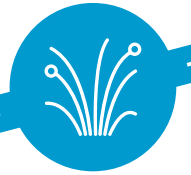
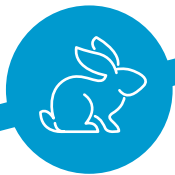




# Roadside Weed and Pest Animal Control Management Plan

2020 - 2027



Adopted 22 April 2020

## Vision

A healthy and resilient natural environment supported by our community.

## Aim

Weeds and pest animals are managed on roadsides throughout the Shire to improve native vegetation quality, farmland productivity, landscape values, biodiversity, and waterway habitats.

# Contents

Executive Summary	2
Objectives and Strategies	3
Background	4
Scope	6
Purpose	6
Land Management Context	7
Best Practice	8
Invasive Plant Classifications	10
Existing Council Activities	11
Treatment and Prioritisation	12
Monitoring, Evaluation, Reporting and Improvement	14
Treatment	15
Funding	16
Conclusion	16
References	17
Appendix 1 – Implementation Plan	18
Appendix 2 – Roadside Weed and Pest Animal Control Strategy 2015-2020: Review	20
Appendix 3 – Legislation and Policy Context	28

## **Acknowledgement of Traditional Land Owners**

We, the Moira Shire Council, would like to acknowledge the traditional owners of the land upon which we meet and pay our respects to their Elders both past and present.

# Executive Summary

Moira Shire Council (Council) is responsible for the management of Regionally Prohibited and Regionally Controlled weeds and established pest animals located on rural roadsides managed by Council in accordance with the *Catchment and Land Protection Act 1994* (CaLP Act).

In Moira, the North East and Goulburn Broken Regional Catchment Strategies outline a number of key priorities for environmental management policy. Weed control is an important objective at achieving many of the characteristics of a healthy catchment, such as biodiversity, vegetation quality and healthy waterways. Moira is comprised mostly of the Goulburn Broken Catchment, with a small section that is included within the North East Catchment.

The Moira Shire Roadside Weed and Pest Animal Control Management Plan aims to take an integrated approach to weed and pest animal management on Council managed roadsides, while ensuring Council fulfils its legislative requirements. This management plan aligns with the biosecurity approach outlined in the Invasive Plants and Animals Policy Framework (IPAPF) (Agriculture Victoria 2012) which underpins the Goulburn Broken Biosecurity Invasive Plants and Animals Management Plan 2019-2025.

This management plan is built around a best practice approach to weed and rabbit control. The treatment criteria outlined within the management plan is based on the ability to achieve best practice. The criteria are used to identify priorities for treatment of weeds and pests on Council managed roadsides.

The treatment criteria are:

- Conservation value of the roadside with higher priority being Critical and High conservation value roadsides;
- Classification of weed species with higher priority given to sites containing regionally prohibited and controlled weed species;
- Neighbouring property asset value such as roadsides adjoining conservation or bushland reserves;
- Population density (in the case of rabbit control); and
- Cost efficiencies, higher priority given to sites where multiple weed species are present that require the same method of treatment at the same time.

This management plan builds on the Roadside Weed and Pest Control Plan 2012-2015 and the Roadside Weed and Pest Animal Control Strategy 2015-2020.

The management plan is based on a strategic long term program (7 years) to:

- control priority weeds and pest animals on roadsides throughout the Shire;
- minimise costs;
- maximise effectiveness; and
- address legislative responsibilities.

The implementation of this management plan involves two phases aimed at eradicating regionally prohibited weeds and preventing the growth and spread of regionally controlled weeds and pests.

**Phase 1** - A relatively high initial investment for the first 2 years to target and reduce the current weed biomass, treating approximately 30% of roadsides each year.

**Phase 2** - An annual maintenance program to monitor and treat weed on approximately 100% of roadsides for the following 5 years of this management plan.

*Note: Effective and efficient treatment of weeds is impacted significantly by weather and seasonal conditions. The treatment of weeds will vary according to the particular seasonal and climatic conditions.*

Funding to implement this management plan will be sourced from a combination of revenue sources including Councils rate revenue, and State and Federal funding sources.

# Objectives and Strategies



## Theme 1: Weeds

### Objectives:

- Council meets its legal obligations as specified under the *Catchment and Land Protection Act 1994* (CaLP Act), while maximising resource efficiency.
- The spread of weeds is minimised.

### Strategies:

- Apply the weed treatment prioritisation criteria (listed in this Management Plan) when implementing Council's annual weed program which takes into account the classification of weeds under the CaLP Act, the efficient use of Council resources and the location and conservation value of sites.



## Theme 2: Pest Animals (Rabbits)

### Objectives:

- Council meets its legal obligations for pest animal management as specified under the CaLP Act.

### Strategies:

- Apply the pest animal treatment prioritisation criteria (listed in this Management plan) when implementing Council's annual pest animal program which takes into account the location and conservation value of the site and the efficient use of Council resources.

*Note: Legislation and policy context and council strategies and plans are attached as an appendix to this management plan.*

# Background

Moira Shire Council (Council) is responsible for conducting weed and pest animal control works across all Council managed roadsides across the shire.

## Roadside Weed and Pest Control Plan 2012-2015

As part of the amendment to the Catchment and Land Protection Act 1994, Moira Shire received a grant from the Department of Environment and Primary Industries (now Department of Environment, Land, Water and Planning) to develop and implement a Roadside Weed and Pest Control Plan which was developed with a focus on treating and mapping noxious weeds of Regionally Controlled and Regionally Prohibited status, and European Rabbits (*Oryctolagus cuniculus*).

This plan was endorsed by the State Government and Council was provided with funding to assist in implementing works set out in the plan. This funding totalled \$150,000 over three years, and Council commenced works on the annual Roadside Weed and Pest Control Plan in 2012-2013.

With these State Government funds, contractors were engaged to conduct the works to treat and map weed species on Council managed roadsides. The mapping was essential to document and assess the weed species present, weed coverage, and to allow for appropriate planning for future control programs.

The plan targeted weeds species on roadsides of high conservation significance as a first priority. The State funding for the implementation of this plan allowed mapping of all Council managed roadsides within the Shire, as well as partial treatment of approximately 30% of our roadsides. The roadsides treated were considered to be of high conservation value. This funding ran for three years from 2012-2013 to 2015-2016.

## Roadside Weed and Pest Control Strategy 2015-2020

The Roadside Weed and Pest Control Strategy 2015-2020 was designed to build on the Roadside Weed and Pest Control Plan in the view of a longer term approach at weed and pest control on Council managed roadsides within the Moira Shire.

The Strategy sat within a broader State and Federal response to weeds and pest animals. It clearly defined the Shire's priorities for roadside weed and pest animal control activities and ensured Council's resources were allocated effectively.

The Strategy expanded on the Roadside Weed and Pest Control Plan which was focused on treating and mapping noxious weeds of Regionally Controlled and Regionally Prohibited status, and European Rabbits (*Oryctolagus cuniculus*) on roadsides of high conservation significance.

This Strategy took an integrated approach to weed and pest animal management on Council managed roadsides, while ensuring Council fulfilled its legislative requirements.

In 2015:

1. the Roadside Weed and Pest Control Strategy 2015-2020 was developed and adopted by Council, 25 May 2015; and
2. Council committed to a five-year implement plan for the Roadside Weed and Pest Animal Control Strategy 2015-2020.

Funding sourced from the State's Roadside Weeds and Pests Program and Councils rate revenue jointly contributed towards the implementation plan and the program that managed weeds and pests on rural roadsides.

