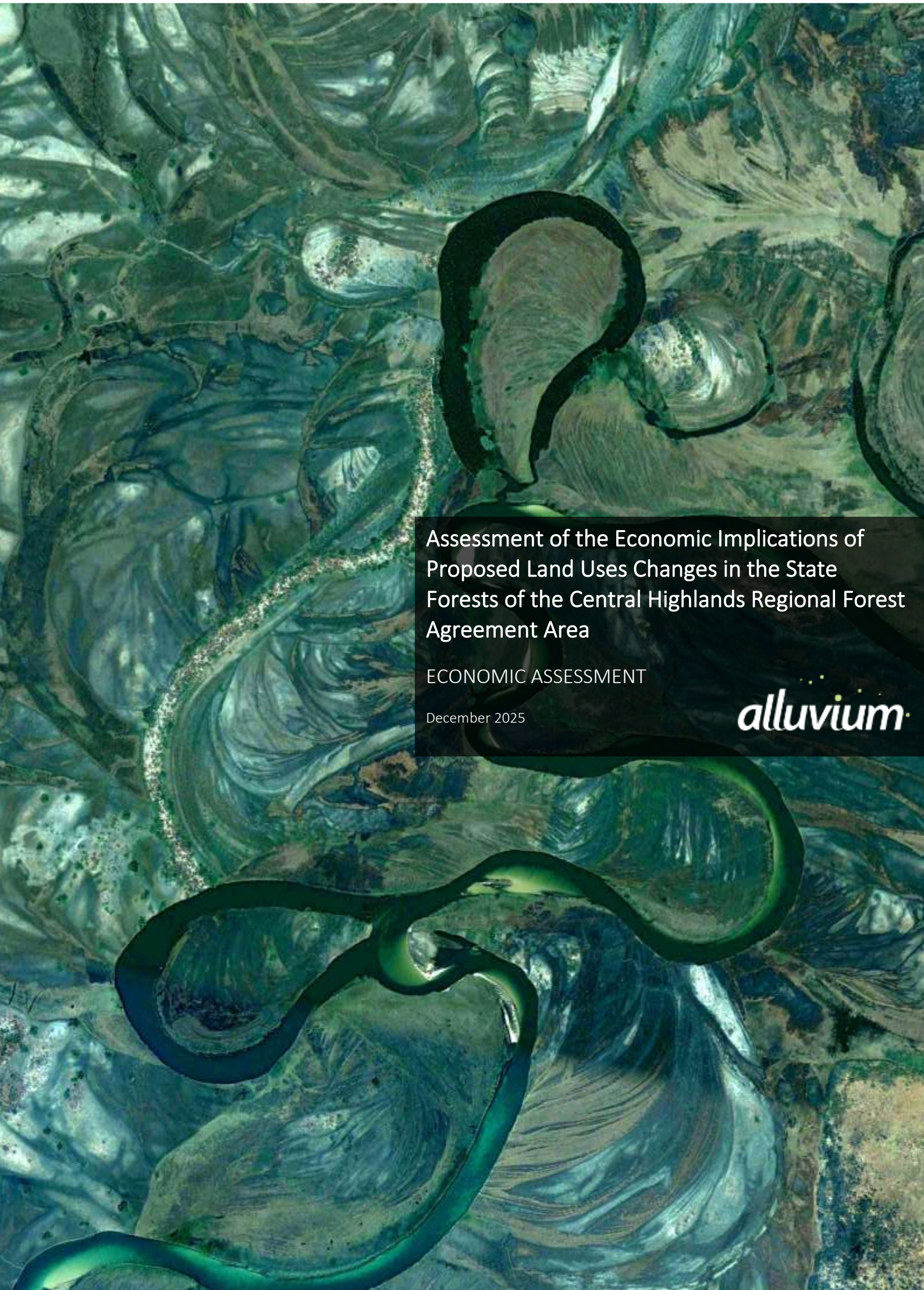

Assessment of the Economic Implications of Proposed Land Uses Changes in the State Forests of the Central Highlands Regional Forest Agreement Area

ECONOMIC ASSESSMENT

December 2025

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Alluvium recognises and acknowledges the unique relationship and deep connection to Country shared by Aboriginal and Torres Strait Islander people, as First Peoples and Traditional Owners of Australia. We pay our respects to their Cultures, Country and Elders past and present.

Artwork by Melissa Barton. This piece was commissioned by Alluvium and tells our story of caring for Country, through different forms of waterbodies, from creeklines to coastlines. The artwork depicts people linked by journey lines, sharing stories, understanding and learning to care for Country and the waterways within.

