

Parliamentary inquiry into ecosystem decline in Victoria

Preliminary submission by the Victorian National Parks Association

24/07/2020

Thank you for inviting submissions into this important inquiry into ecosystem decline and examining the measures that should be taken to restore habitats and populations of threatened and endangered species in Victoria.

We hope that this inquiry will provide support for future strengthening of environmental legislation and that it will give more direction to government policy and programs in regards to biodiversity conservation and reversing ecosystem decline.

Our state has come a long way in nature conservation, but in 2020 we are still far from turning the corner to restoration. By addressing threatening processes and aiming towards restoration, we can greatly improve the health of our state's natural areas and ecosystems, recover our threatened flora and fauna, and preserve Victoria's marvellous natural heritage for generations to come.

Established in 1952, the VNPA is Victoria's leading community based nature conservation organisation. We are an independent, non-profit, membership-based group, which exists to support better protection and management of Victoria's biodiversity and natural heritage. We aim to achieve our vision by facilitating strategic campaigns and education programs, developing policies, undertaking hands-on conservation work, and by running bushwalking and outdoor activity programs which promote the care and enjoyment of Victoria's natural environment.

The following submission includes some preliminary recommendations for various management areas pertaining to nature conservation in Victoria. It also includes a brief overview of some of the key drivers of ecosystem decline in Victoria.

The VNPA will provide a second submission with more detailed responses to the Terms of Reference in due course.

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The following sections discuss 11 issues (more issues will be addressed in our final submission). These include:

- 1) Drivers of Ecosystem decline in Victoria*
- 2) Threatened species laws – where is the Guarantee?*
- 3) Ramsar Wetlands of International Importance – globally recognised but locally neglected*
- 4) Critically endangered grassy ecosystems – promises broken*
- 5) National Parks - icons taken for granted*
- 6) New national parks and nature reserves*
- 7) Our seas and shores – greater protection needed*
- 8) Victoria the feral State – managing invasive species*
- 9) Protect our native forests – transition now*
- 10) Time to rethink fire management*
- 11) Addressing habitat fragmentation – key steps to recovery*

Most sections contain preliminary recommendations for various management areas pertaining to nature conservation in Victoria, but these will be expanded on in our final submission.

1) Drivers of ecosystem decline in Victoria

There are numerous threats to Victoria's ecosystems and flora and fauna. Some are legacy issues that hark back to the early days of British settlement in Australia, while others are emerging threatening processes that make old problems worse by exacerbating habitat loss and degradation.

Victoria has the highest number of threatened species by subregion in Australia. Since British settlement there has been a progressive rate of native animal and plant extinctions with Victoria losing 18 mammal species, 2 birds, 1 snake, 3 freshwater fish, 6 invertebrates and 51 plants.

There has been an increasing trend in the number of critically endangered and vulnerable vertebrate groups. Today, between one quarter and one third of all of Victoria's terrestrial plants, birds, reptiles, amphibians and mammals, along with numerous invertebrates and ecological communities, are considered threatened with extinction.

A consideration of invertebrates and fungi together with the rest of our flora and fauna would bring the total number of species in Victoria close to 100,000. Invertebrates and fungi are functionally at the core of ecosystem health, but those functions are largely

ignored, partly because of the lack of necessary expertise in government departments, and a lack of training opportunities in educational institutions.

Across the whole state, native vegetation continues to be lost in Victoria at approximately 4,000 habitat hectares per year (see the 2018 Victorian State of the Environment [Report](#)). A habitat hectare is a government metric which seeks to measure the extent and quality of vegetation (see the [Habitat Hectare Assessment fact sheet](#)). 4000 habitat hectares is roughly equivalent to 8,000 - 12,000 hectares of native vegetation of varying quality, this includes counting alleged/estimated gains made up through the management of other areas, such as conservation reserves.

Freshwater ecosystems have been significantly impacted too. More than a quarter of Victoria's wetlands have been lost since British settlement and the remaining are mostly in poor condition.

Some of the key drivers of ecosystem decline in Victoria are:

- **habitat fragmentation** – caused by centuries of land clearing and is slowly but surely still happening
- **inappropriate fire regimes** – especially unseasonal, too frequent or too severe fire
- **invasive animals** – such as deer, pigs, goats, horses, rabbits, cats and foxes
- **invasive plants** – such as serrated tussock and willows
- **native forest logging** – which fragments forests and damages habitat for forest dependent species
- **unsustainable hunting of native wildlife** – like native duck shooting or over fishing
- **altered water regimes** – due to dams, over-extraction or unseasonal flooding
- **loss of hollows in trees** – due to logging, occupation by feral bees and inappropriate fire
- **climate change** – this is exacerbating impacts of many other drivers of decline, such as altered fire and water regimes and invasive species
- **population growth** – especially around metropolitan and large urban centres, leading to permanent land clearing and fragmentation
- **land-use intensification** – including increased grazing pressure or changing from grazing to cropping or irrigation
- **inadequate public resources for ecosystem management** – increased investment needed to reverse declines

*For a detailed overview of some of the key drivers of ecosystem decline in Victoria see **Appendix 1** at the end of this submission.*

2. Threatened species laws – where is the Guarantee?

The *Flora and Fauna Guarantee Act 1988* is the main piece of legislation protecting Victoria's threatened flora and fauna, ecological communities and habitats. Great name with great intent, but unfortunately the Act has historically been poorly implemented. Poor implementation and limited obligations on public authorities have resulted in many of the legal tools available to protect flora and fauna never being used.

Many of the listed threatened species do not have recovery action statements and no management plans have been made to guide and enable the implementation of action statements. Just one critical habitat determination and zero conservation orders have been made in the 32 year history of the Act.

The new amendments to the FFG Act that came into effect on the 1st of June 2020 somewhat improved the legislation but, fundamentally, threatened species protection is still at the discretion of government ministers and departments. Our government and government agencies need far more political will to implement the legal conservation tools available under the Act, or better still, need to be legally obligated to act.

Preliminary recommendations

It is important to ensure that the *Flora and Fauna Guarantee Act 1988* is adequately implemented, and/or made stronger. This includes:

- creating action statements and management plans to guide and implement conservation action for listed threatened species and communities – it should also be noted that the amended Act now provides for efficient management plans that can incorporate multiple action statements under the one plan
- creating ministerial guidelines that specifies when management plans must be made
- making critical habitat determinations so that the environment Minister is able to use habitat conservation orders in urgent conservation situations – this may involve legislating for mandatory critical habitat determinations for threatened communities of flora and fauna and for conservation priority taxa
- ensuring that public authorities are aware of their new duty to consider biodiversity conservation and the objectives of the *Flora and Fauna Guarantee Act 1988*
- updating and strengthening the Biodiversity Strategy so that it relates to the objectives of the FFG Act and so that it incorporates the use of the legal conservation tools available under the Act
- accepting the Victorian Auditor-General's recommendation to implement a "prioritised action plan" to address the backlog of action statements waiting to be prepared. The prioritised action plan should be expanded to encourage the making of management plans and critical habitat determinations. A possible list of conservation priorities for action could include:
 - Threatened communities of flora or fauna

- Highly threatened taxa in Victoria
- Threatening processes
- Umbrella taxa – who's conservation may help to conserve many other taxa simultaneously
- Keystone taxa – that have a central ecological role in a community
- Flagship taxa – iconic species that have high public appeal
- Indicator taxa – who's monitoring can indicate changes in environmental quality

3) Ramsar Wetlands of International Importance – globally recognised but locally neglected

In 1975 Australia signed and ratified the *Convention on Wetlands of International Importance especially as Waterfowl Habitat* (known as the Ramsar Convention), and was one of the first nations to sign up to the treaty. The Convention encourages the designation of sites containing representative, rare or unique wetlands, or wetlands that are important for conserving biodiversity – particularly for migratory birds. The Convention provides a framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

Australia has 66 sites designated as Wetlands of International Importance. 12 of these sites are in Victoria and include places like the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula, the Gippsland Lakes, Western Port, the Kerang Lakes, Gunbower Forest and Barmah National Park.

A recent parliamentary inquiry report into whether there is an effective regime to manage Victoria's Ramsar sites and protect them from decline found that:

- 31% of the 281 management actions listed in the Department of Environment Land Water and Planning's Ramsar management system database, have not commenced despite most Ramsar management plans being developed in 2014; 63% percent of activities have commenced and 6% have been completed.
- Many management plans have not been updated to adhere with the management principles for Ramsar sites.
- There are data gaps and potential for improvement in data coordination.
- At 10 of the 12 Ramsar sites there are outdated Ecological Character Descriptions (important for establishing limits of acceptable change for all critical components, processes and systems).
- There are inadequate funding arrangements to maintain long-term Ramsar management programs for implementation, monitoring, evaluation, reporting and improvement.
- At 10 of the 12 Ramsar sites, there is a lack of compliance with the Convention's requirement to update Ramsar Information Sheets which are important for

assessing the status and trends of Wetlands of International Importance regionally and globally.

This poor oversight and management record is compounded by imminent plans to build a new large scale Liquid Natural Gas (LNG) Import Terminal Facility (i.e. an LNG port) in Western Port Bay, one of our most precious Ramsar wetlands. See more in our recent Park Watch article [Too sensitive and precious to risk](#).

Preliminary recommendations

The local and international significance of Ramsar sites needs far more acknowledgment and we ask that the Government consider the recommendations of the recent Public Accounts and Estimates Committee parliamentary inquiry, (the full inquiry report can be accessed [here](#)) particularly:

- Establish long-term funding for Ramsar site management so that monitoring programs and appropriate management can be maintained, to protect migratory birds and other species as well as our international reputation.
- Implement the Yorta Yorta joint management plan for Barmah National Park, especially in relation to management of feral animals and weeds. A commitment to these objectives allows the Environmental Water Holder to implement a timely flooding regime for the Barmah Ramsar wetlands.
- Stopping large scale development in Ramsar sites, such as the proposed AGL LNG port in Western Port Bay.

4) Critically endangered grassy ecosystems – promises broken

Victoria has an array of highly endangered temperate grasslands and grassy eucalypt woodlands that are unique and harbour many threatened species. Once covering almost a third of Victoria, now just 2-5% of native grasslands remain in small and fragment pockets of remnant vegetation, making it one of the most endangered ecosystems in Australia.

The Victorian Auditor-General's Office (VAGO) recently audited the protection of critically endangered grasslands in Melbourne's urban growth boundary and assessed the implementation of a decade-old joint Commonwealth and State government program known as the Melbourne Strategic Assessment.

This program had intended to streamline urban development approvals and ensure the survival of the remaining grasslands and grassy woodlands threatened by urban sprawl in Melbourne's west and north. To offset losses from urban development, in 2010 the Victorian government committed to establish by 2020, a 15,000 hectare Western Grassland Reserve (between Werribee and Melton) and a 1,200 hectare Grassy Eucalypt Woodland Reserve (near Donnybrook), along with a range of other measures.

10 years later DELWP has still not met its commitments to establish the reserves and has purchased only 10 % of just one reserve to date, while property developers have continued apace. This is not just seriously inadequate, but another example of the environment being pushed aside for development. See our recent media release [here](#).

Key findings from the VAGO report (available [here](#)) include:

- To date, only 10% of designated land has been acquired for the Western Grassland Reserve, and no land has been acquired for the Grassy Eucalypt Woodland Reserve.
- Delays in acquiring land, and continuing threats of degradation, pose significant risks to the ecological values of native vegetation within the reserves.
- Delays in acquiring land have been compounded by cost increases; estimated program costs have increased around 80% between 2013 and 2019, mostly due to rising land values.

Preliminary recommendations

The VNPA recommends that the Victorian Government:

- ensure that all of Victoria's diverse vegetation communities, including native grasslands, are adequately represented and properly managed within the reserve system to better secure the future of threatened species
- immediately deliver on promises to protect endangered temperate grasslands and grassy woodlands and establish the Western Grassland Reserve and the Grassy Eucalypt Woodland Reserve
- prioritise the highest conservation value grasslands for purchase and management as soon as possible

5) National Parks - icons taken for granted

Permanently protected habitats on public and private land form the backbone of our society's efforts to conserve our natural heritage and its rich biodiversity. Victoria's national parks and conservation estate, areas protected by legislation, are also a key community asset. They provide great benefit to people as well as to nature.

National parks and conservation reserves protect areas of significance from some damaging activities; but to be effective they also need active management to combat weeds, to control introduced pest animals, to manage visitors, to implement recovery programs for threatened species and their habitats, to mitigate inappropriate fire regimes, to assess and monitor biodiversity and ecosystem health, and to provide general land care and restoration.

