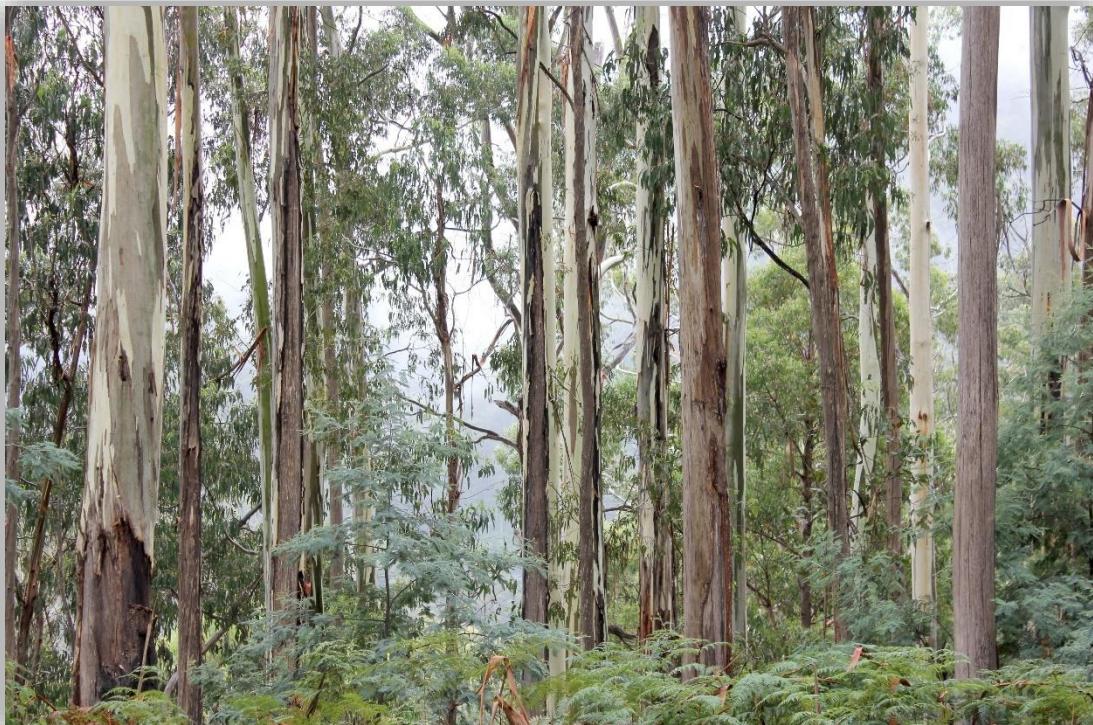


**SUBMISSION TO THE  
VICTORIAN LEGISLATIVE COUNCIL  
ENVIRONMENT & PLANNING COMMITTEE**

**INQUIRY INTO ECOSYSTEM DECLINE IN VICTORIA**

Submission by  
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## Executive Summary

The Institute of Foresters of Australia and Australian Forest Growers (hereafter referred to as the 'Institute') is Australia's independent national body representing forest scientists, technicians, growers and managers with professional and practical expertise in managing private and public land native forests and plantations.

The Institute's approximately 1,000 members are engaged in all aspects of forestry, as well as nature conservation, natural resource and land management, research, administration, and education. We advocate balanced land use that meets society's needs through sustainable forest management, including timber supply and biodiversity conservation, while addressing the fire and conservation issues arising from a changing climate.

Given that unnaturally high severity wildfire is one of the main contributors to ecosystem decline in forests, it is pertinent to note that most foresters gain substantial experience of bushfire mitigation and suppression during their careers. This generally gives them a strong understanding of fire in the natural environment, largely through the operational use of fire prescribed for silvicultural or conservation purposes, and for fuel reduction.

The Institute would welcome the opportunity to present in person to the Inquiry or to provide more detailed written information. We would be pleased to respond to any questions this submission may raise.

### Key points

- The Institute is primarily focussed on forests and trees in the rural landscape, their flora and fauna, and their management. This submission needs to be considered in that context. However, the Institute considers that many of Victoria's terrestrial ecosystems are at risk of decline due to fragmentation; while all are being degraded due to unnatural fire regimes, introduced plant and animal pests, diseases, and a lack of active management to mitigate these risks. As climate change is expected to increase these risks, active landscape-scale management is becoming more urgent to maintain biodiversity and ecosystem function.
- Historically, Victoria has responded to environmental threats primarily by declaring national parks and other conservation reserves subsequently promoted as 'protected areas.' This approach was initially justifiable in the interests of reserving comprehensive, adequate and representative examples of the landscape. However, the Institute is concerned that over the last 20-years it has largely become a political vehicle to appease influential minority groups and 'green-leaning' voters opposed to commercial uses of public land, especially timber production, despite these uses typically having only a proportionally minor or negligible environmental impact at the landscape level.
- This submission notes that while the substantial expansion of 'protected areas' in forests over the past 50-years has excluded human use, this has provided minimal benefit in reducing the risks or the impacts to biodiversity being caused by the critical threats of bushfire and introduced pests. Indeed, as the expansion of 'protected areas' has generally been accompanied by a reduced management capacity to actively address these threats, it is more likely to have exacerbated ecosystem decline in Victoria's public forests.
- Only landscape-scale active land management and collective community action can directly and effectively address whole-of-landscape environmental threats that transcend all public and private land boundaries.

## Recommendations to the Inquiry in response to the Terms of Reference

**TOR (a):** The extent of the decline of Victoria's biodiversity and the likely impact on people, particularly First Peoples, and ecosystems, if more is not done to address this, including consideration of climate change impacts.

- A1:** Define a baseline ecosystem benchmark against which comparisons can be made to meaningfully assess ecosystem decline in relation to forests and woodlands.
- A2:** Establish a process or accountability framework for Victoria's State of the Forests recommendations to ensure they are addressed in a timely way that supports active, adaptive and accountable management of native forests and plantations across public and private lands.

**TOR (b):** The adequacy of the legislative framework protecting Victoria's environment, including grasslands, forests and the marine and coastal environment, and native species.

- B1:** Implement the 2017 VEAC recommendations in relation to reforming land-based legislation, specifically to streamline it and reduce complexity and duplication, including improved compliance frameworks, improved transparency, and facilitating meaningful community involvement in public land.
- B2:** Support the recently announced review of the Code of Practice for Timber Production 2014, with a view to further strengthening and streamlining the regulatory framework that enables active management, including sustainable timber production, within State forests.
- B3:** Shift the forest conservation strategy from a singular focus on creating more 'protected areas', to a broader strategy of targeted management actions designed to specifically address the major threats posed by bushfires, habitat loss or degradation, pest plants, and introduced feral animals.

**TOR (c):** The adequacy and effectiveness of government programs and funding protecting and restoring Victoria's ecosystems.

- C1:** Recognise the critical importance of effectively managing the bushfire threat to mitigating ecosystem decline in forests and woodlands. This necessitates increasing expenditure and commitment to active forest management through increasing the annual level of fuel reduction treatments and by reinstating or upgrading road and track networks, especially in remote area forests.
- C2:** Ensure government programs and funding are directed to sustaining and restoring Victoria's iconic landscapes, including ash-type forests, by establishing and maintaining strategic seedbanks for vulnerable forest types; combined with forest nursery developments and strategic reforestation programs to implement timely and effective regeneration across fire-affected public lands.
- C3:** Invest further and expand the Victorian Forest Monitoring Program (VFMP), through the establishment of additional field plots, consideration of more frequent remeasures of key indicators (e.g. annually rather than all on a 5-yearly basis) and aligning field-based measures with emerging technologies for remote sensing using increasingly cost-effective satellite imagery and LiDAR data.

- C.4:** Invest further in strengthening regionally based natural resource management programs, including catchment management authorities, and local community based organisations such as Landcare, to more effectively engage local communities to arrest ecosystem decline, to integrate resources more efficiently, and achieve improvements in the state of the environment within catchment boundaries.

**TOR (d):** Legislative, policy, program, governance and funding solutions to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts.

- D1:** Ensure that the responsible agencies (i.e. DELWP and DJPR) and State-owned enterprises (i.e. VicForests), are fully supported in their mandates to manage public native forests in accordance with the recently renewed Regional Forest Agreements, which are designed to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts.
- D2:** Consider further the scope to extend the renewed Regional Forest Agreements (or the policy principles they represent) to ensure a long-term view is applied to active management of public native forests across Victoria.
- D3:** Call on the State government to reverse the decision to phase out timber harvesting in native forests on the basis that it will not guarantee protection of biodiversity, and will be more likely to counter-productively foster a significant reduction in active, adaptive and accountable forest management across public land, especially in relation to fire.
- D4:** Promote, foster and support responsible agencies and State-owned enterprises to ensure there is more active, adaptive and accountable forest management across public land tenures, principally to address the broader threats of wildfires, invasive species and climate change.

**TOR (e):** Opportunities to restore Victoria's environment while upholding First Peoples' connection to country, and increasing and diversifying employment opportunities in Victoria.

- E1:** Traditional Owners' forest fire management practices should be fostered and re-introduced, where possible, to complement (but not replace) existing prescribed burning programs.
- E2:** Explore the potential to engage and employ First Peoples in the various aspects of environmental restoration and recovery.

**TOR (f):** Any other related matters.

- F1:** Consider the evidence supporting the need for more active management of forested landscapes, rather than a 'lock-up' or 'set-and-forget' model of conservation, which carries major risks for Victoria and its forest biodiversity. A more active management model can be targeted towards adaptive measures that can arrest and reverse biodiversity decline, and over time should increase forest ecosystem health and vitality, and the resilience of our forests to the threats posed by climate change.



## Introduction

### The Institute of Foresters of Australia and Australian Forest Growers

The Institute of Foresters of Australia and Australian Forest Growers (hereafter referred to as 'the Institute') is the independent national body representing Australia's forest scientists, technicians, growers and managers with professional and practical expertise in managing native forests, plantations and other natural resources. The Institute of Foresters of Australia was established in 1935 but has recently merged with the Australian Forest Growers (est. 1969) which represents private land forest owners and plantation growers.

The Institute is governed by an elected voluntary Board and has around 1,000 members spread throughout every Australian State and Territory. A requirement of professional level membership is tertiary qualifications in forest science or a closely related scientific discipline; or alternatively, extensive practical experience in forest or plantation management or forest science.

The Institute's members range from new graduates to retired men and women with over 50 years of experience in land and park management. Members are employed in a wide variety of positions in native forest and plantation management (including conservation roles), research, bushfire management, land care, education, public service administration, private land forestry, and associated wood-based industries.

Professional foresters and forestry practitioners have led the field of fire management and research in native forests over many decades and have established linkages and collaboration with professionals engaged in these activities elsewhere in the world. Most Victorian foresters have had personal responsibility for bushfire mitigation and suppression at some stage during their career. The Institute's membership includes many of Australia's most knowledgeable and experienced State forest and national park fire managers, and fire researchers.

The Institute is one of the few organisations to have developed formal national policies on native forest and fire management and the ecological role of fire in Australian forests and woodlands. These policies have evolved since they were first developed 40 years ago (see attached Appendices).

The Institute also publishes a quarterly peer-reviewed scientific journal – *Australian Forestry* – which includes many fire and conservation-related research articles, thereby adding to the store of Australian forest management knowledge.

## This Submission

Given the training, background and experience of the Institute's members, this submission makes some key observations about ecosystem decline in public and private native forests and woodlands; and provides some specific recommendations in response to the Inquiry's Terms of Reference. If required, it can be supported by a verbal presentation to the Inquiry.