This report has been prepared by Alluvium Consulting Australia Pty Ltd for VICTORIAN ENVIRONMENTAL ASSESSMENT COUNCIL under the contract titled 'ASSESSMENT OF THE ECONOMIC IMPLICATIONS OF PROPOSED LAND USES CHANGES IN THE STATE FORESTS OF THE CENTRAL HIGHLANDS REGIONAL FOREST AGREEMENT AREA'.

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1 Introduction

The Victorian Environmental Assessment Council (VEAC) was requested by the Victorian Government to assess the values of state forests in the Central Highlands. This included evaluating the potential economic implications of proposed land use changes within the Central Highlands Regional Forest Agreement (CHRFA) area.

As part of VEAC's assessment, Alluvium was engaged to prepare reports on:

1. Existing socio-economic setting of the CHRFA area. Alluvium's *Socio-Economic Context Report (Alluvium, 2024)* provided information on:
    a. Demographics of the communities within and nearby to the CHRFA area
    b. Structure of the local economy
    c. Levels of community wellbeing and resilience
    d. Use and non-use values associated with forests in the CHRFA area
2. Economic implications of the Victorian Government's decision to expand the Yarra Ranges National Park to include the Yarra Tributaries Forest Reserve (this report).

1.1 Context for this assessment

The Eminent Panel for Community Engagement was established by the Victorian Government in 2021, in part to provide advice and recommendations to the Minister for Environment on land classifications and permissible uses of state forests in the Central Highlands. Following engagement with organisations and the community, this work was completed in 2024 (Department of Energy, Environment, and Climate Action [DEECA], 2025a).

In October 2025, in response to recommendations made by the Eminent Panel for Community Engagement, the Victorian Government announced it would expand the Yarra Ranges National Park to include the Yarra Tributaries Forest Reserve (YTFR) (DEECA, 2025b).

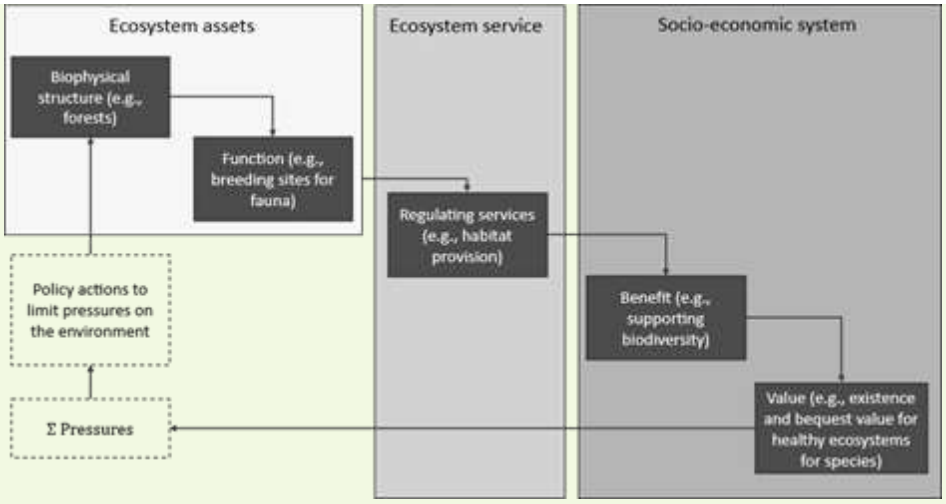
The YTFR is a 'closed' water catchment (DEECA, 2025b). This means public access is restricted to protect water quality and to minimise the need for treatment of Melbourne's drinking water (Melbourne Water, 2023). The government's response confirmed that the new areas of national park would continue to be managed as closed water catchments, with no changes to public access or use.

2 Approach

A qualitative approach was used to assess the economic implications of the YTFR becoming national park, due to the time and data available. The assessment drew on an ecosystem services framework, which was discussed in detail in the *Socio-Economic Context Report* and is presented in Box 1 below. This framework provides a useful structure for identifying, categorising and valuing the benefits from environmental assets, such as the YTFR.

Box 1. Overview of an ecosystem services framework

An ecosystem services framework provides a structure for identifying, categorising and valuing the benefits from the environment. It involves linking the ecosystem assets (e.g., the forests and their specific biophysical characteristics) to the services they provide and then linking these services to associated economic and social values. An overview of an ecosystem service framework is shown below.



