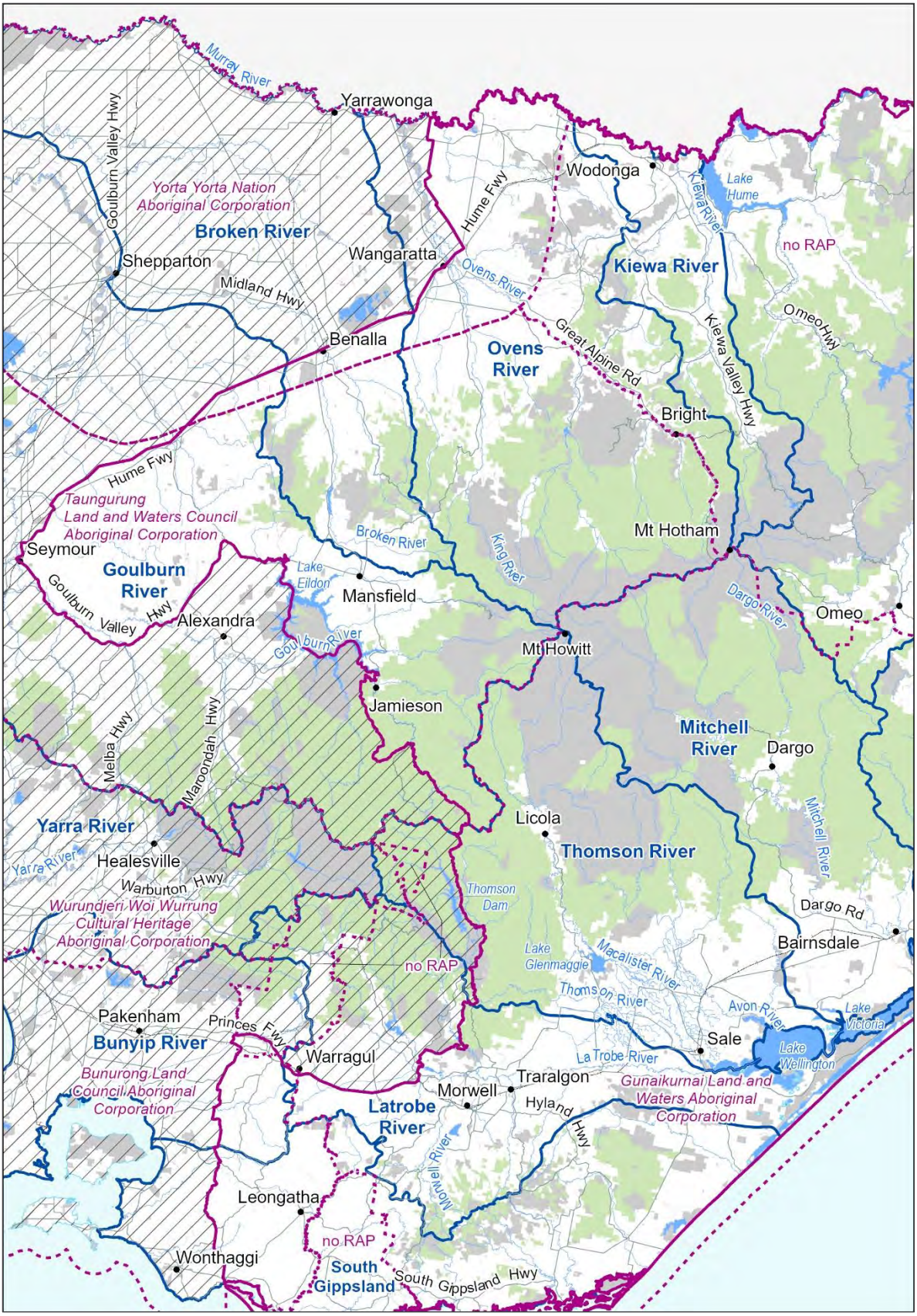


Figure 2.6b River basins, major waterways and reservoirs of the assessment area

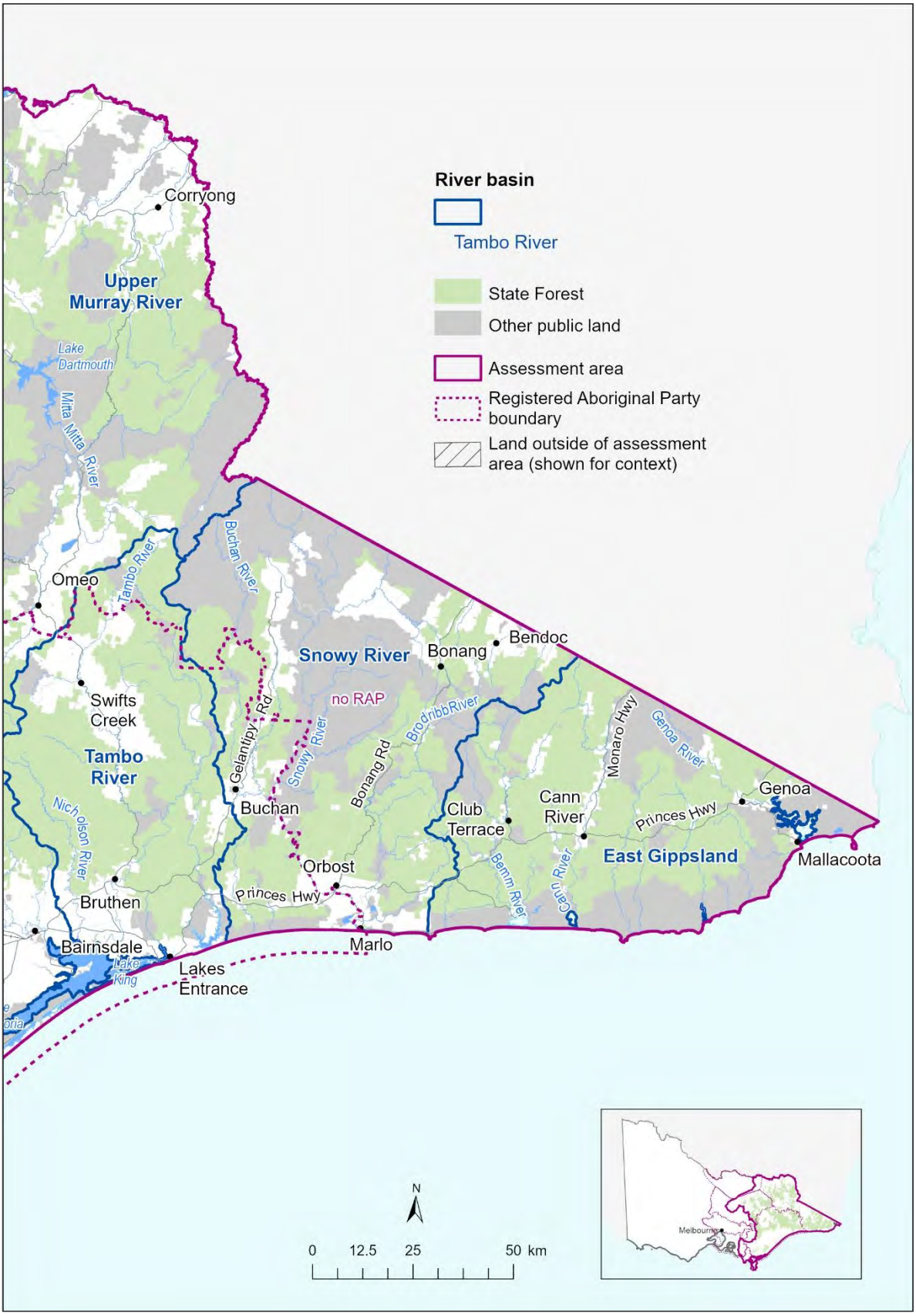


Table 2.3 Major waterways and reservoirs in the river basins of the assessment area

River basins	Waterways	Reservoirs
Goulburn	Goulburn, Howqua and Delatite rivers	Lake Eildon
Broken	Broken River	Lake Nillahcootie
Ovens	Ovens, King, Buffalo and Buckland rivers	Lake William Hovell, Lake Buffalo
Kiewa	Kiewa River	
Upper Murray	Mitta Mitta, Cobungra and Big rivers	Lake Dartmouth
Bunyip	Bunyip River	
South Gippsland	Tarwin and Albert rivers	
Latrobe	Latrobe, Tanjil and Tyers rivers	Moondarra Reservoir (also in Central Highlands RFA area), Lake Narracan
Thomson	Thomson, Aberfeldie, Macalister and Avon rivers	Lake Glenmaggie
Mitchell	Moroka, Wonnangatta, Wongungarra, Dargo and Wentworth rivers	
Tambo	Nicholson, Tambo and Timbarra rivers	
East Gippsland	Buchan, Suggan Buggan, Snowy, Rodger, Yalmy, Delegate, Brodribb, Goolengook, Bemm, Cann, Thurra, Wingan, Betka, Genoa and Wallagaraugh rivers	

2.6. Heritage rivers and reference areas

Victorian heritage rivers are listed under the *Heritage Rivers Act 1992 to* provide protection of the public land along river reaches in Victoria that have significant nature conservation, recreation, scenic or cultural heritage attributes. Natural catchment areas are also scheduled on the *Heritage Rivers Act 1992*, requiring that they be maintained in an essentially natural condition.

The *Reference Areas Act 1978* sets aside small, remote areas of public land to limit human disturbance as far as is possible, in order that they be potentially available for comparative scientific studies.

Heritage rivers, natural catchment areas and reference areas are overlays in that they occur over land in a variety of public land use categories such as national park, nature reserve and state forest. In the assessment area, there are 11 heritage rivers, of which 6 run partly through state forest (table 2.4); and 56 reference areas of which 16 are located wholly over state forests (table 2.5).

The assessment area also encompasses 25 natural catchment areas (NCAs), of which 10 overlay state forest (table 2.6).

Table 2.4 Heritage rivers overlaying state forest in the assessment area

Heritage river	State forest	Area (ha)
East Gippsland RFA area		
Bemm, Goolengook, Arte and Errinundra Rivers Heritage Area	Bemm River, Bemm, Cann Valley, Club Terrace, Combienbar, Ellery and Murrungower State forests	2,095
Snowy River Heritage Area	Orbost, Tulloch Ard and Waygara State forests	2,649
Gippsland RFA area		
Mitchell and Wonnangatta Rivers Heritage Area	Dargo, Hibernia and Warriaballat State forests; Wonnangatta River Camping and Forest Area	1,159
Mitta Mitta River Heritage River	Uplands and Mount Battery State Forest	209
Thomson River Heritage River	Boola Boola, Deep Creek, Erica and Stony State forests	2,036
North East RFA area		
Howqua River Heritage Area	Mansfield area and Upper Goulburn State forests	943

Note: All heritage rivers in this table extend beyond state forest into other public land use categories – the area figures are just for the portion of each heritage river that overlays state forest.

Table 2.5 Reference areas overlaying state forest in the assessment area

Reference area	State forest	Area (ha)
East Gippsland RFA area		
Concordia Gully Reference Area	Bonang State Forest	884
Gippsland RFA area		
Eaglehawk Creek Reference Area	Boola Boola State Forest	320
Spring Creek Reference Area	Birregun and Cobungra State forests	702
Stringybark Creek Reference Area	Ben Cruachan State Forest	688
Thirteen Mile Spur Reference Area	Boulung-Deera and Hibernia State forests	268
Twenty Acre Creek Reference Area	Aberfeldy/Nambruc and Mount Useful State forests	1,039
North East RFA area		
Burbibyong Creek Reference Area	Gentle Annie-Thowgla and Nariel Gap area forests	1,307
Cambatong Reference Area	Mansfield State Forest	336
Cudgewa Creek Reference Area	Mount Cudgewa State Forest	823
Drum Top Reference Area	Drum Top-Archerton State Forest	402
Dry Forest Creek Reference Area	Mount Brutal State Forest	1,382
King Reference Area	Mansfield State Forest	1,018
Lightwood Reference Area	Wabba State Forest	528
Lucyvale Creek Reference Area	Lucyvale Creek State Forest	538
Mitta Mitta Reference Area	Mitta Mitta State Forest	681
Ryan Creek Reference Area	Tatong-Toombullup State Forest	327

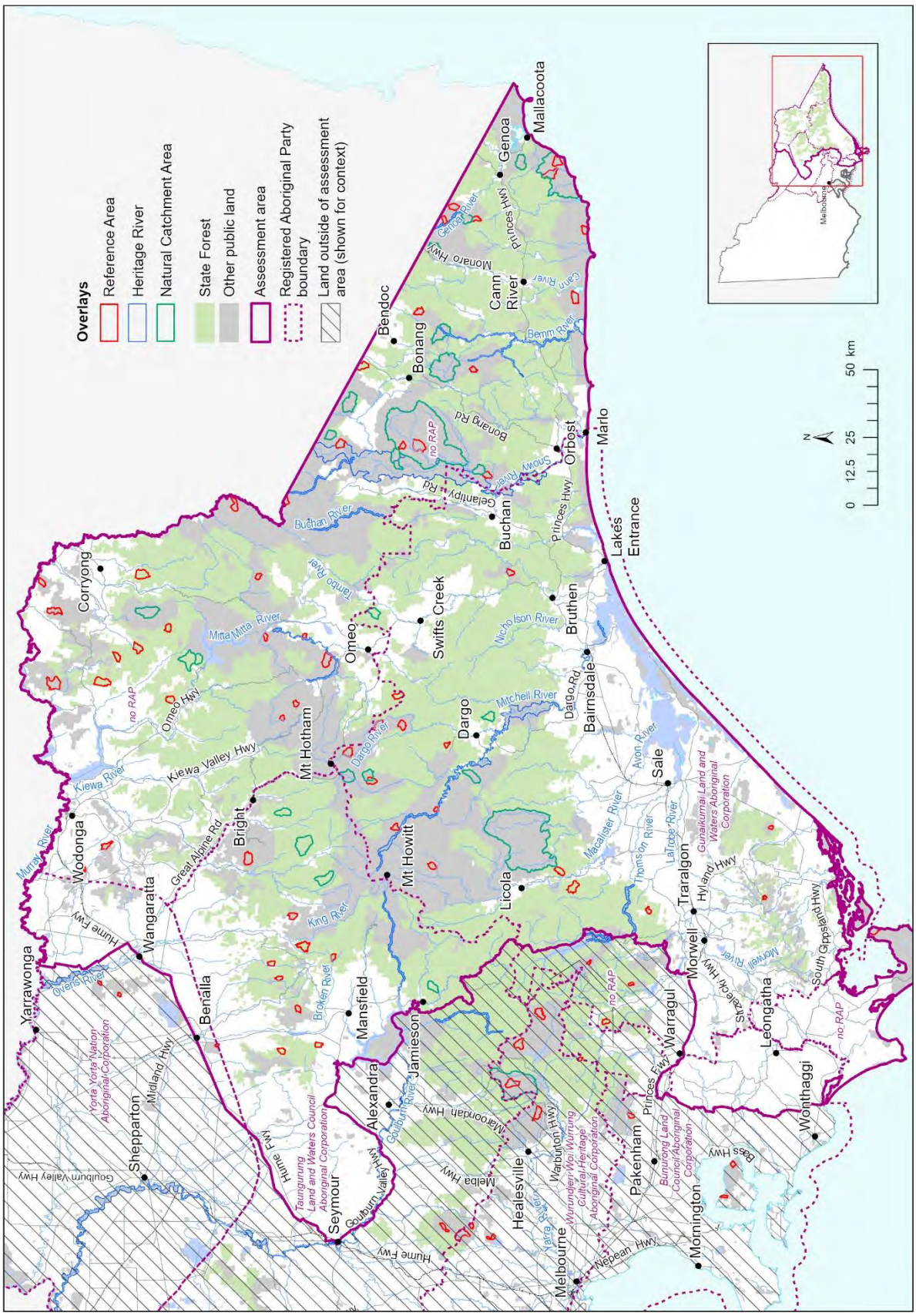
Table 2.6 Natural catchment areas overlaying state forest in the assessment area

Natural catchment area (NCA)	State forest	Area (ha)
East Gippsland RFA area		
East Gippsland Coastal streams NCA*	Wingan State Forest	106
Musk Creek NCA*	Yalmy State Forest	6
Gippsland RFA area		
Avon, Turton and Dolodrook Rivers; Ben Cruachan Ck NCA*	Ben Cruachan, Pinnacles and Valencia State forests	105
Punchen Creek NCA	Dargo State Forest	994
Stony Creek NCA	Splitters Range State Forest	1,142
North East RFA area		
Banimboola Creek NCA*	Mitta Mitta and Wabba State forests	2,251
Devils Ck-Middle Branch NCA	Whitfield-Harrietville and Brookside State forests	1,240
Long Jack Creek NCA	Whitfield-Harrietville State Forest	1,810
Mount Tabor Creek NCA	Mitta Mitta State Forest	835
Williams Creek NCA	Upper Goulburn State Forest	1,012
Yarrarabula Creek NCA	Whitfield-Harrietville State Forest	3,099

* These NCAs either:
1. occur very largely over public land in other categories (in the case of the first three asterisked NCAs), or
2. the reverse – only extend marginally beyond state forest into adjoining public land in other categories (Banimboola Creek NCA).

However, GIS mapping of NCAs appears imprecise and may be the cause of these marginal occurrences across public land boundaries. If this proved to be the case, the first 3 asterisked NCAs would be removed from this table. In any event, the area figures in this table are just for the portion of each NCA that overlays state forest.

Figure 2.7 Heritage rivers, reference areas and natural catchment areas in the assessment area



3. Assessment area forest values

This chapter addresses the following items of the terms of reference:

a. the biodiversity, ecological, geological and geomorphological values of the specified area

b. the historic heritage, social and economic values of the specified area.

3.1. Biodiversity and ecological values

Threatened species

Over many decades, DEECA and its predecessors have compiled databases containing millions of records of plants and animal from across Victoria. In the last 2 decades, these records have been used to develop many different sophisticated analyses to make the best strategic use of this large dataset, including habitat distribution models for over 4,000 species of plants and animals.

Habitat distribution modelling

Habitat distribution models have been developed to help understand the distribution of threatened and other species and the relative quality of habitat within each species' distribution, both of which can be prohibitively expensive and difficult to determine by direct field observation. This is because threatened species are very often scarce, patchily distributed, idiosyncratic in their habitat preferences, difficult to detect, highly mobile or live in dynamic or difficult to access locations (particularly in mountainous regions such as the eastern forests). Even for species without these difficulties the locations of sites where records are made can be biased, such as towards places that are accessible, close to where observers live or work, or well-known places to see a particular species. Habitat distribution modelling adjusts to counter these difficulties and biases.

Habitat distribution modelling predicts where suitable habitat may exist for a species, based on locations of verified observations of the species and the biophysical attributes of those locations. The modelling essentially identifies the combinations of biophysical attributes that coincide with the occurrence of the species and maps other places where those attributes occur, to varying degrees. The resulting maps show the relative likelihood of suitable habitat across Victoria, from high to low. A large number of biophysical attributes are available to assess for correlation with records of threatened species, and the attributes can be complex and interrelated. There are many measures related to rainfall, for example, other than the annual average, to incorporate things such as reliability and seasonality. For many plants these are likely to be interrelated with topography and soil parameters (especially relating to water retention) in influencing patterns of occurrence. At the same time the inclusion of multiple interrelated potential determinants is tempered to avoid bias towards those variables – such as climate in the preceding example.

Whether a species currently occurs in apparently suitable habitat at a particular location depends on many factors including the size of the habitat patch, impact of predators and disease, seasonal factors and natural disturbance cycles, and the resilience of systems to disturbance. Habitat distribution modelling can highlight issues or places for further investigation, such as areas of apparently suitable habitat with few or no records, which may provide new insights if followed up and which may in turn be fed back in to improve the modelling. Input from expert ecologists familiar with particular species can also be used to identify issues to investigate and to refine modelling.

Habitat distribution models can be accessed via DEECA's NatureKit tool, or downloaded through the Victorian Government Data Directory.

Conservation planning analysis

DEECA's Habitat Value analysis combines multiple habitat distribution models and uses the Zonation conservation planning software to produce a hierarchical ranking of conservation value

across the landscape. This process can be tailored to answer particular questions. VEAC commissioned scientists at DEECA's Arthur Rylah Institute for Environmental Research (ARI) to run this analysis to identify the state forests that are of highest value for biodiversity including threatened species, that is, the places that likely support the largest range of species in the smallest area.

Biophysical data, including those used in habitat distribution modelling, can be used to further refine this synthesis. Other aspects of the analysis can also be adjusted and varied to improve the utility of the results and to test key considerations for the question under examination. Variations and adjustments in the VEAC-ARI analysis for this assessment included an option of weighting for forest-dependent threatened species. This analysis used habitat distribution models for the 49 forest-dependent species listed in table 3.1. This provided the opportunity to assess the implications of, for example, wetland-dependent species which would dilute the value ascribed to important forest locations by elevating the value ascribed to wetlands remote from the state forest areas that are the focus of VEAC's eastern forests assessment. Note that the forest-dependent species list includes aquatic plant and animals found in the forested waterways of the assessment area. This has been a standard adjustment for strategic biodiversity value analyses for several years.

Key locations for threatened species

Figures 3.1a and b and 3.2a and b show the synthesised results of ARI's zonation analysis for VEAC, with and without adjustment for forest-dependent species. The map with adjustment for forest-dependent species (figure 3.1a and b) shows:

1. The state forests with highest Habitat Values (darkest blue) are in 3 key locations in East Gippsland:
    a. around Errinundra Plateau and its southern fall – from Bendoc south beyond Club Terrace
    b. between Coopracambra and Croajingolong national parks west and northwest of Genoa
    c. the Colquhoun State Forest area between Bruthen, Lakes Entrance and Nowa Nowa.
2. The next highest Habitat Value state forests are:
    a. between the Errinundra Plateau and Colquhoun blocks (points 1a and 1b above)
    b. in the Nunniong – Mount Wong area east of Swifts Creek
    c. in the Seldom Seen – Haunted Stream area southwest of Swifts Creek
    d. in the Mount Battery and Cobungra state forests west and southwest of Omeo
    e. the patch between Licola and the western edge of the assessment area near the Thomson Dam.
3. Other notable patches are:
    a. Mount Alfred State Forest, northwest of Bairnsdale
    b. both the west and east lower slopes of the Kiewa Valley, east of Bright
    c. Mount Wills Historic Reserve and Glen Valley State Forest, on the north side of the Alpine National Park north of Omeo
    d. Tea Tree Range State Forest, east of the Wonnangatta River about halfway between Mount Howitt and Mount Hotham
    e. waterways and adjoining riparian strips in the headwaters of the north-flowing rivers – for example the Delatite, Howqua and Jamieson rivers flowing into Lake Eildon near Jamieson.

Compared to the forest-dependent species map, the Habitat Value map for all species (figure 3.2a and b) shows:

1. Many small high value patches (darkest blue) on the lowest foothill forests, particularly in northeast Victoria – for example, in a broad area south and east from Wangaratta, near Wodonga and east towards Corryong; but also at some higher altitudes northeast of Omeo. Threatened species in these areas include many that are more dependent on woodlands and grassier ecosystems than the species on the forest-dependent list; these habitats have been extensively cleared for agriculture or grazed by domestic stock and cut for timber and firewood.

2. Some alpine or subalpine forests adjoining the Alpine National Park – north of Omeo and southwest of Mount Howitt. In these areas, some threatened and localised species occur in the relatively small areas of these habitats in state forest.

3. Some coastal and swampy forests and other habitats such as Mullungdung State Forest southwest of Sale, which support species favouring denser coastal heaths and thickets than those on the forest-dependent list.

Table 3.1 Forest-dependent threatened species used to identify priority areas for threatened species

Species name	Conservation status in Victoria*	Conservation status in Australia#
Flora		
Baw Baw berry *Wittsteinia vacciniacea*	vulnerable	
Brown guinea-flower *Hibbertia rufa*	vulnerable	
Colquhoun grevillea *Grevillea celata*	critically endangered	vulnerable
Eastern pomaderris *Pomaderris discolor*	endangered	
Elegant daisy *Brachyscome salkiniae*	Vulnerable	
Forest geebung *Persoonia silvatica*	endangered	
Forest phebalium *Phebalium squamulosum* subsp. *squamulosum*	endangered	
Forest sedge *Carex alsophila*	endangered	
Gippsland stringybark *Eucalyptus mackintii*	vulnerable	
Gully grevillea *Grevillea barklyana*	critically endangered	
Leafless pink-bells *Tetratheca subaphylla*	vulnerable	
Native hemp *Androcalva rossii*	critically endangered	
Outcrop guinea-flower *Hibbertia hermanniifolia* subsp. *recondita*	vulnerable	
Oval-leaf grevillea *Grevillea miqueliana* subsp. *miqueliana*	endangered	
Sandfly zieria *Zieria smithii*	endangered	
Serpent heath *Richea victoriana*	endangered	
Smooth geebung *Persoonia levis*	endangered	
Tall astelia Astelia australiana	endangered	vulnerable

Species name	Conservation status in Victoria*	Conservation status in Australia#
Tasmanian wax-flower *Philotheca virgata*	endangered	
Toothed leionema *Leionema bilobum serrulatum*		
Tree geebung *Persoonia arborea*	endangered	
Upright pomaderris *Pomaderris virgata*	critically endangered	
Fauna		
Baw Baw frog *Philoria frosti*	critically endangered	critically endangered
Broad-toothed rat *Mastacomys fuscus mordicus*	vulnerable	vulnerable
Clayton's spiny crayfish *Euastacus claytoni*	endangered	
Dargo galaxias *Galaxias mungadhan*	critically endangered	
East Gippsland galaxias *Galaxias aequipinnis*	critically endangered	
East Gippsland spiny crayfish *Euastacus bidawalus*	vulnerable	
Giant burrowing frog *Heleioporus australiacus*	critically endangered	vulnerable
Glossy black-cockatoo *Calyptorhynchus lathami*	critically endangered	vulnerable
Leadbeater's possum *Gymnobelideus leadbeateri*	critically endangered	critically endangered
Long-footed potoroo *Potorous longipes*	endangered	endangered
Mallacoota burrowing crayfish *Engaeus mallacoota*	critically endangered	
Masked owl *Tyto novaehollandiae*	critically endangered	
McDowall's galaxias *Galaxias mcdowalli*	critically endangered	
Orbost spiny crayfish *Euastacus diversus*	endangered	
Powerful owl *Ninox strenua*	vulnerable	
Roundsnout galaxias *Galaxias terenasus*	critically endangered	
Smoky mouse *Pseudomys fumeus*	endangered	endangered
Sooty owl *Tyto tenebricosa*	endangered	
Southern greater glider *Petauroides volans*	vulnerable	endangered
Spot-tailed quoll *Dasyurus maculatus maculatus*	endangered	endangered
Spotted tree frog *Litoria spenceri*	critically endangered	critically endangered
Variable spiny crayfish *Euastacus yanga*	endangered	
Watson's tree frog *Litoria watsoni*		endangered
'Yalmy' galaxias *Galaxias sp. nov. 'Yalmy'*	critically endangered	
Yellow-bellied glider *Petaurus australis*		vulnerable

* Conservation status in Victoria: the category of threat for each species as listed under the Victorian *Flora and Fauna Guarantee Act 1988* as of March 2025.

\# Conservation status in Australia: the category of threat for each species as listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Figure 3.1a Threatened species Zonation output for the assessment area – forest-dependent species

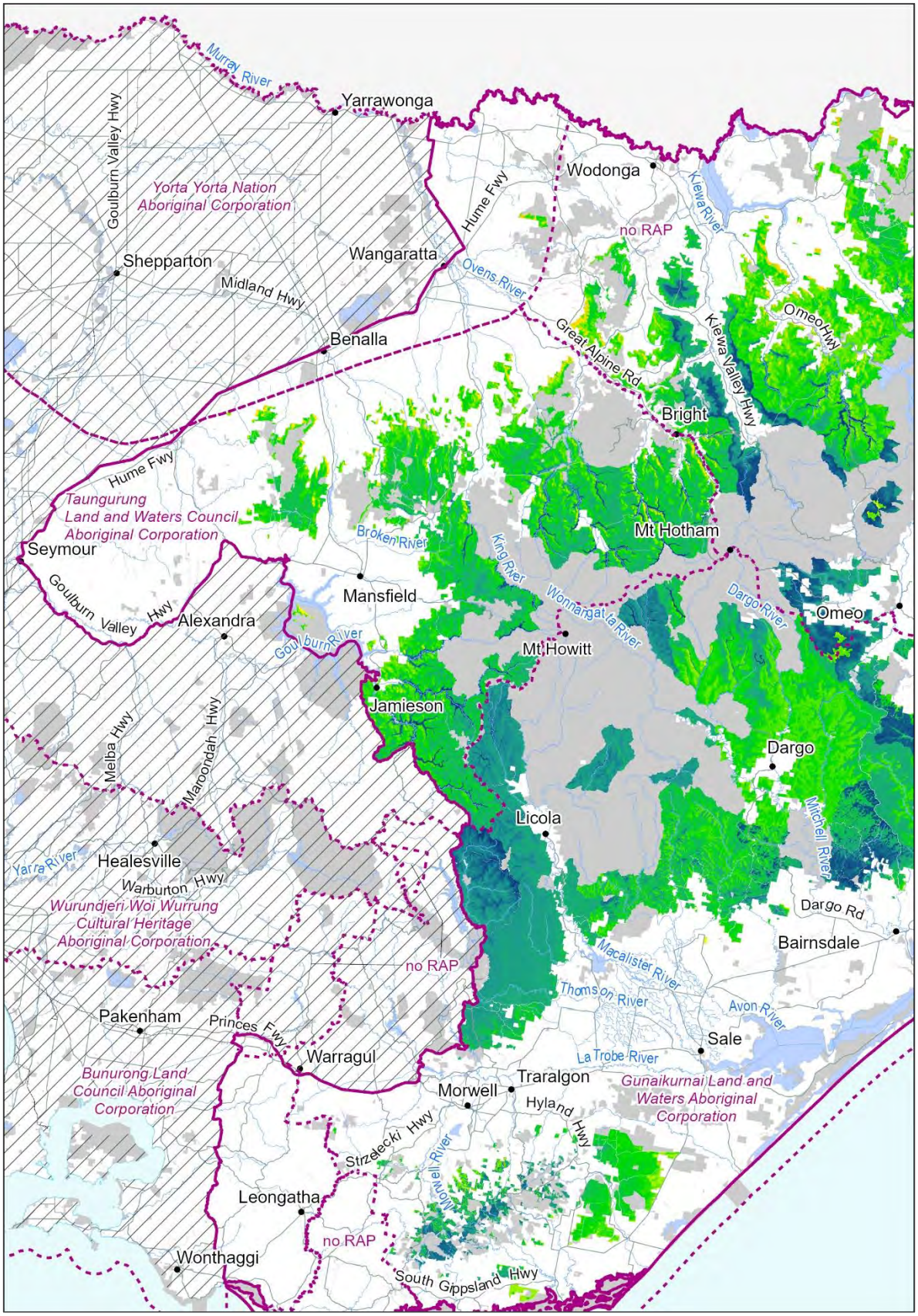


Figure 3.1b Threatened species Zonation output for the assessment area – forest-dependent species

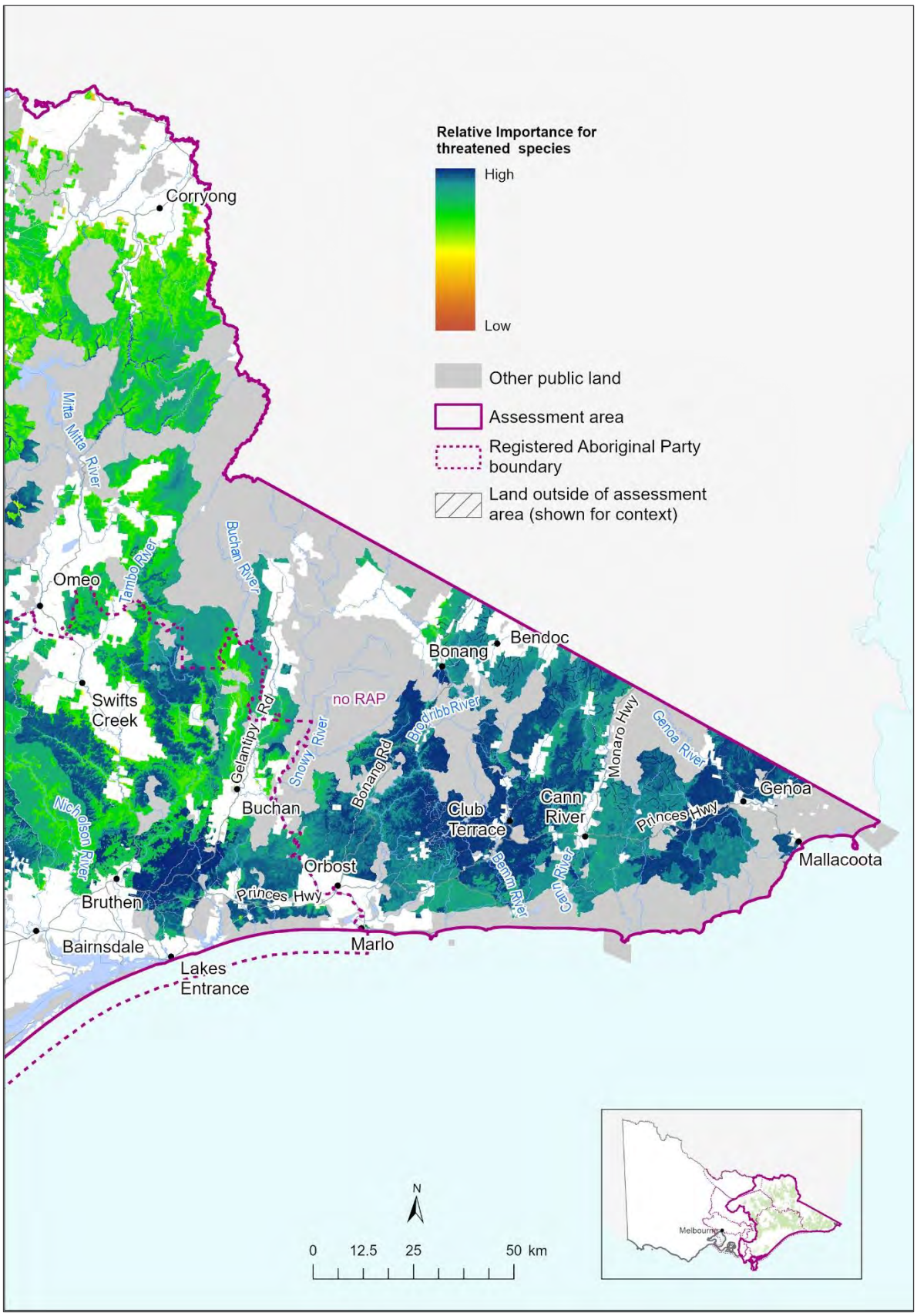


Figure 3.2a Threatened species Zonation output for the assessment area – all species

