



Local Land  
Services  
Riverina

# Riverina Regional Strategic Weed Management Plan 2017 - 2022



Developed in partnership with the  
Riverina Regional Weed Committee

This plan was recommended by the Riverina Regional Weeds committee for endorsement by the Board of Riverina Local Land Services.

The Board of the Riverina Local Land Services endorsed the Riverina Regional Strategic Weed Management Plan 2017-2022 on 18 May 2017.

Subsequent minor amendments were made following the final Regulation being passed by Parliament on 2 June 2017 and commencing 1 July 2017.

**Published by Riverina Local Land Services**

Riverina Regional Strategic Weed Management Plan 2017-2022

First published June 2017 [www.riverina.lls.nsw.gov.au](http://www.riverina.lls.nsw.gov.au)

© State of New South Wales through Local Land Services, 2017.

**Disclaimer:** The information contained in this publication is based on knowledge and understanding at the time of writing. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of Local Land Services or the user's independent adviser.

# Contents

<b>Acknowledgement of Country</b> .....	<b>4</b>
<b>Acknowledgement of Contributors</b> .....	<b>4</b>
<b>Riverina Regional Weeds Committee Chair’s Foreword</b> .....	<b>5</b>
<b>Riverina Local Land Services Chair’s Foreword</b> .....	<b>5</b>
<b>Executive summary</b> .....	<b>6</b>
<b>1. Intent of plan</b> .....	<b>10</b>
1.1 Introduction .....	10
1.2 Vision, Goals and Objectives.....	11
1.3 A more strategic approach to weed management .....	14
<b>2. Policy framework</b> .....	<b>18</b>
2.1 Overview of key plans and strategies .....	18
2.2 Guiding legislation .....	19
2.3 Biosecurity Act 2015.....	19
<b>3. Weed management in the region</b> .....	<b>23</b>
<b>4. Weed risk assessment and prioritisation</b> .....	<b>26</b>
4.1 Weed management prioritisation .....	26
4.2 Regional prioritisation process.....	27
<b>5. Actions</b> .....	<b>30</b>
5.1 Overview .....	30
<b>6. Implementation</b> .....	<b>34</b>
6.1 Regional Weed Committee.....	34
6.2 Guiding principles for implementation.....	34
6.3 Processes supporting implementation .....	35
6.4 Delivery partners .....	36
6.5 Investment .....	39
6.6 Community engagement .....	40
<b>7. Measuring success and continuous improvement</b> .....	<b>41</b>
7.1 Measuring performance .....	41
7.2 Adaptive management and continuous improvement .....	43
7.3 Plan review .....	43
<b>8. Abbreviations</b> .....	<b>45</b>
<b>9. Glossary</b> .....	<b>46</b>
<b>10. References</b> .....	<b>48</b>
<b>Appendix 1: Priority weeds for Riverina Local Land Services Region</b> .....	<b>49</b>
<b>Appendix 2: Other weeds of concern to the Riverina Region that have been risk assessed:</b> .....	<b>64</b>

## **Acknowledgement of Country**

We acknowledge that the protection and promotion of Aboriginal culture, heritage, traditional land management practices and spiritual beliefs are of great importance to the Traditional Owners of the lands and waters in the Riverina region, and benefits the whole community. Strengthening shared cultural values will contribute to a more reconciled and resilient Riverina region community.

## **Acknowledgement of Contributors**

The Regional Strategic Weed Management Plan (Plan) was developed by the Riverina Regional Weeds Committee on behalf of the Riverina Local Land Services Board. The Board wishes to acknowledge the extensive work of the Committee, the Riverina/Murray Executive Project Team and regional support staff in developing this Plan. The Board would also like to acknowledge the State Weeds Committee and their subcommittees, NSW Office of Environment and Heritage, and NSW Department of Primary Industries for their guidance in the Plan's development.

Development of this Plan was supported through the NSW Government's Weeds Action Program funding.

## Riverina Regional Weeds Committee Chair's Foreword

The Regional Strategic Weed Management Plan marks a new phase of weed management in our region, bringing together state and local government with landholders and stakeholders in a combined effort to tackle ongoing weed issues.

Weed management is an integral part of sustainable agriculture, sound environmental management and the maintenance of biosecurity that underpins our rural industries. This Plan will help us achieve our strategic goals in integrated land and water management across the region.

I would like to thank all members of the Riverina Regional Weeds Committee and the Executive Project Team for their contribution and spirit of cooperation, which helped me as Chair guide the process and produce a practical document that maps the way forward for weed management in the Riverina region.

Rob Ferguson, Chair

Riverina Regional Weeds Committee

## Riverina Local Land Services Chair's Foreword

The Plan sets the priorities for weed management in the Riverina region for five years from 2017.

The development of the Regional Weed Management Plan is a result of the introduction of the *NSW Biosecurity Act 2015*, which repealed numerous legislation including the *Noxious Weeds Act 1993*. The Plan also gives support to Goal 1 of the NSW Biosecurity Strategy 2013-2021: "biosecurity is a shared responsibility".

The Riverina Regional Weeds Committee includes representatives from local government, NSW Department of Primary Industries, state government agencies managing crown lands (including the National Parks and Wildlife Service, Forestry Corporation of NSW, Roads and Maritime Services and Department of Industry - Lands), NSW Farmers, Landcare, rural landholders and Riverina Local Land Services.

The Board wishes to acknowledge the work of the Riverina Regional Weeds Committee, its Chair Rob Ferguson, the Riverina/Murray Executive Project Team and regional support staff in developing this Plan. The Board would also like to acknowledge the State Weeds Committee and their subcommittees' for their support in undertaking weed risk prioritisation.

On behalf of the Board of Riverina Local Land Services I would like to thank the members of the Riverina Regional Weeds Committee for their time, expertise and effort to produce this Regional Strategic Weed Management Plan.

We look forward to community support for the Plan and the opportunity to work with all stakeholders in weed management.

Barney Hyams, Chair

Riverina Local Land Services

# Executive summary

## Our vision

Biosecurity protects the economy, environment and community from the negative impacts of pests, diseases and weeds. As such, it is vital for the health, wellbeing and prosperity of the state. The Riverina Regional Strategic Weed Management Plan focuses on managing weeds to improve the region's biosecurity. Our vision is to protect the Riverina's environment, economy and community from the negative impacts of weeds and thereby strengthening the sustainability of the natural environment, primary industries, and local communities in the region.

In line with new Commonwealth biosecurity measures NSW has reformed its weed, pest and disease legislation. Together, the NSW Biosecurity Strategy 2013-2021 and *NSW Biosecurity Act 2015* (which repeals amongst other Acts, the *Noxious Weeds Act 1993*) provide a clear framework for safeguarding primary industries, natural environments and communities from a range of pests, diseases and weeds. Community-wide shared responsibility for biosecurity and a tenure-neutral approach are crucial to realise the vision of a sustainable and prosperous future.

The Riverina Regional Strategic Weed Management Plan was prepared by the Riverina Regional Weed Committee on behalf of the Riverina Local Land Services Board, with guidance from the State Weeds Committee and Local Land Services staff.

## Working together

The plan outlines how government, industry and the community will share responsibility and work together to identify, minimise, respond to, and manage weeds. It relates to all lands and waters in the Riverina Local Land Services region of NSW. It focuses on managing weeds that impact:

- animal and plant industries, including agriculture, horticulture, forestry, aquaculture and recreational fishing in freshwater systems
- ecological communities and biodiversity, including natural urban and peri-urban environments
- human health, livelihood, lifestyle, cultural values, recreation and landscape amenity
- infrastructure and service industries, including energy, transport and water supplies.

The plan sets the vision and goals for weed management in the Riverina region, and outlines strategies and actions to achieve outcomes based on principles of shared responsibility, sustainable landscapes, collaborative leadership and innovation. The Vision and Goals are :

**Vision:**

*Government, industry and communities of the Riverina region working together to protect the environment, economy and community from the negative impacts of weeds for the benefit of the region*

**Goal 1: Responsibility for weed biosecurity is shared by the community**

Actions focus on a whole of community approach to weed management, with an emphasis on:

- building community capacity
- building stronger partnerships
- fostering a shared responsibility
- promoting behavioural change

**Goal 2: Weed biosecurity supports profitable, productive and sustainable primary industries and****Goal 3: Weed biosecurity supports healthy, diverse and connected natural environments**

Actions focus on weed biosecurity to protect the environment and foster sustainable economic growth. The emphasis is on:

- preventing new weeds from entering the region
- eradicating or containing the spread of new weeds that do establish
- managing widespread weeds on priority sites.

**Goal 4: Weed biosecurity is supported by coordinated, collaborative and innovative leadership**

Actions focus on a consistent approach to implementing this plan, with emphasis on:

- providing good governance and leadership to support a collaborative approach
- supporting and delivering the weed biosecurity reforms for NSW
- implementing risk based systems across all tenures in a co-ordinated manner
- using information and mapping systems, current research and adaptive management to improve effectiveness of weed control.

## Sharing responsibility

The plan provides a sound basis for a co-operative and co-ordinated approach to managing weeds in the Riverina region. It defines what “shared responsibility” means for the region’s communities and stakeholders, and how they might work together to identify, minimise, respond to and manage high risk weeds at a landscape scale, both now and into the future.