Park management issues are often complex and therefore require management by a well-resourced team of the very best scientists and land managers as well as appropriate funding from the government to do the job. This is illustrated by the following:

- Victoria's parks network contains 4,728 of the state's 5,145 native plant species (91.9 per cent) and 1,102 of its 1,405 native animal species (78.4 per cent).
- Much of the Victorian coastline is managed as national or state parks or coastal reserves. These areas protect against storm damage, flooding and erosion.
- More than one million hectares of our water catchments are located within Victoria's national parks. The market value of water run-off supplied through just nine Victorian national parks is estimated at \$244 million per year.
- The 50 million visits to national, state and metropolitan parks saw (pre-covid) tourists spending \$2.1 billion per year, and generating at least 20,000 jobs. Of course, this must be managed carefully.

Unfortunately, funding for our parks is grossly inadequate. Currently, Parks Victoria manages 18 per cent of Victoria and approximately five per cent of our marine waters – yet it receives less than 0.5 per cent of state government expenditure. Our parks must not be allowed to decline in condition due to inadequate resourcing. (See our call for at least 1% funding for parks [here](#).)

Victoria's marine national parks need extra support and funding for their protection and management too. Our small network of 13 marine national parks and 11 smaller sanctuaries protects some of Victoria's most iconic and charismatic marine species such as weedy sea dragons, eastern blue devilfish, southern fiddler rays and the eastern blue groper. Marine national parks are also great places for people to connect with, explore, and learn about our marine environment.

Finally, in order to have better and more informed nature conservation and park management, there is a strong need to significantly expand programs for ongoing biodiversity surveying and monitoring across Victoria's various terrestrial, riparian, freshwater, coastal and marine ecosystems, as well as expanded support for citizen science programs.

Preliminary recommendations

In regards to park management the VNPA recommends that the Victorian Government undertake the following actions:

- increase funding for park management to at least 1% of state annual expenditure
- include appropriate park employment programs, including Indigenous employment programs, as part of regional recovery plans

- significantly increase funding, resources and expertise for habitat restoration programs and ecosystem management across all public land, especially national parks and conservation reserves
- significantly expand programs for ongoing biodiversity surveying and monitoring across Victoria's various terrestrial, riparian, freshwater, coastal and marine ecosystems as well as expanded support for citizen science programs
- support community engagement such as friends groups to increase community connection to parks and reserves
- promote national parks (including marine national parks) as good for people, nature and the economy

6) New national parks and nature reserves

Over the last 150 years (particularly the last 60 years) Victoria has developed an extensive network of national parks and conservation reserves, covering roughly 18% of the state (about 4.1 million hectares) including 70% of Victoria's coastline and 5% of state marine waters. However, there are still significant gaps to be filled on both public and private land.

A detailed analysis by the VNPA in 2010 (see our [Nature Conservation Review](#)) identified the need to secure the permanent protection of around a further 3.1 million hectares of both public land (1.5 million hectares) and private land (1.7 million hectares) in order to complete a minimally comprehensive reserve system, that is, one that gives the necessary protection to all habitat types. The state environment department acknowledged in its biodiversity strategy that the extent of additional protected areas required to meet Australia's criteria for a comprehensive, adequate and representative reserve system is 2.1 million hectares. (See Victoria's Biodiversity Strategy [here](#)). These figures are without taking into account the needs of specific threatened species, the implications of climate change, or other management factors such as fire impacts.

The last decade has been a low point in the creation of parks, with few areas being formally added to the parks estate by either side of politics (see the [national parks by premier op-ed](#)). However, various government reports have highlighted gaps in the reserve system. The top three areas identified in Victoria's latest State of the Environment [Report](#) as having poor habitat representation are South West Victoria, the Central Victorian Uplands (this includes the current central west proposals for new parks near Daylesford, Beaufort, Avoca and Bendigo) and the Strzelecki Ranges and Gippsland Plains.

This does not include areas with high numbers of threatened species such as the Central Highlands or East Gippsland or areas vulnerable to climate change and other threats like logging, which deserve better protection.

The current government has struggled to make a decision about proposals for 60,000 hectares of new national parks in Victoria's central west, in the Wombat, Wellsford, Mt Cole and Pyrenees Forests which is currently seeing logging and mining exploration in the Wombat and Mount Cole Forests (see [here](#)). After four years of government sponsored investigation and consultation by the Victorian Environment Assessment Council, the government missed its statutory deadline to make a decision in late February 2020. See here: [Andrews government late for an important date](#).

The central west forests are within the Central Victoria Uplands bioregion which only has approximately 10% of its Ecological Vegetation Classes (units for assessing ecosystem representation) targets met. 43 of the 107 important EVC's identified in the central west investigation area will have significantly improved representation in the Comprehensive Adequate Reserves system (CAR) system if VEAC's proposals are implemented. This will add up to 16,000 hectares of particular EVC's and will either meet or significantly add to ecosystem representation targets.

The forests of the central west are home to 380 threatened species. Notably, the Wombat Forest near Daylesford is a vital refuge for a regionally significant population of the Greater Glider. A new national park here would secure long-term protection for this iconic species that is in decline across much of the state. (See a new report released by the Victorian National Parks Association and local group Wombat Forestcare [Wombat Forest, A greater refuge for Gliders](#)). This is now increasingly important last summer's large-scale wildfires burnt through 32% (21% at high severity) of modelled Greater Glider habitat in Victoria.

The forests are also significant for many headwaters of many rivers providing water supply to northern and western Melbourne and will be important climate change refuges as species shift in a changing climate.

For more information on the proposed new national parks in Victoria's central west, see our following recent Park Watch articles: [A dozen good reasons for new national parks in the central west of Victoria](#) , and [Mount Cole still on the chopping block](#) which is still seeing clear fell logging.

Preliminary recommendations

In regards to establishing new national parks and nature conservation reserves, the VNPA recommends that the Victorian Government undertake the following actions:

- make a decision on the proposals to create much needed 60,000 hectares of new national parks in Victoria's central west Wombat, Wellsford, Mt Cole and Pyrenees Forests to help better secure the future of threatened species such as the Greater Glider, Brush-tailed Phascogale and Mount Cole Grevillea
- initiate new Victorian Assessment Council Investigations (across all terrestrial, riparian, freshwater, coastal and marine environments) to identify how to fill

- gaps in the reserve system, including under represented habitat areas, areas with high numbers of threatened species and areas under threat
- remove the current Victorian Government ban on new marine national parks
 - undertake an independent review of the current Victorian marine national parks, sanctuaries and other marine protected areas against the NRSMPA's key principles of comprehensiveness, adequacy and representativeness, as recommended by the Victorian Environmental Assessment Council's Statewide Assessment of Public Land Assessment 2017

7) Our seas and shores – greater protection needed

Australia's southern waters, particularly in the southeast, are among the most species-rich temperate seas in the world and even host many more unique species than the Great Barrier Reef. The level of endemism in many marine groups is close to 90%, and at least 12,000 marine species call Victoria home.

In regards to our coasts, of the 300 ecological vegetation classes described for Victoria's bioregions, 95 occur within 500 metres of the state's shoreline, with 34 found only on the coast. Almost two-thirds (62%) of ecological vegetation classes within 500 metres of the shoreline are threatened within at least one of the subregions in which they occur.

Our marine and coastal environments are often our protectors for our way of life by the sea, acting as buffers, protecting against erosion and weather events, controlling our climate and sequestering carbon, as well as providing food, and enjoyment for many.

We know that national parks are one of the best ways to protect biodiversity, but we still have a long way to go to achieving adequate protection for our marine and coastal ecosystems in Victoria.

90% of our coastline is in public ownership, of which 70 per cent is protected under the National Parks Act as national, marine or coastal parks. Almost 30 per cent of the coastline is in areas known as coastal reserves.

For our marine areas the level of protection is very poor. Although we have a network of 13 marine national parks and 11 smaller sanctuaries, a mere 5.3% of our waters in Victoria are covered in no-take areas – the lowest of any Australian state, well below international benchmarks for marine protected areas. For more information see our latest literature review of marine protected areas here [VNPA Marine Parks Report 2019](#).

A lack of protection is not all that risks these areas – development pressures, pollution, industrialization, habitat loss, overexploitation (fishing), and a changing climate are some of these risks. Marine spatial planning, a tool for proper planning of our marine

and coasts needs to be prioritised to holistically plan for and manage threats across the board, as well as stopping inappropriate developments and uses along our coast.

In regards to conservation of marine areas, currently the Andrews Government has a formal policy ban on creating new marine national parks and sanctuaries, even though expert bodies like VEAC have shown clear gaps in our network of marine national parks and sanctuaries, and recommended that they be filled. Victoria needs to create new marine national parks and sanctuaries.

Additionally, any new policies and strategies under the Marine and Coastal Act should be used to establish marine spatial plans as guides for planning regimes which protect high conservation marine areas from developments such as dredging or over fishing. These should be expanded in Victoria.

Preliminary recommendations

For better management and nature conservation in our marine and coastal areas, the VNPA recommends the following:

- that the Victorian Government remove the ban on new marine national parks, and create new marine national parks and sanctuaries
- an independent review, of current Victorian marine national parks and sanctuaries (and other marine protected areas) against the [NRSMPA's key principles](#) of comprehensiveness, adequacy and representativeness, as recommended by the Victorian Environmental Assessment Council's Statewide Assessment of Public Land Assessment, 2017
- the creation a state-wide ecosystem based marine spatial plan and that Victoria's marine national parks and sanctuaries be considered as a key conservation pillar in the current Victorian process of marine spatial planning
- that the Victorian government invest adequate funding into marine science and into management of our marine national parks and sanctuaries
- stopping large scale development in RAMSAR sites, such as the proposed AGL Liquid Natural Gas (LNG) Import Terminal Facility (i.e. an LNG port) in Western Port Bay
- the prohibition of commercial racehorse training along any of Victoria's beaches, including the Belfast Coastal Reserve
- that the Victorian Government implement either the accepted or proposed recommendations from the Victorian Environment Assessment Council in relation to the planning and management of marine parks (the VEAC Coastal Reserves Assessment 2020, VEAC Public Lands Assessment 2017, and the VEAC Marine Investigation 2014)

8) Victoria the feral State – managing invasive species

Invasive species have major impacts on Victoria's native flora and fauna and are a serious conservation concern. Species of animals can be declared as an established pest animal in Victoria under the *Catchment and Land Protection Act 1994*. The Act requires all land owners to prevent the spread of, and as far as possible eradicate, established pest animals. The Act applies to both public and private land.

In Victoria foxes and cats have already contributed to the extinction of a number of small native marsupials and are threat to many remaining threatened species. Australia's native wildlife has not evolved to survive alongside predation by cats and foxes and many birds and mammals are vulnerable particularly if they have small populations in fragmented areas.

It was only in 2018 that feral cats were listed as an established pest animal (on specified Crown Land). The control of feral cats and foxes is currently an urgent land management priority to protect fragile populations of various mammals and birds that are recovering from fire.

Introduced herbivores can also be highly destructive to ecosystems. Grazing by pest animals such as rabbits, deer and horses can limit the regeneration of trees, shrubs and grasses, alter the composition of plant communities, and allow weeds to establish in disturbed areas. They also compete with native mammals and birds for food and alter, trample and destroy habitats. The European Rabbit is declared as an established pest animal, mandating its control. However there are other significant pest grazing animals, such as deer and horses that are not declared.

Over a million deer are wreaking havoc in Victoria's state forests and national parks, and instead of being managed as a serious pest, deer are oddly protected under the *Wildlife Act 1975* in order to support hunting interests. (See the VNPA's submission on the Victorian Government's yet to be released [deer management strategy](#).) The government released a poorly written draft deer strategy in late 2018, and a final has yet to be released, well over year later. Meanwhile deer are creating havoc. See our joint statement from over 100 individuals and groups calling for decisive action: [Call for Andrews' Government to act decisively on feral deer](#).