Ecosystem services are often categorised into three key categories:

- Cultural services: services directly experienced by humans
- Provisioning services: services describing the material or energy outputs from ecosystems
- Regulating services: services that ecosystems provide by acting as regulators

A fourth category called supporting services (ecological functions) is also often used to describe services that underpin other ecosystem services categories. However, supporting or intermediate services may be better described as "structures, processes and functions that give rise to services" rather than being a final service (Fabis Consulting, 2018).

The assessment evaluated the economic implications of changes in land classifications in terms of changes in social welfare. This is consistent with the approach underpinning cost-benefit analysis, which is the Department of Treasury and Finance's (DTF) preferred approach for assessing projects and policies as part of business cases (DTF, 2013). This approach is different to considering changes in economic output (e.g. gross domestic product).

The steps undertaken in this assessment were as follows, with each of these steps being described in a separate chapter of the report:

1. Define the objectives and scope of the assessment – Outlines the purpose of the assessment and the spatial boundaries (Chapter 3)
2. Define the current state – Describes the values and uses under the base case or status quo, providing a benchmark against which the proposed changes are evaluated (Chapter 4)
3. Define the future state and evaluate economic impacts – Analyses the economic implications of the proposed changes, relative to the base case (Chapter 5)
4. Summarise key findings and next steps – Consolidates the main insights and provides recommendations for next steps (Chapter 6)

3 Objectives and scope of the assessment

3.1 Objectives

The objective of Alluvium's assessment was to provide an account of the economic implications of the government's decision to change the designation of the YTFR from state forest to national park. This will support VEAC's assessment of the values of state forests in the Central Highlands.

3.2 Scope of the assessment

The YTFR is situated within the Upper Yarra Catchment and accounts for an area of approximately 13,000 hectares (ha). This was the area subjected to the economic assessment. The YTFR is shown in Figure 1, represented by the areas enclosed by solid red lines. Based on spatial data provided by VEAC (2025) and information on water supply catchments for Melbourne Water (2024), the individual catchments within the YTFR are the Armstrong Catchment, Micks Creek Catchment, Starvation Creek Catchment, Big Flume Catchment, and the Cement Creek Catchment.