The NSW *Biosecurity Act 2015* is tenure neutral, meaning it applies equally to all land in the region, whether public or private. The Act contains a range of new regulatory tools and a General Biosecurity Duty that support this tenure neutral approach to managing weed biosecurity risk. These tools include Prohibited Matter, Biosecurity Zones, Mandatory Measures and Control Orders and the plan outlines how they might be applied.

The plan outlines how land managers might meet requirements under the General Biosecurity Duty: *the responsibility of any person who has any dealing with weeds (biosecurity matter), whether they have an infestation on their land, are selling a potentially invasive species, dumping garden rubbish, or supplying contaminated fodder or the like must prevent, minimise or eliminate the biosecurity risk (as far as is reasonably practicable).*

## Weed Priorities

An expert panel used best available knowledge and an internationally-recognised risk-assessment process to identify the high-priority weed species in the Riverina region. The weed prioritisation process is detailed in Chapter 4 in more detail but is guided by the principle that *managing weeds earlier rather than later is more cost effective*. The weed management objectives listed support this principle and prioritises outcomes which can be achieved during the early stages of the invasion process.

The plan identifies regional priority weeds, including management objectives and “outcomes to demonstrate compliance with the General Biosecurity Duty”. The plan also identifies state level and other priority weeds to provide further focus to weed management in the region.

## Building on the past

This plan builds on the previous efforts of the Noxious Weeds Advisory Groups and from the accumulated experience and expert local knowledge of committee members and their networks. The Riverina regional weed committee includes representatives from Local Government, NSW Department of Primary Industries, State government agencies managing state owned lands (Office of Environment and Heritage, National Parks and Wildlife Service, Forestry Corporation of NSW, Roads and Maritime Services and Department of Industry – Lands), NSW Farmers, Landcare, rural landholders and Riverina Local Land Services.

The Riverina Regional Weed Committee (RWC) was established as a local community advisory group under the *Local Land Services Act 2013* providing advice to the Riverina Local Land Services Board. Development of this plan was a key role for the committee.

The Committee provides strategic planning advice and weed management advice to the Riverina Local Land Services Board. It works closely with the State Weeds Committee (SWC), whose charter is to ensure a consistent, coordinated and strategic approach to weed management across the state of NSW.

A range of stakeholders have played an important role in weed management planning in the region over many years.



## **Implementation**

The Riverina Local Land Services Board will have oversight of the plan implementation. The plan will guide investment in weed management across the region and provide a consistent basis for regional weed planning and implementation. The regional weed committee will play an important role in providing advice to the Board on implementation of the plan. Key stakeholders and managers of land including the Local Control Authorities will implement the plan under the principle of shared responsibility for weed management. Implementation is further detailed in Chapter 6 of this Plan.

# 1. Intent of plan

## 1.1 Introduction

The Riverina Regional Strategic Weed Management Plan provides a framework for regional weed management. The plan supports regional implementation of the NSW *Biosecurity Act 2015* by articulating community expectations in relation to effective weed management and facilitating a coordinated approach to weed management in the region. The plan (and the legislation that underpins it) is based on the premise that biosecurity is everyone's responsibility. It supports development of this culture, guiding the community in effective and coordinated management of weeds and meeting relevant statutory obligations.

The plan relates to all lands and waters in the Riverina Local Land Services region of NSW (Figure 1.1).

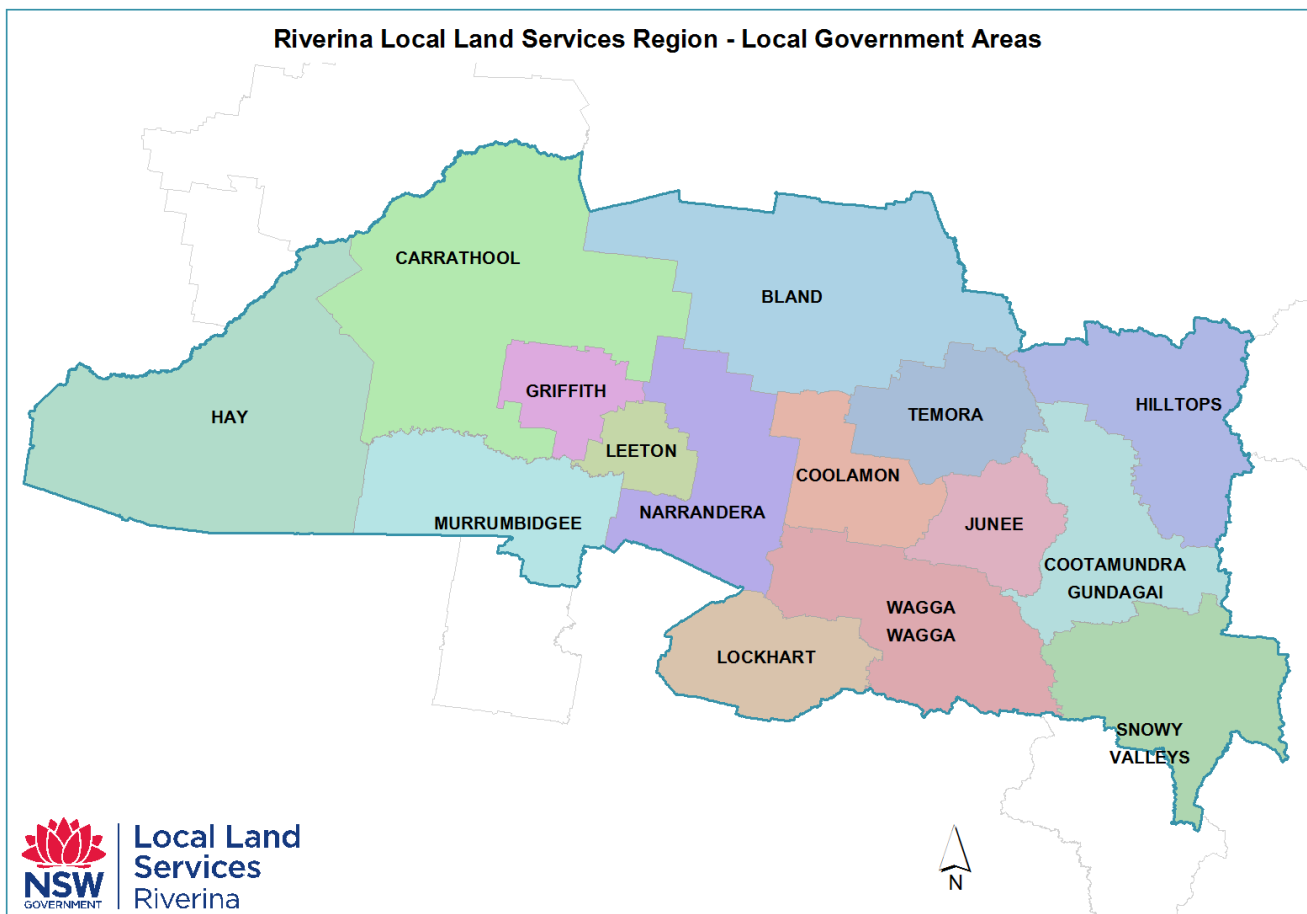


Figure 1.1: Riverina Local Land Services region.

This plan is underpinned by expert local knowledge of regional weed committee members and their networks. It will guide resource allocation and investment in the region and provide a consistent basis for regional planning and delivery.

The Riverina Regional Strategic Weed Management Plan implements the NSW weed reforms, Biosecurity Strategy and Invasive Species Plan in relation to weed management for the Riverina region. The Plan was prepared by the Riverina Regional Weed Committee and approved by the Riverina Local Land Services Board. The Plan covers weed risks that impact on :

- animal and plant industries, including agriculture, horticulture, forestry, aquaculture, recreational fishing
- biodiversity of natural, urban and peri-urban environments (terrestrial and aquatic)
- human health, livelihood, lifestyle, recreation and landscape amenity
- infrastructure and service industries, including energy, transport and water supplies.

This plan sets the vision, goals and objectives for weed management in the Riverina region for the next five years and outlines the strategies and actions through which these goals will be achieved.

## 1.2 Vision, Goals and Objectives

This plan provides a sound basis for a co-operative and co-ordinated approach to weed management, The Vision for this plan is:

*Government, industry and the people of the Riverina region working together to protect the environment, economy and community from the negative impacts of weeds.*

The goals, objectives and outcomes for this plan align with those of the NSW Biosecurity Strategy 2013-2021 and the Riverina Local Land Services Local Strategic Plan 2016-2021, which provide the overarching policy framework. Our Goals are:

1. *Responsibility for regional weed biosecurity is shared by the Riverina community*
2. *Weed biosecurity supports profitable, productive and sustainable primary industries*
3. *Weed biosecurity supports healthy, diverse and connected natural environments*
4. *Weed biosecurity is supported by coordinated, collaborative and innovative leadership.*

The objectives of this plan, outcomes we expect to see, and the strategies to achieve them, are shown in Table 1.1.

Table 1.1: Vision, Goals, Outcomes, Objectives and Strategies of the plan.