Approximately 75% of council's roadsides received at least one round of treatment during this program. However, the implementation plan was not fully completed within the five-year time period. Another two years are required, targeting 30% of roadsides p.a. as proposed in the 2015-2020 strategy.

*Note: The review of the Roadside Weed and Pest Animal Control Strategy 2015 – 2020 Implementation Plan is attached as an appendix to this management plan*

## Why is it important to treat weeds and pest animals on roadsides?

### Weeds

Invasive weeds are among the most serious threats to Australia's natural environment and primary production industries (Australian Government 2020). They displace native species, contribute significantly to land degradation, and reduce farm and forest productivity.

A weed is any plant that requires some form of action to reduce its effect on the economy, the environment, human health and amenity. Weeds typically produce large numbers of seeds, assisting their spread and are often excellent at surviving and reproducing in disturbed environments. A weed can be an exotic species or a native species that colonises and persists in an ecosystem in which it did not previously exist. Weeds can inhabit all environments; from our towns and cities through to our oceans, deserts and alpine areas. McLeod (2018) estimate that weeds cost approximately \$4.8 billion/year to agriculture nationally.

The effective management of weeds can also significantly impact on fire management. In many circumstances weedy roadsides of the same vegetation type will tend to pose a higher fire risk than those dominated by natives.

To take grasslands as an example, Phalaris can grow to two metres high, with fuel levels of 29 tonnes per hectare. This contrasts with fuel levels of 6 tonnes per hectare measured for native grasslands dominated by Kangaroo Grass (*Themeda triandra*) during January in an average year (CFA 2011).

### Pest Animals

Pest animals are invasive species that have been introduced or could be introduced into Victoria or Australia. These species threaten native flora and fauna in a number of ways, including but not limited to, creating competition with native fauna for the same resources and creation of additional grazing pressure on native vegetation communities and agricultural systems.

In the case of rabbits, more than 2 rabbits per hectare virtually eliminate the regeneration potential of plant species (Government of South Australia 2011), and 16 rabbits exhibit the same grazing pressure as 1 dry sheep equivalent. The overall loss caused by rabbits to agriculture was recently estimated to be around \$206 million per annum (Gong et. al 2009). The implication of this is that there is a clear conservation and economic need to act strategically to control these species.

# Scope

This Roadside Weed and Pest Animal Management Plan applies to:

- Council managed roadsides;
- Regionally Prohibited and Controlled, and Restricted weeds declared under the *Catchment and Land Protection Act 1994*;
- Environmental weeds, including Australian natives from other regions whose growing populations have caused concern as they are a threat to agriculture or native vegetation and habitats; and
- Established rabbit populations on Council managed roadsides.

This Roadside Weed and Pest Animal Management Plan does not apply to:

- native fauna, including perceived problem wildlife;
- pest animals other than rabbits;
- invertebrates;
- diseases or plant pathogens; and
- species or controls covered by the Domestic Animal Management plan 2018-2021.

## Purpose

The purpose of the Weed and Pest Animal Management Plan is to:

- Identify a set of Council priorities for weed and pest animal control actions;
- Establish a framework using best practice principles which takes a conservation based approach that is effective and cost efficient; and
- Establish a robust monitoring, evaluation, review and improvement program.



# Land Management Context

Management of weeds and pests on public land involves multiple state government departments and agencies as well as various Council departments.

The following matrix sets out who is responsible for weed and pest animal management on public land in Moira Shire.

Table 1: Stakeholders responsible for weed and pest animal management on public land within Moira Shire

Location	Sub-location	Responsible Department / Agency
Roads and Roadsides	Local roads in townships	Moira Shire Council
	Local roads outside townships	Moira Shire Council
	Arterial roads	Regional Roads Victoria
Rail reserves	Rail reserves	VicTrack
Public and Council reserves	Council reserves (Kinnairds Wetland)	Moira Shire Council
	Recreation and sporting reserves	Moira Shire Council and in certain circumstances the responsibility has been delegated to Committees of Management (CoM)
	State Parks, Regional Parks, Flora Reserves and Crown Land	Parks Victoria / DELWP*

\* DELWP – Department of Environment, Land, Water and Planning

# Best Practice

Striving for best practice is essential as are many factors that can confound or interrupt the effect of treatment works, and many treatment methods in isolation can tend to have a limited effect. Most weed species also create a seed bank in the soil that can be viable for many years.

As the biology and ecology of species vary, Best Practice Management Manuals have been developed for each of the Weeds of National Significance. This expertise should be drawn upon for decision making.

## Best Practice Principles

There are some general principles that can be broadly applied. These include:

### Integrated management

This involves a long term management approach, using as many management techniques as possible. Using several methods of control reduces the chance that species will adapt to the control technique used e.g. through herbicide resistance.

Integrated management also involves coordinating weed control, pest animal management and revegetation to maximise resources and achieve improvements in vegetation quality. As a general principle, weed and pest animal control should occur before revegetation to ensure new plantings survive. Similarly, treatment of woody weeds can have the dual effect of controlling invasive flora species, while also removing harbour for rabbits and foxes.

### Appropriate scale

Species such as rabbits are very mobile. Research shows that the likelihood of reinvasion is greatly reduced if there is no significant warren within 3km of the given treatment site. Therefore, rabbit control needs to take a landscape scale approach to be effective.

### Long term time frames with follow up

Many species develop extensive seed banks that can be stimulated by disturbance, so a lack of follow-up can allow a bigger problem to emerge.

### Chemical control

Chemical control is the most commonly thought of measure for weed and pest animal control. The effectiveness of this technique depends on the choice of chemical, timing of application, rate of application to suit the circumstance, and even changing chemicals to avoid plants developing resistance.

### Physical control

Grooming can virtually remove the fire risk of standing biomass without the need to gain permits to transport weed material from a site.

Controlled burning can remove biomass and stimulate the seed bank of weeds and natives to germinate, thus allowing more efficient follow up, potentially reducing the duration of a weed seed bank, and expediting site rehabilitation.

### Cultural control

Humans are the most efficient cause of spread for weed and pest animal species. Behavioural measures, such as the cleaning of vehicles to remove seeds (especially slashers), can drastically reduce the spread of species such as Chilean Needle Grass (*Nassella neesiana*).