Feral horses are also trampling and exerting grazing pressure on critical habitats in the Victoria's Alpine National Park and Barmah National Park. "Degradation and loss of habitats caused by feral horses" is listed as a threatening process under the *Flora and Fauna Guarantee Act 1988*. Recent plans to cull the horses have been slowed by interest groups seeking to protect brumbies for their cultural heritage value (a stance that has now been rejected in three court cases). See our recent FAQ on feral horse management in Barmah National Park and the Alpine National Park: [Feral horses in national parks](#)

Preliminary recommendations

Introduced pest animals and plants are one of the top contributors to ecosystem decline and the extinction of Victoria's threatened species. The VNPA recommends that the Victorian Government undertake the following actions:

- significantly expand funding and planning for control measures and mitigating impacts of invasive pest animals and plants
- adequately declare invasive pest animals and plants in legislation
- specifically declare deer as a pest species, and release a detailed state-wide deer control strategy

9) Protect our native forests – transition now

In November 2019 the Victorian government announced it would immediately cease logging of old growth native forests in Victoria, immediately protect threatened species habitat, and end native forest logging by 2030 (see [Details of Andrews government forest announcement](#)).

In the months since the announcement Victoria has had a devastating fire season in East Gippsland that impacted significantly on threatened species habitats, on proposed immediate protection areas and on areas marked for logging. After community led litigation the Victorian Supreme Court ordered that logging be temporarily halted in 26 unburnt areas of public native forest.

Despite the enormous environmental impacts of the fires, the Victorian government renewed all of its Regional Forest Agreements for another 10 years in order to allow the government backed logging enterprise, VicForests, to be exempt from national environmental protection laws while it continues its unnecessary environmental destruction. (See discussion of RFAs here [Another decade](#))

This included the renewal of the totally obsolete Western RFA which allows logging operations in what's left of Victoria's highly fragmented, high conservation value native forests in the west of the state. In 2014 VicForests was given management of forestry in the west, and received a \$3.3 million grant in advance to run its so-called "Western Community Forestry". In their 2018–19 Annual Report, VicForests reported that total revenue from western native forest logging was around \$700,000. State government funding to VicForests' Western Community Forestry" in that same period was \$678,000. That's a surplus of only \$22,000 for Victorian taxpayers, in return for the logging of our publicly-owned native forests. The \$3.3 million grant is due to expire this year, and should most certainly not be renewed to prop up the logging industry in the region. See our recent article [The wicked Regional Forest Agreement of the west](#).

In May 2020, the federal court ruled that VicForests had breached national environmental protection laws when it logged the habitat of Leadbeater's Possums and Greater Gliders. VicForests has not been complying with the Code of Practice for Timber Production 2014 in respect of threatened species, particularly in applying the precautionary principle, and as a result has not been acting in accordance with their Regional Forest Agreement.

Logging regimes have not only significantly impacted on biodiversity and threatened species but have made many Australian forests more fire prone and have contributed to increased fire severity and flammability. Fire ecologists have been increasingly pointing out that impacts of logging include changes in forest composition and structure, such as the creation of extensive, dense stands of young trees with a scarcity of elements such as tree ferns and rainforest plants, which in turn can influence fire dynamics and the spread of wildfire; that is, fire can spread from logged areas and burn into adjacent old growth eucalypts and rainforests.

Most native forest logging in Victoria now occurs to supply pulplogs to the Maryvale pulp and paper mill. A quarter of the mill's wood is supplied through VicForests but this demand could easily be covered by the plantation timber industry which exports high volumes of woodchips. The mill already uses plantation timber for more than two-thirds of its products.

Preliminary recommendations

The VNPA recommends that the Victorian Government agree to the following:

- conduct a review of all Regional Forest Agreements in the wake of the large landscape scale fires of 2019/20 fire season
- abandon the Western Regional Forest Agreement and rule out the renewal of the soon to expire \$3.3 million grant which props up the logging industry in the region
- stop using tax payer's dollars to subsidize VicForests' logging and destruction of public native forests and threatened species habitat
- bring forward to as soon as possible the transition of the native forest logging industry to plantation only timber production

10) Time to rethink fire management

The large increase in frequency of wild and planned fires in Victoria has created highly unnatural fire regimes across the state. Frequent fire is changing the composition and flammability of native vegetation and is placing unprecedented pressure and threats on our wildlife and natural heritage. Furthermore, Australia's climate is warming and promoting fire weather conditions. We need to radically re-think the management of fire. Doing what we used to do just isn't working.

Last summer's fires had a devastating impact on Victoria's natural heritage, especially in East Gippsland which saw the roasting of ancient rainforests and old growth eucalypt forests. In addition, inappropriate response measures such as deliberate burning or "blacking out" of patches of unburnt vegetation, and cases of whole-sale clearing of trees along roads and tracks have added to the impacts. However, the increased frequency of fire, and its unseasonality, is the most pressing concern.

In 2019 about 50% of public land in Victoria was already below its minimum tolerable fire interval and much of the vegetation in Victoria is currently in an adolescent or juvenile growth stage due to excessive recent fire both planned and wild. In many forest types in Victoria, a fire can initially (for a few years) reduce undergrowth, but young post-fire regrowth can then be more flammable and more prone to wildfire than before a fire occurred – a condition that can extend for decades. This is particularly the case in the Australian Alps and in the damp and relatively high rainfall eucalypt forests and rainforests in the east of our state, but it is also evident in many of the state's drier woodlands.

If fire occurs too frequently it can replace the vegetation with more fire loving species and can wipe out species before they get a chance to grow to reproductive maturity, kill young trees and potentially cause ecosystem collapse. Frequent fire is a critical threatening process to many ecosystems in Victoria.

The 2019-20 wildfires had a profound impact across Australia's south-eastern temperate forests and there is a potential for post-fire young regrowth to significantly increase wildfire risk in the near future. There is an urgent need to strategically counter rising challenges by shifting focus from fire-based fuel management to other methods of reducing wildfire risk.

For more information see the VNPA's recent submission to the Senate's bushfire inquiry [here](#) and our FAQ on fire management [here](#).

Preliminary recommendations

For improved fire management and for better protection of people and nature from inappropriate fire regimes, the VNPA recommends the following:

- the ramping up of point of ignition control, including developing state-wide aerial firefighting capabilities to suppress ignition points in both urban and remote landscapes
- improved funding arrangements between the Federal and State governments in order to support aerial operational responses to wildfires in remote areas and to support the protection of environmental and cultural assets (Currently, federal funding is only available for aerial intervention if a fire is clearly threatening lives

and infrastructure. This discourages critical point-of-ignition control in remote areas.)

- the improvement of wildfire preparedness for citizens in towns and cities, including improved evacuation planning and procedures, and support for private bushfire shelters
- strategic and regulated fuel reduction of understorey vegetation close to assets
- evidence-based and strategically planned fuel reduction burn programs with follow up monitoring of post-fire regrowth and fuel loads
- the incorporation of the ecological and associated flammability outcomes of planned burns and wildfires in different forest types into wildfire risk modelling
- reducing the long term flammability of the landscape by setting targets to protect and promote the growth of older vegetation in those forest types where older growth is historically less flammable than younger post-fire growth
- protection of critical habitat features, such as (but not only) hollows in trees and coarse woody debris

11) Addressing habitat fragmentation – key steps to recovery

One of the oldest, most pressing and often neglected legacy issues is that of habitat fragmentation. Centuries of land clearing, particularly beginning during waves of agricultural expansion and in the gold rush era of the mid 1800's, has left Victoria as the most cleared state in Australia. Many of our remaining natural areas, especially in western and central Victoria, are now in isolated fragments of vegetation often in rugged terrain and sandy soils that were undesirable for agriculture. Habitat fragmentation can make a whole array of threatening processes worse, due to the flora and fauna being confined to small and isolated populations.

Fragmented habitats and isolated populations are more vulnerable to the impacts of weed invasion, fires (planned and wild), grazing pressure, predation by foxes and cats, and to changes in climate, vegetation and habitat. Furthermore, pollination and seed dispersal is limited, animals are isolated, and the population genetics of flora and fauna can be vulnerable to genetic bottlenecks.

Native vegetation continues to be lost in Victoria at approximately 4,000 habitat hectares per year (which is roughly equivalent to 8,000 to 10,000 hectares of varying quality and this includes counting alleged gains in vegetation quality made up through the management of other areas).

Victoria's 2018 State of the Environment Report (accessible [here](#)) indicates that there have been decreases for the following habitats in Victoria between the years 1990 and 2015:

- native grasslands and herblands from 2,282,992 hectares to 1,820,093 hectares (20% decrease)
- native scattered trees from 542,201 hectares to 393,147 hectares (27% decrease)
- native shrubs from 165,262 hectares to 116,620 hectares (29% decrease)
- intermittent wetlands 47,286 hectares to 42,133 hectares 2015 (11% decrease)
- seasonal wetlands 418,611 hectares to 342,955 hectares (18% decrease) respectively

To address habitat fragmentation as a threatening process we need stronger native vegetation laws and regulations to stop clearing plus we need well-funded, strategic revegetation and land care programs to connect habitats. Reconnecting and restoring habitats is one of the top things Victorians can do to restore the health of our vulnerable ecosystems and assist with threatened species recovery.

Protection of habitats on private land is also critical, and one of the key mechanisms for achieving this is through Trust for Nature conservation covenants. The state biodiversity strategy, *Protecting Victoria's Environment – Biodiversity 2037* states that “The estimated gap in additional protected areas required to meet Australia’s criteria for a comprehensive, adequate and representative reserve system is 2.1 million hectares. In some bioregions... this can only be achieved by land purchase or additional formal protection of habitat on private land.” (See the [biodiversity strategy](#) page 49). However, little of the money provided to implement the state biodiversity strategy has been spent on supporting land stewardship or expanding the number of Trust for Nature covenants.

See Appendix 1a below for further discussion of habitat fragmentation as a key driver of ecosystem decline.

Preliminary recommendations

The VNPA recommends that the Victorian Government undertake the following actions:

- address habitat fragmentation with on-going well-funded, strategic revegetation and land care programs
- develop stronger native vegetation laws and regulations
- develop a detailed understanding on the implications of climate change on ecosystems, and a detailed assessment at fine scale (e.g at least 5 kilometre blocks) should be undertaken to model the potential changes for key natural areas
- dramatically increase funding for private land conservation through the Trust for Nature, including the establishment of a \$20 - \$30 million revolving fund

Appendix 1. Key drivers of ecosystem decline in Victoria – a brief overview

There are many threats to Victoria's ecosystems and flora and fauna. Some are legacy issues that hark back to the early days of British settlement in Australia, while others are emerging threatening processes that make old problems worse by exacerbating habitat loss and degradation.

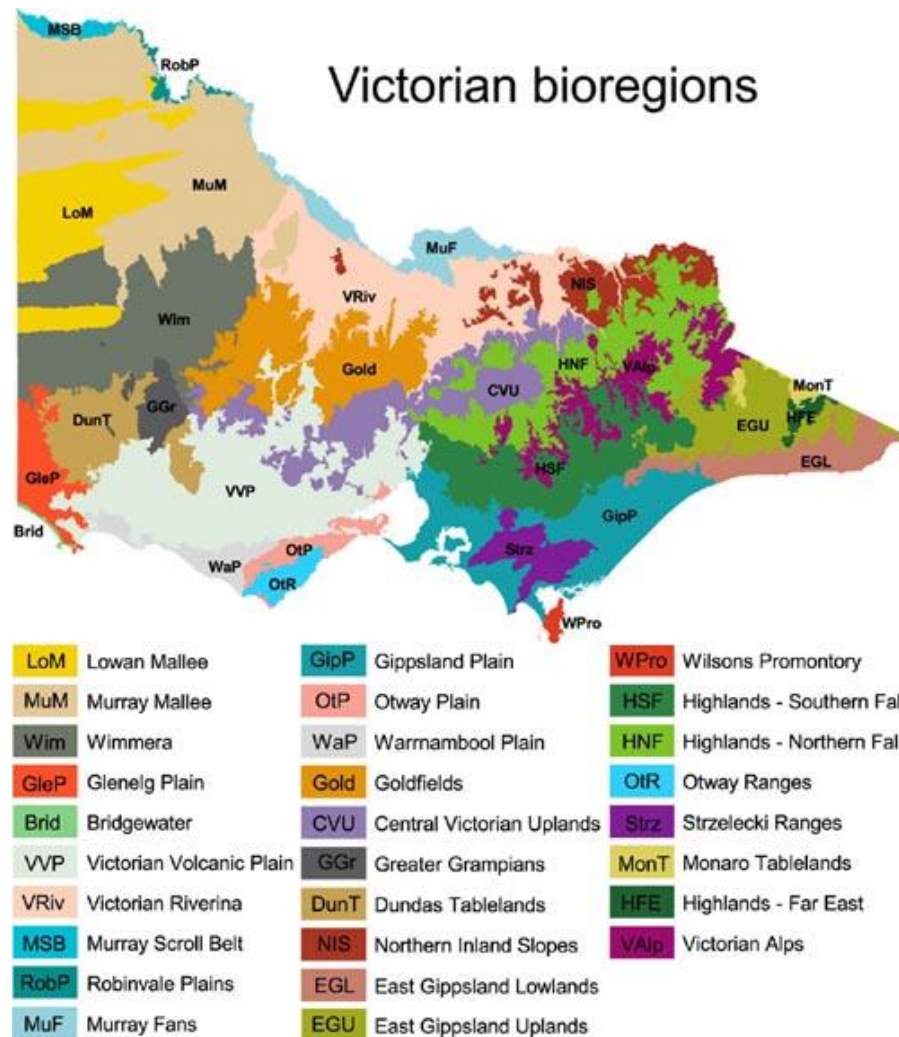
Here we will provide a brief overview of key drivers of ecosystem decline in Victoria. For a more detailed look at nature conservation issues in Victoria see the VNPA's [Nature Conservation Review](#).

