



Victorian
Environmental
Assessment
Council

Assessment of the values of the Strathbogie Ranges and Mirboo North Immediate Protection Areas

JULY 2022



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.

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JULY 2022

Published by the Victorian Environmental Assessment Council
2 Lonsdale Street, Melbourne, Victoria, 3000

July 2022

Also published on veac.vic.gov.au

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Design by Kate Mansell Design Studio

Citation

Victorian Environmental Assessment Council (VEAC) (2022)
Assessment of the values of the Strathbogrie Ranges and Mirboo
North Immediate Protection Areas. Victorian Environmental
Assessment Council, Melbourne

ISBN 978-1-76105-216-3 (pdf/online/MS word)

ISBN 978-1-76136-020-6 (Print)

For more information contact the Victorian Environmental
Assessment Council on (03) 9637 9902 or 1800 134 803,
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In November 2021, the Victorian Environmental Assessment Council (VEAC) was requested by the Minister for Energy, Environment and Climate Change, the Hon Lily D'Ambrosio MP,¹ to carry out an assessment of the values of state forests in the areas identified as Immediate Protection Areas (IPAs) in the Strathbogie Ranges and Mirboo North. This assessment was to inform community consultation to be undertaken by an Eminent Panel for Community Engagement (EPCE) which the government established for this purpose. The terms of reference accompanying the Minister's request to VEAC specified five purposes of the assessment:

- a) identify the biodiversity, ecological and geological and geomorphological values of the specified area
- b) identify the cultural heritage, social and economic values of the specified area
- c) identify the current and likely future threats to those values, including climate change
- d) identify the typical land use categories commensurate with the identified values
- e) assess the potential economic implications of proposed land use changes recommended by the EPCE and provided to the Council.

The terms of reference also specified the publication of the results of the assessment in two stages:

- an assessment of the matters (a) to (d) specified above. In March 2022 VEAC published two reports (one for each IPA) that were used by the EPCE as the basis for its community consultation.
- this report on the completed assessment. In part 1, new material addresses part (e) of the terms of reference, as well as supplementary information, updates and clarifications to the March 2022 reports. Parts 2 and 3 reproduce the two reports published in March 2022 with minor corrections.

Part 1

Following community consultation, the EPCE provided VEAC with proposed land use changes as follows:

- The **Strathbogie Ranges** IPA be managed in accordance with the principles of an interim Strathbogie Ranges Cultural Reserve, with recommended permissible uses and activities subject to further consideration through a detailed management planning process. Cultural Reserve was identified as a potential land category in the Victorian Traditional Owner Cultural Landscapes Strategy to describe a culturally important place or area within a cultural landscape. Cultural Reserve is not a current category in Victoria's public land framework. The EPCE's proposed Strathbogie Ranges Cultural Reserve would pilot this approach.
- The **Mirboo North** IPA become a Conservation Park.

The EPCE has provided a final report to the Minister with its recommendations on the future use and management of the Mirboo North and Strathbogie Ranges IPAs.

¹ Now the Minister for Environment and Climate Action

In VEAC's terms of reference, assessment of the economic implications of EPCE's recommendations is limited to assessment of the EPCE's recommended land use changes (expressed as the proposed public land category). VEAC is aware that there are several other groups of EPCE recommendations that aim to generate cultural, social and environmental benefits in the future. These are not included within the scope of VEAC's analysis.

For VEAC's assessment, changes in economic values relative to the base case (continuation of the current policy setting for the IPA) are the relevant measure for the evaluation of policy initiatives using the cost benefit analysis (CBA) method. All activities that involve expenditure in a region provide some stimulus to economic activity in that region. Changes in these can be considered using the regional economic impact assessment framework.

VEAC's **assessment of the potential economic implications** of the EPCE's proposals found:

- There are few economic implications of the land use changes recommended by the EPCE. Most of the costs and benefits from changes in land use arise from the cessation of commercial timber harvesting in 2019, prior to and outside the scope of the work of VEAC and the EPCE.
- Most activities currently occurring in the IPAs will not be affected by the EPCE's recommendations. Four-wheel driving and trail bike riding on publicly available formed roads and tracks and apiculture are unchanged. Domestic firewood collection is proposed to be unchanged in the Strathbogie Ranges IPA and is not currently allowed in the Mirboo North IPA.
- Activities that are affected, such as domestic stock grazing, are minor in extent and intensity, and negligible in the context of regional economic activity. For the very few recreational activities that may be affected such as prospecting there is low or non-existent current use and high substitutability.
- The potential impact of some restrictions to mining and extractive industries in the Strathbogie Ranges IPA is likely to be modest.
- Potential costs and benefits of some of the EPCE's recommendations remain unquantified, such as those arising from increased investment in management and infrastructure.
- Cultural benefits to Traditional Owners and the broader community from the proposed changes towards direct management by Traditional Owners remain unquantified.

Part 1 of this report also provides the following supplementary information, updates and clarifications:

- Supplementary information on the system of **public land use categories** in Victoria and how it relates to its predecessors and planned new or amended public land legislation. The conservation park category and reference area overlay are explained in further detail and the over-arching protection of Traditional Owner rights and interests in legislation reforms is highlighted.
- Clarification of **allowed activities** in the relevant public land use categories.
- Clarification that Victoria's **bushfire risk** management planning considers the whole landscape, regardless of land tenure (including public and private land).
- Supplementary information about the status of **plantations** near the Mirboo North IPA.
- **Social and demographic profiles** of the regions around the IPAs:
 - key drivers of both economies are agriculture
 - employment in the Forestry and Logging, and Wood Manufacturing sectors represented 1.8% of total employment around the Strathbogie Ranges IPA and 0.3% of total employment around the Mirboo North IPA.
 - in 2019 tourism expenditure represented 7.0% of the output of the regional economy around the Strathbogie Ranges IPA and 4.1% around the Mirboo North IPA.

- New information, including maps, about three species that have recently been listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and are found in the IPAs: **yellow-bellied glider, gang-gang cockatoo and pilotbird**. Of these species the IPAs are most important for the gang-gang cockatoo.
- Supplementary information on the cordierite-rich and unusually shallow and thin **granite** sheet found in the Strathbogie Ranges IPA, and the occurrence of **bauxite** and the history of its extraction near the Mirboo North IPA.
- New maps showing **domestic firewood collection** areas for the last 10 seasons augment the scant information available for this high-profile community activity.

Parts 2 and 3

VEAC's March 2022 reports attached as parts 2 and 3 of this report both include an executive summary. These reports were a key consideration of the work of the EPCE. In preparing the VEAC reports, information was sourced from government datasets such as the Victoria Biodiversity Atlas, published reports, external publicly available datasets, meetings with scientists, land managers, resource managers, and information and reports from community groups and forest users where available.

In brief, for the Strathbogie Ranges IPA:

- The high cultural significance of the Strathbogie Cultural Landscape to Taungurung Traditional Owners is documented in a report prepared by the Taungurung Land and Waters Council and reproduced in full in part 2.
- Containing the largest and best quality native vegetation in the Strathbogie Ranges, this IPA supports an extensive list of natural and other values including the headwaters of Seven Creeks, at least 20 threatened species, 13 Ecological Vegetation Classes (EVCs) that are poorly represented in existing protected areas, recreational opportunities for camping, four-wheel driving, horse riding, trail bike riding, bushwalking, nature study, hunting and scenic driving. Current resource uses include quartz mining, apiculture, domestic firewood collection, licensed stock grazing, tourism and outdoor education.
- The main threats to these values include climate change, invasive plants and animals, wildfires and planned burning and illegal off-track vehicle use.
- VEAC concluded that these values were commensurate with conservation park over the central and northern part of the IPA. For the remaining southwestern part of the IPA, forest park was considered the most appropriate land use category.
- VEAC noted its support for the future incorporation of Traditional Owners' cultural landscapes approaches into the categorisation and management of the Strathbogie Ranges native forests, as well as reforms to enable Traditional Owners to directly manage land.

For the Mirboo North IPA:

- The report prepared by the Gunaikurnai Land and Waters Aboriginal Corporation, and reproduced in full in part 3, expresses the need for cultural heritage survey work and Reading Country Assessments and associated research to provide Traditional Owners with a deeper understanding of the land and waters of the IPA.

- Although relatively small in size the IPA forms a core part of the highest value area for biodiversity in the western half of the Strzelecki Ranges, and it is known or likely to contribute to the conservation of at least 10 threatened species. The forests of the IPA are of generally high quality and include EVCs that are underrepresented in existing protected areas. The IPA comprises a significant part of the catchment for Mirboo North's water supply and is popular with locals and tourists for nature study, trail bike riding, horse riding, bushwalking, mountain bike riding and four-wheel driving.
- The main threats to these values are climate change, invasive plants and animals, wildfires and planned burning, habitat loss and fragmentation, more intensive human use pressures and illegal off-track vehicle use.
- VEAC identified regional park as the public land category commensurate with these values given the small size of the IPA. VEAC noted however that the identified values were commensurate with conservation park if combined with the surrounding regional park areas, subject to further assessment.

VEAC acknowledged there are significant gaps and limitations in the current legislation that pose barriers to enabling Traditional Owners' self determination and supporting cultural land management, and the current public land legislation reforms provide an opportunity to address these.



Part 1

1



1.1 Introduction

In November 2021, the Victorian Environmental Assessment Council (VEAC) was requested by the then Minister for Energy, Environment and Climate Change,¹ the Hon Lily D'Ambrosio MP, to carry out an assessment of the values of state forests in the areas identified as Immediate Protection Areas (IPAs) in the Strathbogrie Ranges and Mirboo North.

The IPAs were put in place in November 2019 alongside the Victorian Forestry Plan and the announcement by the Victorian government that timber harvesting would end in Victoria's native forests by 2030. Environmental protections that were announced included the immediate protection from commercial timber harvesting of 96,000 hectares of state forest in eastern Victoria. The IPAs are in the Strathbogrie Ranges, Central Highlands, East Gippsland and near Mirboo North.

In 2021 the government announced that VEAC would undertake a scientific assessment of the environmental, biodiversity and other values in IPAs and community consultation would be undertaken by an Eminent Panel for Community Engagement (EPCE) on the future uses of State forest in eastern Victoria. The assessment of the IPAs will be delivered in two phases with phase 1 covering IPAs in the Strathbogrie Ranges and near Mirboo North.

As part of phase 1, two reports were produced by VEAC in March 2022:

- *Assessment of the values of the Strathbogrie Ranges Immediate Protection Area*
- *Assessment of the values of the Mirboo North Immediate Protection Area.*

These reports assessed the values of the Strathbogrie Ranges and Mirboo North IPAs to inform the community consultation undertaken by the EPCE as part of phase 1. The assessments included the direct input from the Traditional Owners of the Countries that include the IPAs, and advice on the typical land use categories commensurate with the identified values. The EPCE used the assessments during community engagement from April to June 2022.

The EPCE is chaired by Karen Cain and includes the VEAC chairperson Mellissa Wood, a nominee of the Minister for Regional Development and representation from relevant Victorian Traditional Owner groups.² The EPCE completed a range of engagement activities from April to June 2022. The EPCE's full report to the Minister has been published and is available at <https://www.delwp.vic.gov.au/futureforests/immediate-protection-areas>. The report includes two engagement reports in appendices capturing what was heard during community consultation. The proposed land use changes recommended by the EPCE following community consultation are described in section 1.4 of this report.

VEAC did not undertake community consultation or receive formal submissions on the assessments.

¹ Now Minister for Environment and Climate Action

² More information about the EPCE, including membership, can be found here <https://www.delwp.vic.gov.au/futureforests/immediate-protection-areas/eminant-panel-for-community-engagement>

Structure of this report

This document is the final assessment by VEAC for phase 1 and includes the assessment of the potential economic implications of proposed land use changes recommended by the EPCE. It is in three parts.

Part 1 addresses topic (e) of the terms of reference by providing an economic assessment of the proposed land use changes recommended by the EPCE. It also includes some supplementary information, updates and clarifications following the release of the two reports in March 2022.