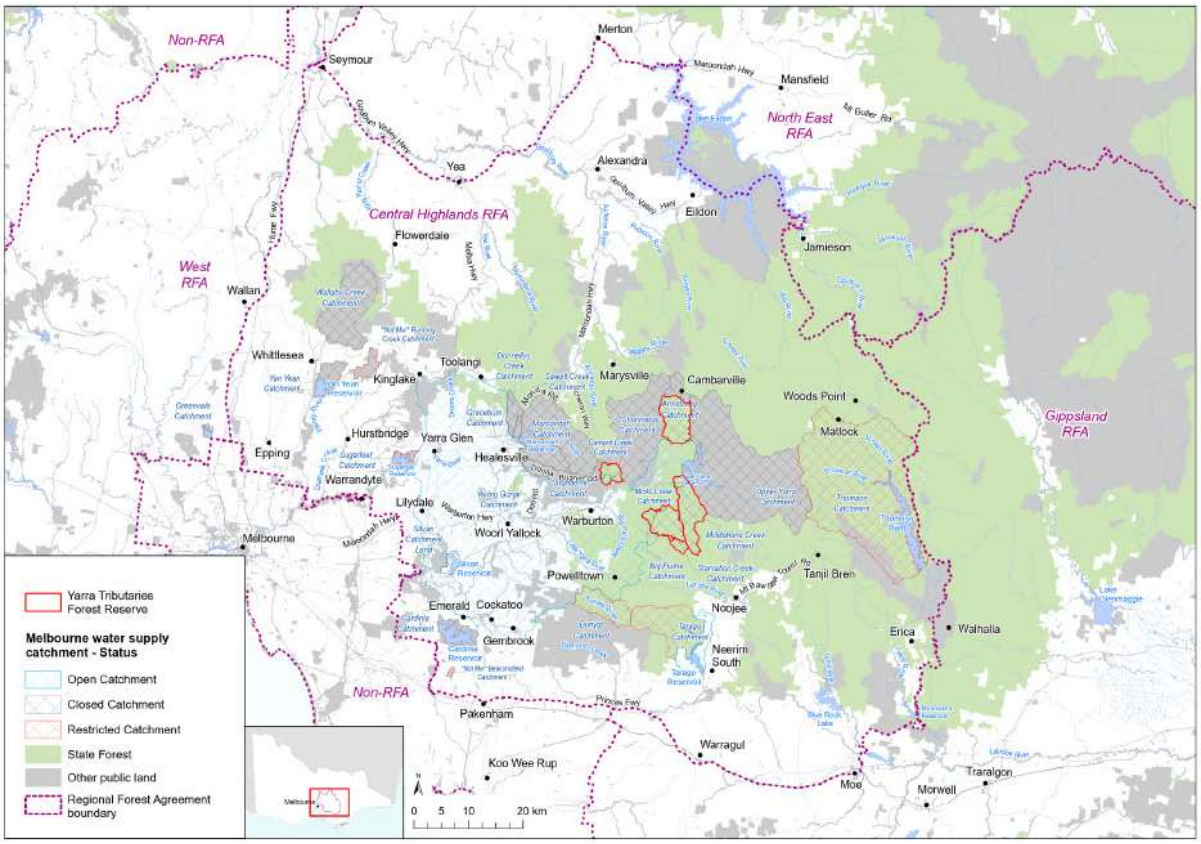


Figure 1. Location of the Yarra Tributaries Forest Reserve with reference to the Central Highlands Regional Forest Agreement area
Source: VEAC (2025).

4 Current state of the Yarra Tributaries Forest Reserve

This chapter describes the current state or base case for the YTFR. Clearly defining the base case was critical as it provided the necessary reference point for understanding the incremental costs and benefits attributable to changing the land classification of the YTFR from state forest to national park.

4.1 Socio-economic context

The socio-economic characteristics of the CHRFA region was explored through the development of the *Socio-Economic Context Report*. Box 2 provides an overview of the key findings from this work to help understand the socio-economic context in which proposed changes are made.

Box 2. Summary of the socio-economic context of the CHRFA region

The assessment indicates that the RFA region is projected to experience significant population growth, increasing from approximately 0.89 million in 2021 to 1.23 million by 2036. Around 90% of this growth will

occur within Urban[1] areas, which tend to be younger, more educated, and earn higher weekly incomes compared to Rural area communities. The majority of the region's population is concentrated in the west, on the outskirts of Greater Melbourne.

Employment patterns reveal that the RFA region has a slightly lower proportion of public sector workers than the Victorian average. Industries such as construction, manufacturing, and agriculture, forestry and fishing are more prevalent locally. In 2021, the region's total Industry Value Added (IVA) was estimated at $26 billion, with construction (17%), manufacturing (14%), and health care and social assistance (10%) contributing the largest shares.

Prior to the end of native forest logging on public land, jobs linked to the logging industry represented a relatively small share of total employment in the RFA region (approximately 0.7%). It was estimated that around 1,748 jobs across agriculture, forestry and fishing, manufacturing, and wholesale trade were directly connected to logging activities. Importantly, many of these jobs may have remained unaffected by the decision to end native logging, (for example, those associated with plantation forestry). Furthermore, some affected workers may have been redeployed into alternative government roles, including forest and fire management.

Community wellbeing indicators suggested that Urban area communities closer to metropolitan Melbourne are generally more socially and economically advantaged, with higher education and occupational status. Consequently, these communities are expected to be better equipped to cope with and adapt to changes in economic conditions compared to Rural area communities.

4.2 Land use classification

The YTFR is classified as state forest under the Forests Act 1958, however, as a forest reserve it enjoys a higher level of protection and is subject to slightly different rules compared to other state forest areas (Victorian Government, 2025). In addition, it is managed as a closed water catchment, which means public access is restricted[2]. These classifications govern the management of the area and determine the permissible uses.

Box 3 provides an explanation of what a closed water catchment is, while the management arrangements and existing uses of the YTFR are discussed in the following sections.

Box 3. What is a 'closed' water catchment?

Closed water catchments (also known as protected catchments) are areas where public access is restricted to safeguard water quality. Located within both state forests and national parks, these catchments protect drinking water at its source by limiting activities that could introduce contaminants. This proactive approach greatly reduces the level of water treatment required, reducing costs to the public (Melbourne Water, 2023).

Closed water catchments supply more than 65% of Melbourne's drinking water (Melbourne Water, 2023).

They may include:

- Special Water Supply Catchment Areas under the Catchment and Land Protection Act 1994
- Water Supply Protection Areas under the Water Act 1989
- Designated Water Supply Catchment Areas under the National Parks Act 1975

[1] Urban areas are defined as Statistical Area 2 (SA2) units within the Melbourne Greater Capital City Statistical Area boundary, with the remaining SA2 units in the RFA region defined as Rural. Refer to Figure 2 in Alluvium (2024) to see the geographic boundaries of where the Urban and Rural areas lie in the RFA region.