The following issues are briefly discussed below:

- a) Habitat fragmentation***
- b) Inappropriate fire regimes***
- c) Altered water regimes***
- d) Invasive plants***
- e) Invasive animals***
- f) Native forest logging***
- g) Unsustainable hunting of native wildlife***
- h) Urban population growth***

a) Habitat fragmentation

One of the oldest, most pressing and often neglected legacy issues is that of habitat fragmentation. Centuries of land clearing, particularly beginning during waves of agricultural expansion and in the gold rush era of the mid 1800's, has left Victoria as the most cleared state in Australia. Many of our remaining natural areas, especially in western and central Victoria, are now in isolated fragments of vegetation often in rugged terrain and sandy soils that were undesirable for agriculture.

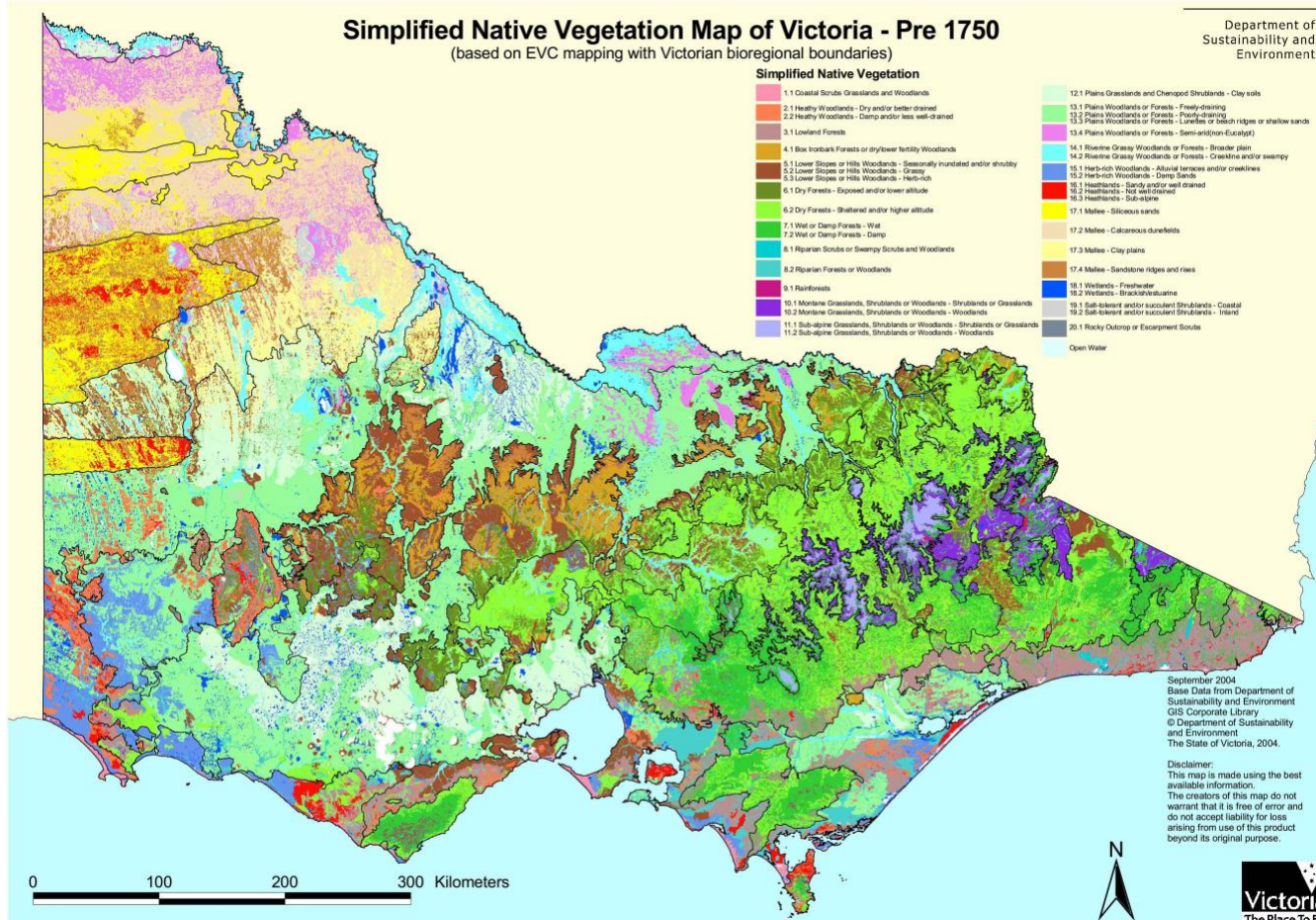


Bioregions are a landscape-scale approach to classifying the environment using a range of attributes such as vegetation, soils, geology, geomorphology and climate. (See more [here](#)).

Many of Victoria's bioregions have been heavily cleared, causing the fragmentation of remnant vegetation and threatening the persistence of many ecological communities of flora and fauna. See maps below comparing Pre 1750 and extant vegetation.

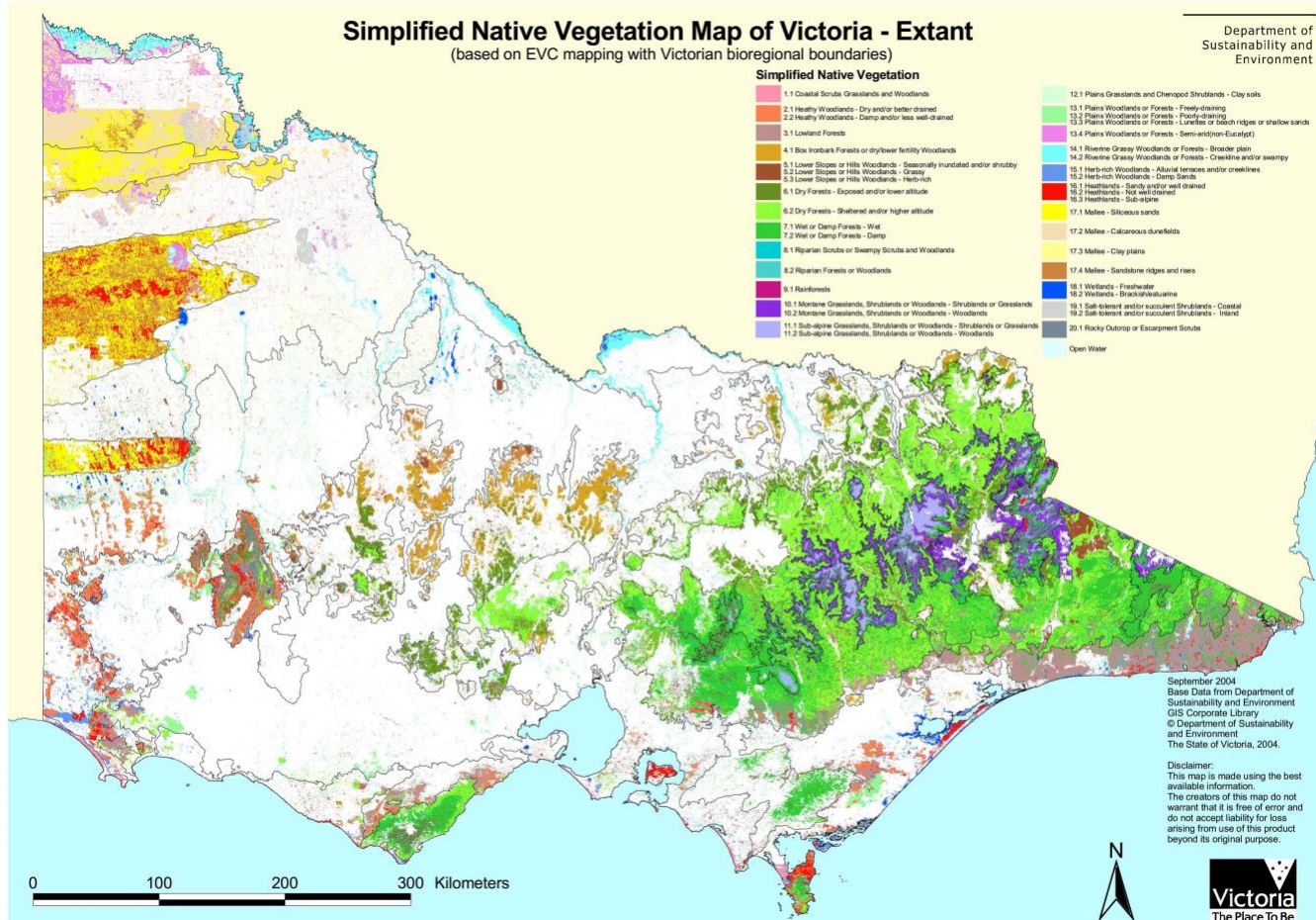
Simplified Native Vegetation Map of Victoria - Pre 1750 (based on EVC mapping with Victorian bioregional boundaries)

Department of
Sustainability and
Environment

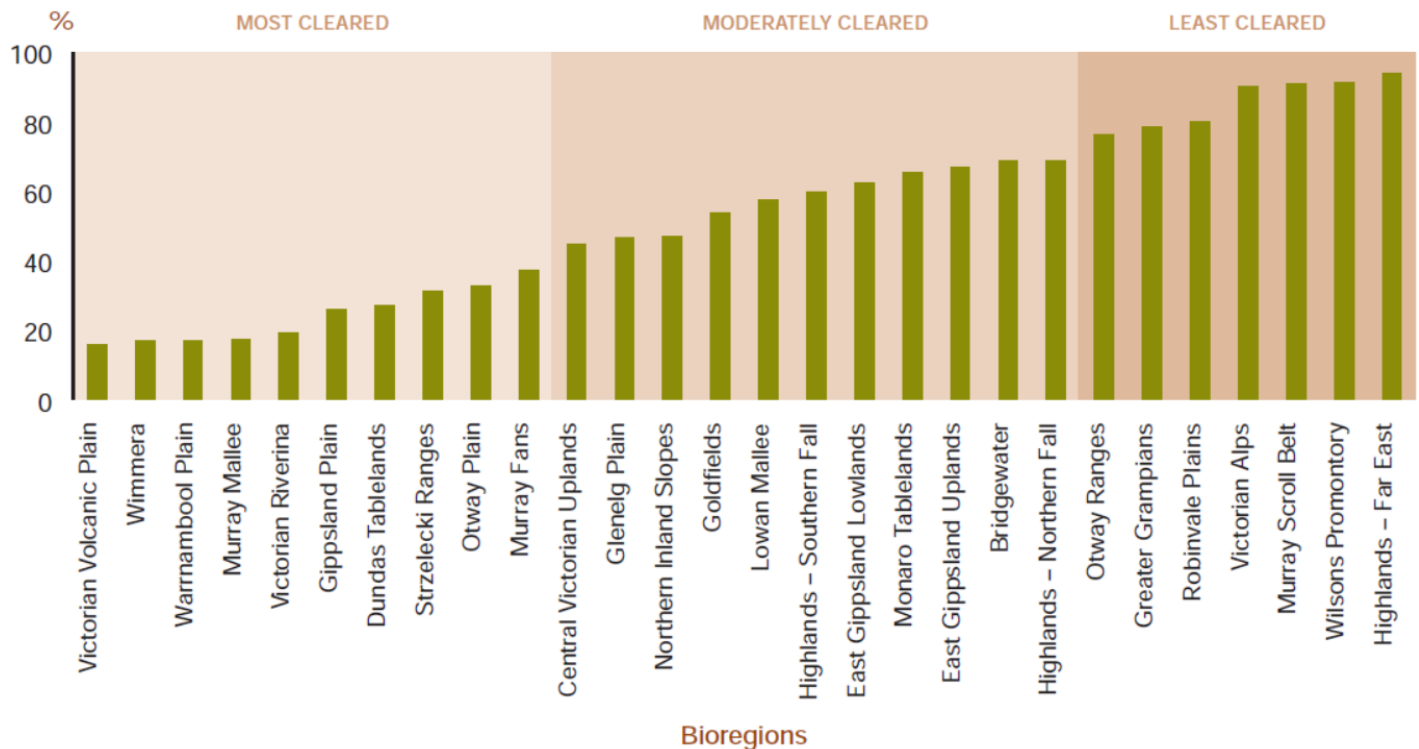


Simplified Native Vegetation Map of Victoria - Extant (based on EVC mapping with Victorian bioregional boundaries)

Department of
Sustainability and
Environment



The below graph from the VEAC's Remnant Native Vegetation Investigation 2010 discussion paper demonstrates that the proportion of native vegetation remaining in the fragmented parts of Victoria's bioregions varies greatly – from less than 16% of the Victorian Volcanic Plain to more than 93% in the Highlands–Far East. In fragmented landscapes overall, 31.6% of the state's original extent of native vegetation remains.¹ The paper notes that landscape context (that is, consideration of components such as patch size, distance to core area, and extent of nearby vegetation) is especially poor in the Victorian Volcanic Plain, Wimmera and the Victoria Riverina bioregions.