Parts 2 and 3 reproduce the reports released by VEAC in March 2022 assessing the values of the Strathbogie Ranges (part 2) and Mirboo North (part 3) IPAs. The reports are included in full as published, including appendices.

1.2 Terms of reference

On 25 November 2021, the then Minister for Energy, Environment and Climate Change³ requested VEAC to assess the values of state forests in the Immediate Protection Areas in the Strathbogie Ranges and Mirboo North. See box 1.1 for the terms of reference. The terms of reference were tabled in Parliament and gazetted on 2 December 2021. Minor amendments were made to the terms of reference in February 2022 and the amended terms of reference were tabled and gazetted on 8 March 2022.

³ Now Minister for Environment and Climate Action

Box 1.1 Terms of reference

Pursuant to section 26B of the *Victorian Environmental Assessment Council Act 2001*, the Minister for Energy, Environment and Climate Change hereby requests the Victorian Environmental Assessment Council (the Council) to carry out an assessment of the values of state forests¹ in the Immediate Protection Areas (IPAs) in the Strathbogrie Ranges and Mirboo North² as shown on the accompanying map.

The assessment will inform the work of an Eminent Panel for Community Engagement (EPCE) in its provision of advice and recommendations to the Minister for Energy, Environment and Climate Change on the future uses of the Immediate Protection Areas and state forest in eastern Victoria.

The purpose of the assessment is to:

- a) identify the biodiversity, ecological and geological and geomorphological values of the specified area
- b) identify the cultural heritage, social and economic values of the specified area
- c) identify the current and likely future threats to those values, including climate change
- d) identify the typical land use categories commensurate with the identified values
- e) assess the potential economic implications of proposed land use changes recommended by the EPCE and provided to the Council

This assessment will build upon the Council's Conservation values of state forests - *Assessment report* (2017) by providing a more localised assessment of these areas.

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

This request is for an assessment and report on the above values and the economic implications of the proposed recommendations of the EPCE. Public consultation and recommendations are not required.

The Council will engage with the EPCE regarding the content of the Council's assessment.

The Council must publish its assessment of the matters specified in paragraphs (a) to (d) above by 31 March 2022* and submit a report on the completed assessment by 31 July 2022#.

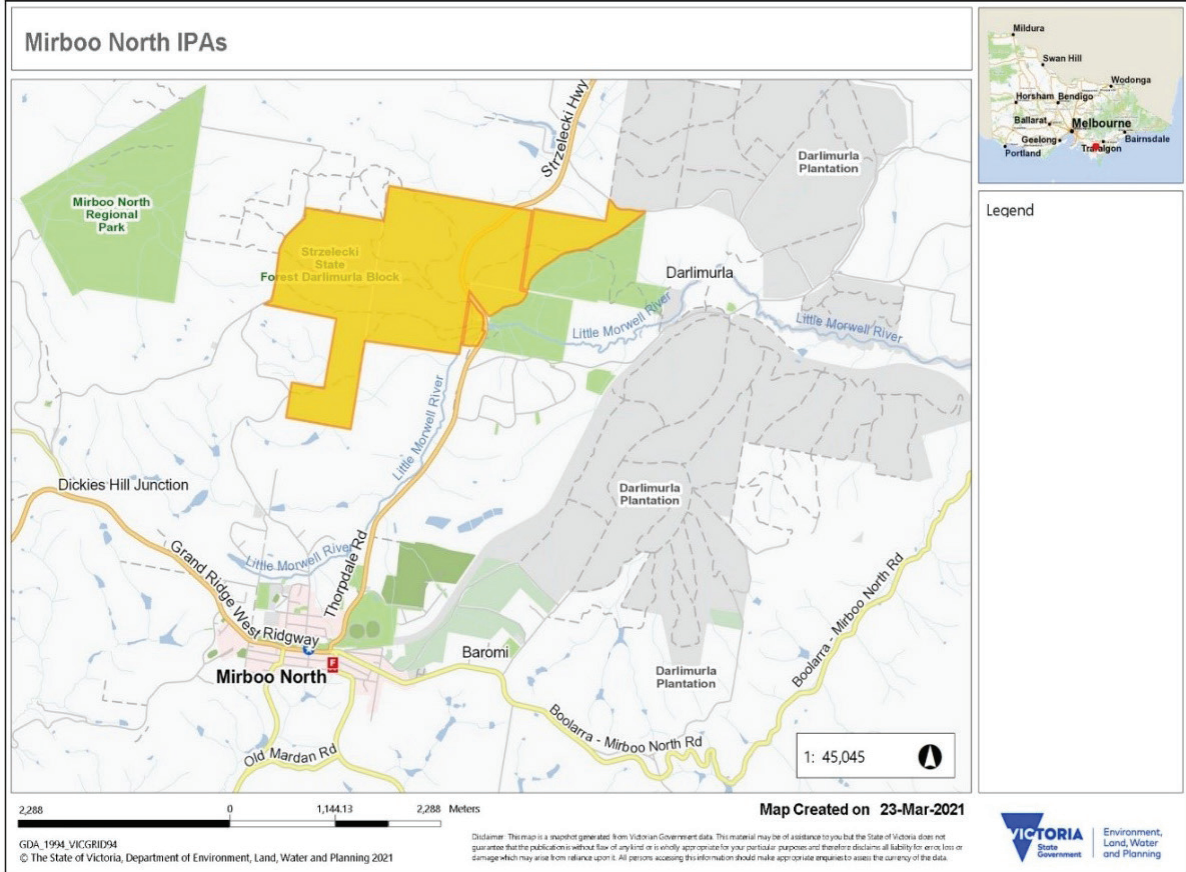
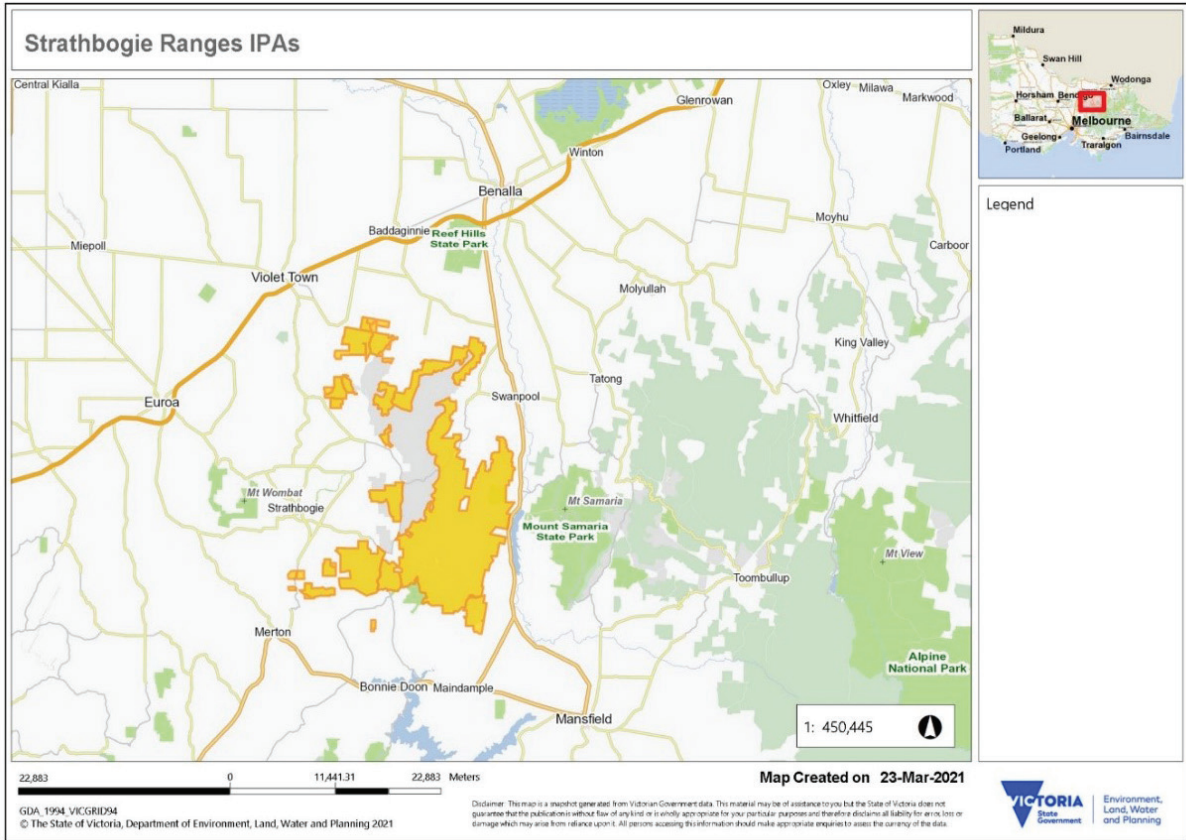
1 For the purposes of this assessment, State forest is defined as the areas of public land depicted as General Management Zone, Special Management Zone and Special Protection Zone in the maps accompanying the Regional Forest Agreements as updated from time to time and expressed in the DELWP forest zoning data set (FMZ 100) as at the time of commencement of the assessment.

2 For the purposes of this assessment, IPAs are defined as the areas announced as part of the Victorian Forestry Plan in November 2019 and updated on 21 November 2019.

*originally 28 February 2022

#originally 31 May 2022

Figure 1.1 Map accompanying the terms of reference: Immediate Protection Areas in the Strathbogrie Ranges and Mirboo North (orange shading)



1.3 Assessment process and timelines

The role of VEAC is outlined in section 1.3 in each of the assessments published in March 2022 and reproduced in parts 2 and 3 of this report.

The full process to provide advice to government on the future uses of State forest in eastern Victoria involves scientific assessments undertaken by VEAC and community engagement on the assessments undertaken by the EPCE. Further information can be found in section 1.4 in each of the assessments published in March 2022 and reproduced in parts 2 and 3 of this report.

An updated version of table 1.1 from the assessments published in March 2022 is included here to show the process and timelines for phases 1 and 2, together with the relevant links to the EPCE processes including consultation.

For further background and context on the assessment process see sections 1.5 to 1.10 in each of the assessments published in March 2022 and reproduced in parts 2 and 3 of this report.

Table 1.1 Assessment process and timelines

Phase	Timing	Activity
Preliminary	November 2019	Victorian government announces cessation of logging in native forests by 2030 and establishes Immediate Protection Areas (IPAs)
	August 2021	Minister announces process for assessment and advice on permanent protection of IPAs in eastern Victorian forests
	January 2022	Eminent Panel for Community Engagement (EPCE) established
Phase 1	November 2021	Minister provides terms of reference to VEAC for assessment of the values of Mirboo North and Strathbogrie Ranges IPAs
	31 March 2022	VEAC publishes assessment of Mirboo North and Strathbogrie Ranges IPAs for the matters specified in paragraphs (a) to (d) in terms of reference
	April – June 2022	EPCE conducts community engagement informed by VEAC's assessment
	June 2022	EPCE provides proposed land use changes to VEAC
	June – July 2022	VEAC assesses the potential economic implications of EPCE's proposed land use changes as specified in (e) in terms of reference
	31 July 2022	VEAC submits full report to Minister addressing (a) to (e) in terms of reference
	Mid 2022	EPCE submits Phase 1 report to the Minister
	7 August 2022	VEAC report publicly released
Phase 2	Mid-2022 tbc	Terms of reference provided to VEAC for assessment of the values of IPAs in Central Highlands and East Gippsland and future use and management of State forests in eastern Victoria
	tbc	VEAC report due
	tbc	EPCE report due

1.4 Proposed land use changes recommended by the Eminent Panel for Community Engagement

Following completion of the EPCE's engagement activities from April to June 2022, the EPCE provided VEAC with proposed land use changes for the Strathbogie Ranges and Mirboo North IPAs as follows:

Strathbogie Ranges – Recommend the Strathbogie Ranges Immediate Protection Area be managed in accordance with the principles of an interim Strathbogie Ranges Cultural Reserve public land category. The Panel recommended the permissible uses and activities may be subject to further consideration through a detailed management planning process.

