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SOUTH EAST TIMBER ASSOCIATION SUBMISSION TO THE INQUIRY INTO ECOSYSTEM DECLINE IN VICTORIA

Introduction

South East Timber Association (SETA) members advocate for policies that allow for appropriate active and adaptive management of native forests and other native vegetation on both private and public land. SETA expects government policies and practices will maintain environmental values in the long term.

A number of SETA members have extensive experience in the management of native vegetation landscapes, particularly native forests. This submission draws on that experience and observations of the positive and negative changes to regulatory and land management frameworks over the past 50 years.

1. The Extent of the Decline of Victoria's Biodiversity

The impacts of more than 230 years of development, on Victoria's natural environment, are most obvious in urban areas, where permanent removal of native vegetation has occurred across the majority of the affected landscape. In the broader landscape, agricultural development, electricity supply, water storage and mining, among many other activities, has also had significant impacts on the natural environment.

However, much more insidious factors are having a wide reaching impact on Victoria's biodiversity and some legislation and public land management practices are aiding ecosystem decline.

2. The Adequacy of the Legislative Framework Protecting Victoria's Environment

In general, national (including the *Environment Protection and Biodiversity Conservation Act 1999*) and state environmental and fire management law, particularly in relation to native flora and fauna, is written from a terra nullius ecological view. The terra nullius ecological view assumes that Aboriginal management had no real impact on the evolution of the Australian biota.

The *Reference Areas Act 1978* is an example of Victorian legislation that enshrines the terra nullius ecological position. It is somewhat ironic that the following acknowledgement sits at the bottom of the legislation login page. The Act purports' to Be "*An Act to make further Provision with respect to the Management of certain Special Areas of Crown Land and for other purposes.*"

"The Victorian Government acknowledges Aboriginal and Torres Straight Islander people as the Traditional Custodians of the land and acknowledges and pays respect to their Elders, past and present."

This is a classic example of the words not matching the music. The words convey an appropriate message yet the legislative framework effectively ignores the traditional land management practices that unpinned the creation of the Victorian biota, that existed at the time of European arrival.

Environmental legislation generally assumes the cessation of Aboriginal land management by fire, has had no impact on the ecology, health and habitat of all the species that evolved in a regime of regular disturbance by fire. In the more remote parts of Australia, The



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Australian Wildlife Conservancy (AWC) is using managed fire, to protect, restore and enhance the food resources of a range of threatened species. The scientists working for the AWC apparently see managed fire as an ecological protection tool, used for habitat and wildfire risk management.

As with most areas of public land in Victoria, areas of land with Special Values are subject to a preservationist (exclude human activity), rather than an active and adaptive management conservation regime. While preservation is an appropriate management regime for a museum, the "do not disturb" management regime, applied to most public land, interspersed with increasingly frequent mega fires, is underpinning ecological decline and an ever-growing threatened species list.

One key element of environmental law in Victoria is the Precautionary Principle. Clause 1C(1) of the Environment Protection Act 1970 states: *If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*

While the intent of the clause is eminently sensible, the implementation, from a native flora and fauna perspective, is to "protect" the particular species or eco-system through the application of a do not disturb management regime. It is generally presumed that the passive management approach will prevent environmental degradation.

This management style has several benefits to government and land management agencies.

- It is usually the lowest cost approach in the short to medium term;
- Land managers don't actually have to do anything, other than erect keep out signs, so reputational risk of a 'wrong' management decision is avoided in the short to medium term;
- Fire emergencies generally don't come from departmental budgets;
- The general public assumes protection means protection, so don't ask questions;
- As there is limited funding for ongoing and broadscale monitoring, no one knows that the "protected" ecosystems are in decline;
- Annual reports can avoid or gloss over the reporting of bad news by telling us how many hectares of land has been "protected" in the prior year, what has been done to engage Traditional Owners, how much environmental watering has been done, without knowing whether it was beneficial, advise on "recovery works" after natural disasters (mega fires) and how people of all abilities have more access to less public land, to view the charred remains; and
- Public land managers can assure us that our splendid parks system continues to be appropriately managed and protected.

With more than half of the Victorian public land estate being subjected to high to extreme intensity megafires in less than 20 years, with some areas being burnt multiple times, the current Victorian legislative framework, which legitimises management through neglect, has underpinned terrestrial ecosystem decline in Victoria for the past 50 years.