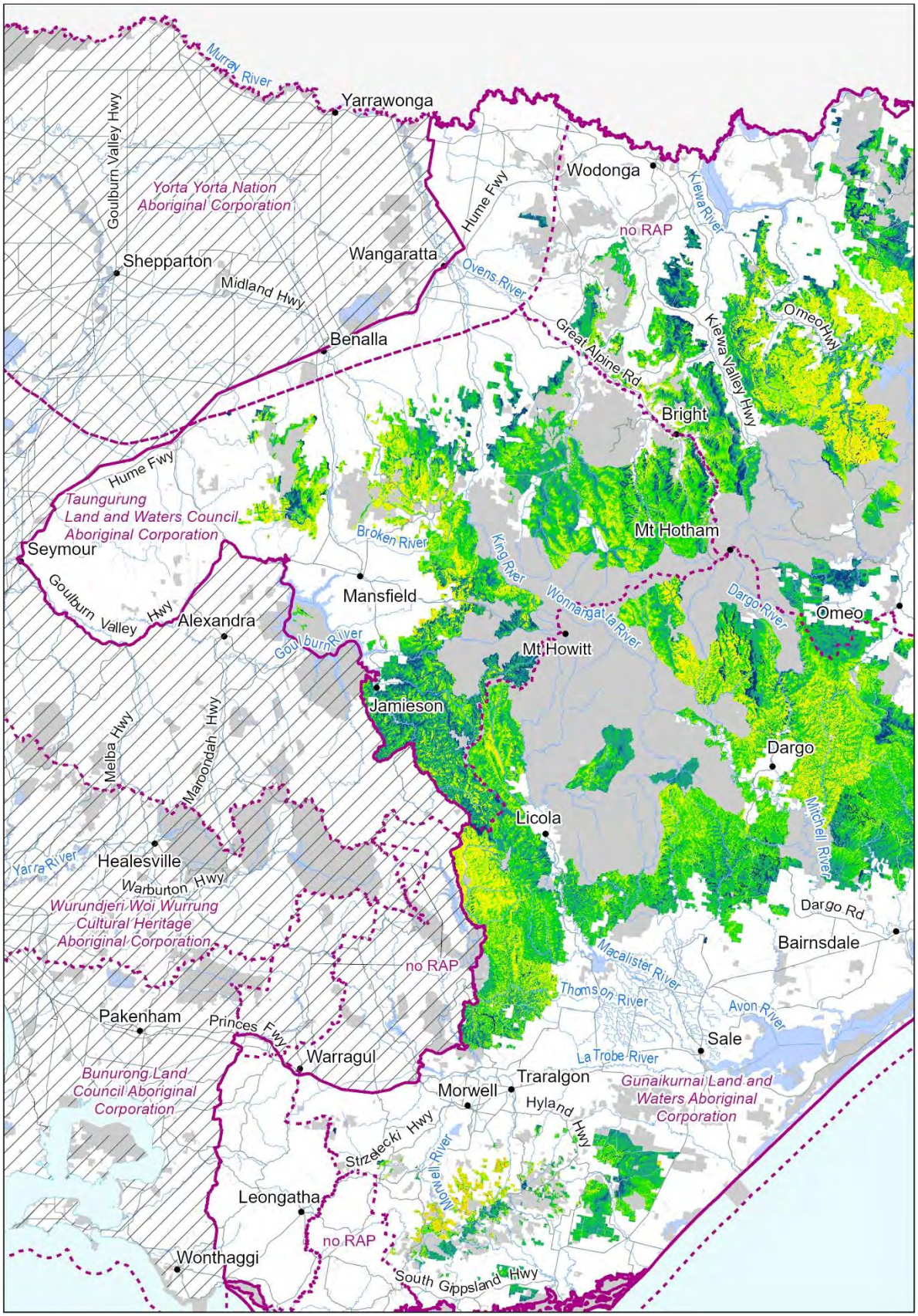
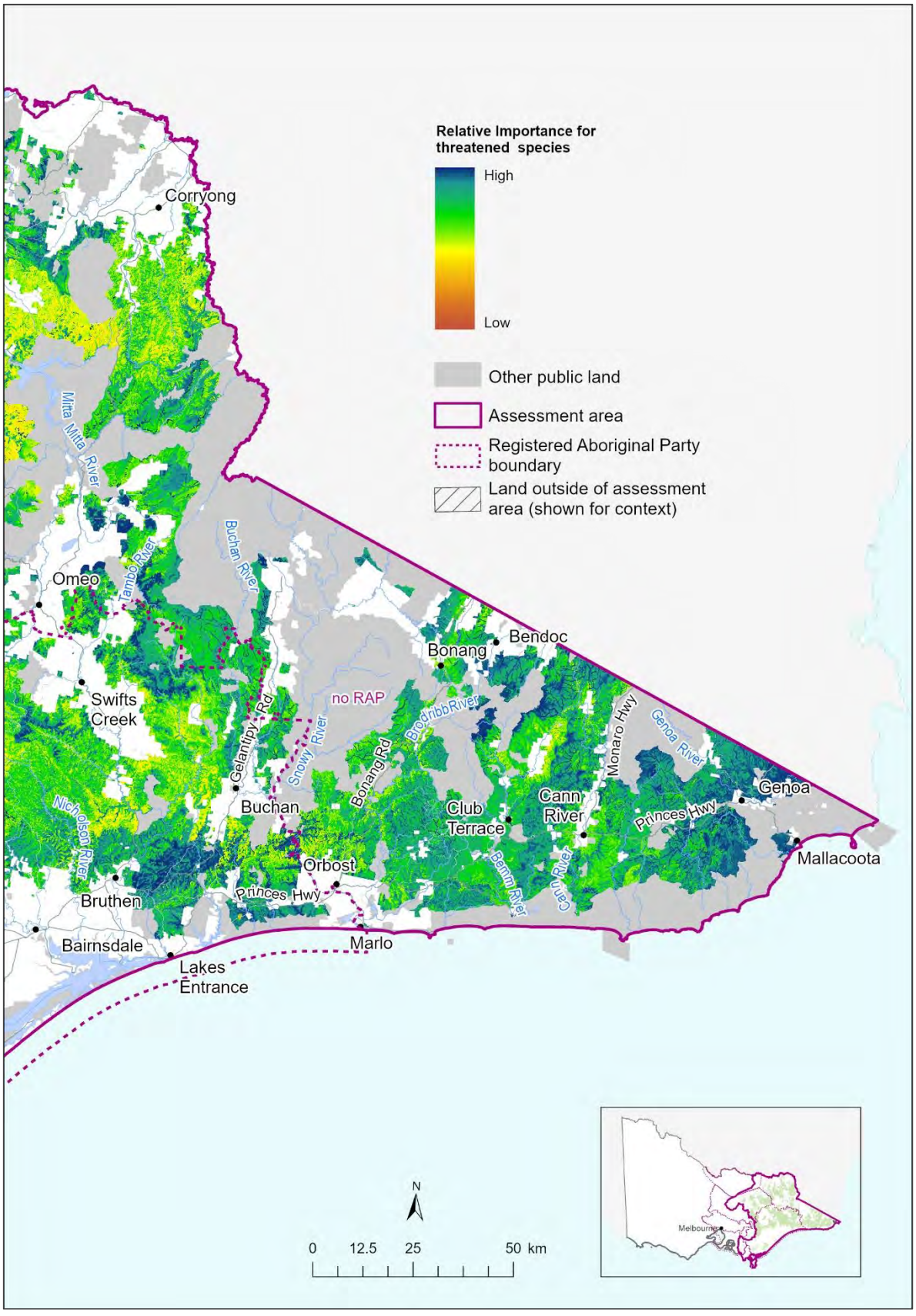


Figure 3.2b Threatened species Zonation output for the assessment area – all species



Ecosystems

Biodiversity conservation often considers the conservation of ecosystems separately to threatened species. This approach leads to the conservation of a wide range of species (beyond threatened species, and including undescribed species), landscapes and special places.

Conservation planning for public land in Australia uses ecosystems as the basis for establishing a protected area system – comprising national, state and conservation parks, and nature and bushland reserves – based on national and state targets for comprehensiveness, adequacy and representativeness (see section 1.8). Victoria's current protected area system has adequate representation for some ecosystems (e.g., Sub-alpine Woodland in the Victorian Alps bioregion) while other ecosystems are not well represented (e.g., Montane Grassy Woodland in the Monaro Tablelands bioregion). Appropriately located and managed protected areas are by far the most cost-effective and proven way to conserve biodiversity at scale.

In Victoria, Ecological Vegetation Classes (EVCs) are used as ecosystem surrogates. EVCs are the standard unit for classifying vegetation types in Victoria. They are described through a combination of floristics, lifeforms and ecological characteristics, and through an inferred fidelity to particular environments. More information is available from the DEECA website.

There are several hundred EVCs in the assessment area (see online supplementary material for the current extent and conservation status of these EVCs). The most important ecosystems to be conserved in the assessment area were identified as those that are most poorly represented in the current protected area system and calculated as the protected area shortfall, or the area of each EVC on public land that would need to be added to the existing protected area system to meet the nationally agreed protected area targets (figure 3.3a and b). While protected area additions are not the primary focus of this assessment, these protected area shortfalls are useful and important to identify for several reasons:

- without the bulwark of adequate representation in protected areas elsewhere, these important ecosystems contain irreplaceable biodiversity that is, in many cases, unique or rare and prone to threats
- identifying and managing them appropriately will conserve the biodiversity they contain
- conserving this biodiversity retains options for future enjoyment or to improve protected area representation
- they provide options for alternative management approaches to conserve biodiversity
- identifying these areas provides guidance for on-ground management and planning such as where best to locate walking trails and campgrounds to avoid damage to important ecosystems, or prioritise revegetation in areas that will benefit biodiversity the most.

Two parameters were used to characterise EVC shortfalls (as mapped in figure 3.3a and b):

- **Absolute extent**. The absolute size (in hectares) of the shortfall of each EVC in Victoria's protected area system existing in the assessment area, ranging from zero (no shortfall) to 16,977 ha (for Wet Forest in the Strzelecki Ranges bioregion). Larger shortfall areas are more important to identify and manage for conservation than smaller ones.
- **Proportion of what is available**. EVCs with higher shortfall percentages have a high level of irreplaceability and should be considered more important for conservation. For some EVCs, the shortfall is 100% (or more) of their area of occurrence in state forest. For example, Lowland Forest EVC in the Gippsland Plain bioregion has a shortfall of 11,516 ha, mostly in Mullundung State Forest southwest of Sale, shown in red in figure 3.3a and the whole EVC area should be considered important for conservation. For other EVCs, the shortfall may be a small proportion of their area of occurrence in state forest. For example,

while the absolute extent of the shortfall for Herb-rich Foothill Forest in the Northern Inland Slopes bioregion is large (12,832 ha) there are 37,741 ha of that EVC in state forests in the assessment area, so only 34% of the area of the EVC on other public land would be required to meet the target.

The shading in figure 3.3a and b shows the importance of ecosystems in the assessment area calculated as EVC shortfalls from the highest (where both absolute extents and proportion of what is available are high), decreasing as one or other then both parameters decrease, to the lowest (where both parameters are low).

The importance for conservation of the long list of bioregional EVCs in the eastern forests (listed in full with relevant statistics in the supplementary material available online) can be summarised as follows:

- 122 EVCs are the most important for conservation, having both large absolute shortfalls (>50 ha) and more than 90% of their area needed to cover the shortfall. These are in the highest priority category in figure 3.3a and b – shown in deep red. These include
  - the Lowland Forest EVC in the Mullungdung State Forest
  - Montane Grassy Woodland on the Monaro Tableland southwest of Bendoc, and
  - many smaller patches of Blackthorn Scrub east of the Bonang Rd and between Swifts Creek and Bruthen east thereof towards Buchan.
- 125 EVCs with >90% of their area needed to cover the shortfall but <50 ha in absolute extent, or 60–90% of their area needed to cover the shortfall and >50 ha absolute extent. These EVCs are shown in purple in figure 3.2a and b, such as the large purple areas south of the Mullungdung Lowland Forest – this EVC is Plains Grassy Forest.
- 20 EVCs with 60–90% of their area needed to address the shortfall and 10–50 ha in absolute extent, or 30–60% of their area needed to address the shortfall and >50 ha in absolute extent. These EVCs are shown in pink in figure 3.3a and b and include:
  - the Wet Forest (mostly mountain ash) in the Strzelecki Ranges
  - Montane Grassy Woodland on the edge of state forest blocks along the Great Alpine Rd northwest of Omeo (Highlands - Northern Fall bioregion)
  - large areas of pink over the northern foothill forests (between Bright and Wodonga, for example) generated by several adjacent EVCs in this priority category – e.g., Herb-rich Foothill Forest and Grassy Dry Forest in the Northern Inland Slopes bioregion .
- 50 EVCs with 30–60% of their area needed to address the shortfall and an area of 10–100 ha, or <30% of their area needed to address the shortfall and variable area (>10 ha – largest extents here are nearly 4,000 ha) – large areas of orange in figure 3.3a and b, mostly on the foothills on both the north and south sides of the Dividing Range.
- 268 of the bioregional EVCs have a total shortfall area of less than 10 ha (including many that meet protected area targets) and can effectively be excluded from further consideration at the strategic level of VEAC's assessment; they are shown in blue in figure 3.3a and b and cover large parts of East Gippsland and higher elevations in the North East and Gippsland RFA areas.

Figure 3.3a Ecosystem (EVC) importance for conservation

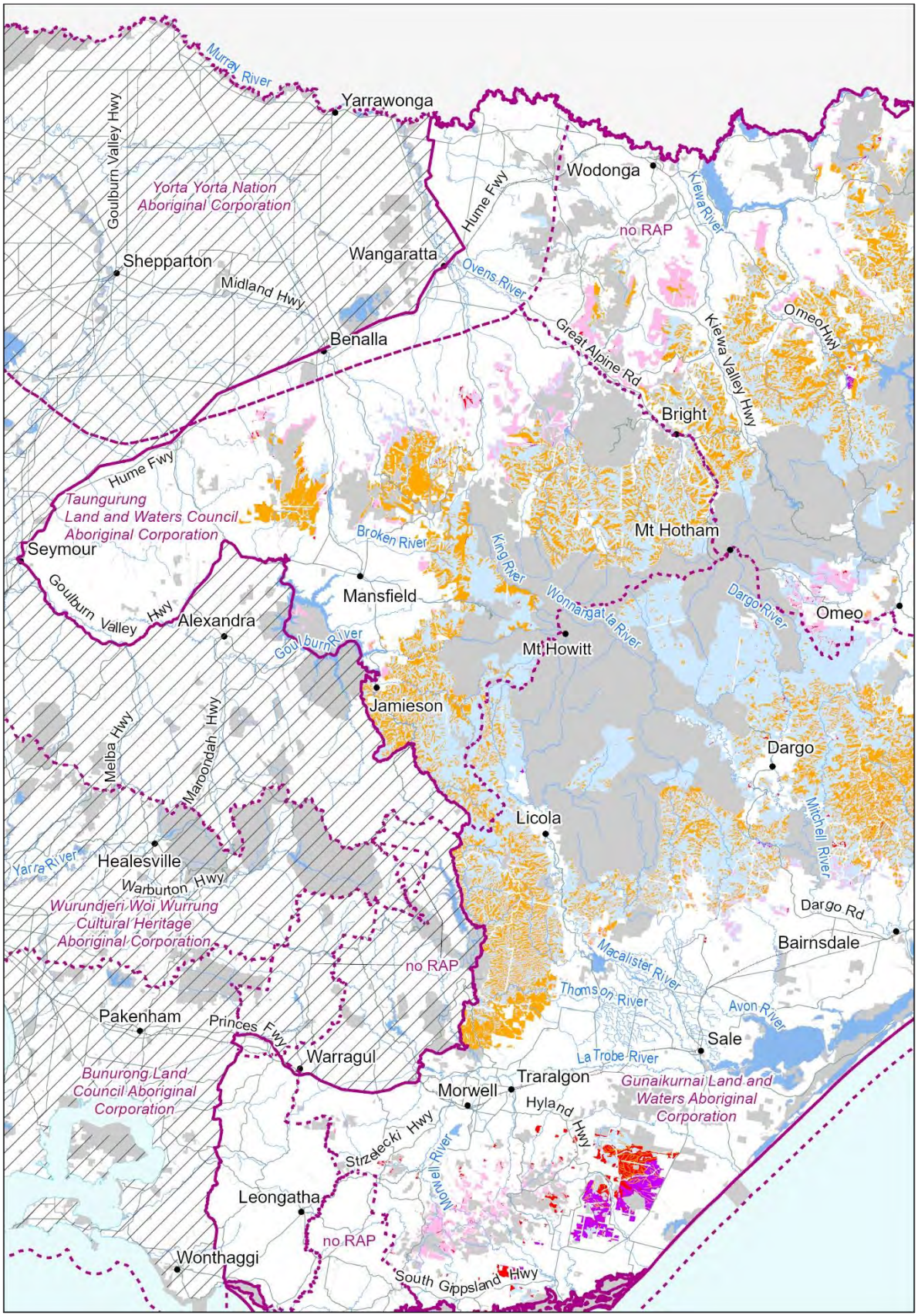
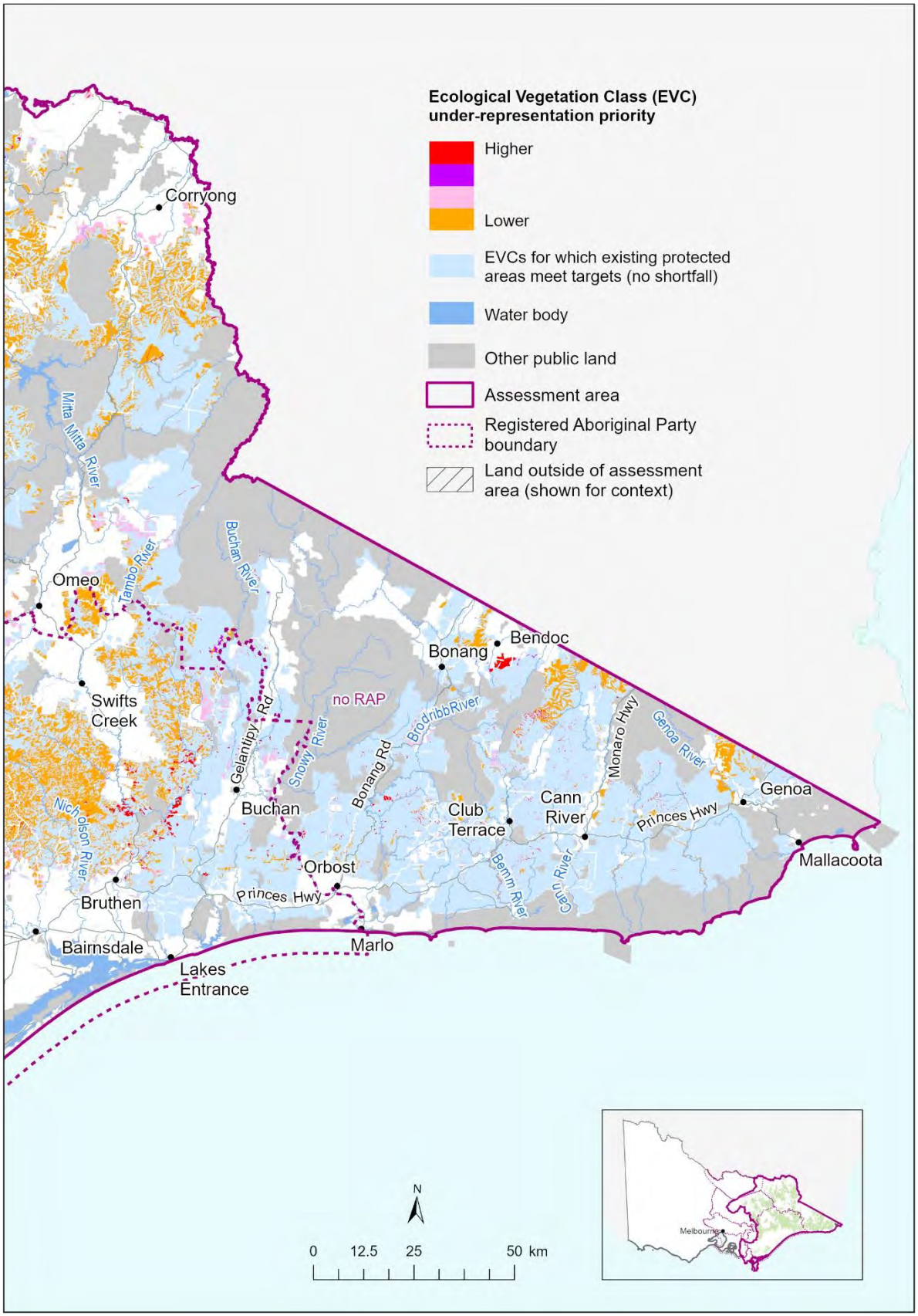


Figure 3.3b Ecosystem (EVC) importance for conservation



3.2. Geological and geomorphological values

Eastern Victoria is an area of great geological interest and diversity, and the resultant geomorphological variation of the region underpins its abundance of different ecosystems and rich biodiversity.

Geology and geomorphology are important in shaping the landscape, influencing biodiversity, and providing earth resources. Geological formations determine soil types and hydrology, support diverse ecosystems, and contribute to tourism. While this assessment does not cover Aboriginal cultural heritage, it is important to note that many landforms hold cultural significance for Traditional Owners. This section examines the geological and geomorphological values in the assessment area including a summary of a desktop review of known sites of high significance.

Geological overview

This large area of eastern Victoria includes a wide range of rock lithologies and ages from the Cambrian to recent. The most extensive rocks are those of the Palaeozoic Lachlan Fold Belt (~541-359 million years ago (mya)), overlain by sheets of Cenozoic sedimentary rocks (~65-0 mya) along the coastal regions and alluvial fans extending inland from the highlands.[22]

The main episodes of rock formation across this region are:

- Palaeozoic construction of the Lachlan Fold Belt area of the Australian continent
- A long relatively quiet period from the Late Carboniferous to mid-Mesozoic prior to continental rifting – Australia and Antarctica finally part ways by the Eocene
- Cenozoic uplift of the highlands, coal formation and basaltic volcanism; processes shaping the present landscape.

Lachlan Fold Belt Palaeozoic rocks

The Lachlan Fold Belt Palaeozoic rocks are predominantly oceanic sedimentary and volcanic rocks subjected to periods of folding, faulting and uplift (figure 3.4). Roughly north-south trending faults separate the fold belt into 10 structural zones of similar tectonic history – 6 of which are within the assessment area: Melbourne, Tabberabbera, Omeo, Deddick, Kuark, Mallacoota zones.

The oldest rocks from this region are Cambrian (~580-500 mya) greenstones formed from submarine lava flows. These rocks are mostly subsurface with a few outcrops, including one at Walkerville, west of Wilsons Promontory.

From the Ordovician to Devonian periods (~485-380 mya) sandstones, mudstones, and shales accumulated under a deep ocean. These form the main rock units across this region. Metamorphosed rocks such as schists and gneisses known as the Omeo Metamorphic Complex are found within the Omeo zone.

Silurian to Devonian (~443-359 mya) rhyolites and granitic intrusions occur throughout the Lachlan Fold Belt. Notable locations are at Corryong, Koetong, Yabba, Wilsons Promontory, Mount Buffalo, Errinundra, Mitta Mitta, Mount Lawson, Dargo and Gabo Island.

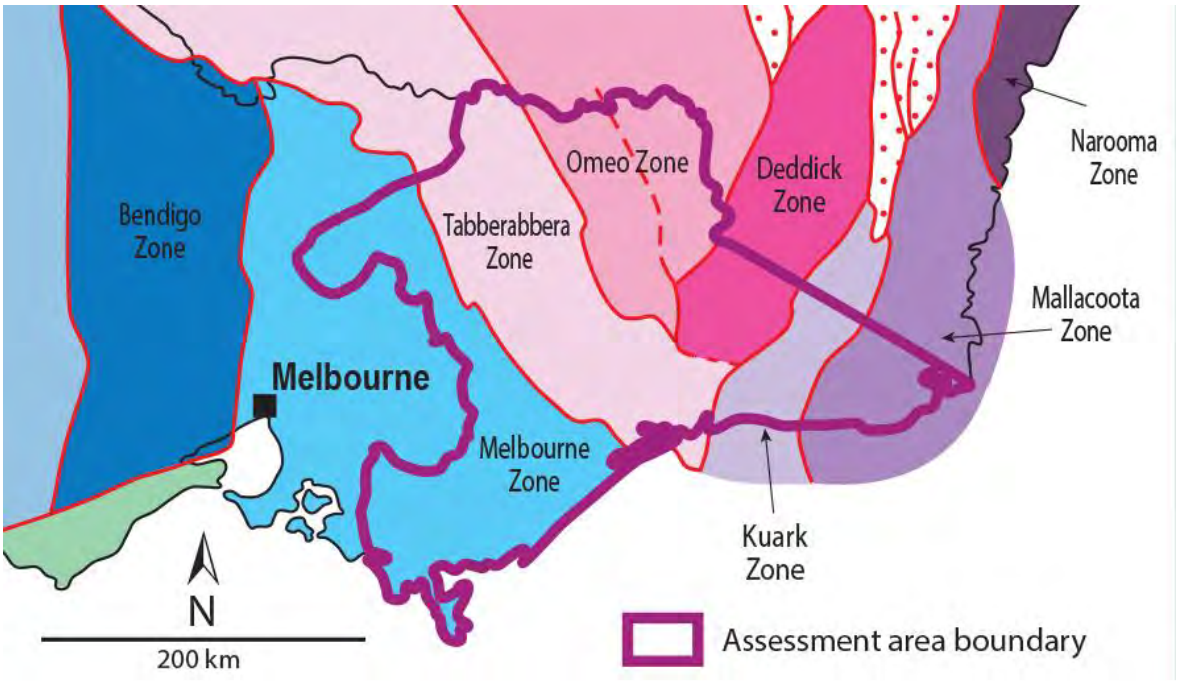
In the Late Devonian to Early Carboniferous (~370-350 mya) volcanic rocks and freshwater sediments filled large basins. Devonian volcanogenic sediments and minor trachyte lavas occur around Benambra.

Most of Victoria's gold is derived from orogenic (mountain building) deposits in the Lachlan Fold Belt. Gold mineralisation primarily associated with quartz veins is notable around Walhalla, Beechworth and Bright. Other minerals such as tin, gold, molybdenum and tungsten have been

[22] Costermans, L.F. and VandenBerg, A.H.M. (2022) *Stories beneath our feet*. Costermans Publishing, Frankston

mined from magmatic-hydrothermal mineralisation linked with Devonian igneous activity in this region.

Figure 3.4 Lachlan Fold Belt system in eastern Victoria[23]



Tectonic stability prior to the breakup of Gondwana

The Late Carboniferous to mid-Mesozoic (~320-160 mya) was a period of tectonic stability in southeastern Australia with extensive erosion. There are no rocks of Jurassic age in Victoria and limited occurrences of those of Triassic age. The Mount Leinster Igneous Complex (210 and 230 mya) is a small granite intrusion and trachyte lava flows in the Benambra area from the Triassic period. In the Permian (299-252 mya) Gondwana was near the south pole and there are scattered remnants of glacial sediments mostly in central Victoria.

During the Late Jurassic to Early Cretaceous (~160-96 mya), Gondwana broke apart and a rift valley now known as the Otway, Bass and Gippsland basins was formed between Australia and Antarctica. The valley filled with volcanic materials and sediments included coal-forming swamp deposits in the Wonthaggi area. Rifting was followed by an episode of faulting and uplifting (~100-85 mya) in the Late Cretaceous forming the Otway and Strzelecki Ranges.

Cenozoic basins and landscape formation

During the Cenozoic the Australian southern continental margin expanded and sedimentary basins deepened. The Gippsland Basin oil and gas reservoirs are found offshore in sediments deposited at this time. Significant Miocene brown coal deposits formed in the Latrobe Valley. In the Buchan area acidic groundwater dissolved limestone in a karst-forming process leading to numerous caves for which the area is famous.

Basaltic lava flows occurred in two major episodes: the scattered Eocene Older Volcanics (49-39 mya) found in south Gippsland, and Pliocene-Pleistocene (5-0 mya) Newer Volcanics mostly located west of Melbourne in an extensive plain with numerous eruption points.

[23] VandenBerg, A.H.M., William, C.E. Maher, S., Simons, B.A., Cayley, R.A., Taylor, D.H., Morand, V.J., Moore, D.H. and Radojkovic, A. (2000) The Tasman Fold Belt System - Geology and Mineralisation of Proterozoic to Carboniferous Rocks. Geological Survey of Victoria, East Melbourne, Victoria (page 2)

Minor episodes of uplift during the Pliocene (~5-1.8 mya) led to erosion and the formation of alluvial fans and floodplains, which were later covered by Quaternary sediments. The foothills to the north of Bairnsdale and east of Orbost comprise marine and alluvial Cenozoic deposits, forming an extensive plain that is now heavily dissected by creeks and rivers. The development of today's landscape is described in the following sections.

Geomorphological overview

The Victorian Geomorphological Framework (VGF) divides Victoria into major regions based on their geology, elevation, and landform history. The assessment area lies predominantly within the Eastern Uplands geomorphic region, with smaller extents in the Eastern Plains and Southern Uplands geomorphic region (figure 3.5).[24]

Eastern Uplands

The Eastern Uplands is the largest and most geomorphologically diverse region in Victoria. It extends across eastern Victoria on the Great Dividing Range separating rivers flowing north to the Murray (e.g., Goulburn, Mitta Mitta and Ovens rivers) from those flowing south to the sea (e.g., Latrobe, Thomson, Snowy Rivers). Faulting has played a significant role in shaping the landscape, resulting in uplift in certain areas and redirecting watercourses (e.g., West Kiewa River, Livingstone Creek and sections of the Mitta Mitta River). The region features high ridges (including prominent summits), plateaus and deep valleys formed by major river systems eroding Palaeozoic rocks of the Lachlan Fold Belt. The region includes Victoria's highest mountains, such as Mount Bogong (1,986 m above sea level (asl)), Mount Feathertop (1,922 m asl) and Mount Hotham (1,862 m asl), although no major peaks are found in state forests. Extensive plateaus, such as the Bogong High Plains and Mount Buffalo Plateau, sit at high elevation, while lower plateaus, such as the Errinundra Plateau, formed away from the Great Dividing Range (see section 2.3 for more detail).

Eastern Plains

The Eastern Plains, located east of Port Phillip Bay and south of the Eastern Uplands, is a relatively low-relief region typified by undulating rises and level plains of Quaternary to recent sediments (2.6 mya-present). Erosion of the Eastern Uplands has formed the plains. The youngest sediments are found in floodplains, swamps, and morasses associated with current rivers and streams; coastal areas from Corner Inlet to Lake Tyers feature recent windblown dune deposits, lagoons, and salt marshes. High-level terraces and fans east of the Southern Uplands and south of the Latrobe River originated from Neogene (~23-2.6 mya) and early Quaternary sediments, occasionally covered by windblown coastal sand dunes and sand sheets formed during past glacial periods.

The southeastern riverine plains, north of the Latrobe River and south of the Eastern Uplands, consist of Quaternary alluvial plains shaped by sediment deposits from the uplands. Climate fluctuations during the Quaternary period, along with local land uplifts, influenced sea levels and formed distinct terraces in Gippsland. During the last Glacial Period (~17,000-20,000 years ago), sea levels dropped by about 150 m, creating a land bridge to Tasmania and causing rivers such as the Latrobe, Macalister, Thomson, Avon, and Tarra to carve deep valleys into the floodplains. When sea levels rose again, these valleys filled, forming upper (old floodplain) and lower terraces (current flood plain). The Gippsland Riverine Plain has 6 identifiable terraces in 3 geomorphological units: present floodplains, prior stream plains, and older alluvial terraces. Inland sand sheets and dunes, once thought to be marine formations, are now recognised as younger terrestrial deposits overlaying older terraces.

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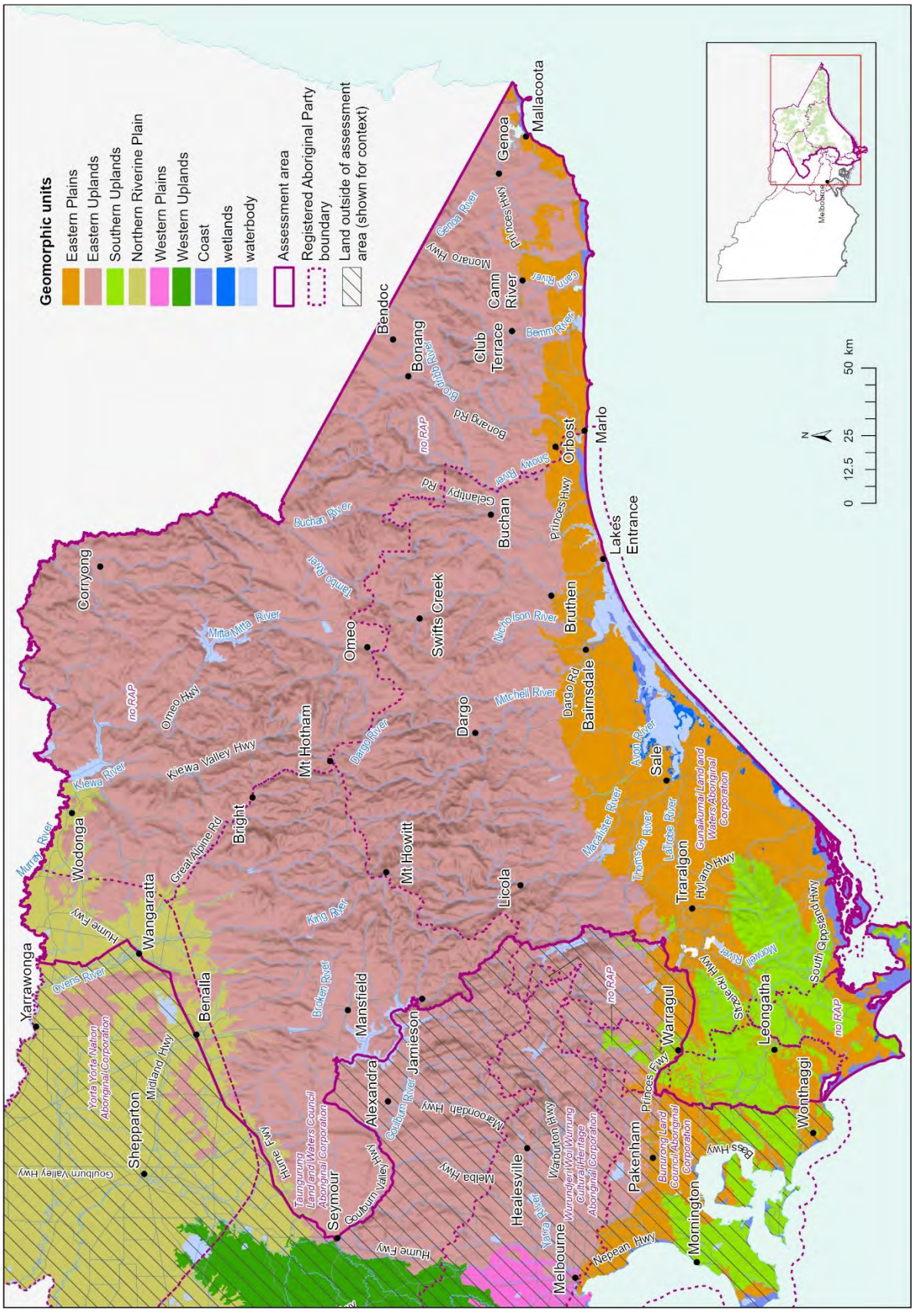
[24] Information on the geomorphic regions has been predominately sourced from Victorian Resources Online (VRO)—DJPR (2025) *Victorian Geomorphological Framework*. https://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/landform_geomorphological_framework, Accessed March 2025.

Figure 3.5 Geomorphic regions in the assessment area



Southern Uplands

The Southern Uplands, east of Port Phillip Bay, feature high-relief ranges such as the Strzelecki and Hoddle Ranges and Wilsons Promontory, along with lower-elevation plateaus extending from Grantville to north of Warragul. These landforms formed due to mid-Cretaceous fault activity (~125-100 mya) uplifting rocks of the Cretaceous Strzelecki Group. Over time, erosion shaped these uplifted sedimentary rocks, while ongoing minor tectonic activity has continued to modify drainage patterns and river valleys. In the uplands fertile soils are derived from Older Volcanics, while fast-flowing streams in sheltered valleys are lined with cool temperate rainforests.

Geological and geomorphological sites of international, national and state significance

Around 137 geological and geomorphological sites of high significance were identified on public land in the Eastern Forests assessment area from available information[25] (figure 3.6). These sites are important as they represent specific characteristics of the region, or demonstrate outstanding, rare or unique geological or geomorphological features. However, the state forests of this region are poorly surveyed and there is difficulty accessing much of the area. Some 137 sites of high significance are currently known on public land comprising:

- 3 of international and 27 of national significance on other public land, mostly national parks or other parks or conservation reserves, and
- 107 of state significance of which 8 are at least partly within state forest.

Table 3.2 lists 8 sites of state significance in or partially within state forests including a summary of the significance values. No sites of international or national significance were identified in state forest. A more detailed table of the state forest sites and the consultant's report[25] are available in the supplementary material on VEAC's website.

Summary

Limited work has been undertaken to document geological and geomorphological sites of significance in state forests of the eastern Victoria largely due to limited accessibility. Therefore, more sites have been identified where there is better access by road or along the coast. The available literature is limited and outdated, with publications dating back over 30 years, and some site localities and description are poor quality.

Several of the sites identified are very large and robust (e.g., Walhalla goldfield, Murmungee Basin granite erosion features, Woods Point dyke swarm). Many other significant geological and geomorphological sites face threats, including human activities such as industrial use, development and tourism, which can in some cases lead to alteration or destruction. Conservation efforts for sites of high significance may assist in mitigating these threats and preserve the scientific, cultural, and environmental values.