<b>Vision</b>	<b><i>Government, industry and the people of the Riverina region working together to protect the environment, economy and community from the negative impacts of weeds.</i></b>		
<b>Goals</b>	<b>Shared Responsibility</b>	<b>Sustainable Landscapes</b>	<b>Collaborative Leadership and Innovation</b>
	<b>1. Responsibility for weed biosecurity is shared by the Riverina community</b>	<b>2. Weed biosecurity supports profitable, productive and sustainable primary industries 3. Weed biosecurity supports healthy, diverse and connected natural environments</b>	<b>4. Weed biosecurity is supported by coordinated, collaborative and innovative leadership</b>
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>• Community, industry and government are sharing responsibility for weed management and have a clear understanding of their roles and obligations.</li> <li>• People have the skills, knowledge, capacity and capability to deliver weed management activities.</li> <li>• Strong supportive partnerships have improved weed management for all partners.</li> <li>• Awareness of weed management in the region has improved, with communication and engagement, proactive and inclusive.</li> </ul>	<ul style="list-style-type: none"> <li>• Weed management is integrated and co-ordinated across all tenures.</li> <li>• Weeds are monitored at landscape and industry scales and developing problems are proactively managed.</li> <li>• Weed management is supporting landscape health and key assets important to biodiversity.</li> <li>• Primary industries are using leading weed management practices that contribute to increases in productivity, sustainability and market access with minimal impacts on natural resources.</li> <li>• Sensitive aboriginal cultural heritage areas are protected.</li> <li>• Weed biosecurity threats are continually identified, assessed and prioritised across Riverina region environments and primary industry sectors.</li> <li>• Weed biosecurity emergencies and high risk pathways are well managed.</li> <li>• Impacts on high priority assets have been minimised through risk based weed management programs.</li> </ul>	<ul style="list-style-type: none"> <li>• Engagement, collaboration and involvement of local people in decision making are co-ordinated.</li> <li>• Relevant and timely information supports decision making by the Riverina Regional Weed Committee and the State Weeds Committee.</li> <li>• Information, monitoring, performance evaluation and reporting systems, provide for benchmarking, continuous improvement, stakeholder feedback and innovation.</li> <li>• A strong evidence and knowledge base is supporting innovation and strengthening research.</li> <li>• Changes in weed behaviour under a changing climate are being understood and monitored.</li> </ul>

<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Communicate a clear strategic vision and build support for a strong and integrated biosecurity system for the region.</li> <li>• Provide the foundation for all customers and stakeholders to work together, and to fully utilise knowledge and expertise across all groups.</li> <li>• Foster accountability for weed management in the region at all levels.</li> </ul>	<ul style="list-style-type: none"> <li>• Improve effectiveness in prevention and response to new weed incursions.</li> <li>• Prevent, eradicate, control and manage the impacts of weeds.</li> <li>• Understand and have regard for the impacts of a changing climate on weed biosecurity.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a framework for more detailed planning, monitoring and reporting of weed management programs.</li> <li>• Provide guidance for weed management prioritisation, decision making and actions at a regional level.</li> <li>• Support consistent and coordinated regional weed management planning and local delivery.</li> <li>• Support leading practice in weed management through ongoing creation and sharing of knowledge and spatial information.</li> </ul>
<b>Strategies</b>	<p>1.1 Promote weed management and behavioural change in the community.</p> <p>1.2 Build stronger partnerships that support weed management.</p> <p>1.3 Enhance community-wide capacity in sharing responsibility for weed management.</p>	<p>2-3.1 Improve surveillance, reporting and tracing systems for weeds.</p> <p>2-3.2 Improve prevention, preparedness and response to weed emergencies.</p> <p>2-3.3 Eradicate or prevent the spread of new weeds.</p> <p>2-3.4 Contain and manage impacts of widespread weeds.</p> <p>2-3.4 Support and utilise developments in weed science and technology.</p> <p>2-3.6 Use results of research [for example, Weed Futures, Bioclim, ANUCLim] to assess and respond to changing risks under a changing climate.</p>	<p>4.1 Provide governance and leadership that supports collaborative, effective and efficient weed management.</p> <p>4.2 Adopt adaptive, contemporary planning and processes.</p> <p>4.3 Develop a regional weed knowledge base and information system that supports state standards.</p> <p>4.4 Develop consistent systems for monitoring, evaluating and reporting on the effectiveness of weed management.</p>

## 1.3 A more strategic approach to weed management

### 1.3.1 Drivers

Weeds are a major threat to Australia's natural environment. The impact of weeds on Australian agriculture alone, are estimated to be \$2.5 billion in lost production and \$1.8 billion in control activities every year (NSW DPI, 2015). As well as increasing costs of weed control, a range of developments are increasing the need to manage weeds more strategically and efficiently:

- NSW weed management reform, identified in a *Review of Weeds Management in NSW* (Natural Resources Commission in 2014). This followed reform of Commonwealth biosecurity measures in 2012, alignment of state legislation, and measures for better cross-jurisdictional biosecurity management around the country.
- Globalisation is integrating the world economy with rapid growth in trade, tourism, passenger and cargo movements. This is increasing the risk of pest, disease and weed incursions.
- The global climate is more variable and less predictable, with more extreme weather events, increasing average temperatures and other changes expected. These changes are likely to favour the establishment, spread or shift of some weeds and limit the distribution and impact of others.
- The demand for food is continually increasing, with modelling indicating global food production will have to double between now and 2050 to keep up with that demand. We need to do everything we can to protect our capacity to produce food, with weeds being a major impact on productivity.
- Herbicide resistance is a growing problem, particularly with the development of resistant crops. There is also a trend towards growing organic produce in western countries, and concern about the impact of pesticides on health.
- Pressure to maintain profitability and increase efficiency are ongoing in government, industry, and business sectors with an ageing population and an increasingly global economy. It is crucial that limited resources for weed biosecurity are used wisely, with constructive partnerships and clear decision-making processes established.

Technological developments are creating opportunities to improve the cost effectiveness of weed control and improve capacity to work more strategically at a landscape scale. Planning for weed management must consider the effectiveness and efficiency of control measures so that the cost is commensurate with the benefit.

The NSW Biosecurity Strategy 2013-2021 outlined the measures needed to align NSW with Commonwealth and other state biosecurity policies. This led to the development of the NSW *Biosecurity Act 2015*, which replaces 14 other pieces of legislation and establishes a clear framework for safeguarding primary industries, natural environments and communities from biosecurity threats.

The emphasis in the NSW Invasive Species Strategy and biosecurity legislation is on prevention of invasive species and early intervention in the incursion process (Figure 2). Early and strategic investment to prevent and eradicate invasive species provides more cost-effective and successful weed control outcomes.

### 1.3.2 Weed committees and development of this plan

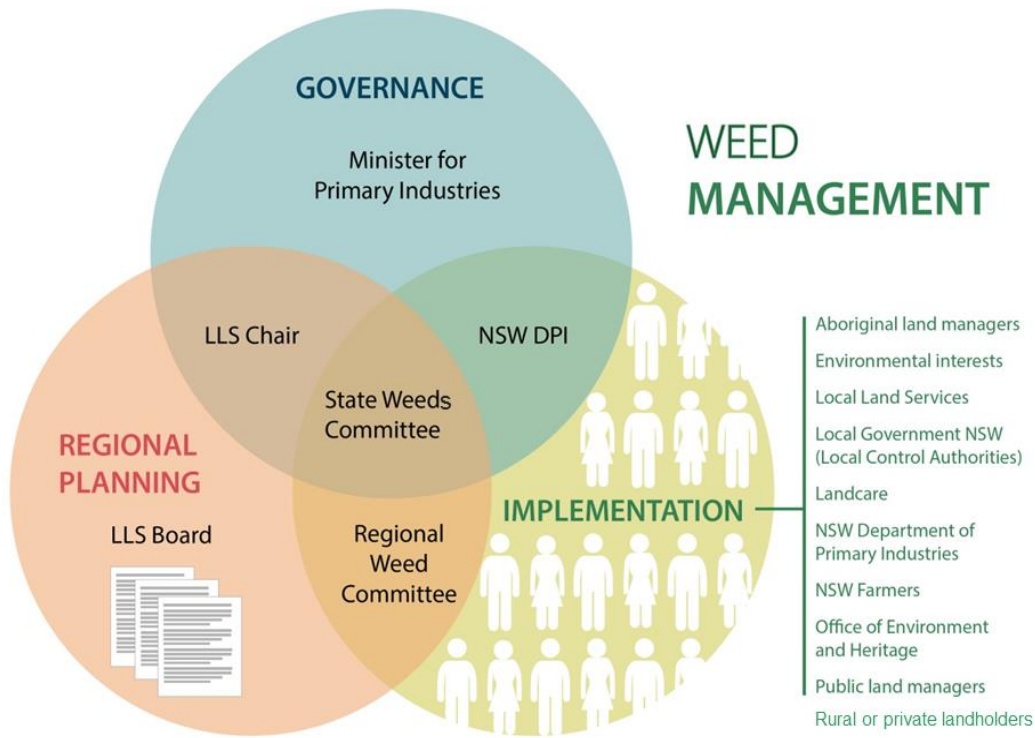
The NSW weed reforms recommended that Local Land Services assume responsibility for forming a weed committee in each region to act as a Community Advisory Group and provide appropriate support for weed management and planning. The Riverina Regional Weeds Committee includes representatives from Riverina Local Land Services, NSW Department of Primary Industries (DPI), state government agencies managing state owned lands (Office of Environment and Heritage (OEH), Forestry Corporation, Roads and Maritime Services and Department of Industry – Lands), local government, NSW Farmers, Landcare and rural landholders. Through this representation, the committee provides tenure neutral strategic planning and co-ordination of weed management activities at a regional level and also provides a forum for community and stakeholders to raise issues and find solutions.