Mirboo North – Recommend that the Mirboo North Immediate Protection Area be managed in accordance with a Conservation Park public land category and uses associated with this category.

The panel provided further information on permissible uses and activities in the public land category in table 1.2.

Cultural Reserve was identified in the Victorian Traditional Owner Cultural Landscapes Strategy to describe a culturally important place or area within a cultural landscape. The EPCE's proposed Strathbogie Ranges Cultural Reserve would pilot this approach.

Table 1.2 Proposed permissible uses and activities in public land category

The Panel acknowledges Traditional Owner rights to take and use natural resources and the definition of management uses and activities should not impinge on these rights nor inadvertently create barriers to the application of indigenous cultural land management practices in healing and caring for Country.

Activity	Conservation Park*	Strathbogie Ranges Cultural Reserve**
Bushwalking, nature observation and picnicking	Yes	Yes
Camping	Yes - in designated areas	Yes - in designated camping areas only
Car touring, including four-wheel driving on publicly available formed roads and tracks	Yes	Yes
Trail bike riding on publicly available formed roads and tracks	Yes	Yes
Mountain biking and cycling on publicly available formed roads and tracks	Yes	Yes
Horse riding on formed roads and tracks	Yes, as specified by the Land Manager	Yes - unless specified by the Land Manager
Dog walking on lead	No, except as specified by the Land Manager	Yes
Apiculture at licensed sites	Yes	Yes
Grazing by domestic stock	No	No - except as specified by the Land Manager
Prospecting	No	No - except as specified by the Land Manager
Recreational hunting	No	No - except as specified by the Land Manager
Timber harvesting	No	No
Domestic firewood collection	No	Within designated areas only
Exploration and mining	Yes, subject to National Parks Act minister's consent.	No, except where a licence predates the reserve

*Conservation Park land use classification and associated uses outlined in this table may be subject to change in accordance with the outcomes of the proposed public land legislation reforms.

** Strathbogie Ranges Cultural Reserve uses outlined in this table may be subject to change following management review. All permissible uses will be consistent with the management purpose: to maintain, restore and heal Country and its cultural landscapes, protect Traditional Owners' biocultural values and knowledge and Traditional Owners' rights and interests in and connections to Country. Note, that in accordance with the Panel's recommendations, 'Land Manager' in this instance refers to the relevant governance function, such as Committee of Management, responsible for Strathbogie Cultural Reserve area.

1.5 Economic implications of proposed land use changes

The terms of reference for VEAC's assessment require VEAC to assess the potential economic implications of proposed land use changes recommended by the EPCE and provided to the Council. Gillespie Economics were commissioned to prepare this assessment. A summary is provided in the following sections and the full report is available on VEAC's website.⁴

1.5.1 Overview of the findings

In summary, there are few economic implications of the EPCE public land category recommendations as provided to VEAC.

Most of the costs and benefits from changes in land use arise from the cessation of commercial timber harvesting, a decision made by the Victorian government in 2019 and not within the scope of the work of VEAC or the EPCE.

This economic assessment focuses on the proposed land use changes recommended by the EPCE.

The EPCE's proposed land use changes affect very few activities in the Strathbogie Ranges and the Mirboo North IPAs. For example, domestic firewood collection is proposed to be unchanged in the Strathbogie Ranges IPA and is not currently allowed in the Mirboo North IPA. Apiculture, four wheel driving and trail bike riding are unchanged.

Those activities that are affected, such as domestic stock grazing, are minor in extent and intensity, and negligible in the context of regional economic activity. For the very few recreational activities that may be affected such as prospecting there is low or non-existent current use and high substitutability.⁵ In the Strathbogie Ranges IPA, impacts from restrictions to mining and extractive industries are likely to be modest.

Potential increases in investment in management and infrastructure may lead to expanded visitor opportunities, although there is no information available on these future costs and benefits at present.

There may also be future cultural benefits to Traditional Owners and the broader community (non-use benefits) from the proposed changes to management in the Strathbogie Ranges IPA towards direct management by Traditional Owners. These remain unquantified.

1.5.2 Approach to the assessment

This economic assessment aims to provide:

- a. an economic baseline and/or a review of the available information on the economic value of the industries and recreational and other activities in the investigation area in table 1.3.
- b. an assessment of the costs and benefits of the EPCE's proposed land use change recommendations provided to VEAC and how those costs and benefits are distributed
- c. a qualitative description of the potential social implications of EPCE's recommendations, with attention to implications for regional townships and communities.

Table 1.3 Potential industries and recreation activities in the Strathbogie Ranges and Mirboo North IPAs

	Sector or activity
Industries	tourism, mining, apiculture, water, public land grazing, outdoor education, commercial guiding
Recreational activities incl associated events	prospecting, horse riding, hunting, 4WDing, trail bike riding, car rallying, mountain biking, bush walking, bird watching and nature study, orienteering, camping, scenic driving/day touring/picnicking
Other	domestic firewood collection, events and festivals, altered property values

⁴ <https://www.veac.vic.gov.au/investigations-assessments/current-assessments/investigation/assessment-of-the-values-of-immediate-protection-areas-in-the-strathbogie-ranges-and-mirboo-north>

⁵ For example, recreational prospecting is low overall in the Strathbogie Ranges IPA, and higher in the Tallangalook-Dry Creek historic reserve to the south.

Economic values and economic activity

Economic values are focused on the well-being of people as measured by the surpluses (consumer and producer surpluses) that accrue to people. Baseline economic values of the forests of the Strathbogie Ranges and Mirboo North IPAs may arise from two types of values:

- use values (use of the forest and its resources)
- non-use values (values that accrue to people from just knowing that a forest resource is being protected).

Combined, all the economic values that can be obtained from a resource are referred to as Total Economic Value (TEV), although it needs to be recognised that some values that a resource is able to provide may be at least partially mutually exclusive e.g. timber harvesting and biodiversity conservation.

Changes in economic values (marginal values), relative to the base case, are the relevant measure for the evaluation of policy initiatives using the cost benefit analysis (CBA) method. The base case is generally defined as continuation of the current policy setting.

All activities that involve expenditure in a region provide some stimulus to economic activity in that region. Changes in these can be considered using the regional economic impact assessment framework.

Cost Benefit Analysis (CBA) framework

From a CBA perspective, the current assessments and recommendations can be seen as the second stage of a land allocation decision making process. The first stage was the government's decision in 2019 to protect the Strathbogie Ranges and Mirboo North forests from commercial timber harvesting.

The main costs and benefits of the two-stage process are attributable to this first stage decision. The costs are the foregone commercial timber values of the forest. The benefits relate to increased biodiversity conservation values, heritage protection and water quality and quantity regulation in the catchments, from cessation of harvesting.

The second stage in this land use allocation decision relates to the nomination of a land use classification that best matches the values of the forests and community aspirations. This will have some economic costs associated with the restriction of other forest uses and some additional economic benefits (incremental environment, heritage, and water regulation values) from the restriction of these additional forest uses.

1.5.3 Base case economic values

Economic values from the current management of the Strathbogie Ranges IPA are associated with:

- Management costs
- Biodiversity conservation
- Water quality and quantity regulation
- Aboriginal cultural heritage protection
- Apiculture
- Mining and extractive industry
- Recreation/tourism uses e.g. camping, horse riding, walking, running, cycling, trail bike and four wheel driving, hunting, prospecting etc.
- Education
- Domestic firewood
- Domestic stock grazing
- Telecommunications.

Economic values from the current management of the Mirboo North IPA are associated with:

- Management costs
- Biodiversity conservation
- Water quality and quantity regulation
- Aboriginal cultural heritage protection
- Apiculture
- Recreation/tourism uses e.g. horse riding, four wheel driving, mountain and trail bike riding, walking, running etc.
- Access for domestic stock grazing.

1.5.4 Implications of the EPCE recommendations

As outlined in section 1.5.2, most of the costs and benefits from changes in land use in the IPAs arise from the cessation of commercial timber harvesting, a decision made by the Victorian government in 2019 and not within the scope of the work of VEAC or the EPCE.

The EPCE's recommendations are a second stage in this land use allocation process. They will have some economic costs associated with the restriction of forest uses other than commercial timber harvesting and some additional economic benefits (incremental environment, heritage, and water regulation values) from the restriction of these additional forest uses. An uplift in ongoing funding for land management recommended by the EPCE may lead to expanded visitor opportunities; these costs and benefits remain unquantified.

An **interim Strathbogrie Ranges Cultural Reserve** (see section 1.4) is the EPCE's proposal for the Strathbogrie Ranges IPA, with further investigation of permitted activities to take place over the next one to three years.

From the advice received from the EPCE, the main current land uses that may be impacted are grazing by domestic stock and recreational prospecting. It is also assumed that extractive industry and mining would be prohibited, except where licences predate the reserve. Four wheel driving and trail bike riding, where legally undertaken on publicly available formed roads and tracks, are unaffected by the proposed land use changes. Mountain biking and cycling on publicly available formed roads and tracks are also unaffected. Other unaffected activities are: apiculture on licensed sites, dog walking on a lead, recreational hunting, camping in designated areas, and horse riding on formed roads and tracks.

Conservation Park (see section 1.4) is the EPCE's proposed land use classification for the Mirboo North IPA.

Land uses for this public land category generally exclude domestic firewood collection, recreational hunting, access for grazing by domestic stock, and recreational prospecting. Dogs may be excluded or restricted to areas specified by the land manager such as visitor areas or along a limited number of specified tracks. There would also be a change in the approval process for extractive industry and mining. However, no legal firewood collection is currently permitted in the Mirboo North IPA and the land is unsuitable for recreational hunting. The land also has low prospectivity. Consequently, the main implication of the recommended land use is a restriction on access to grazing by domestic stock in a very small licensed area, and restrictions on dog walking. Four wheel driving and trail bike riding, where legally undertaken on publicly available formed roads and tracks, are unaffected by the proposed land use changes. Mountain biking and cycling on publicly available formed roads and tracks are also unaffected. Other unaffected activities are apiculture on licensed sites and horse riding on formed roads and tracks.

The estimated additional economic costs of the recommendations for each IPA are summarised in table 1.4. For the Strathbogrie Ranges IPA, impacts for a three-year period and 30-year period are reported. The full economic assessment report is available on VEAC's website.

Table 1.4 Estimated economic costs associated with EPCE recommendations (present value @7% discount rate)

Strathbogie Ranges			Mirboo North	
	\$ - 3-year impact	\$ - 30-year impact		\$ - 30 year impact
Reduction in domestic stock grazing	\$30,000	\$145,000	Reduction in access for domestic stock grazing	\$500
Reduction in recreational prospecting	\$17,000	\$82,000	Restrictions to dog walking	\$17,000
Reduction in extractive industry	NQ	NQ		
Reduction in mining	NQ	NQ		
	\$47,000	\$227,000	Total	\$17,500

NQ: not quantified

The recommended land use classifications would also provide some conservation, heritage, and water regulation benefits from the restriction of impacting activities. In addition, there may also be some benefits to the community from the improved security of tenure associated with allocating land to a public land use category and away from an interim protection status.⁶ For the Strathbogie Ranges IPA, there may also be potential non-use benefits to the community associated with knowing that the land will be managed by Traditional Owners.⁷ The abovementioned potential benefits remain unquantified in the analysis. Unquantified benefits would need to exceed \$17,500 for Mirboo North and up to \$227,000 for the Strathbogie Ranges IPA, for the economic benefits of the proposed land use changes to exceed the economic costs.

Additional recreation benefits may arise from active management of the subject lands for recreation activity. Substantive additional recreation benefits would require additional investment, particularly in infrastructure. Such infrastructure investments remain unquantified.

Additional conservation benefits may also arise from active conservation management of the subject lands. Like recreation, this is subject to additional investment and remains unquantified.

1.5.5 Economic activity impacts

Potential negative impacts of the land use recommendations on regional economies arise from:

- reduction in commercial activities that purchase inputs to production from the local economy and employ people who spend some of their income in the region economy
- displaced recreation activities (where there is no substitution) undertaken by people travelling from outside the region into the region i.e. tourists, who spend money in the region on accommodation, food and inputs into their recreation activity.