## Key Contacts

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## General Response to the Inquiry

The Institute considers that there are significant areas of Victoria's terrestrial landscapes, including native forests, woodlands and grasslands, which have been adversely impacted over a long period of time and are at risk of further ecosystem decline. Historical causes and key drivers of this decline across a broad range of ecosystems can be primarily attributed to:

- post-European settlement land use patterns of clearing land initially for towns and agricultural development;
- disruption of the natural (pre-European) pattern of landscape fire frequency and intensity;
- subsequent land development associated with increasing population and consumption, including large scale infrastructure impacts;
- the associated fragmentation of terrestrial ecosystems including forests, woodlands, shrublands, and native grasslands; and
- the introduction of European animals and plants (eg. rabbits, foxes, blackberry) that soon became invasive pests which outcompeted native species.

Collectively, these causes have resulted in substantial impacts on the natural environment and created ongoing threats to most ecosystems.

Over the past 40 years, there has been a substantial effort to reserve intact forest and other terrestrial ecosystems in national parks and conservation reserves; and Victoria now has arguably the nation's most extensive network of formal (ie. legislated) and informal reserves. This network has certainly contributed substantially to efforts to retain and conserve ecosystems by reducing their further decline.

However, the nature of these reservations has also introduced some of its own risks, most notably, the exclusion of regular incidences of fire leading to an altered fire regime, and more generally, the reduced capacity for active management of these landscapes, to address ongoing and emerging threats.

Today, the primary threats to our native forests are very large high intensity wildfire and, introduced feral pest animals and plants. Decline due to these factors is evident across all public land tenures, including in national parks and other reserves that have never been subject to direct human disturbance. This is evident from Victoria's State of the Forests reports.

The Institute refers the Inquiry to a recent highly relevant peer-reviewed paper which highlights that wildfire is the main factor impacting on habitat components for threatened species such as Leadbeater's Possum, both alone and in interaction with climate change and forest management<sup>1</sup>. Over the past twenty years, Victoria has seen multiple large-scale wildfires that have burnt extensive areas of all public native forest tenures— notably in 2003, 2006/07, the Black Saturday bushfires of 2009, and most recently the catastrophic bushfires of the 2019/20 summer (refer to Figure 1).

In addition, the increasing extent and occurrence of wildfire disasters in south-eastern Australia indicates that current fire management regimes (focussed principally on suppression, more so

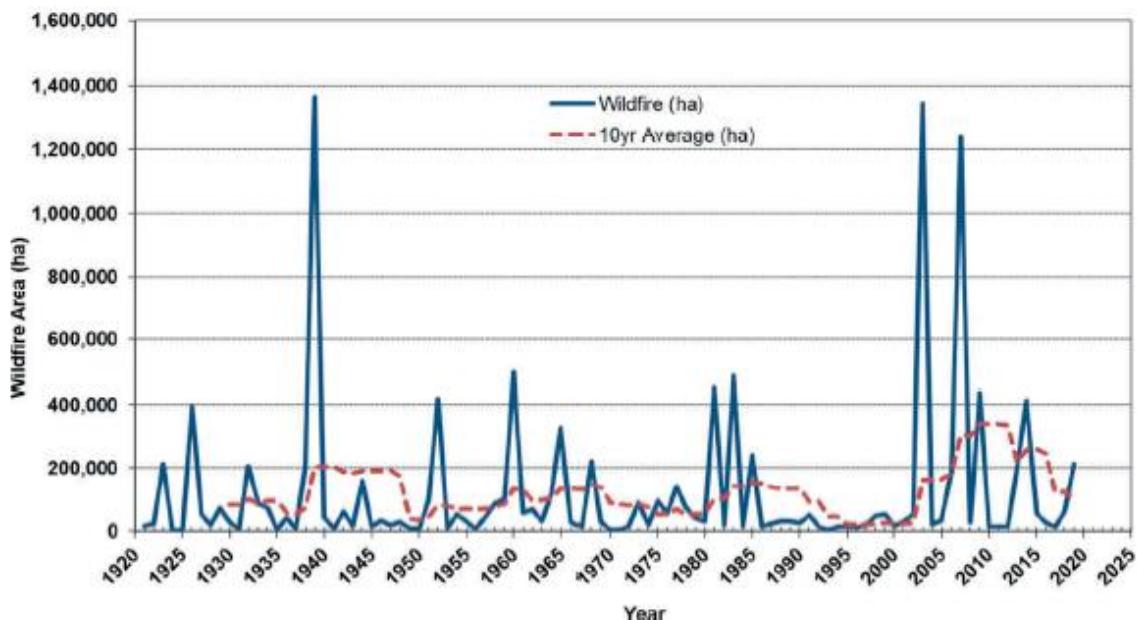
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<sup>1</sup> Nitschke, C et al, 2020. Spatial and temporal dynamics of habitat availability and stability for a critically endangered arboreal marsupial: implications for conservation planning in a fire-prone landscape. *Landscape Ecology*, May 2020. <https://doi.org/10.1007/s10980-020-01036-2>

than mitigation through land management), will not allow the full range of ecosystem processes and biodiversity to be sustained, nor reduce to an acceptable level the impact of wildfires on human lives and property.

There is now compelling evidence for the greater use of prescribed burning and other fuel reduction measures to reduce wildfire risks and impacts, rather than committing increasing resources to emergency wildfire suppression.<sup>2</sup> We expect this will also be borne out in the recommendations of current state government inquiries and a Royal Commission into the 2019-20 bushfire season.

**Figure 1: Annual extent of wildfires in Victoria since 1920**



Source: Morgan et al. 2020, derived from Annual reports and unpublished records from the Victorian Department of Land Environment Water and Planning. The solid line is the annual total area burnt by wildfire and the dashed line is the rolling 10-year average area burnt by wildfires.

Clearly there is a lack of active management to mitigate the wildfire threat to Victoria's native forests and other terrestrial ecosystems. Climate change is expected to increase these risks, thereby increasing the importance of active forest management to maintaining forest biodiversity and ecosystem resilience.

On this basis, the Institute opposes the notion of addressing concerns about ecosystem decline simply through transferring more State forest and other public lands to a 'lock it up and leave' model of passive conservation by expanding national parks and reserves in which there are minimal levels of management activity. A more active management model can be targeted towards adaptive measures that can arrest and reverse biodiversity decline. Over time, this should increase forest ecosystem health and vitality, and improve the resilience of our forests and woodlands to the expected impacts of climate change.

<sup>2</sup> G.W. Morgan, K.G. Tolhurst, M.W. Poynter, T. Blanks, N. Cooper, T. McGuffog, R. Ryan, M. Wouters, N. Stephens, P. Black, D. Sheehan, P. Leeson S. Whight and S. Davey (2020), Prescribed burning in south-eastern Australia: history and future directions. *Australian Forestry*, 83:1, <http://doi.org/10.1080/00049158.2020.1739883>

## Response to the Inquiry's Terms of Reference

### TOR (a): The extent of the decline of Victoria's biodiversity and the likely impact on people, particularly First Peoples, and ecosystems, if more is not done to address this, including consideration of climate change impacts

#### Defining a benchmark condition from which to assess ecosystem decline

Given the accounts of our earliest European explorers and settlers, it is apparent that Victoria's forest and woodland biodiversity has been in decline since the earliest days of European settlement. In 1890, noted explorer and grazier, Alfred Howitt, wrote an account of his observations of the ecological impacts of early European settlement in Gippsland for the Royal Society of Victoria.<sup>3</sup> The following extract is drawn from this account:

*"The influence of settlement upon the Eucalyptus forests has not been confined to the settlements upon lands devoted now to agriculture or pasturage ... It dates from the very day when the first hardy pioneers drove their flocks and herds down the mountains from New South Wales into the rich pastures of Gippsland [in about 1840].*

*Before this time, graminivorous marsupials had been so few in comparative number that they could not materially affect the annual crop of grass which covered the country, and which was more or less burnt off by the aborigines, either incidentally or intentionally, when travelling or for the purpose of hunting game.*

*These annual bush fires tended to keep the forests open, and to prevent the open country from being overgrown, for they not only consumed much of the standing or fallen timber, but in a great measure destroyed the seedlings which had sprung up since former conflagrations. The influence of these bush fires acted, however, in another direction, namely, as a check upon insect life, destroying, among others, those insects which prey upon the Eucalypts.*

*Granted these premises, it is easy [to] conclude that any cause that would lessen the force of the annual bush fires, would very materially alter the balance of nature, and thus produce new and unexpected results.*

*The increasing number of sheep and cattle in Gippsland, and the extended settlement of the district, lessened the annual crop of grass, and it was to the interest of the settlers to lessen and keep within bounds bush fires which might otherwise be very destructive to their improvements.*

*The results were two-fold. Young seedlings had now a chance of life, and a severe check was removed from insect pests. The consequences of these and other co-operating causes may be traced throughout the district, and a few instances will illustrate my meaning."*

Howitt went on to give examples where the changed fire regime had resulted in a significant expansion of dense forest into areas that were formerly grassed and only sparsely or very sparsely treed, including:

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<sup>3</sup> Howitt, A.W. 1890, *The Eucalypts of Victoria*, by A.W. Howitt, F.G.S., F.L.S., Reprinted from the transactions of the Royal Society of Victoria for 1890.

"Within the last twenty-five years, many parts of the Tambo Valley, from Ensay up to Tongio, have likewise become overgrown by a young forest, principally of *E. hemiphloia* and *macrorhyncha*, which extend up the mountains on either side of the valley. This dates especially from the time when the country was fenced into large sheep paddocks, when it became very important that bushfires should be prevented as a source of danger to the fences, and even when fire occurred the shortness of the pasturage checked its spread.

*I might go on giving many more instances of this growth of the Eucalyptus forests within the last quarter of a century [from about 1865 – 1890], but those I have given will serve to show how widespread this re-foresting of the country has been since the time when the white man appeared in Gippsland, and dispossessed the aboriginal occupiers, to who we owe more than is generally surmised for having unintentionally prepared it, by their annual burnings, for our occupation."*

From this historical account it is clear that, at least in relation to forests, an assessment of ecosystem decline from the pre-European state will give very different answers compared to an assessment of ecosystem decline over just the past few decades.

We note that the Inquiry's Terms of Reference do not set a baseline benchmark from which to assess decline. We would respectfully suggest that this is a fundamental requirement that needs to be addressed at the start of the Inquiry.

### **The current state of Victoria's forest and woodland ecosystems**

In relation to more recent reporting, the status of Victoria's forest and woodland biodiversity is periodically reported in the government's five-yearly 'State of the Forests' report. The most recent 2018 report is the fourth since 2003, and therefore provides scope for assessing trends over time.<sup>4</sup>

The 'State of the Forests' reports are structured in accordance with the Montreal Process which comprises seven criteria.<sup>5</sup> In relation to environmental conservation, the most relevant of these are:

- Criterion 1: Conservation of biological diversity – which has indicators that focus on forest dwelling species and their conservation status, to assess disturbance to native forest species by invasive species.
- Criterion 3: Maintenance of ecosystem health and vitality – with indicators now focusing on the impact of natural and human-induced disturbances on forest health and vitality. Disturbances in this context include fire, climatic events, planned burning and road management.

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<sup>4</sup> State of the Forests 2018 Report, Commissioner for Environmental Sustainability, Victoria. Online: [www.ces.vic.gov.au/reports/state-forests-2018](http://www.ces.vic.gov.au/reports/state-forests-2018)

<sup>5</sup> Department of Sustainability and Environment 2007. Criteria and indicators for sustainable forest management in Victoria: guidance document. Melbourne, Victoria. Online: [https://www.forestsandreserves.vic.gov.au/\\_\\_data/assets/pdf\\_file/0022/30865/Vic\\_Indicators\\_for\\_SFM\\_Guidance.pdf](https://www.forestsandreserves.vic.gov.au/__data/assets/pdf_file/0022/30865/Vic_Indicators_for_SFM_Guidance.pdf) Accessed 11 January 2019.