Recommendation 1: It is recommended that the *Reference Areas Act 1978* be repealed as a symbolic step to signal the commencement of a new approach to the management of native flora and fauna in Victoria.



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Recommendation 2: It is recommended that Victorian environmental legislation, including the *Environment Protection Act 1970*, be rewritten to promote active and adaptive conservation management principles.

3. The Adequacy and Effectiveness of Government Programs and Funding Protecting and Restoring Victoria's Ecosystems

Most government conservation programs have revolved around the transfer of multiple use state forests to the parks and reserve system. The changing land tenure and the facile nature of most conservation reserve reporting seems to satisfy most members of the public

At the time of European arrival, much of the Victorian biota had developed as a result of tens of thousands of years, of Aboriginal land management, through the agency of regular use of fire.

Fire regimes influence soils, flora and fauna. This submission will provide a brief summary of the linkages between:

- altered fire regimes;
- the consequent impact on soil chemistry;
- the impact of altered chemistry on plant root health and plant physiology and plant health; and
- the flow effects of altered fire regimes on available food resources for selected species.

Impact of Regular Low Intensity Burning on Soil Chemistry

In the native vegetated landscape of Victoria, the regulators along with many fire and ecology researchers generally ignore the role that Aboriginal fire played in the evolution of the forested landscapes.

Substantial research has been undertaken in the agricultural industry to understand the role of soil pH (level of soil acidity or alkalinity), chemical composition and nutrient availability to crops. The general conclusions are that land management changes soil pH and with lower soil pH less plant nutrients are available and toxic elements including manganese and aluminium become more available to plants.

Given the imperative to produce food, researchers and farmers clearly understand the need to manage soil acidification and macro and micro nutrients, if healthy and productive crops, orchards and pastures are to produce our food needs.

In contrast, soil science is not as heavily researched in native landscapes. While this lack of understanding does not impact on human food resources, it does impact on food resources and habitat available to insects, birds, mammals and reptiles.

Turner et al in *Forest Ecology and Management 20 August 2008* is one of the few research papers that examines the fundamental drivers of native forest health and productivity.

They found, among other things:

The increases in N/C(Carbon) lead to a reduced soil C/N (Nitrogen) ratio, higher N mineralisation and reduced pH.

The present study demonstrated that N accumulates with time since fire in dry eucalypt forests at Eden, and that relatively high N, low C/N, low pH and high Al (Aluminium) occurred in three severely declining stands.



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Elimination of frequent fire leads to either high intensity fires and tree mortality or long term modification to the soil process leading to reduced tree health and mortality.

4. Legislative, Policy, Program, Governance and Funding Solutions to Facilitate Ecosystem and Species Protection, Restoration and Recovery in Victoria

The Victorian government must commit to developing low intensity fire management regimes across the native vegetation estate. Priority should be given to forests where overall decline in forest health is most obvious, to those who know what to look for.

The use of traditional burning techniques will create an ideal opportunity to uphold First People's connection to country.

Individual species recovery plans can be incorporated into this program.

See the next section for more background.

5. Opportunities to Restore Victoria's Environment While Upholding First Peoples' Connection to Country

There is some difference of opinion regarding the use of fire by Aboriginal people. Gammage in his book *The Biggest Estate on Earth* and Jurskis in *Firestick Ecology* provide a comprehensive review of the Australian landscape at the time of European arrival and the use of fire by Aboriginal people, prior to the destruction of the Aboriginal way of life.

These authors also document the change in the Australian landscape, including flora and fauna, resulting from the loss of Aboriginal land management.

The writings of Gammage and Jurskis are supported by Paleoecologist Simon Haberle an Australian National University Professor of Natural History.

Professor Haberle has undertaken sediment, sampling at a very fine resolution, which paints a picture of the landscape around the Bega Swamp in freeze frames of every 20 years, stretching back over 15,000 years.

"The results show that the number of samples including charcoal has increased since European settlement, confirming other studies that big fires have occurred more frequently than during the time of Aboriginal land tenure in the Australian high country," Professor Haberle said.

"It also shows that in the past mega fires only occurred very rarely, once every 4000 years, and that the current situation of big and intense fires is unusual in the long-term history of the region."

"You see big changes in fire management, because you can look at the charcoal and see what burning regime took place," he said.

"It was a regular regime, Aboriginal people knew how to keep fuel loads lower."

According to Professor Haberle's research from Tasmania to the Kimberley, big fire events are becoming more common, fires are starting sooner and problematic trends are forming.