[25] Wakelin Associates (2025) *Report on Desktop Inventory of Sites of Geological and Geomorphological Significance in VEAC's Eastern Victorian Forests Assessment Area*. Report to Victorian Environmental Assessment Council, Melbourne.

Figure 3.6 Sites of international, national and state geological and geomorphological sites of significance in state forests of the assessment area

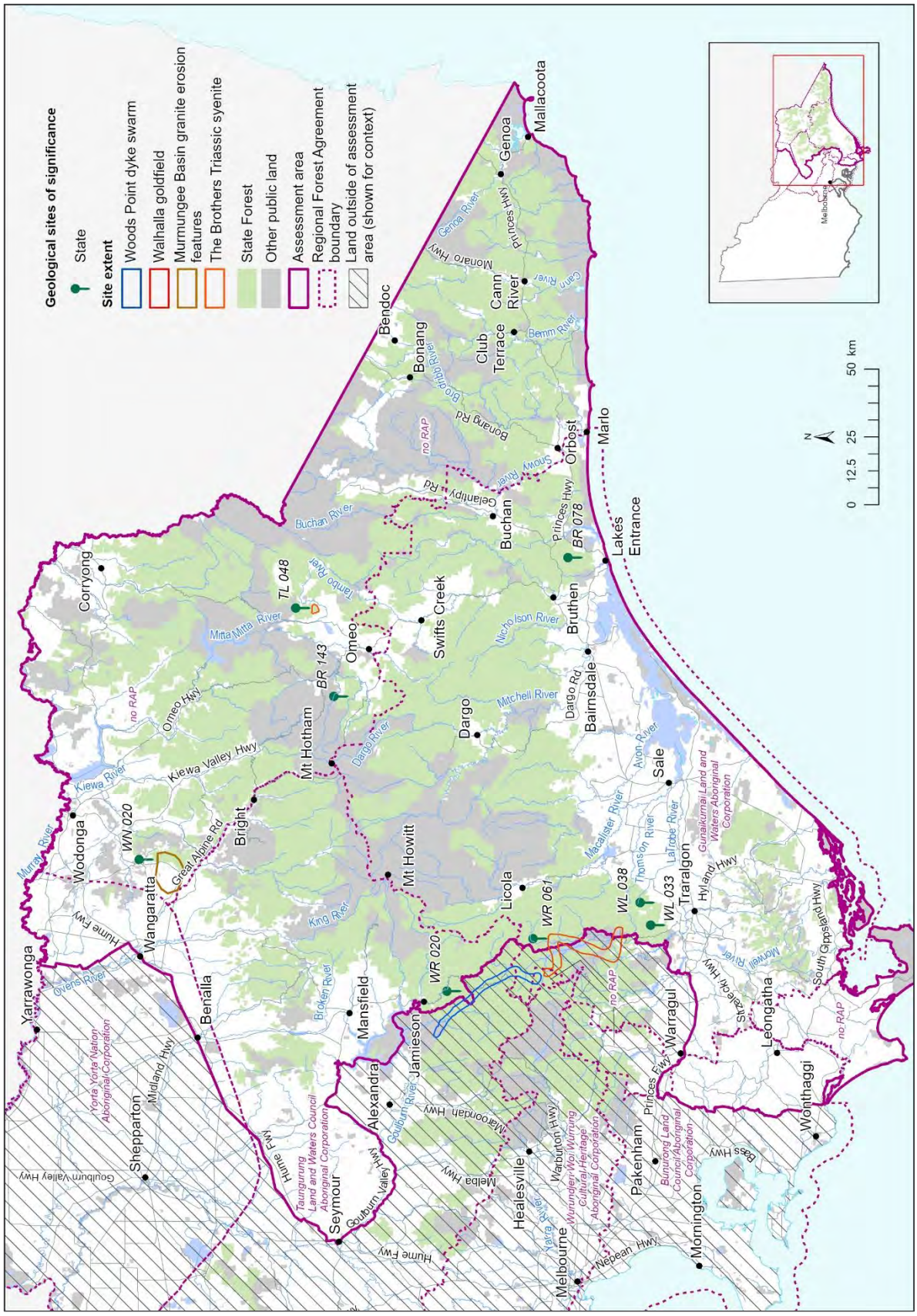


Table 3.2 Sites of state geological and geomorphological significance identified in state forests

Site ID	Site Name	Location	Size
BR 078	Stony Creek and Nowa Nowa caves	12 km southwest of Nowa Nowa	small
BR 143	Mount Battery landforms	10 km north of Cobungra	large
TL 048	The Brothers Triassic syenite	10 km northeast of Benambra	large
WL 033	Eaglehawk Creek Walhalla Group outcrops	6 km west of Toongabbie	small
WL 038	Rintoul Creek Tyers Group fossil flora	Restricted location	small
WN 020	Murmungee Basin granite erosion features	10 km south of Yackandandah	large
WR 020	Woods Point dyke swarm	13 km north of Licola	large
WR 061	Walhalla goldfield	Walhalla area	large

3.3. Water supply catchments

The assessment area spans a large and varied geographical area from the Alps, through forested slopes, and riparian and agricultural land down to the coast.

Water catchments in the assessment area are essential for irrigated agriculture, domestic supplies to towns and cities, stock and domestic supplies to farms, hydro and coal-fired energy generation, riparian and wetland environments and many types of outdoor recreation such as fishing, boating and water skiing.

The catchments in the north of the assessment area comprise a critical part of the most important river system in Australia – the Murray-Darling Basin that stretches across a large area of southeast Australia, covering parts of Victoria, South Australia, New South Wales, the Australian Capital Territory and Queensland, providing water to 2.4 million people. Although the North East Catchment Management Area only takes up 2% of the basin area, it provides 38% of the total water in the Murray-Darling Basin system.

Management of these catchments is critical to ensure adequate water for food production, drinking water, the environment and the full range of other services for much of the basin area including northern Victoria. There are no large, closed catchments in the assessment area, unlike the Central Highlands for instance.

Catchment management

There are 5 catchment management areas in the assessment area that are serviced by Catchment Management Authorities (CMAs): East Gippsland (the only one entirely within the assessment area), West Gippsland; Melbourne Water (small part of the assessment area); Goulburn Broken; and North East.

Special water supply catchment areas

Special Water Supply Catchment Areas (SWSCAs) are declared under the *Catchment and Land Protection Act 1994*. Those in the assessment area are shown in figure 3.7a and b.

SWSCAs are areas that have significant value as a water supply for stock and domestic use. Catchments can be ‘open’ or ‘closed’. Closed catchments are managed or co-managed by the water corporation and public access is restricted. Open catchments can be accessed by the public and the water corporations do not usually have direct control over the land. However, there are

special guidelines for planning permissions in the areas to ensure development does not have a negative impact on water quality.

Each SWSCA has its own management plan, the focus of which will vary depending on location and the responsible CMA. Management plans generally describe strategies to protect water quality through land management, planning schemes, wastewater treatment and monitoring among other measures.

Table 3.3 shows the largest special water supply catchments in the 3 RFA areas comprising the assessment area. These catchments are largely on the state forests and other public lands of the assessment area which – by Australian standards – relatively reliably contribute large volumes of high-quality water.

Table 3.3 Extent of the larger special water supply catchment areas in the assessment area

Special Water Supply Catchment Area	Total extent (ha)	Assessment area extent (ha)	State forest extent (ha)
East Gippsland RFA area			
Tambo River	270,625	270,625	186,127
Brodribb River (Orbost)	93,429	93,429	61,361
Bemm River	93,258	93,258	65,603
Buchan River (Buchan)	81,789	81,789	33,901
Cann River	62,341	62,341	43,556
Gippsland RFA area			
Mitchell River	391,845	391,845	198,224
Glenmaggie	189,873	189,873	83,982
Tarwin River (Meeniyan)	105,998	105,998	1,041
Merrimans Creek (Seaspray)	53,491	53,491	10,082
Tanjil River*	50,686	923	0
North East RFA area			
Lake Hume	1,006,230	1,006,230	386,435
Upper Goulburn*	387,992	255,533	114,200
Ovens River (Wangaratta)	297,260	297,260	78,317
Buffalo River (Lake Buffalo)	114,909	114,909	64,622
Nicholson River	47,557	47,557	44,388
Lake Nillahcootie	42,005	42,005	13,036

* parts of these SWSCAs extend beyond the assessment area

Major water storages

There are many water storages in the assessment area, including Victoria's 3 largest: Lake Hume (on the Murray, partly in New South Wales), Lake Eildon (on the Goulburn, partly outside the assessment area) and Lake Dartmouth (on the Mitta Mitta) all have a capacity of over 3,000,000 ML (table 3.4). However, most water storages in the assessment area are small, supplying water to one or more nearby towns and cities.

These lakes serve a range of purposes and provide opportunities for recreational activities. As well as being 2 of the largest water supply reservoirs in the Murray-Darling system, Lake Hume and Lake Eildon are widely used for fishing, boating, and other water based recreational activities. Lake Eildon in particular is also a well-used camping destination, especially in summer and other holiday periods.

Table 3.4 Major water storages in the assessment area

Storage name	Capacity (GL)	RFA area
Dartmouth*	3856.2	North East
Hume*#	3005.2	North East
Eildon#	3334.2	North East
Blue Rock	198.3	Gippsland
Glenmaggie	177.6	Gippsland
Nillahcootie	40.4	North East
Moondarra#	29.9	Gippsland
Buffalo	23.5	North East
William Hovell	13.7	North East

* Victoria has a 50% share of inflows to Dartmouth and Hume
# not entirely within the assessment area

Figure 3.7a Special water supply catchments in the assessment area

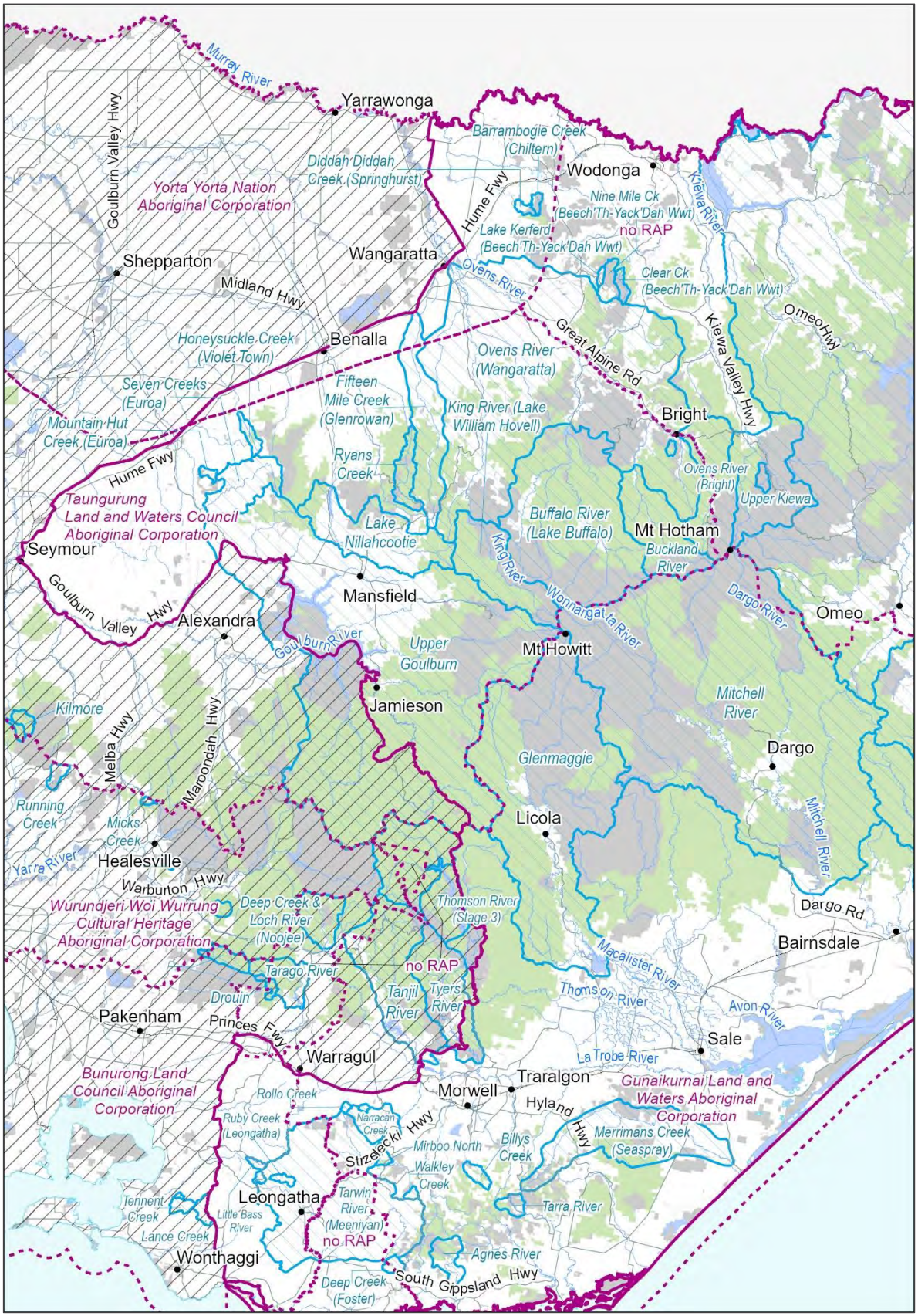
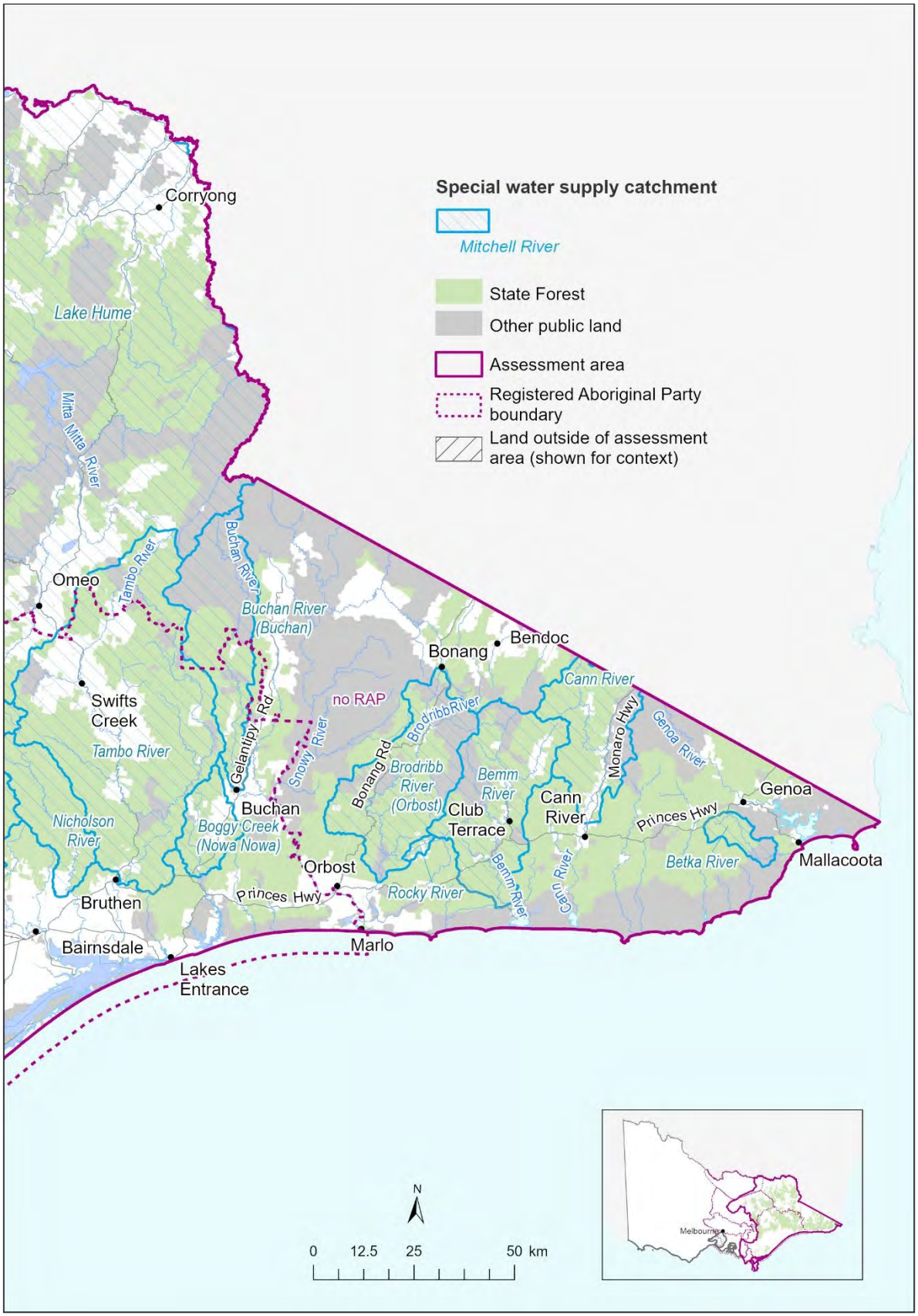


Figure 3.7b Special water supply catchment in the assessment area



3.4. Aboriginal cultural heritage values

As outlined at section 1.4, this values assessment does not include Aboriginal cultural values, which are being represented to the Great Outdoors Taskforce through direct participation of Traditional Owners. VEAC acknowledges that while not part of VEAC's terms of reference, our assessment is incomplete without considering these values. VEAC believes the Eastern Victorian forests are cultural landscapes as well as ecosystems, and ecological, social, economic and cultural values together must inform decision-making.

3.5. Non-Aboriginal cultural heritage values

The following section details non-Aboriginal cultural heritage values ('historic heritage') in the assessment area. Historic heritage includes sites, places and objects that are of aesthetic, archaeological, architectural, cultural, scientific or social significance. These places reflect the region's post-colonisation history and provide valuable insights into past activities and land uses.

Post-colonisation history overview

European squatters moved into northeast Victoria (Murray, Goulburn, Ovens, Kiewa and Mitta Mitta river valleys) in the 1830s and into Gippsland by the late 1830s, establishing large pastoral runs for sheep and cattle grazing. These squatters forcibly took over the land, leading to the violent dispossession and displacement of Aboriginal people. As European settlement expanded, sheep and cattle grazing, and cropping, became central to the region's economy. Alpine grazing became an established practice in the high country, particularly after the 1851 Black Thursday bushfires, which removed undergrowth over large areas. Many historic huts, originally built by cattlemen, miners and early settlers, remain as heritage sites (e.g., O'Dell's Hut, Victorian Heritage Register (VHR) site no. H2411 and Wilson's Hut, Victorian Heritage Inventory (VHI) site no. H8623-0010).

Gold was discovered in the 1850s to1870s, bringing an influx of European and Chinese miners and settlers to towns such as Beechworth, Bright, Omeo, Walhalla, Dargo and Bendoc, and leading to dramatic changes in the region. This history is evident in the numerous heritage places in the region associated with gold mining, including mine sites, battery and sluicing operations and diversion tunnels. The period was also marked by social tensions, particularly between European and Chinese miners, culminating in the Buckland Valley Riot of 1857, one of the worst race riots in Victoria's history (VHR H2431). In addition to gold, other valuable minerals were extracted, including silver, copper and tin. Coal was a significant resource and the Latrobe Valley's rich brown coal deposits became the foundation for Victoria's major energy industry, with power stations such as Loy Yang and Yallourn supplying much of the state's electricity throughout the 20th century (see also section 3.9).

The dense native forests of eastern Victoria became a major resource for the timber industry following European settlement, which supported construction, fuel and paper production. Several sites associated with the forestry and timber industry are recorded throughout the region, including the Goodwill Sawmill site (VHR H2011). The Goodwood Timber and Tramway Company mill was the largest and most capital-intensive sawmill to operate in the yellow stringybark forests of South Gippsland. Native timber logging operations supported the development of sawmilling towns such as Noojee, Erica, Orbost, Heyfield, Swifts Creek, Cann River, and Bruthen. The post-World War II housing boom further boosted demand for timber from these native forests.

Victorian bushfires have been a key feature in the region's history. Some of the most destructive fires include the Black Thursday (1851) and Black Friday (1939) fires, which claimed dozens of lives and destroyed large tracts of forests and many towns. Following the devastating Black Friday bush fires, the Forest Commission began investigating ways to improve early detection of wildfires and

built spotting towers such as the Stringers Knob tower (VHR H2244) that was constructed in 1941. These and other landscape-scale fires remain a central theme in the history of the region.

Register searches

The following registers were searched to compile an inventory of recorded heritage places within the assessment area:

- World Heritage List (WHL)
- Commonwealth Heritage List (CHL)
- National Heritage List (NHL)
- Victorian Heritage Register (VHR)
- Victorian Heritage Inventory (VHI).

Historic sites or places listed on the WHL, CHL and NHL are protected under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Any action that may have a significant impact on these sites or places must be referred to the Commonwealth Environment Minister. Historic sites and objects listed on the VHR and VHI are protected under the Victorian *Heritage Act 2017*. Under this Act is it an offence to excavate, damage or disturb sites and relics whether or not they are included on the VHR or VHI.

World Heritage List

The WHL is a list of the world's most significant cultural and natural heritage. There are currently no WHL sites in the assessment area.

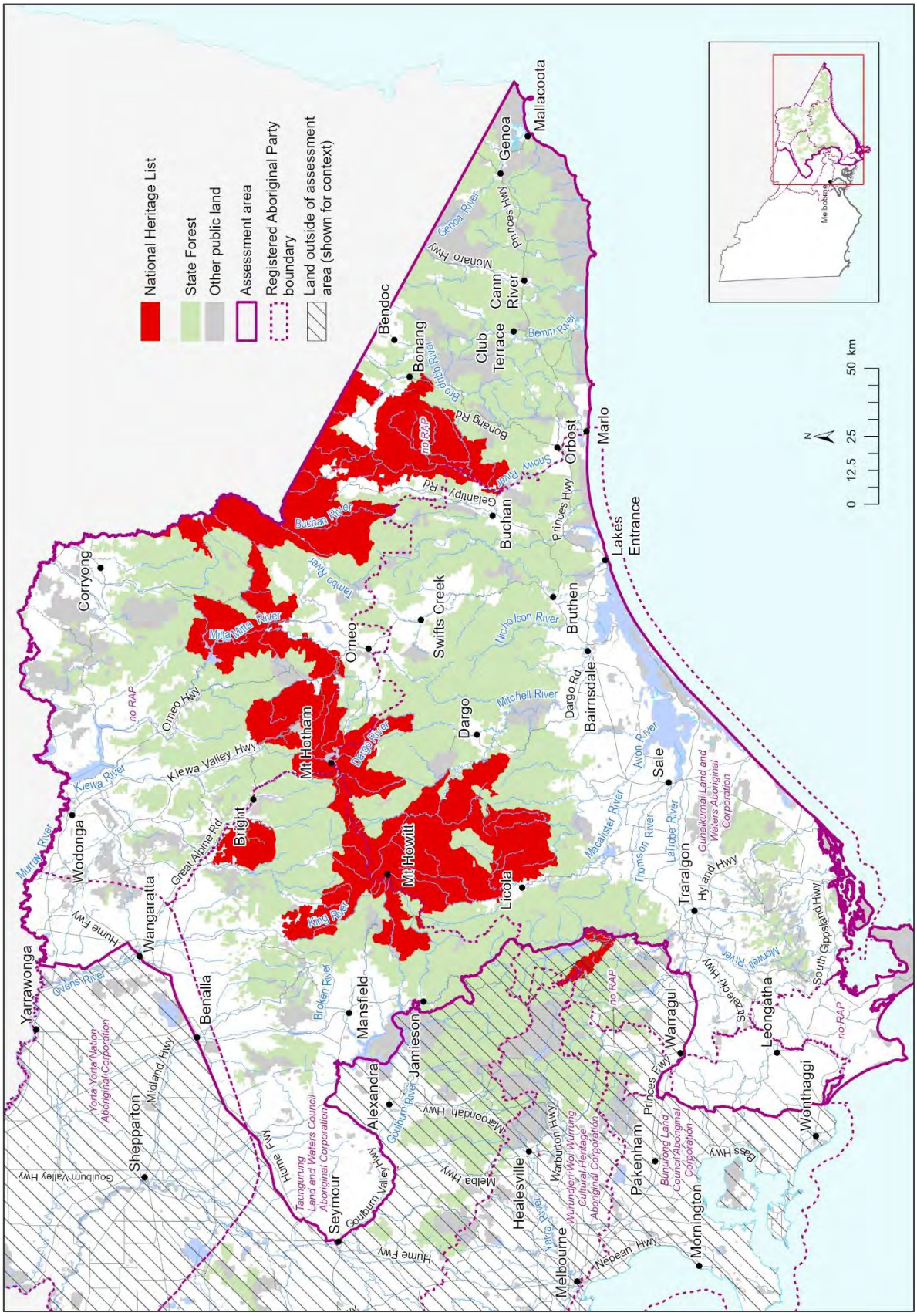
Commonwealth Heritage List

The CHL is a list of significant indigenous, historic and natural heritage sites owned by the Australian Government such as places associated with defence, communications and other government activities. There are currently no CHL sites in the assessment area.

National Heritage List

The NHL comprises a list of Australia's outstanding natural, historic and Indigenous sites. There is 1 NHL site (Australian Alps National Parks and Reserves, Place ID 105891) within the assessment area, although it is not situated within state forests. The site comprises the unique Australian mountainous region that extends over New South Wales, the Australian Capital Territory and Victoria, however figure 3.8 only shows the site extent within Victoria. Within the assessment area, the site is very largely surrounded by state forests and comprises the Avon Wilderness Park and four national parks: the Alpine, Snowy River, Baw Baw and Mount Buffalo national parks.

Figure 3.8 The Australian Alps National Parks and Reserves National Heritage List site



Victorian Heritage Register and Victorian Heritage Inventory

The VHR is a statutory list of the Victoria's most significant heritage places, objects and historic shipwrecks protected under the *Heritage Act 2017*. The VHI is a statutory list of all known historical archaeological sites in Victoria under the *Heritage Act 2017*. There are a total of 224 sites recorded in the assessment area's state forests, of which 31 (14%) are VHR sites and 193 (86%) are VHI sites (figure 3.9a and b). Most sites are predominantly related to gold mining reflecting the history of resource extraction and early non-Aboriginal settlement in the region. Record details of these heritage places can be found via the Victorian Heritage Database. A detailed list of sites and their associated site numbers is provided in the supplementary material on VEAC's website.

It is important to note that the distribution of these sites represents only the recorded sites, likely documented during various heritage investigations. It is not surprising that more sites are recorded closer to Melbourne due to greater historical settlement density, accessibility for surveys and higher levels of land use and development – and therefore more surveys – in these areas. Many additional unknown heritage sites are likely to exist within the eastern Victorian state forests.

Local council planning scheme heritage overlays

Heritage overlays generally reflect heritage of local significance and have not been reviewed in this current assessment, except for where they also have VHR and VHI components associated with them (see supplementary material on VEAC's website).

Historic reserves

Historic reserves (formerly called historic and cultural features reserves) are designated areas of public land containing examples displaying significant historical themes or archaeological features that are relevant to a specific area, region, or town. There are 42 historic reserves in the assessment area that are surrounded by state forest (figure 3.10). A list of these historic reserves is provided in the supplementary material online.

Figure 3.9a Victorian Heritage Register and Victorian Heritage Inventory sites in the assessment area

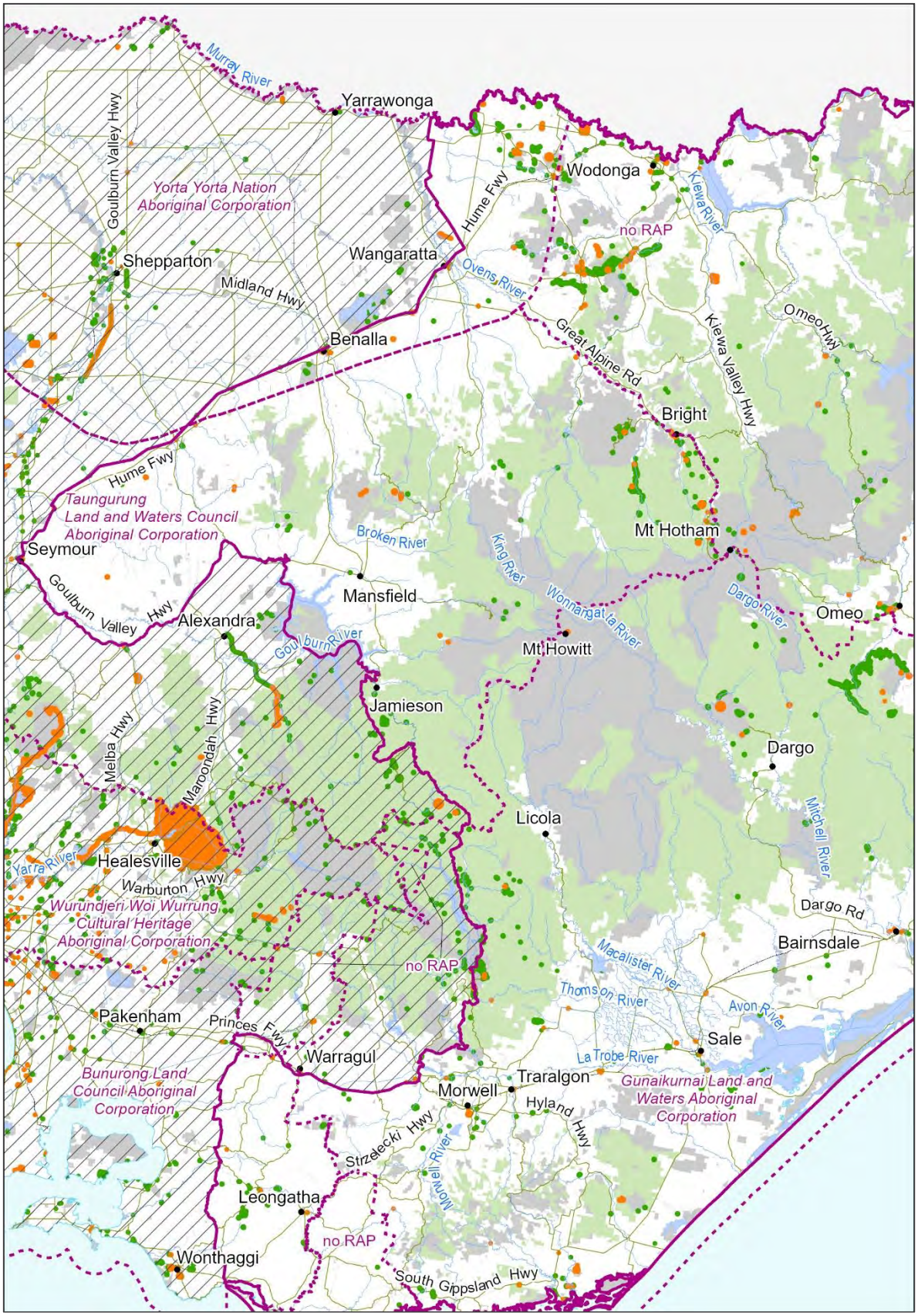


Figure 3.9b Victorian Heritage Register and Victorian Heritage Inventory sites in the assessment area

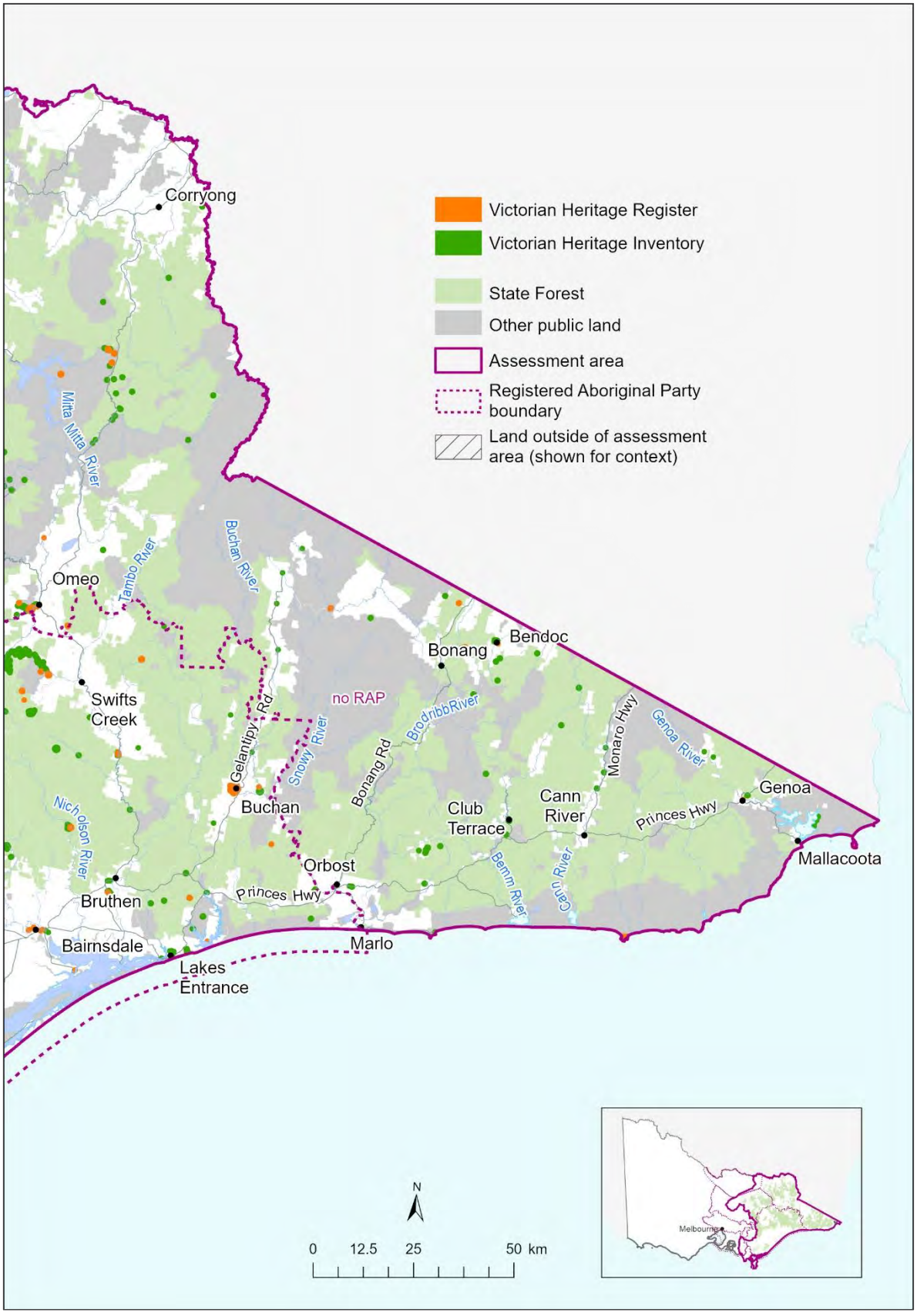
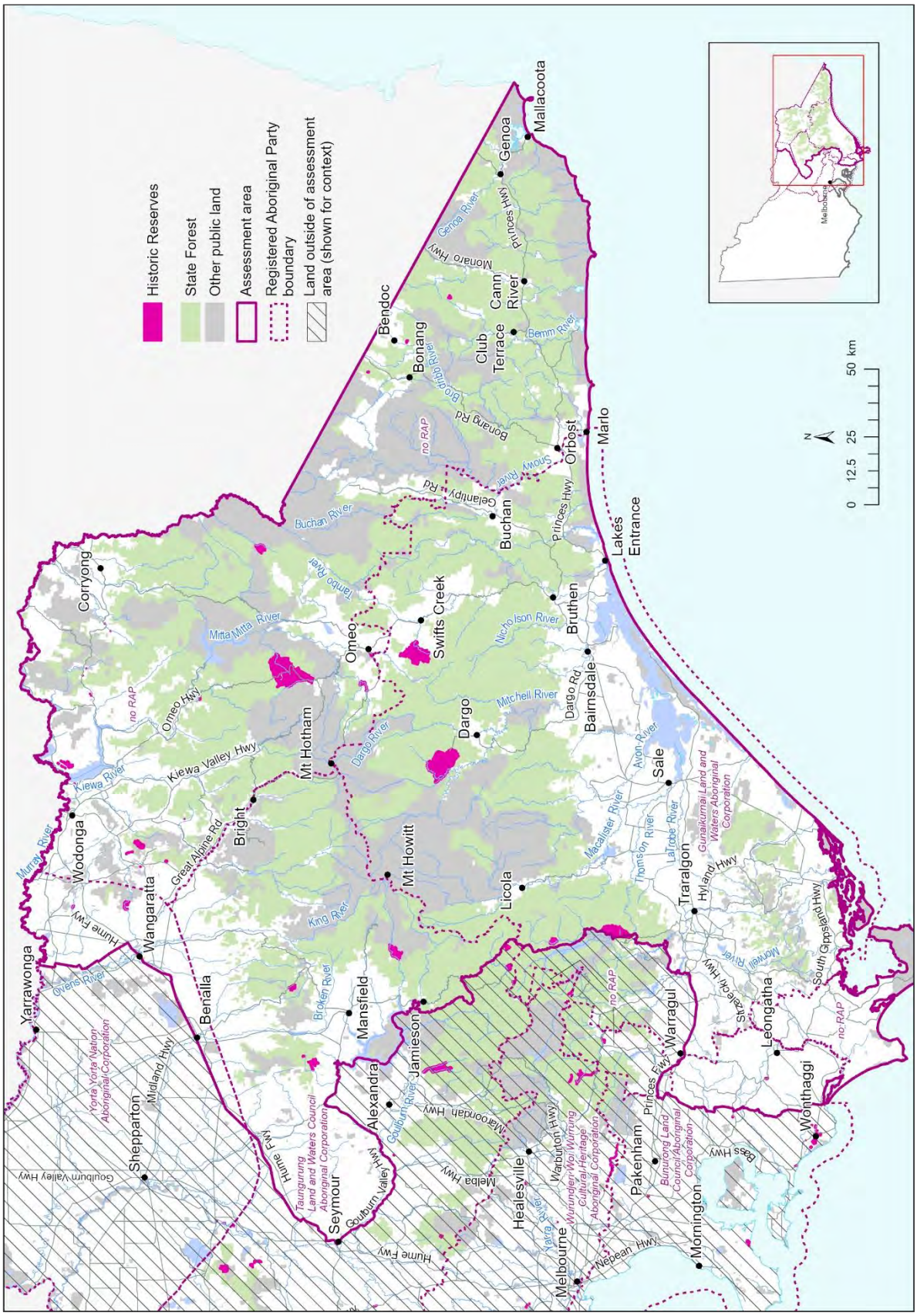


Figure 3.10 Historic reserves in the assessment area



3.6. Recreational uses and tourism

Surveys by land managers show an increase in visits to Victoria's public land in recent years. A 2024 study by DEECA into state forest visitation estimated there were nearly 16 million unique visits to Victorian state forests between September 2023 and September 2024, with 40% of Victorians visiting a state forest in each of spring/summer 2023–24 and autumn/winter 2024. As would be expected, visitation numbers were generally higher in state forests closer to Melbourne.