The most recent 2018 State of the Forests Report shows, at best, a mixed scorecard for these criteria.

Under criterion 1, only one out of 12 indicators is rated as "good" (*monitoring of representative indicator species*); seven were rated as "fair"; one was rated as "poor" (*fragmentation of native forest cover*); with the other three rated as "unknown". Data quality for these indicators ranges between good and poor, with a relatively even spread across categories.

The trends apparent from a comparison with the previous 2013 report, i.e. progress over the past five years, are also mixed. The 2018 report shows an improving trend for four of the 12 indicators; declining for two of the indicators; and unknown for around half of the indicators.

Under criterion 3, there are four indicators. The 2018 report rated three of these as "fair", and one as "unknown" (*the area and type of human-induced disturbance – grazing*). Data quality for these indicators shows a similar mix of good, fair and poor. The five-yearly trend is "unknown" for two of the indicators, declining for one indicator (*the scale and impact of agents and processes affecting forest health and vitality – bushfire affected area and climate*), and unclear for the fourth indicator.

The following observations arise from examining these Reports:

- The most recent reporting shows a substantive proportion of indicators that are rated as only 'fair', 'poor' or 'unknown'. At face value, this raises concerns about these aspects of biodiversity conservation. However, more detailed examination suggests the indicators need to be reviewed and the quality of the data used needs to be thoroughly scrutinised, as this is a complex area and aggregation to a high-level spatial scale can lead to misleading results.
- The State of the Forests reports encompass reporting across all public land tenures, including national parks, conservation reserves and other public lands. Therefore, concerns for biodiversity conservation extend beyond State forests being managed for multiple uses, including timber.
- The State of the Forests reports also highlight a range of indicators for which data quality is considered "poor"; which should be considered as a guide for prioritising further work by relevant Departments, to support long-term programs such as the Victorian Forest Monitoring Program<sup>6</sup> and associated data capture and analysis programs, e.g. DELWP's commissioning of comprehensive airborne LiDAR measurements of Victoria's forests, notably ecologically mature forests and rainforests<sup>7</sup>.

The State of the Forests Report 2018 provided four recommendations for Government to improve state-wide understanding of the impacts of forest fragmentation on forest-dependent species, and improve the assessment of protected areas by conducting detailed research to identify the benefits of various types of IUCN-protected areas for target species. While the Institute supports the thrust of these four monitoring and modelling recommendations, we note that there are no practical recommendations that specifically address the major threats to

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<sup>6</sup> DELWP 2020. Victorian Forest Monitoring Program. Online: <https://www.forestsandreserves.vic.gov.au/forest-management/victorian-forest-monitoring-program>

<sup>7</sup> DELWP 2019. Mapping Victoria's forests with LiDAR. Online: [https://www2.delwp.vic.gov.au/\\_data/assets/pdf\\_file/0017/413090/6-LiDAR-factsheet-FINAL.pdf](https://www2.delwp.vic.gov.au/_data/assets/pdf_file/0017/413090/6-LiDAR-factsheet-FINAL.pdf)

forest biodiversity posed by the unnaturally severe bushfire regime and the increasing impacts of introduced feral animals and plants.

The Institute would like to see a process or accountability framework established for State of the Forests Report recommendations, to ensure they are addressed in a timely way that supports active, adaptive and accountable management of native forests and plantations across public and private lands.

### **Effects on people and ecosystems**

The problems created for rural and regional communities by severe bushfires have been well documented during the past 17 years when over half of Victoria's public land forests have been burnt in summer conflagrations (in 2003, 2006-07, 2009, and 2019-20). This includes material concerns such as house loss, stock loss, and other property damage incurred by farmers and residents of impacted towns; as well as impacts on water supplies, rural road infrastructure, timber resources, and other public utilities.

The detailed impacts on environmental values are perhaps not as well-known beyond superficial claims that simplistically imply that all fire is equally as severe and destructive, rather than highly variable in conjunction with the variability of weather conditions between days, between day and night, and between seasons.

The Institute does not consider it is qualified to comment on the emotional or psychological effects of ecosystem decline on people, including First Peoples. However, we acknowledge that adverse changes to forested landscapes and their ecosystems may well cause profound concerns, especially to Traditional Owners with inherent generational links to their tribal 'country'. Accordingly, the Institute appreciates the need for ongoing dialogue to, wherever possible, incorporate Traditional knowledge when restoring damaged landscapes.

#### **Recommendations for TOR (a):**

- A1:** Define a baseline ecosystem benchmark against which comparisons can be made to meaningfully assess ecosystem decline in relation to forests and woodlands.
- A2:** Establish a process or accountability framework for Victoria's State of the Forests recommendations, to ensure they are addressed in a timely way that supports active, adaptive and accountable management of native forests and plantations across public and private lands.

## TOR (b): The adequacy of the legislative framework protecting Victoria's environment, including grasslands, forests and the marine and coastal environment, and native species

Under this component of the Terms of Reference, we highlight issues relating to the complexity of the existing legislative framework, the signals indicating a lack of clarity in existing regulations, and the excessive emphasis on area-based reservations of 'protected areas' to address concerns about ecosystem decline.

### Issues with the existing legislative framework

The Institute considers the existing legislative framework for protecting Victoria's terrestrial environment to be complex, featuring an array of legislation including some statutes that date back 60 years, as well as multiple government agencies, statutory authorities and Government-owned corporations involved in managing a broad range of land values and services across public land tenures and landscapes.

In broad terms, the Institutes agrees with the thrust of the Victorian Environmental Assessment Council (VEAC) findings in relation to the need for reforms of land legislation in Victoria, following its statewide assessment of public lands in 2017. Specifically, we refer to VEAC's observations that:<sup>8</sup>

*"In 2018 it will 60 years since commencement of the current Land Act and Forests Act and 40 years or more for the National Parks Act and the Crown Land (Reserves) Act. While attempts have been made in the last 25 years to rewrite legislation, none have been completed. Meanwhile fine-scale legislative solutions to issues have increased the complexity of the primary legislation and led to inconsistencies, overlaps and gaps, while retention of obsolete provisions confuses practitioners and the community.*

*It is timely now to simplify, strengthen and modernise the legislation in consultation with stakeholders and the broader community. There are also substantial efficiencies for land management and administration to be gained from streamlining legislation and reducing complexity and duplication, including improved compliance frameworks, improved transparency and facilitating community involvement in public land."*

Following this 2017 review, VEAC recommended that within five years, a new public land Act be developed to replace the current Land Act, Crown Land (Reserves) Act and Forests Act. The Institute observes, in 2020, that these reforms are yet to be enacted or otherwise implemented. The Institute would like to see further efforts to streamline this legislation and reduce complexity and duplication, notably in the division of responsibilities between responsible departments and the multiple assessment and review bodies.

Furthermore, specifically in relation to forest values, the Institute also observes the problematic situation at present where the government's State-owned enterprise, VicForests, is frequently engaged in defending itself against litigation brought against it on matters that relate, at least in part, to issues of interpretation of legislation and regulations pertaining to timber harvesting operations in public native forests<sup>9</sup>.

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<sup>8</sup> Victorian Environmental Assessment Council, 2017. *Statewide Assessment of Public land – Final report*. May 2017.

<sup>9</sup> VicForests, 2019. *Annual Report 2018-19*. Refer notes on litigation and ongoing legal proceedings.

These legal proceedings are continuing to play out and presumably there will be Court rulings based on the merits of each case. However, the Institute considers the Inquiry should note that the situation has, among other considerations, already led the State government to commission a broad-ranging review of the Code of Practice for Timber Production 2014, which is the key regulatory instrument containing broad principles and operational guidance (but not site-specific prescriptions) to govern timber harvesting on public and private land. In announcing the review, the State government acknowledged that while the Code has been in operation, there have been numerous legal challenges and uncertainty for conservationists and the forestry industry about their operating environment. Given this, the government has initiated the review (in July 2020) to:<sup>10</sup>

- minimise the risk to short-term supply obligations arising from third-party litigation;
- ensure it remains fit-for-purpose and facilitates implementation of the Victorian Forestry Plan;
- strengthen the regulatory powers available to the Conservation Regulator.

The Institute supports this review of the Code of Practice, with a view to further strengthening and streamlining the regulatory framework that enables active management, including sustainable timber production, within State forests. This recommendation is discussed further under Terms of Reference (d).

#### **Excessive emphasis on area-based reservations of 'protected areas'**

With respect to Victoria's forests and woodlands, the centrepiece of the existing legislative framework aimed at protecting biodiversity has long been a reliance on area-based reservations. Initially, this was based on a sound scientific rationale to address legitimate conservation gaps. But over the past 25-years it has increasingly been driven by a political ideology of acquiescing to demands for all forests to be 'protected' (irrespective of their conservation value) to appease influential environmental activist groups and their largely 'green-voting' supporters.

Contrary to common perceptions fuelled by environmental activist campaigns, the area of Victorian public native forest reserved for biodiversity conservation has dramatically increased in the 50 years since 1970. Key forest and woodland reservation milestones over that period have included:

- 1971 – 1997: Land Conservation Council (LCC) investigations and recommendations created at least 1.5 million hectares (ha) of new national parks and other conservation reserves, including the huge Little Desert, Croajingolong, Grampians, Snowy River, and Alpine National Parks.
- 1990 – 1995: Forest Management Planning process – created ~1.75 million ha of State Forest Special Protection Zones, Special Management Zones, and Code of Forest Practices management reserves which act as conservation reserves.
- 1997 – 2000: Regional Forest Agreement (RFA) process – increased forest reservations in the five RFA regions as follows:
  - Central Highlands – a 64% increase – 116,000 ha of new parks/conservation reserves.

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<sup>10</sup> Minister for Energy, Environment and Climate Change Lily D'Ambrosio, 2020. Media release: Review to protect Victoria's forests, jobs and timber industry. July 27, 2020.

- East Gippsland - almost half of the public land contained in forested parks and reserves.
  - Gippsland – a 51 % increase in forested parks and reserves.
  - North East – a 42% increase – 174,000 ha of new parks/conservation reserves.
  - West Victoria – a 44% increase – 194,000 ha of new parks/conservation reserves.
- 2002: Environment Conservation Council (ECC) Box Ironbark investigation – ~60,000 ha of State Forest changed to national parks and conservation reserves.
  - 2002 – 08: Great Otway National Park and Forest Park decision – 93,000 ha of State Forest changed to parks and reserves.
  - 2006 – 09: East Gippsland ‘old growth and iconic forests policy’ – ~43,000 ha of State Forest changed to parks and conservation reserves (refer further commentary on this in Box 1).
  - 2008: Cobboldonee National Park decision – 18,500 ha of State Forest changed to park.
  - 2008: Victorian Environmental Assessment Council (VEAC) Red Gum Forests investigation – 94,000 ha of State Forest changed to national parks and conservation reserves.
  - 2019: Around 90,000 ha of forest reserved for old growth and greater glider protection as part of the Government’s announcement of the phased closure of the timber industry.
  - 2017 – 20: VEAC Central West Forests Investigation – not yet announced, but the VEAC recommendation is for a further ~77,000 ha of State Forests to be changed to national parks and other conservation reserves.