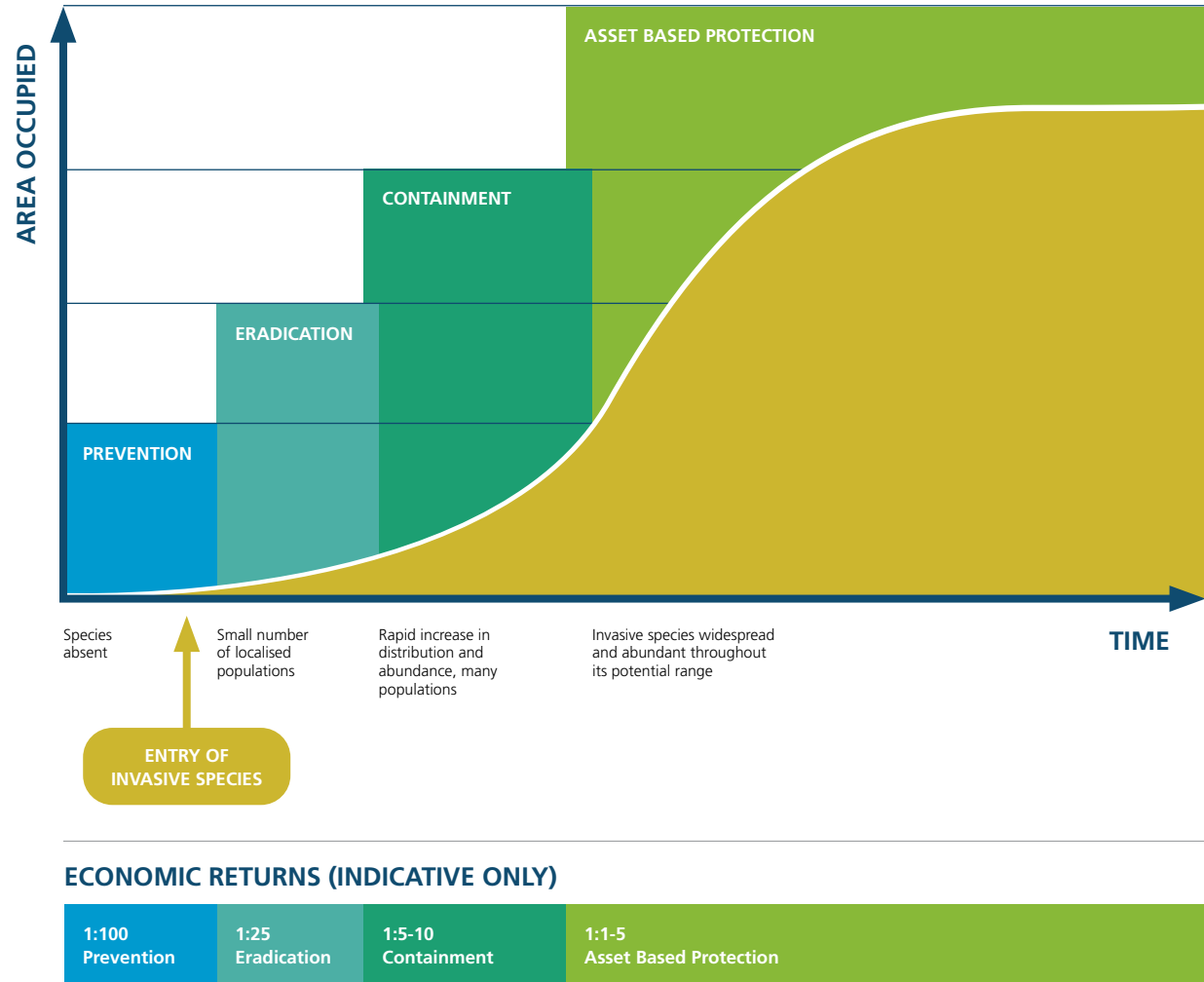
### Biological control

In some areas biological controls, such as the Bridal Creeper rust and mite that are already present in the landscape can help reduce the vigour of infestations ahead of other integrated controls.

### Biosecurity

Taking a biosecurity approach involves preventing incursions of new species, eradicating high threat species that have low infestation levels, containing species that are wide spread but could spread further, and only targeting wide spread infestations that have reached their natural range where they threaten areas of high conservation or agricultural value. This approach is cost effective as it maximises the return from investment in weed and pest control. A diagrammatic explanation of a biosecurity approach is provided in Figure 1. This approach generally aligns with the classification of weed species for each catchment as defined under the CaLP Act.

Figure 1: Generalised Invasive Curve (Agriculture Victoria, 2012)



# Invasive Plant Classifications

## Declared noxious weeds

Under the CaLP Act certain plants and animals can be declared as noxious weeds and pest animals in Victoria. The latest list of declared noxious weeds and animals as they appear in the Victorian Government Gazette G29 dated 20 July 2017 (from page 1579) can be viewed on Agriculture Victoria's Webpage "Victoria's consolidated lists of declared noxious weeds and pest animals" (2019).

Declared noxious weeds and pest animals are given different classifications for different catchment management areas.

Noxious plants cause environmental or economic harm or have the potential to cause such harm. They can also present risks to human health. The CaLP Act defines four categories of noxious weeds:

## State prohibited weeds

These invasive plants either do not occur in Victoria but pose a significant threat if they invade, or are present and pose a serious threat and can reasonably be expected to be eradicated. If present, infestations of a State prohibited weed are relatively small.

## Regionally prohibited weeds

Regionally prohibited weeds are not widely distributed in a region but are capable of spreading further. It is reasonable to expect that they can be eradicated from a region and they must be managed with that goal. Land owners, including public authorities responsible for crown land management, must take all reasonable steps to eradicate regionally prohibited weeds on their land.

## Regionally controlled weeds

These invasive plants are usually widespread in a region. To prevent their spread, ongoing control measures are required. Land owners have the responsibility to take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land.

## Restricted weeds

This category includes plants that pose an unacceptable risk of spreading in this State and are a serious threat to another State or Territory of Australia. Trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited.

## Non-declared weeds and pest animals

Non-declared weeds and pest animals are those species which are not listed under current legislation. It is important that Council recognise the impact these species can have on the natural, agricultural and economic environments and, consequently work to minimise their impact.

From an effectiveness and efficiency standpoint, it is advisable that Council also treat non-declared weeds on roadsides alongside the treatment of declared noxious weeds in these areas.

# Existing Council Activities

## Annual weed control program

The annual Roadside Weed and Pest Control Program commenced in 2012. The Program is discussed in detail in the Background section and Appendix 2.

In addition to the Roadside Weed and Pest Control Program, Council has an annual roadside spraying and slashing program to manage vegetation within the road maintenance envelop. This program serves to meet a number of objectives with regards to fuel reduction, road safety and drainage line management. This program is limited to the road maintenance envelop.

## Queensland Fruit Fly Program

At the time of preparing this management plan, the Goulburn Murray Valley (GMV) Regional Fruit Fly Group, 'NO FLIES ON US – lets stop Queensland fruit fly' (2017) were running a program to control host species on public land, including Council managed roadsides. Host species include prickly pear, prunus species and other fruiting plants. Prickly pear is one of the more prevalent host species along our roadsides.

Queensland fruit fly (QFF) presents a serious threat to Moira's horticulture industry (Goulburn Murray Valley Regional Fruit Fly Group 2017). These species degrade our natural ecosystems, can readily spread when unchecked and compete with native vegetation (e.g. prickly pear for water).

The roadside weed and pest control program has not prioritised the control of QFF host species because they are not a regionally prohibited or regionally controlled weed species. However, in areas of environmental significance or when cost efficient they have been controlled. The QFF program builds on the work undertaken by the roadside weed and pest control program.

# Treatment and Prioritisation

The volume of work necessary to treat weeds and pest animals on Council managed roadsides is likely to always exceed the available budget each year. Council manages 7,000 km of roadsides (3,500 km of roads) which amounts to thousands of hectares.

As a result, a robust method needs to be implemented to determine priorities to enable treatment of roadsides. This will enable the most effective treatment and the highest return on investment by taking action at sites that pose the biggest threat to environmental, economic and social assets. It will also address the liability that Council faces as a land manager through the potential for prosecution related to CaLP Act listed weeds.

## Community Expectations

Community requests are a valued component of the roadside weed and pest control program. However, expectations made may exceed the available budget at the time the request is made. Community requests will be considered according to the treatment priority criteria outlined below.

## Do Not Spray Register

Landholder's can request for their local roadside to be placed on the Do Not Spray register managed by Council. Reasons can include Organic and/or Biodynamic Certification, allergies, and for various land uses.

Council employees or contractors responsible for the management of roadside weeds need to have a copy of the register. When treating weeds on roadsides adjoining properties on the Do Not Spray Register the landowner must be contacted for their consent prior to any treatment occurring.



