



Birdwood Avenue  
Melbourne Victoria 3004  
Private Bag 2000  
South Yarra Victoria 3141  
Australia  
DX212587  
T +61 3 9252 2300  
F +61 3 9252 2442  
E [rbg@rbg.vic.gov.au](mailto:rbg@rbg.vic.gov.au)  
[rbg.vic.gov.au](http://rbg.vic.gov.au)

Royal Botanic  
Gardens Board  
ABN 36 600 553 934

**31 August 2020**

## **Submission to the Parliamentary Enquiry into Ecological Decline in Victoria Royal Botanic Gardens Victoria**

### **Author background**

Royal Botanic Gardens Victoria is a statutory authority established under the *Royal Botanic Gardens Act 1991*. We manage two botanic gardens sites at Melbourne and Cranbourne and are responsible for the oversight and management of the state's irreplaceable \$252 million State Botanical Collection, ongoing research in plant biodiversity and conservation, and the agency with state responsibility for protection and development of the Victorian Conservation Seedbank.

The State Botanical Collection is the ark for Victoria's flora, containing plant knowledge and records dating back to the 1600s including specimens collected by Ferdinand von Mueller (the state's first Chief Botanist), Joseph Banks at Botany Bay, Charles Darwin and many more.

The Victorian Conservation Seedbank is an insurance policy against extinction and currently contains about 50% of Victoria's rare and threatened flora. Material in the Seedbank is used to generate knowledge about plant requirements and as a source material for reintroduction programs for threatened plant species. Research capability within the National Herbarium of Victoria documents and conserves plant biodiversity across Victoria and disseminates this information to the general public and scientific community through digital and mobile platforms such as VicFlora<sup>1</sup> and HortFlora<sup>2</sup>.

Our site at Cranbourne Gardens is 380 hectares of remnant vegetation and home to 25 rare and threatened plant and animal species including the Southern Brown Bandicoot. Our Native Orchid Conservation program and research group is based at Cranbourne, and the team there recently discovered, painstakingly propagated and re-planted a native orchid that was thought to have been extinct for over 90 years. Research capability at Cranbourne seeks to understand the biology of threatened flora and the conditions required for successful re-introduction in the wild.

---

<sup>1</sup> VicFlora 2020. <https://vicflora.rbg.vic.gov.au/flora/> (accessed 25/8/2020)

<sup>2</sup> HortFlora 2020. <https://hortflora.rbg.vic.gov.au/> (Accessed 25/8/2020)

All horticultural and scientific activity at the Gardens is supported by a strong Engagement program, providing nature-based experiences to deepen Victorians' engagement with nature and serve to develop an understanding of their role in safeguarding and acting for the natural world.

We support the Department of Environment, Land, Water and Planning in delivering upon the goals and objectives of *Protecting Victoria's Environment – Biodiversity 2037*<sup>3</sup> plan through our activities within the lands and research facilities managed by the Gardens and also in collaboration with other agencies, universities, local government authorities and industries across Victoria.

We welcome the opportunity to provide input to the Parliament's Inquiry into ecological decline in our state.



Professor Tim Entwisle  
Director and Chief Executive

---

<sup>3</sup> Department of Environment Land Water and Planning 2017. *Protecting Victoria's Environment – Biodiversity 2037*. Department of Environment, Land, Water and Planning, Victorian Government

## Submission to the Parliamentary Enquiry into Ecosystem Decline in Victoria Royal Botanic Gardens Victoria

### Preamble

Prior to European settlement, First Peoples managed the natural environment and developed a strong Connection with Country. Over the last 200 years, Australian ecosystems have been dramatically altered through extensive land clearing – Victoria is the most cleared state in the country – urbanisation, farming and the spread of pest animals and non-indigenous plant species. These have all altered the environment and impacted adversely upon the state's biodiversity.

Yet Victoria is well endowed with natural resources: the Grampians, Twelve Apostles, Otway Ranges, Central Highlands, Alps, Phillip Island, Wilsons Promontory, Royal Botanic Gardens and regional botanic gardens are just a few of the places that contain important ecosystems and diversity. Importantly these natural assets provide a significant economic benefit to the state through eco-tourism, employment and engagement. For example, it is estimated the Parks Victoria Estate contributes \$1.4 billion to the Victorian economy annually<sup>4</sup> and a BIS Oxford economic analysis at Royal Botanic Gardens Victoria calculated a \$4.40 investment return to the state for every dollar invested in the Gardens<sup>5</sup>. Halting ecosystem decline and building on this natural capital not only benefits the environment but also the social, health, educational and economic well-being of our state.

### **(a) The extent of the decline of Victoria's biodiversity and the likely impact on people and ecosystems**

Globally we are facing an extinction crisis, with over 1 million species on the brink of extinction today. The current extinction rate is 100 to 1000 times higher than the historic background rate, making this the first mass extinction since humans have been on Earth. We do not know what the impacts will be to people and the planet.

The factors driving these extinctions include land use changes and invasive species (plants and animals)<sup>6</sup>. Victoria is not immune to this trend with extinction of at least 51 species of plants and some ecosystems having experienced greater than 90% loss (for example, the Victorian Plain Temperate grasslands).