**Box 1. Regional case study: East Gippsland:**

The East Gippsland region has been subject to on-going environmental campaigns to ‘save’ it from logging for at least 40 years. The unchanging premise of these campaigns is that unless the timber industry is removed, the region’s forests and their unique values will be lost. This premise continues to completely ignore the reality of progressive conservation action since the late 1970s, including the following:

- 1977: Following the Land Conservation Council process: ~169,000 ha of forest was contained in national parks and a range of other conservation reserves. This represented about 20% of the East Gippsland region’s public lands.
- 2009: Following the implementation of the ‘Protecting East Gippsland’s Old Growth and Iconic Forests Policy’, around 450,000 ha of forest was contained in the region’s national parks and a range of other formal conservation reserves. This represented about 54% of the region’s public lands.

In addition to this 250+% increase in formal parks and reserves in the region over the 32-years from 1977 to 2009, the growth in informal reservations and management reserves plus the recognition of unusable or unsuitable forests, meant that around 85% of the East Gippsland forests were already acting as biodiversity conservation reserves by 2009. More recent announcements in 2019 about formally protecting remnant small patches of old growth, plus habitat for one threatened species will (once implemented) further increase the proportion of East Gippsland forest that is already ‘protected’ towards 90%.

Overall, from 1970 to 2016, the area of forested national parks and other formal conservation reserves increased from around 750,000 ha to 4,000,600 ha, which represents an approximately 530% increase (Victoria’s State of the Forests Report, 2018). This will increase further because of the more recent government announcements and processes outlined above.

In addition to this, the 760,000 ha of State Forest Special Protection Zones plus management reserves, increased the area of formal and informal forested conservation reserves to around 5.7 million ha. There is also a further 1 million hectares of unusable State Forest and other forested Crown Lands which are effectively also acting as conservation reserves.

Overall, the total area of forest contained in formally declared conservation reserves, informal reserves created under management protocols, or effective reserves by means of not being used for any commercial purpose, will soon approximate 6.7 million ha, which represents close to 95% of Victoria's public native forests.

#### **The effectiveness of the conservation strategy of expanding 'protected areas'**

Despite the extensive placement of Victorian forests into 'protected areas' over the past 50-years, the incidence of damaging bushfires and numbers of feral pests, such as deer, continues to increase; while the devastating impacts of introduced carnivores such as foxes and feral cats shows little sign of abating.

On this basis, the term 'protected area' is misleading. Contrary to public perceptions fostered by decades of environmental campaigning, the declaring of such areas (especially national parks) shuts out various human uses, but this (on its own) provides no material improvement to the health of forest biodiversity. Indeed, there is a strong argument that it has worsened biodiversity outcomes, especially in relation to the propensity for bushfire impacts, because of an associated shift to less active management of fuels and lax maintenance of road access, due to a combination of park management philosophy and a general lack of budgetary funding for the majority of parks that are not of 'iconic' status.

Further to this, there is emerging evidence that many Victorians are tiring of having popular, generations-long recreational activities suddenly shut-out of long-visited State forests by unwarranted national park declarations based primarily on an enviro-political ideology. A recent analysis of the second round of public submissions to the VEAC Central West Forest Investigation, found a majority of 65.6% of the 2,652 submissions were opposed to declaring more national parks. Despite this, VEAC's final recommendations to the Victorian Government were to change most of the region's State Forests (about 77,000 ha) into new national parks.<sup>11</sup>

#### **Recommendation for TOR (b):**

- B1:** Implement the 2017 VEAC recommendations in relation to reforming land-based legislation, specifically to streamline it and reduce complexity and duplication, including improved compliance frameworks, improved transparency, and facilitating meaningful community involvement in public land.
- B2:** Support the recently announced review of the Code of Practice for Timber Production 2014, with a view to further strengthening and streamlining the regulatory framework that enables active management, including sustainable timber production, within State forests.
- B3:** Shift the forest conservation strategy from a singular focus on creating more 'protected areas', to a broader strategy of targeted management actions designed to specifically address the major threats posed by bushfires, habitat loss or degradation, pest plants, and introduced feral animals.

<sup>11</sup> Analysis undertaken by Steve Smitham for David Bentley, Bush Users Group, August 2020.

## TOR (c): The adequacy and effectiveness of government programs and funding protecting and restoring Victoria's ecosystems

Under this component of the Terms of Reference, we would like to draw attention to three key issues relating to Victoria's public native forests:

1. limitations associated with the State government's fire management program and its approach to protecting public forests from severe bushfires;
2. increasingly urgent requirement for government infrastructure to support the restoration of Victoria's fire-killed Ash forests, among other forest ecosystems; and
3. the need for further investment in ongoing forest monitoring programs across public and private land tenures and all forest types.

In addition, the Institute considers there is a need for some government funding support to re-establish and strengthen regionally based programs and functions, such as those provided by Catchment Management Authorities and community-based organisations such as Landcare.

### **State government programs for protecting forests from severe bushfires**

The capability to maintain Victoria's forest and woodland biodiversity is strongly related to effective management of the bushfire threat that otherwise has the potential to inflict huge ecosystem damage in just a few days each summer. While most Victorian forested ecosystems are adapted to periodic fire, the frequency and severity of recent Victorian wildfires is unnatural and the 2019-20 fires in eastern and north-eastern Victoria are the just the latest in a series of huge fires since 2003 to have strongly reinforced that point.

Unfortunately, the regularity of these very damaging conflagrations strongly suggests that the Victorian government's fire management program and its funding is far from adequate. This has also been noted by a range of State and Federal government bushfire inquiries which have specifically nominated insufficient forest fuel management as a major problem. The 2009 Victorian Bushfires Royal Commission recommended a tripling of the then annual rate of fuel reduction burning, but this was overturned by the Andrews Government in 2015, resulting in a return to the pre-2009 levels.<sup>12</sup>

Arguably, the nation's most successful forest management regime has been in south-western WA since the 1960s, whereby 6 – 8% of the public forest has been annually fuel reduced. This means that at any point in time, between 30 – 40% of the forest contains fuels of less than 5 years of accumulation.<sup>13</sup> Under these circumstances, any summer wildfire generally soon runs into fuel reduced areas where it can be more easily controlled. This fuel management regime has kept WA's south western forests relatively free of the mega-fires that have afflicted SE Australia's forests, especially over the past 20-years.<sup>14</sup>

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<sup>12</sup> G.W. Morgan, K.G. Tolhurst, M.W. Poynter, T. Blanks, N. Cooper, T. McGuffog, R. Ryan, M. Wouters, N. Stephens, P. Black, D. Sheehan, P. Leeson, S. Whight and S.M. Davey (2020), *A History of Prescribed Burning in South-eastern Australia*. Australian Forestry, Vol 83:1, 4-28, April 2020, DOI: [10.1080/00049158.2020.1739883](https://doi.org/10.1080/00049158.2020.1739883)

<sup>13</sup> Burrows N. and McCaw L. (2013), *Prescribed burning in southwestern Australian forests*, The Ecological Society of America: Frontiers in Ecology and the Environment, Volume 11 Issue s-1, e25-e34.

<sup>14</sup> M. Adams and P. Attiwill (2011) *Burning Issues*. CSIRO Publishing.

In Victoria since the mid-1990s, the rolling 10-year average of annual fuel reduction burning has varied from 80,000 – 150,000 hectares of its 7.7 million hectares of public forest. This equates to 1 – 2% of the public forests being annually fuel reduced over the past 25-years (or ~1.5 – 2.7% of the public forest types that are suitable for burning). This is clearly insufficient to achieve the wildfire mitigation benefit being enjoyed by WA, notwithstanding that it is harder to achieve the same proportional rate of annual fuel reduction in Victoria's far more ecologically and topographically variable forest estate.<sup>15</sup>

Further to this, the expansion of national parks at the expense of former State forests has – especially in remote locales – been generally accompanied by a contraction in the size and quality of the road and track network due to a mix of park management philosophy and a lack of budgetary resourcing.<sup>16</sup> This has made it harder to safely confine prescribed fuel reduction burns to planned boundaries, and at times has seriously impeded the capability to quickly access and attack wildfires when they are small and most controllable.<sup>17</sup>

There is acknowledged concern that climate-induced changes to the length and severity of bushfire seasons will create challenges for conducting more fuel reduction burning by narrowing the window of opportunity. However, a trend towards longer and more severe fire season heightens (rather than diminishes) the importance of managing forest fuel levels.

The Institute believes that meeting this challenge will necessitate:

- a reversion back to doing more broadscale prescribed burning for fuel reduction and environmental objectives in remote areas in lieu of the current 'residual risk' approach which concentrates a reduced amount of burning in strategic areas adjacent to private and community assets;
- an innovative approach to prescribed fuel reduction burning outside the traditional seasons, such as extending into either side of winter given an expectation that it may also become drier; and burning later into the evening when conditions allow during the traditional burning seasons; and
- a partial shift to other non-burning methods of fuel management, especially the use of mechanical methods that mulch or remove the fuels, especially near private or community assets where burning risks are problematic.

Reportedly Forest Fire Management Victoria (FFMV) is already extending the burning season into winter months and burning into the evening to a limited extent in parts of East Gippsland, while mechanical fuel reduction has also been trialled in the same region.

A major challenge will be in dealing with the increased costs of widely implementing these approaches. However, given the current over-reliance on aircraft use in firefighting,

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<sup>15</sup> G.W. Morgan, K.G. Tolhurst, M.W. Poynter, T. Blanks, N. Cooper, T. McGuffog, R. Ryan, M. Wouters, N. Stephens, P. Black, D. Sheehan, P. Leeson, S. Whight and S.M. Davey (2020), *A History of Prescribed Burning in South-eastern Australia*. Australian Forestry, Vol. 83:1, 4-28, April 2020, DOI: [10.1080/00049158.2020.1739883](https://doi.org/10.1080/00049158.2020.1739883).

<sup>16</sup> Ryan M. and Runnalls R. (2015), *Does timber harvesting in natural forests have any influence on fire management at the landscape level?* Unpublished paper presented to the Institute of Foresters of Australia Biannual Conference, Coffs Harbour, 2015.

<sup>17</sup> Goongerah-Dedrick Trail Fire January – March 2014: Community Report, Emergency Management Victoria, July 2014.

considerable amounts of money could potentially be saved and redirected towards fuel management and employing more field staff if aircraft-use was reduced in accordance with a proper cost-benefit assessment. Furthermore, any issues relating to increasing costs of implementing more effective fuel reduction programs should be considered in the context of the potentially far greater costs to Victoria and its terrestrial ecosystems from not addressing fuel reduction risks, including potentially irreversible impacts (e.g. loss of particular forest types).

A more general concern about bushfire preparedness in Victoria (and throughout SE Australia) is the gradual 20-year shift to a forest fire management approach strongly weighted towards emergency wildfire response in lieu of the traditional approach that was based on a reasonable balance between off-season wildfire mitigation (such as fuel reduction) and in-season wildfire suppression. This shift reflects the US experience and is strongly correlated with sharply increasing budgetary expenditure on aerial firefighting technology at the expense of traditional off-season preventative actions.<sup>18,19</sup>

These consequences of this are now also evident in Australia (see Box 2 below); and according to some researchers and commentators they foster a self-sustaining cycle of massive wildfires which is regularly reinforced because each big fire increases community and political demands to further expand the fleet of firefighting aircraft. Recent research in Mediterranean countries, refers to this phenomenon as the 'firefighting trap' because nowhere in the world has increasing the numbers of firefighting aircraft ever reduced the incidence, extent, and severity of large forest fires.<sup>20</sup>

Large Air Tankers, as used during the 2019/20 fire season, are enormously expensive and have limitations in their use. However, to date no independent evaluation of their cost-effectiveness on the season's fire suppression outcomes has been made publicly available.

The Institute considers that Victoria could generate savings from reducing the expenditure on operational fire-fighting by increasing its annual program of prescribed burning. The additional expenditure on conducting an enlarged prescribed burning program should be more than offset by the savings generated through reducing expenditure on large air tankers, which currently dominates the cost of dealing with the fire threat.