The recommendations for the Strathbogie Ranges IPA will potentially result in a minor contraction in grazing activity. The recommendation will also prohibit extractive industry and mining, except where licences predate the reserve. The area is highly prospective. Extractive industry and mining projects can provide significant economic activity to regional economies. However, any future extractive industry and mining projects are highly uncertain and so the consequences for regional economic activity are also highly uncertain.

The EPCE recommendations will also result in some reduction in regional economic activity associated with recreational prospecting. However, the levels of this activity in the Strathbogie Ranges IPA are modest and the potential for these activities to be undertaken in other areas in the region is medium to high.

The recommendations for the Mirboo North IPA will potentially result in an inconsequential contraction in grazing economic activity in the region.

⁶ The nonmarket valuation literature shows that people value increases in certainty of environmental outcomes.

⁷ Nonmarket valuation studies have found community willingness to pay for the protection of significant Aboriginal sites. These type of non-use values may potentially extend to management of land by Traditional Owners, although this has not been empirically tested.

1.6 Supplementary information, updates and clarifications

Updates to the information in the individual assessments for the Strathbogie Ranges and Mirboo North IPAs published in March 2022 are provided in the following sections 1.6.1 to 1.6.8. The March 2022 reports are reproduced in parts 2 and 3 of this document. Clarifications and more details are also provided where this is considered to be useful.

Sections 1.6.1 to 1.6.5 relate largely to introductory material and regional context in chapters 1 and 2 of the March 2022 reports, while sections 1.6.6 to 1.6.8 update information in chapter 3 on values of the IPAs.

1.6.1 Public land categories

An overview of public land categories was provided in section 5.1 of each of the assessments which are reproduced in full in this document (see parts 2 and 3). Below is a summary of some of this information:

- For the purposes of VEAC's work, public land classification is the assignment of public land to specific purposes and uses, and the naming of the resulting public land use categories.
- In 2017, the Victorian government broadly accepted the recommendation in VEAC's Statewide Assessment of Public Land for rationalising and consolidating the system of public land use categories.
- VEAC's recommendation to rewrite Victoria's public land legislation was also broadly accepted. A consultation paper was released for public comment by the Victorian government in 2021 seeking comment on proposals to renew Victoria's public land legislation.

Further information is provided here on the revised public land use categories arising from VEAC's Statewide Assessment of Public Land and the associated renewal of Victoria's public land legislation. Additional information is also provided on reference areas.

The terminology for the revised public land use categories was adopted in the assessments published by VEAC in March 2022. An outline of revised public land use categories recommended in VEAC's Statewide Assessment of Public Land is provided in table 1.5, showing how it aligns with the previous Land Conservation Council (LCC), Environment Conservation Council (ECC) and VEAC categories and sub-categories. Only land use categories that were identified as potentially commensurate with the identified values of the Mirboo North and Strathbogie Ranges IPAs are included in table 1.5. The purposes of each category should be read together with an over-arching purpose to protect the rights and interests of Traditional Owners and native title holders and their cultural values.

Conservation park is a consolidated public land use category arising from VEAC's Statewide Assessment of Public Land. It is part of the revised system of public land use categories developed in that assessment. The conservation park category consolidates and provides more clarity around purpose for a number of existing 'other parks' under schedule 3 of the National Parks Act including coastal parks.

It includes 10 of the existing 18 'other parks' listed on schedule 3 of the National Parks Act when the revised system was developed. Two new conservation parks (Cobaw Conservation Park and Hepburn Conservation Park) were subsequently recommended in VEAC's Central West Investigation and accepted by government in 2021.

The revised public land use categories are expected to be included in the relevant new or amended public land legislation.

Table 1.5 Current public land use categories

Public land category and description	Characteristics and purposes ⁸	Former LCC, ECC or VEAC categories and sub-categories
National park*	<p>Extensive area or areas often with national significance with outstanding natural values and diverse land types contributing to representativeness of parks and reserves in the state</p> <p>Purposes</p> <ul style="list-style-type: none"> • Protect the natural environment including biodiversity. • Protect and maintain natural, cultural, or historic places or features, and natural landscapes. • Provide opportunities for informal recreation associated with the enjoyment of nature, or education, where consistent with the purposes above. 	<ul style="list-style-type: none"> • National park • State park • Wilderness park
Conservation park*	<p>Land often linear in shape (e.g. coastal park) with natural features, flora and fauna of landscape or conservation significance</p> <p>Purposes</p> <ul style="list-style-type: none"> • Protect the natural environment including biodiversity • Protect and maintain natural, cultural, or historic features and natural landscapes. • Provide opportunities for informal recreation associated with the enjoyment of nature, and education, where consistent with the purposes above. 	<ul style="list-style-type: none"> • Coastal park • Includes many <i>National Parks Act 1975</i> Schedule 3 'other parks'
Regional park	<p>Extensive areas of natural or semi-natural land close to population centres or major tourist routes or easily accessible areas</p> <p>Purposes</p> <ul style="list-style-type: none"> • Provide opportunities for informal recreation for large numbers of people associated with the enjoyment of natural or seminatural surroundings or semi-natural open space. • Protect and maintain natural or semi-natural features and scenic landscapes. • Protect the natural environment including biodiversity to the extent consistent with the above. 	<ul style="list-style-type: none"> • Regional park • Metropolitan park[#] • Forest park[#] • Some other parks on Schedule 3 of <i>National Parks Act 1975</i>
Nature reserve*	<p>An area of land or wetland of particular importance for its significant flora, fauna, natural habitat, geology, or geomorphology</p> <p>Purposes</p> <ul style="list-style-type: none"> • Protect the natural environment, including significant species, communities and habitats of native flora and fauna. • Protect and maintain natural, cultural, or geomorphic features and natural landscapes. • Provide for low-levels of informal recreation associated with the enjoyment of nature, and education, where strictly consistent with the purposes above. 	<ul style="list-style-type: none"> • Nature conservation reserve • Flora reserve • Flora and fauna reserve • Natural features reserve: <ul style="list-style-type: none"> – cave – geological and geomorphological features area – wildlife reserve (no hunting)

8 From DELWP 2021 Realising the value of Victoria’s public land: renewing Victoria’s public land legislation

Public land category and description	Characteristics and purposes ⁸	Former LCC, ECC or VEAC categories and sub-categories
Bushland reserve*	<p>An area of land containing important elements of the natural environment or landscape that are of habitat or scenic significance</p> <p>Purposes</p> <ul style="list-style-type: none"> • Protect and restore the natural environment, including significant species, communities and habitats of native flora and fauna, remnant vegetation and areas with value as habitat linkages • Protect and maintain natural or cultural features and natural landscapes • Provide opportunities for informal recreation associated with the enjoyment of nature, or education, where consistent with the purposes above • Provide for sustainable, controlled, low-intensity use of natural resources where consistent with the purposes above 	<ul style="list-style-type: none"> • Natural features reserve: <ul style="list-style-type: none"> – bushland area or reserve – streamside area or reserve – natural and scenic features area – scenic area
Forest park	<p>Area of native forest providing opportunities for recreation and minor extraction of some natural resource products</p> <p>Purposes</p> <ul style="list-style-type: none"> • Provide opportunities for recreation and education. • Protect the natural environment including biodiversity. • Supply water and protect catchments and streams. • Protect and maintain natural, cultural, or historic features and scenic landscapes. • Provide for a range of forest uses including the supply of forest products, but excluding sawlogs and pulpwood. 	

* denotes protected area

The 2021 consultation paper *Realising the value of Victoria's public land: renewing Victoria's public land legislation* re-instated 'forest park' and 'metropolitan park' categories which VEAC had consolidated into 'regional park'. Separating the 'forest park' category is a sensible response to the changed State forest landscape across Victoria after the 2019 announcement that timber harvesting would be phased out in all native forests on public land by 2030.

Reference areas

There are two reference areas within the boundaries of the Strathbogrie Ranges IPA. See the map of public land in figure 2.1 in the March 2022 report (reproduced in part 2 of this document). Table 5.2 in the March 2022 report outlines the characteristics and purposes of reference areas. Further information about reference areas is provided below.

Reference areas are one of several public land overlays which lie over primary land categories such as state forest, national park and so on.⁹

Reference areas are relatively small areas of public land containing viable samples of one or more land types that are relatively undisturbed. Reference areas recommended by the LCC, ECC or VEAC and accepted by government are proclaimed under the *Reference Areas Act 1978* to maintain natural systems as a scientific reference to enable comparative study of modified and unmodified lands. There are 144 reference areas in Victoria.

The provisions of the Reference Areas Act and other legislation apply restrictions to access and activities in reference areas, irrespective of the underlying land category. The directives for management of reference areas issued and gazetted in 1996 prohibit entry except for authorised research workers and management personnel.¹⁰ Grazing, mineral exploration, mining, harvesting of forest produce, all other forms of harvesting (except water), quarrying, bee-keeping, educational use, recreation activities, and any other activities that conflict with the purpose of reference areas are prohibited.

⁹ An online map showing reference areas and other public land overlays in Victoria can be viewed at <https://www.veac.vic.gov.au/investigations-assessments/previous-investigations/investigation/statewide-assessment-of-public-land>

¹⁰ Directive for management of reference areas. *Victoria Government Gazette G27 pages 1793-4, 11 July 1996*

The scientific value of a reference area as a benchmark in perpetuity is not diminished if there is no active research. An appropriate area of the surrounding public land should be managed as a buffer, in accordance with government-accepted LCC/ECC/VEAC recommendations, with the width of the buffer depending on the activity of the adjacent land.

1.6.2 Allowed activities in categories of public land

The following information is to assist with understanding of allowed activities in different public land use categories in Victoria.

Many activities such as four wheel driving, trail bike riding, mountain biking, horse riding and camping can take place in national parks as well as in conservation parks, regional parks and state forests.

The rules for four wheel driving, trail bike riding and bicycle riding are the same across parks, forests and other public land; that is, it is allowed on formed roads that are open to the public and other formed roads as specified through management planning. Other than in limited specifically-identified areas, off road driving and riding is illegal on public land.

Timber harvesting for sawlogs and pulpwood is largely only permitted in State forest.

An overview of allowed activities in different categories of public land in Victoria is provided in table 1.6.

Table 1.6 Overview of allowed activities in different categories of public land in Victoria

Activity	National park	Conservation park	Regional park	Nature reserve	Bushland reserve	Forest park	State forest
Apiculture at licensed sites	✓	✓	✓	✓	✓	✓	✓
Bushwalking, nature observation and picnicking	✓	✓	✓	✓	✓	✓	✓
Camping ¹	✓	✓	✓	O ²	O ²	✓	✓
Car touring, including four wheel driving ³	✓	✓	✓	✓	✓	✓	✓
Trail bike riding ⁴	✓	✓	✓	✓	✓	✓	✓
Bicycle riding (including mountain biking) ⁵	✓	✓	✓	✓	✓	✓	✓
Horse riding ⁶	✓	✓	✓	X	✓	✓	✓
Car rallies	O ⁷	O ⁷	✓	O ⁷	✓	✓	✓
Prospecting	X	X	✓	X	✓	✓	✓
Dog walking (on-lead)	O ⁸	O ⁸	✓	X	✓	✓	✓
Domestic firewood collection ⁹	X	X	X	X	X	✓	✓
Recreational hunting ¹⁰	X	X	X	X	X	✓	✓
Timber harvesting	X	X	X	X	X	X	✓
Grazing by domestic stock	X	X	X	X	X	✓	✓
Exploration and mining	X ¹¹	O ¹²	O ¹²	O ¹²	O ¹²	✓	✓

✓ Allowed O Allowed with conditions (see notes) X Not allowed

Notes:

- In designated areas where provided and in other areas as specified through management planning.
- May not be provided in smaller reserves, where there is high day visitor use or where there are ample camping opportunities on adjacent land.
- In registered vehicles on formed roads that are open to the public and on other formed roads and tracks as specified through management planning; off road driving is illegal on public land.
- By licensed riders on registered vehicles on formed roads that are open to the public and on other formed roads and tracks as specified through management planning; off road riding is illegal on public land.
- On formed roads that are open to the public and on other roads, tracks and trails as specified through management planning.
- On specified formed roads that are open to the public and on other roads and tracks as specified through management planning.
- 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.
- May be allowed in visitor areas or along a limited number of tracks as specified through management planning.
- In designated areas.
- Recreational hunting for pest animals may be allowed on other public land if part of an authorised control program at the discretion of the land manager.
- Except where a licence predates the park.
- Subject to ministerial consent.

