



Inquiry into Ecosystem Decline in Victoria

Submission by Macedon Ranges Shire Council

Introduction

Thank you for the opportunity to provide a submission into ecosystem decline in Victoria. Council welcomes this much needed inquiry and hopes that it leads to the changes required to halt further loss of species and environmental values.

We would like to address the following terms of reference in this submission:

1. *The extent of the decline of Victoria's biodiversity and the likely impact on people and ecosystems.*
2. *The adequacy of the legislative framework protecting Victoria's environment and ecosystems, particularly in the context of climate change impacts.*
3. *The adequacy and effectiveness of government programs.*
4. *Opportunities to restore the environment while upholding First Peoples' connection to country.*

Council's submission can be summarised as follows:

1. **Local government plays an important role in supporting ecosystem rehabilitation** – Local government manages large public reserves with significant conservation values as well as roadside vegetation which plays a critical role in supporting habitat connectivity. Local government also has the ability to influence conservation outcomes on private land through implementation of planning regulations, provision of advice to landowners, delivery of citizen science programs and support for community groups and community led action. The role of local government should be recognised and reflected in the design of government programs.
2. **The extent of ecosystem decline is severe and ongoing** - Macedon Ranges has experienced significant species decline as the result of the fragmentation of habitat associated with land clearance and past logging of native forests. This decline will continue as land is further fragmented by subdivision and development and remnant patches of native vegetation are degraded by threatening processes such as domestic uses, lack of weed and pest animal management, inappropriate fuel reduction works, and overgrazing.
3. **The public reserve system needs to be expanded and appropriately funded** – Public conservation reserves provide the main refugia for flora and fauna species. Expanding the public reserve network, managing recreation uses that negatively impact environmental values, and appropriately funding conservation management within public agencies such as DELWP and Parks Victoria will help enhance ecosystem resilience. This includes implementing the recommendations of the VEAC Central West Investigation, supporting the rehabilitation of important habitat links such as the Department of Education pine plantations, and assisting with the permanent protection and public acquisition of historic inappropriate subdivisions such as Barrm Birrm / the Shone and Shultz subdivision in Riddells Creek.
4. **Resources are required for conservation on private land** – Approximately 87% of the Macedon Ranges comprises private land. This means that private land owners play a critical role in protecting and enhancing local ecosystems. Additional resources for protective covenants, including through Trust for Nature, would enable more land holders to set aside high

value remnant native vegetation for conservation. In addition, expanding farm advisory services and exploring biodiversity incentive programs through state government agencies and / or local government would enable greater take up of regenerative agriculture and other holistic farming practices that support biodiversity, restore ecosystems and enhance on-farm productivity.

- 5. Strong planning regulations need to be maintained and supported with resources for compliance** - Current state-wide planning regulations generally provide an adequate balance between protection of ecosystems and enabling development. Any weakening of current provisions should be avoided. Additional resources are required to support enforcement of native vegetation regulations as well as harsher penalties for non-compliance.
- 6. Legislative changes and coordinated cross tenure projects are required to reduce the impact of wild Deer, Goats and Pigs** – Wild Deer, Goats and Pigs are having a significant impact on conservation values on public and private land. Declaring Deer a “pest” species under the *Catchment and Land Protection Act 1994*, removing them from the list of protected “game” under the *Wildlife Act 1975* and finalising the Victorian Deer Management Strategy will establish the necessary pre-conditions to tackle this pest species. Well-resourced state-led control programs will enable coordination across land tenures and government jurisdictions.
- 7. Restoration projects need to be long term, at a landscape scale and informed by on-ground knowledge** – Funding for restoration works should enable long term, cross-tenure, landscape scale projects to be delivered. This means providing funds for planning and implementation over 5 to 10 years, rather than 1 to 3 years as per current programs. These programs should be informed by on-ground knowledge of threats and opportunities with less reliance on modelled data which often does not align to high priority areas for restoration.
- 8. Reduce the burden on volunteers** – Volunteers play an important role in advocating for conservation outcomes, raising awareness in the community and delivering on-ground works in local areas. While their contribution cannot be under-estimated, managing ecological restoration projects can place a significant burden on community groups and their volunteers. Instead, funding models should ensure large scale restoration projects are delivered by organisations with appropriate resources to ensure coordination across partners and the landscape, while still providing opportunities for community groups to access funding for local projects and to partner in larger programs. This includes expanding funding opportunities to government agencies and local government.
- 9. Additional core funding is required for Traditional Owner groups** – Traditional Owner groups play an essential role in supporting ecological restoration. However, their ability to influence outcomes on country is currently limited by their resources. Increasing core funding for Traditional Owner groups will enable groups to better meet the demand for their on-ground and cultural heritage services. State-wide cultural awareness training across state government departments and agencies, local government and community groups will also identify ways project timelines and funding could be augmented to better support Traditional Owner involvement.
- 10. Fill the funding gap for pro-active Aboriginal heritage assessments and engagement** – Whilst funding exists for European cultural heritage assessments and restoration works through Heritage Victoria, no similar funding is available for proactive assessments of Aboriginal heritage. This is large gap in current government programs.