Dexter and Macleod (2017)<sup>21</sup> have previously raised concerns that forest fire management on Victoria's public land are neither being effectively nor efficiently applied nor fully and transparently documented. They called for an investigation by the Victorian Auditor General's office. Similar concerns have been voiced in other jurisdictions.

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<sup>18</sup> Pyne, S., (2006) *The Still Burning Bush*, Scribe Publications.

<sup>19</sup> Williams, J.T. (2013), *Exploring the onset of high-impact mega-fires through a forest land management prism*, Forest Ecology and Management, Volume 294: 4 – 10, April 2013.

<sup>20</sup> Moreira et al (2020), *Wildfire management in Mediterranean-type regions: paradigm shift needed*, Environmental Research Letters 15 011001.

<sup>21</sup> Dexter B. and Macleod D. (2017): *What is the True Cost of Forest Fire Management on Public Land in Victoria? What actions are required to increase transparency and accountability in reporting these costs in the public interest?* ISBN 978-0-9942531-4-9 Printed paperback with CD-ROM. Online: [https://members.professionalsaustralia.org.au/Forestry/About the IFA/forest fire/Fire TrueCostandBriefing\\_2019.pdf](https://members.professionalsaustralia.org.au/Forestry/About the IFA/forest fire/Fire TrueCostandBriefing_2019.pdf)

**Box 2. The shift to emergency wildfire response in lieu of preventative fire mitigation:**

In the USA, the domination of aircraft-based emergency wildfire response arose because of a need to protect burgeoning suburbs, towns and other assets that were increasingly being built adjacent to or amongst flammable forests. But while this justified the approach, it is generally accepted to be failing to reduce the incidence, extent and severity of large wildfires because:

- It is focussed on treating the symptoms rather than addressing the factors underpinning fire risk;
- Massive expenditure on aircraft reduces the budgetary resources for off-season activities such as fuel reduction and maintaining forest access that is integral to quickly containing wildfires while they are small;
- Aerial water/retardant-bombing under suitable operating conditions can be useful at saving houses and other community assets, but is relatively ineffective in controlling most forest fires (once they grow larger than one hectare); and
- An over-reliance on aerial water/retardant-bombing is partly displacing ground-based fire-fighting which although carrying higher fire-fighter risks, is integral to effectively containing wildfires.

Until the responsible government agencies develop a stronger enthusiasm for and commitment to regular broadscale fuel reduction burning and more targeted mechanical fuel reduction treatments, the protection of forest and woodland biodiversity from the threat of wildfire will be tragically inadequate.

**Restoring fire-killed ash-type forests**

With regard to restoring forest ecosystems, the Institute is highly concerned about the condition and future regenerative capacity of young ash-type eucalypt forests, including Mountain Ash (*Eucalyptus regnans*) and Alpine Ash (*E. delegatensis*), which have been burnt by multiple wildfires over the past 20 years (in 2003, 2006-07, 2009, and 2019-20). Young ash forests are particularly vulnerable to fire and, at the most juvenile stages, are also susceptible to herbivore browsing, exacerbated by the presence of pest species such as deer. If a fire occurs in ash forests that are under 20 years of age, the trees are generally too young to produce sufficient seed for natural regeneration, and artificial regeneration will be essential.

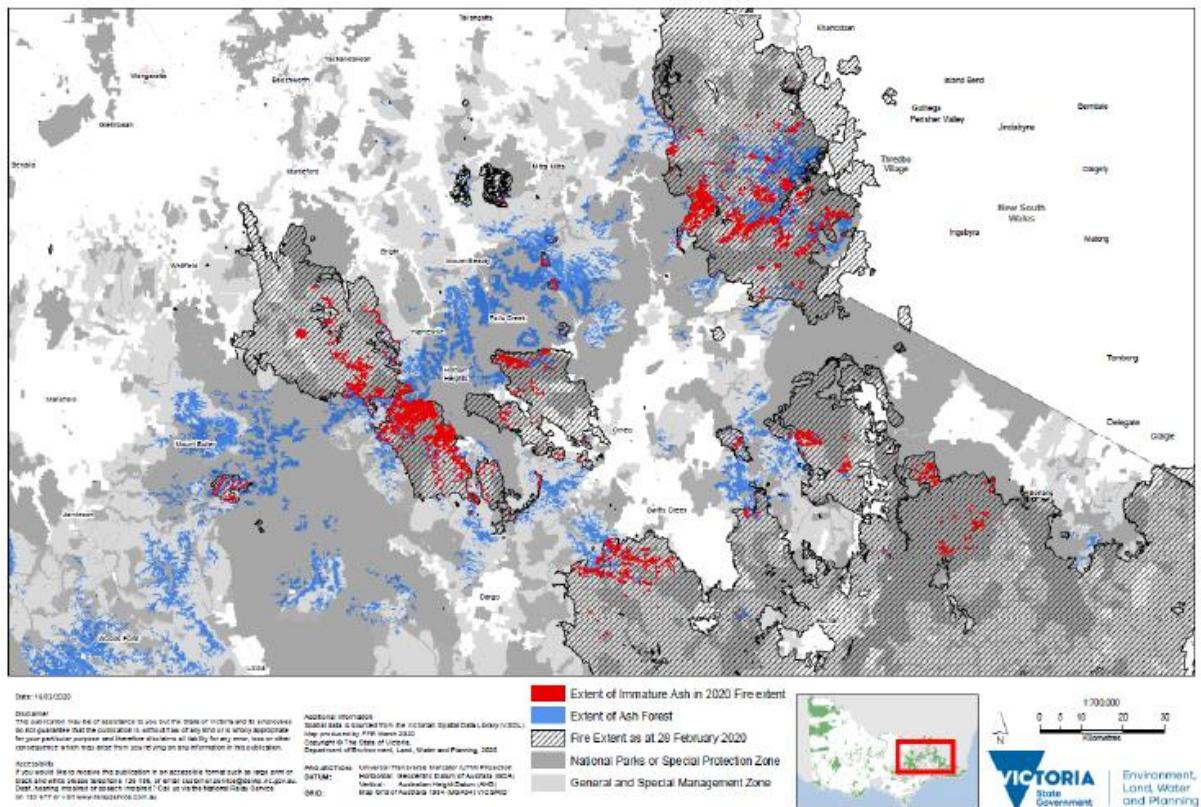
DELWP has recognised this concern in its assessment of the biodiversity response and recovery following the 2019/20 bushfires<sup>22</sup>. In March 2020, DELWP noted initial indicative analyses suggesting that at least 14,000 hectares of young Ash species forest within the current fire extent impacted by high severity fire (>80% crown scorch and/or full crown burn) may require active interventions (e.g. re-seeding) to support regeneration (refer Table 1 and Figure 2). DELWP was undertaking further aerial and field verification to refine these estimates; however, they clearly highlight a level of concern across public land tenures.

<sup>22</sup> DELWP 2020. Victoria's bushfire emergency: biodiversity response and recovery. Version 2, March 2020.

**Table 1: Area of Ash forest impacted by the 2019/20 bushfires and high severity fire**

Category	Area (Ha)
Mountain Ash ( <i>Eucalyptus regnans</i> ):	
Total area of Mountain Ash impacted by 2019/2020 fires	4,286 ha
Total area of young Mountain Ash impacted by 2019/2020 fires	1,741 ha
Area of young Mountain Ash impacted by 2019/2020 high severity fire	1,277 ha
Alpine Ash ( <i>Eucalyptus delegatensis</i> ):	
Total area of Alpine Ash impacted by 2019/2020 fires	52,516 ha
Total area of young Alpine Ash impacted by 2019/2020 fires	20,460 ha
Area of young Alpine Ash impacted by 2019/2020 high severity fire	13,051 ha

Source: DELWP, March 2020

**Figure 2: Indicative extent of immature ash forest impacted by 2019/20 bushfires**

Source: DELWP, March 2020

In this context, the Institute considers there is a pressing need for government programs to protect and restore immature Ash forest impacted by successive bushfires. Artificial (or assisted) regeneration will be required, at a scale that is likely to significantly exceed standard operational requirements across State forest and national parks and reserves.

Artificial regeneration is reliant upon having a sufficient store of suitable seed (i.e. from the same provenance to conserve biodiversity), as well as substantial, ongoing capacity to implement a regeneration program comprising aerial seeding complemented by on-ground assessments and potentially some areas of replanting of nursery-grown seedlings.

The Institute is particularly concerned about whether there is a sufficient store of suitable seed (strategic seedbanks) in place to provide for regeneration program in 2020/21 and in subsequent years. The need for strategic seedbanks to meet fire risks for Victorian ash-type species has been recognised for some time. Former Institute President, the late Professor Ian Ferguson, published a paper in 2011 on the urgent need to build up seed stocks of Ash species as soon as possible in order to respond to the next big fire; such as the 2019/20 wildfires that we have since experienced. Professor Ferguson noted at the time:

*"The uncertainties attached to the occurrence of major fires and future climate change are not only of great importance to the future management of seed stocks: they affect the sustainability of these forest types on state forests with respect to water production, water quality, biodiversity and timber production. The estimates of the probabilities of unacceptable risks in this study beyond 2050 are sufficient to create discomfort about the potential long-term sustainability of these forest types and signal a need to consider other operational and research measures in addition to seed collection and storage."*<sup>23</sup>

The Institute calls on the State government to ensure government programs and funding are directed to protecting and restoring Victoria's iconic ash-type forests, by establishing and maintaining strategic seedbanks for vulnerable tree species; combined with associated infrastructure (e.g. forest nurseries) and systems (e.g. strategic reforestation programs) to implement timely and effective regeneration across fire-affected public lands (including State forests and national parks and reserves).

In accordance with a central theme of this submission, the Institute would argue against a passive approach to setting aside these fire affected areas, in the hope they will recover and maintain their ecological values over the long term. Active management is usually required to restore ash-type forests that have been heavily impacted by successive wildfires.

### **Forest monitoring programs**

The Institute advocates for further investment in cross-tenure forest monitoring programs to support active, adaptive and accountable management of Victorian forests, particularly across threatened ecosystems.

The Institute recognises the value of the Victorian Forest Monitoring Program (VFMP) which was established in 2010 based on a network of permanent ground plots, which cover Victoria's public forests, and associated aerial photography and satellite imagery. The design of the plot network is based on systematic stratified sampling based on Interim Biogeographic Regionalisation for Australia (IBRA) bioregions and Crown land tenure categories (parks and reserves, and State forest). The complete VFMP ground plot network now comprises around 800 field plots which are being remeasured at 5-yearly intervals.

Collectively these plots provide a set of basic forest attributes (including structure, species diversity, and health) that are indicative of sustainability and trends in the extent, state and condition of our forests. More broadly, the VFMP provides a platform to meet statutory reporting obligations, support forest policy and management decisions, and assess Victoria's performance towards sustainable ecosystem management.

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<sup>23</sup> Ian Ferguson (2011) Strategic seedbanks to meet fire risks for Victorian ash-type species, *Australian Forestry*, 74:2, 97-107, DOI: 10.1080/00049158.2011.10676351.

The remeasurement and re-analysis of VFMP plots and satellite imagery over time provides State agencies with detailed information that should ultimately improve evidence-based decision-making and policy development across a range of issues including fire and flood impacts, habitat protection, carbon accounting, biomass, forest productivity, forest health and biodiversity.