"Big disastrous fires used to be rare, but are more common now," he said.

"The difference now is the regular burning doesn't occur anymore, so we don't know what will happen in the future.



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“Things that happened in the past can be beneficial, and regular small scale burning in the forest may be a reason for less big fires.”

Ensuring widespread use of fire as used by Aboriginal people for tens of thousands of years understanding the role of fire in restorative environmental management programs is a critical issue to be addressed, if broadscale ecological decline is to be reversed and the growing list of threatened species is to be reduced.

Developing broadscale traditional/ecological fire programs will:

- Provide meaningful opportunities for First People's to connect to country;
- Reintroduce broadscale low intensity fire to the native vegetated landscape;
- Create conditions for many flora to receive levels of disturbance by fire, which align with their evolutionary regeneration capacity;
- Regenerate or stimulate the food resources for many species, including Critical Weight Range mammals;
- Reduce landscape fuel loads; and
- Greatly extend the return time for high intensity wildfires. The return time for high intensity wildfires has decreased significantly in the 21st century, compared to earlier centuries.

6. Any Other Related Matters

The Terra Nullius Ecological View – Helping to Push Native Species to Extinction

The wilderness view of conservation in Victoria is exhibited across most conservation reserves through passive management by neglect of most of the landscape.

Protecting, promoting and restoring wilderness and natural processes across Australia for the survival and ongoing evolution of life on Earth, is a false premise. This "conservation" goal effectively supports the terra nullius ecological view, as it effectively denies the role that Aboriginal use and management of fire played in the evolution of the Australian biota, over a period of up to 60,000 years.

The terra nullius ecological view is exhibited in the constant claim of 'permanent protection' made, whenever land tenure is changed from private, leasehold or state forest, to national park or other reserve status. The concept of permanent protection has been shown time and again to be a falsehood, as passive management ensures megafires and feral predators and other threats push more and more species in the "permanently protected" reserve system to extinction.

An example provided by the Threatened Species Scientific Committee, in 2016, documented the declining populations of the threatened Southern Brown Bandicoot (SBB), in five reserves, across three states. This example illustrates that flawed "conservation" management strategies is not unique to Victoria. See the table below.

Available quantitative data are summarised in the table below.

Population	State	Decline
Ben Boyd National Park	NSW	44% (1999 to 2008)
Nadgee Nature Reserve	NSW	47% (1999 to 2008)
Port Campbell	Vic	>70% (past 10 years)
Pines Flora and Fauna Reserve	Vic	100% (extirpated around 2006)
Mt Lofty Ranges – northern metapopulation	SA	100% (extirpated around 2009)



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In 2017, the Port Campbell website contained a list of threatened species that were "protected" in the park. It was concerning to find that the SBB was not one of the species on the list. When checking the website, while preparing this submission, no list could be found.

A significant area of SBB and Long-footed Potoroo, along with many other threatened species habitat, has been decimated in the December 2019 and January 2020 wildfires in East Gippsland, Victoria and south east NSW.

Current ideology driven research, consistently fails to understand the basic actions needed to manage megafire risk and modelling assumptions fail to place a value on the broad native vegetated environment. Many current fire researcher advocate for fuel reduction operations to be conducted adjacent to human assets State governments and government agencies, are yet to recognise the perverse environmental, social and economic impacts, this research is helping to deliver. Perhaps 2019-20 will be the fire season that will force governments to discard failed passive (lockup and neglect) land and minimalist megafire mitigation policies.

A number of fire and ecological research institutions have failed to deliver scientific advice to the state-run fire and public land management agencies, that would allow the delivery of ecologically sustainable native ecosystem fire management.

In Victoria, the Safer Together Policy is just one example of failed advice to government, yet the Victorian government continues to defend this failed policy. See the following discussion of some of the flawed analysis that government and agencies accepted.

The 'Safer Together' Policy - Risk Management for Who and for What Values?

This indicator replaces the 2015-16 indicator 'Area of public land treated through planned burning and other treatments' as part of a new approach to reducing the risk of bushfire in Victoria, detailed in the government's policy statement Safer Together. The new indicator addresses recommendations from the Inspector-General for Emergency Management that a risk reduction target is the most effective form of performance target for bushfire fuel management on public land to protect life, property and the environment. DELWP 2017 Annual Report.