1. The extent of the decline of Victoria's biodiversity and the likely impact on people and ecosystems

Council profile

The Macedon Ranges Shire is located in central Victoria with major townships including Kyneton, Romsey, Gisborne, and Woodend. The Shire is a popular place to live and visit. The current population of 50,231 is projected to increase to 65,405 by 2036.

The biodiversity found in the Macedon Ranges Shire is unique and highly significant. The varying topography, range of altitudes and localised climatic patterns results in many diverse ecosystems hosting a wide range of native plants and animals. However, what is present in the shire today is only a fraction of what once existed. Today, the Macedon Ranges has two vegetation communities and 18 species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* and 24 species listed as endangered or critically endangered under the Victorian *Flora and Fauna Guarantee Act 1988 (FFG Act)*.

Macedon Ranges Shire Council is committed to conserving and enhancing biodiversity. Protecting the natural environment is a key theme of the Council Plan, with the commitment to “*protect our natural environment through proactive environmental planning, advocacy and policy to address climate change, support biodiversity, enhance water catchment quality, and manage waste as a resource*”. Biodiversity is considered essential to the economy, health and wellbeing of our communities and rural industries.

Extent of decline

Local extinctions – Numerous native animals are now considered locally extinct from the Macedon Ranges including:

- Eastern Quoll (last record in the late 1800s)
- Lyre Bird (last recorded in the 1800s)
- Southern Brown Bandicoot (last record in 1968)
- Long-nosed Bandicoot (last record in the 1990s)
- Leadbeater's Possum (last record in 1995)
- Greater Glider (while known to occur nearby in the Wombat State Forest, Greater Glider were last officially recorded on Mount Macedon in 1987)

Greater Glider now locally extinct

Greater Glider were likely to have been wide spread across the Great Divide from Woodend across Mount Macedon and north over the Cobaw Ranges. Loss and fragmentation of habitat across the shire resulted in the isolation of Greater Glider populations in small patches. Due to their low mobility and specialised diet, their populations dwindled and slowly died out. The last official record in the shire occurred in 1987 and the last unofficial sighting in the shire was at Hanging Rock in 2013. As no sightings have been made since then despite significant survey effort, it is assumed that Greater Glider are now locally extinct along the Macedon and Cobaw Ranges.

Local fauna in decline – Many fauna species found in the Macedon Ranges are now listed as threatened or endangered, including: Powerful Owl, Brush-tailed Phascogale, Brown Toadlet, and the Yarra Pygmy Perch. Iconic species which were once considered relatively common are seeing local declines including Platypus, Wombats and Koalas. According to Birdlife Australia, the chance of seeing a Kookaburra has halved since 1999.

Appendix 1 provides a detailed overview of fauna species at risk or considered locally extinct in the Macedon Ranges.

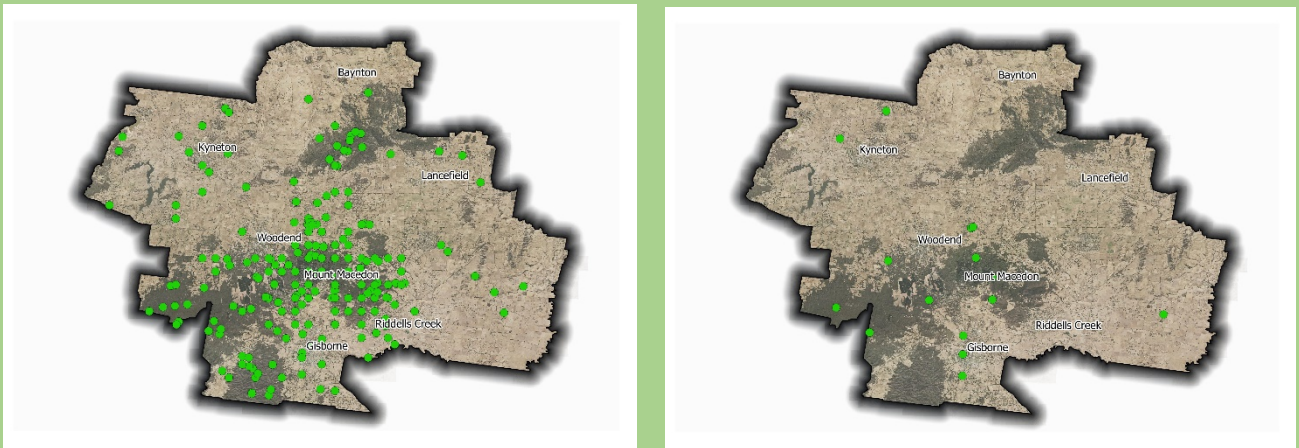
Local vegetation communities in decline – Nearly 80% of ecosystems in the Macedon Ranges are under threat. Of the 33 Ecological Vegetation Classes (EVCs) known in the shire:

- 13 are listed as “endangered” in Victoria (<10% of pre-settlement coverage)
- 9 are vulnerable (10-30% of pre-settlement coverage)
- 4 are depleted (30-50% of pre-settlement coverage)
- 6 of least concern (50% of pre-settlement coverage)

Local flora species in decline – Four flora species listed under the *FFG Act* have more than 20% of their Victorian range located in the shire; the Black Gum (*Eucalyptus aggregata*), Hairy leaf Triggerplant (*Stylidium armeria subsp pilosifolium*), Wombat Bush-pea (*Pultenaea reflexifolia*) and Swamp Bush Pea (*Pultenaea weindorferi*). Other plants of concern include the Matted Flax-Lily (*Dianella amoena*), Silver Banksia (*Banksia marginata*), Snow Gum (*Eucalyptus pauciflora*) and Yarra Gum (*Eucalyptus yarraensis*).

Decline of Koalas

The documented decline of common species provides a strong indication of what is happening in our ecosystems. In the Macedon Ranges, the Koala is a good example. In the 1960s there were many records of Koala across the shire. These records dropped by almost two thirds in the 2010s. This is demonstrated in the maps below which also show a significant retraction in their range. The cause of the decline can be attributed to habitat loss, fragmentation and urbanisation.



The maps above show all records of Koala’s in the Victorian Biodiversity Atlas (left) compared to records from the last 20 years (right).

Causes of ecosystem decline

Historical clearance – Past logging of native forests and land clearing for agriculture, roads and residential development has resulted in the loss and fragmentation of habitat. This has reduced food sources for wildlife and has impeded the ability of both flora and fauna species to reproduce and disperse.

Current clearance – Fragmentation and habitat loss continues as the result of rural subdivisions and expansion of urban areas.

Pest plants and animals – Pest plants continue to be a challenge for land managers by out-competing native species, thereby changing the habitat and food sources available. Pest animals such as rabbits, goats, pigs and deer can prevent natural regeneration and cause erosion. Predator species such as foxes and cats prey on native wildlife, reducing opportunities for breeding and dispersal.

“Tidying up” bush blocks – The legacy of historic rural subdivisions has resulted in residents living in highly vegetated areas. This places a conflict between domestic uses, fire risk management and protection of ecosystems. This manifests in fuel reduction around houses to create defensible space, as well as “tidying up” of bush-blocks through raking, removal of fallen logs and mowing of native understory. These activities reduce opportunities for natural regeneration and for fungi and micro-organisms to establish, impacting insect populations and soil moisture levels which increases fire risk and has flow on effects up the food chain.

Over-grazing and ploughing of native grasslands – Many native grasslands and grassy woodlands persist on private land. These vegetation communities are highly endangered with less than 1% of their distribution remaining. When planned appropriately, grazing can be a beneficial management tool for native grasslands, helping to reduce biomass and stimulate species diversity. When poorly planned and managed, grazing of native grasslands can lead to soil erosion and weed invasion. Removal of native grasslands through ploughing, tilling and rock removal is also a threat which is difficult to mitigate given that many farmers are often unaware of the natural values on their paddocks and farms. Finding a balance between facilitating farming and protecting threatened ecological communities is a key challenge for the future. *See the break-out box below for further details about the decline of grassy woodlands in the Macedon Ranges.*

A landscape previously dominated by Banksia and Sheoaks

Eucalypts were not always the dominant tree species in central Victoria. Ecologist Ian Lunt has described how Silver Banksia and Sheoaks were once the most abundant tree species which were an important food resource for a range of birds and mammals. Settlers removed these trees for farming and to 'beautify' the landscape. In doing so, they modified the area's ecological functions and the food web. Today, Silver Banksia and Sheoaks are rare in the Macedon Ranges.

Loss of hollows places small mammals at risk

Mammals below 5kg in weight have been shown to be at highest risk of extinction from habitat loss. A typical eucalypt of the Macedon Ranges, Messmate, has been shown to take 300 years to form a hollow that it usable for medium sized mammals. The loss of hollow bearing trees has been described as an international disaster for wildlife with urgent responses required to mitigate the losses in lieu of hollow formation.