The Institute considers this type of state-wide monitoring program is a critical component of active, adaptive and accountable land management, which needs to encompass measures that detect signals or patterns of ecosystem decline across forested landscapes. The Institute encourages the responsible government agencies to significantly expand the VFMP through the establishment of additional field plots, consideration of more frequent, cost-effective remeasures of key indicators (e.g. annual or biannual measures of key metrics, rather than all metrics on a 5-yearly basis), and aligning field-based measures with emerging technologies for remote sensing using increasingly cost-effective satellite imagery and LiDAR data.

Further to this, the Institute also recognises the State government investment over the past two years in acquiring and processing 1.35 million ha of LiDAR across Victoria (2019), notably to map old growth forests and rainforest, among other forest attributes. The Institute supports state-wide forest monitoring at multiple scales because of the opportunities and benefits that it can provide. Ongoing investment in the cost-effective capture and analysis of this type of data could supply regular updates to support monitoring of forest health and responses to management interventions to restore ecosystems.

### **Strengthening regionally based natural resource management programs**

Finally, under this component of the Terms of Reference, the Institute would like to see further funding support for regionally based natural resource management programs, notably Catchment Management Authorities, and community-based organisations such as Landcare.

The Institute is concerned that over the past decade there has been a shift towards centralisation of funding and decision-making processes, which has constrained the opportunity and the capacity for regionally-based organisations and local community groups to become more directly engaged, if not involved, in land management decisions within those regions.

Further government support for regionally-based organisations and devolved decision-making processes, through funding and other coordinated processes (e.g. extension programs and secretariat support), is needed to more effectively engage local communities to arrest ecosystem decline, to more efficiently integrate resources, and achieve improvements in the state of the environment within catchment boundaries.

#### **Recommendations for TOR (c):**

**C1:** Recognise the critical importance of effectively managing the bushfire threat to mitigating ecosystem decline in forests and woodlands. This necessitates increasing expenditure and commitment to off-fire season forest management through increasing the annual level of fuel reduction treatments and by reinstating or upgrading road and track networks, especially in remote area forests.

**C2:** Ensure government programs and funding are directed to protecting and restoring Victoria's iconic landscapes, including for example the Ash-type forests, by establishing and maintaining strategic seedbanks for vulnerable forest types; combined with forest nursery developments and strategic reforestation programs to implement timely and effective regeneration across fire-affected public lands.

- C3:** Invest further and expand Victoria's forest monitoring program, notably the VFMP, through the establishment of additional field plots, consideration of more frequent remeasures of key metrics (e.g. annually rather than all on a 5-yearly basis) and aligning field based measures with emerging technologies for remote sensing using increasingly cost-effective satellite imagery and LiDAR data.
- C4:** Invest further in strengthening regionally based natural resource management programs, to more effectively engage local communities to arrest ecosystem decline, to integrate resources more efficiently, and achieve improvements in the state of the environment within catchment boundaries.

**TOR (d): Legislative, policy, program, governance and funding solutions to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts.**

In a broad sense, the Institute considers that Victoria has a comprehensive legislative framework in place to facilitate ecosystem and species protection, restoration and recovery, including in the context of climate change impacts. However, as discussed under component (b) of the Terms of Reference, the existing framework is complex and features a range of outdated legislation; and the Institute would like to see further efforts to streamline this legislation and reduce the complexity and duplication.

In relation to policy considerations, the Institute is concerned that the current State government policy to phase-out timber harvesting in native forests will lead to a counter-productive reduction in the level of active management across public native forests, which will compromise these protection measures, and increase the risks associated with wildfires, invasive species and climate change. Further work to support forest ecosystems and species should include a review of policy positions that are likely to lead to a winding back of active management capacity, notably across State forest. Under this aspect of the Terms of Reference, we also highlight the need to continue to support the agencies and enterprises that implement forest management practices in accordance with the existing legislation and government programs.

**National and State level policy frameworks**

Since the late 1990s Australia's native forests and woodlands have been covered by a Comprehensive, Adequate and Representative (CAR) reserve network developed in accordance with the National Forest Policy Statement (first published 1992; updated in 2005), and developed using nationally agreed guidelines and criteria during the RFA process. The CAR reserve network requires regular review to ensure that it continues to be aligned with the original objectives and is refined based on new knowledge and data about species and ecosystems.

On this basis, the Institute cautiously welcomed the March 2020 'modernisation' of the Victorian RFAs through to June 2030; but noted that more needed to be done, and specifically called on the State government to reconsider its decision to withdraw from the scope to conduct timber harvesting in public native forests. The Institute would like to see a longer-term commitment to active, adaptive and accountable forest management that maintains a range of forest uses and benefits.

The modernised RFAs were designed to bolster protections for Victoria's unique forest biodiversity and threatened species by:

- reinforcing existing protections of rainforests and recognising the Victorian Government's commitment to protect all Old Growth Forest;
- providing for more timely interventions to protect threatened species including plans for their care and protection (Action Statements);
- identifying and reviewing priorities for research to fill critical knowledge gaps including the effectiveness of protections and management actions and to improve understanding of new and emerging threats to vulnerable species; and
- having stronger checks and balances through outcome-based reporting to inform five-yearly reviews, the ability to initiate Major Event Reviews (e.g. after major wildfire events),

new audit provisions for evaluation of RFA performance and identification of remedial actions<sup>24</sup>.

Of note for this TOR, the Victorian RFAs now specifically recognise the impacts of climate change and adaptations will need to be integrated into forest management and the CAR reserve to build resilience and manage climate risks. The impacts of climate change on Victoria's forests will now be considered during each five-yearly RFA review.

The modernised RFAs also include a significantly expanded section dealing with Matters of National Environmental Significance (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) including Listed Species and Communities. These sections include requirements for Victoria to maintain a Forest Management System that provides for the protection and management of MNES and the conservation and recovery of Listed Species and Communities.

The Institute supports the intent of the modernised RFAs to strengthen the pre-existing agreements, with the inclusion of additional measures such as specifically addressing climate change and MNES under the EPBC Act, while also streamlining and strengthening outcomes-focussed reporting, to be consistent with international indicators and the Australian Government's State of the Forests Report series.

As noted above, the Institute now encourages the State government to now ensure that the responsible agencies (i.e. DELWP and DJPR) and the state-owned commercial forestry enterprise VicForests, are fully supported in their mandates to manage public native forests in accordance with these modernised RFAs. In addition, the Institute encourages the State government to reconsider the scope to extent these agreements (or the policy principles they represent) to ensure that a long-term view is applied to active, adaptive and accountable forest management across Victoria.

### **State policy position on a phase-out of timber harvesting in native forests**

The State and Commonwealth governments agreed to a 10-year timeframe for the modernised RFAs because the Victorian Government announced in November 2019 a policy of phasing-out timber harvesting from Victorian State forests by 2030. This decision was premised on several environmental protections that would be supposedly achieved through the cessation of timber production.

The Institute does not support this policy because timber production is a renewable, low energy-use industry that is already very limited and highly regulated to prevent any significant impacts on biological diversity. Accordingly, excluding timber production from native forests will not guarantee protection of biodiversity from the key threats of unnaturally severe wildfires, invasive pest species and climate change.

This is already evident from the decline in the forestry workforce as a result of progressively reducing timber harvesting in public native forests since the mid-1990s, which has substantially reduced the numbers of experienced bush workers with the capacity to quickly suppress wildfires in the often difficult and dangerous terrain of remote forests. Large numbers of competent operators of bulldozers and other plant and machinery have already left the

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<sup>24</sup> DELWP 2020. Victorian Regional Forest Agreements. Online:

[https://www2.delwp.vic.gov.au/futureforests/what-were-doing/victorian-regional-forest-agreements#toc\\_id\\_0\\_modernised](https://www2.delwp.vic.gov.au/futureforests/what-were-doing/victorian-regional-forest-agreements#toc_id_0_modernised)

sector. This capacity was critical to the efficient construction of fire control lines and containing wildfires while they are small or when being fought under relatively favourable weather before the onset of extreme weather conditions. Once such conditions arise, small fires spread rapidly and with the extreme intensity that can damage native forests and their ecosystems for many decades.

The Institute contends that the weakened capability to rapidly control fires when small is a contributing factor in the increasing incidence of unnecessarily large wildfires, including some of the recent 2019-20 East Gippsland fires.

Victoria's native forests require a level of active forest management to maintain structural diversity and resilience. While timber harvesting can have a localised impact in time and space on plant and animal species, modern forest management systems are based on a whole-of-landscape approach to protecting biodiversity values, including threatened species and habitats. Biological diversity can be maintained in native forests and plantations managed for timber production through scientifically based management plans, and enforceable operational standards enshrined in Codes of Practice.

In this context, the Institute supports the recently announced review of the Code of Practice for Timber Production in Victoria<sup>25</sup>. Most States and Territories have Codes of Forest Practice that apply to public and/or private forests and aim to create a balance between conservation and production. They act as guidelines for a variety of situations, management intentions, areas and types of forest and ownership. Based on best science and forestry knowledge, these Codes provide standards and guidelines to ensure reasonable protection of the environmental and cultural values of the forest through forest practices.

Codes of Practice can ensure commercial timber growing and harvesting operations are carried out on public and private land in a way that is compatible with the conservation of environmental and social values within forests. They promote the ecologically sustainable management of native forests proposed for timber production and enhance public confidence in forest management.

Major challenges related to Codes of Practice are ensuring their effective implementation across all timber production and roading activities, regardless of land tenure. The coverage of regulations and Codes needs to be improved to deal with other significant forest activities. Forest managers need training and support in developing and implementing Codes, particularly in small-scale harvesting activities.

### **Active management for a broad range of benefits**

In summary, the Institute considers that active management of native forests, including renewable timber production in a minor portion, is vital to their sustainability and provides many benefits to Australian society. It also ensures that Australia meets more of its timber needs domestically, rather than sourcing timber and paper products from other countries, which may not be subject to the same level of environmental management standards applied in Australia.

The sustainable management of scattered, small-scale native forest timber production provides a broad suite of socio-economic benefits, including road access for recreation, fire control, eco-tourism and the production of non-timber products; while also providing

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<sup>25</sup> Victorian Government media release, 27 July 2020. Online: <https://www.lilydambrosio.com.au/media-releases/review-to-protect-victorias-forests-jobs-and-timber-industry/>

ecological benefits in ways that include increasing structural diversity (uneven aged stands and forest mosaics) across the landscape, and by contributing a fire-fighting workforce that is a major component of efforts to reduce the threats of huge (stand replacing) wildfires that can cause major flora and fauna losses or profound changes to vegetation communities.

Sustainable management is underpinned by the CAR conservation reserve network, complemented by active management of biodiversity outside of formal parks and reserves.

The Institute supports ongoing research on timber harvesting in native forests to support this capability in Australia. This needs to encompass the development of adaptive management to protect biological diversity.

Concurrently, the Institute supports and encourages the use of Codes of Practice that promote best practice forest management; are based on best available science and knowledge; are subject to regular public review; and, have appropriate support, monitoring, compliance, audit, reporting and, where required, enforcement. In conclusion, public native forests and woodlands should be managed by people trained in the principles of sustainable forest management supported by professional knowledge and expertise in forest science.

#### **Recommendations for TOR (d):**

Following the modernisation of Victorian RFAs earlier this year, the State government should now:

- D1:** Ensure the responsible agencies (i.e. DELWP and DJPR) and State-owned enterprises (i.e. VicForests), are fully supported in their mandates to manage public native forests in accordance with these renewed agreements, which are designed to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts.
- D2:** Consider further the scope to extend these agreements (or the policy principles they represent) to ensure a longer-term view is applied to active management of public native forests across Victoria.
- D3:** Call on the State government to reverse the decision to phase-out timber harvesting in native State forests on the basis that it will not guarantee protection of biodiversity, and will be more likely to counter-productively foster a significant reduction in active, adaptive and accountable forest management across public land, especially in relation to fire.
- D4:** Promote, foster and support responsible agencies and State-owned enterprises to ensure there is active, adaptive and accountable forest management across public land tenures, principally to address the broader threats of wildfires, invasive species and climate change.