1.6.3 Bushfire risk management

Further details are provided here on fire management arrangements in Victoria.

The Department of Environment, Land, Water and Planning (DELWP) is responsible for bushfire risk management on public land, as defined in the *Forests Act 1958*. Forest Fire Management Victoria (FFMVic) delivers bushfire risk management activities on this land and includes staff from DELWP, Parks Victoria, VicForests and Melbourne Water.

Bushfire risk management on Forests Act public land is delivered in accordance with the *Code of Practice for Bushfire Management on Public Land 2012*. The two objectives in the Code are to:

- minimise the impact of major bushfires on human life, communities, essential and community infrastructure, industries, the economy and the environment; human life will be afforded priority over all other considerations
- maintain or improve the resilience of natural ecosystems and their ability to deliver services such as biodiversity, water, carbon storage and forest products.

To reduce bushfire risk on private land or other public land (such as roads, rail corridors, council reserves and land managed by water authorities), planned burning is carried out under the *Country Fire Authority Act 1958* or *Fire Rescue Victoria Act 1958*. Here, planned burning is often conducted by CFA brigades on behalf of and at the request of private landowners or land managers. Figure 1.2 shows the roles and responsibilities for managing bushfire risk in Victoria.

In 2015, *Safer Together: A new approach to reducing the risk of bushfire in Victoria* was introduced. This saw greater coordination between bushfire management agencies, a shift from a hectare-based planned burning target on public land to a risk reduction target and expansion of bushfire risk management planning to consider the whole landscape, regardless of land tenure (including public and private land).

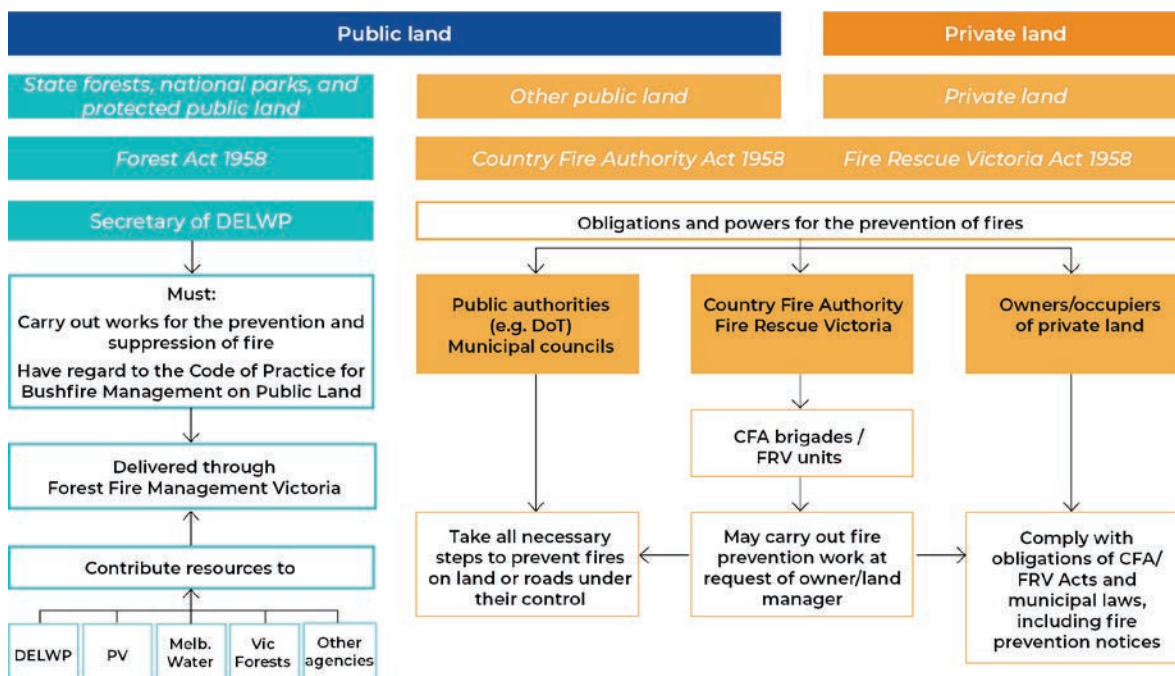


Figure 1.2 Roles and responsibilities for managing bushfire risk on public and private land (Source: VAGO¹¹)

Note: DoT is the Department of Transport.

11 Victorian Auditor-General’s Office. Reducing Bushfire Risks. October 2020. Independent assurance report to Parliament 2020-21:4 <https://www.audit.vic.gov.au/report/reducing-bushfire-risks?section=>

1.6.4 Plantations

Further information about plantation land near the Strathbogie Ranges and Mirboo North IPAs is provided below.

Government-owned softwood and hardwood plantations were transferred to the Victorian Plantations Corporation (VPC) on its establishment in 1993. The VPC was created under legislation to establish, maintain and manage timber plantations on land vested in or managed by the Corporation, and to enter into, administer or manage agreements or licences relating to forest produce on that land.

Approximately 170,000 hectares of Crown land was vested in VPC, including an estimated 107,000 hectares of softwood plantations, 8,000 hectares of hardwood plantations, and approximately 55,000 hectares of non-plantation land, including some native forest.

In 1998, the Victorian government announced its decision to privatise the VPC, and it was sold to Hancock Victorian Plantations Pty Ltd (HVP Plantations) including a licence to the 170,000 hectares of land vested with VPC, granting Hancock the right to operate a plantation business on that land in perpetuity.

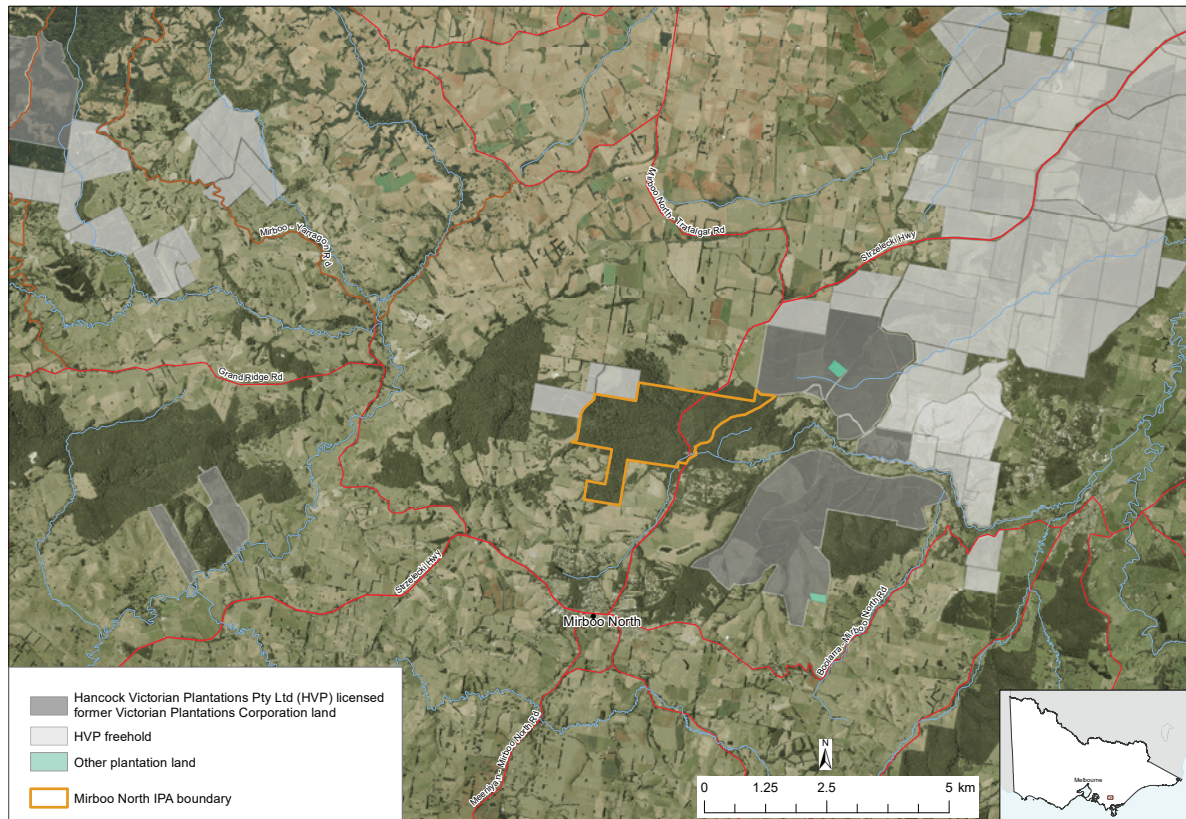
In 2008, some 8,000 hectares of forest and mountain ash plantation in Gippsland's Strzelecki Ranges was relinquished as part of the 'Cores and Links' agreement between the Victorian government and HVP Plantations. The agreement provides for the protection of the native forest to the east and south of the Mirboo North IPA in an area known as 'Cores and Links' and the eventual return of all 8,000 hectares to public management and, ultimately, protection as part of the conservation reserve system (protected areas). Some 1,200 hectares have been returned to date and included in the Brataualung Forest Park as an interim measure. In 2017 Minister D'Ambrosio announced that VEAC will be requested to undertake an investigation prior to 2028 to provide recommendations on permanent protection for the 'Cores and Links' area of the Strzelecki Ranges.¹²

HVP Plantations manages approximately 240,000 hectares of land in Victoria across three land tenures: freehold, leasehold and plantation licence.¹³ Included in this area is the remaining 162,000 hectares of former VPC plantation land over which HVP maintains a licence.

Figure 1.3 shows land around the Mirboo North IPA that is managed by HVP Plantations and identifies the relevant tenure type. All the land managed by HVP plantations adjacent to the Strathbogie Ranges IPA is licensed former VPC plantation land (see the detailed map of public land in part 2 of this report, figure 2.1 on page 13 of the assessment).

¹² <https://www.forestsandreserves.vic.gov.au/initiatives/brataualung-forest-park>

¹³ <https://www.hvp.com.au/hvp-forest-management/area-maps/>

Figure 1.3 Plantation land surrounding the Mirboo North IPA

1.6.5 Social and demographic profiles

Socio-economic profiles of the regions in which each of the IPAs is located were commissioned as context for VEAC's assessment of the potential economic implications of proposed land use changes recommended by the EPCE. A summary is provided in this section, with the full report available on VEAC's website.¹⁴

Mirboo North IPA

Mirboo North IPA is located in the South Gippsland Shire local government area (LGA). Compared to regional Victoria, the population of South Gippsland Shire LGA is characterised by a lower proportion of Aboriginal and/or Torres Strait Island people, a higher proportion in the 55+ age bracket, a higher proportion of couple families without children, lower levels of schooling and higher education, and lower levels of household income. Compared to regional Victoria, South Gippsland Shire LGA has a relatively higher proportion of its resident labour force workers employed as Managers (including farm managers) and Labourers. The most significant employment sectors in the region are Agriculture/Forestry and Fishing, and Health Care and Social Assistance. Key exporting sectors and drivers of the economy are:

- Agriculture – predominantly Dairy Cattle Farming and Beef Cattle Farming (Specialised), but also Vegetable Growing (Outdoors)
- Food Product Manufacturing – predominantly Cheese and Other Dairy Product Manufacturing, and Meat Processing.

For the South Gippsland LGA, Tourism Research Australia identified that in 2019 tourism expenditure represented 4.1% of the output of the regional economy.