Climate change – The Macedon Ranges Shire plays a significant role across the broader landscape in providing connectivity and climate refugia due to its cooler and wetter climate in higher elevations.

The threat of climate change to biodiversity cannot be underestimated. In the Macedon Ranges it is expected that climate change will result in more extreme events such as flooding and bushfires, alongside long term trends such as reduced rainfall and increased temperatures. Current threats to biodiversity, including the impact of habitat loss, weeds, pest animals and drought, are expected to intensify.

Ecosystems will be affected as a whole and individual species will be affected either directly or indirectly. Climate change will cause population and ecosystem decline, however it will also cause population changes. Some species may start using different environments such as townships more. Some species populations may expand, impacting on more vulnerable species.

Further declines in ecosystem health will lead to the inability of the natural environment to respond to the significant threats of climate change and provide the important roles of landscape functionality and carbon sequestration.

Inappropriate planned burning regimes - Fire is an important part of the environment. Native plants and animals have evolved to require specific fire regimes. However, planned burning regimes which are too frequent and / or too intense, can have an adverse effect on ecosystems and, in some cases, can increase fuel loads in the short term. Careful planning and ecological assessments are required prior to conducting planned burns to ensure these practices are not resulting in long term negative impacts to ecosystem health.

Impact of decline

Additional local extinctions – The current trajectory of ecosystem decline is likely to lead to additional local extinctions in the Macedon Ranges.

Appendix 1 provides an overview of the species which are most at risk in the Shire. The table lists current threats to these species, the community and ecological impact associated with their decline and opportunities to ensure their ongoing protection.

Ecosystem services – The Shire's agricultural industry is worth nearly \$200 million per annum. Biodiversity provides important ecosystem services to enable agriculture to thrive. This includes water purification, natural pest control, shelter for stock, productive soils, and goods such as honey, timber and pasture. Further declines in ecosystem health will ultimately lead to declines in agricultural production and the associated economic impacts.

The Decline of Snow Gums

Mount Macedon and Hanging Rock support small, but significant stands of Snow Gum (*Eucalyptus pauciflora*) which generally rely on cold conditions that occur above 700m in elevation. As the climate warms, the Mount Macedon's Snow Gums are likely to decline, potentially leading to the local extinction of this iconic local species as well as the Montane Grassy Woodland Ecological Vegetation Community which it is associated with.

Impacts of planned burning on Mount Macedon on Dusky Antechinus

The wet gullies of Mount Macedon have been subject to regular planned burning over the last 10+ years. This is likely to have impacted invertebrate populations which live beneath the bark of trees and which rely on healthy understory growth as well as decomposing leaves and logs. This explains the decline in sightings of Dusky Antechinus which live in wet gullies and which feed heavily on invertebrates. There has been only two sightings of Dusky Antechinus in the last 20 years on Mount Macedon, despite significant survey effort.

Health and Wellbeing – Spending time in nature has physical, psychological, cultural and social health and wellbeing benefits. In 2017, the Victorian Memorandum for Health and Nature stated that “a thriving natural environment not only conserves biological diversity but also sustains the health and wellbeing of people and communities.” Further declines in ecosystem health will lead to a decline in the health and wellbeing of our community.

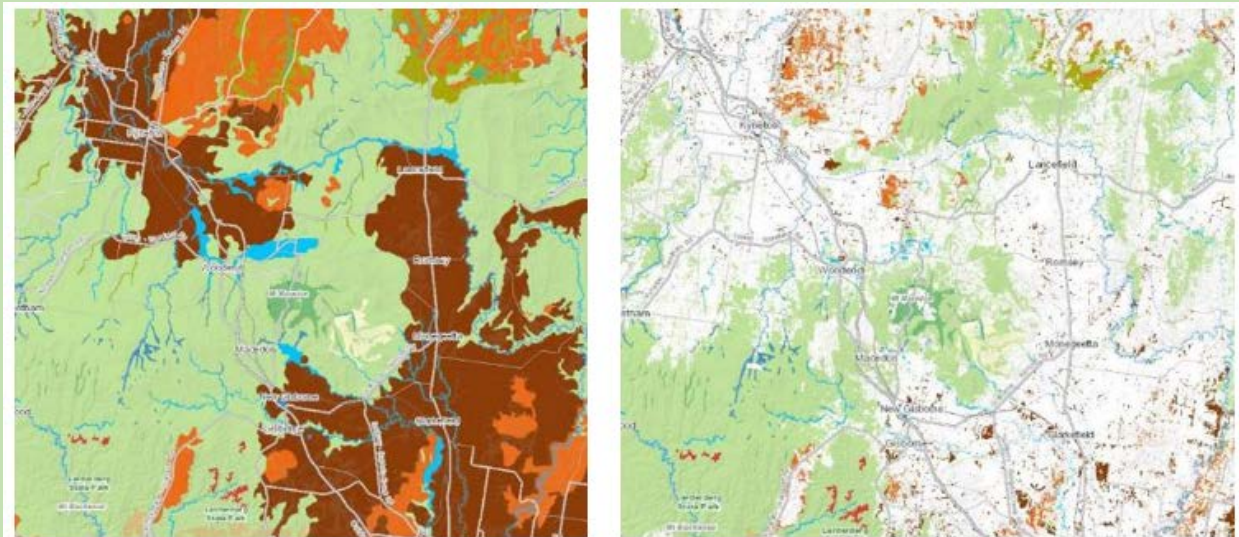
Tourism – The *Macedon Ranges Visitor Economy Future Directions Paper 2017 - 2027* notes “the outdoors” as a product pillar, and recognises the importance of outdoor based recreation and tourism as a key component to the economic and social sustainability of the shire. In particular, the shire’s public land and the biodiversity it supports is considered critical to the local visitor economy.