## **TOR (e): Opportunities to restore Victoria's environment while upholding First Peoples' connection to country, and increasing and diversifying employment opportunities in Victoria**

With respect to native forests and woodlands, the Institute considers there is potential for First Peoples to be more gainfully engaged and employed in bushfire prevention and mitigation, and in a range of environmental restoration and recovery programs.

### **Bushfire prevention and mitigation**

The beneficial use of cultural burning and 'cool fire' by Traditional Owners has been widely acknowledged since the 2019-20 bushfires. With regards to future bushfire prevention and mitigation, traditional knowledge and cultural burning practices have potential to contribute further to positive social and environmental outcomes. Integrating Traditional burning into forest fire management could also help to reintroduce traditional knowledge to Indigenous communities where it may have been lost.

Prescribed burning for wildfire mitigation undertaken by state forestry and fire authorities since the 1950s is based on a similar concept of preventative cool season burning to create a mosaic of low and moderate fuel zones.

While Traditional burning practices have been maintained or successfully re-introduced into the vast and sparsely populated landscapes of central and northern Australia, south-eastern Australia has far more densely populated mixed farming and forested landscapes, with more variable topography and a greater imperative for burn control to avoid property damage. These factors would be expected to create challenges for utilising Traditional burning practices to the extent required to make a significant impact on reducing forest fuels at a landscape scale, especially given the limited window of opportunity for safe burning. Furthermore, some Indigenous fire practitioners have noted that the heavy fuel loads which are evident across much of the public lands of south-eastern Australia, may be a constraint to widely re-introducing Traditional burning practices.

It is likely that Traditional burning will be most suited to certain forest or woodland types, and so would be complementary to the current burning programs carried out by land and fire management authorities, rather than a replacement for them. Nevertheless, the Institute considers there is potential for engaging and employing Indigenous rangers and cultural heritage officers in these types of roles.

### **Environmental restoration and recovery**

In addition to bushfire prevention and mitigation, there are many different aspects to environmental restoration and recovery that offer potential for participation by First Peoples. Examples include:

- The collection and storage of native tree and understorey seed, primarily as a contingency to assist environmental recovery of fire sensitive communities after severe bushfires (e.g. ash-type forests);
- Restoring tree stocking in unstocked or severely understocked areas of regeneration arising from past timber harvesting or due to the effects of multiple bushfires in close succession;
- Restoration of native vegetation in targeted areas of bushland (e.g. in national parks or conservation reserves) that have become over-run with introduced feral plants and noxious weeds;

- Habitat supplementation in areas adversely affected by disturbance; e.g. the building and installing of nest boxes or chainsaw carving of artificial tree hollows in areas where sufficient habitat is lacking;
- Feral animal control to protect native wildlife;
- Restoration of native vegetation and habitat on degraded former agricultural lands.

**Recommendations for TOR (e):**

**E1:** Traditional Owners' forest fire management practices should be fostered and re-introduced where possible, to complement (but not replace) existing prescribed burning programs.

**E2:** Explore further the potential to engage and employ First Peoples in the various aspects of environmental restoration and recovery.

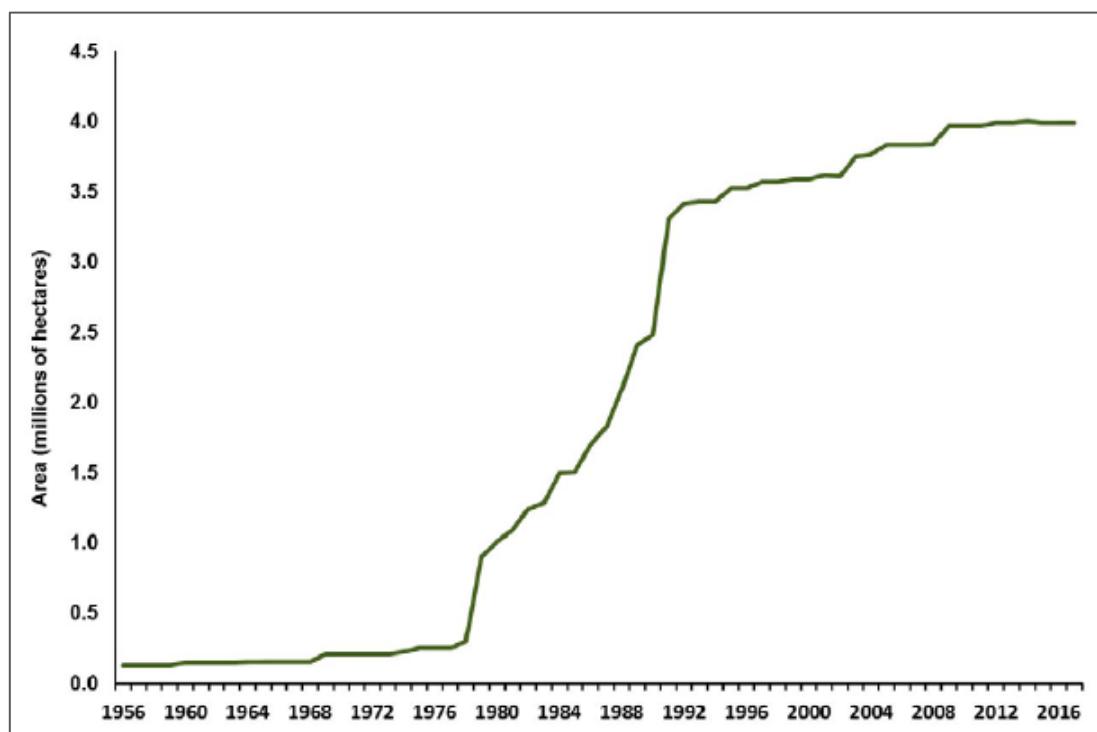
### TOR (f): Any other related matters

In respect to any other related matters, the Institute would like to register its concerns about the gross misrepresentations of reality and counter-productive nature of environmental stakeholder calls for an immediate cessation of timber production in public native forests and the associated reservation (setting aside) of most/all State forests into formal or informal conservation reserves, ostensibly to 'protect and safeguard' forest ecosystems.

Under Terms of Reference (b) and (d) of this submission, we have summarised the progressive development of formal 'protected areas' in Victoria since the 1970s, including the establishment of a comprehensive, adequate and representative reserve system during the mid to late-1990s. This has resulted in the majority of public native forests being placed into formal parks and conservation reserves (see also Figure 3 below).

Today, more than half of Victoria's 7.1 million hectares of public native forests are set aside in national parks and formal conservation reserves. These are the formal protected areas (ie. lands assigned to Parks Victoria). In addition, there are extensive areas and networks of informal reserves within State Forests that are reserved for a broad range of biodiversity values as well as other values, and these areas specifically exclude timber harvesting or any silvicultural intervention that could help to reduce the fire threat or increase water yield, for example.

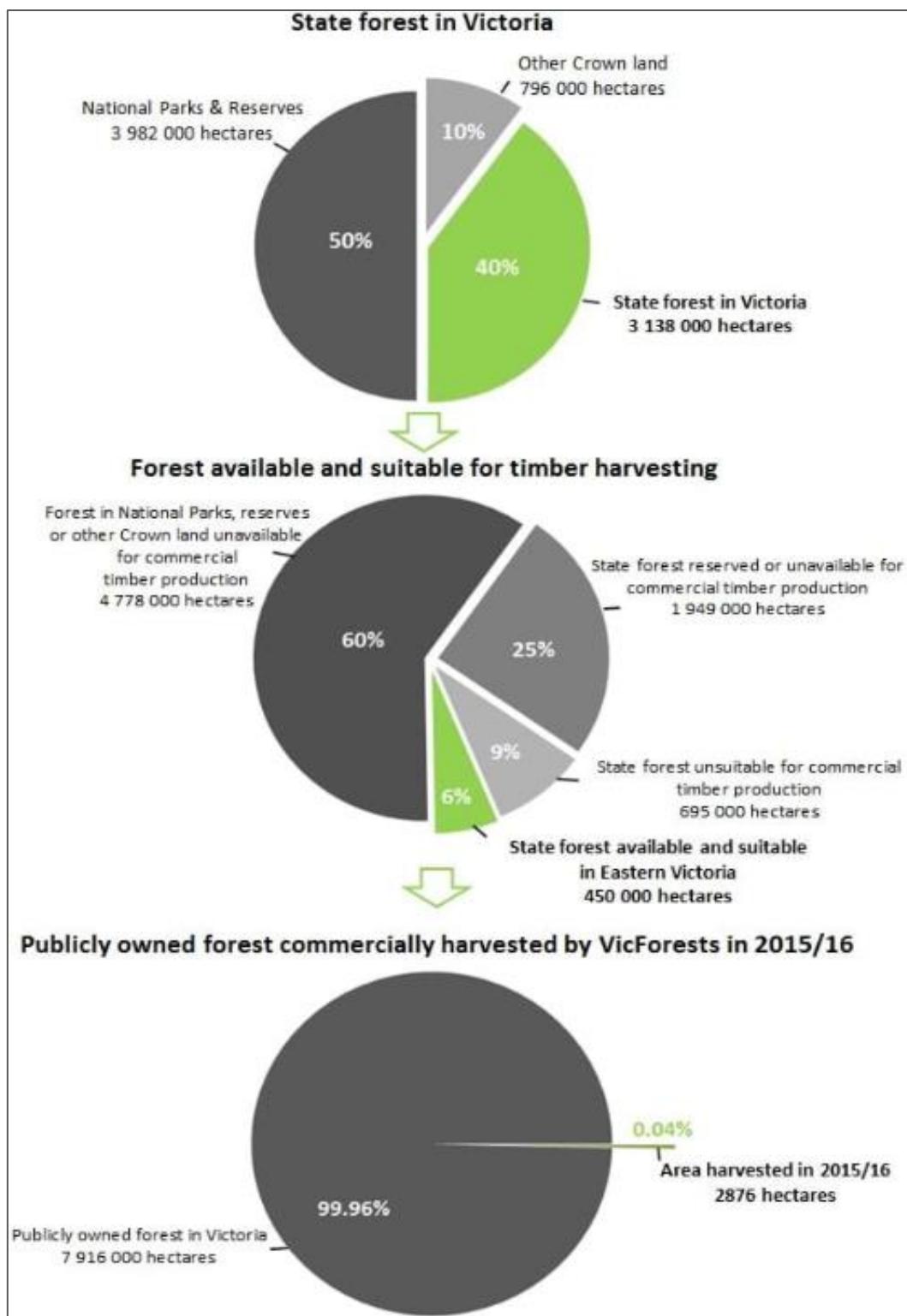
**Figure 3: Change in Victoria's formal protected area (parks and conservation reserves), 1956-2016**



Source: State of the Forests report 2018; derived from Parks Victoria 2018 Managing Country Together.

In 1986, the Victorian Timber Industry Strategy estimated that around 31% of the state's public forests were legislatively available and suitable for long-term sustainable timber production. Today, in 2020, the proportion of Victoria's total public native forest estate that is still available and suitable for timber production is less than 6%; and the area of State forest harvested in any given year equates to approximately 0.04% of the total public forest area (refer to Figure 4); with further restrictions and constraints being potentially imposed by ongoing litigation.

**Figure 4: Forest area available and commercially suitable for timber production in Victoria's publicly-owned forests**



Source: VicForests Resource Outlook 2016-17

Coinciding approximately with the start of national park and reserve expansion, the production of the highest grade sawlogs (C+) declined by almost 80% between 1970 and 2015 (down from 1.2 million to 260,000 m<sup>3</sup>). The effect of reserve expansion on sawlog production has been compounded by the extent of multiple large-scale wildfires over the past 20 years in particular.