The State Weeds Committee (SWC) was established to provide a state-wide perspective in overseeing implementation of the weed management reforms: auditing, evaluating weed declarations, and providing state-level perspectives and governance. Their role includes developing service delivery standards for weed compliance, and commissioning audits. The regional weed committee refers weed policy issues to the State Weeds Committee and will support the State Weeds Committee in the development and implementation of performance standards.

This plan represents a partnership between the regional weed committee and its representative organisations. The committee developed this plan for the Riverina Local Land Services Board.

The relationship between Local Land Services, the Regional Weed Committee, the State Weeds Committee and other customers and stakeholders is shown in Figure 1.2.

Government, industry, industry associations, research providers, universities, non-government organisations, individuals and the community as a whole all have a role to play in the management of weed biosecurity risks. Local control authorities play a particularly important role in weed management including enforcing the *NSW Biosecurity Act 2015* with respect to weeds.



**Figure 1.2: Roles in weed management.**

The relationship between the regional weed committee, the Riverina Local Land Services Board and other Community Advisory Groups is shown in Figure 1.3 below. Riverina Local Land Services provides executive support to the committee.





**Figure 1.3: Regional Weed Committee relationship to Riverina Local Land Services Board.**

## 2. Policy framework

### 2.1 Overview of key plans and strategies

The Riverina Regional Weed Committee considered a range of relevant plans and strategies in development of this plan, at national, state and local levels. These are shown below.

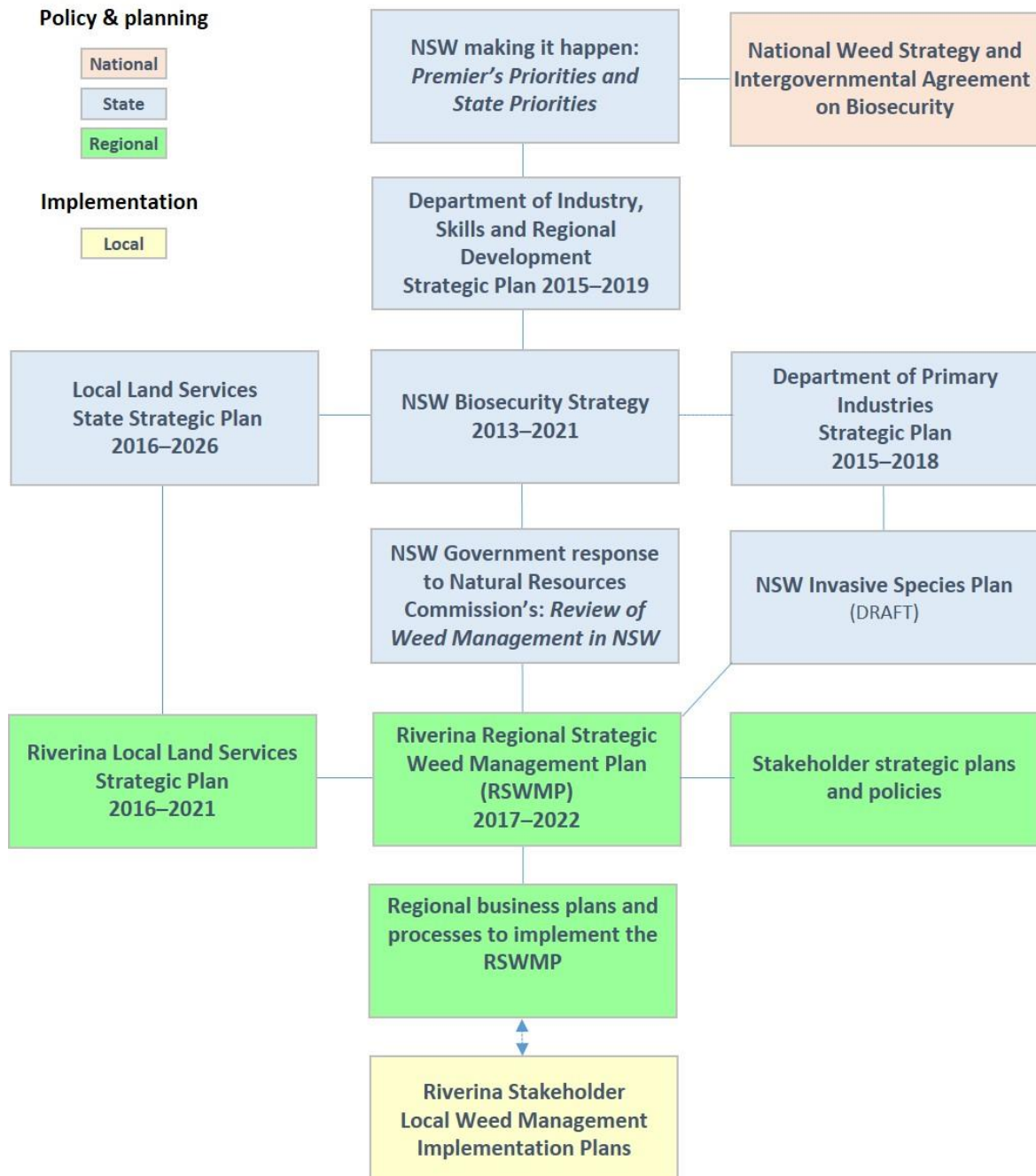


Figure 2.1: Overall planning framework for the Regional Strategic Weed Management Plan.

## 2.2 Guiding legislation

The key legislation that underpin this plan is the *NSW Biosecurity Act 2015*, *Local Land Services Act 2013* and *Local Government Act 1993*. The *NSW Biosecurity Act 2015* takes effect with publication of the Biosecurity regulations in the NSW Government Gazette. This Act and regulations are administered by NSW Department of Primary Industries.

A range of other relevant state and national legislation will also influence how the plan is implemented. Key NSW legislation relevant to weed management that will continue to operate in tandem with the *NSW Biosecurity Act 2015* is the:

- *Local Government Act 1993*
- *Local Land Services Act 2013*
- *National Parks and Wildlife Act 1974*
- *Biodiversity Conservation Act 2016*
- *Forestry and National Park Estate Act 1998*

The *Crown Lands Management Bill 2016* has passed the NSW Parliament and the new act is likely to repeal the *Crown Lands Act 1989* and certain other legislation early in 2018. Information about the new Act is available from the Department of Industry - Lands website.

Biodiversity management in NSW is also being reformed, with the NSW government implementing recommendations from the Independent Biodiversity Legislation Review Panel. This includes the new *Biodiversity Conservation Act 2016*, and Saving our Species (which will address the range of weeds in Schedule 4 of the *Biodiversity Conservation Act 2016* listed as Key Threatening Processes). The State Weeds Committee will liaise with regional weed committees on the effect of any changes to relevant legislation.

## 2.3 Biosecurity Act 2015

The *NSW Biosecurity Act 2015* has repealed, amongst other Acts, the *Noxious Weeds Act 1993*, which has previously provided regulatory controls and powers to manage noxious weeds in NSW. The *NSW Biosecurity Act 2015* streamlines and modernises the way weeds are managed in NSW as it:

- moves towards outcome based solutions and voluntary compliance
- embeds the principle of shared responsibility for biosecurity risks (including weeds) across government, community and industry
- applies equally to all land in the state, regardless of whether it is publically or privately owned
- is premised on the concept of risk, so that weed management investment and response is appropriate to the risk
- supports regional planning and management for weeds, as recommended by the *Review of Weeds Management in NSW*.

In keeping with its premise that biosecurity is a shared responsibility, the Act introduces the legally enforceable concept of a General Biosecurity Duty.

### 2.3.1 General Biosecurity Duty

For weeds, the General Biosecurity Duty means that any person dealing with plant matter must take measures to prevent, eliminate or minimise the biosecurity risk as far as is reasonably practicable.

“Dealing” has a broad definition in the Act and includes (but is not limited to) activities such as grazing, cropping, fodder production, horticulture, weed control, seed and other plant production, as well as carrying, sale and distribution of these products. In general if you deal with or carry plant matter as part of a commercial, professional, volunteer or recreational activity or lifestyle, it would be considered that you would know, or ought reasonably to know, the risks. Plant matter includes plants, parts of plants and seeds. Weeds are **not** limited to plants listed in the Appendices of this plan or to schedules in the Regulations of the NSW *Biosecurity Act 2015*: any species that poses a biosecurity risk is subject to the General Biosecurity Duty. This provides the Act with more flexibility to deal with both agricultural and environmental weeds, plants that may pose risks in particular contexts, and invasive species which are not as yet present, but pose a risk.

### 2.3.2 Regulatory tools of the Act

The NSW *Biosecurity Act 2015* includes a number of mechanisms (regulatory tools) that can be used to manage weeds in NSW. These are outlined in Table 2.1 below. The NSW *Biosecurity Act 2015* and Regulations provide specific legal requirements for high risk activities and state level priority weeds. The State level priority weeds and associated legal requirements relevant to the region are included in Appendix 1 together with the high risk priority weeds from the regional prioritisation process.

**Table 2.1: Tools of the NSW *Biosecurity Act 2015*.**

**Prohibited Matter:** biosecurity matter listed in Schedule 2, Part 1 of the *NSW Biosecurity Act 2015* for the purpose of preventing entry of that matter into NSW or a part of NSW. Prohibited matter relevant to the region is listed in Appendix A1.1 of this plan. Prohibited matter includes weeds nationally targeted for eradication and presently not in NSW.