In April 2023 VEAC published its Advice to government on data on recreational activities on Victoria's public land . A key finding was that recreation is now – with nature conservation – the dominant use of Victoria's public land and is the only major use of public land without statewide spatial data to inform decision making. In addition, there is no system in place for collecting and managing knowledge on recreational activities and associated trends nor standardised metrics in use in Victoria. While some information for broad areas of public land exists, there is little data on individual activities at local levels. Without this type of data, comprehensive assessment of national, state and locally important recreational values is difficult. The following overview of recreational use is drawn from a range of sources such as data from visitor satisfaction surveys and fitness sharing apps such as Strava, and qualitative and anecdotal data from social media and websites for recreation groups and discussions with land managers. As VEAC's terms of reference did not require public consultation, discussions with recreational groups and individuals were not undertaken.

Despite these limitations around the spatial quantification of recreational use, it is abundantly clear how important outdoor recreation is to the community. For the recreational users, their time in the bush is often one of the most important parts of their lives, providing essential social, spiritual and mental health benefits and meaning for their lives (see section 3.11 for more discussion). In previous projects involving public consultation Council members have been struck by how many community members characterise themselves by their recreation – as opposed to their career or cultural background, for example. For many businesses and regional communities, recreational use of public land is essential for their economic health, with visitors supporting not just businesses directly related to recreation but a broad variety of other goods and services such as food and fuel providers.

Camping

Figure 3.11a and b show the extent of car parks, camping and picnicking sites across the assessment area. These sites often have amenities such as pit toilets, fire pits and picnic tables and are used as points to access other activities such as bush walking, mountain biking, four-wheel driving, fishing and hunting.

In the northeast, some of the most well-used camping areas are in the Ovens Valley and surrounds, and these areas are usually at or close to capacity during school and public holidays between October and April. They are particularly suited to families as they have access to activities such as cycling, swimming and fishing in nearby state forests and other public land, as well as being close to cafés, shops, wineries and restaurants in towns such as Bright and Milawa. Somewhat further away, but still accessible to car-based day-trips, are the alpine areas with short and longer walks and other attractions, as well as respite from the heat on hot summer days.

Lake Eildon, on the edge of the assessment area is a very important recreational area. Relatively close to Melbourne, it provides access for fishing, many different types of boating (e.g., house boats, water skiing), paddling, swimming and other water-based activities.

In Gippsland – and especially closer to Melbourne – campgrounds are also well-frequented and often at capacity during school holidays and on popular weekends. Many kilometres of forest tracks

are accessible from these camp sites and there are many opportunities for fishing, nature study, deer hunting, bush walking and four-wheel driving.

The sites in state forests in East Gippsland are generally more remote – both from population centres and from ready road access. As a result they are much less busy and generally attract people who are willing to drive further, often specifically to be away from other people as a preferred component of the recreational experience.

Figure 3.11a Locations of car parks, camping grounds and picnic areas in the state forests of the assessment area

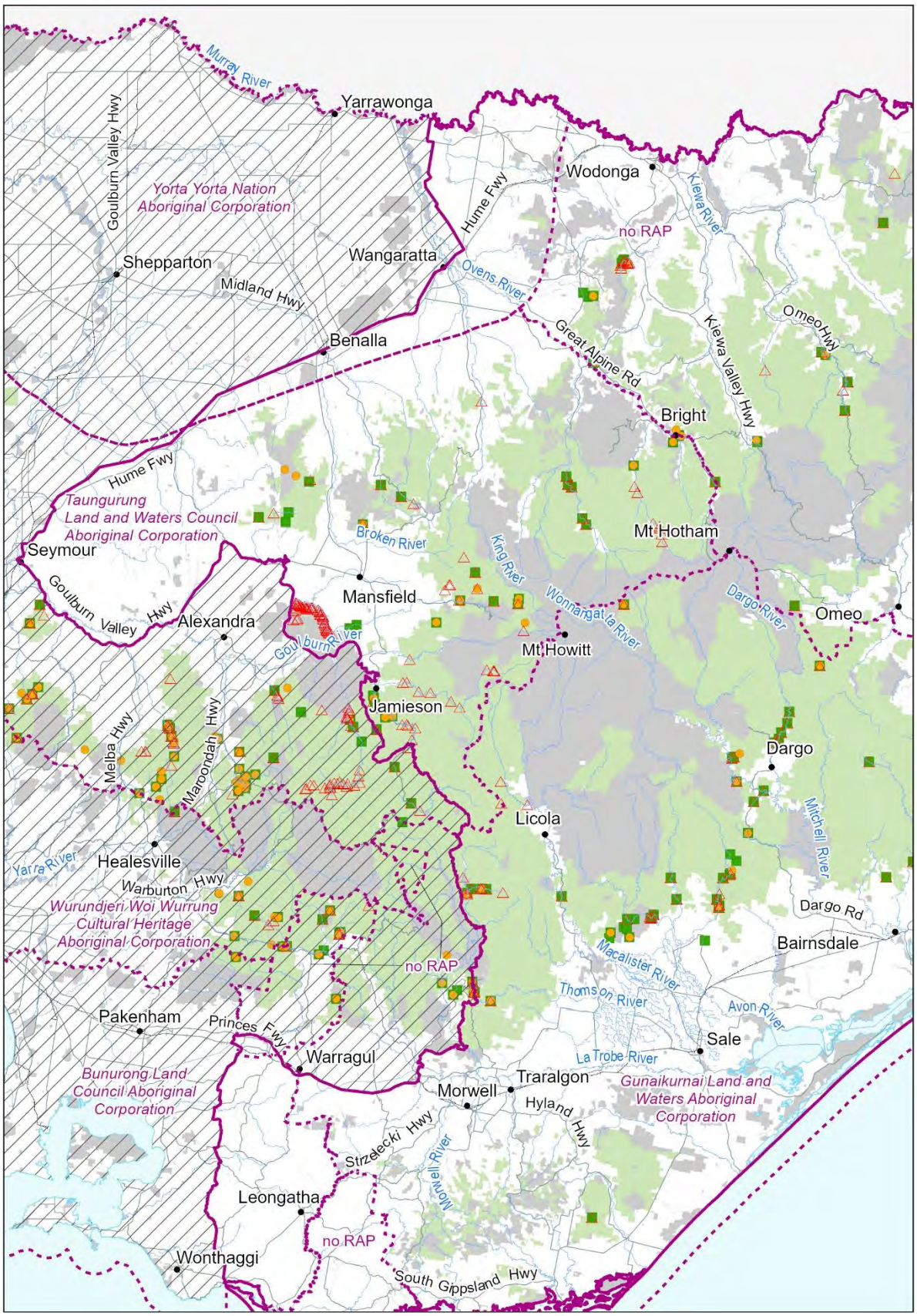
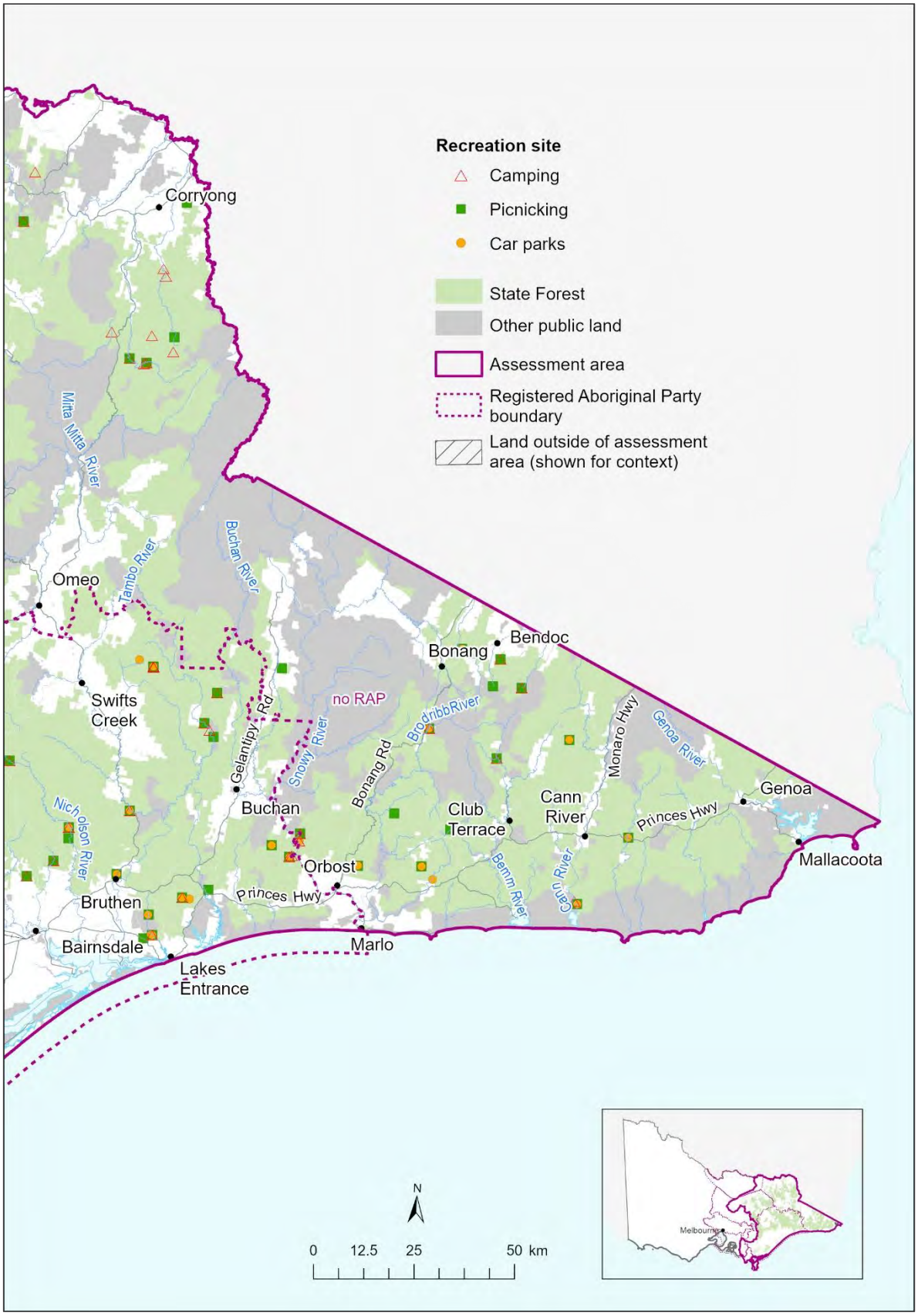


Figure 3.11b Locations of car parks, camping grounds and picnic areas in the state forests of the assessment area



Mountain biking and cycling

Cycling in the state forests of the assessment area largely fits into one of 3 categories:

- Mountain biking primarily is predominantly focused on or near designated mountain bike parks, but mountain biking is also common (including on illegal tracks) in forests near these parks, and less common in more distant forests; an attraction of mountain biking is in negotiating challenging track conditions – e,g., narrowness, steepness, slipperiness –at speed.
- Gravel riding is generally done on forest tracks and quiet country tracks and lanes, originally built for other purposes and tends to be more leisurely than mountain biking. Varied track conditions and landscapes are a key attraction of gravel riding. The increase in popularity of e-bikes (electric bikes) has opened gravel and trail cycling pursuits to a wider set of users, including older cyclists.
- Bicycle touring is generally longer in duration than mountain or gravel biking, often taking a full day or several days and covering long distances so flatter terrain is more sought-after, especially if carrying gear for longer trips; rail trails (see below) are often popular for touring.

Road racing is done on sealed roads and is largely independent of the tenure and land use of the surrounding countryside and of the other cycling types.

There is often overlap in the 3 types of state forest cycling in that (a) in some locations the distinction between for example, gravel riding and bicycle touring can be unclear and (b) individuals and groups will often partake in two or more types of cycling over the course of a cycling trip – e.g., a group might stay in a town for a week with individual people variously trying mountain biking, gravel riding and/or bicycle touring over the weekend. This is especially true for groups with people of different abilities, notably families. As a result, places that offer opportunities for two or especially three types of cycling are popular with these groups.

Many parts of Victoria's mountains and alpine regions provide ideal terrain for mountain biking and these areas have also seen significant investment with networks of trails being developed that are suited to a range of abilities. Mountain bike destinations with a significant state forest component are found near Beechworth–Yackandandah, Bright, Mount Beauty, Omeo, Mount Taylor (north of Bairnsdale), Lakes Entrance and Nowa Nowa. Other destinations in the assessment area include Wodonga, Mount Buller, Dinner Plain, Falls Creek and near Lake Glenmaggie. In the town of Bright – long a hub for snow sports in winter – mountain biking, the Murray to Mountains rail trail and associated cycling in the surrounding area have now made the town a year-round adventure hub.

Mountain biking has increased in popularity in the last few years, and there continue to be many projects to create designated tracks around the state. However, there are still large networks of illegal tracks through state forests. There is also a general issue when funding is provided to establish mountain bike parks without sufficient ongoing funds to maintain them.

Rail trails for cycling

Disused railway lines, created in the early 1900s to service local industries, now make ideal riding tracks that are flat, with generally smooth riding surfaces, and are close to towns and facilities.

There are rail trails in many parts of Victoria. Some of the most notable in Gippsland and East Gippsland are the Great Southern Rail Trail, East Gippsland Rail Trail and Gippsland Plains Rail Trail. Some go near the coast, others further into the hinterland, but most are characterised by gentle slopes and accessibility to a range of levels.

In the north of the assessment area there is the Great Victorian Rail Trail, High Country Rail Trail and Murray to Mountains Rail Trail. These trails are generally slightly more challenging as a large

part of the tracks go some way into the higher country. However, there are many parts that are still very accessible to a range of skill and experience levels.

Rail trails in general make cycling accessible to more people as they provide a safer off road experience away from car traffic.

Horse riding

Horse riding is enjoyed in many of the state forests of the assessment area which provide extensive riding opportunities across a variety of landscapes. While there are some designated horse riding trails (often called bridle trails) and multi-use tracks, many riders use state forest roads. Popular riding areas include Mansfield, Bogong High Plains, Licola and Dargo. The High Country and associated 'Man from Snowy River' narrative are a key element of the attraction for many local and visiting horse riders in the region.

Recreational horse riding is done individually, in small informal groups, with a club or on commercial riding tours. It is popular with women and girls as it provides opportunities to get into nature. Information on horse riding events (notably endurance rides) is provided in chapter 3.8. Local riders and tour operators may access state forest directly from their private land. Riders from further away bring horses in floats to suitable locations to unload horses and commence riding. Licensed tours offer rides that travel through both state forest and national parks. Some recreational riders may only ride in state forests on weekends, while others, such as endurance riders, may use trails for training. Long distance riders undertaking extended rides often camp overnight at designated sites with horse yard facilities.

There are several designated horse camping areas with horse yards and rider facilities. Popular horse trails and yards in state forests include Howqua River Walk, Flat Spur Campground and Mitchells Bridle Trail. Additionally, horse facilities are also provided in some nearby national parks including Pretty Valley Horse Yards, (Alpine National Park), Langfords West and Diamantina Horse Yards (Bogong High Plains).

The Bicentennial National Trail is a 5,330 km riding trail along the Great Dividing Range from near Healesville to Cooktown in Queensland. The trail runs west to east through the middle of the assessment area – the route is generally close to the boundary between the North East and Gippsland RFA areas (see figure 1.2) before branching off and passing through Omeo and then roughly following the Gippsland-East Gippsland RFA boundary before leaving Victoria at Tom Groggin on the Murray River about 40 kilometres south of Corryong. This section is notable compared to the rest of the trail for being almost entirely in and surrounded by forested public land – mostly state forest and national park, and often quite remote.

From a broader perspective – as indicated by the location of riding clubs, for instance – many horse riders are based in larger towns of the region (e.g., Wangaratta, Bairnsdale) as well as smaller towns that are closer to popular area – in the Ovens and Tambo valleys for example. These riders are likely to take advantage of the forests in their area as well as proximity to the high country that also attracts riders from further afield. In those parts of the assessment area distant from population centres – for example, east of Benambra and Lake Entrance – the majority of horse riding is by locals, often those who live or agist horses within riding distance of state forests. Horse riding occurs throughout the year but is less popular in the colder months, especially in the high country and more remote locations.

In some areas, particularly the high country, horse riding culture intersects with the local tradition of brumby running, the practice of chasing, capturing and sometimes taming wild horses typically on horseback. While this tradition holds cultural significance for some people, it is not a permitted activity on public land. The presence of brumbies in certain areas can be a management issue,

particularly where their presence can impact tracks, sensitive ecosystems and other recreational users.

Associated management issues with horse riding include track erosion, the spread of weeds from horse manure and feed, as well as occasional conflict with other forest users, especially on shared trails. Horse riding occasionally occurs on walking or mountain bike tracks – where horses are not permitted – which can cause environmental damage on tracks not designed for horse traffic.

Bushwalking, hiking and running

There are many walking tracks throughout the assessment area ranging from shorter walks that can be completed in under an hour to multi-day overnight hikes. Shorter walking trails often head out from picnic areas, car parks or other visitor nodes and are sometimes found close to towns adjacent to state forests such as Bright and Mount Beauty in the north and Bruthen and Mallacoota in the south of the assessment area. DEECA surveys indicate that short walks are consistently in the top three activities undertaken by visitors to state forests, the others being sightseeing and appreciating nature. Nearby access to forested public land is often a significant consideration for many locals in terms of where they live. For some – such as people who walk dogs regularly in the bush – state forests can be particularly favoured compared to, for instance, national parks where dogs are generally not permitted.

For multi-day walking, some of the most iconic hikes in Victoria are situated in the assessment area. Many are in the alpine region around Falls Creek and Mounts Buffalo, Buller, Howitt, Bogong, Feathertop and Hotham. Although most of the alps are in the Alpine National Park, many hikes extend into state forests. For example, the famous Australian Alps Walking Track traverses 655 km from Walhalla almost to Canberra, and the Victorian section is very largely within the assessment area. While much of the track goes through the Alpine National Park, there are some sections through state forest, notably the westernmost leg which enters the assessment area just north of Aberfeldy and goes through Aberfeldy/Nambuc, Upper Goulburn and Barkly River state forests before entering the Alpine National Park about 20 km south of Mount Buller.

The state forests of Gippsland and East Gippsland stretch over a vast area, with walks in many environments, rainforests, dry forests, shrub, plains, and along the coast. Shorter walks often focus on specific features such as historic places, scenic views, rainforests or geological features. Examples include the Drummer Rainforest Walk east of Cann River and the Youngs Creek Falls Track near Orbost.

There are also longer walks in Gippsland state forests. The Grand Strzelecki Walking Track between and around Morwell and Tarra-Bulga National Park comprises over 100 km of connected walks many of them through state forests. Briagolong State Forest Walk is a multi-day historic walk through an old gold mining area. Particularly in more remote areas, narrower and frequently used forest tracks can be more favourable for bushwalking and hiking than is the case in forests closer to population centres.

Walking and hiking trails are also popular with trail runners. Trail running, a growing sport, provides a connection with the natural environment as well as a more challenging and diverse running experience when compared with road running. Some trail running is particularly challenging – covering many kilometres and with a high proportion of steep terrain – and beyond the capabilities of all but a few people. More generally, though, the areas of highest use for trail running are in and around the alps and their access routes, and around focal points for other adventure activities such as mountain biking. The most used such areas are around and between places such as Mounts Buller, Buffalo and Hotham, Falls Creek, Bright, Myrtleford, Beechworth Yackandandah and Merrijig. Examples in Gippsland include Mount Taylor, Bruthen and Colquhoun Forest north of Lakes Entrance.

Recreational prospecting

Recreational prospecting (the search for gold and gemstones) is a popular activity in the assessment area. Prospectors require a Miner's Right which allows prospectors to remove and keep minerals found on Crown Land using only non-mechanical hand tools. Miner's Rights can be purchased from Services Victoria for $27.80,[26] and there are currently 95,000 active Miner's Rights statewide.[27] Trends indicate that prospecting activity typically increases with increasing gold prices.

Prospectors commonly use metal detectors, pans, cradles, sluices, and hand tools such as picks and shovels to search for minerals and stones. Recreational prospecting is allowed in state forests, apart from in certain rivers and streams, many of which are in the assessment area.[28] Prospecting is generally not permitted in parks and reserves scheduled under the *National Parks Act 1975*, although there are a number of exceptions with zones where it is allowed, including three in the assessment area: Beechworth Historic Park, Chiltern-Mount Pilot National Park and Reef Hills State Park.

Preferred prospecting locations can be difficult to determine as prospectors often avoid sharing location information to limit competition. Nonetheless, the restriction permitting only non-mechanised hand tools for prospecting and technological limitations of metal detectors means that prospecting is largely limited to gold near the surface. From the gold rushes of the 1850s, Victoria has been intensively searched for surface gold. As a result, historic goldfields are well-known and serve as a useful indication of the preferred areas for prospecting (figure 3.12). Extensive goldfields are found in the North East and Gippsland RFA areas, generally running northwest to southeast between Wodonga and Bruthen. In East Gippsland, occurrences are sparser, with larger goldfields concentrated around Bendoc, Bonang and Buchan. Information from regional managers of state forest identified the Upper Goulburn and Buckland valleys as important prospecting areas in the Hume region and Aberfeldy, Walhalla, Swifts Creek, Omeo and Cassilis in the Gippsland region. Mostly for the reasons mentioned earlier, more precise information about the extent of prospecting and specific locations within these broader areas is not available.

Similarly, fossicking locations for gemstones are not well known. However, in the North East RFA area land managers report fossicking for gemstones being concentrated around Beechworth. The most common gemstones in Victoria are garnet, topaz, turquoise and zircon. These semi-precious stones are mainly found in alluvial deposits and occasionally in primary source rocks.[29]

Land managers and regulators have noted that prospecting can be difficult to regulate due to some ambiguity and poor understanding or the rules attached to Miner's Rights. Additionally, prospecting – particularly gold panning – can lead to the creation of new illegal tracks in sensitive riparian areas. Illegal prospecting is thought to be increasing and has been reported around Bairnsdale, Cowwarr, Tanjil, and Walhalla, in restricted waterways and sometimes including the use of illegal dredges that are known to damage aquatic ecosystems.

Recreational prospecting offers opportunities for outdoor exploration and a connection to the region's mining history. However, if not practised legally, there are potential environmental and heritage threats, including impacts on biodiversity, water quality, erosion, and the disturbance or removal of cultural heritage.

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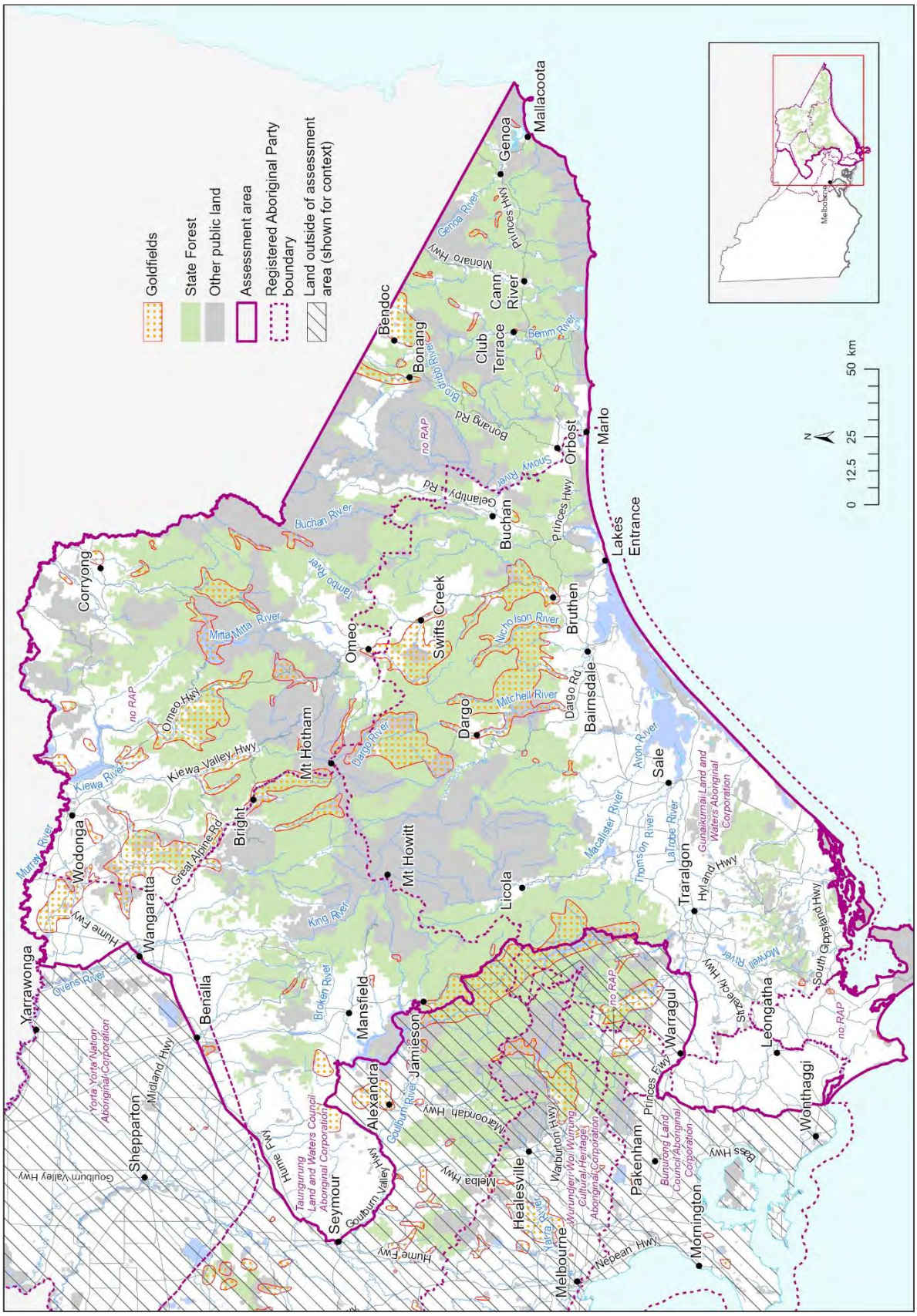
[26] Resources Victoria (2024) *Recreational prospecting*. https://resources.vic.gov.au/licensing-approvals/fossicking. Accessed 23 Jan 2025.

[27] Resources Victoria (2024) *Great prospects to find gold during the festive season with a miner's right.* https://resources.vic.gov.au/about-us/news/great-prospects-to-find-gold-during-the-festive-season-with-a-miners-right. Accessed 23 Jan 2025.

[28] https://resources.vic.gov.au/licensing-approvals/fossicking/where-you-can-prospect-and-fossick/rivers-and-streams-where-you-cant-fossick

[29] Resources Victoria (2022) *Gemstones*. https://resources.vic.gov.au/geology-exploration/gemstones. Accessed 21 March 2025.

Figure 3.12 Historic goldfields in the assessment area



Recreational fishing

The assessment area includes many lakes, rivers, streams, coastal estuaries and ocean waters that provide habitats for a variety of native and introduced fish species. Many rivers, streams and creeks run through state forests, with very few lakes and reservoirs having state forest frontage – they are typically surrounded by public land in other categories (or private land in some places). State forests can offer a quiet, remote fishing experience that is often combined with other recreational activities such as camping, bush walking and boating. Many anglers use state forest campgrounds as a base for fishing trips, with access to smaller tributaries and lesser-known fishing spots. All forms of recreational fishing in Victoria's marine, estuarine and inland waters require a Recreational Fishing Licence (unless exempt) and are regulated by the Victorian Fisheries Authority (VFA). Fishing is most popular during the January holiday period, followed by the Easter holidays, and remains male-dominated (generally 80% male, 20% female). Geographically, while most licences are held by residents of Melbourne, proportionally, regional Victorians are more likely to hold a fishing licence, particularly in Gippsland and the Latrobe Valley.[30]

Inland fishing

Victoria's inland waters support populations of introduced species, such as brown trout, rainbow trout and redfin, as well as native species such as silver and golden perch, Murray cod, blackfish and Australian bass (table 3.5). Yabbies and spiny freshwater crayfish are also popular among anglers in inland waters. Fishing methods commonly include fly fishing, lure fishing or bait fishing, either from the shore or by boat.

According to a VFA survey, the most popular inland fishing locations within the assessment area include: Murray River (NSW), Lake Eildon, Goulburn River, Ovens River and Mitchell River. Other popular locations noted include: Tambo River, Lake Dartmouth, Dargo River and Mitta Mitta River.

30. VFA (2018) Licence Holder Analysis https://vfa.vic.gov.au/__data/assets/pdf_file/0004/468103/Consolidated-Red-Fox-Report.pdf accessed April 2025

Table 3.5 Top 4 favourite inland fish for anglers

Favourite inland fish to catch	Name
	Murray cod
	Rainbow trout
	Brown trout
	Redfin

Source: Australian Survey Research Pty Ltd (2018)

Coastal and estuarine fishing

While state forests are primarily inland, some are located adjacent to estuaries and coastal regions, providing fishing opportunities that combine bushland experiences with access to marine environments**.** Many anglers visiting Gippsland and East Gippsland focus on fishing along the coastline, estuaries, and offshore waters, often using boats. Coastal towns such as Lakes Entrance, Metung, Paynesville and Mallacoota serve as hubs for boat-based fishing and provide abundant facilities, including boat ramps, charter services and other infrastructure for recreational anglers.[3]

Gippsland's bays, inlets and oceans support a diverse range of species including snapper, King George whiting, flathead, bream, estuary perch, Australian salmon, squid, tuna and sharks. Common fishing methods include bait fishing, lure fishing and trolling, either from the shore, piers or boats.[4]

A VFA survey identified the most popular fishing locations within the assessment area including Gippsland Lakes, Lakes Entrance Coastal, Lake Tyers and Mallacoota inlet. Other notable fishing locations include Tamboon Inlet, Port Welshpool, Marlo, Port Albert and Andersons Inlet.[5]

Compliance and management issues

Both inland and coastal fishing have several significant compliance and management issues, including:

Fishing licences: Ensuring anglers have obtained the necessary fishing licence. According to VFA, over 40% of the Victorian population are unaware that a licence is needed to fish recreationally in

Victoria, suggesting that there is a significant number of people currently fishing without the required licence.[6]

Size and bag limits: Strict regulations on size and bag limits are in place for different fish species to prevent overfishing and sustain healthy fish populations.

Protected species: Certain species are legally protected (e.g., Macquarie perch), and it is illegal to catch, keep or disturb these protected species.

Closed season and areas: Seasonal fishing closures or restricted areas prohibiting fishing are in place to protect fish during critical life stages and to preserve sensitive habitats.

Fishing methods: Regulations may restrict or regulate certain fishing methods, such as trawling and netting, to reduce environmental impacts.

Invasive species control: Efforts to manage and control invasive species such as European carp are essential for protecting native ecosystem.

Environmental impact: Management to minimise environmental impacts such habitat destruction, damage to banks and sensitive riparian areas, bank erosion and waterway siltation and the effects of climate change on fisheries.

Paddling and boating

Paddling and boating activities in the assessment area include canoeing, kayaking, rafting, tubing, stand up paddleboarding (SUP), boating and other motorised water sports such as water skiing, wakeboarding and jet skiing. The assessment area features an extensive network of waterways including, rivers, lakes and estuaries that support recreational use throughout the year, and offer a variety of conditions, from gentle flatwater sections to challenging rapids. These waterways are described in detail in section 2.5. While numerous rivers, streams and creeks run through state forests, very few lakes and reservoirs have state forest water frontage. These waterbodies are typically surrounded by other land categories such as reserves or private land.

Boating and paddling are often coupled with other recreational activities such as fishing and camping, with many campsites located along major waterways. Several licenced tour operators also organise watercraft tours throughout the region.

According to land managers, well-used locations for paddling and boating activities in or nearby state forests include, but are not limited to: La Trobe River, Macalister River, Snowy River, Lake Glenmaggie, Mitchell River, Lake Tyers, Lakes Entrance, Mitta Mitta River, Tambo River, Mallacoota Inlet, Lake Eildon, Goulburn River, Lake Dartmouth, Mitta Mitta River, Lake Buffalo, Buffalo River, Lake William Hovell and King River.

A summary of common watercraft activities relevant to the assessment area is provided below.

Kayaking, canoeing and paddling

Kayaking and canoeing offer an alternative means to explore nature and allow access to remote and scenic waterways. Due to their size and weight, these small vessels can access narrow and shallow watercourses, as well as areas often inaccessible to larger boats, which allows for greater exploration of riparian environments.

In recent years Stand Up Paddleboards (SUPs) have become increasingly popular, particularly in calm waters such as lakes, reservoirs, estuaries and sheltered coastal areas. Several paddle trails are located within the assessment area, many of which can be explored from online guides available via platforms such as Global Paddler.

Tubing is typically undertaken in slow-moving rivers, where users float downstream with the current and enjoy the surrounding environment. Tubing typically occurs in areas with established river access, such as camping or picnic grounds.

Boating and motorised watercrafts

Boating is a very popular recreational activity in the region and is often undertaken with other popular activities such as fishing, water-skiing, wakeboarding and jet skiing. While boating and motorised watercrafts are most popular along the Gippsland coastline, these activities also occur in many inland lakes.

Peak seasons

Most paddling and boating activities generally occur from September to April. The summer months from December to February are the most popular season due to warm temperatures and the holiday periods. Spring is also becoming increasingly popular as the weather warms and stabilises. White water enthusiast particularly enjoy spring due to increased water levels from spring rains and rising temperatures that lead to snow melt. Autumn offers great boating and paddling conditions, but with fewer crowds. Winter is the least popular due to colder water and weather conditions, which reduce participation.