In the "Review of Performance Targets for Bushfire Fuel Management on Public Land", April 2015, the Inspector General for Emergency Management, Mr Tony Pearce submitted Recommendation 1:

"Over the long term, a hectare-based target is unlikely to create sufficient incentive for DELWP to maximise the risk reduced through planned burning."

In part, the report argued: *"A hectare-based planned burning performance target does not effectively guide a fuel reduction program towards areas of highest risk reduction over the longer term. Nor does a hectare-based planned burning performance target create incentives to pursue alternate forms of risk reduction where planned burning is not possible."*

It is of deep concern the SETA members, that the authors of the report are suggesting that paid public servants will not do their jobs properly and agency heads and relevant ministers will not fund planned fuel reductions operations based on a hectare based approach, unless they are "incentivised."

Professor John Handmer from the Centre for Risk and Community Safety, RMIT University Melbourne and Ms Adriana Keating from the International Institute for Applied Systems



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Analysis, Laxenburg Austria, conducted an analysis of the hectare based and the risk based policies. Twelve criteria were used in the analysis and scored on a 0 to 4 scale and the academics concluded: "**Aggregating the scores we found that the hectare based policy scored 13 out of a maximum 48, while the risk based policy scored 40 out of 48. Two assessors scored the policy target options independently with results within four points of each other.**"

The risk based approach to megafire mitigation has already proven to be an abject failure from ecological, social and economic perspectives. A triple bottom line disaster.



Planned burning activities (image courtesy of DELWP)

Scores for the First 8 Criteria for the Hectare Based Policy

Criteria 1) Impact of policy on risk to human life.	Scored 2
Criteria 2) Impact of policy on risk to essential and community infrastructure, industries and the economy.	Scored 1
Criteria 3) Impact of policy on resilience of natural ecosystems and ecosystem services.	Scored 0
Criteria 4) Impact of policy on the risks from major fires.	Scored 1
Criteria 5) Fuel reduction burn planning undertaken within a risk-based framework.	Scored 2
Criteria 6) Impact of policy on understanding the role of bushfire in the Victorian landscape.	Scored 1
Criteria 7) Role of community and stakeholders in planned burning decision-making.	Scored 1
Criteria 8) Incentivizes shared responsibility.	Scored 1
TOTAL	9

Scores for the First 8 Criteria for the Risk Based Policy

Criteria 1) Impact of policy on risk to human life.	Scored 3
Criteria 2) Impact of policy on risk to essential and community infrastructure, industries and the economy.	Scored 3
Criteria 3) Impact of policy on resilience of natural ecosystems and ecosystem services	Scored 3
Criteria 4) Impact of policy on the risks from major fires.	Scored 3



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Criteria 5) Fuel reduction burn planning undertaken within a risk-based framework.

Scored 3

Criteria 6) Impact of policy on understanding the role of bushfire in the Victorian landscape.

Scored 3

Criteria 7) Role of community and stakeholders in planned burning decision-making.

Scored 4

Criteria 8) Incentivizes shared responsibility.

Scored 4

TOTAL 26



Public Native Forest in East Gippsland, Victoria, After Four Years of Bushfire Mitigation, Using a Risk Based Policy.

The full report used to justify implementation of the risk based approach, is available at:

https://www.igem.vic.gov.au/sites/default/files/embridge_cache/emshare/original/public/2020/04/e8/39acbe947/Reviewofperformancetargetsforbushfirefuelmanagementonpublicland.pdf

The scoring for all the criteria does beg the question as to whether the academics had even the most basic knowledge of the role of broad scale low intensity burning in both managing bushfire risk and maintaining healthy ecosystems.

To score burning as recommended by the 2009 Royal Commission at zero highlights the consultants ignorance of wildfire risk management. Scoring a smaller fuel reduction footprint at three, under the risk-based policy, has no scientific rationale. As outlined above, the smaller managed burn footprint will undermine the health and resilience of native ecosystems and continue the cycle of destruction by megafires.



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Given the Victorian Government has denied public access to forest fuel load maps, scoring criterion 7 and 8 at the highest score of four begs the question of the competence of the public servants who accepted this deficient analysis of all the risks and benefits associated with the two policies.

Recommendation 3: It is recommended that the risk based policy be abandoned and replaced with a landscape scale program of managed fire, that delivers wildfire mitigation through a combination of low intensity cultural, ecological and fuel management burning on at least five percent of the public land estate each year.