**Control Order:** establishes one or more control zones and related measures to prevent, eliminate, minimise or manage a biosecurity risk or biosecurity impact. Control orders are for managing weeds under approved eradication programs and last for five years (or can be renewed for longer-term eradication programs). Weed Control Order 2017 (Part 6 Division 1) under the *NSW Biosecurity Act 2015* will include weeds that are subject to a Control Order for the purpose of eradication. Further Control Orders will be proposed as needed to address subsequent eradication campaigns.

**Biosecurity Zone:** aims at containment of a species and provides for ongoing strategic management in a defined area of the state. A Biosecurity Zone specifies the measures that must be taken in the defined area to manage the weed. Outcomes to demonstrate compliance with the General Biosecurity Duty may also apply to the species either within the zone or outside it.

**Mandatory Measures:** the regulations may require persons who deal with biosecurity matter or carriers to take specified actions to prevent, eliminate or minimise a biosecurity risk posed or likely to be posed by the biosecurity matter, carrier or dealing. Those requirements are Mandatory

Measures and include Weeds of National Significance (WoNS) (Division 8 Clause 33), Parthenium weed carriers - machinery and equipment (Division 8 Clause 35), and duty to notify of importation of plants into the state (Division 8 Clause 34). Mandatory measures relevant to the region are listed in Appendix 1.

**General Biosecurity Duty:** the purpose of the General Biosecurity Duty is to manage the spread and/or impact of all weeds that pose a biosecurity risk (2.3.1 above provides more detail). The General Biosecurity Duty is in addition to any requirements included in a control order, biosecurity zone or other instrument made under the NSW *Biosecurity Act 2015*. For priority weeds, outcomes to demonstrate compliance with the General Biosecurity Duty are detailed in Appendix 1 of this plan.

**Biosecurity Direction:** an Authorised Officer may issue a Biosecurity Direction to a person or class of persons, if the officer reasonably believes it is necessary for any of the following:

- to prevent, eliminate or minimise a biosecurity risk
- to prevent, manage or control a biosecurity impact
- to enforce any instrument under the NSW *Biosecurity Act 2015*

**Biosecurity Undertaking:** is a written undertaking by a person, accepted by an authorised officer. It must specify the measures a person has agreed to implement to remedy a contravention, likely contravention, or suspected contravention of the Act and when those measures must be implemented by. It is not an admission of guilt.

**Emergency Order:** may be issued to respond to a current or imminent biosecurity risk that may have a significant impact.

### 2.3.3 Enforcing the *NSW Biosecurity Act 2015*

NSW Department of Primary Industries (DPI) administer the NSW *Biosecurity Act 2015* and determine the weed species covered by regulatory tools such as Prohibited Matter, Control Orders and Biosecurity Zones.

Local Control Authorities (Local Councils and County Councils) are responsible for enforcing the NSW *Biosecurity Act 2015* and regulations only in respect to weed management. This includes activities such as:

- conducting weed inspections on public and private property
- inspecting and controlling weeds in high risk pathways and sites
- providing education, training and resources for both the public and staff in relation to weed management
- administering and ensuring compliance with any of the above regulatory tools
- responding to breaches of the Act, and
- notifying and reporting on weed activities to the Biosecurity Information System (BIS).

Authorised officers under the NSW *Biosecurity Act 2015* are able to exercise all the functions specified in the Act to enforce the Act and its regulations, including the regulatory tools covered in Table 2.1. Authorised officers are appointed by the Secretary of the Department of Industry or their delegate. Local Control Authority Weed Officers will be appointed as Authorised Officers under the NSW *Biosecurity Act 2015* by their Local Control Authority.

That appointment will allow the officers to exercise the functions of an authorised officer for weeds within the area of operation of their Local Control Authority.

The primary focus of this plan is to encourage and work with the community and landholders to achieve weed management objectives. Education, extension and use of biosecurity undertakings reinforce the concept of the General Biosecurity Duty and establish a cooperative approach to local and regional weed management.

Monitoring and compliance for weed management in the region will be prioritised according to the priority weeds listed in Appendix 1 to this plan. For these high risk weeds, prompt and responsible action is essential to avoid significant impacts on other landholders, industry and the environment.

### 2.3.4 Agreed standards for weed management

The Regional Strategic Weed Management Plan is an important document for articulating the shared responsibility principle of the NSW *Biosecurity Act 2015* (the Act) and communicating weed control obligations. Although the plan is **not** a regulatory document, it provides information to guide any person to understand how to discharge their obligations under the Act, including their general biosecurity duty.

The general biosecurity duty requires that all land managers and users ensure: *as far as is reasonably practicable, that the biosecurity risk is prevented, eliminated or minimised*. It does not prescribe how these outcomes are achieved. For this reason the plan does not include prescriptive measures for landholders and users to discharge their general biosecurity duty. The plan focuses on the outcomes to be achieved, allowing for different measures to achieve the same outcome.

The plan links the key elements of *Knowledge, Risk, Practicality* and *Outcomes* for discharging the General Biosecurity Duty.

## 3. Weed management in the region

### 3.1 Regional overview

The NSW Riverina Local Land Services (LLS) region encompasses approximately 67,000 km<sup>2</sup> of land. The region is bounded by Harden in the east, Hay in the west, Hillston and Young in the north and Lockhart in the south.

The second-largest river of the Murray-Darling system, the Murrumbidgee River, winds through the region. The region's landscapes range from sub-alpine to semi-arid, and include extensive riverine systems of the Murrumbidgee and Lachlan rivers. These rivers provide the living linkage between all these landscapes. They are working rivers as well as natural assets with the waters generating energy, providing water and recreation for cities, towns and farms. The region's population is approximately 166,000 with the region's largest centre, Wagga Wagga, supporting nearly 60,000 people. The Riverina region is supported by 15 local governments who all play an important role in weed management in the region (Riverina LLS 2016).

The Riverina region is broadly defined by six landscapes or 'systems' that are based on how communities identify with their local landscape. These landscapes include the Rangelands, Irrigation Areas, Riverina Plains, Murrumbidgee, South West Slopes and Riverina Highlands. These systems are each characterised by a distinct set of natural, social, and economic features that influence how business gets done in the Riverina region. Dryland and cereal-focused cropping accounts for more than 80% of land use in the region while irrigated farming covers around 5% of the total land area. The region's natural, social, and economic capital is highly dependent on the availability and condition of natural resources.

Aboriginal cultural heritage is prominent with the Riverina region having always supported large populations of Aboriginal peoples. The region's Aboriginal communities maintain an ongoing and unbroken connection to Country. Aboriginal people, along with other stakeholders, have an important role to play in the management of weeds on Country.

Management of weeds is a significant challenge facing communities across the region. While the cost of weeds to the natural environment and biodiversity is difficult to estimate, it is likely to be significant.

### 3.2 Key weed impacts in the Riverina region

Weeds and weed management present a significant challenge to two of the Riverina region's four strategic goals: *biosecure, profitable, productive and sustainable primary industries* and *healthy, diverse, and connected natural environments* (Riverina LLS 2016).

#### ***Impact of weeds on agriculture***

The negative impacts of weeds on agriculture can be broadly classified as: lost or reduced pasture forage quality (e.g., through proliferation of toxic or unpalatable weeds), increased input costs (i.e., the cost of weed management), reduced product quality (e.g., through contamination of harvests or carcasses), and increased logistical constraints (e.g., where stock mustering or farm machinery is impeded by weed infestations).

## ***Impact of weeds on animal and human health***

Along with their economic costs, certain weed species are also associated with negative impacts on human and animal health. These impacts can be broadly classified as: skin and/or mucus membrane irritations, respiratory problems, toxicity, and/or physical injury. Additionally, some weeds may affect the amenity of land, reducing its aesthetic and recreational values with indirect effects on human health and wellbeing.

### ***Impact of weeds on biodiversity***

Weeds pose a significant threat to biodiversity in the Riverina region by directly affecting the growth and survival of native flora and fauna, and affecting the structure and function of terrestrial and aquatic ecosystems. A review of the impact of weeds on biodiversity in NSW (NSW DPI and OEH 2011) indicated that 67 weed species in the former Murrumbidgee Catchment Management Authority region were threatening biodiversity, including 39 threatened native plant and animal species (NSW DPI and OEH 2011; Coutts-Smith and Downey 2006). Management and investment priorities for weeds affecting biodiversity values are generally based on the value of the natural assets, investor preferences, community interest and the ability for collaboration and value-adding to other weed management programs.

### ***Impact of weeds in aquatic environments***

Aquatic weeds affect the ecological condition and recreational value of waterways by altering dissolved oxygen levels, restricting boating and swimming (in some instances becoming a safety risk), interfering with irrigation activities, and out-competing native aquatic plants. Many water weed species were introduced to waterways after being introduced to Australia for use as aquarium and/or garden plants. The spread of some species has been hastened by boating and fishing.

### ***Impact of weeds in urban and peri-urban landscapes***

Garden escapees are a particular problem around bushland that borders towns. These species invade local bushland, reducing the aesthetic appeal, condition, and habitat value of these areas. Their spread is exacerbated by illegal dumping of garden waste from urban backyards.