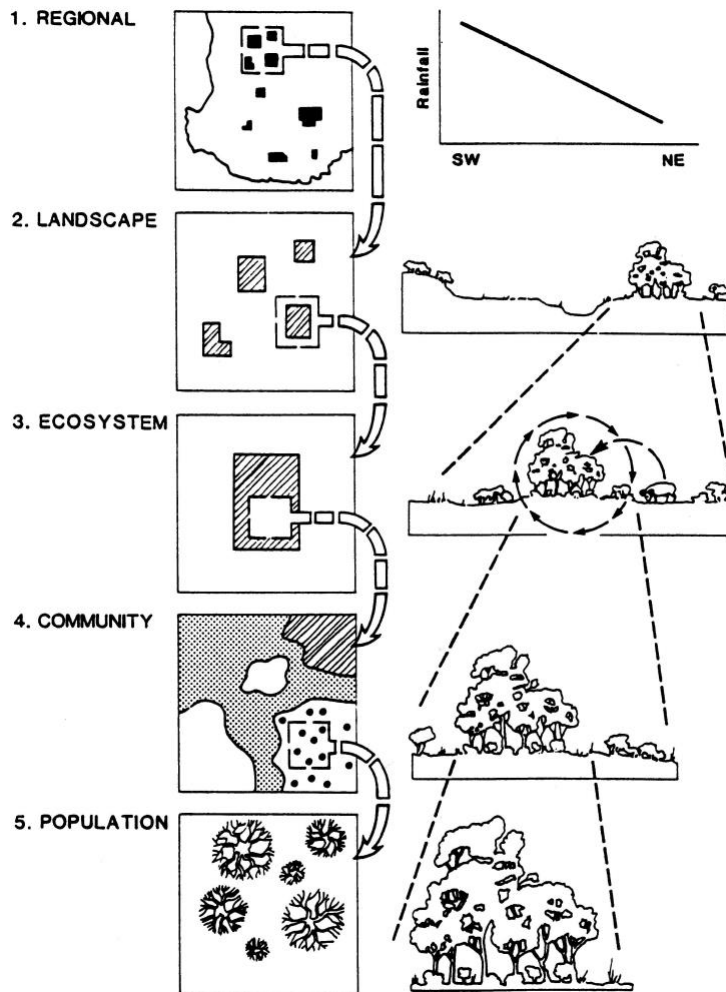
Proportion of native vegetation in fragmented landscapes in each bioregion. VEAC 2010 ¹

In regards to the ten most cleared Victorian bioregions, the VEAC paper discusses that, with the exception of the Strzelecki Ranges (which has an unusual land-use history), all have relatively flat terrain and fertile soils, and less than 40% of their original extent of native vegetation remaining. As a result, habitat loss and isolation of remnants are certainly a major cause of biodiversity loss in these landscapes.

These mostly cleared bioregions typically contain many small patches of remnant native vegetation, little native vegetation in large patches, and patches that rarely adjoin largely-intact landscapes. They are also characterized by a high proportion of remnant native vegetation on private land, poor conservation reserve representation, a high

¹ Victorian Environmental Assessment Council (2010). Remnant Native Vegetation Investigation Discussion Paper. <http://www.veac.vic.gov.au/investigation/remnant-native-vegetation-investigation/reports>

proportion of native vegetation on roadsides, generally poor site condition and generally poor landscape context (especially on private land). The landscape context is also particularly bimodal, with much of the remaining native vegetation in a small number of large patches (usually on public land) and otherwise large areas with little native vegetation (mostly on private land).



Levels of organisation that need to be considered in management of fragmented landscapes. Source: Saunders, D. A. Hobbs R. J. & Arnold G. W. (1993). The Kellerberrin project on fragmented landscapes: a review of current information. *Biological Conservation* 64, 185–92.

Habitat fragmentation can make a whole array of threatening processes worse, due to the flora and fauna being confined to small and isolated populations.

Fragmented habitats and isolated populations are more vulnerable to the impacts of weed invasion, fires (planned and wild), grazing pressures, and predation by foxes and cats, and are also more vulnerable to changes in climate, vegetation and habitat. Furthermore, pollination and seed dispersal is limited, animals are isolated, and the population genetics of flora and fauna can be vulnerable to genetic bottlenecks.

Large patches of remnant native vegetation on public land in fragmented landscapes are of high conservation value and need urgent protection through reservation and ongoing landcare and restoration. Protection of habitats on private land is also critical, and one of the key mechanisms for achieving this is through Trust for Nature conservation covenants.

To address habitat fragmentation as a threatening process we need stronger native vegetation laws and regulations to stop clearing plus we need well-funded, strategic revegetation and land care programs to connect habitats. Reconnecting and restoring habitats is one of the top things Victorians can do to restore the health of our vulnerable ecosystems and assist with threatened species recovery.

b) Inappropriate fire regimes

The large increase in frequency of wild and planned fires in Victoria has created highly unnatural fire regimes across the state. Frequent fire is changing the composition and flammability of native vegetation and is placing unprecedented pressure and threats on our wildlife and natural heritage. Furthermore, Australia's climate is warming and promoting fire weather conditions. We have to reconfigure fire management, both for public safety and for the environment. Business as usual won't do the job.

Frequent fire is a critical threatening process to many ecosystems in Victoria. If fire occurs too frequently it can replace vegetation with more fire loving species and can wipe out species before they get a chance to grow to reproductive maturity, kill young trees and potentially cause ecosystem collapse.

For example, fires in 2003, 2007 and 2009 burnt over 87% of Victoria's Alpine Ash forests, with some areas being burnt a second or third time within a decade by a fire in 2013. This resulted in local elimination of Alpine Ash seedlings in parts of the landscape and an aerial sowing program was implemented in an attempt to mitigate the impacts.²

Frequent fire can change the structure and composition of vegetation and fuel loads to become more fire-prone. In many forest types in Victoria, a fire can initially (for a few years) reduce undergrowth, but young post-fire regrowth can then be more flammable and more prone to wildfire than before a fire occurred – a condition that can extend for decades. This is particularly the case in the Australian Alps³ and in the damp and relatively high rainfall eucalypt forests and rainforests in the east of our state, but it is also evident in many of the state's drier woodlands.

The occurrence of fire both planned and wild in Victorian landscapes has increased significantly in recent decades. There have now been three wildfires over 1 million hectares in Victoria since 2003: in 2003, 2007 and 2020. In recent decades planned burning in Victoria has also occurred at relatively high levels with over 700,000 hectares treated in the last 5 years alone. Between 2003-04 and 2016-17 the Snowy district in East Gippsland had more planned burning than any other district in Victoria.⁴

In 2019, because of so much recent fire in the landscape, about 50% of public land in Victoria was below its minimum tolerable fire interval⁵. Indeed much of the vegetation

² Bassett, O. D., Prior, L. D., Slijkerman C. M., Jamieson D. & Bowman D. M. J. S. (2015). Aerial sowing stopped the loss of alpine ash (*Eucalytus delegatensis*) forests burnt by three short-interval fires in the Alpine National Park, Victoria, Australia. *Forest Ecology and Management* 342, 39–48.

³ Zylstra, P. J. (2018). Flammability dynamics in the Australian Alps. *Austral Ecology* 43, 578–591.

⁴ Commissioner for Environmental Sustainability Victoria, 2018. Scientific Assessments Part III Fire. <https://www.ces.vic.gov.au/reports/state-environment-2018/fire>

⁵ Victorian fuel management report 2018-19. <https://www.ffm.vic.gov.au/fuel-management-report-2018-19/statewide-achievements/bushfire-risk>

in Victoria was in an adolescent or juvenile growth stage, particularly in the east of the state – and even more so now after last summer.

Last summer's fires burnt through 1.5 millions hectares of land and had a devastating impact on Victoria's natural heritage, especially in East Gippsland, which saw the tragic burning of ancient rainforests and old growth eucalypt forests with no recorded fire history. 70% of the remaining Warm Temperate Rainforests in Victoria were impacted by the fires.⁶

The loss of rainforests in East Gippsland is a pressing concern as they can take many decades, even hundreds of years, without fire to re-develop after a major fire event. A recent Arthur Rylah Institute report into post-fire dynamics of cool temperate rainforests⁷ outlines that rainforests are only burnt when surrounding forests carry the fire into them, and therefore conservation of rainforests is largely dependent on protection of the ecotone vegetation and its eucalypt forest buffer. Rainforests and wet forests are not suited to fuel reduction burning ecologically or in a practical sense.

Palaeoecological evidence suggests a low frequency of fire in East Gippsland during the Holocene period prior to British settlement and then a dramatic increase in fire after British settlement. While it is difficult to establish the extent of historical Indigenous burning in different parts of Victoria, research challenges claims of extensive burning across the landscape. "Burning by aboriginal people was not frequent in at least some parts of south eastern Australia and the modern, regular use of fire is not necessarily reflective of pre-European patterns." (Gell, Stuart and Smith, 1993)⁸

The arrival of British settlers in Australia was marked by a dramatic increase in fire frequency in many landscapes. In the early 1800s pastoralists settling in Victoria periodically burned the land as a form of land clearing and to promote fresh grasses. However, because frequent fire promotes the growth of grasses and other fire loving plants it can also encourage the spread of fire and can make landscapes more prone to wildfire – essentially creating unmanageable circles or "landscape traps" of fire.

After the large wildfires of 1939, planned fire in Victoria was suppressed. However in recent decades planned fire in the form of hazard reduction burns has greatly increased. Logging has also been regularly occurring in Victoria's forests, drying out the forests and increasing fire risk. (For more discussion on the impacts of logging on fire risk, see the section below on native forest logging).

⁶ <https://www.wildlife.vic.gov.au/home/biodiversity-bushfire-response-and-recovery>

⁷ Tolsma, A., Hale, R., Sutter G. & Kohout, M., (2019). Post-fire dynamics of cool temperate rainforest in the O'Shannassy Catchment. Arthur Rylah Institute for Environmental Research Technical Report Series No. 298. *Department of Environment, Land, Water and Planning*, Victoria.

⁸ Gell, P. A., Stuart, I. and Smith J. D., (1993). The response of vegetation to changing fire regimes and human activity in East Gippsland, Victoria, Australia. *The Holocene* 3(2), 150-160.

Some forested areas in Victoria naturally have (or had) no recorded fire history due to chance and/or low flammability, or a lack of clear records. According to Victoria's 2018-19 Fuel Management Report, in 1980 47% or 3.52 million hectares of public land in Victoria had no recorded fire history. By 2019 this figure had dropped to just 22% or 1.66 million hectares, corresponding to the increase in large bushfires and fuel reduction burning over the last decade.⁹ Unfortunately Victoria has now had further losses of unburnt forests after ancient rainforests and old growth eucalypt forests tragically burned in last summer's fires.

Victoria must aim to reduce the long term flammability of the landscape by setting targets to protect and promote the growth of older vegetation in those forest types where older growth is historically less flammable than younger post-fire growth. There is a need for an expanded aerial firefighting fleet and a radical increase of secure state and federal funding to support the operational costs of fighting wildfires before they become uncontrollable in both remote and populated areas.

c) Altered water regimes

For an in depth look at freshwater ecosystems and the impacts of changes to natural flow regimes in Victoria, see chapter 4 of the VNPA's 2014 [Nature Conservation Review](#).