## Weed Treatment Criteria

A prioritisation framework has been established as a part of this management plan which enables Council to attribute a priority score for each weed and pest animal control site in the Shire. This will enable Council to maximise efficiency and effectiveness by allocating its resources to the highest priority sites.

A combination of the following criteria informs the priority score for each site:

### 1. Conservation value

Higher priority is given to critical and high conservation value roadsides. Roadsides have already undergone a conservation significance assessment, which provides a strong support basis for roadside priorities.

*Note: In simpler terms, we will be working from the highest quality roadsides with the least infestations out to the most infested.*

### 2. Weed classification

Higher priority is given to sites containing regionally prohibited or regionally controlled weeds (declared under the CaLP Act). Medium priority is given to regionally restricted weeds, and lowest priority is given to sites supporting unlisted environmental and agricultural weeds only.

### 3. Neighbourhood

Higher priority is given to sites adjoining land with high conservation value, such as conservation or bushland reserves. This will include boundaries with other Shires. Higher priority also given to sites where complementary control is being undertaken by partners (e.g. Parks Victoria (PV), Conservation Management Networks (CMNs), Landcare Networks, Catchment Management Authorities (CMAs) and Goulburn Valley Environment Group (GVEG)).

*Note: that chemical weed control on sites immediately adjoining certified organic farms will be avoided where possible.*

### 4. Cost efficiencies

Higher priority given to sites where multiple weed species are present that require the same method of treatment at the same time.



## Pest Animal (Rabbits) Treatment Criteria

Previous surveys and the low number of resident requests relating to rabbits on roadsides suggest that this problem is relatively isolated and low level. This does not mean that Council should be complacent about rabbit control. Instead low infestation levels mean that a small investment in control works now can prevent major costs in the future.

The criteria below will be used to identify works as additional data is collected relating to rabbit activity in the Shire. Council may need to budget or apply for funding to address community requests for pest animal control works.

#### 1. Population density

Higher priority given to sites with a high population density.

#### 2. Neighbourhood

Higher priority given to sites where complementary control is being undertaken by partners (e.g. PV, CMNs, Landcare, CMAs and GVEG)

#### 3. Conservation value

Higher priority is given to critical and high conservation value roadsides.

It is noted that Council's rabbit program will be limited to treatment of rabbits declared under the CaLP Act.

Treatment of non-declared pests and problem wildlife will not form part of Council's treatment works. Instead Council plays a support and advisory role in relation to these species.

There are certain limitations to pest control on roadsides such as no baiting in a road reserve, no deep ripping of burrows, and no damage to cultural heritage.

*Note: Destroying warrens instead of the rabbits themselves is the most effective way to minimise breeding and spread.*

# Monitoring, Evaluation, Reporting and Improvement

Sophisticated mapping technologies now exist to record relevant data and inform future planning and decision making. Ongoing mapping with treatment to monitor trends over time and allowing for seasonal variations is considered best practice and essential for the implementation of a successful and efficient long term program. Mapping allows for the monitoring of kilometres of roadside treated, species present and treated, and density and distribution of weed and pest species.

Mapping information provides the weather, wind speed and direction, chemical used, number of people required and time estimation of each site. This supports future planning and assessments, feedback to the community, and also a reference to previous treatments should there be any complaints. The monitoring and mapping of new and emerging weed species is also a priority, especially taking careful note of the Shire's borders to identify emerging invasions.

Figure 2: Procedure of monitoring, evaluation, reporting and improvement





# Treatment

With the responsibility for roadside weed management under the CaLP Act, a strategic approach including budget is needed to adequately manage the extensive area for which Council is responsible.

It is important that Council's weed and pest animal activities are monitored and evaluated to facilitate improvements. This will ensure Council's investment is as efficient and effective as possible.

The treatment includes two phases. The first phase allows for the completion of the treatment originally proposed in the 2015-2020 strategy. This will allow for 100% of roadsides in Moira to receive a minimum of one round of treatment. This is a more intensive period of treatment to get on top of the current weed biomass and allow for a more manageable annual program.

The second phase is an annual maintenance program aimed at eradicating regionally prohibited weeds and preventing the growth and spread of regionally controlled weeds and pests. The program will aim to monitor and maintain weeds and pests across 100% of Moira's roadsides each year.

This provides Council with the ability to target roadsides according to priorities proposed in this management plan and work through a staged process according to best practice principles to effectively treat roadsides across the Shire each year.

*Note: Effective and efficient treatment of weeds is impacted significantly by weather and seasonal conditions. The cost estimate below is indicative only and treatment of weeds will vary according to the particular seasonal and climatic conditions.*

Table 2: Treatment details

Year	Treatment details	Financials	Strength	Weakness
2020-22	Monitor, Map and Treat: <ul style="list-style-type: none"> <li>• Complete treatment of approx. 30% of roadsides p.a.</li> <li>• Map treated areas p.a.</li> <li>• Map weeds on 100% of roadside weeds in 2022</li> </ul>	\$175,000 per annum (minimum) Contractor and internal resources included in costs	<ul style="list-style-type: none"> <li>• Response to legislative responsibilities</li> <li>• Builds on work already completed over 8 years</li> <li>• Applies best practice principals involving treatment of Regionally Prohibited and Regionally Controlled weeds and rabbits on priority roadsides (allows for multiple or follow up treatments, seasonal variation and/ or species diversity)</li> </ul>	Ongoing Council budget item
2022-27	Monitor, Map and Treat: <ul style="list-style-type: none"> <li>• Monitor and treat weeds on approx. 100% of roadsides p.a.</li> <li>• Map treated areas p.a.</li> <li>• Map weeds present on 100% of roadsides in 2027</li> </ul>	\$100,000 per annum (minimum) Contractor and internal resources included in costs	<ul style="list-style-type: none"> <li>• Avoids potential financial penalties and/or larger infestations that are costlier to treat</li> <li>• Aim to eradicate Regionally Prohibited weeds and prevent the spread of Regionally Controlled weeds</li> <li>• Reduce biosecurity and bushfire risk</li> <li>• High quality roadsides and increased environmental value</li> <li>• Support agriculture industry and community interests</li> </ul>	Ongoing Council budget item

*Note: The implementation plan is attached as an appendix to this management plan.*

# Funding

Ongoing funding is required to implement this management plan, meet our legal obligations and support areas of conservation significance. For the duration of this management plan revenue sources will include a combination of Councils rate revenue, State Government Programs, and Federal Government Programs.

Councils rates revenue contribute \$75,000 per annum plus approximately \$25,000 as in-kind contributions for internal resources to manage the roadside weed and pest control program. External funds will need to be attained to fully implement this management plan and achieve the treatment targets.

# Conclusion

This management plan aims to effectively and strategically manage weeds and pest animals on roadsides throughout the Moira Shire.

The implementation of this management plan involves two phases. A higher initial investment for the first two years aimed at reducing the current levels of weeds to a more manageable level. This is followed by a five-year annual maintenance program.

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South Australia State Government (2011), *Rabbit Technical Note 2 How Much Do Rabbits Eat*

## Appendix 1

# Implementation Plan

The implementation plan will enable Council to address its legal obligations relating to pest plant and animal management in accordance with the CaLP Act 1994.