[2] The Forests (Recreation) (Temporary) Regulations 2021 include specific provisions for the Yarra Tributaries Forest Reserve, such as provision 65, which restricts public access.

4.3 Management arrangements

Melbourne Water shares management responsibilities for closed catchments with DEECA and, for closed catchments located within national parks, with Parks Victoria (Melbourne Water, 2023).

Closed catchments are managed by legislation governing water-supply to ensure that Melbourne's access to high water quality and long-term water security is secured. Under powers granted by By-law No.1: Water Supply Protection (2018)[3], Melbourne Water is authorised to restrict access, control land and water use, for the purposes of protecting the water catchment or water supply system.

In addition to restricting access, Melbourne Water undertakes proactive management activities to safeguard catchments. These include preventative and active fire management measures such as increased grass cutting during summer, planned burns, maintenance of firebreaks, ensuring road access for firefighters, clearing drainage systems, and fire tracking (Melbourne Water, 2023). Melbourne Water also manages professional pest control especially of species such as deer that are known to carry human pathogens.

Fire management activities are essential, as bushfires can substantially reduce long-term water yield due to the water requirements of regenerating ash forests. Following severe fire, Mountain Ash and Alpine Ash regrowth results in significantly reduced catchment water yield when compared to runoff from mature and old growth ash forest.

Modelling the consequences of the 2019-20 bushfires, Department of Environment, Land, Water and Planning (DELWP) (2019a) estimated that, across the East Gippsland, Gippsland, and North East RFA regions, regrowth-driven changes in forest age structure could result in a cumulative loss of approximately 3,900 GL of water yield between 2020 and 2169. For Melbourne Water, any such reductions in water yield in its catchments would likely bring forward the need to augment water supply at significant cost.

Catchment protection is further supported through regular security patrols, CCTV monitoring, and supplementary surveillance technologies (Melbourne Water, 2023).

4.4 Uses and values (i.e. ecosystem services)

As a closed water catchment, where public access is restricted, the uses and values of the YTFR are more limited compared to a typical state forest.

Table 1 summarises key uses and values associated with a closed water catchment, reflecting those of the YTFR, and provides a comparison with the uses and values of typical state forests and national parks. These uses and values are presented within an ecosystem services framework, as described in Box 1.

Table 1. Overview of ecosystem services in closed water catchments, with reference to national parks and state forests, which are not in closed water catchments

Ecosystem service	Closed water catchment in state forest or national park	National park	State forest
Cultural*			
Bushwalking, nature observation and picnicking	✗	✓	✓
Bicycle riding (including mountain biking)	✗	✓	✓
Camping	✗	✓	✓
Car rallies	✗	O1	✓
Car touring, including four-wheel driving	✗	✓	✓
Dog walking (on-lead)	✗	O2	✓
Horse riding	✗	✓	✓
Trail bike riding	✗	✓	✓

[3] Made by the Melbourne Water Corporation pursuant to its powers as an Authority under the Water Act 1989 (Vic).

Ecosystem service	Closed water catchment in state forest or national park	National park	State forest
Provisioning			
Apiculture at licensed sites	✗	✓	✓
Domestic firewood collection	✗	✗	✓
Exploration and mining	✓	✗[3]	✓
Grazing by domestic stock	✗	✗	✓
Prospecting	✗	✗	✓
Recreational hunting	✗	✗	✓
Water supply	✓	✓	✓
Regulating			
Erosion regulation	✓	✓	✓
Natural hazard protection, water flow regulation	✓	✓	✓
Water purification	✓	✓	✓
Biodiversity and habitat provision	✓	✓	✓
Pollination (wild pollination only)	✓	✓	✓
Carbon sequestration	✓	✓	✓

Source: Adapted from VEAC (2022)

Note: See Table 14 in the Socio-Economic Context Report for a full list of allowable activities in open catchment areas.

✓ Allowed/Occurs **O** Allowed/Occurs with conditions (see notes) ✗ Not allowed/Does not occur

* The value of the connections that Traditional Owners have with the environment can be considered as another element of cultural ecosystem services from the perspective of Aboriginal people. The Aboriginal cultural values held by the Traditional Owners of the state forests of the region are articulated, for example, in the biocultural assessment conducted by the Taungurung Land and Waters Council (2023).

[1]Competitive sections of car rallies generally not allowed in national parks, conservation parks and nature reserves; transport sections through these areas allowed subject to events policy and procedures.