Much of Victoria's landscape is densely woven with rivers and streams – the greatest concentration of waterways on Australia's mainland – and includes many heritage rivers, high-value wetlands and important bird and biodiversity areas.

Victoria's freshwater ecosystems have great diversity and complexity and support more than 100 waterbird species, 54 freshwater fish, 38 frogs, 40 crayfish and a large number of freshwater invertebrates. Some groups of freshwater organisms – crayfish, galaxiid fish and stygofauna (groundwater-inhabiting organisms) – have high levels of endemism in Victoria, and close to half or more of Victoria's frogs, freshwater fish and freshwater crayfish are threatened. Additionally, more than 800 vascular plants are associated with Victoria's wetlands. This great diversity has largely evolved in response to natural flow regimes – the patterns of water flow resulting from interactions of climate, geology, topography and vegetation. Unnatural deviations from these regimes are placing our freshwater ecosystems, and the species that depend on them, at great risk.

One of the biggest problems for Victoria's rivers and streams is over-extraction of water. There are 134 declared water supply catchments across Victoria and about 52 major storages, with at least one major on-stream storage constructed in 19 of Victoria's 29 river basins, and hundreds of smaller dams and weirs on waterways. There are about

⁹ Victorian fuel management report 2018-19. <https://www.ffm.vic.gov.au/fuel-management-report-2018-19/statewide-achievements/bushfire-risk>

450,000 farm dams in Victoria and most of Victoria's water use is by irrigated agriculture.

In 2017-18 Victorian farming businesses used an estimated 2.3 million megalitres (ML) of water to irrigate about 630,000 hectares of agricultural land, with 2.2 million ML used to irrigate crops and pastures.¹⁰ Six thousand farms applied water to their land. About 1.4 million ML, or 60% of all water applied, was applied to pastures. Close to 1.1 million ML was applied to 326,000 hectares of pastures and cereals used for grazing; 200,000 ML was applied to 61,000 hectares of pastures and cereals cut for hay, and 106,000 ML was applied to 44,000 hectares of pastures and cereals cut for silage. About 750,000 ML was applied to crops (32 per cent of all water applied), with 51 per cent of this applied to fruit trees and 15 per cent to grapevines.



The Wimmera River's unique terminal lake system once received seasonal or occasional flooding. Most of these terminal lakes have now not seen water for many decades. Wonga Lake, Wyperfeld National Park. Photo: John Kotsiaris

Australia's ever-increasing push for agricultural exports is driving agricultural intensification and placing further pressure on water resources. While diversion caps and regulations on consumption are in place in Victoria to assure allocation of held

¹⁰ Food and fibre economic fact sheet, June 2019. Agriculture Victoria.
<http://agriculture.vic.gov.au/agriculture/food-and-fibre-industries>

water to the environment, flow regimes in irrigation areas are dictated by consumption needs rather than environmental requirements. In such areas seasonal flow regimes can be reversed because large volumes of water are released for irrigation during summer and autumn, when flows would typically be lower, and less water is released during winter, when flows would typically be greater. In Victoria there has been an overall decrease in streamflow of approximately 50% over the past 20 years.¹¹

The 2018 Victorian State of the Environment Report¹² found that the water basins that experienced the lowest proportions of water leaving the basin as a percentage of total flows in 2015–16 were the Avoca (0%), Wimmera (7%), Moorabool (14%), Werribee (25%), Loddon (29%), and Maribyrnong (30%) basins. This indicates that consumption is exerting more pressure on aquatic ecosystems in these basins. Annual runoff is projected to decrease by 5-15% across most of Victoria by 2040 and 10-30% by 2065 (relative to a baseline period from 1975-2014), with the largest reductions expected to occur in the south west. The report also found that only 26% of the river basins assessed from 2010 to 2017 were rated as having good water quality.

Bulk entitlements¹³ and environment entitlements are legal rights to water granted by the Minister for Water under the *Water Act 1989*. They provide the right to take or store a volume of water subject to a range of conditions. Bulk entitlements are held by specified authorities, such as water corporations, while environmental entitlements are held by the Victorian Environmental Water Holder. The Commonwealth Environmental Water Holder also has rights to a share of Victoria's water resources for environmental purposes. These are in the form of water shares, licences or contractual supply agreements.

The Victorian Environmental Water Holder's *Reflections 2018-19* annual report¹⁴ lamented that "much of Victoria is experiencing drier than average conditions and some regions are struggling with restricted water availability. As a result, many rivers, wetlands and farming communities are under stress."

"Below average rainfall across large parts of Victoria and the Murray Darling Basin created significant challenges for many water users in 2018-19, including environmental water holders. Low on-farm rainfall across entire regions meant there was increased demands on water for irrigation, while persistent dry conditions since late 2016 meant that water availability was relatively low, particularly in New South Wales, as many storages were at their lowest levels since the Millennium drought. With only relatively small volumes of water available on the market, the price of available water rose to levels that only a few industries could reasonably afford. From an already high \$250 per

¹¹ <https://www.ces.vic.gov.au/reports/state-environment-2018/water-resources>

¹² <https://www.ces.vic.gov.au/reports/state-environment-2018/water-resources>

¹³ <https://waterregister.vic.gov.au/water-entitlements/bulk-entitlements>

¹⁴ https://www.vewh.vic.gov.au/__data/assets/pdf_file/0011/515783/VEWH-Reflections-2018-19_web_REV.pdf

megalitre in July 2018, prices rose to \$550 per megalitre in May 2019, creating big challenges for many prospective buyers.”

The pressures of water extraction are at their worst during dry times when consumptive uses are given even greater priority over environmental health. For example, in 2007–08, the environment received less than 7% of its already inadequate entitlement while irrigators received 30–35% of their much larger entitlements. The volume of environmental entitlements was just 6% of total entitlements but only 1% was delivered for the environment that year. The proportion of total flow leaving Victoria’s river basins was 56% in 2009–10 and 74% in 2010–11. The flow was less than 10% of natural levels in six basins in 2009–10. Flow patterns have also been disrupted by physical changes to rivers due to dredging, straightening and levee banks, and changes to catchments.

This imposition of water regimes suited to agriculture and human consumption has profound ecological impacts on river and floodplain wetland ecosystems. Overbank flooding of rivers is crucial for many vegetation communities, for many species on floodplains and for maintaining ecological connectivity along and across floodplains, and between rivers and floodplains. Overbank flooding is integral to biological processes such as regeneration, dispersal and growth, and to geomorphological processes such as the deposition of silts and the regulation of ground water depth and chemistry. An assessment of flooding requirements for floodplains of the Murray, Goulburn, Ovens and King Rivers in northern Victoria,¹⁵ the first such assessment in Victoria, found at least 110 ecological vegetation classes across 224,000 hectares and 124 rare or threatened plant taxa and 62 threatened vertebrate fauna taxa (excluding fish) depend on flooding. For about 30 ecological vegetation classes, the critical interval to maintain healthy ecosystems is one flood event about every two years.

Victorian floodplains have suffered widespread and increasing decline due to regulation of river flows preventing pulse flooding. Currently, large overbank flows occur only when water storages are full, and for most of the Murray River floodplain the frequency of small and moderate floods has declined by two-thirds or more compared to the natural flood frequency.¹⁶ As a consequence, growing numbers of river red gums and black boxes are dying or dead, river red gum growth rates have declined and acid sulphate soils have developed due to the drying of once-permanent wetlands. In 2010, an estimated 79% of the area of river red gum, black box and other box communities in

15 Fitzsimons JA, Peake P, Frood D, Mitchell M, Withers N, et al (2011). Flooding requirements for biodiversity values along the Victorian floodplain of the Murray Valley. *The Victorian Naturalist* 128: 48–85

16 Peake P, Fitzsimons J, Frood D, Mitchell M, Withers N, et al (2011) A new approach to determining environmental flow requirements: Sustaining the natural values of floodplains of the southern Murray-Darling Basin. *Ecological Management & Restoration* 12: 128–37

‘the living Murray icon sites’ was in a stressed condition (moderate to severely degraded condition).¹⁷

One such living Murray icon site is Gunbower Forest, an internationally recognised Ramsar wetland and one of the most significant remaining areas of River Red Gum forest in Australia. The Reflections 2018-19 report and the North Central Catchment Management Authority’s Program Delivery Executive Manager Rachel Murphy, discuss the benefits that the Victorian environment watering program has had on the Gunbower Forest:

“Before regulation of the River Murray, Gunbower Forest would have flooded roughly seven out of every 10 years, with large widespread flooding lasting for up to six months in four of those seven years. In the past 22 years, between natural floods and allocated water for the environment, key sections of the forest floodplain have been inundated only eight times – stretching the tolerances of wetland and floodplain plants to breaking point... even in a dry year such as 2018, the forest would still have received water in spring if Murray River flows weren’t regulated by dams and weirs... Thanks to the watering, understorey vegetation in the red gum forests and box woodlands is in the healthiest condition it has been since we began monitoring it in 2005, though it still has some way to go towards making a full recovery. The Forest is also an incredibly important refuge site for waterbirds, particularly when such large areas of New South Wales and Queensland are so dry.”

These issues are also very evident in Barmah National Park and its (once extensive) Ramsar-listed wetlands – the largest floodplain wetlands in the state. Barmah is currently facing the likely extinction of its characteristic Moira Grass floodplains community if no action is taken to improve management.

Victoria requires an independent comprehensive state wide scientific review of freshwater dependent ecosystems. There is an urgent need to reduce water extractions to sustainable levels and restore natural flow variability. The conservation of Victoria’s high value rivers and wetlands can be improved by strengthening protection in existing protected areas and revamping the Heritage Rivers framework. Wetlands require a much higher level of protection that is consistent with their ecological values.

¹⁷ Cunningham S, Griffioen P, White M, Mac Nally R (2011) Mapping the Condition of River Red Gum (*Eucalyptus camaldulensis* Dehnh.) and Black Box (*Eucalyptus largiflorens* F.Muell.) Stands in The Living Murray Icon Sites. Stand Condition Report 2010. Murray - Darling Basin Authority, Canberra

d) Invasive plants

Many weeds love to take advantage of disturbances such as clearing, grazing and fire, and habitat fragmentation makes it even easier for weeds to invade Victoria's ecosystems. After habitat destruction, environmental weeds are probably the single most significant cause of habitat loss and degradation.

Of about 1000 exotic plants established in native vegetation in Victoria, about 580 are known to threaten biodiversity, landscape or social values. Weeds such as invasive pasture grasses, blackberry and willows can outcompete and crowd out other plants and create weed monocultures. Weeds can modify and add to fuel loads and increase fire risk. Waterways can be swamped by dense masses of weeds that deplete oxygen. Invasive animals can find food and shelter amongst weeds. And severe weeds like blackberry, English broom, phalaris and tall wheat grass can completely transform ecosystems by replacing almost all native plants.

Dry sclerophyll forests in Victoria have been heavily used, degraded and burned and as a result they are the most invaded forest type, with abundant rabbits, foxes, thistles, gorse, blackberries and introduced grasses. Red Gum ecosystems have been extensively used for grazing resulting in abundant weeds with more than half of the 50 most common plants being introduced. Alpine and sub-alpine habitats have been damaged by cattle grazing, and are increasingly impacted by feral horses, deer and weed invasion. Riparian forests, which are of immense ecological and biodiversity value, have been degraded by clearing, runoff, weeds and exotic animals. Rainforests are often weedy and disturbed where the surrounding forest has been removed or altered. Box-Ironbark forests were subjected to intensive digging and clearing during the gold rush years followed by extensive clearing for agriculture, resulting in vegetation that is now heavily fragmented and invaded by weeds. Heathlands cleared for marginal agriculture has allowed the invasion of pasture grasses. Native grasslands have had their composition substantially altered by heavy grazing in the early days of British settlement as well as widespread sowing of exotic pasture grasses and clovers. Coastal saltmarshes are heavily invaded with about half the plant species being exotic, causing major degradation, shifts in composition and changes in ecosystem function. Tall wheat grass, introduced and promoted by the Victorian government as a pasture species for grazing on saline lands, is the most serious invader of saltmarshes and could destroy most upper saltmarsh in western Victoria.