Decline of Grassy Woodlands of the Victorian Volcanic Plains

The ‘critically endangered’ EPBC listed Grassy Eucalypt Woodlands of the Victorian Volcanic Plains used to cover a large area of the shire from Clarkefield to Lancefield. This vegetation community also occurs in the Central Victorian Upland bioregion side of the shire from Woodend through to Malmsbury.

Grassy Woodlands can support highly threatened species such as the Growling Grass Frog, Golden Sun Moth and Striped Legless Lizard as well as a suite of herbs and rare orchids. While most of these threatened fauna species have not been sighted in the Macedon Ranges for many years, a number of threatened herbs and orchids can still be found in the shire.

The maps below show the Ecological Vegetation Classes within the shire and immediate surrounds for pre-1750 modelled extent (left) and in 2005 (right). These maps show a dramatic reduction in Plains Grassy Woodland (brown) and Grassy Woodland (orange) vegetation after European settlement.



Remnants predominately occur on private land and road and rail reserves. They are under considerable threat from clearance for residential development, over-grazing and weed invasion. Protection and enhancement of this threatened vegetation community could be facilitated by the following activities:

- Ensure remnant patches are retained and protected through the planning process.
- Raise awareness about the environmental values of Grassy Woodlands and appropriate management regimes including holistic grazing and cultural and ecological burns.
- Support farmers to transition to regenerative agriculture, perennial native cereal “crops” and native grassland seed production.

2. The adequacy of the legislative framework protecting Victoria's environment and ecosystems, in the context of climate change impacts

It is the experience of Macedon Ranges Shire Council that the current legislation and enforcement mechanisms intended to protect the environment and ecosystems are inadequate. We have considered state planning scheme provisions, native vegetation removal laws, the public reserve system, pest animal legislation and threatened species recovery in this response.

State Planning Provisions – Current state-wide planning regulations attempt to balance protection with development. Any weakening of current provisions should be avoided. To prevent further ecosystem decline, state planning provisions should, amongst other things, include additional focus on requirements for land management plans and protection of paddock trees, dead vegetation, exposed rock and fallen logs and leaf litter.

Planning compliance – Current resourcing for compliance at a state and local level is currently inadequate. Opportunities for improvement include:

- Increase penalties for illegal native vegetation removal to ensure there is an adequate disincentive for illegal vegetation removal.
- Increase resources to enable compliance activities. This includes resources at a state level, as well as state government funding for local government enforcement, particularly for regional councils which are resource-poor.
- Improved landholder awareness about the legal requirements associated with native vegetation clearing.

Public reserve system – The Macedon Ranges Shire is fortunate to have a number of large and popular reserves including Macedon Regional Park, Cobaw State Forest, Wombat State Forest, and the Lerderderg State Park (Pyrete Range). Current issues causing ecosystem decline in public reserves in the Shire include:

- Limited resources for active management – i.e. insufficient resources for DELWP and Parks Victoria's conservation functions.
- Inappropriate prescribed burns for some ecosystem types.
- Inappropriate recreational activities.
- Lack of enforcement to ensure compliance with allowable activities and adherence to conditions in leases and licences.
- Increases in pest animal species, especially wild Deer, Goats and Pigs.

Opportunities to improve the public reserve system in the Macedon Ranges include:

- Implement the recommendations of the recent **VEAC assessment** including the reclassification of part of the Wombat State Forest as a National Park and the Cobaw State Forest as a Conservation Park which will ensure the ongoing protection of these forests from timber harvesting and limit destructive uses in these important forests.
- Reconsider some of the **allowable uses** in the various parks and park classifications to ensure protection of conservation values and to minimise conflicts with recreation activities.
- **Increase resourcing for management** of all parks and reserves including significant pest plant and animal control programs on public land and enforcement and compliance.
- **Increase resources for community education** and publicly available information for visitors.