Recommendation 4: It is recommended that a similar program be rolled out to private land owners.

Recommendation 5: It is recommended that a state wide monitoring network be established to monitor soil, flora and fauna changes to ensure the new management approach is reversing the current ecological decline.

Some Brief Case Studies

Native Grasses and Small Flowering Plants

Kangaroo Grass (*Themeda triandra*) is one of the most widely distributed of Australian plant species, ranging from Tasmania to the Northern Territory and from sea-level and the arid inland to the Alps. Seed germinates in the first year after fire and is most healthy when it is occasionally managed by burning, grazing or mowing, but declines if overgrazed.

If Kangaroo Grass is not managed regularly, it will become rank and potentially smother other more delicate flora species that would usually grow between the mature Kangaroo Grass plants.

Kangaroo Grass demonstrates the evolution of species in an environment subject to regular disturbance by fire.



Themeda triandra Year 1



Themeda triandra Year 2 – 3

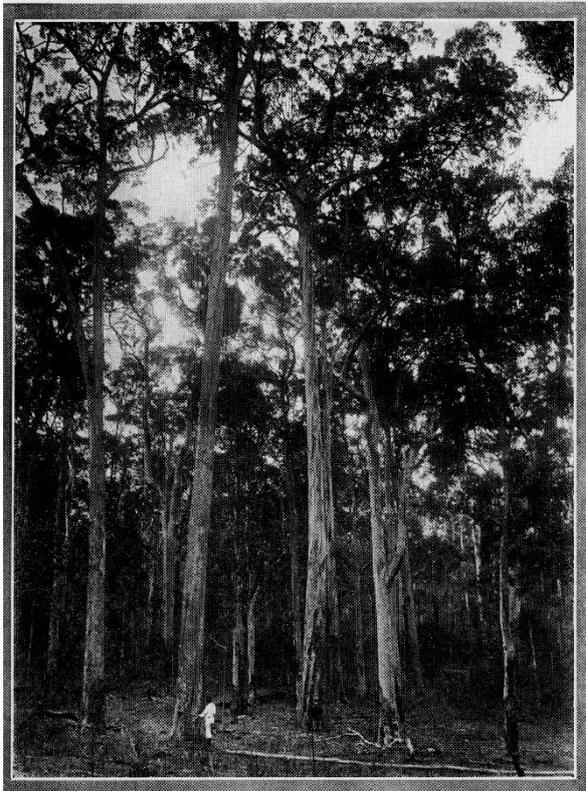
General Decline in Forest Health

Aside from dense understorey one of the key features of eucalypt forest in declining health, is the normal branches dying back and then epicormic shoots growing from buds on the branches. In cases of advanced decline or wildfire, the epicormic shoots will also grow from the tree trunks.



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One of the insidious outcomes for trees with crowns dominated by epicormic shoots, is flowering capacity is severely depressed and in the worst cases or after intense wildfires, flowering may stop for many years. This has a significant medium to long-term implications for any species that depend on flowering eucalypts for food supply, such as flying foxes.



Early 20th Century Stand of Mature (150 Years +) Eucalypts With Healthy Crowns & Very Limited Understorey. Regular Burning Continued by Graziers



Early 21st Century Stand of Trees Generally Less than 100 Years Old with Epicormic & Dying Crowns & Dense Understorey. Long-term Fire Exclusion

Will Conservation Reserves Ever Restore Forests Containing a Predominance of Large Trees or a Landscape That Mirrors the Forests Growing on Those Lands Prior to European Arrival?

- If we continue to lockup and neglect our parks and reserves and don't reverse the ever more vicious cycle of mega fires – NO!
- If we assume the dense eucalypt regrowth, wattles, casuarina and other understorey species is 'natural' and ecologically sustainable. NO!
- If there is no decline in rainfall under changed climate conditions, will we have the current water availability to undertake environmental watering and grow sufficient food crops, if the ever-increasing areas of regrowth forests resulting from megafires is left to self -thin? NO!