## Weeds on Roadsides

Objectives	Action	Measure	Resources
<b>Manage Pest Plants</b>	Maintain an annual weed control program for Council managed roadsides.	<ul style="list-style-type: none"> <li>Control weeds on approx. 30% of roadsides p.a. for years 2020-2022.</li> <li>Monitor and control weeds on approx. 100% of roadsides p.a. for years 2023-2027.</li> <li>Weed control to occur in accordance with the Roadside Weed and Pest Animal Management Plan 2020-2027.</li> </ul>	Conducted by external contractors utilising Council's annual weed and pest program budget allocation
	Improve machine hygiene practices within Council, with Council staff and Contractors that operate machinery.	<ul style="list-style-type: none"> <li>Develop a Standard Operating Procedure for machine hygiene, including:                             <ul style="list-style-type: none"> <li>The use of engineered solutions to prevent the transport of seeds on vehicles (e.g., slasher covers, wash downs etc.); and</li> <li>Movement of machinery from lower to higher conservation areas.</li> </ul> </li> <li>Undertake annual machine hygiene training sessions with staff.</li> <li>Staff complete the Agriculture Victoria WeedStop Vehicle Hygiene Program.</li> <li>Incorporate vehicle hygiene practices into position descriptions for staff.</li> </ul>	2020-2022 Estimated Cost: \$175, 000 p.a. (minimum)  2023-2027 Estimated cost: \$100,000 p.a. (minimum)
<b>Monitor and Evaluate</b>	Monitor and evaluate the success of the roadside weed and pest control program.	<ul style="list-style-type: none"> <li>Monitor, record and map weeds controlled on roadsides p.a.</li> <li>Survey, assess and map weeds present on roadsides in years 2022 and 2027 to compare with the 2016 dataset.</li> <li>Mapping to be in the form of a shapefile and available on Councils internal mapping system.</li> <li>Program to reduce:                             <ul style="list-style-type: none"> <li>Density and spread of Regionally Controlled and Regionally Prohibited weeds;</li> <li>Density and spread of Restricted weeds; and</li> <li>Density and spread of Environmental weeds.</li> </ul> </li> <li>Program to increase:                             <ul style="list-style-type: none"> <li>Number of sites over the life of the management plan that transition from requiring annual treatment to requiring monitoring only.</li> </ul> </li> </ul>	Conducted by external contractors utilising Council's annual weed and pest program budget allocation  Internal resources

## Rabbits on Roadsides

Objectives	Action	Measure	Resources
<b>Manage Rabbits</b>	Maintain an annual rabbit control program for Council managed roadsides.	<ul style="list-style-type: none"> <li>• Monitor and control rabbits on approx. 100% of roadsides p.a.</li> <li>• Pest animal control undertaken in a humane manner in accordance with the relevant codes of practice and standard operating procedures.</li> </ul>	<p>Conducted by external contractors utilising Council's annual weed and pest program budget allocation</p> <p>Internal Resources</p>
<b>Monitor and Evaluate</b>	Monitor and evaluate the success of the roadside weed and pest control program.	<ul style="list-style-type: none"> <li>• Monitor, record and map rabbits controlled on roadsides p.a.</li> <li>• Program to reduce the number of sites and density of rabbits on roadsides.</li> </ul>	<p>Conducted by external contractors utilising Council's annual weed and pest program budget allocation</p> <p>Internal Resources</p>

## Appendix 2

# Roadside Weed and Pest Animal Control Strategy 2015-2020: Review

### Executive Summary

This document is a review of the Roadside Weed and Pest Animal Control Strategy 2015-2020 (strategy) and the actions identified in Appendix 1 – Implementation Plan (implementation plan).

This review considers activities undertaken for financial years 2015/2016, 2016/2017, 2017/2018 and 2018/2019 (2015-2019). A large component of the strategy and implementation plan was the roadside weed and pest control program (program).

The implementation of the Strategy 2015-2020 has proven highly successful with approximately 75% of the Shire receiving at least one round of treatment for the years 2015-2019. The program has resulted in an observed reduction of African boxthorn, black berry, horehound, sweet briar, and Bathurst burr. Also, the percentage of roads across Moira that receive treatment in a 1-year time period has increased from 17% in 2016-2017 to 36% in 2018-2019.

Though the program has proven successful, another 2 years at the current treatment rate is required to reach the next stage of roadside weed management, being an annual maintenance program.

The available budget over the life of the program was only partially allocated. Council contributed \$120,175.89 from a \$400,000 budget (\$279,824.11 underspend) and the State contributed \$300,000. In total, \$420,175.89 has been spent on this program, 2015-2019.

This is because the strategy has only been partially implemented as a result of a combination of factors including:

1. In 2015-2016, a 9-month delay to the roadside weed and pest control program occurred, it took until April 2016 for the roadside weed and pest control contract to be awarded;
2. In 2016-2017, rainfall events and flooding in Winter and Spring reduced the time available to control pest plants; and
3. In 2017-2018 and 2018-2019, the dry climate conditions experienced complicated and limited the amount of spraying that could occur.

The key recommendations following the review of the strategy includes:

1. Another two years of weed and pest control at the current rate, \$175,000 p.a., is required; and
2. An ongoing annual maintenance program is required.

The pest animal identified in the Strategy for control, the rabbit, has only been identified at one site. Therefore, no work has been undertaken to control pest animals. Monitoring has occurred throughout the life of the strategy.

### Summary

Moira Shire Council manages approximately 3,500 km of rural roads (excluding Regional Roads Victoria roadsides) or 7,000 km of roadsides.

The *Catchment and Land Protection Act 1994* (CaLP Act) requires Council to manage pest plants and animals on land managed by council including road reserves.

Council must take reasonable steps to:

- eradicate regionally prohibited weeds;
- prevent the growth and spread of regionally controlled weeds; and
- prevent the spread of, and as far as possible eradicate, established pest animals.

The Strategy's objective was to meet Councils legal obligation (CaLP Act) whilst maximising resource efficiency and minimise the spread of weeds. The strategy's treatment criteria prioritised the treatment of weeds to ensure efficient and effective use of resources. A combination of the following criteria informed site priority:

- 1. Conservation value of the roadside** – higher priority given to high and critical conservation value roadsides;
- 2. Weed classification** – higher priority given to sites containing regionally prohibited or regionally controlled weeds;
- 3. Neighborhood** – higher priority given to sites adjoining high conservation value land (i.e. the Broken Boosey, Murray River and other Bushland reserves); and
- 4. Cost efficiencies** – sites where multiple weeds species can be treated using the same treatment method.

## Weed and Pest Control Program 2015-2019

In 2016, the Roadside Weed and Pest Control Contract was awarded in line with the requirements of the strategy and the implementation plan. The Roadside Weed and Pest Control Program (program) commenced April 2016.

Councils annual budget for the program has only been partially allocated (2016-2019: \$120,175.89). Council committed to \$75,000 per year to engage a contractor to undertake the works (materials and resources) and \$25,000 for internal resourcing (human resources). The State committed \$75,000 per year to the program.

Council has had an underspend of \$279,824.11 over the life of the program.

A complete breakdown of the programs budget, expenditure and contributions is presented in Table 2.1.

Table 2.1: Program Budget, Expenditure and Contribution

Financial Year	Budget		Expenditure			Contribution	
	Council	State	Materials and Contractors	Human Resources	Total	Council	State
<b>2015-2016</b>	\$100,000	\$75,000	\$49,980.00	\$22,935.00	\$72,915.00	-\$2,085.00	\$75,000.00
<b>2016-2017</b>	\$100,000	\$75,000	\$65,579.20	\$13,667.50	\$79,246.70	\$4,246.70	\$75,000.00
<b>2017-2018</b>	\$100,000	\$75,000	\$105,614.95	\$15,293.13	\$120,908.08	\$45,908.08	\$75,000.00
<b>2018-2019</b>	\$100,000	\$75,000	\$132,243.06	\$14,863.05	\$147,106.11	\$72,106.11	\$75,000.00
<b>Total</b>	\$400,000	\$300,000	\$353,417.21	\$66,758.68	\$420,175.89	\$120,175.89	\$300,000.00

A timeline is provided in Table 2.2 which summaries the activities undertaken to implement the strategy in accordance with the implementation plan.