Species of plants can be declared as noxious weeds under the *Catchment and Land Protection Act 1994*. The Act defines noxious weeds in Victoria into four categories. State Prohibited Weeds are the highest category of declared noxious weeds in Victoria and are either not yet in Victoria, or are here in small numbers, where their eradication is still possible. Agriculture Victoria is responsible for state prohibited weeds on all land in Victoria. Regionally Prohibited Weeds are not widely distributed in a region but land owners, including public authorities responsible for crown land management, must take

all reasonable steps to eradicate them on their land. Regionally Controlled Weeds are usually widespread in a region and land managers must take all reasonable steps to prevent the growth and spread of these weeds on their land. Restricted Weeds include plants that pose an unacceptable risk of spreading in Victoria and are a serious threat to another State or Territory of Australia. Trade of restricted weeds is prohibited. In order to mitigate the impacts of invasive plants on Victoria's ecosystems, Victoria needs to adequately declare noxious weeds and significantly expand funding and planning for control measures.

e) Invasive animals

Invasive species have major impacts on Victoria's native flora and fauna and are a serious conservation concern. Species of animals can be declared as an established pest animal in Victoria under the *Catchment and Land Protection Act 1994*. The Act requires all land owners to prevent the spread of, and as far as possible eradicate, established pest animals. The Act applies to both public and private land.



Sambar Deer, Alpine National Park. Photo: Parks Victoria

Introduced predators have had profound direct impacts on native wildlife. The Red Fox was introduced into Victoria during the mid 1800s and rapidly spread around the continent. In Victoria foxes have already contributed to the extinction of a number of small native marsupials. Feral cats also have enormous impacts on wildlife and are a threat to many threatened species. Australia's native wildlife has not evolved to survive alongside predation by cats and foxes and many birds and mammals are vulnerable particularly if they have small populations in fragmented areas. It was only in 2018 that feral cats were listed as an established pest animal (on specified Crown Land). The control of feral cats and foxes is currently an urgent land management priority to protect fragile populations of various mammals and birds that are recovering from fire.

Introduced herbivores can also be highly destructive to ecosystems. The European Rabbit was one of the earliest invasive species to be introduced into Australia. The species has reached plague proportions numerous times in Victoria and they can be found throughout the state wherever there are suitable plants to graze on. Grazing and browsing by rabbits and other introduced herbivores limits the regeneration of trees, shrubs and grasses, alters the composition of plant communities, and allows weeds to

establish in disturbed areas. Introduced herbivores also compete with native mammals and birds for food and alter, trample and destroy habitats. The European Rabbit is declared as an established pest animal, mandating its control. However there are other significant introduced pest grazing animals, such as deer and horses that are not declared.

Over a million deer are wreaking havoc in Victoria's state forests and national parks, and instead of being managed as a serious pest, deer are oddly protected under the *Wildlife Act 1975* in order to support hunting interests. (See the VNPA's submission on the Victorian Government's yet to be released [deer management strategy](#).) The government released a poorly conceived draft deer strategy in late 2018, and a final has yet to be released, well over year later. Meanwhile deer are creating havoc. See our joint statement from over 100 individuals and groups calling for decisive action <https://vnpa.org.au/call-for-andrews-government-to-act-decisively-on-feral-deer/>.

Feral horses are also trampling and exerting grazing pressure on critical habitats in the Australian Alps and "degradation and loss of habitats caused by feral horses" is listed as a threatening process under the *Flora and Fauna Guarantee Act 1988*. Recent plans to cull the horses have been slowed by interest groups seeking to protect Brumbies for their cultural heritage value. See our recent FAQ on feral horse management in Barmah National Park and the Alpine National Park: [Feral horses in national parks](#)

There are a number of other pest animals of increasing concern. For example, populations of the highly aggressive Indian Mynah bird have exploded in recent years and are thought to be impacting on the abundance and diversity of native birds in greater Melbourne. The Northern Pacific Seastar is also a highly invasive and opportunistic predator of Victoria's marine habitats and the species has significant impacts on biodiversity where it invades. Pest animals are one of the top contributors to the decline and extinction of Victoria's threatened species. In order to control pest animals and mitigate their impacts, Victoria urgently needs to adequately declare pest animals and significantly expand funding and planning for control measures.

f) Native forest logging

As Melbourne's population expanded in the late 1800's, timber cutters worked their way into the hills and mountains to the north and east of Melbourne to meet timber demands for construction. After the Second World War, large scale immigration expanded the population even further and logging pushed further into Gippsland and East Gippsland. But it is the transition to industrialized logging in more recent decades (that is, from handsaws and chainsaws to clear-fell logging), which has been of increasing ecological concern.

Environmental historian Don Garden describes in his 2014 account of the phases of ecological impact in Victoria post British settlement: *“After the War, demand for timber increased further, initially mostly for the housing boom, but governments also began to licence the export of wood chips to Japan for papermaking – large areas of Victorian forests were cheaply sold off to the chipper. The clear-felling old growth forests, especially for woodchipping, became and has remained one of the hottest environmental issues in Victoria. Environmental protests began to slow the rate of destruction from about the 1980s but the future of East Gippsland’s forests remains a major source of ecological concern.”*¹⁸

Most native forest logging in Victoria now occurs to supply pulplogs to the Maryvale pulp and paper mill. A quarter of the mill’s wood is supplied through VicForests but this demand could easily be covered by the plantation timber industry which exports high volumes of woodchips. The mill already uses plantation timber for more than two-thirds of its products.

In November 2019 the Victorian government announced it would immediately cease logging of old growth native forests in Victoria, immediately protect threatened species habitat, and end native forest logging by 2030 (see [Details of Andrews government forest announcement](#)).

In the months since the announcement Victoria has had a devastating fire season in East Gippsland that impacted significantly on threatened species habitats, on proposed immediate protection areas and on areas marked for logging. After community led litigation, the Victorian Supreme Court ordered that logging be temporarily halted in 26 unburnt areas of public native forest.

Despite the enormous environmental impacts of the fires, the Victorian government renewed all of its Regional Forest Agreements for another 10 years in order to allow the government backed logging enterprise, VicForests, to be exempt from national environmental protection laws while it continues its unnecessary environmental destruction. See further discussion of RFA renewals here: [another decade](#).

This included the renewal of the totally obsolete Western RFA which allows logging operations in what’s left of Victoria’s highly fragmented, high conservation value native forests in the west of the state. Although an independent review in 2010 recommended that the Western RFA be cancelled, revised ecologically-damaging logging plans were released in mid-2017 for targeted logging of woodlands right across the west. This includes around the Grampians, Wombat forest near Daylesford and Mt Cole west of Ballarat. Some of the issues of this plan are:

¹⁸ Garden, Don. Phases of ecological impact of the European occupation of Victoria. Victorian National Parks Association, 2014. <http://vnpa.org.au/wp-content/uploads/2014/02/Appendix-1-Phases-of-Ecological-Impact.pdf>

- 60 areas of state forest are targeted for logging and to take place in areas known to harbour more than 20 threatened native animals and 14 threatened native plants
- 70% of the area targeted for logging contains native vegetation types that are either endangered (19%) vulnerable (11%) or depleted (40%) – in the Horsham Forest Management Area 54% of the vegetation is endangered
- threatened species have been found either within or near 33% of planned logging coupes, even higher in some regions

More info:

Our 2017 report on how VicForests' Timber Utilisation Plan for the west is putting our western our western risk can be accessed [here](#).

Our 2018 submission outlining why RFAs have failed and are obsolete and should not be renewed, can be accessed [here](#).

In 2014 VicForests was given management of forestry in the west, and received a \$3.3 million grant in advance to run its so-called "Western Community Forestry". In their 2018–19 Annual Report, VicForests reported that total revenue from western native forest logging was around \$700,000. State government funding to VicForests' Western Community Forestry" in that same period was \$678,000. That's a surplus of only \$22,000 for Victorian taxpayers, in return for the logging of our publicly-owned native forests. The \$3.3 million grant is due to expire this year, and should most certainly not be renewed to prop up the logging industry in the region. For further discussion see our recent article [The wicked regional forest agreement of the west](#).

Regional Forest Agreements are regulatory relics. They allow unjustified special treatment for the native forest logging industry while other Victorian industries have to follow the law. The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the main piece of federal environmental legislation, yet the *Regional Forest Agreements Act 2002* provides that RFAs, and by extension the native forest industry, are exempt from the EPBC Act.

RFAs are also clearly out of date in their consideration of conservation issues. They have continued to allow logging to occur in high conservation value forest habitats despite, for example, Mountain Ash forest (one of the key target species for logging) being listed in 2015 as critically endangered on the International Union for the Conservation of Nature (IUCN) Red List of Ecosystems. Leadbeater's Possum were also up-listed to critically endangered, and the Greater Glider was added to federal and state threatened species lists.

While RFAs have been in effect in East Gippsland, populations of the Greater Glider have declined by 50 per cent in the region – and that was before last summer's wildfires burnt through 32% (21% at high severity) of modelled Greater Glider habitat in

Victoria.¹⁹ According to analyses by WWF Australia, more than 840,000ha of native forest is approved for logging in Victoria and 73 per cent of that area is likely to be Greater Glider habitat – and that’s just in areas that are mapped properly.²⁰



Greater Glider, O’Shannassy Water Catchment. Photo: Vic Willms

RFAs also fail to consider predicted changes in climatic conditions. For example the Victorian Environmental Assessment Council Fibre and Wood Supply Assessment 2017 Consultants’ report²¹ warned that the total area suitable for regeneration of mountain ash could decrease by up to 80% under a 3°C climate change scenario by 2080. If this were to come to fruition it could have huge biodiversity impacts.

RFAs also fail to consider the successive or cumulative impacts of logging and bushfires, even though there have been extensive fires in the last 10 years. Our 2018 submission on Regional Forest Agreements (accessible [here](#)) stated the following:

“Estimates from DELWP show that at least 40 – 60% of state forest has, since 1960, already been logged or burnt or is proposed to be logged in the next few years. Assuming that many of the easier and non-constrained areas of forest have been logged first, there is limited resource left, particularly if future fires are taken into account. There is no clear provision in the RFAs to consider the impacts or cumulative implications of these scales and rates of fire plus logging.”

¹⁹ <https://www.wildlife.vic.gov.au/home/biodiversity-bushfire-response-and-recovery>

²⁰ <https://www.wwf.org.au/news/news/2020/destruction-of-greater-glider-habitat-jumped-by-52-after-vulnerable-listing>

²¹ <http://www.veac.vic.gov.au/documents/Fibre-and-Wood-Supply-Assessment-Report.pdf>

By 2020 this has indeed turned out to be the case. The megafires in East Gippsland burnt through approximately 1.5 million hectares including nearly half of the forest areas marked for logging.

Critically, Regional Forest Agreements also ignore the impacts that logging itself has on fire regimes. Forest ecologists are advising policy makers to recognize that the historical and contemporary logging of forests in Australia has had profound effects on fire frequency and the severity of the 2019/2020 fires.

In an article recently published by *Nature Ecology and Evolution*, Lindenmayer et al (2020)²² contend that logging regimes have not only significantly impacted on biodiversity and threatened species but have made many Australian forests more fire prone and have contributed to increased fire severity and flammability. They explain that ecological impacts of logging include changes in forest composition and structure, such as the creation of extensive, dense stands of young trees with a scarcity of elements such as tree ferns and rainforest plants, which in turn can influence fire dynamics and the spread of wildfire. They point out that fires have spread from logged areas and burnt into adjacent old growth eucalypts and rainforests dominated by ancient Gondwanan lineages. “The former have either never burned since establishment or are subject to extremely rare fires (for example, every 300–500 years), and the latter have never burned, with fire only at the rainforest edges at intervals of ~1,000 years.”

Another issue of concern is the post-fire salvage logging of dead and living burnt trees. This directly impacts on forests during the critical recovery stage of the vegetation. Salvage logging is a threat to biodiversity and also potential factor in future wildfire risk. Research in the Mountain Ash forests of south-eastern Australia has found that salvage logging results in an overall loss of species richness, including a disproportionate loss of ferns and midstory trees and in increase in the abundance of bracken and shrubs.²³ Such research must be considered by governments and logging industries when planning for conservation, forest management and fire management.

RFAs also fail to account for non-wood forest values such as water, ecosystem services, recreation and tourism that are [contributing significant sums to the state's economy](#), and could contribute further. The method of harvesting native forest, that is, clear fell logging, has not changed significantly in 30 years and has a dramatic impact on native habitats and drinking water production.

²² Lindenmayer, D. B., Kooyman, R. M., Taylor, C., Ward, M. and Watson, J. E. M. Recent Australian wildfires made worse by logging and associated forest management. *Nature Ecology & Evolution* (2020). <https://doi.org/10.1038/s41559-020-1195-5>

²³ Blair, D. P., McBurney, L. M., Blanchard, W., Banks, S. C. & Lindenmayer, D. B. Disturbance gradient shows logging affects plant functional groups more than fire. *Ecological Applications* 26, 2280–2301 (2016).