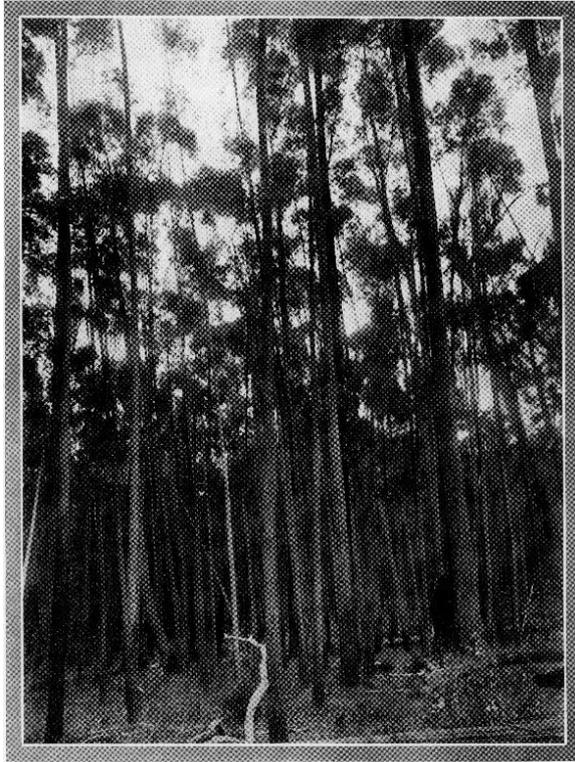
With a legacy of up to two centuries of mismanagement, in the medium term, reinstatement of traditional/cultural burning be a key step in native landscape ecological recovery, but will not be able to manage stand density in advanced regrowth.

Other forms of forest thinning, with a focus on retaining/promoting the growth of trees with the greatest ecological value (eg. size, hollows, health and flowering capacity) will need to

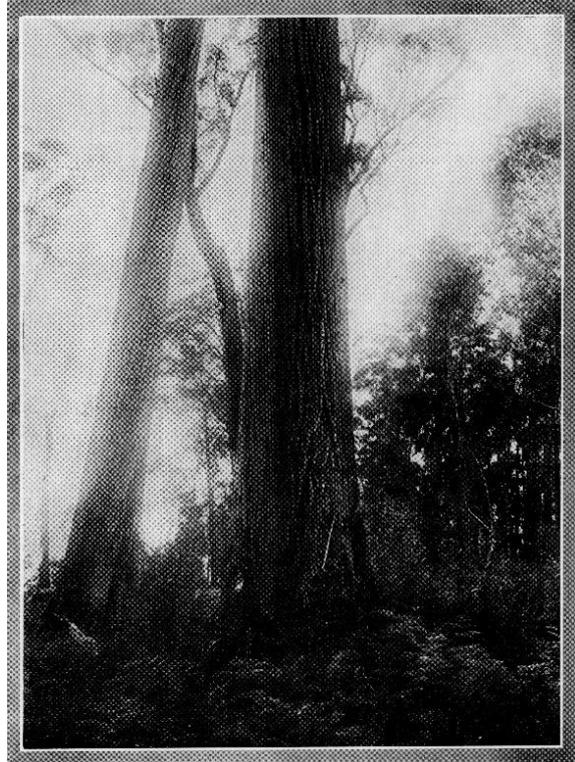


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be undertaken. While there is likely to be significant opposition from ecologists who support a terra nullius view of Australia's and Victoria's historical ecological development, there is already research available that has shown the dietary shift of some owl species (for example) from ground to arboreal prey. This has resulted from denser understorey obstructing owl access to ground dwelling prey. The shift is increasing predation pressure on arboreal species and creating additional competition for food between birds of prey.



Regrowth eucalypts, becoming more common in the early 20th century.



Old, giant eucalypts, much more widespread in the early 20th century

Current environmental legislation, bushfire mitigation and conservation reserve management, is failing to deliver ecologically sustainable forest management.

Long-nosed Bandicoots Respond to Low Intensity Burning

An area of mixed species eucalypt forest with forest oak understorey and a mixed litter layer up to 10 centimetres deep was subject to a low intensity fuel reduction burn in April 2013. Prior to the burn, there was no evidence of Long-nosed Bandicoots foraging in the area of forest that was planned to be burnt.

Follow-up checks in July revealed intense foraging activity had commenced. An infrared camera was set up, with an attractant. While a number of photos of bandicoots were obtained, unlike camera stations in unburnt forest, no bandicoots were photographed near the attractant.

Burning of the thick fuel layer has stimulated food resources and made insects and fungi more readily accessible.



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Bushnell

08-10-2013 02:10:43

Long-nosed Bandicoot Foraging



Bushnell

07-30-2013 14:41:59

Soil Disturbance Resulting From Long-nosed Bandicoot Foraging

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29 August 2020



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