In 2016 employment in South Gippsland Shire LGA in Forestry and Logging, and Wood Manufacturing represented 0.3% of the total employment in the region.

¹⁴ The profiles were prepared prior to the Australia Bureau of Statistics phase 1 release of 2021 census data on 28 June 2022 and are based on 2016 census data.

Strathbogie Ranges IPA

Strathbogie Ranges IPA is located in the LGAs of Benalla (RC), Mansfield (S) and Strathbogie (S). Compared to regional Victoria, the population of this region is characterised by a lower proportion of Aboriginal and/or Torres Strait Island people, a higher proportion in the 50+ age bracket, a higher proportion of couple families without children, lower levels of schooling and higher education, and lower levels of household income. Compared to regional Victoria, Strathbogie region has a relatively higher proportion of its resident labour force workers employed as Managers (including farm managers), Technician and Trade Workers and Labourers. The most significant employment sectors in the region are Agriculture/Forestry and Fishing, and Health Care and Social Assistance. Key exporting sectors and drivers of the economy are:

- Agriculture - predominantly Beef Cattle Farming (Specialised), Sheep Farming (Specialised) and Sheep-Beef Cattle Farming, but also Mushroom Growing, Vegetable Growing (Outdoors), Other Grain Growing, Poultry Farming (Eggs), and Horse Farming
- Preschool and School Education.
- Residential Care Services, predominantly Aged Care Residential Services

For the Benalla, Mansfield and Strathbogie region, Tourism Research Australia identified that in 2019 tourism expenditure represented 7.0% of the output of the regional economy.

In 2016 employment in the Strathbogie Ranges IPA region in Forestry and Logging, and Wood Manufacturing represented 1.8% of the total employment in the region.

1.6.6 Biodiversity and ecological values

Section 3.2 in each of the assessments published in March 2022 (reproduced in parts 2 and 3 of this report) described the biodiversity and ecological values of the IPAs. Updates and supplementary information are provided below.

Threatened species records and habitat distribution models

Just before publication of VEAC's assessments in March 2022, three species recorded in the IPAs were listed as threatened under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act): the gang-gang cockatoo (listed in the endangered category), yellow-bellied glider (vulnerable) and pilotbird (vulnerable). New information on these species is provided below. None of these species is listed as threatened in Victoria in DELWP's June 2022 Flora and *Fauna Guarantee Act 1988* list although that may change in future lists.

In addition, in July 2022 the listing of the southern greater glider was moved from the vulnerable category to the endangered category under the EPBC Act; this change does not require any update in the information provided in VEAC's March 2022 assessments.

Strathbogies Ranges IPA

Table 1.7 is an updated table of the threatened species recorded in and near the Strathbogies Ranges IPA with additions highlighted.

Table 1.7 Threatened species recorded in and within two kilometres of the Strathbogies Ranges IPA (additions since March 2022 report highlighted in green)

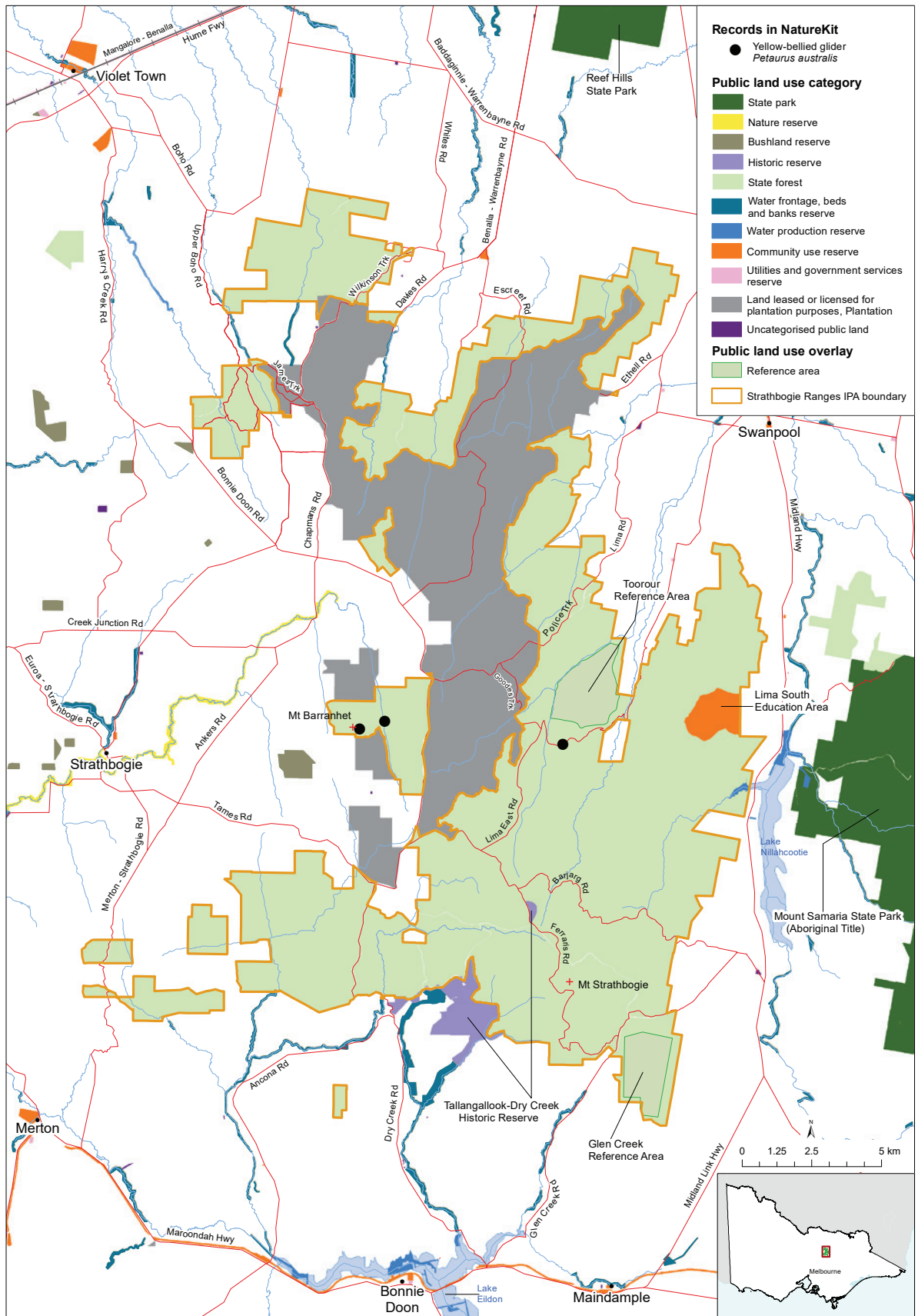
Species names	Conservation status in Victoria	No. of records	
		in IPA	within 2 km
Southern greater glider <i>Petauroides volans</i>	vulnerable	~300	8
Gang-gang cockatoo <i>Callocephalum fimbriatum</i>	least concern	44	16
Eastern horseshoe bat <i>Rhinolophus megaphyllus</i>	endangered	20	
Powerful owl <i>Ninox strenua</i>	vulnerable	26	6
Grey rice-flower <i>Pimelea treyvaudii</i>	endangered	12	2
Brush-tailed phascogale <i>Phascogale tapoatafa</i>	vulnerable	8	11
Tall leafy greenhood <i>Pterostylis cucullata</i> subsp. <i>sylvicola</i>	endangered	7	
Murray spiny crayfish <i>Euastacus armatus</i>	threatened	3	2
Little eagle <i>Hieraaetus morphnoides</i>	vulnerable	3	
Hairy hop-bush <i>Dodonaea boroniifolia</i>	endangered	3	1
Yellow-bellied glider <i>Petaurus australis</i>	least concern	3	
Square-tailed kite <i>Lophoictinia isura</i>	vulnerable	3	
Glandular early nancy <i>Wurmbea biglandulosa</i> subsp. <i>biglandulosa</i>	endangered	2	6
Euroa guinea-flower <i>Hibbertia humifusa</i> subsp. <i>erigens</i>	critically endangered	1	4
Wine-lipped spider-orchid <i>Caladenia oenochila</i>	critically endangered	1	
Cupped bush-pea <i>Pultenaea vrolandii</i>	endangered	1	1
Austral moonwort <i>Botrychium australe</i>	critically endangered	1	
Highland bush-pea <i>Pultenaea williamsonii</i>	endangered	1	
Tiny daisy <i>Brachyscome ptychocarpa</i>	endangered	1	
Large-leaf cinnamon-wattle <i>Acacia leprosa</i> var. <i>uninervia</i>	endangered	1	
Macquarie perch <i>Macquaria australasica</i>	endangered		40
Lima stringybark <i>Eucalyptus alligatrix</i> subsp. <i>limaensis</i>	critically endangered		30
Southern pygmy perch <i>Nannoperca australis</i> (Murray-Darling)	vulnerable		3
Late-flower flax-lily <i>Dianella tarda</i>	critically endangered		1
Mountain Swainson-pea <i>Swainsona recta</i>	critically endangered		1
Cottony cassinia <i>Cassinia ozothamnoides</i>	endangered		1
Bear's-ear <i>Cymbonotus lawsonianus</i>	endangered		1
Fir clubmoss <i>Huperzia australiana</i>	endangered		1
Eastern bitter-cress <i>Cardamine microthrix</i>	endangered		1
Broom scale-rush <i>Lepyrodia anarthria</i>	endangered		1
Bent-leaf wattle <i>Acacia flexifolia</i>	endangered		1

The following information on the occurrence of and threats to these two additional species and the importance of the Strathbogies Ranges IPA to their conservation supplements the information in appendix 2 of the March 2022 assessment (reproduced in part 2 of this document).

Species names	Occurrence in and importance of the IPA	Threats
Gang-gang cockatoo	Moderate: East of Melbourne at least, gang-gang cockatoos primarily spend spring-summer (the breeding season) in mature montane forests and disperse to drier forests and woodlands at lower altitudes in autumn-winter. The IPA supports both habitat types and records are spread throughout the year and across the IPA, increasing the likely importance of the area for the gang-gang cockatoo. Also, despite the mobility and conspicuousness of this species (which would tend to confound the identification of importance sites), there seems to be a cluster of records and higher value habitat in the IPA and the Mount Samaria block to the east, underscoring the likely importance of the area for the gang-gang cockatoo in the region and perhaps more broadly.	<ul style="list-style-type: none"> • Reduction in large trees for nesting and of forest cover generally; competition for nesting hollows and nest predation. • Wildfire and inappropriate fire regimes; warming climate and altered rainfall patterns. • Timber harvesting.
Yellow-bellied glider	Low: The yellow-bellied glider is uncommon and patchily distributed on the inland side of the Great Dividing Range in Victoria. Its occurrence in the Strathbogies accords: three records (1992-1996) but none in the last 26 years despite extensive and intensive searching by locals and professional scientists – the former suspect that the species is extinct in the Strathbogies. Given the relative scarcity of yellow-bellied gliders on the inland edge of the Divide, all sites are potentially of some importance but the Strathbogies perhaps less so than several others with many more records, including recent records (e.g., Mt Buffalo, the Tatong-Toombullup forests).	<ul style="list-style-type: none"> • Habitat clearing and fragmentation. • Extensive severe bushfires; prescribed burns. • Timber harvesting. • Increased temperatures and changes to precipitation patterns.

Figure 1.4 and figure 1.5 supplement the threatened species records in appendix 3 of the March 2022 report (see part 2 of this document).

Figure 1.5 Yellow-bellied glider records (source: Victorian Biodiversity Atlas)



Mirboo North IPA

Table 1.8 is an updated table of the threatened species recorded in and near the Mirboo North IPA with additions highlighted.