- Take a cautious approach to **controlled burns** taking into account community consultation, threatened species records, and appropriate ecological burning regimes.
- Establish **cross tenure programs** that help mitigate threats such as weeds and pest animals.
- **Rehabilitate the pine plantations** on Mount Macedon and on Department of Education land to locally native vegetation creating additional habitat and new opportunities for community education.

Legislated status of Deer – Deer have a significant impact on conservation values and have been listed as a potentially threatening process under the Flora and Fauna Guarantee Act 1988. The absence of a state-wide strategy and the limited resources available for Deer control has resulted in significant increases in Deer populations across peri-urban Melbourne, including in the Macedon Ranges. Declaring Deer a “pest” species under the Catchment and Land Protection Act 1994, removing them from the list of protected “game” under the Wildlife Act 1975 and finalising the Victorian Deer Management Strategy will establish the necessary pre-conditions to tackle this pest species.

Threatened Species Protection and Recovery – Threatened species recovery programs are ad hoc and are often dependant on community or individual interest. Under-investment in this area has resulted in the absence of Action Plans for many species and the inability to update old plans, many of which are outdated. This means that decisions about development and prescribed burning are not informed by appropriate threatened species data and strategic planning. In addition, local and state government agencies often have limited resources to ensure compliance with legislation.

Opportunities to improve threatened species protection and recovery include:

- Improve funding for the preparation and implementation of threatened species Action Plans required by the FFG Act.
- Increase resources to ensure compliance with the EPBC and FFG Acts.
- Improve monitoring of threatened species through awareness raising campaigns, land owner engagement programs and citizen science projects.
- Continue to raise community awareness of threatened species including the need to comply with FFG and EPBC approval processes.
- Review prescribed burns in high quality vegetation areas where threatened species occur.

3. The adequacy and effectiveness of government programs and funding

Council appreciates the various funding opportunities and support programs delivered by the state government. Feedback about some of these programs is provided below:

Existing programs

Roadside Weed and Pest Animal Program – Council currently receives approximately \$38,000 for weed control on Council managed roadsides through the State Government’s Roadside Weed and Pest Animal Program. While Council is very grateful for this contribution, Council manages approximately 1,700km of roads, many of which support high conservation values. As a result, the Roadside Weed and Pest Animal Program funds make up approximately 15% of Council’s overall spending on roadside weed control each year. Increasing the State Government allocation would enable additional funding from rate-payers to be allocated to other initiatives of benefit to the environment and / or community.

Biodiversity Response Planning – Council was involved in the State Government’s Biodiversity Response Planning process in 2018. The allocation of funds relied heavily on the Strategic Management Prospects modelling which, from Council’s experience, does not adequately identify the issues and opportunities applicable to local areas. The pool of funding available was also insufficient to enable a full suite of high priority projects to be funded. For future programs, Council encourages the State Government to increase the quantum of funding available and reconsider the criteria for projects to ensure they align to on-ground priorities.

Landcare Facilitator Program – Landcare and Friends groups are currently supported through various programs, including DELWP’s Landcare Facilitator program which funds facilitators for Landcare Networks. This funding generally provides resources to employ facilitators part time on short term contracts. This has been a positive initiative that has benefited local Landcare groups. Opportunities to improve this program include increasing funding allocations to enable facilitators to work 4 to 5 days per week and on longer term, secure contracts. Encouraging the positions to be located with local government or other government agencies (such as CMAs) would reduce the administrative and human resources burden on volunteers. Considering expansion of the program to support awareness raising, capacity building and community led action outside the Landcare framework could also be beneficial.

Melbourne Water’s Corridors of Green Program – Macedon Ranges regularly accesses funding for waterway restoration works through Melbourne Water’s Corridors of Green program. Through this process we have developed excellent working relationships with Melbourne Water and have delivered a range of strategic and on-ground projects together. We commend Melbourne Water for delivering this funding program and hope it will be maintained into the future.

Community led action – Macedon Ranges Shire Council has benefited from a range of community led programs aimed at tackling noxious weeds. This includes the work of the Serrated Tussock Working Party and the Victorian Gorse Taskforce. Both programs have provided rural land owners in project areas with useful advice, monitoring services and, in some cases, financial support for control efforts. Continued State Government support for these programs is important to facilitating holistic management of these weed species.