Table 2.2: Weed and Pest Control Program Timeline

Financial Year	Expenditure	Activities completed	Main Species Treated
2015-2016	<ul style="list-style-type: none"> <li>Underspend - \$102,085.00</li> <li>Considerable effort and time was taken to complete the procurement process (tender)</li> <li>Contract awarded April 2016 providing less than 3 months to undertake planned work</li> </ul>	<ul style="list-style-type: none"> <li>Contract awarded for a 3-year term with 1+1 option April 2016</li> <li>Pest plants and rabbits mapped across 100% of council managed rural roadsides</li> <li>59.92 ha of weeds treated</li> </ul>	Horehound (C) Paterson's Curse (C) Sweet Briar (C)
2016-2017	<ul style="list-style-type: none"> <li>Underspend - \$95,753.30</li> <li>Program interrupted by average and above average rainfall and flooding in winter and spring 2016</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 600 km of roads treated, 17% of council managed rural roadsides</li> <li>Targeted the treatment of priority weeds primarily along the Broken Boosey</li> </ul>	African Boxthorn (C) Bathurst Burr (C) Bridal Creeper (R) Gazania (E) Horehound (C) Paterson's Curse (C) Prairie Ground Cherry (C) Silver leaf Nightshade (C) Sweet Briar (C)
2017-2018	<ul style="list-style-type: none"> <li>Underspend - \$54,091.92</li> <li>The dry conditions experienced in summer and autumn limited the amount of spraying that occurred</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 860 km of roads treated, 25% of council managed rural roadsides</li> <li>Targeted the treatment of priority weeds located on the eastern (quarter) side of the Shire</li> </ul>	African Boxthorn (C) Bathurst Burr (C) Horehound (C) Paterson's Curse (C) Prairie Ground Cherry (C) Silver leaf Nightshade (C) Sweet Briar (C)
2018-2019	<ul style="list-style-type: none"> <li>Underspend - \$27,893.89</li> <li>Budget largely allocated (-15%)</li> <li>The dry conditions experienced in summer and autumn limited the amount of spraying that occurred</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 1250 km of roads treated, 36% of council managed rural roadsides</li> <li>Targeted the Eastern and Central sections of the Shire</li> </ul>	African Boxthorn (C) Bathurst Burr (C) Horehound (C) Paterson's Curse (C) Prairie Ground Cherry (C) Silver leaf Nightshade (C) Sweet Briar (C)

(C) Regionally Controlled Weed; (R) Regionally Restricted Weed; and (E) Environmental Weed

The regionally controlled weed species identified in Table 2.2 are mapped in Figure 2.1 and Figure 2.2 below. Figure 2.1 displays the weeds mapped in 2016 and Figure 2.2 displays the weeds treated in financial years 2015-2019.

Approximately 75% of the Shire has received one round of treatment (Figure 2.2). Some areas have received up to 3 rounds of treatment. Multiple rounds of treatment are often required to reduce the amount of seed present in the seedbank. Some species seed can remain viable for multiple years waiting for suitable conditions to germinate (e.g. Bathurst Burr, Paterson's Curse, and Silverleaf Nightshade).

Andrew Knowles (pers. comm., January 2020) identified that the following weeds have been targeted and reduced in Moira through this program.

- African Boxthorn has been reduced by approximately 75%;
- Black Berry has been reduced by approximately 70%;
- Horehound has been reduced by approximately 50%;
- Sweet Briar been reduced by approximately 80%; and
- Bathurst Burr has been reduced by approximately 70% however seed is remaining in the seedbank waiting for the right seasonal conditions to emerge.

To evaluate the success of the program the entirety of the Shires weeds would need to be mapped to compare with the 2016 dataset.



Figure 2.1: Regionally Controlled Weed species mapped 2016. The points only indicate the general location of weeds, not the extent or abundance, and shows only the key regionally controlled weed species treated.