Table 1.8 Threatened species recorded in and within two kilometres of the Mirboo North IPA (additions since March 2022 report highlighted in green)

Species names	Conservation status in Victoria	No. of records	
		in IPA	within 2 km
Southern greater glider <i>Petauroides volans</i>	vulnerable	~50 (up to 2019)	~20
Narracan burrowing crayfish <i>Engaeus phyllocerus</i>	endangered	5 (1999)	1
Powerful owl <i>Ninox strenua</i>	vulnerable	2 (2000-2018)	8
Gang-gang cockatoo <i>Callocephalum fimbriatum</i>	least concern	2 (2017-2020)	3
South Gippsland burrowing crayfish <i>Engaeus karnanga</i>	endangered	2 (2021)	
Lace monitor <i>Varanus varius</i>	endangered		5
South Gippsland spiny crayfish <i>Euastacus neodiversus</i>	endangered		1
Swamp sun-orchid <i>Thelymitra incurva</i>	critically endangered		1
Lewin's rail <i>Lewinia pectoralis</i>	vulnerable		3
Southern brown bandicoot <i>Isodon obesulus</i>	endangered		1
Slender tree fern <i>Cyathea cunninghamii</i>	critically endangered		1
White-throated needletail <i>Hirundapus caudacutus</i>	vulnerable		10
Growling grass frog <i>Litoria raniformis</i>	vulnerable		2
Strzelecki gum <i>Eucalyptus strzeleckii</i>	critically endangered		5
Grey goshawk <i>Accipiter novaehollandiae</i>	endangered		2
Pilotbird <i>Pycnoptilus floccosus</i>	least concern		2 (1878-1967)

The following information on the occurrence of and threats to these two additional species and the importance of the Mirboo North IPA to their conservation supplements that in section 3.2.1 of the March 2022 report (see part 3 of this document). Figures 1.7 and 1.8 below supplement the information on threatened species records in appendix 1 of the March 2022 report (see part 3 of this document).

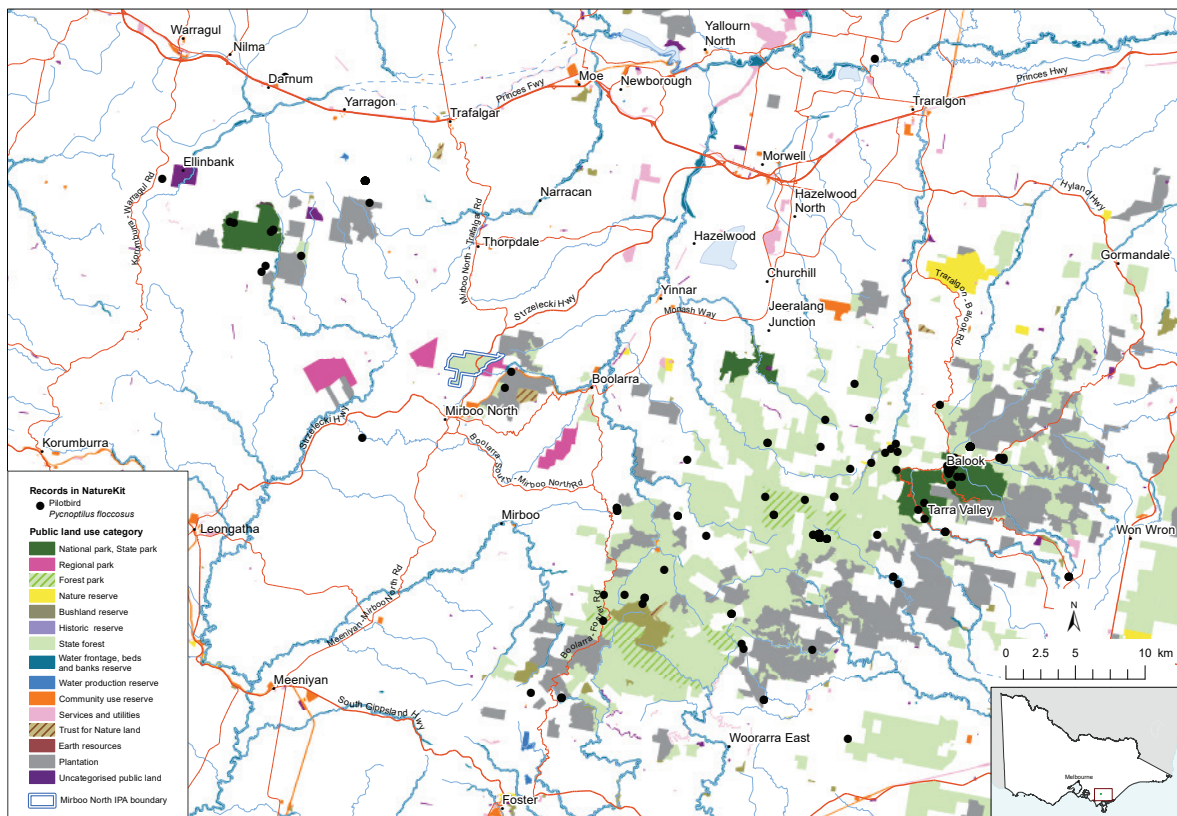
Gang-gang cockatoo

Gang-gang cockatoos are relatively large mobile birds that often fly across open country giving their distinctive call which is instantly recognisable to most naturalists. On the other hand, they can be remarkably difficult to find when feeding or breeding in the canopy of tall trees in dense forests. As a result, a relatively low proportion of records are of birds at feeding or breeding sites, which are the most important locations for their conservation. This leads to difficulties in reliably interpreting maps of records and in developing habitat distribution models. The map showing records in the Strzeleckis (figure 1.6 below) shows only that, apart from the most heavily cleared areas, gang-gang cockatoos occur across the region and the handful of records in or near the IPA is typical of the general pattern.

Gang-gang cockatoos are relatively large birds that only nest in tree hollows that take many decades to form. They breed in spring-summer in mature montane forests and disperse to drier forests and woodlands at lower altitudes in autumn-winter. When breeding they predominantly feed on eucalypt

Pilotbirds mainly inhabit wet eucalypt forest and gullies where they forage on damp ground and leaf litter below dense shrubs. The main threat to pilotbirds is increased frequency, extent or severity of wildfire. Climate change increases the risk of wildfire as well as heatwaves and the frequency and length of droughts. All these changes are likely to negatively impact a species dependent on damp, densely vegetated forest floors and may explain the retreat of pilotbirds up an altitudinal gradient, as has been observed in some areas.

Figure 1.7 Pilotbird records (source: Victorian Biodiversity Atlas)



Powerful Owl Management Areas

Clarification is provided here about Powerful Owl Management Areas.

The special protection zone in the Mirboo North IPA, together with the Allambee East and Lyrebird Walk blocks of Mirboo North Regional Park comprises one of the 115 Powerful Owl Management Areas to be identified in the Gippsland Forest Management Area.

The Strathbogies Ranges IPA contains five of the 125 Powerful Owl Management Areas to be identified in the North East Forest Management Area.

Mirboo North Ecological Vegetation Class mapping

Some information sources have documented the Mirboo North IPA as containing Swampy Riparian Complex EVC. However, there is no evidence of Swampy Riparian Complex EVC occurring in the Mirboo North IPA and the nearest mapped area of this EVC is approximately 1.2 kilometres from the IPA boundary. As described in section 3.2.2 of VEAC’s March 2022 report (reproduced in part 3 of this document), there are four EVCs present in the Mirboo North IPA: Wet Forest, Damp Forest, Lowland Forest and Warm Temperate Rainforest.

1.6.7 Geological and geomorphological values

Section 3.3 in each of the assessments published in March 2022 (reproduced in parts 2 and 3 of this report) described the geological and geomorphological values of the IPAs. Section 3.5.3 in each of the assessments provided additional relevant information on earth resources. Updates and supplementary information are provided below.

Strathbogrie granite

Further information relating to the geology and geomorphology of the Strathbogrie Ranges and the significance of the Strathbogrie Granite is provided.

Geology of the Strathbogrie Ranges IPA comprises a small part of the extensive Devonian Strathbogrie Granite and Violet Town Volcanics. The undeformed granite is one of the youngest intrusions in Victoria dated at 374 million years ago and forms four plateaux up to 700 metres above the surrounding plains and valleys. There is a range of geomorphological features seen here characteristic of granitic landscape including tors of up to 10 metres height, pavements of hundreds of metres length, isolated cliffs, and perched soaks around springs on hillsides. In a global context the Strathbogrie granite (and surrounds) is scientifically important for three reasons:

- the extensive and abundant occurrence of the igneous mineral cordierite not seen on this scale in other granites
- its shallow emplacement with some of the granite reaching within 1 km of the surface (now eroded to be exposed at the surface)
- this is an unusually thin sheet of granite (less than 400 m but almost 100 km in length across the surface).¹⁵

Mirboo North mineral deposits – bauxite

Further information is provided on bauxite deposits, the most common ore of aluminium, that are found in the Mirboo North area. In this region bauxite is formed by deep weathering of older volcanics basalt lava flows and was mostly used to boost aluminium content in cement manufacture.

In the context of known world class Australian (and global) bauxite deposits, the known Victorian bauxite deposits, including those in the Mirboo North – Boolarra area of South Gippsland, are considered insignificant.¹⁶

Of the 40 known occurrences in South Gippsland, about half contain negligible or poorly quantified resources. Until around 1992 small scale mining occurred in the region just north of Mirboo North, including immediately adjacent to the southern boundary of the IPA and north of the IPA towards Allambee East. The two largest deposits (Napier No. 1 and Watkins) are located near the Mirboo North IPA, but most of these resources have been depleted by mining.¹⁷ The total recorded bauxite production in Victoria (mostly from the Mirboo North – Boolarra area) since 1926 is about 200,000 tonnes.¹⁶

Based on the available information, the local geology, and the overall context of known bauxite deposits in Victoria, the Geological Survey of Victoria (GSV) advises that additional exploration may locate small scale bauxite resources within parts of the Mirboo North IPA. The GSV advises that the probable economic significance of any such deposit would be moderate to low by Australian standards.

¹⁵ Phillips G.N. 2017. Strathbogrie granite: a summary. Benalla Granite Symposium. Granites2017@Benalla symposium, Victoria, Australia. AIG Bulletin 65 88-92.

¹⁶ McHaffie, I.W. & Buckley, R.W. 1995. Industrial minerals and rocks of Victoria. Geological Survey of Victoria Report 102. <http://earthresources.efirst.com.au/product.asp?plD=519&clD=39>

¹⁷ Nott, R.J., 1988. Bauxite. In J.G. Douglas & J.A. Ferguson (eds). Geology of Victoria. Geological Society of Australia, Victorian Division, Melbourne. pp. 593-594).

1.6.8 Social and economic values

Section 3.5 in each of the assessments published in March 2022 (reproduced in parts 2 and 3 of this document) described the cultural heritage, social and economic values of the IPAs. Updates and supplementary information about domestic firewood is provided below.