Four-wheel driving

Four-wheel driving is a popular recreational activity in the assessment area, which offers some of the best-known off-road terrain in Australia. Tracks span diverse landscapes, from alpine mountains and remote valleys to coasts, rainforests, rivers and plains, and cater to a broad range of drivers, from novices to seasoned adventurers. Four-wheel drive users can be broadly grouped into 4 key types:

- ‘Real’ four-wheel drivers: enthusiastic, self-reliant adventurers who love camping and being immersed in nature.
- Nature adventurers: younger drivers seeking remote locations and whose primary aim is to have fun.
- Affordable discoverers: mostly aged over 55 who have four-wheel drives for safety and stability and not for going four-wheel driving. They prefer nature and cultural activities and stay in low-cost accommodation.
- Comfort travellers: Have four-wheel drives for safety, they avoid camping and favour roofed accommodation and creature comforts offered in towns.

Many four-wheel drive routes are purpose built with several notable self-guided back country tours that highlight the regions natural, cultural and historic values. Some important routes are listed below but many more tracks are located across state forests: [31,]

- Aberfeldy Backroads Tour – the route runs though the historic goldfields north from Walhalla and provides rugged mountain views. It is one of the largest colonial history touring routes in the southern hemisphere.
- High Country Backroads Tour – a remote and scenic alpine drive through Victoria’s high country.
- Far East Gippsland Backcountry Tour – the route explores the remote forests of East Gippsland

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[31]. Four Wheel Drive Victoria (2021). *Your Complete Guide To Four Wheel Driving. Discover Four Wheel Driving. A guide to recreational four wheel driving*. Ed Brian Tanner—2nd edn.

- Upper Goulburn Four-wheel Drive Tour – travels through state forests and features mountain views and historic sites associated with the gold mining era
- Davies Plain Drive – remote and challenging alpine terrain, featuring steep climbs, river crossings and panoramic views of the Victorian Alps
- Wonnangatta Drive – offers a remote high country experience through alpine valleys and historic sites.

Notwithstanding the development of touring routes and an abundance of tracks after decades of timber harvesting, the remoteness of East Gippsland from population centres appears to limit the actual extent of four-wheel driving there. In comparison, there is much heavier use of the areas in and around the alps and in the forests around the closest access points and major roads from towns (large and small) in the northeast and further west in Gippsland. Four-wheel drivers in these forests are coming from those regions and from further west (notably Melbourne).

Many four-wheel drivers combine four-wheel driving with other recreational activities such as camping, hunting, fishing, kayaking and bushwalking, especially where dogs are permitted. Recreational patterns are usually seasonal, with peak periods occurring between November to June. Tracks are often closed from June to November to protect them from wet-season damage. This helps to maintain access for summer as well as fire management operations.

Compliance and management issues

Despite seasonal road closures several environmental and management issues remain and have been noted by relevant land managers. This includes illegal off-track driving which leads to soil disturbance, deep wheel ruts, bog holes and sediment runoff into waterways. Damage to the forest floor can also contribute to carbon release from soils. Following the end of public land native forest logging, there is a reduced capacity for track maintenance which had previously been done for timber harvesting. With population increase and more affordable vehicles on the market, the access to and participation in four-wheel driving has grown among a broader range of demographics, which has further raised compliance issues.

Trail bike riding

Many people participate in trail bike riding throughout the region, which offers diverse terrain and an extensive network of forest roads and tracks for a variety of skill levels. Trail bike riding allows riders the ability to explore state forests, discover remote camping and fishing locations, and enjoy scenic views; trail biking provides a unique way to experience the landscape, particularly in areas where larger vehicles cannot travel.

In northeast Victoria popular trail bike riding areas include Yackandandah State Forest (Big Ben Foothills), Delatite Arm Reserve, and Mansfield State Forest – land managers report that the Eildon and Delatite areas are reportedly more popular than the nearby alpine regions.

In Gippsland, the Dargo trail bike precinct – featuring Nicholson River Track, Merrijig Track and Destination Dargo – is popular with riders and, further east, trail riders explore remote and scenic forest areas around Nowa Nowa, Orbost, Cann River and Bendoc according to information provided by DEECA.

Trail bike events in the region, such as the Sawmill Rally near Mansfield, attract both recreational and competitive riders. These event and designated visitor areas help focus riding activity in appropriate and permissible locations.

Compliance and management issues

Trail bike riders are required to have a valid motorcycle licence or learner permit, and all motorcycles must be fully registered. As with all public roads, it is illegal to ride unregistered bikes in state forests, and all riders must comply with Victorian road rules when using forest roads or vehicle tracks.

Riding off designated routes, including on natural terrain, in streams, or along informal single tracks, is prohibited. Seasonal road closures are also in place in many areas to protect the environment and user safety. Despite these regulations, land managers report that informal and illegal 'single tracks' are widespread through the region's state forests. The full extent of this unauthorised network remains unknown, however creation of these illegal track causes both environmental and safety concerns, and highlights an unmet demand for single-track trail bike experiences in the assessment area.

Trail bike riders often share public land with other forest users such as bushwalkers, mountain bikers, campers, hunters and horse riders. Shared use increases the potential for conflict and accidents, particularly where trail bikes and four-wheel drive vehicles intersect. Additionally, riders sometimes ignore departmental operational signage during forest management activities such as planned burns, creating serious risk.

The emergence of mini-bikes in state forests is another growing issue, particularly through state forest campsites, and is often associated with unlicensed and underage riders operating unregistered vehicles sometimes close to other forest users.

Recreational hunting

Victoria offers diverse hunting opportunities in both state forests and some parks, providing recreational users access to remote bush areas. The hunting of game and pest species is permitted in state forests, although restrictions apply in certain locations. A current Game Licence is required to hunt declared game species, while recreational pest animal hunting generally does not require a licence. However, registration of interest is required to hunt pest animals on Crown land in some circumstances. Traditional Owners are exempt from requiring a game licence if they are acting in accordance with a Natural Resource Agreement. Recreational hunters in Victoria target species such as deer, game birds including duck and quail, and pest animals such as feral pigs, rabbits, hares, goats, and red foxes. In 2024, a total of 58,611 people were licensed to hunt game in Victoria.[1] A map of permissible hunting area relevant to the current assessment area is provided in figure 3.13a and b.

Recreational hunters in Victoria can generally be grouped into two broad categories: local hunters, who live near and hunt within their local area, and tourism hunters, who travel from other regions or pay others to facilitate their hunting experience.[2] Large numbers of licence holders are based in and around Traralgon, Bairnsdale and Wangaratta (figure 3.14). Hunters are generally male (approximately 95%), aged between 28 and 57, employed full-time, and earn a higher income than the average Victorian.[3][4] In 2019, hunters took an average of 6 trips per annum, with many also engaging in complementary recreational activities such as four-wheel driving, camping, and fishing. Recent surveys indicate that hunters are motivated by a desire to spend time in places special to them and to enjoy the outdoors.[5] Many hunters also hunt for the challenge, tradition, social and cultural connection and to contribute to pest animal management. According to the Game Management Authority (GMA), there has also been a noticeable shift in recent years from trophy hunting towards hunting for meat.[6]

Figure 3.13a Permissible hunting areas in principle on public land

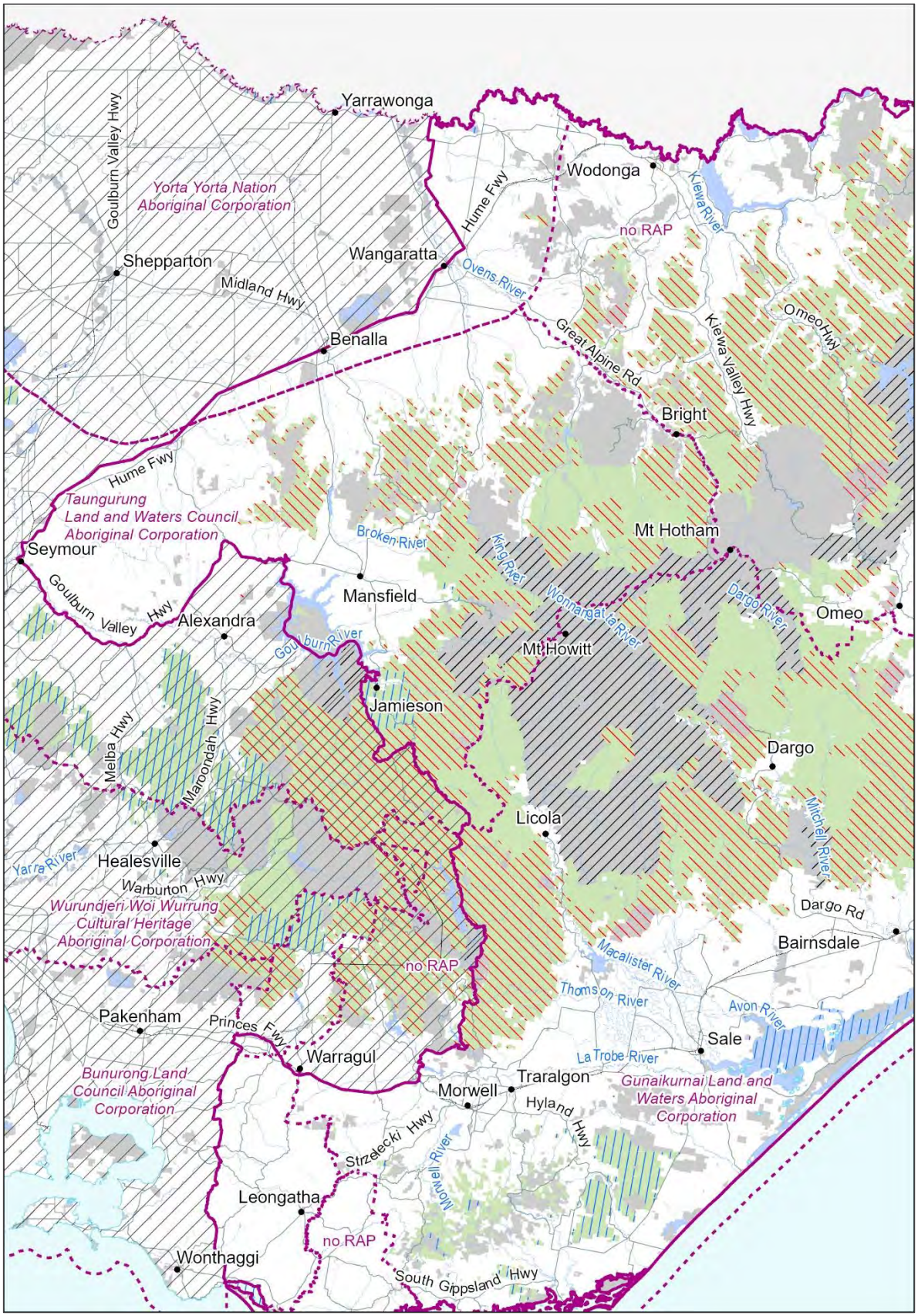


Figure 3.13b Permissible hunting areas in principle on public land

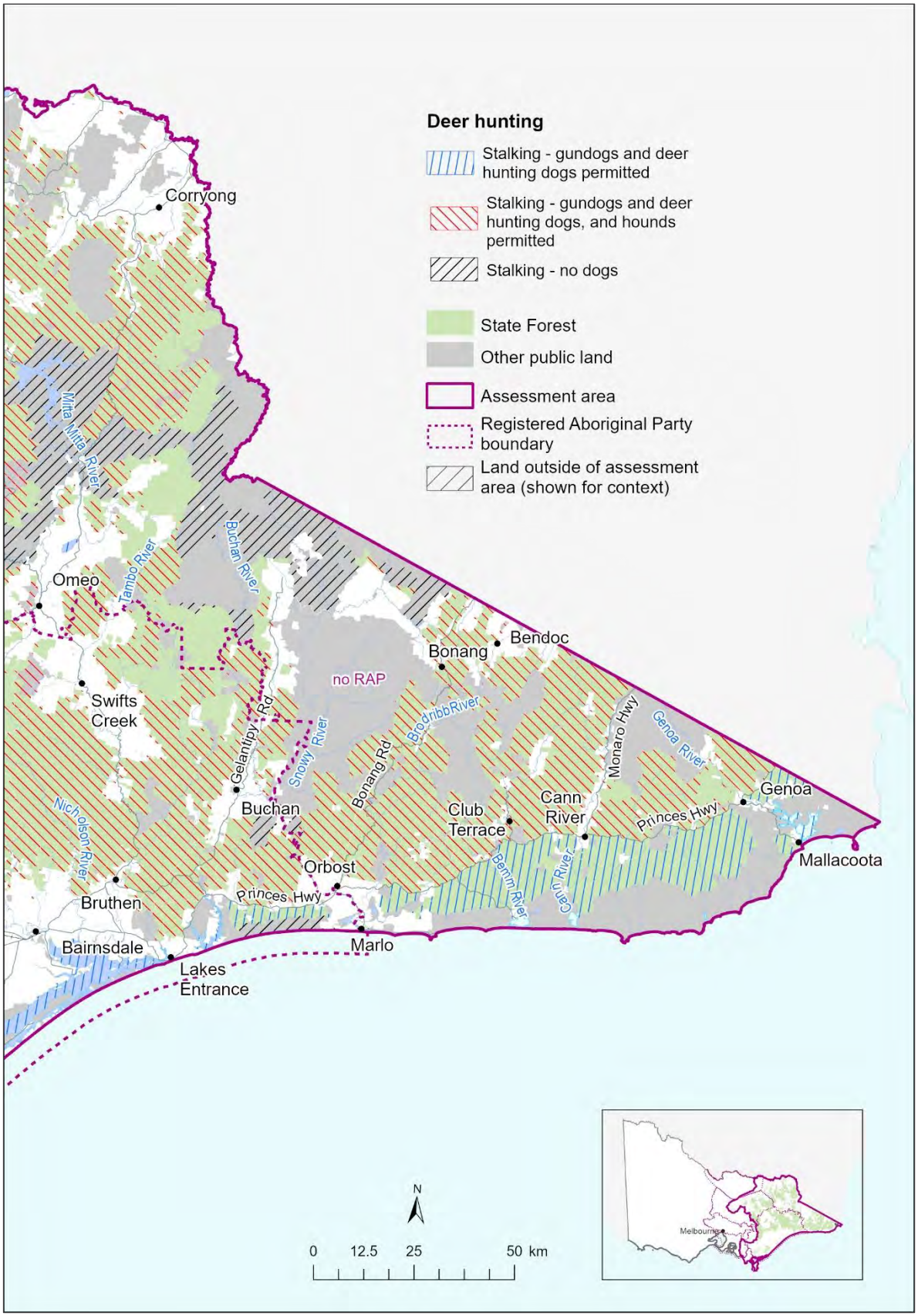


Figure 3.14 Victorian hunters by postcode as at 30 June 2024

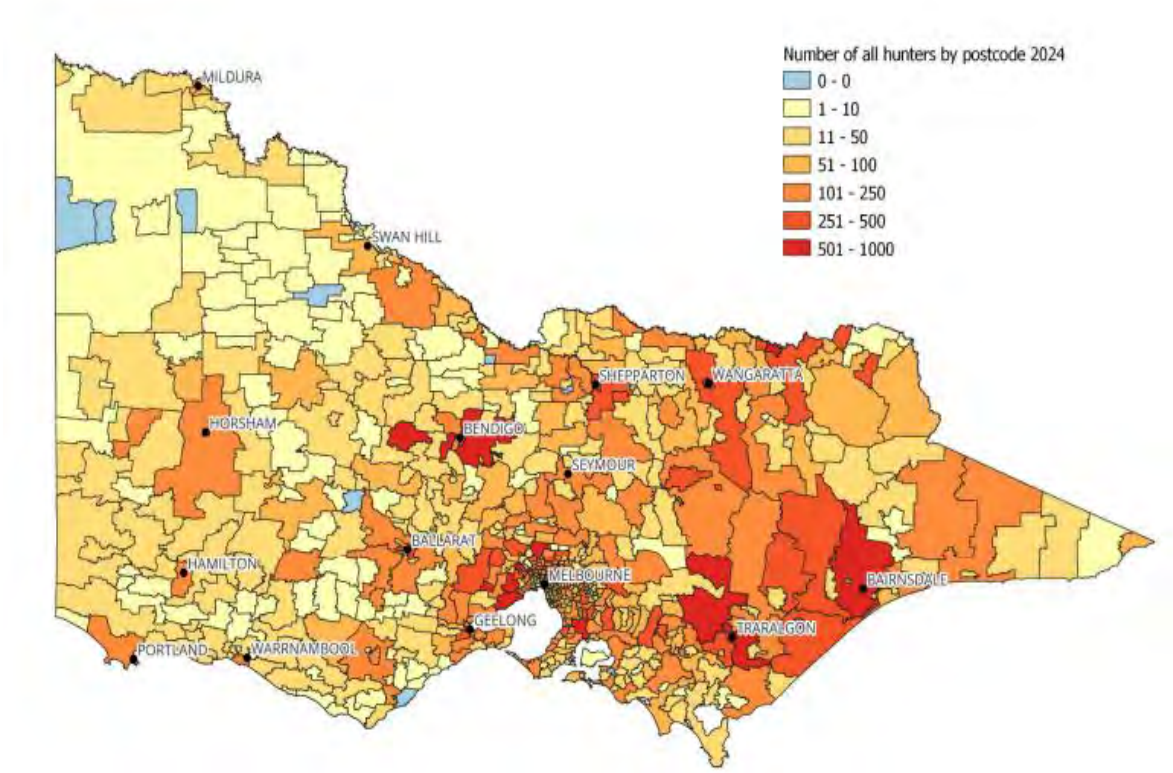


Image source: GMA (2024). Game licence statistics. Summary report 2024.

Permitted hunting methods in Victoria include the use of firearms, bows or crossbows, and certain dog breeds to locate, flush, trail, or retrieve game. The target hunting species in the assessment area are discussed below.

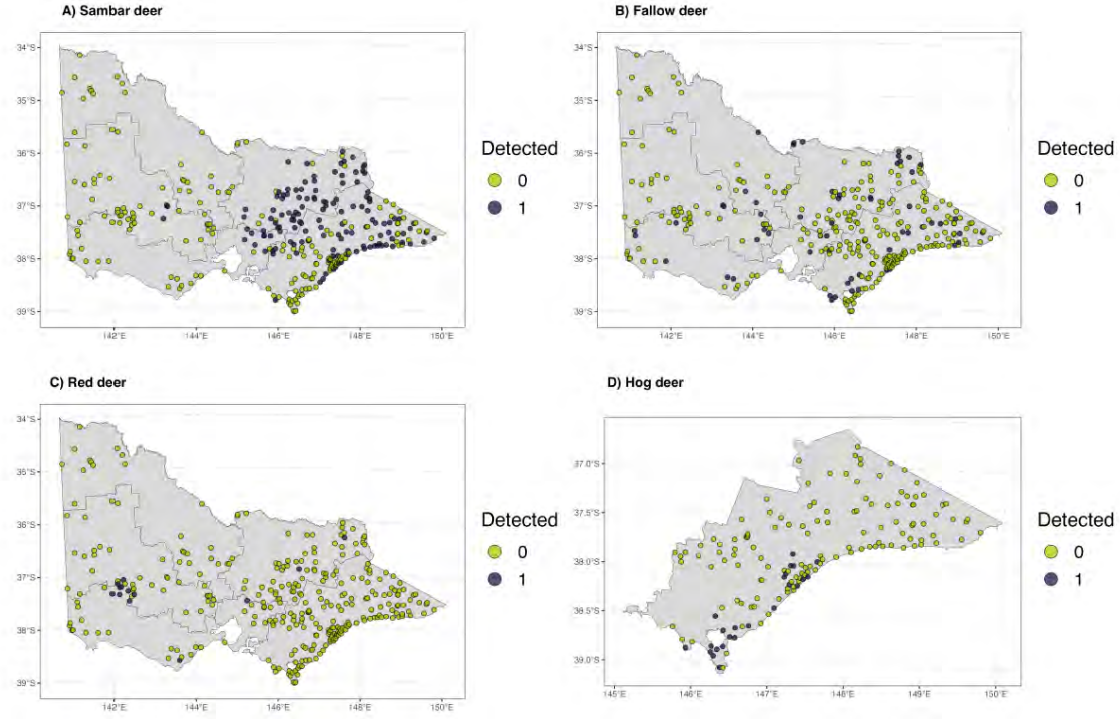
Deer are the most commonly hunted game in the assessment area, particularly from autumn to mid-spring. As of 2024, 55% of game licence holders were endorsed to hunt deer only (i.e., not duck and quail).1 In 2023, the estimated total deer harvest was 137,090 deer.[32] In the same year, it was estimated that 13,600 deer were harvested using hounds. The most harvested species was sambar deer, followed by fallow deer and red deer. Although no survey respondents reported harvesting hog deer in 2023, 185 were officially reported as harvested that year.

Sambar occur widely across the alps, with remote areas of state forest along the Great Dividing Range being popular hunting locations. They are found throughout the region down to the coast, where they are reportedly pushing hog deer out of coastal areas in south and east Gippsland. GMA has also noted range expansion in both fallow and red deer populations in recent years, with red deer – initially only in and near the Grampians – now found in numbers at least as far east as Mansfield. Figure 3.15 shows the recorded detection location of deer species across Victoria.[33]

32. Moloney, P.D. and Flesch, J.S. (2024) Estimates of the 2023 deer harvest in Victoria: results from surveys of Victorian Game Licence holders in 2023. The Game Management Authority. Department of Energy, Environment and Climate Action, Melbourne, Victoria.

33. Cally, J.G. and Ramsey, D.S.L. (2023) *Abundance of deer in Victoria: Regional and statewide estimates of deer density and their impact on vegetation*. Arthur Rylah Institute for Environmental Research Technical Report Series No. 368. Department of Energy, Environment and Climate Action, Heidelberg, Victoria.

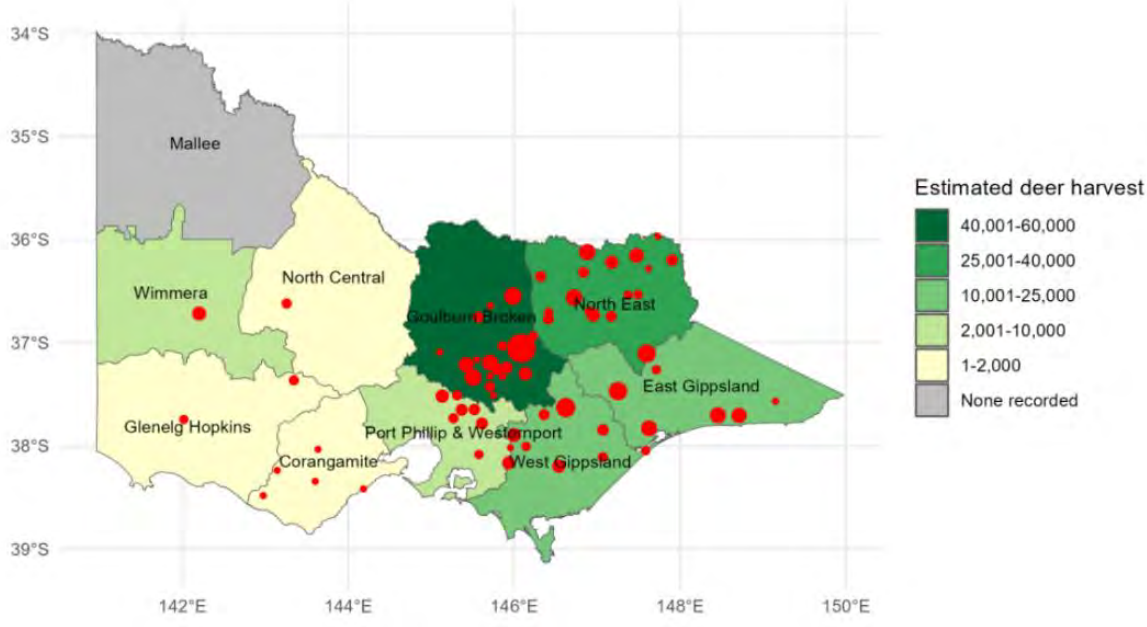
Figure 3.15 Detections of deer species recorded across Victoria



Source: Cally and Ramsey (2023).

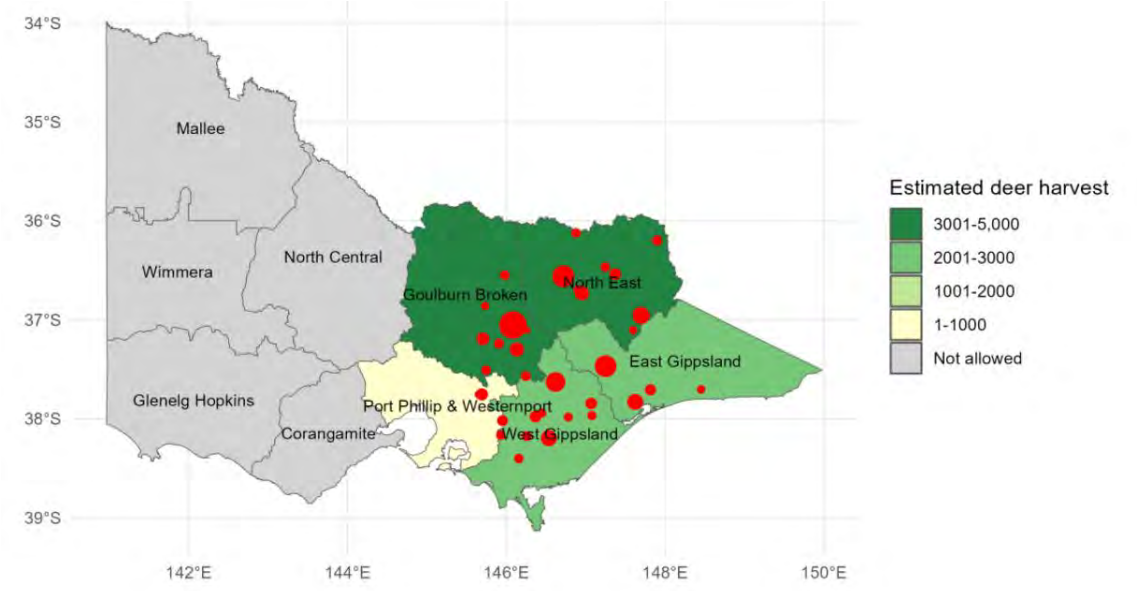
Stalking without dogs is the most common hunting method on public land. In 2023, the 5 towns with the highest total reported deer harvests were, in descending order: Mansfield, Licola, Dargo, Omeo, and Benalla (figure 3.16). For deer harvested using hounds, the top five towns were Mansfield, Myrtleford, Dargo, Licola, and Benambra (figure 3.17). Hunting parties typically consist of 6 to 10 people and may camp for a single night or for up to a week as part of a hunting trip.

Figure 3.16 Estimates of total deer harvest in 2023 by CMA region



Red circles indicate the nearest town to harvest locations, with symbol size proportional to reported harvest. Source: Moloney and Flesch (2024).

Figure 3.17 Estimates of total deer harvest using scent-trailing hounds in 2023 by CMA region



Red circles indicate the nearest town to harvest locations, with symbol size proportional to reported harvest. Source: Moloney and Flesch (2024).

Popular deer hunting events in the region include the Wild Deer Hunting and Outdoors Expo in Lardner Park, south of Warragul. Game bird hunting, especially duck hunting, is mostly done in wetlands or game reserves – opportunities for duck and quail hunting in state forests are limited. However, a small extent of state forest in the assessment area abuts Lake Eildon, where duck hunting is permitted in some areas and under certain seasonal conditions. Pest animal hunting – including foxes, rabbits, goats and, especially, pigs – also occurs across the assessment area. Hunting makes a significant contribution to the Victorian economy. In 2019, the local government areas with the highest reported gross economic contributions from hunting were Mansfield ($12 million), East Gippsland ($11 million), and Latrobe ($11 million). Deer hunting accounted for the largest share of this economic activity, contributing an estimated $201 million to Gross State Product (GSP). DEECA estimates the total contribution from game animal hunting (excluding pest animal hunting) at $287 million in GSP. Recreational hunting in Victoria is subject to a range of differing views. Concerns have been raised about alleged instances of pest species being deliberately released into state forests to enhance hunting opportunities, and about the ecological impacts of expanding deer populations on native fauna and ecosystems. Conversely, recreational hunting is also seen by some as playing a constructive role in the control of deer and other pest animals, and in the broader management of introduced game species. In addition, challenges have been reported with the accuracy of GMA maps for permissible hunting areas – such as private driveways being incorrectly shown as public roads – which can lead to conflict with other forest users and private landholders. There is also potential for tension between hunters and other recreational users of public land, particularly in relation to the use or visibility of firearms in or near shared spaces.

3.7. Nature Appreciation

Nature appreciation can be done everywhere regardless of land type or tenure, all that is required is some sort of natural environment. It can be done in a backyard, and it can also be done in state forests and national parks. Nature appreciation is dependent primarily on being attentive and aware of surroundings when spending time in nature. It is a way to practice paying attention. One practice is called ‘Forest Bathing’ and can be offered as a guided experience. Going for a walk in nature will have physical health benefits, but without noticing birds, looking at trees or listening to the natural

sounds, the full experience may not be attained. With an increased pace of life people seek to use nature to de-stress, do nature-based meditation or being present in the moment. There are specific activities that are linked to nature appreciation such as enjoying waterfalls, appreciating views from lookouts, experiencing natural sounds such as bird calls and flowing water. These activities are also often practised at a slow pace. Other activities undertaken include birdwatching, photography, and orchid and rainforest appreciation. There are many places in the eastern forests where these activities can take place.

3.8. Events and other activities

For a number of recreational activities in state forests, specific events are an important component of the activity overall; examples include:

- Car rallies
- Trail running races
- Horse riding endurance events
- Several different mountain bike competitions
- Rogaining and orienteering events
- Trail bike rallies

The role of specific events in their respective recreational activities varies greatly. The actual car rallies, for example, are virtually the only aspect of car rallying on public land. This is because, for safety reasons, the type of driving involved requires exclusive use of forest tracks, so practising on public roads is limited. Near the other end of the spectrum, for example, for trail running only the actual events require track closures and these comprise a small part of the total time and spatial extent of public land used by people training for the events, let alone those who have no engagement at all with the events and just enjoy non-competitive trail running.

Events in different activities share characteristics that distinguish them from less formal versions of their respective activities; events are more likely to:

- be competitive
- attract spectators and support teams
- be planned months or even years in advance
- attract publicity
- raise the profile of region where they occur
- predictably attract large numbers of visitors, to the benefit of local businesses
- be part of statewide, national or even international competitive series
- generate significant local or regional economic benefits.

Several of these characteristics are also shared with various festivals held in or near towns in the assessment area. While proximity to state forests or other public land is sometimes a beneficial component of these festivals, rarely is it as necessary as it is for the events listed above.

There are many other recreational activities that occur in state forests less conspicuously or in a limited number of specific places.

Cross-country skiing mostly takes place in the Alpine National Park and alpine resorts, a notable exception is around Mount Stirling which has tracks through state forest. Cross country skiing, along

with less formal snow play (including tobogganing) can take place anywhere that has sufficient snow, such as the Tea Tree Range State Forest and Gibbo State Forest.

As well as larger events, rogaining and orienteering occur in state forest and other public land less formally, including low-key competitions organised by clubs and associations in various places.

Action and adventure sports are undertaken at suitable locations. Buchan and surrounds is a notable place for rock climbing and caving in state forest, and there is a number of suitable spots for paragliding and hang-gliding places in areas around Bright and south of Wangaratta.

3.9. Earth resources

The assessment area contains valuable mineral and extractive resources that are important for regional industries and state economic development, with substantial potential for future development. Mining and quarrying have a long history in the region with operations producing gold, silver, platinum, tin, tungsten, base metals (e.g., copper, zinc), aluminium (bauxite) and coal. There are established existing deposits of these resources, with significant prospectivity remaining. There is also significant prospectivity for existing and emerging strategic or critical minerals (e.g., lithium, caesium and tantalum) now considered critical minerals or strategic materials at the national level,[1] for their likely role in underpinning the clean energy transition.

Quarrying for rock such as granite, basalt, limestone, hornfels, sand and gravel to produce materials for public and private construction projects has also occurred within the assessment area and continues. This section provides details on the historical and current mining and quarrying activities of the region, as well as the potential for future mineral and extractive resources.

Historic exploration and mining activity (1860–1966)

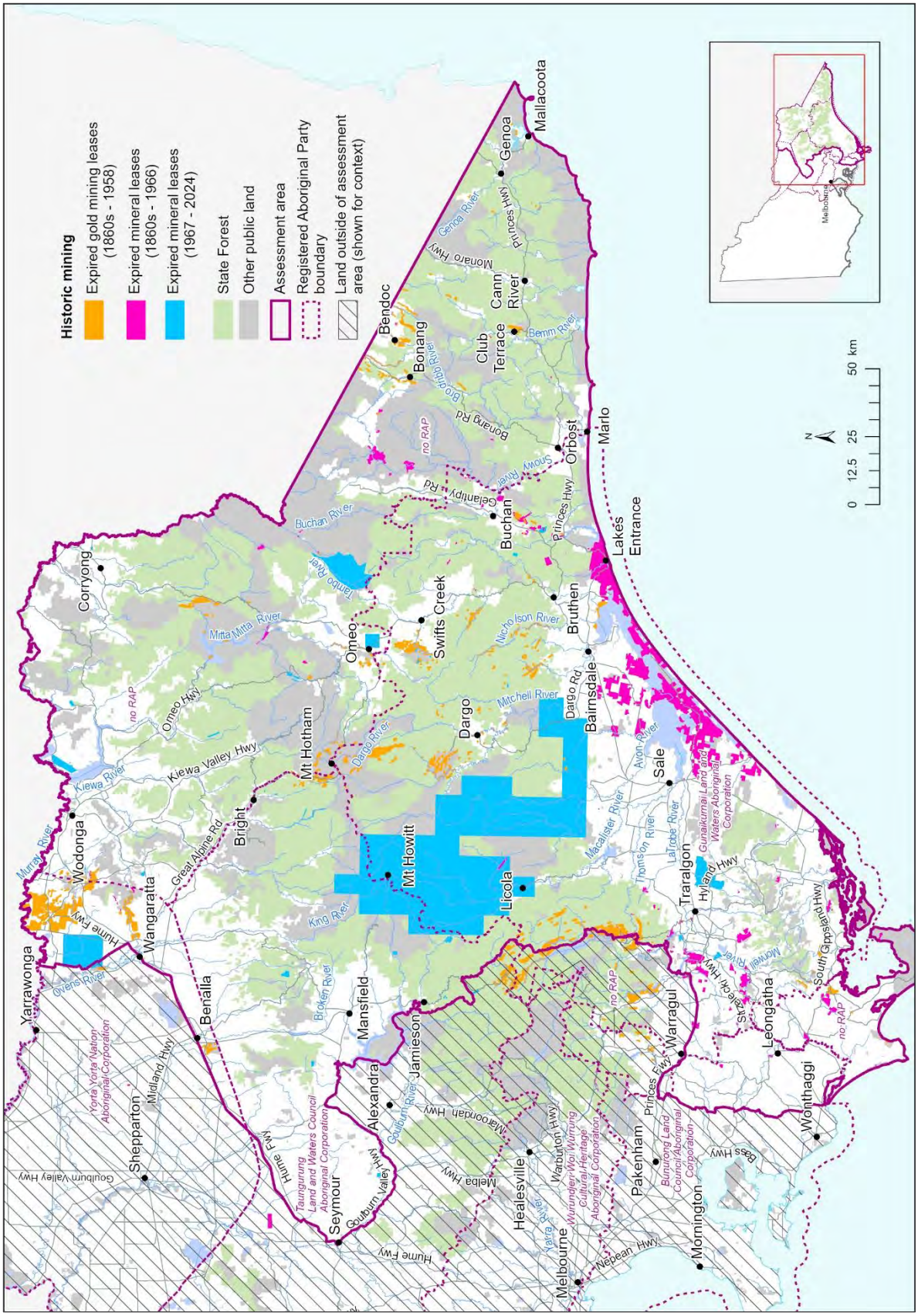
Mining in eastern Victoria during the 19th and 20th centuries played a key role in the region's development, with gold rushes of the mid-19th century driving settlement and use of forest resources (see also chapter 3.5). While gold was the primary focus, other minerals such as silver, platinum, coal, tin and tungsten were also extracted, contributing to the region's broader resource industry.