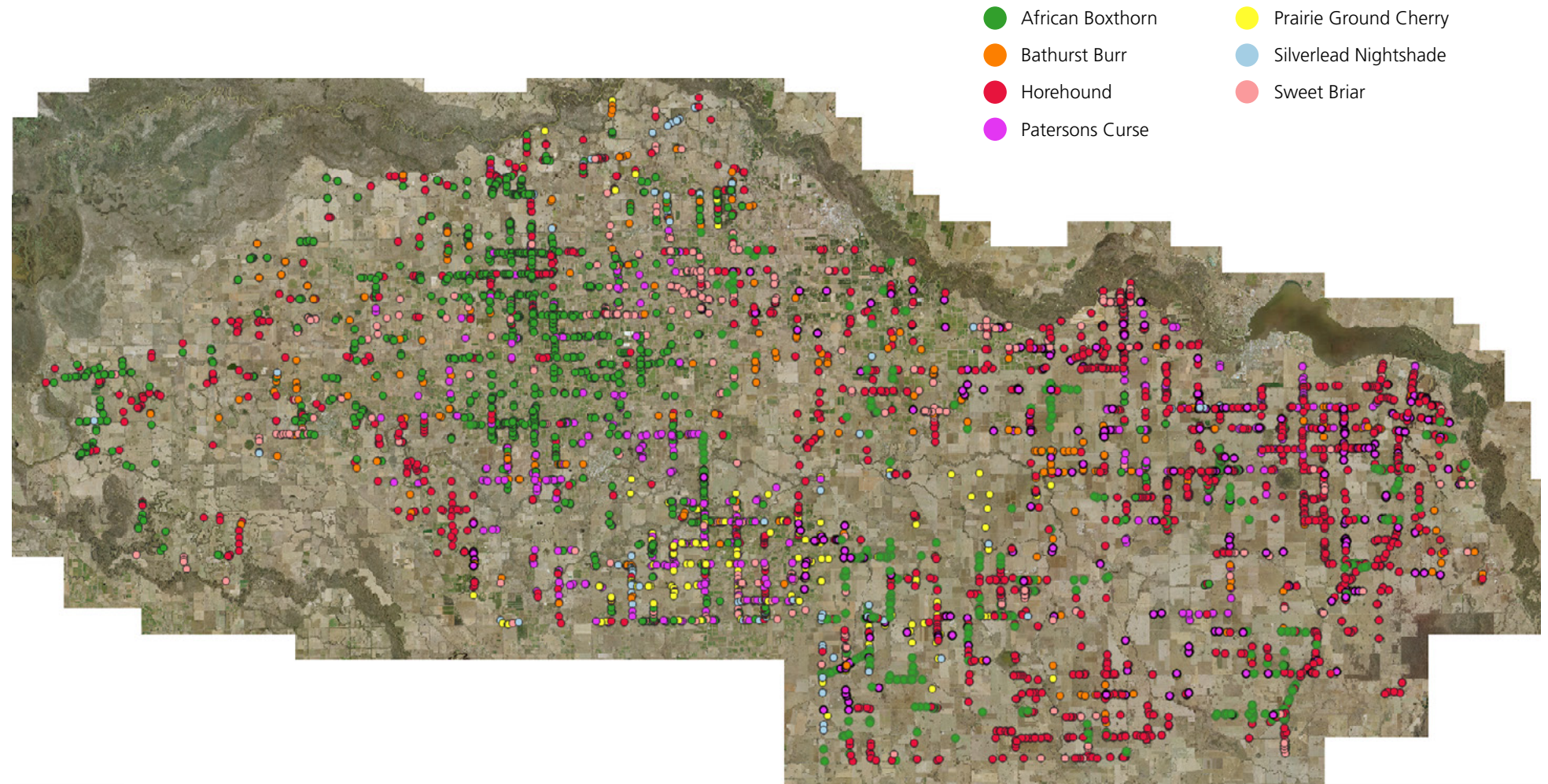
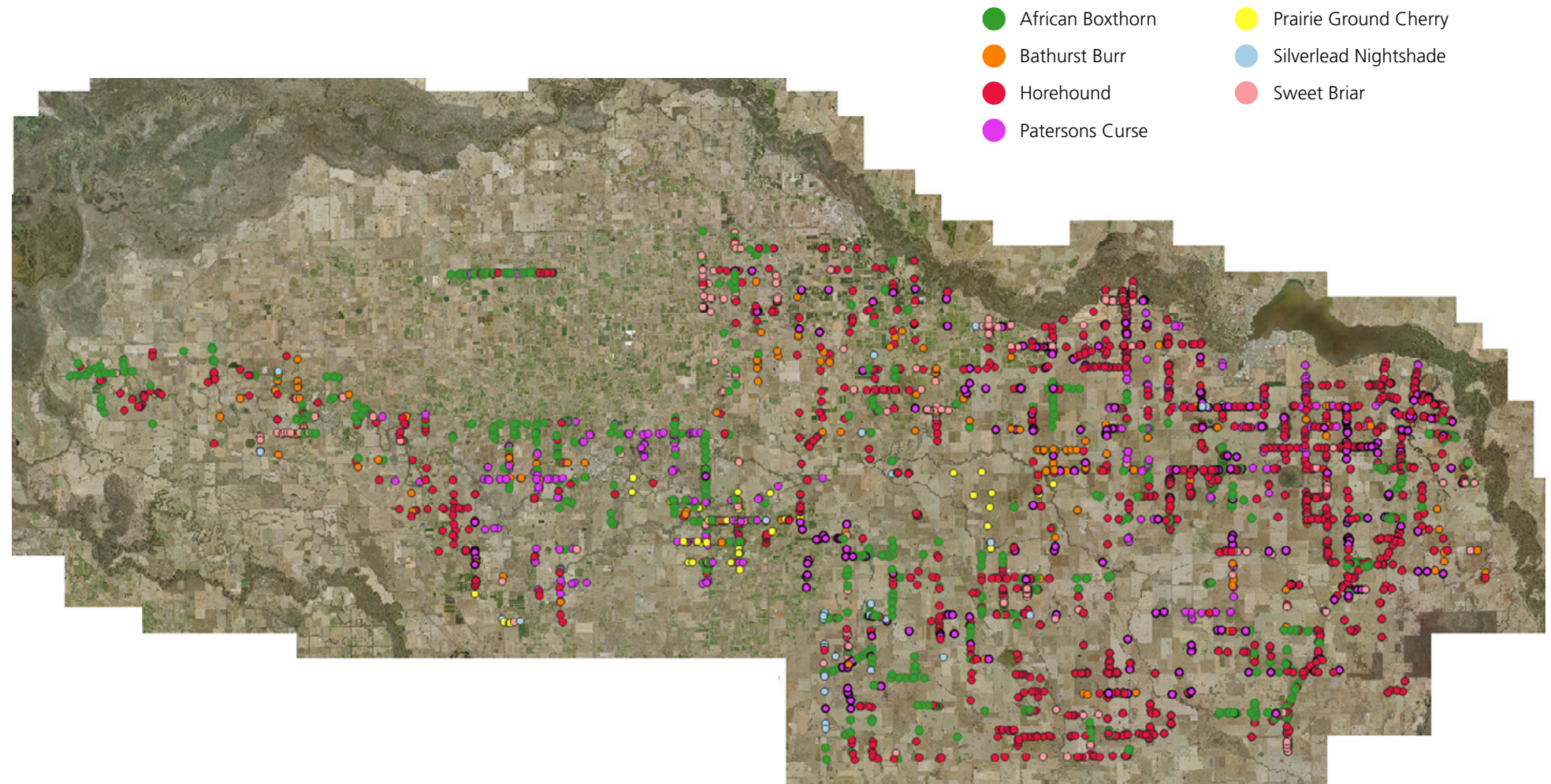





Figure 2.2: Regionally Controlled Weed species treated 2015-2019. The points only indicate the general location of weeds, not the extent or abundance, and shows only the key regionally controlled weed species identified in table 2.2.





## Evaluation of the Implementation Plan

Table 2.3. The proposed objectives, actions, measure and resources identified in 'Appendix 1 – Implementation Plan' with the evaluation of the status of the proposed actions up to the 30th June 2019.

Objectives	Action	Measure	Resources	Status	Comments
<p><b>Council addresses its legal obligations relating to pest animal management as specified in our approved Roadside Weed and Pest Control Plan under the CaLP Act 1994</b></p>	<ul style="list-style-type: none"> <li>Implement an annual weed treatment for Council managed roadsides as outlined in this strategy</li> <li>Give highest priority to the treatment of sites that contain Regionally Controlled or Regionally Prohibited weeds</li> <li>Give priority to sites that have been treated previously (to reduce regrowth)</li> <li>Give medium treatment priority to sites that contain restricted weeds</li> <li>Treat environmental weeds</li> </ul>	<ul style="list-style-type: none"> <li>Number of Council managed roadside sites treated each year and over the life of the strategy</li> <li>Target 30% p.a.</li> <li>Density and spread of Regionally Controlled and Regionally Prohibited weeds</li> <li>Number of sites over the life of the Strategy that transition from requiring annual treatment to requiring monitoring only</li> <li>Density and spread of Restricted weeds</li> <li>Density and spread of environmental weeds</li> </ul>	<ul style="list-style-type: none"> <li>Conducted by external contractors utilising Council's annual weed and pest program budget allocation</li> <li>Estimated cost: \$175,000 p.a.</li> </ul>	<p>● Ongoing 2 more years required</p>	<ul style="list-style-type: none"> <li>An annual weed treatment program in line with the strategy was implemented</li> <li>Contract awarded 1 April 2016</li> <li>Regionally controlled weeds were prioritised for treatment with some regionally restricted weeds and environmental weeds treated in areas of environmental significance or when cost efficient</li> <li>The target to treat 30% p.a. Was not achieved until 2017-2018 with ~25% treated (table 1)</li> <li>2 years of the management plan did not achieve the target of 30%</li> <li>Requires 2 more years of a relatively high investment (\$175,000 p.a.) to achieve the treatment target and allow for a transition to monitoring with reduced management</li> <li>Density and spread of some Regionally Controlled and Regionally Prohibited weeds reduced</li> <li>Density and spread of restricted weeds and environmental weeds similar to 2016 levels</li> <li>Have not spent the full \$175,000 budget to date, underspend ranges from \$102,085 to \$27,893.89</li> </ul>