The extent of decline is continuing with the major threats being **further land clearing** - although rates have slowed, losses continue<sup>7</sup> - **impact and migration of feral animals** and

---

<sup>4</sup> Parks Victoria and DELWP 2015. *Valuing Victoria's Parks – Accounting for ecosystems and valuing their benefits: Report of first phase findings*. Parks Victoria and Department of Environment, Land, Water and Planning, Victorian Government

<sup>5</sup> BIS Oxford Economics 2017. *Investment in Royal Botanic Gardens Victoria: An economic analysis*. BIS Oxford Economics, Melbourne

<sup>6</sup> IPBES 2019. *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, United Nations Environment Programme, Bonn, Germany

<sup>7</sup> VEAC 2017. *Statewide Assessment of Public Land Final Report*. Victorian Environmental Assessment Council <http://veac.vic.gov.au/documents/Final%20report.pdf> (accessed 25/8/2020)

**foreign weed incursions.** However, it is looming threats that are not fully understood that will challenge us, and Victoria's ability to respond in a timely manner is crucial. For example, the intensification of agricultural processes is leading to the loss of insects in other parts of the world. These are important at the base of the ecosystem and have consequences all the way up the food chain impacting biodiversity and ecosystem function.

**The three most important actions to have the greatest impact upon halting decline are as follows:**

1. Reverse the loss of vegetation through clearing, with reconnection of patches of vegetation across the landscape;
2. Control and reduce in weed load and pest/feral animals across the landscape;
3. Invest in behavioural change models and social marketing campaigns to modify behaviours and attitudes so that Victorians value and act for their fragile and unique ecosystems (*Goal 1. Biodiversity 2037 - Victorians value and act for nature*<sup>8</sup>)

**(b) The adequacy of the legislative framework protecting Victoria's environment**

The legislative environment protecting Victoria's environment is complex, with at least twenty pieces of legislation interacting in varied and often unanticipated ways to protect the environment. This makes it difficult to develop effective policy levers that deliver on protecting Victoria's environment.

In recent years, significant reform has taken place such as the revised *Flora and Fauna Guarantee Act*. This Act was pioneering at the time it was introduced but 'lacked teeth' in terms of compliance, relying on other legislation (both state and Commonwealth) to provide a compliance framework. The revised Act is better but it is still too early to understand if it will be effective in halting future decline and whether compliance activities penalties can be applied.

A critical flaw in the current legislative framework is that *biodiversity and ecosystem protection is often the last part of the planning process*. Furthermore, the environment is generally undervalued and so any cost-benefit analysis is often biased towards direct economic gain. Bringing the environment to the front of planning processes and recognising the benefits that biodiversity and natural ecosystems provide is crucial if we want to reverse ecosystem decline.

Approaches such as penalties for failing to refer projects, making binding recommendations for the protection of biodiversity in EES, and mandatory requirements for all projects to *avoid impacts rather than offset impacts* are required urgently. As is now well understood through the iterative global debate regarding climate change, offsetting can lead to the view that destruction of the environment is simply a cost of doing business.

There is also a strong legislative divide between Public and Private Land that is highly problematic. Not all Public Land is captured under current legislation, therefore renewal of public land legislation would provide the opportunity to wrap all Public Land under the one

---

<sup>8</sup> Op cit.

regulatory regime. A number of pieces of legislation that set out to protect Victoria's biodiversity and ecosystems do not apply on Private Land. Yet clearly biodiversity is 'tenure blind'. Providing alternative incentives for landowners to protect biodiversity 'close to home and in their own backyard' must be considered further. There is an important role for state agencies in communicating simple messages about the need to conserve biodiversity on all tenures of land.

### **(c) The adequacy and effectiveness of government programs and funding protecting and restoring Victoria's biodiversity**

The magnitude of the challenge for the environment is greater than the funding available. However, historical under-investment in the environment overall has led to significant and long-term degradation for Victoria's biodiversity programs, policies and protections.

The *Victorians Value Nature Survey* in 2019 underscored that when Victorians *value* nature they are more likely to "*act for nature*".<sup>9</sup> Therefore, it is timely to consider how social marketing and behavioural modification approaches such as those used in the health sector - to, for example, reduce smoking or alcohol consumption - might be adapted to the environment to modify behaviours toward nature. For example, we might encourage gardens for wildlife and the planting of native rather than introduced grasses. Simple initiatives such as this require a reasonable level of investment, but nothing compared to the impact of a complete loss of our state's greatest, most treasured assets: our flora, fauna and landscapes.

Alternative funding models for the conservation of biodiversity are needed, and needed urgently. These should address all the threats to our environment, from on-ground action to programs designed to change behaviours.

### **Summary**

Despite current efforts, Victorian ecosystems continue to decline at an unprecedented rate. The legacy of 200 years of European impact upon the land is of great concern to those organisations, scientists and individuals charged with protecting it. To reverse this decline, we need new ways of thinking and new models of investment, as well as new tactics and strategies in terms of land management.

Through directed and planned investment to support a societal shift in attitudes and behaviours to maintain and develop Victoria's celebrated biodiversity, we may one day come to see *all* Victorians connected with nature in a way that demonstrates stewardship and action.

---

<sup>9</sup> Department of Environment Land Water and Planning 2019. *Victorians Value Nature Survey*. Behaviourworks, Monash University and Department of Environment, Land, Water and Planning, Victorian Government  
*Royal Botanic Gardens Victoria*  
*Submission to the Parliamentary Inquiry into Ecosystem Decline in Victoria*  
*August 2020*