Historic mining activity in Gippsland is concentrated in several key areas (figure 3.18). Expired gold leases (1860s–1958)[2] are found along the Jamieson to Walhalla corridor, with additional clusters located from near Dargo northwest towards Bright, south of Omeo, and in the vicinity of Mitta Mitta, Mount Wills and Granite Flat. The Gippsland coastline, stretching from Sale to Lakes Entrance, also contains numerous expired mineral leases from this era.

In East Gippsland, historic gold mining is less prominent, however there are notable concentrations of historic gold mining around Bendoc and Club Terrace, along with other expired leases northwest of Bonang and south of Buchan (figure 3.18)

Mapped historic mining leases in the North East RFA area are limited, with isolated gold leases near Mount Hotham and Benalla, along with additional scatters of mineral leases northeast of Wangaratta (figure 3.18).

Figure 3.18 Historic mining in the assessment area



Recent exploration, mining and extractives activity (1967–2024)

In the past 50 years, there has been extensive exploration and mining activity across eastern Victoria. Gold exploration and mining continued within historically explored areas, and mining of additional commodities such as base metals (including copper, iron, zinc and lead), critical minerals (tin and tungsten), extractives and coal commenced (3.18). Mining practices during this period saw a general shift away from above-ground mining across broad areas to sparsely distributed, small footprint underground operations.

Gold

Gold mining leases granted between 1967 and 2014 overlap historical gold mining areas, including Howqua Hills, Jamieson, Woods Point, Gaffneys Creek, Aberfeldy and Walhalla in the Gippsland region. Significant clusters of former mining leases also occur in a northwest to southeast trend from Rutherglen to Nowa Nowa, encompassing Myrtleford, Bright, Mount Wills, Omeo, Swifts Creek and Cassilis. Other noteworthy clusters include leases in the Bethanga and Tallangallook areas. Many of these deposits were also mined for silver, platinum and copper.

Base metals

Exploration and mining of base metals is concentrated in several key areas. Notable features include the broad expired mining leases which cover large portions of Gippsland southeast of Mount Buller. Leases from this area were granted in the mid-1970s for base metal exploration, with a focus on copper, lead and zinc.

In the eastern part of Gippsland, base metal exploration and mining licences were granted around the Omeo area, with prominent leases shown to the east and southwest of Benambra. Licences were also granted in the historic Mount Wills area, in the far northeast of the state, and near Deddick Valley to the east.

Notably, in the 1960s a mining licence for the Nowa Nowa iron ore deposit was approved, diversifying Victorian resource exports.

Tin and Tungsten

Historical tin and tungsten mining continued through the 1960s and 1970s, concentrated in the Mount Murphy area in the northeast of the state, which includes the largest tungsten deposit currently known in Victoria.

Extractives

In the southern portion of Gippsland, clay, sand and gravel extraction for construction products occurred near many of the towns within the southern portion of the region, including Maffra, Traralgon, Fish Creek, Leongatha, and areas south of Warragul. Within this area, extraction of limestone and basalt were common.

On the state's southern coastline in East Gippsland, clusters of extractives licences were granted in an eastern trend from Longford to Cann River. Hard-rock construction materials such as granite, limestone and hornfels were extracted from these regions, as well as sands and gravel.

Limestone and its metamorphic counterpart marble were also extracted in the Buchan region in East Gippsland, a region famous for its limestone caves. To the east of Buchan, a larger extractives licence was granted near Nurran, also for the extraction of marble.

In the Omeo area, metamorphic rocks such as schist and marble were extracted, with large leases granted over the Benambra area quarried for granite.

Extraction in the northeast region of Victoria includes sand and gravel extraction near Mount Beauty, and quarrying of granite, basalt, schist, sand and gravel near Mount Mitta Mitta on the New South Wales-Victorian border. To the west, sand and gravel is prominent in Wodonga and surrounds, as well as Beechworth, Myrtleford, Glenrowan and Benalla. Extraction of granite was also common in some of these regions.

Kaolin and industrial materials

In the Gippsland area, kaolin mining occurred in areas east of Walhalla, including Heyfield. In the northeast of the state mining leases were granted for kaolin extraction in areas surrounding Euroa. Industrial minerals such as feldspar were mined in Beechworth, a region known for endowment in a range of precious gems including diamonds.

Coal

The Latrobe Valley contains extensive, readily extracted brown coal (lignite) resources which have been used for power generation that underpinned Victoria's economic development from the 1920s. However, burning these coals produce significant CO_2 emissions. Victoria is transitioning out of brown coal use in response to climate change. There is potential to produce ammonia from brown coal, and to produce valuable products such as magnesium through reprocessing the large stockpiles of wastes from historical energy production. The older Strzelecki Group geology of this region contains significant black coal measures (mined historically at places such as Leongatha and Wonthaggi, prior to the transition to the Latrobe Valley deposits). In the southern portion of the Gippsland region, smaller leases cover areas to the east, west and southeast of Traralgon. These account for more recent (2005–2006) black and brown coal extraction.

Current activity

Mining licences

Mining for specific minerals requires a mining licence, which gives the licence holder the sole right to extract minerals, owned by the Crown, covered by the licence, as well as further exploration for minerals and the construction of mining infrastructure related to the mining operation. There are 12 current mining licences in the assessment area, 6 of which are in state forests (table 3.6, figure 3.19a, figure 3.19b). These operations predominantly focus on coal and gold, but also include platinum, silver, copper, lead, zinc and other minerals such as crystals and gypsum.

Among the operations in state forests, the largest is the Stockman Base Metals Project, an advanced development project in East Gippsland, covering an area of over 4,000 ha. The planned underground mining operation will focus on zinc, copper, gold and silver production (table 3.6). The site includes the former Benambra Mine (figure 3.19b), with plans to reopen the former Wilga Mine, and develop the nearby Currawong deposit. The Wilga deposit is one of only five significant copper deposits in eastern Victoria, alongside Bethanga, Thomson River (near Walhalla), Accommodation Creek (near Deddick) and recently identified resources alongside Stavely and near Ararat in western Victoria.[5] Wilga and Currawong are volcanic-hosted massive sulphide deposits, which are noted for their high concentrations of zinc and copper, both on Australia's critical minerals and strategic materials list. The remaining 5 mines in state forests are smaller in size with target minerals including base metals (e.g., copper, lead, zinc), gold, crystals and gypsum (table 3.6).

Although located outside of state forests, the largest mining operations in the region (the Yallourn Coal Mine in Moe and the Loy Yang Coal Mine in Traralgon), are important to note for regional context. The Latrobe Valley has one of the largest coal deposits in the world, containing almost 90% of Australia's brown coal reserves, with high concentrations near Moe, Morwell and Traralgon.[6] While the traditional use of these deposits (e.g., burning for electrical generation) is winding down and their environmental impacts, i.e., large open cut mines, affect broader landscapes, these mines

have been significant in the regional and state economy. The inherent high water content of the Latrobe Valley brown coal resource makes it suitable for 'coal gasification' which can create feedstock for producing synthetic fuels and fertilisers such as 'blue' hydrogen and ammonia and which may give the brown coal resource enduring value. The planned closure of some of the major legacy power-station mines is part of Victoria's transition from fossil fuels towards cleaner, renewable energy sources in response to climate change.

Table 3.6 Current mining licences in the assessment area

Site name	Licence ID	Mineral type	Location	LGA	Area (ha)
Yallourn Coal Mine	MIN5003	Black coal; brown coal	Moe	Latrobe	5,197
Loy Yang Coal Mine; Loy Yang Mine	MIN5189	Black coal; brown coal	Traralgon	Latrobe	4,584
Stockman Base Metals Project	MIN5523	Base metals; gold; platinum; silver	Benambra	East Gippsland	4,295
Engie Hazelwood Rehabilitation Project; Hazelwood Coal Mine	MIN5004	Black coal; brown coal; coal bed methane; kaolin	Moe	Latrobe	3,151
Driffield Energy Pty Ltd LVZero Project	MIN5526	Black coal; brown coal	Moe	Latrobe	2,340
Stockman Base Metals Project	MIN006642	Base Metals (copper / lead / zinc)	Omeo	East Gippsland	316
Gippsland Gold Project	MIN5561	Gold; platinum; silver	Omeo	East Gippsland	215
Driffield Energy Pty Ltd LVZero Project	MIN5527	Black coal; brown coal	Moe	Latrobe	37
Sambas Gold Mine	MIN5379	Gold	Bogong	Alpine	28
Echidna Mine	MIN4607	Gold	Bairnsdale	East Gippsland	6
Unnamed	MIN4944	Gold	Bogong	Alpine	5
Unnamed	MIN5530	Crystals; gypsum	Euroa	Mansfield	

Figure 3.19a Current mining and exploration licences in the assessment area

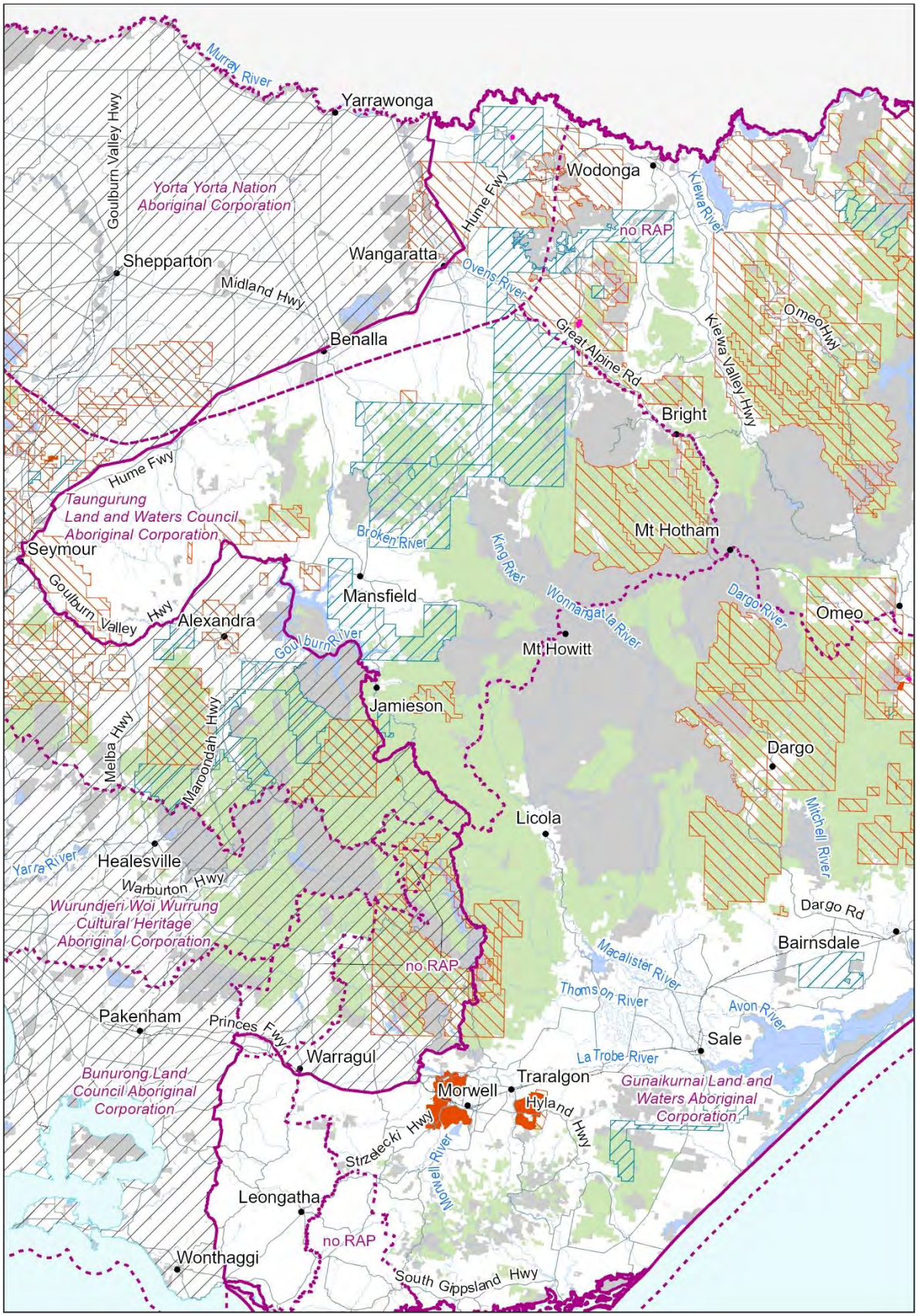
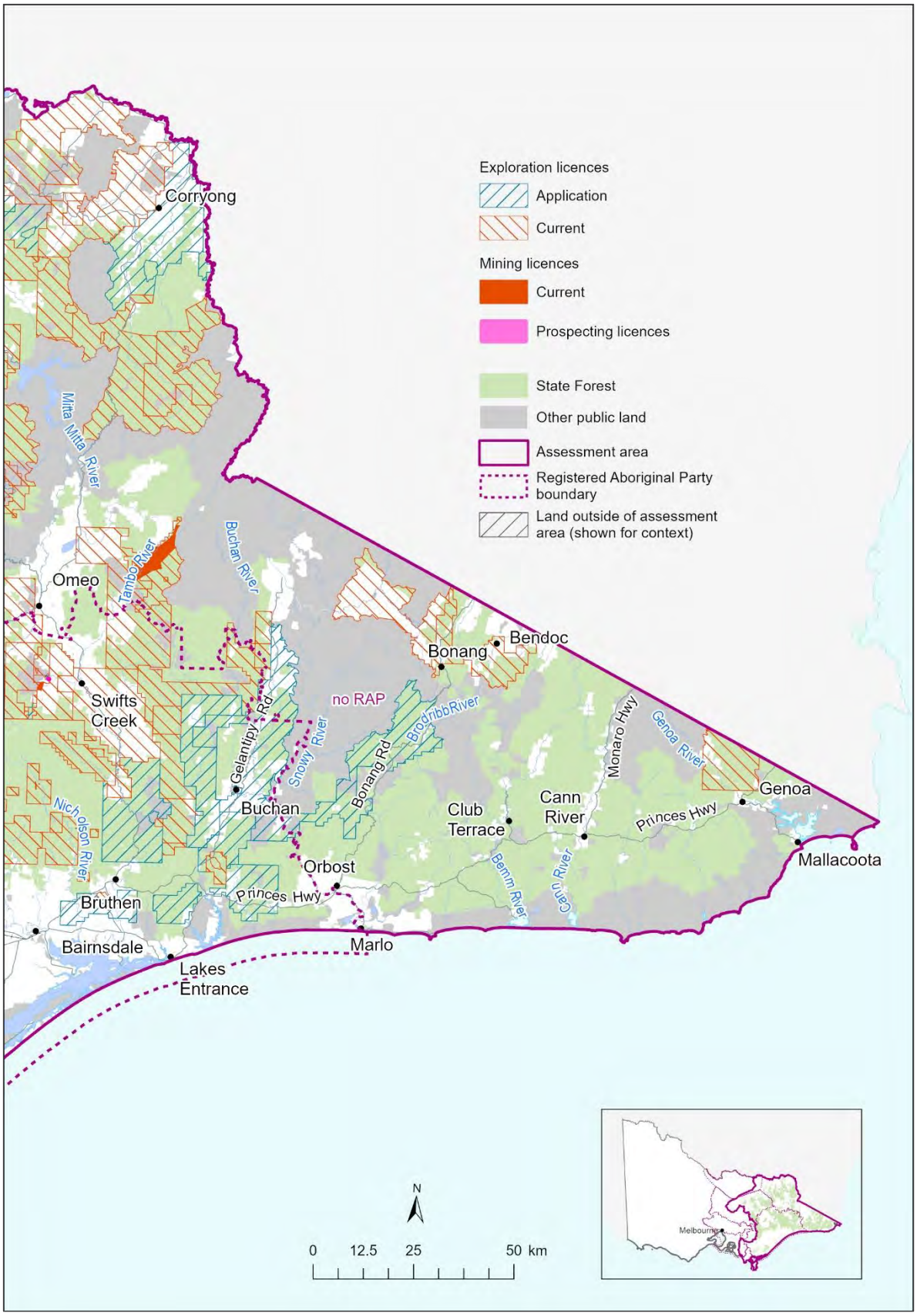


Figure 3.19b Current mining and exploration licences in the assessment area



Mineral exploration licences

Exploration for specific minerals within a designated area requires a mineral exploration licence, giving the licence holder exclusive rights to explore for minerals, owned by the Crown, within the specific licence boundaries. There are 104 exploration licences in the assessment area, either current or under application – 101 of these at least partly cover state forests. These licences are predominantly located within the North East and Gippsland RFA areas (figure 3.19a, figure 3.19b). In East Gippsland, current licences are concentrated around Bonang, Bendoc and Genoa (figure 3.19a, figure 3.19b). Key minerals for exploration currently include precious metals such as gold, silver and platinum, as well as base metals like copper, lead and zinc. A commodity group of emerging significance for Gippsland is those within mineral sands deposits – with a large resource containing zirconium, titanium and rare earth elements identified near Bairnsdale (e.g., the Fingerboards deposit) – all of which are considered critical minerals in Australia and other parts of the world. There is the potential for additional mineral sands deposits of national or even international significance existing within the designated area. Other important minerals targeted include antimony and tin, which are frequently sought for various modern industrial applications. Rare earth elements, along with cobalt and molybdenum, are increasingly targeted due to their importance in the technology and energy sectors. Additionally, minerals such as zircon, copper, nickel, diamonds, lithium, ilmenite, rutile, monazite, and tungsten are also targeted in exploration, as they have diverse uses in manufacturing, electronics and renewable energy industries.

Prospecting licences

A prospecting licence allows the holder to explore or mine up to 5 ha for minerals. While a recreational miner's right only permits small-scale fossicking (chapter 3.6), a prospecting licence confers the right to apply for a mining or retention licence if a mineral resource is identified. There are 6 prospecting licences (5 current and 1 under application) in the assessment area, 4 of them in state forests (table 3.7). Most target gold, but also include platinum, silver and rare earth elements.

Table 3.7 Current prospecting licences in the assessment area

Status	Tenement Number	Mineral	LGA	Area (ha)
Application	PL008312	Gold; platinum; rare earth elements	Indigo	4.92
Current	PL007319	Gold; platinum; silver	East Gippsland	4.66
Current	PL006637	Gold	Wangaratta	3.94
Current	PL006635	Gold	Alpine	3.34
Current	PL006636	Gold	Alpine	3.14
Current	PL006590	Gold	Wangaratta	2.62

Extractive industry work authorities

A work authority (WA) gives quarry operators the right to extract stone, such as sand, gravel and hard rock from land with landholder's consent[34]. WAs are specific for quarries rather than mines. There are 222 WAs across the assessment area, with 39 in state forests (3.20).The largest WAs are in the Wellington, Wangaratta and East Gippsland LGAs, primarily extracting highly sought after sedimentary materials, sand and gravel for products, including those used in public and private construction projects. Other source rocks include limestone, granite, hornfels and basalt (old and new).

[34]. Resources Victoria (2024). *Extractives industry work authority*. https://resources.vic.gov.au/licensing-approvals/extractives-industry-work-authority. Accessed 24 Jan 2025.

Figure 3.20a Current work authorities and extractive industry interest areas in the assessment area

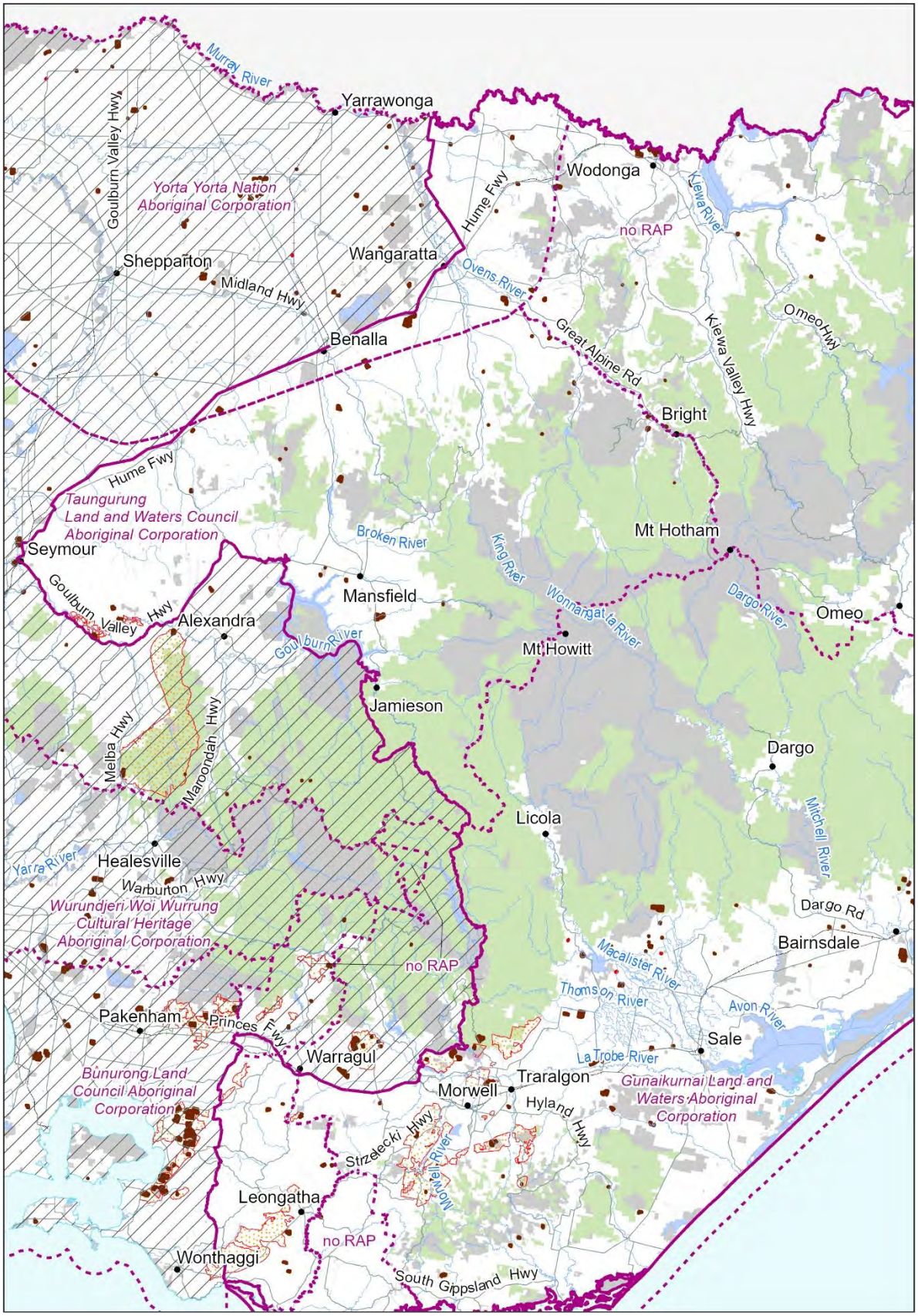
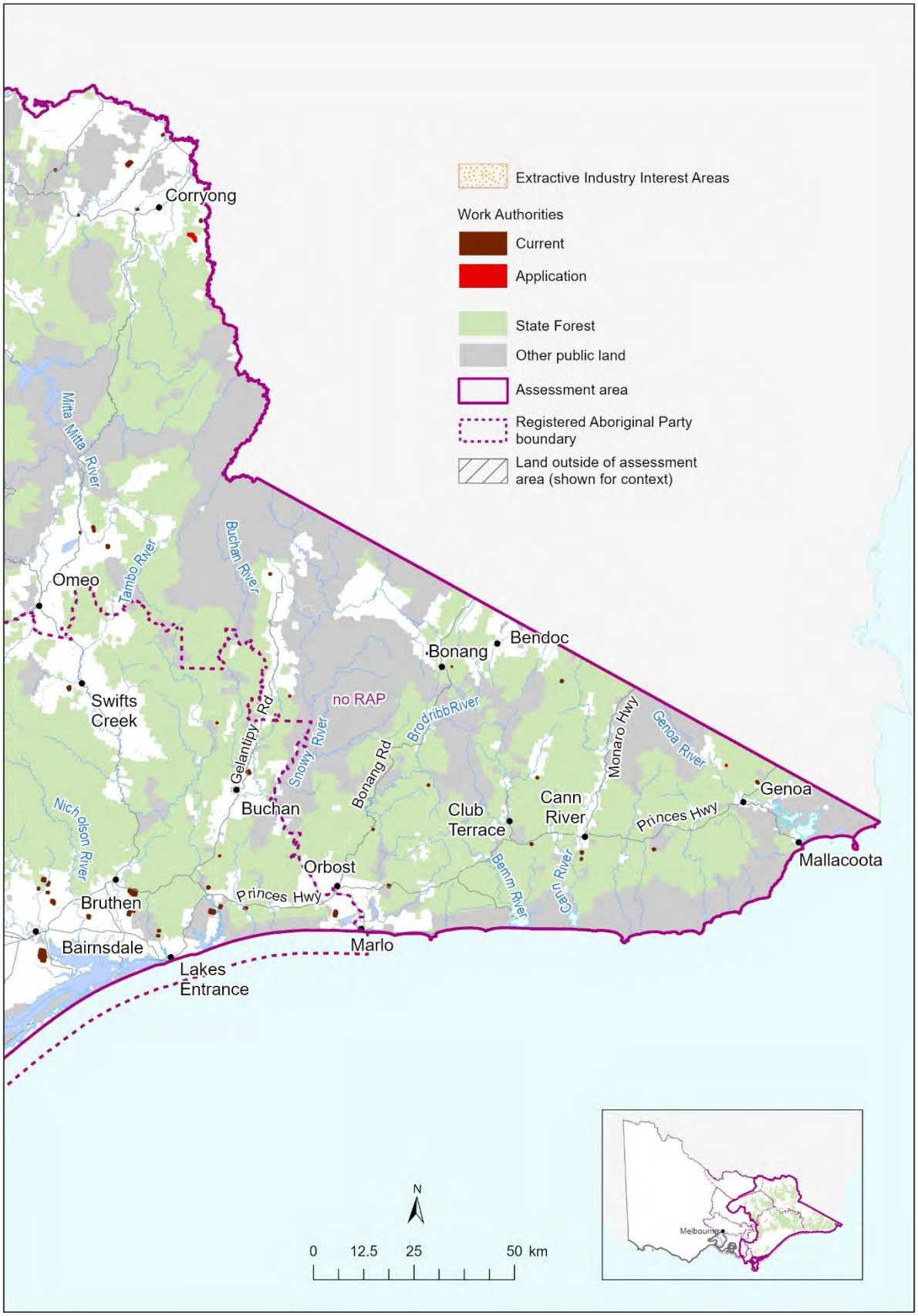


Figure 3.20b Current work authorities and extractive industry interest areas in the assessment area



Extractive industry interest areas

An extractive industry interest area (EIIA) is a designated region containing or potentially containing stone, sand, and clay prospects and/or resources suitable for extraction. These areas are chosen as they have source rock of interest, good transport access and generally lower environmental constraints.

In the assessment area, there are 19 EIIAs, six of which at least partly overlap with state forests, mostly around the Latrobe supply area, with a smaller area north of Traralgon (figure 3.20a, figure 3.20b). The EIIAs in state forests are marginal relative to the overall assessment area.

While EIIAs inform planning decisions, they do not automatically authorise extractive industries and do not represent all of Victoria's stone resources.[35]

Mineral resource potential

The Geological Survey of Victoria (GSV) conducted a customised analysis of the mineral resource potential for VEAC's eastern forests assessment area. The results of the analysis are shown in figure 3.21a and 3.21b, which categorise areas of state forest based on their estimated cumulative value—calculated as estimated volume multiplied by current market price—for copper, gold, lead, mineral sands, silver, tin and zinc.

Critical minerals – such as those required for renewable energy infrastructure including wind turbines, batteries and electric motors – are of increasing economic and strategic value for Victoria and Australia. GSV advised that data on critical minerals is currently limited for most of the assessment area, and as a result they were not included in the analysis. However, it is noted that mineral sands contain some critical minerals, and tungsten is often found with tin in certain mineral deposits.

Several higher value areas are identified in figure 3.21a and b. These include the eastern half of the Walhalla to Jamieson goldfield, which is a large area of variable but generally high value, located between the eastern boundary of the assessment area and the western end of the Alpine National Park, and also south of the Avon Wilderness Park northwest of Maffra. The goldfield extends well west of the assessment area, as documented in VEAC's 2023 Central Highlands Interim Report.

Another large high value area is in the upper Murray region, encompassing almost all state forest from the Kiewa River east and north to the Murray River and south to the Alpine National Park.

A relatively large area between Lakes Entrance and Cann River includes some areas of moderate value in the centre of the block, separating areas of high value at the west and east ends—between Nowa Nowa and Orbost (west end), south of the Princes Highway from west of Club Terrace to a little east of Cann River (east end).

Additional high value areas include smaller, isolated blocks south and east of Beechworth.

Areas of lowest value are located between Mallacoota and the eastern boundary of Errinundra National Park; across a wide band of country extending from well northwest of Dargo to almost Bairnsdale in the southeast; and in the King and Buffalo river valleys, located west of Mount Buffalo.

The remaining large areas of state forest shown in figure 3.21a and 3.21b are either generally of moderate value or have not been assessed.

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35. DTP (2023). Extractive Industry and Resources. https://www.planning.vic.gov.au/__data/assets/pdf_file/0021/654303/PPN89-Extractive-Resources-November-2023.pdf. Accessed 24 Jan 2025.

Figure 3.21a Estimated cumulative mineral value based on current market price for state forests in the assessment area

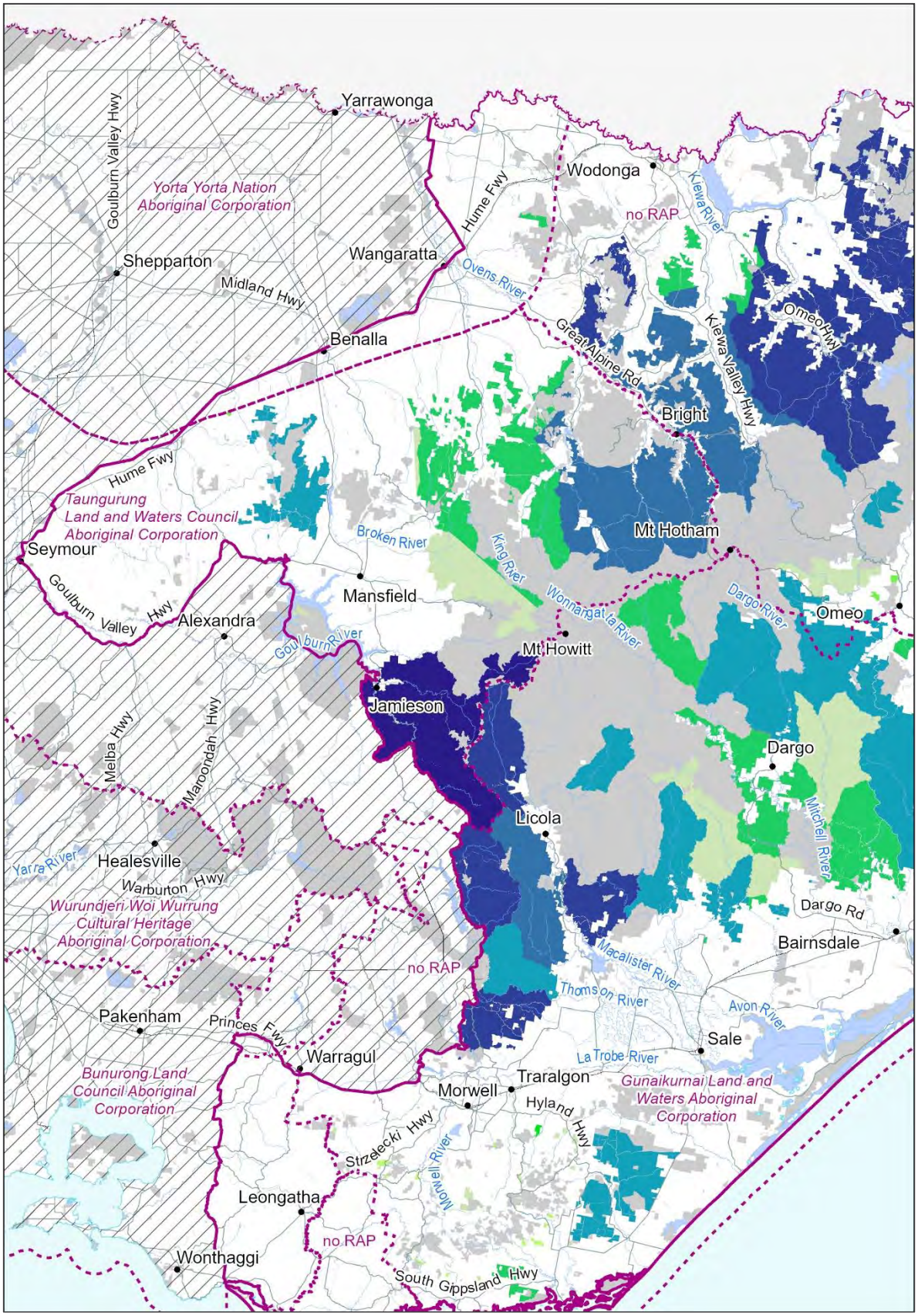
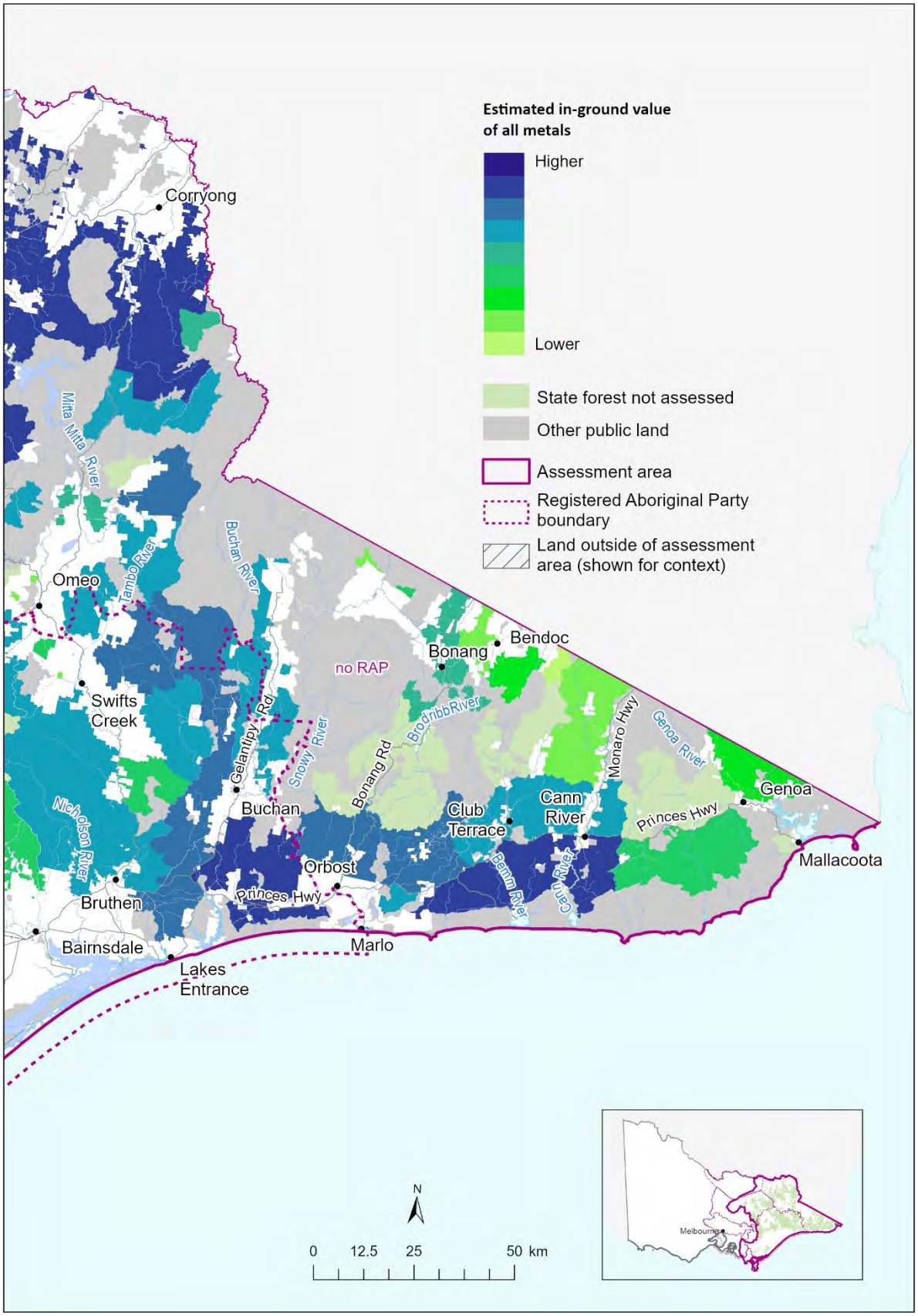


Figure 3.21b Estimated cumulative mineral value based on current market price for state forests in the assessment area



3.10. Other economic values

Wood products

Firewood

In Victorian state forests, firewood harvesting is categorised as either domestic or commercial.