Other suggestions

Lack of landscape scale, long term focus – Many funding programs such as the Biodiversity Response Planning, DELWP On-ground Action Grants, Landcare Grants and similar programs provide funding for small scale projects over 1 to 3 years. Funding for large scale projects across 5 to 10 years would provide certainty for land owners, project partners and project staff, while ensuring there is sufficient follow-up and monitoring.

Reliance on volunteers – In recent years, government programs such as the Biodiversity On-ground Action Grants and similar programs have relied heavily on community groups such as Landcare to implement on-ground projects. This places a heavy burden on volunteers. Whilst the Macedon Ranges contains many active and high capacity community groups, few are set up to deliver programs of the scale and complexity required to effect landscape change. Instead, delivering large scale programs through established organisations, local government or government agencies such as CMAs would alleviate the burden on volunteers while enabling holistic, coordinated program delivery.

Flexible funding for community groups – As mentioned above, many grant programs delivered by DELWP, the CMAs and Melbourne Water are aimed at Landcare groups. These are all excellent programs that support the administration of Landcare groups as well as local on-ground action. Maintaining funding to Landcare is important for its ongoing success and continued community

involvement in local restoration projects. Extending this funding and support to other environmental community groups, such as regenerative agriculture groups, would be welcome.

Increased support for local government land management – Local councils are important managers of conservation assets across the state. In the Macedon Ranges, Council is responsible for managing 512 ha of conservation reserves and 1,700km of roadsides, many of which have conservation values. Council managed conservation and roadside reserves are often the last remaining examples for remnant vegetation in an area and provide a benchmark for surrounding landholders in their restoration efforts.

The possibilities for the improvement of these patches is only limited by the resources Council has available. Increased resources to support Councils to manage their conservation reserves could have many benefits including:

- Demonstrating best practice conservation land management and maintenance of 'benchmarks' for ecological vegetation classes.
- Provision of genetic material to support biolink projects (seed supply).
- Establishment of seed orchards planted specifically for growing species for seed collection for large scale restoration projects.
- Sites for community education and capacity building.

Increased funding for biodiversity monitoring – Council has recently established a long-term ecological monitoring program to be delivered in collaboration with the community. It is the first time a strategic monitoring program has been put in place across the Shire.

Monitoring and citizen science by the community across the shire is varied. While many motivated individuals are undertaking flora and fauna surveys, often these are not being collated across the shire nor being entered into the Victorian Biodiversity Atlas (VBA). Hence the Macedon Ranges Shire remains a 'cold spot' in the Victorian Biodiversity Atlas representing a lack of scientific research identifying or confirming ecological values. At a State level, biodiversity monitoring has been minimal, resulting in the lack of sufficient data to help understand past and current trends.

Increased funding to improve biodiversity monitoring is essential – it needs to be consistent and long-term in order to signify any changes in the landscape. It is also important to increase community education about the benefits and best approaches to citizen science and provide support for data sharing.

Conservation on private land - In the Shire of Macedon Ranges, 87% of the land is privately owned. Of this private land, approximately 17% supports native vegetation modelled by DELWP to be high quality. It includes pockets of indigenous grassland, large tracts of bushland, corridors of vegetation and paddock trees. Whilst public parks and reserves are critical refugia, private land plays an important role in connect habitat and allow species to disperse across the landscape.

Opportunities for government programs to support conservation on private land include:

- Increased funding for Trust for Nature and similar organisations to increase protection of land using conservation covenants.
- Increased support for landowners to protect and enhance biodiversity on their properties through extension programs and incentives.
- Support the transition to holistic farming / regenerative agriculture. This may require a shift in focus from Agriculture Victoria.

Funding for pro-active Aboriginal Heritage Assessments and Engagement – As outlined below, engagement of Traditional Owners through the planning and implementation of development and restoration projects is critical. Currently this is impeded by the lack of dedicated funding available to local government and community groups for proactive cultural heritage assessments or community engagement programs. Whilst funding exists for European cultural heritage assessments and restoration works through Heritage Victoria, no similar funding is available for Aboriginal heritage. This limits the ability of public and private land managers to plan for the protection and recognition of Aboriginal heritage values which often leads to engagement of Traditional Owner groups in on-ground and community engagement activities. This is a large gap in current government programs.

4. Opportunities to restore the environment while upholding First Peoples' connection to country

Traditional Owner groups are the caretakers and custodians of land. Their engagement through the planning and implementation of development proposals as well as ecological restoration works is critical. This places a heavy burden on Traditional Owner groups who often have limited resources.