[2]May be allowed in visitor areas or along a limited number of tracks as specified through management planning.

[3]Except where a licence predates the park.

The YTFR's provision and purification of water are expected to be two significant values, with the catchments that make up the YTFR estimated to account for 6% of Melbourne's total water supply (DSE, 2008 as cited in DSE, 2009). These values along with other significant value are described in more detail in the following section.

4.5 Economic value

The YTFR provides economic value through the provision of ecosystem services. A range of these services, which are expected to contribute significant economic value, are discussed below. This includes a description of the ecosystem services and reporting of economic values estimated from existing research, to provide an indication of the potential economic value delivered by these services within the YTFR.

The main sources referenced for this section are Marsden Jacob Associates (MJA) (2014) – Valuing the Water Services Provided by Victoria's Parks and DELWP (2019b) – Ecosystem Services from Forests in Victoria, supplemented by additional sources where relevant. These reports are not specific to the YTFR and therefore provide indicative estimates only. Values are expressed as approximate unit values (i.e. dollars per ha per year)

As these values are indicative, they have not been aggregated to estimate the total economic value of the YTFR. Existing values are presented in lieu of bespoke economic valuations, which could not be undertaken due to insufficient biophysical data for these services within the area.

Water supply and purification

The YTFR plays a critical role in supplying high-quality water for households, industry, and government. Its forested catchments capture, filter, and purify sediments and contaminants before water enters storage systems. DELWP (2019b) provides indicative values for these services for similar forested catchments, estimating a value of approximately $520 per ha per year in 2025 terms. This was calculated using a replacement cost approach, modelling water yield and estimating the cost of securing equivalent water from alternative sources. The study assumes constant water demand and does not account for variability in rainfall or climate change impacts and excludes ecological and cultural values associated with water.

Erosion regulation

The YTFR's intact forest cover helps prevent erosion and sedimentation, protecting water storages and reducing treatment costs. DELWP (2019b) estimated the value of this service for Victorian RFAs at $1,100–$2,020 per ha per year, using an avoided cost method which compares sediment removal costs under forest cover versus alternative land uses. MJA (2014) reported a more context-specific estimate of $151 per ha per year for erosion regulation in non-metropolitan national parks, based on avoided dam storage losses caused by sediment accumulation. Both studies rely on broad assumptions about counterfactual land uses and average sediment loads and do not capture year-to-year variability driven by rainfall and extreme events.

Natural hazard protection, water flow regulation

The YTFR regulates water flows, reducing flood peaks and sustaining base flows during dry periods, which mitigates flood and drought risks. DELWP (2019b) estimated the value of water flow regulation services at $19 per ha per year for Victorian RFAs. MJA (2014) applied peak flow modelling for metropolitan parks, reporting a value of $4,000 per ha per year. DELWP's estimate is based on high-level modelling and does not reflect local hydrological complexity, while MJA's metropolitan park values may overstate benefits for remote catchments.

Carbon sequestration

The YTFR stores substantial carbon, which supports climate change mitigation. DELWP (2019b) estimated the value of carbon sequestration services for forests in the CHRFA at $600 per ha, applying a median carbon price of $20 per tonne CO_2. MJA (2014) reported an upper bound value of $12,900 per ha for Yarra Ranges National Park using a social cost of carbon approach. Using marginal abatement cost modelling, the Centre for International Economics (CIE) (2023) suggests values for carbon sequestration could range from $8,700 per ha in 2024 to $58,800 per ha by 2050. Carbon values depend heavily on price assumptions and policy settings, and future projections are highly uncertain.

Biodiversity and habitat provision

The YTFR supports diverse native flora and fauna, including threatened species such as Leadbeater's Possum and many other forest-dependent species, alongside Blackfish and platypus populations. Restoration cost proxies suggest biodiversity and habitat provision values of $758 per ha per year (Reside et al., 2025), while ecosystem accounting approaches estimate values of $4,800–$5,100 per ha per year for comparable sites (Cheesman et al., 2021). Non-market valuation studies further highlight strong public willingness to pay for species conservation, with historical estimates for Leadbeater's Possum equivalent to $94 per household annually (Jakobsson & Dragun, 2001). Restoration cost proxies assume uniform recovery costs and do not capture ecological complexity, while non-market valuations vary widely depending on species-specific preferences and survey design.