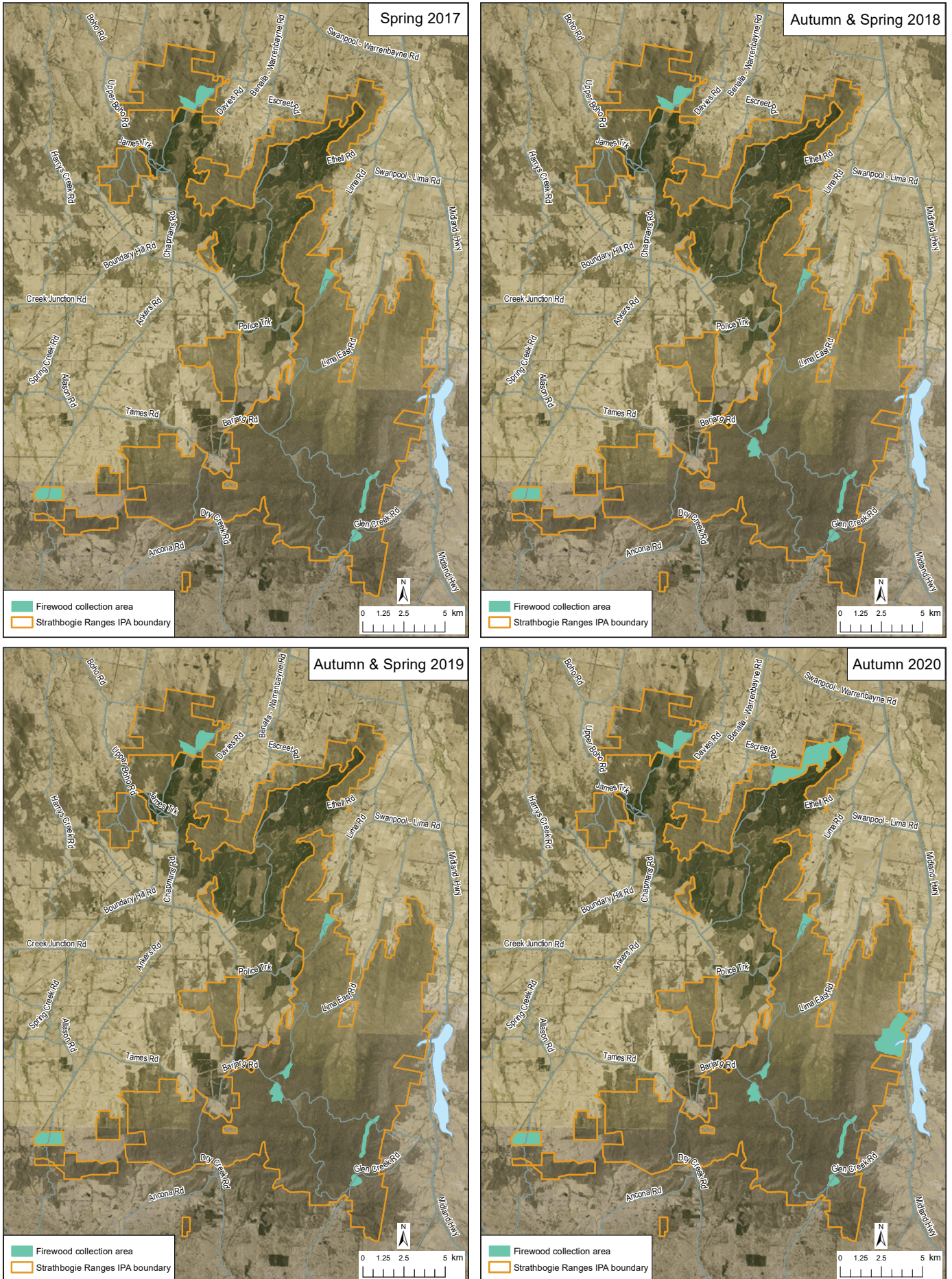
Domestic firewood collection

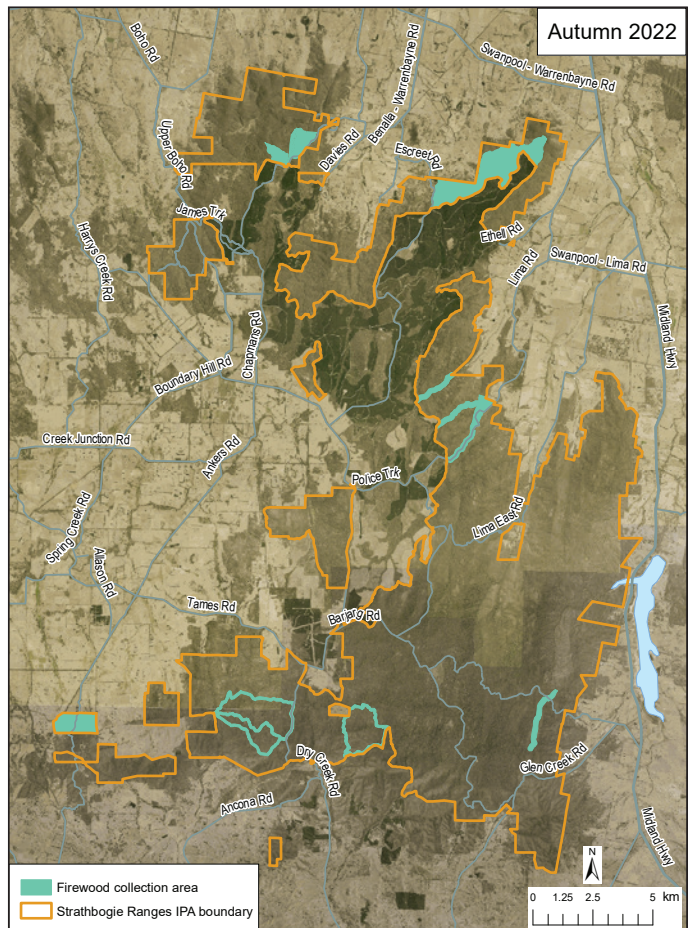
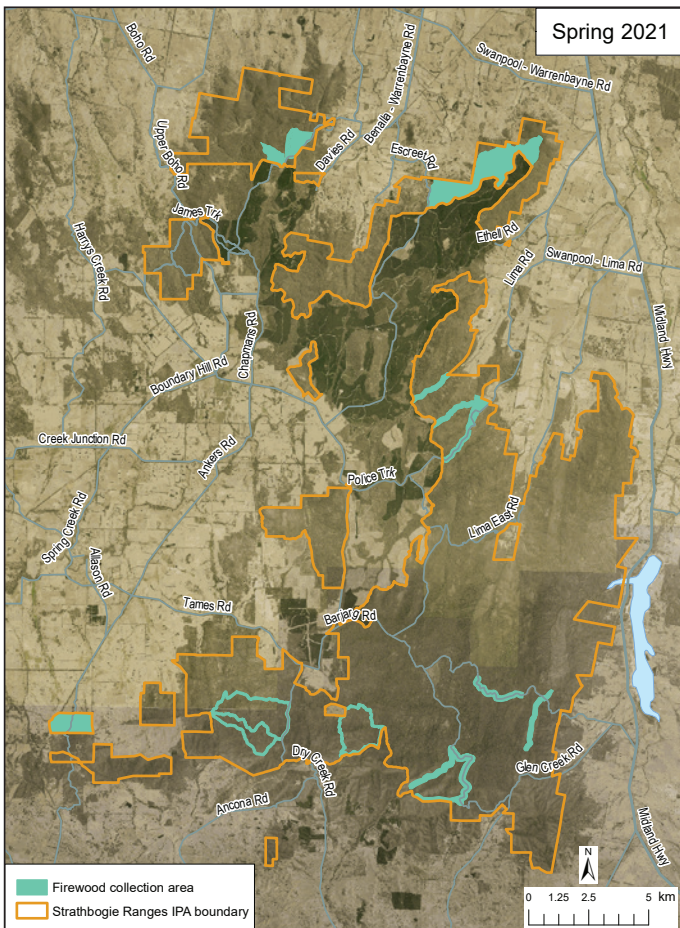
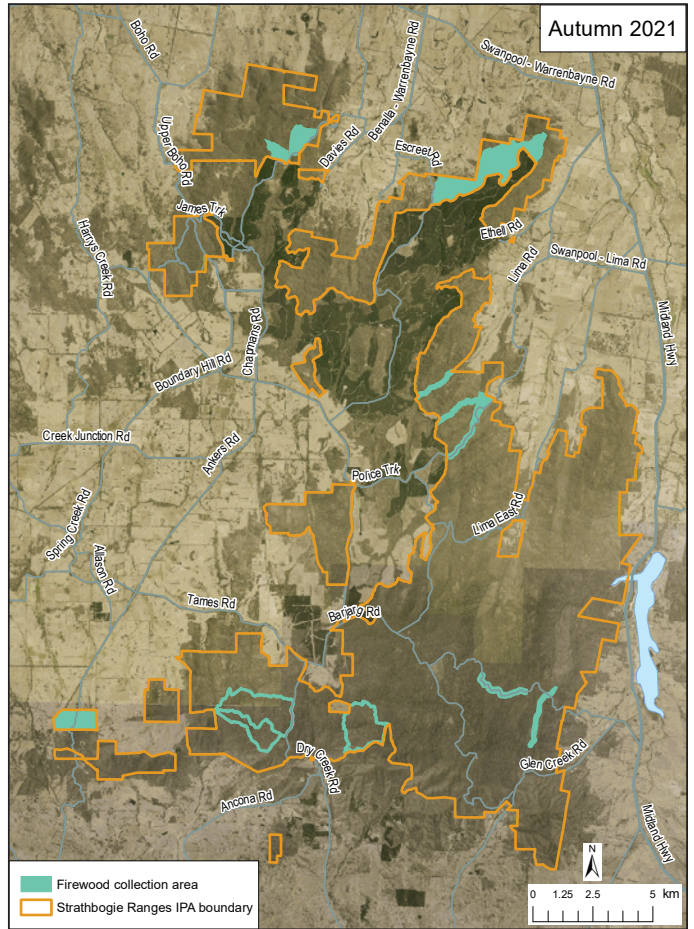
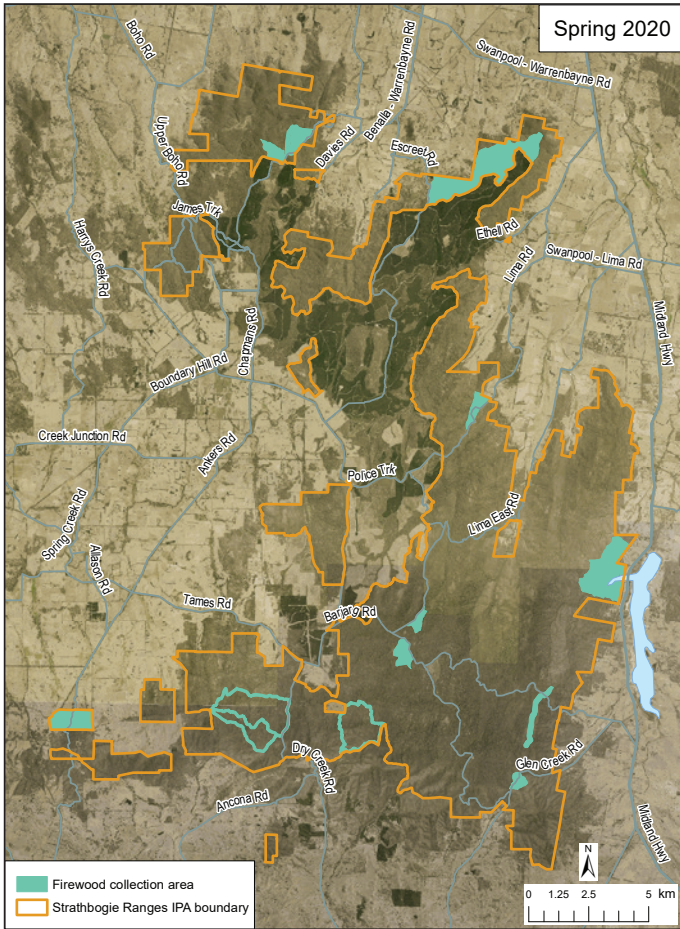
A series of new maps (figure 1.8) shows the location of domestic firewood collection areas in the Strathbogie Ranges IPA each season between Spring 2017 and Autumn 2022. This information supplements the information on domestic firewood in section 3.5.2 of the March 2022 report (reproduced in part 2 of this document).

Domestic firewood collection is allowed only in designated firewood collection areas during a firewood collection season. Victoria has two statewide firewood seasons: Autumn (1 March to 30 June) and Spring (1 September to 30 November).

The maps in figure 1.8 show the carryover of firewood collection areas between seasons and years.

Figure 1.8 Map series showing domestic firewood collection areas in the Strathbogrie Ranges IPA between Spring 2017 and Autumn 2022







Part 2

2

Assessment of the values of the Strathbogie Ranges Immediate Protection Area

MARCH 2022

A reproduction of this report is
attached separately.



Victorian
Environmental
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Assessment of the values of the Strathbogie Ranges Immediate Protection Area

Taungurung Country

MARCH 2022





Part 3

3

Assessment of the values of the Mirboo North Immediate Protection Area

MARCH 2022

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