The main point of relevance for this Inquiry is, notwithstanding the substantial increases in forest reservations over the past 20+ years and associated reductions in timber production levels, we have seen major bushfires become more prevalent, across national parks and reserves as well as State forests, with significant impacts on forest ecosystems and species.

The Institute contends the so-called 'protected area' status of national parks and conservation reserves has therefore done nothing to reduce these risks or their ecological impacts. This reality is in stark contrast to ongoing environmental campaigning suggesting that our forests can only be saved by closing the local timber industry and placing virtually all public forests into national parks and other conservation reserves.

The major problem with this 'environmentalist' narrative is that national parks and conservation reserves are subject to management regimes that are generally poorly funded, relatively passive, and allow less flexibility than is needed to effectively manage key threats such as fire.

On the other hand, State forests that provide an economic return from part of their area, have traditionally been subject to an active land management model encompassing appropriate and timely interventions that can cater for a broad range of forest values. The Institute advocates for more extensive use of fuel reduction burning, including Traditional cultural burning practices that can complement contemporary techniques, through the involvement of and collaboration with Traditional Owner groups. Active management should also include various forms of sustainable timber harvesting, including ecological thinning and selective harvesting systems. These practices enhance structural diversity (uneven-aged stands and patch mosaics), strengthen the resilience of forested landscapes, and maintain the skills and workforce capacity of the forestry sector to contribute to forest and fire management strategies as it has done for generations.

In addition, there is a pressing need for more extensive seed collection to support forest restoration programs, such as in the young immature ash forests that have been impacted by successive wildfires, and require direct human intervention to ensure effective regeneration. Without timely and effective regeneration, a large proportion of these forests are at risk of forest type change (i.e. the loss of Ash forests of specific provenances, or worst-case, the loss of all ash forests of vulnerable species often to replacement by wattle and scrub). While the risks for fire-sensitive ash-type forests are arguably the most acute, similar risks are applicable to a broader range of native forest species and ecosystems when impacted by successive unnaturally severe bushfires.

These issues and concerns should extend beyond State forest boundaries to the greater area of national parks and conservation reserves, which have also suffered substantial adverse impacts from wildfires and the associated spread of invasive feral animal and plant species.

#### **Recommendations for TOR (f):**

- F1.** Consider the evidence supporting the need for more active management of forested landscapes, rather than a 'lock it up and leave' model of conservation, which carries major risks for forested ecosystems. A more active management model can be targeted towards adaptive measures that can arrest and reverse biodiversity decline, and over time should increase forest ecosystem health and vitality, and the resilience of our forests to the threats posed by climate change.



## APPENDIX 1

### **IFA Policy Position 1.4: Timber Production and Biological Diversity**



The Institute of Foresters of Australia (IFA) maintains that biological diversity can be effectively conserved in native forests and plantations managed for timber production through scientifically-based management planning, and highly regulated forestry practices conducted in accordance with appropriate operational standards outlined in Codes of Practice and enforceable site-specific coupe plans.

Government and private sector forest managers have policies and practices for managing native forests and timber plantations that aim to preserve biological diversity and landscape values. Using internationally recognised practices can reduce the impact of timber production on biological diversity. However, unplanned short-term impacts may demand remedial action.

#### **Background**

Conservation of biological diversity is an important goal of managing forests in an ecologically sustainable way. Australia is a signatory of the Convention on Biological Diversity (CBD), which aims to conserve biological diversity, use its resources sustainably and share the benefits of use (commercial and other) of genetic resources. Australian States have legislation and policies providing for biodiversity conservation that can be independently audited for environmental, social and economic management.

Forest biological diversity is defined as the variability that occurs among forest-living organisms and the ecological processes they are part of; this includes diversity in forests within species, between species and of ecosystems and landscapes. Forest diversity plays important economic, social and cultural roles, providing a range of goods and services (such as timber and clean water), as well as providing jobs and livelihoods. Timber production can be based on plantations or native forests (or a combination of both). Short term impacts include aesthetic, environmental, water values, fauna habitat, potentially flora species and off-forest impacts.

#### **Policy**

The IFA supports and encourages:

- Sustainable management of native forests and plantations through relevant principles of the CBD and relevant objectives under the National Strategy for the Conservation of Australia's Biodiversity
- Establishment and management of a Comprehensive, Adequate and Representative (CAR) conservation reserve network, along with the management of biodiversity outside forest reserves
- Using scientifically based management systems to protect biodiversity values, including threatened species
- Consideration of the ecosystem and landscape approaches for maintaining biodiversity in large areas of native forest
- Development, implementation and monitoring of Codes of Practice for timber production and associated harvesting plans that recognise and protect biological diversity

- Mitigation of unplanned short-term impacts and rehabilitation of degraded ecosystems (including off-forest) where long-term impacts are identified in native forest harvesting
- Ongoing research and development on adaptive management to protect biological diversity.

The IFA considers that:

- Timber production is a renewable, low energy use industry that need not threaten biological diversity
- Excluding timber production from native forests does not guarantee protection of biological diversity
- Native forest ecosystems can recover from disturbance caused by timber harvesting and fire.



## APPENDIX 2

### **IFA Position Paper: Sustainable Timber Harvesting in Native Forests**



The universal management of native forests for their full range of values, including timber, has been brought into question in Australia. Entities that oppose native forest harvesting have mounted concerted, yet often misinformed, public campaigning. These entities have advocated for preservation as the sole objective of native forest management, ignoring evidence that forests can be sustainably managed to deliver multiple environmental social and economic benefits.

There is now a pressing need to consider how the management of Australia's native forests can provide a full range of values, including high-quality timber and associated products. The IFA/AFG advocates for active forest management that addresses the following key considerations.

#### **Socio-economic values**

Australia has large areas of native forests that can produce, from a very small portion of the total estate in each state and territory, high quality hardwood timbers to meet domestic demand. Many of these products cannot yet be produced in plantations.

Failure to produce these timbers in Australia will lead to increased imports, often from developing countries whose forests are not managed to the same high environmental standard as in Australia. Importing more wood rather than harvesting in native forest is morally questionable given that Australia is amongst the world's top five in per capita consumption of wood products.

Currently Australia has a \$2 billion trade deficit in forest products. This is in large part due to imports of paper and packaging products sourced from other countries; as well as imports of wooden doors, mouldings and sawn timber, all sourced from overseas rather than our own native forests.

The sustainable management of native forests for timber production provides a broad suite of socio-economic benefits, including road access for recreation, fire control, ecotourism and production of non-timber products like honey.

#### **Biodiversity**

In Australia, management of public and most private native forests is conducted in accordance with principles from the Convention on Biological Diversity and objectives under the National Forest Policy Statement and National Strategy for the Conservation of Australia's Biodiversity. Sustainable management is underpinned by a Comprehensive, Adequate and Representative (CAR) conservation reserve network, complemented by active management of biodiversity outside of formal parks and reserves.

Excluding timber production from native forests does not guarantee protection of biodiversity, particularly from the broader threats of wildfires, invasive species and climate change. The CAR reserve system also requires a level of active forest management to maintain structural diversity and resilience to this range of threats.

While timber harvesting can have a localised impact in time and space on plant and animal species, modern forest management systems and practices are supported by a scientific approach. They take a whole-of-landscape view to protect biodiversity values, including threatened species and habitats.

### **Climate change**

Forests clearly play an important role in mitigating the concentration of greenhouse gases in the atmosphere, by removing (sequestering) carbon dioxide through photosynthesis, particularly in actively growing regrowth forests, and storing carbon in 'forest carbon stocks'. Sustainable forest management incorporates the maintenance or enhancement of carbon stocks over the long term. Sustainable timber harvesting then enables society to obtain timber and other wood products from a renewable, carbon neutral source, rather than relying entirely on fossil fuel intensive alternatives such as aluminium, concrete and steel, and coal or petroleum-based fuels.

The Intergovernmental Panel on Climate Change (IPCC) has recognised that a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained climate change mitigation benefit.

### **Water**

High quality drinking water is often associated with undisturbed native forest catchments. However, high quality drinking water can be obtained from catchments that have been disturbed by fire events, and manageable levels of agriculture and timber harvesting.

Many years of scientific studies have resulted in harvesting prescriptions that maintain appropriate streamside reserves that consider the size of the stream, topography, soil type and adjacent land use, limit the area harvested in any one year and disperse harvested areas in space and time. In addition, management practices such as forest thinning, selective timber harvesting and prescribed burning can be used to maintain or enhance water yield in domestic water-supply catchments.

Rather than posing a threat, sustainable native forest management including some timber harvesting can maintain or enhance water quality and quantity.

### **Fire**

The 2019/20 summer has highlighted the ever increasing threat of forest wildfires in Australia. Over the last 25 years, there has been a significant increase in the area of conservation parks and reserves that emphasise preservation, and a corresponding decrease in the area of State forest. This has led to reduced levels of active forest management across the public native forest estate. There are now fewer experienced forest managers and timber harvesting crews working in native forest with the skills and capacity to use the plant and equipment required to confidently mount rapid and aggressive first attack on any fire outbreaks.

This decline in land management skills and capacity has coincided with an observed shift from a land management approach to an emergency response approach to fire management with a conservative attitude to risk, which tends to avoid direct attack on fires and relies more on aircraft to suppress fires.

Maintaining a strong native forest timber industry is integral to maintaining effective fire management across forested landscapes and reducing the risks of catastrophic impacts on forest values and society.

### **Active management and silviculture**

Active forest management comprises 'silviculture' - the art and science of sustainably managing the establishment, growth, quality, health, protection and use of forests, to meet the diverse needs and values of forest owners and society.

There is a broad range of silvicultural treatments available to forestry professionals, for use through forest management cycles. These treatments include clear-felling, variable retention, selection harvesting, and thinning for ecological and commercial benefits. Each of these treatments has merits applicable to specific situations, and they will vary due to species, structure and regeneration requirements of different forest types. Most importantly, appropriate silvicultural decisions require clear management objectives, as well as knowledge of the ecology and circumstances of each forest.

If these aspects are considered, silvicultural practices including timber harvesting can enhance forest health and productivity, water yield and biodiversity, as well as reduce the impact of wildfires and other risks to forests.

### **Plantations as the alternative**

Plantations play a significant role in this country in supplying softwood timbers that are not available from our native forests. Australia also has fast-growing hardwood plantations that supply wood fibre for pulp and paper production, predominantly overseas. However, plantations cannot produce hardwood sawlogs in the quantity and quality that can be obtained from sustainably managed native forests, due to the time and costs involved in growing suitable plantation species to achieve comparable timber attributes.

Unlike plantations, native forests require no site establishment using herbicides, no fertilisers and no expensive appropriation of agricultural land that may be required for food production. Australia already has multi-aged native forests available to address much of our timber needs. Proposals to transition from native forests to plantations often fail to recognise the challenges and costs of obtaining a cleared farmland base of substantial scale, and the investment risks of waiting decades before plantations can provide a capital return.

Plantations have a vital role to play in meeting Australia's timber needs, complementing a sustainable supply from actively managed native forests.

### **IFA/AFG position statement**

*The IFA/AFG considers that active management, including timber production, is vital to the sustainability of native forests and provides many benefits to Australian society. The IFA/AFG advocates for ongoing research on timber harvesting in native forests to support this capability in Australia. The IFA/AFG represents forestry professionals that have the skills to develop management strategies to meet forest owner's objectives and community expectations regarding the production of wood products and conservation of other forest values.*