Summary of economic values for ecosystem services

The information and studies referenced above demonstrate that forests, including the YTFR, can provide substantial economic value through the delivery of ecosystem services. While no recent primary economic valuations exist for the YTFR specifically, the broader evidence base indicates that the ecological assets it supports are likely to hold significant economic value for local communities and society as a whole.

The economic values presented in the previous section are summarised in Table 2.

Table 2. Indicative economic values per unit for key ecosystem services delivered by the YTFR

Ecosystem service	Economic value ($ per ha per year)*	Source
Water supply and purification	$520	DELWP (2019b)
Erosion regulation	$1,100–$2,020	DELWP (2019b)
	$151	MJA (2014)
Natural hazard protection / water-flow regulation	$19	DELWP (2019b) (RFA forests)
	$4,000	MJA (2014) (metropolitan parks)
Carbon sequestration	$600	DELWP (2019b)
	$12,900	MJA (2014)
	$8,700 per ha in 2024 and $58,800 per ha in 2050	CIE (2023)

Ecosystem service	Economic value ($ per ha per year)*	Source
Biodiversity ecosystem account values (Gunbower-Koondrook-Perricoota pilot ecosystem account)	$4,800 to $5,100	Cheesman et al. (2021)
WTP for species protection (Leadbeater's possum)	$100 to $390 per household per year	Jakobsson & Dragun (2001)

* Unless presented otherwise

5 Future state and economic implications

This chapter describes the future state of the YTFR as national park. It also describes the potential economic implications of the government's plan to change the land use classification of the YTFR from state forest to national park. The potential economic implications described reflect potential marginal changes to social welfare, relative to the base case.

5.1 Land use classification

Under the government's plan, it is understood that the YTFR would be classified as national park under the National Parks Act 1975. It would remain as a closed water catchment. These classifications will govern the future management of the area and determine the permissible uses.

The National Parks Act 1975 includes provisions to protect Designated Water Supply Catchment Areas, water quality, and water resources, and to restrict human activity within these areas. Furthermore, the National Parks Regulations 2013 allow for additional Water Supply Catchment Areas to be designated for the protection of other catchments within parks governed by the National Parks Act 1975 (DEECA, 2024b).

To ensure the YTFR can continue to be managed as a closed water catchment within a national park, it may need to be declared a Designated Water Supply Catchment Area.

5.2 Management arrangements

Redesignating the YTFR from state forest to national park is not expected to lead to substantive changes in catchment management. Melbourne Water already manages the YTFR as a closed catchment, and it is believed that these practices closely align with those applied in other closed catchments within national parks.

However, the national park designation may restrict certain existing management activities or make approval processes more complex. For example, constructing water supply infrastructure could require authorisation under Section 27 of the National Parks Act 1975, while vegetation removal for asset protection may necessitate more rigorous environmental assessments. These changes could lead to increased management costs.

Transitioning the YTFR to national park may also introduce some administrative or compliance costs, such as updating management plans, signage, reporting frameworks, and interagency agreements. These are expected to be relatively minor, one-off adjustments, as core management practices, staffing, monitoring programmes, and access-control measures (e.g., fencing) are already in place.

5.3 Uses and values (i.e. ecosystem services)

Under the government's plan, it is understood that the YTFR would remain a closed water catchment with restricted public access. Consequently, the change in land use classification is unlikely to result in any significant changes to the existing uses and values (i.e. ecosystem services) provided by the YTFR, as previously outlined in Table 1.

5.4 Change in economic value relative to the base case

Changing the YTFR land use classification from state forest to national park is expected to have minimal impact on land management or the ecosystem services currently provided. Consequently, no material change in its economic value is anticipated.

The adoption of more restrictive land use classifications to limit human activity (e.g., recreational access, agriculture) can significantly improve water quality protection in public water supply catchments (Australian Bureau of Agriculture, Fisheries and Forestry, 2025). However, as such restrictions are already in place and are not expected be strengthened under the new classification, no additional benefits to water quality protections are anticipated.

Changes in economic value are assessed relative to the base case, which assumes current management and public access arrangements remain unchanged due to their considerable role in safeguarding water quality. While it is unlikely, these restrictions could theoretically be relaxed in the future. This possibility is explored further in the next section on the value of permanent protection.

Value of more permanent protection

One potential benefit of the planned changes is the increased certainty that the environmental values of the YTFR will be better protected under national park designation compared to state forest. This is because the legislation protecting national park areas under the National Parks Act 1975 (Vic) makes it difficult to re-purpose areas declared as national park to other land use categories. Areas under this Act receive 'permanent protection' and that any change to that dedication such as through rezoning or removal of park status, can only occur through legislative amendment.