Domestic firewood is for personal use only – it is illegal to sell it or use it for commercial purposes. Only wood already on the ground can be taken and only in designated zones and seasons (spring: 1 September to 30 November; autumn: 1 March to 30 June) – among other conditions.

In order to meet high demand in some areas, collection zones may be designated in places with more abundant fallen wood. In the assessment area, most firewood collection zones are related to planned burning, wind and storm events, cutting of hazardous trees or trees felled to create fire breaks or fire access roads.

These locations are apparent on the map from the spring 2024 season (figure 3.22a and 3.22b) which shows a pattern of linear zones along forest roads as opposed to broader zones extending further into the forest. As well as being the focus of management that generates fallen wood, roadsides also provide easier access favoured by domestic collectors. Forests on the edge of blocks tend to be drier and on less rugged terrain than those deeper into the forest. The wood from drier forests generally burns better for heating and the more open less rugged forests are easier to access and for more of the time.

Finally, a general pattern of higher firewood demand closer to where more people live is somewhat ameliorated by social and economic circumstances – for example, more affluent areas or bigger centres with reticulated gas are likely to have several options for home heating not available to people in more isolated or less affluent areas.

These general patterns – drier forests along roads generally near the edge of state forest blocks – are the key insights from this map. So long as harvesting is managed sustainably, these general areas (as opposed to specific roads or seasons) are likely to continue to be the preferred areas for domestic firewood in the future.

Land managers and compliance officers on the northern side of the ranges consistently report very high and increasing demand for firewood to a greater extent than is reported to the south. Some attribute this to collectors coming from increasingly further away to the northwest (e.g., Shepparton) due to reducing supplies in that area. Increasing energy costs are also likely to be increasing pressure on supplies more generally. Greater demand is leading to increased illegal activities such as excessive, out-of-season, and out-of-zone taking of firewood, sale of firewood and cutting of standing trees.

Commercial firewood is harvested by professionals for sale to markets as far away as Melbourne. Historically, Forest Produce Licences have been issued to operators to harvest firewood, much of it as a by-product of sawlog harvesting and silvicultural management of forests (including cutting standing trees). Presumably, the end of public land native timber harvesting has and will continue to significantly reduce these sources of firewood and therefore overall availability.

With reduced supply and no change in, or increasing, demand, firewood is likely to be more difficult to find and more expensive, placing more pressure on the domestic firewood resource and increasing incentives for illegal harvesting. In recent years, the Conservation Regulator and Parks Victoria have run Operation Ironbark – a sustained campaign to combat the illegal firewood trade, theft of firewood, and its effects on public land values.

Both domestic and commercial firewood use is influenced by many dynamic factors well beyond access to public forests including costs and availability of alternative hearting sources, wood smoke pollution controls, transport costs and household energy efficiency.

Besides firewood, there are a number of lower-volume products supplied from state forests such as fence posts, woodchop logs and seed collection. These are also managed through the Forest Produce Licence system but are generally smaller in scale and so potentially less likely to adversely impact ecological or economic outcomes. Seed collection is increasingly critical to support forest restoration, particularly at scale and with increasing large-scale fires.

Figure 3.22a Roads and tracks made available for domestic firewood collection in the autumn 2025 season

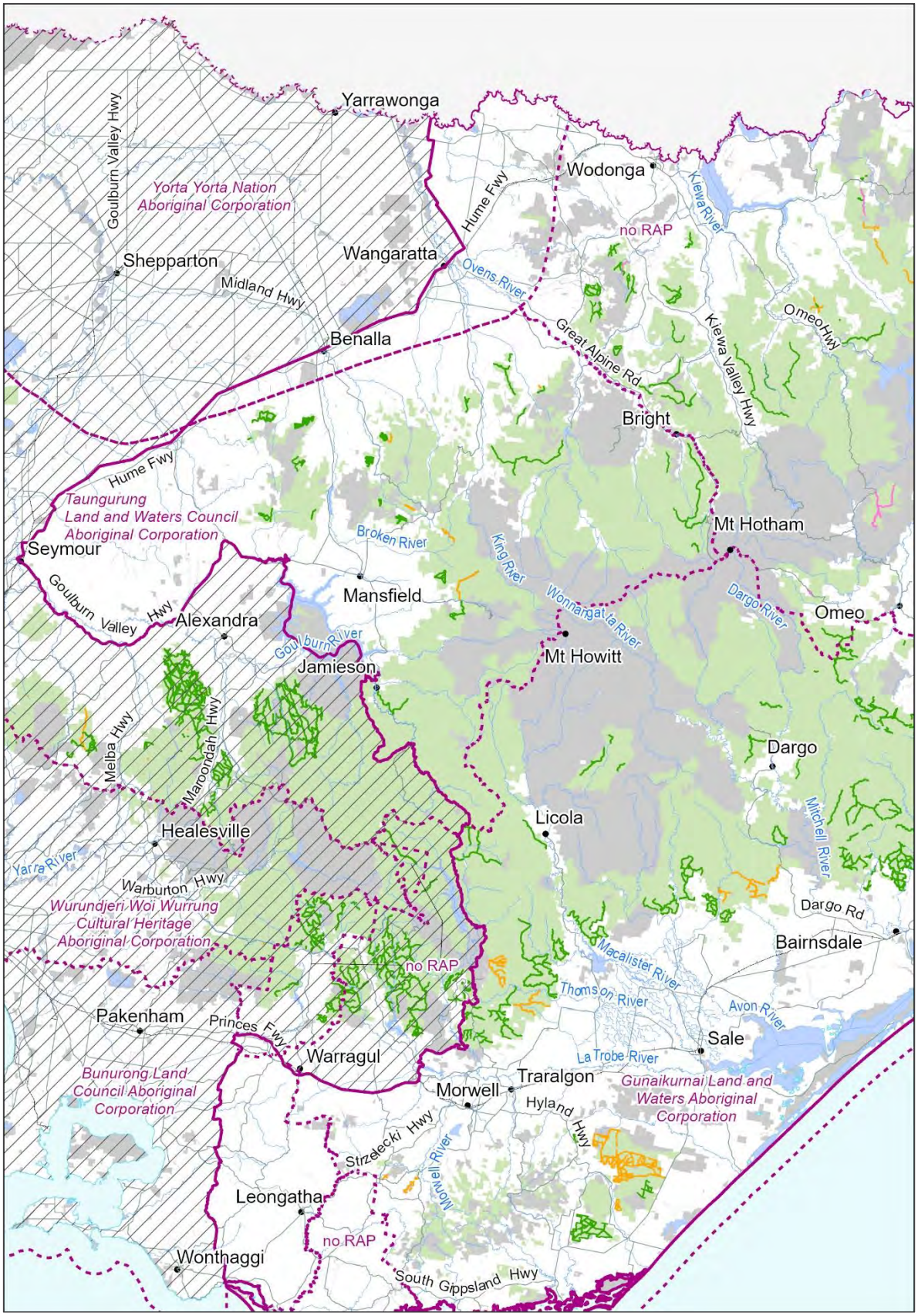
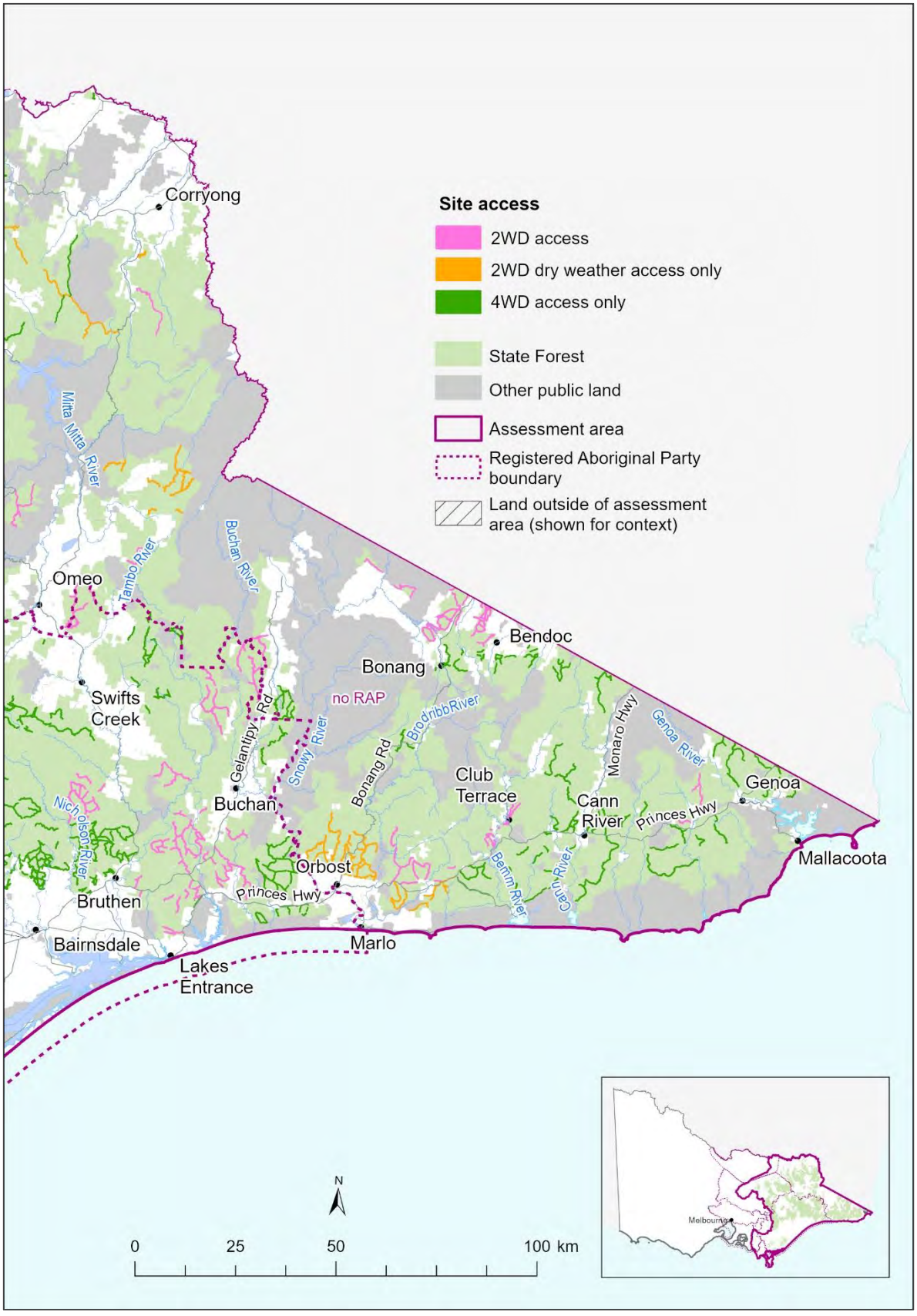


Figure 3.22b Roads and tracks made available for domestic firewood collection in the autumn 2025 season



Timber harvesting

Figure 3.23a and b shows recorded timber harvesting in the assessment area since 1960. Timber harvesting commenced in the 19th century, but the spatial extent was not reliably documented across the state before about 1960, especially in the more remote parts of the assessment area which is also where logging was less intensive than it has been since. The current legal framework for harvesting was created with the *Forests Act 1958*.

The map (figure 3.18a and b) indicates that timber harvesting occurred broadly across the eastern part of the state but was particularly concentrated in some areas such as the Central Highlands and – in the assessment area – East Gippsland, especially on the Errinundra Plateau and its southern and eastern falls. Harvesting was more prevalent in these areas due to the quality and availability of timber there as well as proximity to markets such as Melbourne, the La Trobe Valley and the export woodchip mill near Eden in NSW. Other areas of somewhat more intense logging are to the southwest of Licola and to the east and southwest of Swifts Creek.

Native timber harvesting in Victoria's state forests ended on 1 January 2024, and the responsible management authority VicForests was abolished on 30 June 2024. Between 2000 and 4000 people were directly employed in public land native timber harvesting and associated industries in Victoria. This number consisted of VicForests employees, sawmill workers and contractors. While some of the mills have switched or already sourced most of their wood from other sources, other sawmills were heavily affected by the change. As the sawmills were the largest industry in some towns, several communities were – in the absence of assistance – vulnerable to the likely negative economic impacts of the cessation of public land native timber harvesting. In general, native forest timber harvesting has been in decline for several decades, with associated economic impacts and transitional arrangements at various stages.

Transition packages have been awarded to the timber workers, sawmill operators and contractors through the Forestry Transition Fund. Local Development Strategies and the Community Development Fund are programs to help develop strategies for 11 localities impacted by the end of timber harvesting to support economic transition.

Figure 3.23a Decade of most recent logging across the assessment area

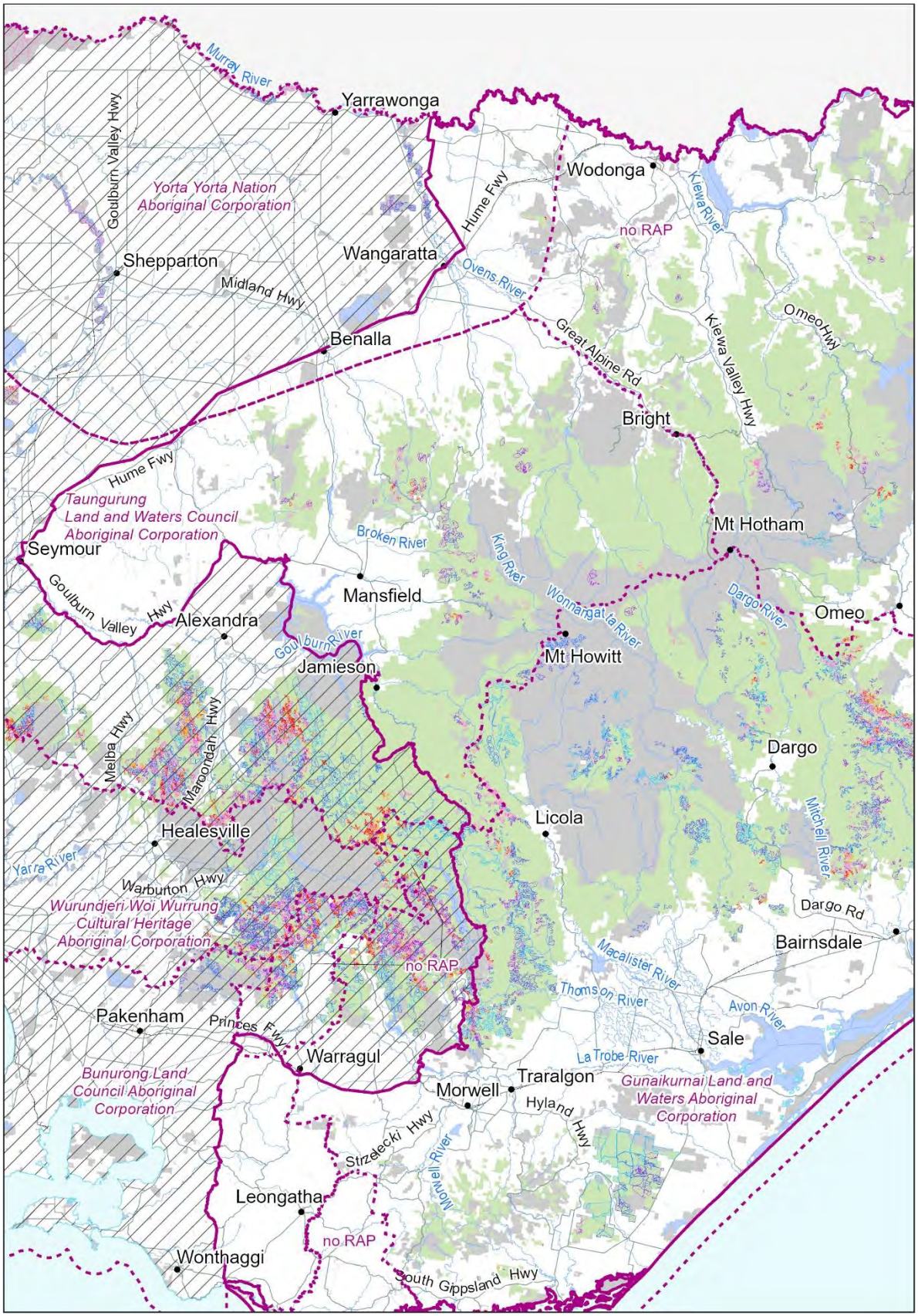
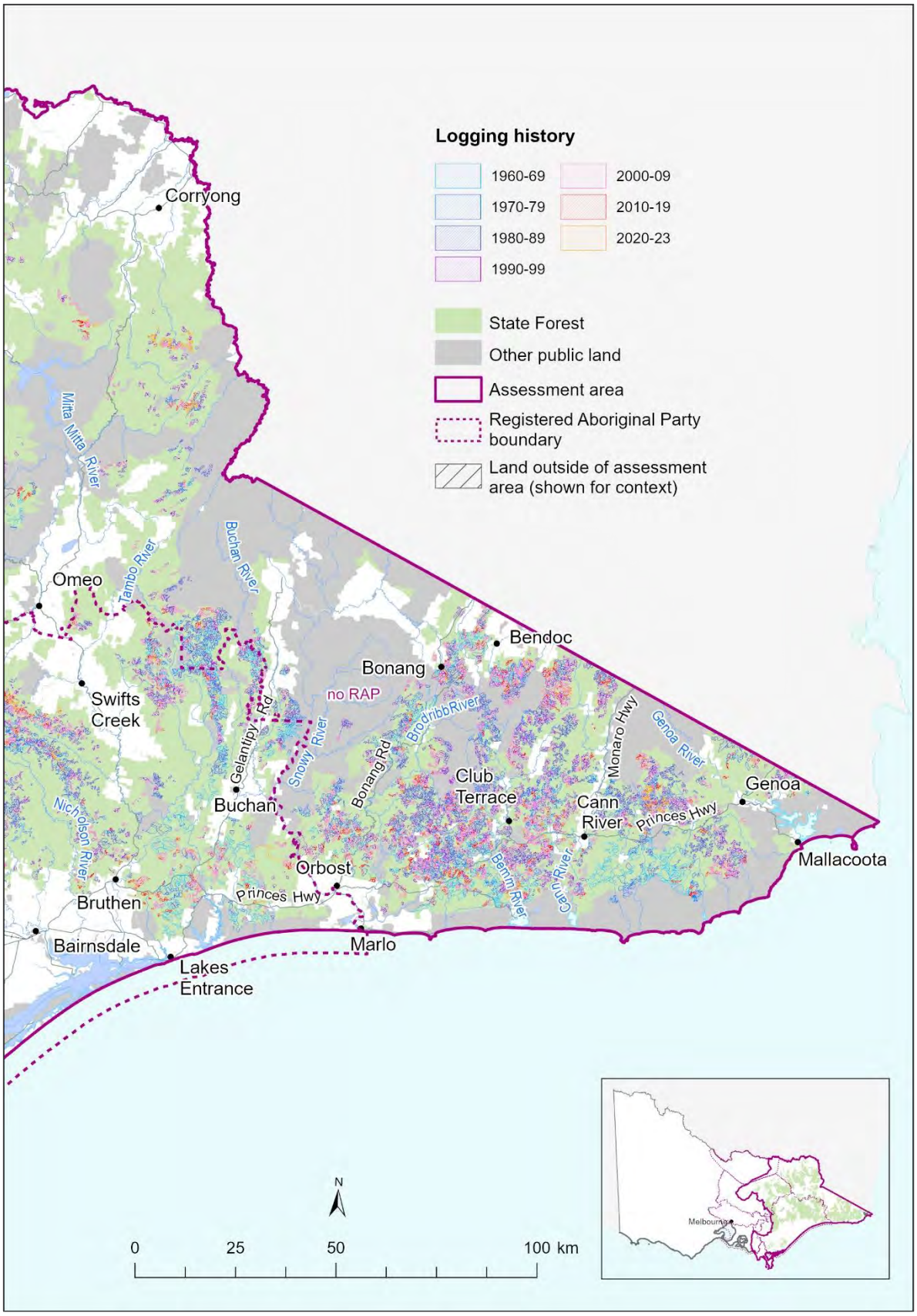


Figure 3.23b Decade of most recent recorded logging across the assessment area



Leases and licenses

Many areas of public land are managed and used through leases and licenses. Leases are for exclusive use whereas licences are for non-exclusive use. Licences are for a specific purpose (for example grazing), but that does not necessarily exclude other users from accessing that land.

Figure 3.24a and b shows the extent of current public land licences over the state forests of the assessment area. By far the largest coverage of state forests – especially in higher elevation areas – is by various types of licences for grazing domestic stock (nearly always sheep and/or cattle). The five different types of grazing licences have slightly different condition and approval processes. The five types mapped are:

- Bush grazing – seasonal (yellow)
- Grazing – alpine (tan)
- Grazing (pale pink)
- Grazing – unused road (dark pink)
- Grazing – water frontage (pale blue)

Grazing – unused road and water frontage are numerous, linear, small and not over state forest although some may be adjacent to state forests and effectively managed as part of the state forest, especially unused roads. These licence areas may be grazed, usually by sheep or cattle.

‘Bush grazing’ and ‘grazing – alpine’ cover large, often remote state forests in rugged country – they are likely to be largely, if not exclusively grazed by cattle.

The third category (just ‘grazing’) has a relatively small number of large remote blocks. Otherwise, there are many ‘medium-sized’ blocks, mostly abutting private land on the northern foothill state forests. Usually these are managed as part of the broader grazing operations on adjoining private land and, where dingoes are rare, will often be grazed by sheep – the drier forests being less able to sustain cattle.

General licences are for non-agricultural purposes, such as gravel extraction, water storage and tourism/recreation (‘Miscellaneous – General’ in figure 3.19). The most common uses in the assessment area are community use (clubs of different types), rubbish depots, conservation and grazing.

The other licences shown in figure 3.19 are: ‘Miscellaneous – pipe’ (for various pipe infrastructure), ‘Utility/commercial’ (for infrastructure related to utilities such as water supply and waste treatment, communications and energy supply).

Figure 3.24a Licences and leases across the state forests in the assessment area

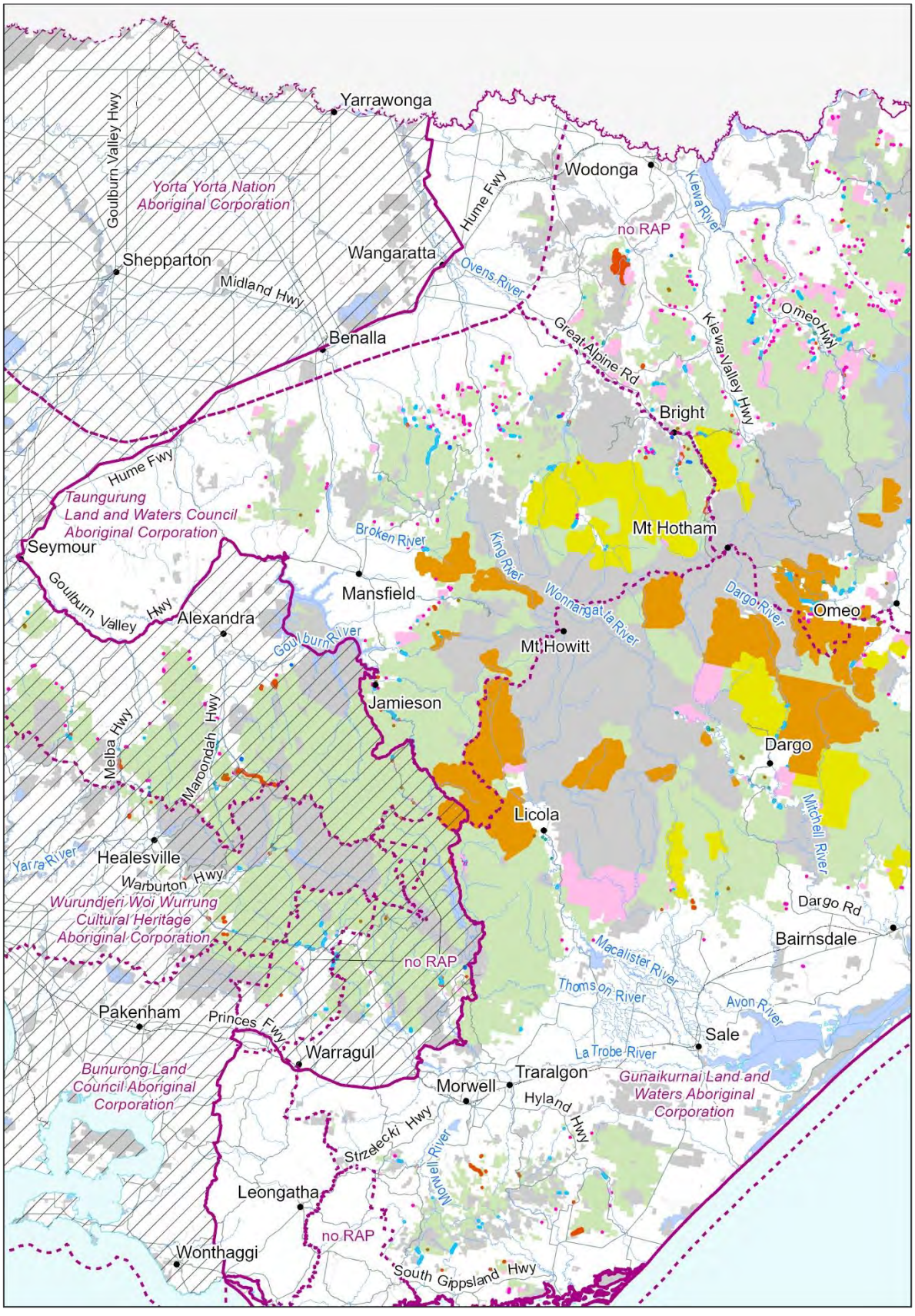
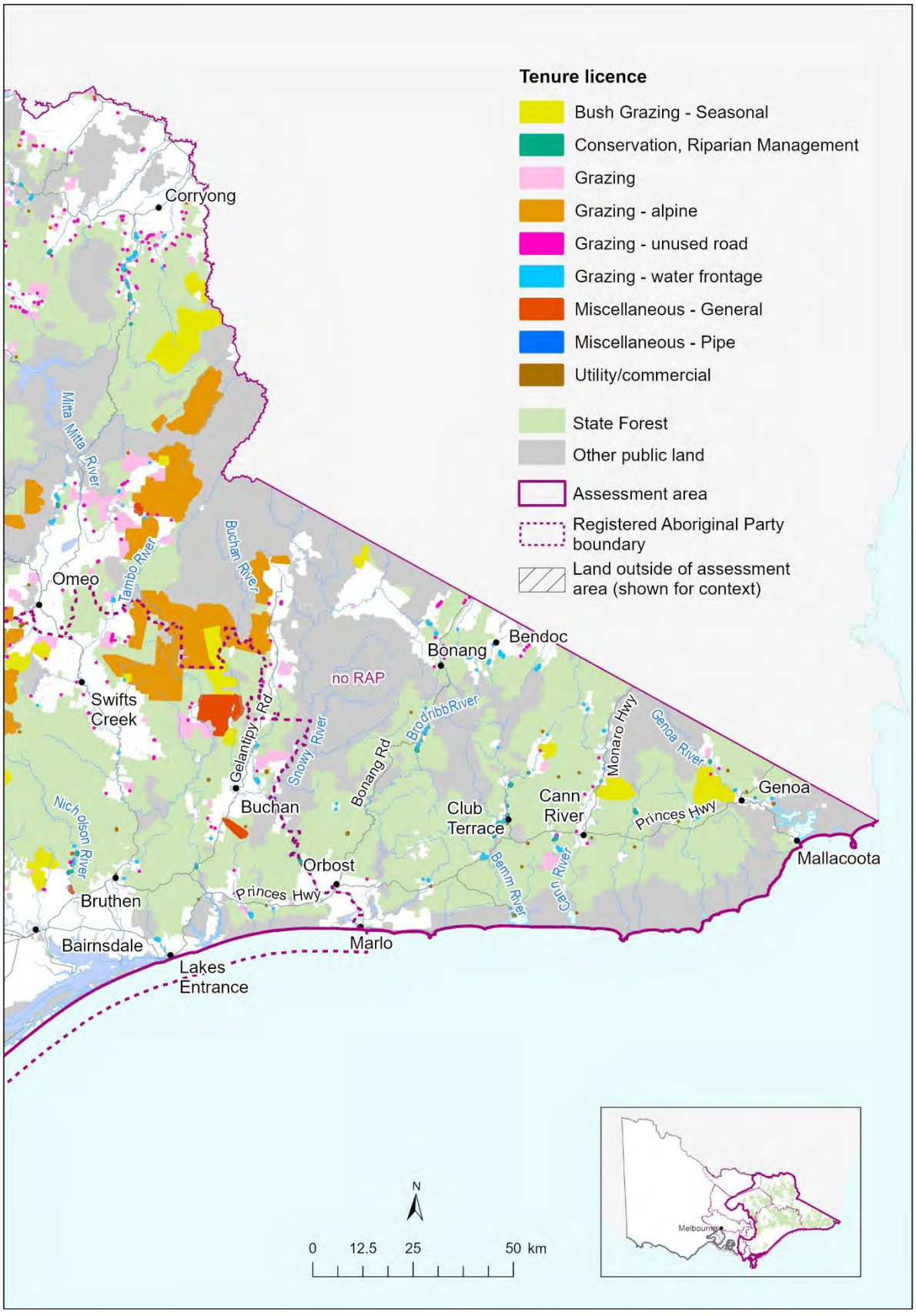


Figure 3.24b Licences and leases across the state forests in the assessment area



Apiculture

State forests and public land provide a food source for domestic (European) honey bees that is crucial to keeping beekeepers' hives alive and healthy between agricultural pollination seasons and to providing a range of products such as honey and beeswax.

There are 4,730 licensed apiary sites in Victoria, 1,315 are in the three RFA areas of the assessment area: 594 in Gippsland, 352 in East Gippsland and 369 in the North East (figure 3.25a and b). In most places, suitable sites for bee keeping have licensed sites which are generally occupied when sufficient plants in the area are flowering

The sites are mostly located close to populated areas and access roads. In general, apiary sites are located close to the Princes Highway in Gippsland, and around Benalla and Wodonga in the North East. There are fewer apiary sites in more mountainous areas which are more difficult to access, colder and have fewer of the eucalypt species preferred by apiarists. On the other hand, sites are densely packed in the highly sought-after areas with a high diversity of preferred nectar-producing plant species – such as the box-ironbark forests near Beechworth and Chiltern (between Wangaratta and Wodonga), and the coastal forests southwest of Sale (Mullungdung State Forest and surrounds) and between Bruthen and Orbost.

Although European honey bees are not a native species and are often invasive with documented negative effects on biodiversity, bee sites are located in almost all public land use categories. In areas of lower demand, sites may be allocated to state forests in the first instance but when demand is higher sites are often located in protected areas – such as Chiltern-Mount Pilot National Park in the aforementioned area between Wangaratta and Wodonga. Therefore, apiculture is not a significant factor in public land use planning or management, with bee sites located in virtually all public land use categories other than reference areas – small remote areas that are technically overlays on actual public land use categories such as state forest.

Figure 3.25a Licensed bee sites in and around the assessment area

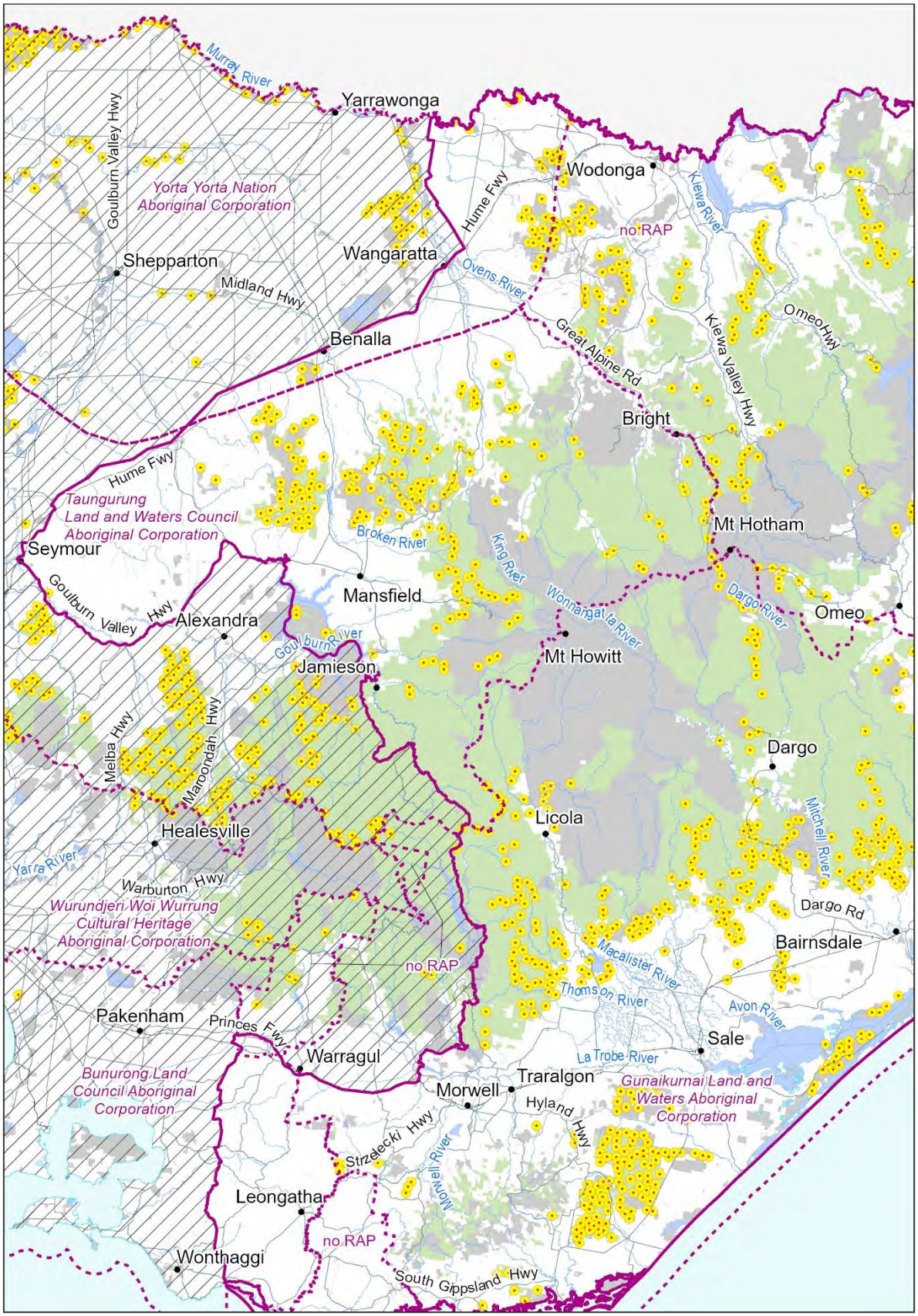
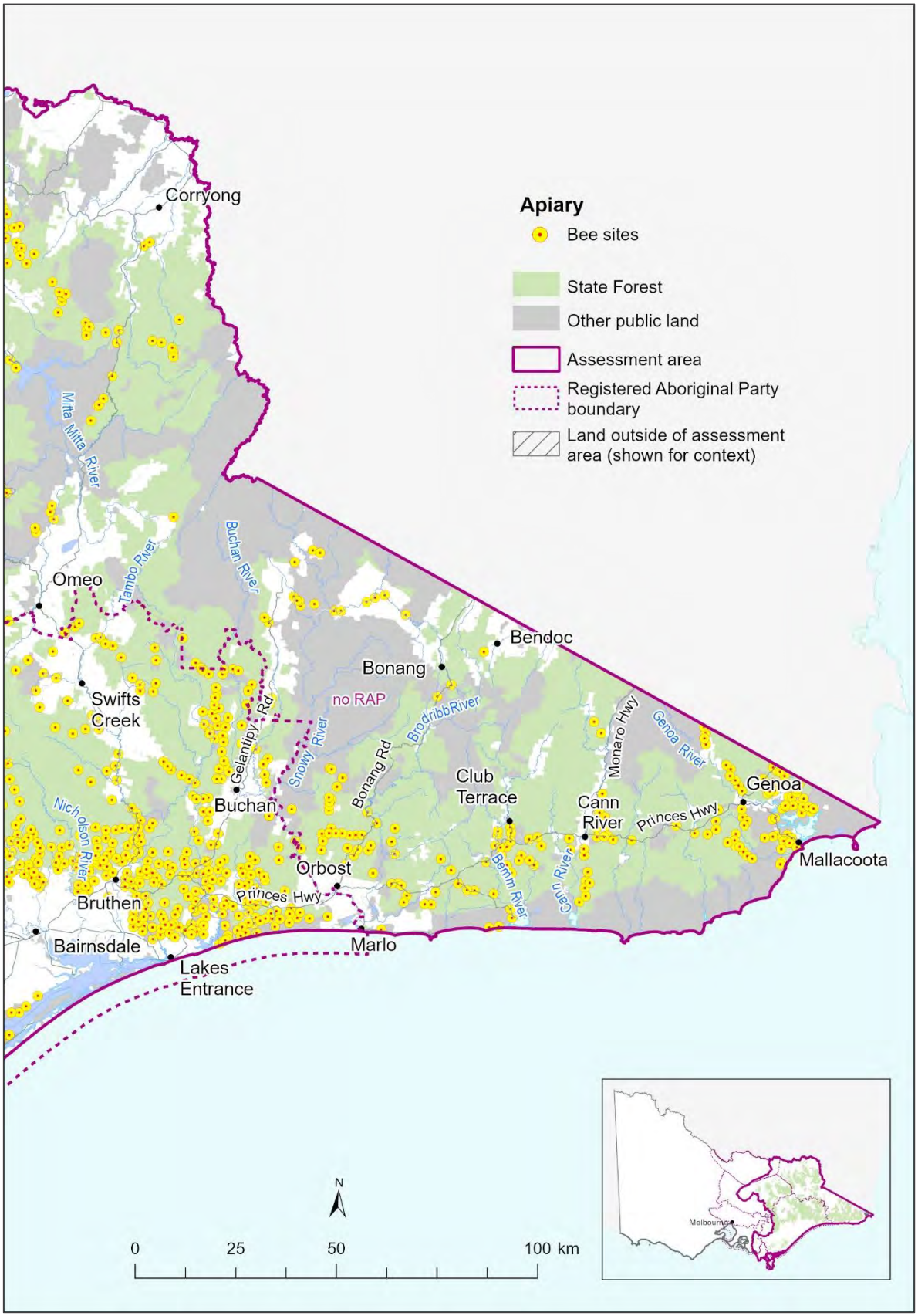


Figure 3.25b Licensed bee sites in and around the assessment area



Outdoor education

Education areas are a subset of the community use reserve public land use category. Although in a separate category to state forest, they often serve as a focus for educational activities to occur in nearby state forests. These sites can be important in enabling urban children and young people to access and experience nature and outdoor activities.