## **3.3 Strategic weed management in the Riverina region**

### ***Previous Management***

Previously the Eastern and Western Riverina Noxious Weeds Advisory Groups (ERNWAG and WRNWAG) were the two peak regional weed bodies dealing with prioritisation of noxious weed management in the Riverina region, including the Murray, Murrumbidgee, Lower Murray Darling, and Lachlan catchments. These groups consisted of key stakeholders in weed management from Tumut in the east, to Wentworth in the west, Carrathool in the north and the Murray River in the south. Both groups ceased operating in late 2015, but have played a pivotal role in regional weed management, including delivering regional components of the NSW Weeds Action Program (WAP).



## ***Current Management***

Riverina LLS has responsibility for the development and implementation of the Riverina Regional Strategic Weed Management Plan (the plan) and other associated plans or strategies in collaboration with key delivery partners. Key biosecurity goals are detailed in the Riverina Local Strategic Plan. Local Land Services provides information on the impact of invasive weed species on natural resources and assists community groups, Landcare and other stakeholders to seek financial assistance and funding for coordinated programs. Riverina Local Land Services is also responsible for the management of travelling stock reserves and routes in the Riverina region, including weed management on these lands.

## ***Local Government (Local Control Authorities)***

There are fifteen (15) Local Government Authorities (LGA) within the Riverina Local Land Service region. These authorities play an important role in education, extension, advice, community engagement, compliance, planning in weed management in the Riverina region.

## ***The Riverina region community***

Community plays an important role in minimising the impacts of invasive weeds, including complementing the work done by government agencies, land managers, and external funding bodies. Land managers and landholders can help detect new weed incursions and support coordinated eradication programs. The Riverina region's Landcare and producer groups also play a key role in regional weed management by coordinating activities and providing resources to build the capacity of community to undertake effective weed management practices. Particular challenges for community and landholder-driven weed management in the Riverina region include:

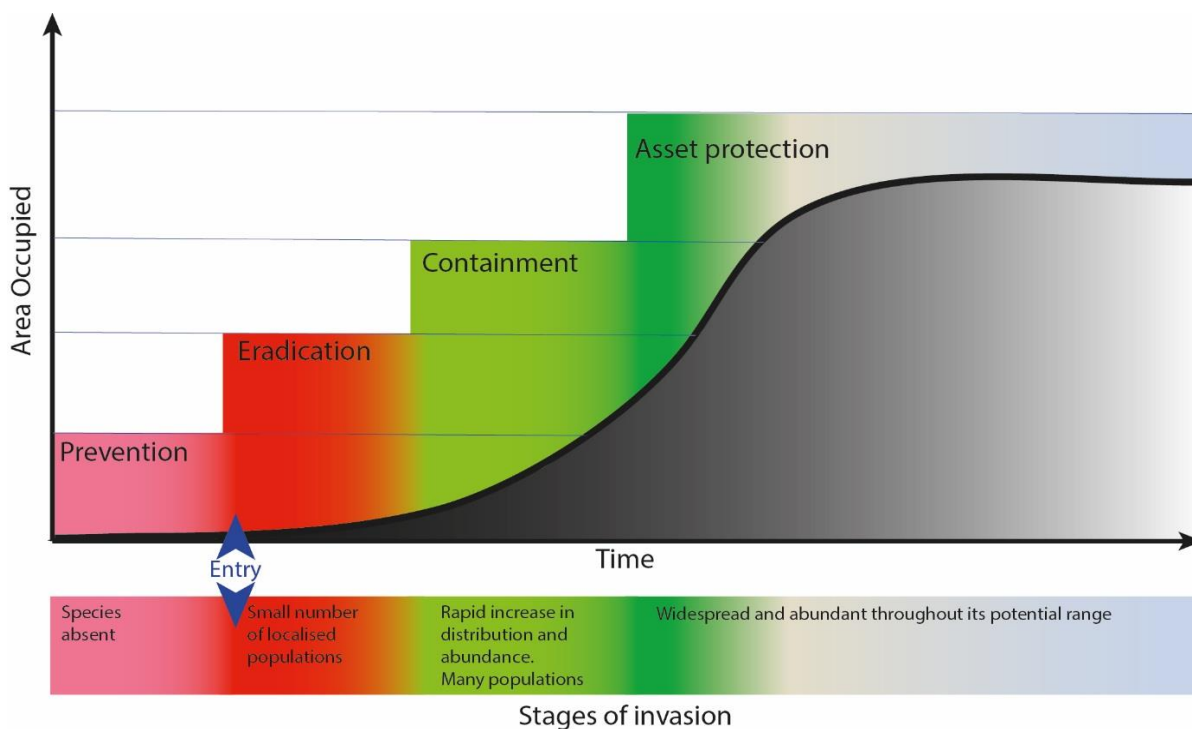
- absentee landholders and farming entities with low profit margins (difficult to engage)
- lack of awareness and understanding of weed management responsibilities on private land
- limited resources (financial and labour) to manage large infestations

## 4. Weed risk assessment and prioritisation

### 4.1 Weed management prioritisation

To ensure limited resources are used to best effect, and that management of weeds is commensurate with the risk posed by each species, an objective and repeatable risk assessment was undertaken across the region. This section outlines the principles and assessment processes used to prioritise weed management.

The generalised Weed Invasion Curve (Figure 4.1) illustrates the invasion process for weeds from arrival to widespread establishment (after Chippendale (1991); Hobbs and Humphries (1995); and Environmental Weeds Working Group (2007)) and shows that the effort and resources required to control a weed rise with time and area occupied. *Managing weeds earlier rather than later* is more effective. This principle is a foundation of the process used to develop the regional weed priority list in this plan (Appendix 1.1). The asset protection phase shown in Figure 4.1 illustrates an important shift in the focus from controlling a weed species, to limiting the impact it may have on important assets.



**Figure 4.1: Weed invasion curve**

#### 4.1.1 NSW Weed Risk Management system

The NSW Weed Risk Management (WRM) system provides a standard, nationally accepted and transparent process to help make decisions about prioritising weed species and determining appropriate management responses. The Weed Risk Management system considers two components for prioritising weeds for management action:

1. A weed risk assessment.
2. An assessment of the feasibility of coordinated control.

Weed risk is determined through scoring a series of parameters (invasiveness, impacts, potential distribution) and likewise for feasibility of co-ordinated control (control costs, persistence, and current distribution). An assessment of these components provides a management objective that reflects the principles of effective weed management, and links with the objectives of the NSW *Biosecurity Act 2015*.

## 4.2 Regional prioritisation process

A regional weed prioritisation process was undertaken using the NSW WRM system. This was carried out using an expert regional panel on behalf of the Riverina Regional Weed Committee. The panel brought together practitioners with long term on-ground experience with high priority species, including local experts previously involved in the weed advisory committees.

Weed Risk Management system assessments were undertaken at the regional scale to ensure the outcomes reflected regional conditions. Where there was significant variation in weed risk or weed distribution in the region, the assessments were conducted at a sub-regional level, to determine containment zones or any other sub-regional response.

Quality assurance was undertaken by the Technical Subcommittee of the State Weeds Committee. The Technical Subcommittee reviewed the weed risk management assessments, management categorisation and objectives, and the outcomes to demonstrate compliance with the General Biosecurity Duty developed for the region. This ensured consistency and alignment with the Weed Risk Management system and the NSW *Biosecurity Act 2015*. The Technical Subcommittee also provided guidance to regional weed committees on appropriate outcomes to demonstrate compliance with the General Biosecurity Duty. The management categories used in the assessment are summarised in Table 4.1.

**Table 4.1: Regional weed management categories**

Category	Objective	Characteristics of weeds in this category
<b>Prevention</b>	To prevent the weed species arriving and establishing in the Region.	<p>These species are not known to be present in the region.</p> <p>They have a high to very high weed risk (highly invasive and high threat) and have a high likelihood of arriving in the region due to potential distribution and/ or an existing high risk pathway.</p>
<b>Eradication</b>	<p>To permanently remove the species and its propagules from the Region.</p> <p>OR to destroy infestations to reduce the extent of the weed in the region with the</p>	<p>These species are present in the region to a limited extent only and the risk of re-invasion is either minimal or can be easily managed.</p> <p>They have a high to very high weed risk and high feasibility of coordinated control.</p>

	aim of local eradication.	
<b>Containment</b>	To prevent the ongoing spread of the species in all or part of the Region.	<p>These species have a limited distribution in the region.</p> <p>Regional containment strategies aim to prevent spread of the weed from an invaded part of the region (core infestation), and/or exclude the weed from an uninvaded part of the region (exclusion zone).</p>
<b>Asset Protection</b>	To prevent the spread of weeds to key sites/assets of high economic, environmental and social value, or to reduce their impact on these sites if spread has already occurred.	<p>These weed species are widespread and unlikely to be eradicated or contained within the wider regional context.</p> <p>Effort is focussed on reducing weed threats to protect priority high value assets.</p>

#### 4.2.1 Priority weed list for the region

The regional prioritisation process culminated in the identification of the priority high risk weeds and the development of the regional priority weed list for the region - Appendix 1 (A1.2) of this plan. This identifies outcomes to demonstrate compliance with the General Biosecurity Duty for listed species. State priority weeds (Appendix 1 (A1.1)) were determined by the Department of Primary Industry. Management requirements for weeds, whether that be specific regulatory measures (State priority weeds) or outcomes to demonstrate compliance with the General Biosecurity Duty (regional priority weeds) are also detailed in Appendix 1.