Objectives	Action	Measure	Resources	Status	Comments
	<ul style="list-style-type: none"> <li>Continue to implement an annual mapping and monitoring program for Council managed roadsides as outlined in this strategy</li> </ul>	<ul style="list-style-type: none"> <li>Number of Council managed roadsides sites mapped and monitored each year and over the life of the strategy</li> <li>Target 100% p.a</li> </ul>	<ul style="list-style-type: none"> <li>Conducted by external contractors utilising Council's annual weed and pest program budget allocation</li> </ul>	<ul style="list-style-type: none"> <li> Ongoing</li> <li>2 more years required</li> </ul>	<ul style="list-style-type: none"> <li>Partially achieved the 100% p.a. target, mapped 100% of roadsides in the first year and mapped treatment areas in subsequent years</li> <li>In 2016, 100% of council managed rural roadsides were mapped for roadside weeds and rabbits, and can be viewed on Councils internal spatial portal, IntraMaps</li> <li>Rural roadsides treated for weeds are monitored and mapped each year and can be viewed on Councils internal spatial portal, IntraMaps (shapefiles collate weed treatment data: Weeds_2018_19_Poly; Weeds_2018_19; Treatment_2017-18_Polys; Treatment_2017-18_Points; Treatment_Polygon_1617; Treatment_Point_1617; Treatment_Polygon_1516; and Treatment_Point_1516)</li> </ul>
	<ul style="list-style-type: none"> <li>Promote vehicle hygiene practices within Council, including the use of engineered solutions to prevent the transport of seeds on vehicles (eg, slasher covers, wash downs etc)</li> </ul>	<ul style="list-style-type: none"> <li>Number of contractors implementing vehicle hygiene practices</li> <li>Develop a Standard Operating Procedure with Council staff and contractors</li> </ul>	Internal resources	<ul style="list-style-type: none"> <li> Partially completed</li> </ul>	<ul style="list-style-type: none"> <li>Roadside management training occurred in 2017 which included vehicle hygiene practices</li> <li>No evidence of contractors implementing vehicle hygiene practices</li> <li>A Standard Operating Procedure has not been developed for vehicle hygiene</li> </ul>
	<ul style="list-style-type: none"> <li>Implement regular vehicle hygiene training sessions with Council staff and contractors</li> </ul>	<ul style="list-style-type: none"> <li>Number of sessions delivered on an as needed basis</li> <li>Review Standard Operating Procedures for training a number of Council staff to implement appropriate vehicle hygiene practices</li> </ul>	Internal resources	<ul style="list-style-type: none"> <li> Partially completed</li> </ul>	<ul style="list-style-type: none"> <li>Roadside management training occurred in 2017 which included vehicle hygiene practices</li> <li>Regular training has not occurred</li> </ul>

Objectives	Action	Measure	Resources	Status	Comments
	<ul style="list-style-type: none"> <li>Investigate incorporating vehicle hygiene practices into the position descriptions for council staff operating machinery</li> </ul>	<ul style="list-style-type: none"> <li>Review Standard Operating Procedures for the inclusion of vehicle hygiene practices into relevant position descriptions</li> </ul>	Internal resources	 Not completed	<ul style="list-style-type: none"> <li>No evidence that this has occurred</li> </ul>
Monitoring and Evaluation	<ul style="list-style-type: none"> <li>Recording data on weeds and treatment to evaluate success of program</li> </ul>	<ul style="list-style-type: none"> <li>Annual decrease in sites and density of weeds on roadsides</li> </ul>	Internal resources	 Ongoing	<ul style="list-style-type: none"> <li>Data is being collected to evaluate the success of the program</li> <li>Contractor has been increasing the number of roadsides that receive treatment on an annual basis</li> <li>The number of sites and abundance of certain weeds have been decreasing</li> <li>Further treatment is required especially in areas that have not received treatment to date and in areas where there is still abundant weed seed present in the seed bank</li> </ul>

## Recommendations

- Continue the weed and pest control program at the current rate (\$150, 000 for Contractors and \$25, 000 for internal resourcing) for another two years (2020-2022) to achieve the target of treating 30% of the shires roadsides p.a. for 5 years. This should allow for at least one round of treatment across 100% of the shires roadsides.
- Re-map weeds across Moira in 2022 to evaluate the success of the program. This will be at the conclusion of the 5-year high intensity treatment program.
- Continue the weed and pest control program at a reduced rate of \$100, 000 p.a. for 5 years (2022 -2027) to manage weeds across 100% of roadsides.
- Remap weeds in Moira every 5 years to evaluate the success of the program and inform future treatment.
- Continue an ongoing annual maintenance program to manage Councils roadsides from a weed and pest animal perspective.
- Seek external funding to strengthen the annual program.

## Appendix 3

# Legislation and Policy Context

## Legislative Context

### Catchment and Land Protection Act 1994

The CaLP Act provides a legislative framework for land management including general duties of landholders and management of noxious weeds and pest animals. The Department of Jobs, Precincts and Regions (DJPR) is the regulating authority for enforcing the Act.

### Councils obligations

In 2013, the CaLP Act was amended to clarify council's responsibilities regarding the management of noxious weeds. Councils as a landholder or land manager under Section 20 of the Act must take all reasonable steps to:

- eradicate regionally prohibited weeds;
- prevent the growth and spread of regionally controlled weeds; and
- prevent the spread of, and as far as possible eradicate, established pest animals.

## Relevant Legislation

Legislation in addition to the CaLP Act needs to be considered when controlling noxious weeds and pest animals. Relevant legislation includes Acts that protect native species, significant areas or sites of cultural heritage significance, humane treatment of animals and agricultural chemical use. Relevant legislation is listed below.

### Australian Government

- *Environment Protection and Biodiversity Conservation Act 1999*

### Victorian Government

- *Aboriginal Heritage Act 2006*
- *Agricultural and Veterinary Chemicals (Control of Use) Act 1992*
- *Flora and Fauna Guarantee Act 1988*
- *Planning and Environment Act 1987*
- *Plant Biosecurity Act 2010*
- *Prevention of Cruelty to Animals Act 1986*
- *Victorian Traditional Owner Settlement Act 2010*
- *Wildlife Act 1975*

## Policy Context

### Biosecurity Strategy for Victoria 2009

The Biosecurity Strategy (2009) outlines a vision for the management of biosecurity in Victoria. The Strategy covers threats to primary industries and the environment caused by pest plants and animals.

### Invasive Plants and Animals Policy Framework 2012

The Invasive Plants and Animals Policy Framework (IPAPF) sites within the context of the Biosecurity Strategy. The IPAPF is the Victorian Government's approach to managing existing and potential invasive species in Victoria. The approach is informed by the invasive plants and animals curve (Figure 1).

Module 1 of the IPAPF deals with weeds and vertebrate pests.

### **Regional Strategies**

It is through the requirements of the CaLP Act that the Catchment Management Authorities (CMAs) were created and given the directive to establish Regional Catchment Strategies (RCS). The RCSs are intended to set the overarching direction for environmental management policy within catchments. Moira is located largely within the Goulburn Broken CMAs region. The eastern edge of Moira along the Ovens River is located within the North East CMAs region. Regional Catchment Strategies in Moira, include:

1. Goulburn Broken Regional Catchment Strategy 2013-2019
2. North East Regional Catchment Strategy 2013

### **Goulburn Broken Biosecurity Invasive Plants and Animals Management Plan 2019-2025**

The Goulburn Broken Biosecurity Invasive Plants and Animals Management Plan sets the strategic direction for invasive plants, animals and biosecurity management in the Goulburn Broken Catchment. The management plan is informed by the Biosecurity Strategy and IPAPF and invasive plants and animals curve (Figure 1).

### **Moira Shire Council**

1. Council Plan 2017-2021
2. Environmental Sustainability Strategy 2017-2021
3. DRAFT Moira Shire Council Roadside Conservation Management Plan 2019



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