In contrast, land classified as state forest is governed under the Forests Act 1958 (Vic), which explicitly provides for a wide range of licensed uses. This framework is inherently more flexible and therefore less secure than national park designation.

Assessing any marginal increase in value from enhanced protection of environmental values is complex. This is because:

1. Under the status quo, it is considered highly unlikely that the YTFR would be converted to other land uses, given its critical role in supplying water to Melbourne and minimising water treatment costs.
2. Non-use values (such as existence value) are inherently difficult to quantify, as they lack observable market prices.

Ultimately, given the level of protection already afforded to the YTFR under the base case, any increase in economic value from enhanced protection is expected to be marginal.

Avoided impacts of mining

Mining is permitted under state forest designation (i.e. under the base case). According to VEAC (2023), no recent mining activity has occurred in the YTFR, and it is thought to be highly unlikely given its status as a closed water catchment, however, the current legislative framework does not prohibit exploration or extraction[4]. Under the Mineral Resources (Sustainable Development) Act 1990, state forest is classified as 'unrestricted crown land', meaning licences and approvals could theoretically be granted for mining activities.

Designating the YTFR as a national park under the National Parks Act 1975 (Vic) would provide stronger legal protection from the potential impacts of mining. National parks are exempt from exploration, mining, and extractive licences under the Act, effectively eliminating the residual risk of resource extraction and reinforcing long-term protection from mining impacts.

If mining were to occur in the future, even at a small scale, it could have significant impacts, including short-term deterioration in water quality, resulting in increased water treatment and monitoring costs, as well as long-term contamination risks from active or legacy mines. Evidence from Nascimento et al. (2023) shows that metal contamination can persist long after mining ceases, highlighting the potential long-term liabilities for Melbourne Water.

[4] The Victorian Heritage Database (DEECA, 2024c) indicates that there are three historic mine sites along the boundary of the YTFR. These are Sovereign Mine Reefton Spur, Victorian Mount Morgan Mine, and Snobs Creek Mine.

Transitioning to national park status may deliver a marginal increase in economic value by avoiding potential mining-related impacts on water quality and subsequent water treatment costs, as well as reducing residual risks to water supply. However, this designation also removes the option to mine in the future, representing a loss of option value—the forgone potential economic benefits that could arise if mineral resources were exploited under an alternative land use scenario. While this option value is difficult to quantify and likely small given the closed catchment status and water supply priorities, it remains an important consideration when assessing trade-offs between the base case and the planned government changes.

6 Conclusions and next steps

The YTFR provides economic value through the provision of ecosystem services. However, as a closed water catchment with restricted public access, its uses and values are more limited than those of a typical state forest. Among these services, water supply and purification are expected to represent some of the most significant sources of economic value.

Under the government's plan to change the land use classification of the YTFR from state forest to national park, it would continue to be managed as a closed water catchment. Consequently, the change in classification is unlikely to result in any significant changes to the ecosystem services provided or to the area's management. Melbourne Water already manages the YTFR as a closed catchment, with practices closely aligned to those applied in other closed catchments within national parks.

With no material changes to land management or ecosystem services, there is also not expected to be any significant change to the economic value it provides, relative to the base case. This assumes that its role in safeguarding water quality makes future changes to land use highly unlikely.

While mining is theoretically permitted under the state forest designation, no recent mining has occurred, and such activity is considered highly unlikely given the area's role in providing high-quality drinking water to Melbourne. Redesignating the YTFR as a national park will further strengthen protection by eliminating residual risks of mining, but this would also remove the future option to mine, resulting in the loss of this 'option value'.

The analysis indicates that the YTFR already benefits from a significant level of environmental protection under its status as a closed water catchment, meaning any increase in economic value resulting from enhanced long term legal protection is expected to be marginal.

Evidence from other economic valuation studies highlights the significant economic value the YTFR may provide through the delivery of ecosystem services. However, these values are indicative only and are not based on the specific biophysical attributes of the region. Therefore, they have not been aggregated to estimate the total economic value of the YTFR.

To strengthen understanding of both current and potential future economic values associated with the YTFR, further research should focus on the region's biophysical characteristics. Collecting detailed, spatially explicit data (e.g. vegetation condition, water yield, sediment loads) would enable the development of more tailored economic valuations. This approach would provide clearer insights into the flow of economic benefits from different ecosystem services and the marginal changes between scenarios. It would also reduce reliance on generic economic unit values or qualitative judgements, offering robust evidence to inform future policy decisions.

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