The outcomes applied to a particular weed will depend on factors such as the biology and ecology of the weed, the land use(s) in which it occurs, the size of the infestation, potential pathways for infestation and others. These factors have been taken into account in determining the suite of outcomes to demonstrate compliance with the General Biosecurity Duty and strategic responses. As with all components of this plan, these obligations apply to all private and public landholders in the region. Monitoring and compliance for weed management in the region will focus primarily on weeds listed in Appendix 1.

#### 4.2.2 Additional regional weed lists

The community is also interested in management of widespread weeds because of their extent and impact in sub-regional locations. Appendix 2 outlines other weeds of concern identified by the committee in consultation with the community. These are species for which a consistent and/or collaborative approach to management will provide the best outcome across the region. Weeds identified within Appendix 2 are also subject to the General Biosecurity Duty and may be a focus for local management plans and coordinated campaigns by the community and other stakeholders in the region.

Both the regional priority weed list (Appendix 1) and the other weeds of concern list (Appendix 2) may be amended as necessary in accordance with state-level reviews and the regional review process.

## 5. Actions

### 5.1 Overview

This section covers actions required to achieve our goals. In essence, Goal 1 addresses community capacity to discharge the General Biosecurity Duty; Goals 2 and 3 are focussed on weed management outcomes, while Goal 4 focuses on coordinating successful regional weed management.

Strategies, actions and associated regional measures of performance (see 5.3), are based on the best available information and science relevant to weed biosecurity. Strategies and actions for each goal are presented in Table 5.1 below.

**Table 5.1: Goals, strategies and actions of the plan**

<b>Goal 1: Responsibility for weed biosecurity is shared by the Riverina community</b>	
<b>Strategies</b>	<b>Actions</b>
1.1 Promote weed management and behavioural changes in the community.	1.1.1 Develop communication products promoting behavioural change and raise the profile of weed management in the Riverina region.
1.2. Build stronger partnerships that support weed management	1.2.1 Develop partnerships that support tenure neutral weed management. 1.2.2 Foster networks, alliances and aboriginal engagement that support communities and stakeholders in weed management activities. 1.2.3 Develop and implement mechanisms to protect biodiversity and support management of weeds on non-productive land.
1.3 Enhance community-wide capacity in sharing responsibility for weed management	1.3.1 Enhance existing communication networks to increase effective dissemination of information and understanding of shared responsibility and a whole of community approach to weed management. 1.3.2 Provide greater opportunities for education, training and community based programs that support behavioural change and increase community capacity to manage priority weeds.

**Table 5.1: Goals, Strategies and Actions of the plan continued.**

<b>Goal 2: Weed biosecurity supports profitable, productive and sustainable primary industries and</b> <b>Goal 3: Weed biosecurity supports healthy, diverse and connected natural environments</b>	
<b>Strategies</b>	<b>Actions</b>
2-3.1 Improve surveillance, reporting and tracing systems for weeds	2-3.1.1 Improve surveillance, reporting and tracing for weeds: <ul style="list-style-type: none"> <li>• Widen implementation of early detection by encouraging partners to become involved in the High Risk Pathways and Sites inspection program and report via BIS</li> <li>• Develop tools, systems and services (e.g. drones) to allow for efficient weed mapping</li> <li>• Build community capacity to assist with early detection</li> <li>• Undertake coordinated surveillance activities for priority weeds.</li> </ul> 2-3.1.2 Support state-wide processes in development of more efficient ways of demonstrating proof of freedom from weeds.
2-3.2 Improve prevention, preparedness and response to weed emergencies	2-3.2.1 Improve cross-jurisdictional collaboration on consistent and effective approaches to preventing establishment of new weed species. 2-3.2.2 Manage high risk pathways, using targeted surveillance, region-wide and consistent industry codes, education and enforcement mechanisms. 2-3.2.3 Improve prevention and response to weed biosecurity emergencies through improved identification processes, improved communication and reporting networks, and rapid responses to management of new incursions of priority weeds,.
2-3.3 Eradicate or prevent the spread of new weeds	2-3.3.1 Develop standardised and consistent planning for: <ul style="list-style-type: none"> <li>• Weeds listed in Appendix 1 to this plan</li> <li>• New weed incursions, including rapid response plans and associated cost sharing arrangements</li> </ul> 2-3.3.2 Work with other jurisdictions to standardise weed biosecurity arrangements across regional and state borders. 2-3.3.3 Ensure management occurs for priority weeds in alignment with relevant State, Regional or Sub-regional objectives.
2-3.4 Contain and manage impacts of widespread weeds	2-3.4.1 Develop and promote best practice weed management to minimise the spread and reduce the impacts of widespread weeds, 2-3.4.2 Support the ongoing development and coordination of new and existing cooperative programs for reducing or controlling the current extent of widespread weeds in priority sites. 2-3.4.3 Actively manage widespread weeds which threaten key sites/assets in alignment with State, Regional or Sub-regional objectives. 2-3.4.4 Continue to contribute to new and existing state and national arrangements for managing established weeds.
2-3.5. Support and utilise developments in weed science and technology	2-3.5.1 Document invasive weed species research priorities in collaboration with government, industry, research providers, the aboriginal community, and the wider community and report these to the State Weeds Committee.

2-3.6 Use results of research to assess and respond to changing risks under a changing climate	2-3.6.1 Use predictive modelling (e.g. Weed Futures, BioClim, ANUclim) to identify the likely weed species and the environmental, social and economic values that will be vulnerable to invasive weeds under a changing climate.
--	--

**Table 5.1: Goals, Strategies and Actions of the plan continued.**

<b>Goal 4: Weed biosecurity is supported by coordinated, collaborative and innovative leadership</b>	
<b>Strategies</b>	<b>Actions</b>
4.1 Provide governance and leadership that supports collaborative, effective and efficient weed management	4.1.1 Work collaboratively with all stakeholders to implement this plan. 4.1.2 Support the functions and business needs of the State Weeds Committee. 4.1.3 Support a coordinated regional approach to strategic and investment planning; monitoring, performance evaluation and reporting; weed risk assessment review; and weed emergency management preparation, response and recovery processes.
4.2 Adopt adaptive, contemporary planning and processes	4.2.1 Develop the components of the Regional Business Planning Framework that underpins the implementation of this plan. 4.2.2 Work with stakeholders to develop and update local implementation plans using best available standards, local knowledge, research and technology, as required. 4.2.3 Review and update existing Regional and Sub-regional weed risk assessments where required.
4.3 Develop a regional invasive weed knowledge base and information system that supports state standards	4.3.1 Support the continuing development of the Biosecurity Information System to collect standardised regional data (including weed mapping) capture, storage, record keeping and retrieval processes. 4.3.2 Encourage wider use of the Biosecurity Information System to improve weed distribution and impacts data and management information. 4.3.3 Ensure that weed information and research data are readily available to stakeholders for use in weed management and planning.
4.4 Develop consistent systems for monitoring, evaluating and reporting on the effectiveness of weed	4.4.1 Develop and implement indicators that assess the performance of this plan and progress towards achieving strategic outcomes. 4.4.2 Develop and implement standard local monitoring and reporting protocols that support region and state-wide needs. 4.4.3 Use the information collected from research, local MERI programs and the BIS to inform an adaptive management approach to Riverina weed management projects, plans, programs, policies and reforms.



management	
------------	--

## 6. Implementation

This chapter covers how the plan will be implemented, including governance. It includes guiding principles for weed management planning, implementation and roles and responsibilities for stakeholders and customers in implementing this plan.

### 6.1 Regional Weed Committee

Collaboration and building capacity of land managers is central to the successful implementation of this plan. By working collaboratively and engaging with all sectors – public, private, non-profit, individuals and community groups – effective and lasting solutions to shared problems can go beyond what any sector can achieve on its own. The Riverina Regional Weed Committee and its member organisations will focus on implementation of this plan with executive support from Riverina Local Land Services and overarching guidance from the local board.

In implementing the plan the committee will work with Local Land Services to:

- represent the interests of the local community and stakeholders
- advise the State Weeds Committee on weed priorities and other strategic matters in the region and seek their advice relating to weed listings, cross jurisdictional and other matters
- liaise with neighbouring regional weed committees, especially with respect to any significant incursions and potential movement of priority weeds from one region to another
- provide advice to the local board on implementation on a region-wide perspective, using committee expertise and best available knowledge, research and technology
- provide advice to management on regional communication, education, training and awareness programs that are consistent with the plan
- promote effective co-ordination of weed management across agencies and tenure, including appropriate resource and information sharing between member organisations
- identify information and research needs and appropriate collaborative actions and opportunities for funding and potential project delivery
- provide advice to the local board on effectiveness of weed management in the region to ensure it is consistent with the plan and continues to inform management actions and planning
- review and provide advice to the local board on the outcomes of collaborative planning and delivery processes

### 6.2 Guiding principles for implementation

The following principles will be used to guide weed management planning and implementation and are consistent with the weed reforms and leading practice:

- Effective stakeholder collaboration and shared responsibility are essential to effective weed management.