Table 3.8 shows all the education area in the assessment area, there are eight in the North East RFA area, three in Gippsland and four in East Gippsland. Most of the education areas in the North East RFA area are based in or around the alpine areas of Mount Buller and Falls Creek, as well as Bright which is a gateway to nearby alpine areas. Two of those in Gippsland are based north and south of Traralgon and the third is just outside Bairnsdale. In East Gippsland Bidwell Education Area is just south of Bonang, and the other three are close to the towns of Bairnsdale, Orbost and Cann River.

Table 3.8 Education areas in the assessment area

RFA	Name	Area (ha)
North East	Carboor Upper Education Area	414.5
North East	Delatite Education Area	401.9
North East	Lima South Education Area	274.5
North East	Lockhart Creek Education Area	442.7
North East	Mount Russell Education Area	214.1
North East	Mountain Creek Education Area	752.7
North East	Sunnyside Education Area	525.6
North East	Wandiligong Education Area	79.8
Gippsland	Jeeralang North Education Area	149.2
Gippsland	Melwood Education Area	224.5
Gippsland	Seaton Education Area	120.3
East Gippsland	Bidwell Education Area	340.7
East Gippsland	Cutfinger Education Area	325.4
East Gippsland	Sardine Creek Education Area	246.8
East Gippsland	Serpentine Creek Education Area	511.4

3.11. Diverse Values

Most people, when asked, have some sort of positive feeling when spending time in nature. Whether that's trekking for days in a remote rainforest or just having access to a green space near their home, nature is important beyond economic or extractive use.

Decisions about land conservation and nature protection are often based on a list of criteria to determine how a specific area should be used, and whether the area should prioritise biodiversity conservation through conservation management and/or inclusion in a protected area. Those criteria usually include rarity of the ecosystems, presence of threatened species, or areas that are of cultural or heritage significance. When deciding whether to protect an area, the questions often asked is 'how is the land is best used?', or 'which land use will be of most value?'.

Traditionally value is measured in economic terms or to indicate some level of transaction or service. These can be characterised as 'use' values, and examples include the value of meat from hunting, the value of timber, or the value of economic activity supporting recreational activities. Yet some places are also protected for other values, such as their natural beauty. The term 'diverse values' was developed to help decision-makers consider other types of value when making decisions about land use.[36] These can include 'non-use' values such as knowing an ecosystem exists, Indigenous cultural values, the feeling of awe or spirituality that some people experience when being in nature, or the intrinsic value of biodiversity (biodiversity for its own sake, not for human purpose).

Diverse values, as a term, is trying to describe or capture the feeling of value that people experience when being in nature – concepts that are difficult (if not impossible) to quantify scientifically. The feelings and experiences that people have in nature, which of them they choose to focus on, and the words they use to describe them vary greatly.[37] Some describe a spiritual connection, or a sense of belonging, others talk of stress-relief or a calming effect when spending time in forests. Even when people are not comfortable with using those types of words to express themselves, they will often talk about having favourite spots they come back to.

Diverse values describe the multiple and plural values that different people and different cultural groups have for nature. People can seek different things from nature and may visit the same areas of nature in very different ways. It might be for specific activities such as hunting, fishing or four-wheel driving; a search for wild or remote places; somewhere to go for exercise; or to see wildlife, native vegetation, waterfalls or beautiful views. It can also be a nice setting for a family outing or a place to go for a picnic or BBQ, or a combination of some or all of the above. Conflict between different user groups can arise when these diverse values conflict (e.g., between motorised and passive recreational uses).

Diverse values are sometimes quantified scientifically using social science approaches such as psychometric surveys or qualitative methods such as interviews. However, many diverse values are considered 'incommensurable', meaning they cannot (and should not) be converted into a common unit such as money.

While diverse values may be more challenging to include in decisions about public land than economic or biodiversity values, recognising the diverse values of the community for natural areas can improve decision making and reduce conflict around land management and land-use change.

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36. IPBES (2022) Summary for Policymakers of the Methodological Assessment Report on the Diverse Values and Valuation of Nature of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Pascual, U., Balvanera, P., Christie, M., Baptiste, B., González-Jiménez, D., Anderson, C.B., Athayde, S., Barton, D.N., Chaplin-Kramer, R., Jacobs, S., Kelemen, E., Kumar, R., Lazos, E., Martin, A., Mwampamba, T.H., Nakangu, B., O'Farrell, P., Raymond, C.M., Subramanian, S.M., Termansen, M., Van Noordwijk, M., and Vatn, A. (eds.). IPBES secretariat, Bonn, Germany. https://doi.org/10.5281/zenodo.6522392

37. Trigger, D. and Mulcock, M. (2010) Forests as Spiritually Significant Places: Nature, Culture and `Belonging' in Australia

4. Threats to values of state forests in eastern Victoria

This chapter addresses part (c) of VEAC's terms of reference, to identify the current and likely future threats to the values described in chapter 3 of this report.

In 2017 VEAC was requested to carry out an assessment of the conservation values of state forests in the Central Highlands, North East, Gippsland and East Gippsland regional forest agreement areas. This chapter updates the section on current and likely future threats to the biodiversity and ecological values in VEAC's 2017 assessment (see Previous VEAC Assessments & Advice - VEAC | Victorian Environmental Assessment Council).

4.1. Cessation of native timber harvesting

Native timber harvesting was previously one of the major threats to forest values. The Victorian government's decision to end this practice from 1 January 2024 is generating discussion and research about future forest policy and land management practices. While the immediate threat to biodiversity has been removed, forest harvesting leaves a legacy that requires careful management and restoration to support good environmental and social outcomes.

Timber harvesting and risk management were major drivers of forest management in the assessment area (e.g., road maintenance, fire management), and this management regime has changed with the cessation of logging. Some approaches being explored to respond to this change include "active and adaptive management", which is evolving and the subject of debate and research.

From its work on public land use over decades and in this assessment, VEAC recognises the importance of taking the necessary time to develop place-based responses that consider the Traditional Owner aspirations, community views, forest values, biodiversity and ecosystems, the legacies of historical management and disturbance (such as fire), and threats particular to each location.

4.2. Climate change

Climate change is a risk accelerator, having uncertain but likely compounding and interacting impacts on other threatening processes. Climate change can have gradual impacts, e.g., through warming, as well as exacerbating and altering the nature of other threats and driving more frequent and severe extreme events like fire, floods and drought. Climate change will have uneven impacts on species, with some species being more suited to future climates, while others being less suited. The current rate of human-induced climate change is orders of magnitude greater than that experienced naturally, and in combination with landscape fragmentation makes species and ecosystem adaptation to future climates extremely challenging.

Of the 35 forest-dependent threatened species considered to be negatively impacted by timber harvesting used in the focused species analysis presented in VEAC's 2017 assessment of the conservation values of state forests,[38] 16 that occur in the RFAs that are the focus of this assessment have approved action statements under the FFG Act at March 2025.

Of these 16 current FFG Act action statements for forest-dependent threatened species, 12 mention climate change, which is also specifically listed as a FFG Act threatening process (phrased in Table 4.2 below as 'loss of terrestrial climatic habitat caused by anthropogenic emissions of greenhouse gases'). The RFA and EPBC lists at Tables 4.1 and 4.3 below also reference climate change.

[38] Victorian Environmental Assessment Council (VEAC) (2017) Previous VEAC Assessments & Advice - VEAC | Victorian Environmental Assessment Council) Chapter 2.

Victoria's Climate Science Report 2024 fulfils a requirement of the *Climate Change Act 2017*, and summarises the best available scientific evidence on climate change for the state. The Department of Energy, Environment and Climate Action (DEECA) has also prepared regional climate projections for the State government's nine Regional Partnership areas, with the Gippsland and Ovens Murray report areas broadly correlating with the Regional Forest Agreement boundaries contained in VEAC's terms of reference for this assessment.

Victoria's temperature has increased by approximately 1.2° Celsius since national records began in 1910, and by around 1.4 °C since the pre-industrial era. More than half of the warming recorded since 1910 took place in the last three decades. Therefore, the climate in the state forest areas covered by this report has already changed substantially**.**

The projections for Gippsland and Ovens Murray regional partnership areas show warming will continue. Compared to 1986–2005 baseline the projections indicate the following increase in **average annual temperature** (°C change):

Regional Partnership area	Low Emissions scenario (°C change)	High Emissions scenario (°C change)
Gippsland	• 0.9 (0.5–1.3) by 2050 • 1.1 (0.5–1.4) by 2090	• 1.5 (0.9–1.8) by 2050 • 3.2 (2.2–3.7) by 2090
Ovens Murray	• 1.1 (0.6–1.5) by 2050 • 1.2 (0.6–1.6) by 2090	• 1.7 (1.0–2.1) by 2050 • 3.4 (2.6–4.0) by 2090

Considering both warming that has already occurred from the pre-industrial period and these future projections for low and high emission scenarios, total expected climate change in the assessment area is 1.9-2.9°C by 2050 and up to 3.6-5.4°C by 2090.

In summary, the projections for both regions state that:

- **Minimum and maximum daily temperatures** will continue to increase until at least 2050; warming is projected to continue in the second half of the century if significant cuts in global greenhouse emissions are not made immediately (*very high confidence*).
- **Hot days and nights** will become hotter and more frequent, with longer, more intense heatwaves (*very high confidence*).
- **Rainfall** will continue to be variable over time, but over the long term is expected to continue declining in the cool season (*medium to high confidence*). Long-term changes to summer rainfall are uncertain.
- **Extreme rainfall** events are expected to become more intense on average through the century (*high confidence*) but remain very variable in space and time.
- High-impact **climate hazards** that affect Victoria including floods, heatwaves, drought and bushfires are also changing.[39]

Natural Environment Climate Change Adaptation Action Plan 2022–2026

DEECA's Natural Environment Climate Change Adaptation Action Plan 2022–2026 (the Adaptation Action Plan) also addresses obligations under the *Climate Change Act 2017*.

The Adaption Action Plan notes that while Australian plants and animals are adapted to a high degree of environmental variability, the fastest rates of past change evident in the fossil record are

[39] Department of Energy, Environment and Climate Action (DEECA) (2024) Victoria's changing climate.

likely to be at least five times slower than the projected rate of climate change. At a broad level, impacts on the distribution, composition, structure and function of ecosystems are expected, and ecosystem tipping points/thresholds may be reached. Potential climate change impacts relevant for the eastern Victoria forests mentioned in this Plan include:

- frequent fire impact
- reduced river flow
- increased impact of invasive species
- increased impact of plant diseases
- changes to species' distribution and abundance.

These impacts have similarities with the threatening processes outlined in tables 4.1, 4.2 and 4.3 of this chapter, highlighting climate change's exacerbation of existing pressures on state forests. However, the Adaption Action Plan also notes that precise impacts on ecosystems and individual species are often uncertain, including due to variable impact even within the same ecosystem type, and limited data on species physiology, demography and genetics. Overall, climate change adaptation is considered a dynamic and continuous process, and needs to be context specific, and contending with these challenges is a key element of environmental management.

The Adaptation Action Plan concludes with a range of proposed actions including addressing data and knowledge gaps, and the creation of a framework to support climate adapted decision making.[40]

Interaction between climate change and other threats

As outlined in the Adaptation Action Plan, climate change accelerates and compounds other threats. For example, frequent fires can exacerbate the extent and impact of weeds and pests and remove the capacity for a forest to naturally regenerate if trees are not mature enough to set seed.

A recent example of FFG Act action statements mentioned above illustrates this point. Threats to the long-footed potoroo (*Potorous longipes*) include:

- introduced species (herbivores, plants and predators)
- altered fire regimes including as a result of a hotter, drier climate, and
- impacts on population and dynamics including loss of genetic diversity, population fragmentation and low population size.

Specifically on climate change the statement says that "…increasing temperature and altered rainfall are likely to magnify existing threats and may reduce the stability, extent and condition of habitat. The drying of habitat may impact on the abundance of underground fungi which are a key food source for the Long-footed Potoroo."[41]

Notably, most of the 16 FFG action statements produced for forest dependent species also refer to loss of genetic diversity in small, greatly reduced and/or isolated populations, leading to reduced populations and capacity to adapt to changing conditions.

4.3. Inappropriate fire regimes

Of the 16 current FFG Act action statements for forest-dependent threatened species, 15 mention altered fire regimes, bushfire or fire management activities. "High frequency fire resulting in

[40] Department of Environment, Land, Water and Planning (DELWP) (2022) Natural Environment Climate Change Adaptation Action Plan 2022-2026

[41] Department of Energy, Environment and Climate Action (DEECA) (2023) Long-footed_Potoroo_AS_11179

disruption of life cycle processes in plants and animals and loss of vegetation structure and composition" is listed as a FFG Act threatening processes at Table 2.4. The RFA and EPBC lists at Tables 4.1 and 4.3 below also reference potential negative impact of fire regimes on biodiversity.

In its discussion of managing threats to ecosystems the Biodiversity Plan states that, depending on their frequency and type, fires, including planned burning, can have significant positive or negative effects on biodiversity. Negative impacts on biodiversity can occur when fires are too frequent, intensive or extensive for recovery of the original ecosystem to occur. For example, ash forests can take decades to reproduce after fire, and intense fires more frequent than this can lead to the loss of ash trees and their replacement with other species adapted to more frequent fires (e.g., messmate, wattles). Climate change is driving more frequent and intense fires, and will exacerbate the threat of 'too frequent fire'. Other factors such as increased human population (driving both intentional and unintentional fire starts) also increase fire frequency.

'Fire regimes that cause declines in biodiversity' is listed as a key threatening process under the EPBC Act (see table 4.3). It includes the full range of fire-related ecological processes that directly or indirectly cause persistent declines in the distribution, abundance, genetic diversity or function of species or ecological communities.[42]

In temperate Australia, the region's predominant eucalypt forests have been burned repeatedly by extensive wildfires since 2003. A 2015 review concluded that historical and recent evidence indicates that recurrent wildfires threaten the persistence of the 'fire sensitive' obligate seeder eucalypt forests, which can facilitate a shift to non-forest states (e.g., woodlands, grasslands) if successive fires occur within the trees' primary juvenile period (1–20 years). The review also highlighted potential for structural and state changes in the 'fire tolerant' resprouter forests, particularly if recurrent severe wildfires kill seedlings and increase tree mortality.[43]

The Advice to the Federal Minister for the Environment from the Threatened Species Scientific Committee on this key threatening process also refers to prescribed or planned burning which may also affect biodiversity. In forest environments treated with low-severity prescribed burns, hollow-bearing trees declined by up to 26%. Loss of such tree related habitat may have been further exacerbated by past logging.[44]

Areas that have been more recently burnt tend to be more flammable than areas that are long unburned. This is particularly important in fire sensitive ecosystems (e.g., wet eucalypt forest, rainforest) and is true for both natural fire and planned burning.[45]

The extent, nature and relative benefit of planned burning, slashing or fire breaks to reduce or contain fire, versus the impact of such works on biodiversity remains contested and requires further research in the context of differing ecosystems and a warming climate. VEAC also notes significant and growing interest in Traditional Owner cultural burning to help restore and care for Country and recognises that cultural burning in ecosystems that have adapted to fire over a long time, has the potential to lead to large scale benefits for biodiversity and support Traditional Owner cultural practices.

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[42] Department of Agriculture, Water and the Environment (DAWE, now DCCEEW) (2022) Fire regimes that cause declines in biodiversity

[43] Fairman, T.A., Nitschke, C.R. and Bennett, L.T. (2016) Too much, too soon? A review of the effects of increasing wildfire frequency on tree mortality and regeneration in temperate eucalypt forests. International Journal of Wildland Fire **25**, 831-848

[44] Department of Agriculture, Water and the Environment (DAWE, now DCCEEW) (2022) Fire regimes that cause declines in biodiversity pp 21-22

[45] Lindenmayer, D. and Zylstra, P. (2023) Identifying and managing disturbance-stimulated flammability in woody ecosystems - Lindenmayer - 2024 - Biological Reviews - Wiley Online Library

4.4. Pests, diseases and invasive species

Of the 16 current FFG Act action statements for forest-dependent threatened species, 14 mention competition from other plants, weeds, pests or predators (Tables 4.1, 4.2 and 4.3.). These threats are likely to interact with climate change leading to the emergence of new threats and changing severity of existing threats. Overseas, pests and diseases have led to the catastrophic loss of forests (e.g., mountain pine beetle populations expanded due to climate change leading to impacts on millions of hectares of pine forest in Canada in the early 2000s).

Potentially threatening processes or disturbances listed under the RFA Comprehensive Regional Assessments at Table 4.1 include environmental weed invasion, introduced fauna species/predation/competition, pest control, and pathogens/disease/dieback.

Both the FFG Act potentially threatening process list and the EPBC Act key threatening process list include predation by cats and foxes. The FFG list also includes grazing by rabbits, browsing and competition by feral goats, and reduction in biodiversity by sambar deer, and the EPBC list includes feral pigs.

The FFG list refers to invasion of native vegetation by blackberries and 'environmental weeds'. The EPBC list includes loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants; the EPBC process novel biota and their impact on biodiversity encapsulates a wide range of introduced invasive species.

Other pests and diseases referenced across the three lists include infection of amphibians with Chytrid fungus, introduction of live fish into waters outside their natural range, Argentine ants, noisy miners, spread of *Pittosporum undulatum* beyond its natural distribution, spread of the root rot fungus *Phytophthora cinnamomi* causing dieback, and psittacine circoviral (beak and feather) disease affecting endangered psittacine species. Human activity which results in artificially elevated or epidemic levels of Myrtle Wilt within *Nothofagus*-dominated Cool Temperate Rainforest is listed as a threat under the FFG Act.

4.5. Impact of human activities on sensitive areas

Increasing population is likely to lead to increased visitation to state forests and other public land for recreation and potentially an increase in economic activities such as organised tourism, four-wheel drive tours and so on. When not carefully managed, increased use can threaten social amenity value through competition between different user groups, reduced stewardship, conflict over how the forests are experienced by people and inappropriate behaviours. Increased use can threaten biodiversity values through inappropriate levels of access or development, erosion, litter and dumping, spreading of weeds, disease and pests, and increased ignition of fires.[46]

Of the 16 current FFG Act action statements for forest-dependent threatened species, 11 mention human activity e.g. road construction and recreation. Human activities are also mentioned in the RFA, FFG Act and EPBC Act threatening process lists at Tables 4.1, 4.2 and 4.3, ranging from collection of native orchids (Table 4.2, FFG Act) to land clearance (table 4.3 EPBC Act) to road construction and maintenance (Table 4.1 RFA CRAs).

At the same time, VEAC recognises that having people in the forest is important to the ongoing health of the forests and the persistence of the biodiversity within them. People are needed to care for and steward the forests. Greater use and enjoyment of forests by a broader population will help the inherent values of the forests to the community and future generations to be recognised and

[46] In regard to population density and increased fire ignitions, see Collins, K..M., Price, O.F. and Penman, T.D. (2015) *Spatial patterns of wildfire ignitions in south-eastern Australia,* at CSIRO PUBLISHING | International Journal of Wildland Fire, accessed April 2025

supported. Forests are a key component of Country and of incalculable value to Traditional Owners, and needed for thriving cultural practices, traditional knowledges and economic self-determination. Forests shape the identity of local places and the lives of local people.

Population projections

Victoria, and specifically Melbourne, has experienced rapid population growth in recent decades. The closure of international borders during the emergency phase of the COVID-19 pandemic put a temporary stop to international immigration and drove changes in internal migration patterns.[47] However the reopening of the Australian border placed Melbourne and Victoria back on the trajectory of significant growth. At the 2021 census, Victoria's population was 6.5 million up from 5.9 million in 2016. In 2021, almost four out of five people in Victoria lived in the capital city area of Greater Melbourne (4.9 million).[48]

Victoria in Future is the official state government projection of population and households. Projections are based on trends and assumptions for births, life expectancy, migration, and living arrangements across all of Victoria.[49] Victoria in Future 2023 (VIF2023) covers the period 2023 to 2051 for Victoria and the major regions. VIF2023 shows Victoria remains the fastest-growing state in the country with the population expected to reach 10.3 million by 2051.

Population pressures on public land

Victoria's growing population and denser settlement patterns can increase demand to access public land close to Melbourne. Increased access and visitation to sensitive public land may increase some existing threatening processes (see tables 4.1 and 4.2). For example, with greater demand for scenic, picnicking and passive recreational settings and opportunities, weeds and pathogens can be spread further. Motorised uses such as four-wheel driving and trail-bike riding, and intensive active uses like mountain biking are likely to continue to grow in popularity. Managing diverse uses of public land, including uses which may not exist now, to support the recreational and wellbeing needs of Victorians is essential. The challenge is to provide recreational and tourism business opportunities for local communities while ensuring the rich biodiversity values of the forests are retained, which is what draws people to the forests in the first place.

4.6. Previous assessments of threatening processes

Detailed work relating to threats to forest values in the area was carried out by the State of Victoria and Commonwealth in the preparation of comprehensive regional assessments for the original RFAs in the late 1990s, and updated in 2019 .[50] Table 4.1 shows potentially threatening processes identified for the four eastern RFAs (including Central Highlands, which is the subject of a separate VEAC interim assessment report in December 2023).

Action statements prepared under Victoria's *Flora and Fauna Guarantee Act 1988* (FFG Act) outline threats and management action to address those threats. Nearly 2,100 species, communities and threats are currently listed under the FFG Act. At March 2025, over 1,150 action statements in total have been developed.[51] There are 44 potentially threatening processes of which 16 have action

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[47] See the Australian Bureau of Statistics (ABS) (2021) Analysis of the impact of COVID-19 on Australia's population and components of growth in the year 2020 at Population change in 2020 | Australian Bureau of Statistics accessed April 2025

[48] Australian Bureau of Statistics (ABS) (2022) Snapshot of Victoria | Australian Bureau of Statistics accessed April 2025

[49] Department of Transport and Planning (DTP) (2023) Victoria in Future accessed April 2025

[50] State of Victoria and Commonwealth of Australia (2019) Further Assessment of Matters Report , accessed April 2025

[51] Department of Energy, Environment and Climate Action (DEECA) (2023) Victoria's Threatened List and Processes List and (2024) Victoria's Threatened List and Processes List accessed April 2025

statements. Eight action statements for potentially threatening processes are under development in 2024-25.[52]

Listed potentially threatening processes under the FFG Act which are relevant to forest ecosystems in eastern Victoria are shown in table 4.2, ranked in two categories with the first being those with potentially high significance for forest biodiversity in the assessment area as assessed by VEAC, and the second being those with potentially moderate significance.

Of the 35 forest-dependent threatened species considered to be negatively impacted by timber harvesting used in the focused species analysis presented in VEAC's 2017 assessment of the conservation values of state forests,[53] 16 that occur in the RFAs that are the focus of this assessment have approved action statements under the FFG Act at March 2025.

At a national level, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides for the identification and listing of key threatening processes, which are shown at table 4.3. At 2019, there were 14 threatening processes listed under the EPBC Act potentially affecting threatened species in Victorian RFA regions in 2019. The Australian government has developed threat abatement plans for most of the key threatening processes registered under the EPBC Act where a threat abatement plan was considered a feasible, effective or efficient way to abate the process.[54]

At July 2019, there were 52 EPBC Act listed fauna and flora species known or likely to occur within the East Gippsland RFA region; 79 in the Gippsland RFA region; and 56 in the North East RFA region. Eleven threatened ecological communities are listed as vulnerable, endangered or critically endangered across the three RFA areas. Since the commencement of the EPBC Act in 1999, 39 additional species known or likely to occur have been listed as threatened under this legislation.

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[52] Department of Energy, Environment and Climate Action (DEECA) (2024) Action-Statement-Preparation-List-2024-25.pdf accessed April 2025

[53] Victorian Environmental Assessment Council (VEAC) (2017) Previous VEAC Assessments & Advice - VEAC | Victorian Environmental Assessment Council).

[54] State of Victoria and Commonwealth of Australia (2019) Further Assessment of Matters Report pp 38-39 and Appendix 2, accessed April 2025, Department of Climate Change, Energy, the Environment and Water (DCCEEW), webpage EPBC Listed Key Threatening Processes accessed April 2025

Table 4.1 Potentially threatening processes identified in Comprehensive Regional Assessments for the 4 eastern RFAs

Threatening process or disturbance
Clearing of native vegetation/fragmentation
Timber harvesting
Planned burning - fuel reduction
Planned burning - regeneration burning
Planned absence of fire
Unplanned fire (wildfire)
Grazing
Road construction and maintenance
Recreation
Environmental weed invasion
Introduced fauna species/predation/competition
Pest control
Firewood collection
Deliberate collection/harvesting (legal and illegal)
Mining/quarrying
Dams/impoundments/instream barriers
Climate change
Mineshaft collapse
Pathogens/disease/dieback
Loss of genetic diversity/genetic pollution
Drainage of wetland habitat
Waste disposal

*includes Central Highlands, which is the subject of a separate VEAC interim assessment report in December 2023.

Table 4.2 Potentially threatening processes listed under the FFG Act potentially relevant to the assessment area (as assessed by VEAC)

Potential high significance for forest biodiversity
High frequency fire resulting in disruption of life cycle processes in plants and animals and loss of vegetation structure and composition
*^Human activity which results in artificially elevated or epidemic levels of Myrtle Wilt within *Nothofagus*-dominated Cool Temperate Rainforest
Infection of amphibians with Chytrid Fungus, resulting in chytridiomycosis
Invasion of native vegetation by Blackberry *Rubus fruticosus* L. *agg.*
Invasion of native vegetation by 'environmental weeds'
Loss of coarse woody debris from Victorian native forests and woodlands
*Loss of hollow-bearing trees from Victorian native forests
Loss of terrestrial climatic habitat caused by anthropogenic emissions of greenhouse gases
*^Predation of native wildlife by the cat, *Felis catus*
*Predation of native wildlife by the introduced Red Fox *Vulpes vulpes*
Potential moderate significance for forest biodiversity
*Alteration to the natural flow regimes of rivers and streams
*Alteration to the natural temperature regimes of rivers and streams
^Collection of native orchids
*Degradation of native riparian vegetation along Victorian rivers and streams
Habitat fragmentation as a threatening process for fauna in Victoria
Inappropriate fire regimes causing disruption to sustainable ecosystem processes and resultant loss of biodiversity
*Increase in sediment input into Victorian rivers and streams due to human activities
*Introduction of live fish into waters outside their natural range within a Victorian river catchment after 1770
Loss of biodiversity in native ant populations and potential ecosystem integrity following invasion by Argentine Ants *Linepithema humile*
*Poisoning of native wildlife by anticoagulant rodenticides
*Prevention of passage of aquatic biota as a result of the presence of instream structures
^Reduction in biodiversity of native vegetation by Sambar *Cervus unicolor*
Reduction in biodiversity resulting from Noisy Miner *Manorina melanocephala* populations in Victoria
Reduction in biomass and biodiversity of native vegetation through grazing by the Rabbit *Oryctolagus cuniculus*
Soil degradation and reduction of biodiversity through browsing and competition by feral goats *Capra hircus*
*Soil erosion and vegetation damage and disturbance in the alpine regions of Victoria caused by cattle grazing
Spread of *Pittosporum undulatum* in areas outside its natural distribution

The spread of *Phytophthora cinnamomi* from infected sites into parks and reserves, including roadsides, under the control of a state or local government authority
Threats to native flora and fauna arising from the use by the feral honeybee *Apis mellifera* of nesting hollows and floral resources
Use of *Phytophthora*-infected gravel in construction of roads, bridges and reservoirs
Wetland loss and degradation as a result of change in water regime, dredging, draining, filling and grazing

Note: (*) denotes potentially threatening processes for which there is an approved Action Statement; (^) denotes that an action statement will be produced or updated in 2024–25.

Table 4.3 EPBC Act listed key threatening processes potentially affecting threatened species in assessment area

Potential high significance for forest biodiversity
Aggressive exclusion of birds from potential woodland and forest habitat by over-abundant noisy miners
Competition and land degradation by rabbits
Competition and land degradation by feral goats
Dieback caused by the root-rot fungus *Phytophthora cinnamomi*
Fire regimes that cause declines in biodiversity
Infection of amphibians with chytrid fungus resulting in chytridiomycosis
Land clearance
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants
Loss of climatic habitat caused by anthropogenic emissions of greenhouse gases
Novel biota and their impact on biodiversity [this key threatening process encapsulates a wide range of introduced invasive species, pests and diseases e.g. blackberries, deer]
Predation by European red fox
Predation by feral cats
Predation, habitat degradation, competition and disease transmission by feral pigs
Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species

5. Conclusion

Eastern Victoria contains magnificent, unique forests which have been shaped and cared for by Traditional Owners for tens of thousands of years. It is a unique region of great geological interest and diversity, with the significant geomorphological variation of the region underpinning its abundance of different ecosystems and rich biodiversity.

Victorians value and benefit from these forests and want them to be healthy for future generations. This report outlines the key biophysical and social values of the forests, and the major threats to them. This report is intended to inform government decision making and associated processes on how we can manage, care for, and enjoy our forests now that timber harvesting has ceased.

The values described here are extensive and varied. There is critical habitat for many forest-dependent threatened species, particularly in east Gippsland, and a range of ecosystems that are highly underrepresented in our current protected area network. The remote location and varied terrain provide many opportunities for nature-based recreational activities including camping, hiking, horse riding, bike riding, four-wheel driving, trail bike riding, hunting and fishing. While Traditional Owner cultural values are valued, they are not included in this assessment as they were specifically not included in the terms of reference. Instead, Traditional Owners are directly contributing to state forest strategic planning through the Great Outdoors Taskforce.

Public land management in Victoria is currently undergoing significant transformation, with several developments reshaping the landscape:

- Our public land legislation is being renewed to simplify the legislative framework and provide clarity and direction for public land management.
- Commercial native timber harvesting ceased in state forests in January 2024, providing a once in a generation opportunity to rethink care and management of forests in ways that support Traditional Owner self-determination, enable a diverse range of public uses and improve the long-term resilience of threatened species and unique ecosystems.
- Treaty negotiations are underway between the Victorian Government and First Peoples' Assembly. VEAC recognises that Aboriginal-led and co-led governance, planning and management of Victorian public land through cultural landscapes is a pathway to achieving improved biodiversity, ecosystem services and cultural values, better nature experiences for all Victorians and economic development for Traditional Owners.
- With forestry ended, it is time to bring in Traditional Owners, innovative land managers, local communities and visitors to support the regeneration of forests that have been commercially harvested, and to enjoy the nature that thrives there. It is time to build collaborative management partnerships between local communities, land managers, experts and Traditional Owners and to build a stewardship ethos in forest users through education and action.

While native timber harvesting has ceased, its legacy requires careful management and we recognise that important threats to the forests remain, including climate change and its interactions with fire, pests and diseases, invasive species, and damage by increasing or inappropriate human activities. Many previously logged areas require immediate restoration following failed efforts.

While the threats described in this report are significant, there are also opportunities for improving forest care and management to deliver environmental, social, cultural and economic outcomes.

New scientific understanding, improved modelling and monitoring tools, and new partnerships and emerging collaborations in governance, management and stewardship can help sustain our forests. These include:

- Supporting and learning from Traditional Owner biocultural approaches to governing, planning and managing cultural landscapes. Taking a 'two worlds approach' to forest management by utilising both scientific and biocultural knowledge could ensure we heal damaged areas and maintain use within the limits that ensure forest health.
- Planning and managing environments at a landscape scale, across tenures (public and private) to better address threats such as deer, weeds, and fire that cross boundaries and require comprehensive approaches to reverse the spread of their damaging impacts.
- Developing active and adaptive management approaches to build resilience in the face of uncertainty. The impacts of climate change and its interactions with fire, pests and diseases, invasive species and biodiversity are likely to be large; yet the specific management approaches needed to mitigate or adapt to these challenges are not always clear.
- Applying principles of resilience including reducing fragmentation, maintaining diversity and redundancy, improving connections in the landscape and between people, learning and participation and moving away from centralised governance will help our forests and communities adapt to these challenges.
- Managing forests for multiple values, including biodiversity conservation, ecosystem restoration, recreation and tourism. In some places, these values have synergies that can lead to win-win outcomes for communities and the environment. In other places, there may be conflict between these values and care should be taken to allow these values to co-exist by separating conflicting values in space or time.
- Respecting and empowering diverse local communities and facilitating local action in collaborative forest management can lead to healthy people and environments, and greater connections between people and nature.
- Broadening our thinking to explore possible complementary management approaches to achieving biodiversity conservation now timber harvesting has ceased. With a shift in management focus from timber harvesting towards managing for multiple values, state forest planning should include implementing specific place-based conservation management and biocultural practice plans, complementing the current tenure-based conservation approaches.
- Recognising multiple and plural values that different people and cultural groups hold for nature. While diverse values may be more challenging to include in decisions about public land than economic or biodiversity values, recognising the diverse values of community for natural areas can lead to improved decision making and reduced land management conflicts.
- VEAC and its predecessors have based assessments and investigations on high quality data. Ongoing monitoring is needed to track forest health to inform active and adaptive management over time. This is particularly important where new approaches to governance and management are being implemented. There is currently little data available on the recreational uses of Victoria's public land, and better data is needed to inform planning and management.

VEAC hopes this report will inform and support the community and government's consideration of these issues.