In May 2020, the federal court ruled that VicForests had breached national environmental protection laws when it logged the habitat of Leadbeater's Possums and Greater Gliders. VicForests has not been complying with the Code of Practice for Timber Production 2014 in respect of threatened species, particularly in applying the precautionary principle, and as a result has not been acting in accordance with their Regional Forest Agreement.

Native forest logging in Victoria is a blatant ecosystem threatening process that is historically responsible for, and continues to be responsible for, the degradation of many forest ecosystems in our state. Many of the RFAs' standards for the protection of ecosystems fall below international and national benchmarks. For example, elements of the JANIS criteria embedded in the RFAs are inconsistent with the National Reserve System (NRS) Strategy adopted by all Australian Governments in 2009, and the Convention on Biological Diversity (CBD) Aichi Biodiversity Targets (specifically Target 11), adopted in 2010. For further discussion of JANIS criteria see our submission on RFA's [here](#).

The amount of saw timber used in construction has dropped dramatically and supply is shaky, to the point that the Victorian Government bought out the main native hardwood sawmill in 2017 (more [here](#)). The unsustainable, unprofitable and ecologically damaging public native forest logging industry in Victoria is on its way out and taxpayers should not have to foot the bill of propping it up. The planned transition to a plantation only timber industry needs to be brought forward from 2030 to as soon as possible.

g) Unsustainable hunting of native wildlife

In 1939 the last member of one of Australia's most graceful native animals, the Toolache Wallaby, died in captivity in Robe, South Australia. The Toolache Wallaby was once common across south-eastern South Australia and south-western Victoria, but destruction of its habitat and hunting for its beautiful fur ultimately resulted in its extinction. While the deliberate hunting and killing of native wildlife is usually considered a 19th and 20th century issue, there are still some significant concerns in the present day. There are still regular cases of blatant disregard for native wildlife, and this is made worse by weak regulations and penalties. In instances where hunting of native wildlife is lawful, such as when farmers are issued a permit to shoot kangaroos, or when governments declare open season on native ducks, there is limited data on how



Toolache Wallaby, illustrated by Henry Richter in John Gould's *Mammals of Australia* (1863)

often cases of mistaken identity or deliberate acts of carelessness and cruelty result in the shooting of wallabies, native birds and other native animals.

The Victorian government supports the hunting of our wild native ducks for recreation despite the pressure it puts on our duck populations and despite the practice being banned in Queensland, New South Wales and Western Australia. Data last year indicated that Victoria's duck populations are dangerously stressed and at critically low levels. In response, the state government shortened the 2019 season and halved the bag limit. One would think that the 2020 duck hunting season would have been called off in the aftermath of a devastating summer bushfire season with severe losses of wildlife and habitat destruction. But much to the disappointment of citizens and government backbenchers, the Victorian government announced that yet another shortened season would go ahead.

Recreational fishing has been perceived to have low ecological impact due to its dispersed effort and generally simple equipment. However, significant population growth and demographic changes have increased pressures, particularly around the coast of Port Phillip Bay. The Victorian Fisheries Authority's aim through the Government's *Target One Million* program has, as its name suggests, been to get more people fishing more often. Combined with the inherent difficulty of managing the large number of diverse and disparate individuals comprising a recreational fishery, this means that monitoring and management can be challenging.

The ban on commercial fishing in Port Phillip Bay and other bays such as Westernport was not driven by environmental or fishing sustainability concerns, but rather perceived competition between commercial and recreational fishing interests. The removal of commercial fishing nets from Port Phillip Bay by 2022 is on track. There has been a reduction of 34 licences over a four year period and this leaves nine commercial fishers in the bay.²⁴ With the removal of the commercial nets, the Victorian Fishing Authority reported that there is now an additional approximately 350 tonnes of popular angling species, including King George whiting, snapper, calamari, bream and flathead, available for recreational fishers across the Bay. This represents an approximate 76 percent reduction in commercial catch of the key fish species in the Bay.²⁴

Our report "*The State of Recreational Fishing in Victoria*" which was prepared by two independent marine scientists (accessible [here](#)) identified knowledge gaps and provided proposals for improving the management of recreational fishing in Victoria. The report discussed that Fisheries Victoria (now the Victorian Fisheries Authority) employed an integrated stock assessment approach in its fisheries management, making use of multiple indicators of stock health from the state's recreational and commercial

²⁴ <https://vfa.vic.gov.au/about/planning-and-reporting/annual-report>

fisheries, along with independent fisheries surveys. The general approach was based on the ecosystem risk assessment model but there was no policy framework in Victoria to follow up important uncovered risks. Furthermore, some ecological effects, such as trophic impacts, are very poorly understood or not incorporated into risk-management frameworks. As such, they may limit the effectiveness of risk-based management systems in addressing the ecosystem-level set of ecological functions of target species. The lack of ecosystem monitoring is a key knowledge gap in Victoria's fisheries management.

Victoria has many fisheries in which productivity is limited by the environment and available habitat. As such, identifying, managing and conserving important fish habitats are important next steps. A general increase in research support, development of harvest strategies, more focus on ecosystem impacts of recreational fishing, and the development of programs to identify and protect fish habitat, are key recommendations for developing comprehensive and effective recreational fishing stock assessment and management. For further discussion and recommendations, including recommendations pertaining to popular fish species see our "*The State of Recreational Fishing in Victoria*" report [here](#).

Another recent wildlife issue in Victoria is the shocking deliberate mass poisonings of Wedge-tailed Eagles. As an example of the weakness of native wildlife protection legislation, in 2018 an East Gippsland farmer was jailed for just 2 weeks for poisoning over 400 Wedge-tailed Eagles marking the first time in the 45 year history of the *Wildlife Act 1975* that someone was jailed for breaches of the act. Furthermore, in October 2019 up to 200 Wedge-tailed Eagle carcasses were found on a property in Violet Town near Shepparton. Other dead native birds were also found on the property including kites, hawks, falcons, a cockatoo and a kookaburra. The incidents have prompted a review of the *Wildlife Act 1975* including the penalties under the act.

h) Urban population growth

Victoria's human population is growing and urban expansion is resulting in precious habitat remnants being bulldozed and paved for urban dwellings, roads and other infrastructure. In addition, urban expansion is eating into our arable land and our growing population increases demand for natural resources such as water, firewood and timber. (see section on Grasslands for example).

Increased travel and trade increases the chance of invasive species introductions and drives biosecurity threats to ecosystems and agriculture. There are also direct impacts on wildlife – more cars and trucks on the road mean more collisions with wildlife. Pet cats also take a significant toll on wildlife in and around urban areas, and stray cats can easily add to the pool of feral pests in our natural areas. Increased pressures from various forms of recreation such as tourism, fishing, hunting and four-wheel driving can

also take their toll on nature if they're not adequately monitored and managed. At the same time, a more sedentary and indoor lifestyle is increasingly severing many Victorians from nature, undermining health and wellbeing as well as support for conservation.

There is a significant shortage of national parks and reserves with in a short drive of Melbourne. In contrast, the protected area network surrounding Sydney consists of eight national parks and reserves in two connecting blocks that are separated by a transportation and urban development corridor. Collectively, they cover 1 million hectares of land. This far exceeds the formal national and state park network surrounding Melbourne, which is less than 185,000 hectares.

This highlights the need for good conservation and recreational planning for an increasing urban population. Gaps in the national parks estate close to Melbourne include the proposal for the Great Forest National Park in the Yarra Ranges and the proposed parks in Central West Victoria, most of which are within a 90 minute drive of Melbourne.

A declaration of the Great Forest National Park would secure the long-term protection of towering Mountain Ash Forests, an array of rare forest animals, and Melbourne's world-renown drinking water catchments. See <https://vnpa.org.au/future-parks/great-forest-national-park/> and our [Great Forest National Park summary report](#).

Victoria is the most densely populated state in Australia. According to the Australian Bureau of Statistics, in September 2019 Victoria had a population of 6.63 million people and a population growth rate of 2.0% per annum – the highest growth rate in Australia.

Most of this growth is due to immigration – 62.5% of Australia's population growth is from net overseas migration. Victoria has no population plan. While there is not necessarily a straight line between population growth and destruction of natural areas, urban sprawl is certainly a threat to nature, especially ecosystems such as grassland close to the urban fringe. <https://vnpa.org.au/urban-sprawl/>

In 2011 the Victorian Environmental Assessment Council released a report on their *Metropolitan Melbourne Investigation*²⁵ which identified and assessed the uses, resources, condition, values and management of Crown land, and public authority land in metropolitan Melbourne.

The report outlined a number of recommendations for enhancing the contribution of public land to Melbourne's liveability and natural and cultural values, however these

²⁵ <http://www.veac.vic.gov.au/investigation/metropolitan-melbourne-investigation/reports>

recommendations have largely remained ignored. Some of the recommendations included:

- additional protection for Crown land with remnant native vegetation through reservation
- conserve and protect biodiversity whilst providing for informal recreation for large numbers of people associated with enjoyment of natural or semi natural surroundings or open space
- local biodiversity action programs
- the next Victorian Coastal Strategy to consider the implications of sea level rise and inundation for Crown land foreshores
- update the public open space data for public land and land owned by local councils at least every five years and use the data to inform the Government's proposed metropolitan strategy for Melbourne
- preparation of a metropolitan open space policy and strategy that provides a long-term plan for public open space in metropolitan Melbourne

The report also acknowledged the importance of Melbourne's waterways for biodiversity protection in an urban landscape:

"The importance of waterways across Melbourne for biodiversity and recreational linkages has long been recognised. These values should be retained in the long term. While the areas may not be primarily reserved for nature conservation, they nonetheless retain natural values and make an important contribution to the biodiversity of Melbourne. These areas can be the most biodiverse, biologically productive and ecologically resilient parts of the landscape."

Protection of nature in urban areas is often presented as a conflict. But even seemingly untidy ecosystems like grasslands can be designed and managed to protect conservation value and provide open space or nature based experience close to home in urban areas.

In 2013 the VNPA worked with the Australian Institute of Landscape Architects (AILA) and landscape architect and editor Adrian Marshall to produce the guide "Start with the grasslands: Design guidelines to support native grasslands in urban areas". The guide is the culmination of more than two years of research and is a resource for anyone interested in conserving and managing grasslands but particularly useful for those planning new urban areas, including state and local government planners, planning consultants and landscape architects. See: [Start with the grasslands](#)

There is no clear current cohesive state-wide or even metropolitan plan for parks and natural open space in metropolitan Melbourne. A useful model is the ANGSt project from the UK. To encourage the provision of natural places close to where people live, Natural England has promoted an Accessible Natural Greenspace Standard (ANGSt). The ANGSt was developed by considering the relationship between the size of natural

spaces capable of sustaining habitats and species and the distances that people were prepared to travel to experience nature, factoring in the distance parents were prepared to allow children to roam freely. While such standards would need to be restructured or reviewed to fit Australian/Victorian conditions, they could potentially be an important driver for provision and communication.

UK Accessible Natural Greenspace Standard

Everyone, wherever they live, should have accessible natural greenspace of at least:

- 2 hectares within 300 metres (5 minute walk) from home
- 20 hectares within 2 kilometres of home
- 100 hectares within 5 kilometres of home
- 500 hectares within 10 kilometres of home
- 1 hectare of Local Nature Reserve per 1000 population

See more detail here: [VNPA draft biodiversity strategy 2036](#)

Protecting nature is not just good for nature; it's also good for people. Our forests provide clean water for our reservoirs, our rivers and streams take away stormwater, and our bays supply seafood as well as countless recreational opportunities. Importantly, parks provide for recreation and quiet enjoyment – an opportunity for respite from the urban jungle, within easy reach of the urban dweller.

Consideration should be given to development of a plan, which could be called something like “A NATURAL MELBOURNE: a Vision for a Naturally Marvelous Melbourne”. The plan would include four key elements:

1. A green edge for Melbourne – creation of a network of national parks and protected areas in high conservation value areas around greater Melbourne.
2. Blue wedges protected – better management and protection of our beautiful bays, Port Phillip Bay and Westernport Bay.
3. Urban nature space networks – planning and creation of a network for retaining native habitat and open space in Melbourne's growth areas.
4. Green wedges maintained and enhanced – strengthen the natural character of green wedges and develop strict controls for protection of high conservation value areas.

i) Land-use intensification

A discussion on land-use intensification will be included as part of our final submission.