Increase core funding for Traditional Owner groups – Council would like to see local Traditional Owner Groups grow to enable them to deliver their own plans whilst also being able to contribute to others. This requires increased core funding for Traditional Owner groups who currently struggle to meet the demand for their on-ground and cultural heritage services. Building the capacity of Traditional Owner groups will enable:

- Public and private land managers to meet their legislative requirements
- Knowledge exchange between Traditional Owners and the community
- Preparation of cultural heritage assessments of public land leading to preparation of Aboriginal Cultural Heritage Land Management Agreements where appropriate
- Engagement of Traditional Owner land management crews to undertake on-ground restoration works

Cultural awareness training - State-wide cultural awareness training across government departments and agencies, local government and community groups is required to build relationships and enable management of expectations. Through training and knowledge sharing, government departments and agencies, including local government, may be able to identify ways that project timelines and funding could be augmented to better support Traditional Owner involvement.

APPENDIX 1: FAUNA SPECIES IN DECLINE IN THE MACEDON RANGES

Species at threat	Evidence of loss	Threatening process	Consequence for people and ecosystems	Possible solution
Koala	Community counts indicate a significant drop in numbers.	Habitat fragmentation and urbanisation	Iconic species. Economically important as a drawcard for tourism.	Prevent further loss of native vegetation. Revegetate areas to improve connectivity. Minimise barriers to movement.
Dusky Antechinus	Very low numbers of records in recent years.	Habitat fragmentation of high quality wet gullies. Introduced predators such as cats and foxes.	Another significant species on the brink of local extinction in the Macedon Ranges.	Prevent further loss of native vegetation and protect wet gullies from disturbance. Implement effective cat and fox control.
Spotted-tailed Quoll	No records since mid-1990s.	Habitat loss and fragmentation. Bushfires and inappropriate planned burning regimes.	Loss of Australia's largest carnivorous marsupial around Melbourne.	Improve connectivity and protection of large habitat. Reduce burning of natural ecosystems.
Greater Glider	Significant decline in records over the last 40 years for the region. Recent surveys found no Greater Glider at Mount Macedon and Hanging Rock.	Loss of habitat, fragmentation, urbanisation, climate change	The Wombat Forest hosts the only population of Greater Glider west of the Hume Freeway. It provides an important 'insurance' should populations decline elsewhere.	Improved connectivity. Retention of old growth trees.
Leadbeaters Possum	A single specimen recorded in 1990's	Loss of habitat and old growth trees	Potential loss of a significant species to the region and a unique population separated by extensive distance from other populations in Victoria. Leadbeater's possum is critically endangered.	Undertake extensive surveys for the Leadbeater's Possum in the Macedon Ranges to identify potential habitat. Consider the potential for translocation of Leadbeaters to Macedon Ranges.
Long-nosed Bandicoot	Detected in mid-1990's	Loss of habitat connectivity and introduced predators	Another significant species lost from Macedon Ranges.	Protection of current habitat where it has potential to survive

Species at threat	Evidence of loss	Threatening process	Consequence for people and ecosystems	Possible solution
Brown Toadlet	Significant decline in records at a rate of 30% over the past 20 years.	Removal of ephemeral waterways, grazing, fire and chytrid	Another significant species lost from Macedon Ranges.	Improve survey effort for this species to identify key habitat zones. Consider planning provisions to enable assessment of development in likely habitat. Monitor existing populations.
Southern Toadlet	Significant decline in records at a rate of 30% over the past 20 years.	Removal of ephemeral waterways, grazing, fire and chytrid	Another significant species lost from Macedon Ranges.	Improve survey effort for this species to identify key habitat zones. Consider planning provisions to enable assessment of development in likely habitat. Monitor existing populations.
Growling Grass Frog	Very few records in recent years.	Loss of connectivity between waterways.	Another significant species lost from Macedon Ranges.	Improved survey effort. Potential for reintroduction to sites where intensive restoration has occurred.
Powerful Owl	Decline in records in over 40 years	Loss of old growth trees. Main prey source are hollow dependent. Powerful Owls also need large hollows.	Apex predator and important for ecosystem health	Retention of old trees and stags.
Barking Owl	Decline in records over past 40 years.	Loss of old growth trees. Main prey source are hollow dependent. Powerful Owls also need large hollows.	Apex predator and important for ecosystem health	Retention of old trees and stags.
Brush-tailed Phascogale	Decline in records over past 40 years.	High need for natural hollows. Cats and foxes major concern.	Important arboreal mammal that consumes invertebrates and may have a role in pollination.	Retention of old trees and stags, removal of pest animals, intensive surveys
Common Dunnart	Decline in records over past 40 years.	Cats and foxes, loss of fallen timber from habitat	Important food source for native carnivores	Protection of fallen timber and native grasses.
Fat-tailed Dunnart	Decline in records over past 40 years.	Cats and foxes, loss of fallen timber from habitat	Important food source for native carnivores	Protection of fallen timber and native grasses.