- Behavioural change and increasing community capacity are important to effective weed management.
- Prevention and early intervention are the most effective weed management tools.
- Causes of weed invasion and spread are managed wherever possible, not just the symptoms.
- The biology and ecological requirements of weeds, including mechanisms and pathways for spread are considered in weed management.
- Innovation in weed control and management is encouraged.
- Regular monitoring, evaluation and improvement are incorporated in weed management programs.
- Weed management is an integral part of land management. Land management practices and their timing are critical to the prevention and reduction in the spread and impact of weeds.
- Weeds are managed in a strategic and co-ordinated manner across the landscape. Assessing and managing weed risk at a landscape and multi species scale (where appropriate) can lead to significant efficiencies in use of resources and achievement of strategic outcomes.
- The best available science, expertise and tools are utilised in weed management decision making.

### 6.3 Processes supporting implementation

A key element of this plan is collaborative and coordinated weed management across tenures. This will require policies, processes and procedures for collaborative planning and action to enable member organisations and key stakeholders to translate this plan into local area priorities, actions, collaboration and partnerships that integrate weed management across both tenures and stakeholders. Riverina Local Land Services will work with the committee in the development of these processes in the region

A range of plans and processes will support implementation of this plan as outlined below :

- Riverina Regional Weed Committee coordination - to ensure clear stakeholder roles and responsibilities and good governance, including the review and update of weed risk assessments as required.
- Local implementation roles and responsibilities - to ensure clear roles and responsibilities and consistency in the delivery of local weed management.
- Processes for integrating regional delivery and projects - to ensure efficient and effective delivery.
- Compliance planning - to support an integrated and consistent approach to meeting regulatory obligations across the region.
- High risk weed incursion planning - to address surveillance and identification of new weed incursions and coordination of regional responses.
- Rapid response planning - to address procedures, responsibilities and actions for response to a new incursion.
- Local control authority planning - to ensure that compliance strategies, standards and service agreements are consistent with this plan and to provide a consistent policy and procedural framework for inspections and enforcement under the NSW *Biosecurity Act 2015*.
- State Guidelines and best practice codes - to support consistency in approach and the capacity to inform state-wide reporting.

- Communication and marketing - to develop a strategic approach to communicating key messages and engaging partners, stakeholders and the broader community.
- Key performance indicator development - to support assessment of this plan's performance measures.
- Monitoring, evaluation, reporting and improvement coordination - to support consistent approaches that allow for reporting at local, regional and state scales.
- Research and development collaboration – to support a collaborative approach to addressing research needs in the region.
- Investment planning – to support an integrated approach to investment in priorities for weed management in the region.
- Procedures for review of weed listings in the plan. Responsibility for amendments to state determined priorities rest with NSW DPI and the State Weeds Committee. The committee will raise any identified issues with changes to listings for state determined priorities via the State Weeds Committee to ensure consistency and alignment.

Many of these plans and processes are already underway, but require regional weed committee endorsement or further collaboration between partners.

## 6.4 Delivery partners

Delivery partners have an interest in delivery of priority actions. This interest spans from being involved in refining priority actions, to further developing processes to address actions, through to participating in the delivery and enforcement of the plan. Broad roles and responsibilities are determined, and responsibilities for specific actions will be agreed upon. As implementation progresses and opportunities for new partnerships emerge, new partners may also become involved.

Resourcing of weed management is unpredictable and will fluctuate, and partners also differ in their capacity to deliver weed management resources. Commitments from partners improve community confidence in action implementation. It is recognised that commitments and capacity may be contingent upon availability of resources at a given point in time.

### 6.4.1 Lead organisations

Lead organisations will take responsibility for the delivery of actions and performance measures within this plan and will manage and coordinate implementation of components of the plan and associated programs. This will ensure clear responsibilities for plan implementation and will be agreed upon in the development of relevant business plans and policies. Partners will take primary responsibility within their respective areas in the delivery of actions and performance measures. Other government agencies, industry and community will also play a role in implementing this plan to varying degrees.

### 6.4.2 Roles and responsibilities

A wide range of stakeholders and customers are involved in weed management in the region. This plan recognises the roles of all levels of government, industry, community and community organisations.

This plan aims to consolidate these efforts through better coordination and communication between organisations and individuals in the region.

### **Commonwealth government**

The Commonwealth government has a role in preventing new weed incursions at national borders (quarantine); in education, research and development; in funding, and national legislation. National agreements outline the roles and responsibilities of government and industry in responding to emergency plant, pest and disease incidents, and detail how those responses will be funded. These agreements include the Intergovernmental Agreement on Biosecurity, Emergency Plant Pest Response Deed and the National Environmental Biosecurity Response Agreement.

### **State government**

State government leads the development of policies, strategies and legislation that promote a comprehensive and responsive weed biosecurity system across NSW. The Department of Primary Industries (DPI) is the lead agency for weed management within the NSW Government, with support from the Office of Environment and Heritage (OEH) in relation to environmental weed management.

Key roles and responsibilities for these two agencies include:

- administration of key legislation relating to priority weeds (NSW *Biosecurity Act 2015* – DPI, and *Biodiversity Conservation Act 2016* – OEH)
- increasing awareness of weeds in industry, key stakeholders and the community
- leading and coordinating prevention, preparedness, response and recovery for weed emergencies
- developing non-regulatory approaches and incentives to underpin weed management
- coordinating diagnostic, surveillance, tracing and monitoring systems for priority species
- conducting weed research in priority areas and collaborating with universities and research providers on priority research initiatives and pest and weed identification
- coordinating the delivery of leading practice solutions for weed managers across the state.

### **NSW Department of Primary Industries**

The NSW Department of Primary Industries leads and coordinates the prevention, preparedness, response and recovery for weed emergencies. This agency also develops and maintains regulatory mechanisms that support weed programs.

### **Office of Environment and Heritage and National Parks and Wildlife Service**

The Office of Environment and Heritage is responsible for managing more than 850 national parks and reserves (see further below). OEH also leads state-wide initiatives to reduce the impacts of invasive species on biodiversity. The *Saving our Species* program provides for the conservation of threatened taxa across all land tenures under the *Biodiversity Conservation Act 2016*.

The National Parks and Wildlife Service (NPWS – part of OEH) is responsible for managing over 7 million hectares of land in NSW. As a public land manager, NPWS works with a range of stakeholders to proactively and strategically manage weeds. NPWS is guided by Regional Pest Management Strategies that identify weed management priorities and programs for implementation on all lands managed by NPWS. The strategies aim to minimise the adverse impacts of pests and weeds on biodiversity, protected areas and the community by identifying the highest priority programs and

delivering measurable outcomes. The strategies also demonstrate NPWS's responsibilities in delivering the NSW Biosecurity Strategy 2013-2021.

### ***Department of Industry - Lands***

The Department of Industry - Lands is a business unit of the NSW Department of Industry and administers and manages Crown land, which makes up approximately half the state. It develops funds and implements invasive species management strategies on land under its direct control and supports activities undertaken by community groups, reserve trusts, lessees and others that manage land on its behalf, including Councils.

Department of Industry - Lands incorporates a multi-pronged risk-based approach to managing invasive species on Crown land, including education, extension, project implementation, audit and compliance activities. Department of Industry - Lands is always keen to work in partnership with other stakeholders and agencies to ensure optimal outcomes in the management of invasive species on Crown land.

### ***Local government***

Local government plays a significant role in biosecurity, particularly in weed management. It has an important role to play in engaging local communities, managing public lands and assisting with emergency management. Local government also makes a significant investment in local and regional weed management. Weed control functions are undertaken by Local control authorities and county councils (formed by adjoining councils to pool resources for weed control or other specified functions). Local control authorities have a major role and responsibility for the implementation of this plan and for priority weed control including:

- enforcing legislated weed management obligations on private and public land
- delivering components of the NSW Weeds Action Program throughout the state
- conducting weed inspections on private and public land
- controlling weeds on lands managed by local government
- reporting and mapping weed incidence across the state
- input into weed strategy and policy
- providing education, training and resources for both the public and for staff.

### ***Other managers of state owned land and linear reserves***

A number of organisations and government agencies manage state owned land allocated for specific purposes. These include travelling stock reserves (TSRs, managed by Local Land Services), state forest (Forestry Corporation of NSW, a state owned corporation), state infrastructure such as road and rail corridors (Roads and Maritime Services and John Holland Rail Pty Ltd), corridors for energy infrastructure and Water NSW. All land managers have an important role in the management of weeds in the region, including the development and implementation of management strategies and the education of the community and other stakeholders.

### ***Aboriginal land managers (Local Aboriginal Land Councils)***

Local Aboriginal communities have a similar role to other community organisations in managing weeds on their land, but have additional cultural factors which influence land management. Aboriginal traditional owners have obligations under traditional law and custom to care for Country. This may

result in Aboriginal people having priorities for weed management to address threats to cultural sites, indigenous plants and animals or other important cultural resources (OEH, 2016).

Throughout the region there are a number of different types of land ownership and management by Aboriginal people. Indigenous Land Use Agreements help clarify obligations of public land managers where Native Title is recognised over the land they manage (OEH, 2016).

### ***Industry***

Industry roles in weed management include:

- implementing and developing industry standards, guidelines and codes of practice
- contributing to research programs in priority areas
- participation in biosecurity response agreements and cost-sharing arrangements
- managing weeds on land and water used for production
- managing risks when trading in potential or known weed species used for, or held by, nurseries, pet shops and aquaria (water weeds), collectors, agriculture, horticulture, aquaculture and biofuels etc.
- preventing the establishment of weeds, through movement of goods, produce and equipment.

### ***Community groups, volunteers and individuals***

Community groups and volunteers play an important role in the management of weeds in the region by enlisting support and providing on-ground weed control. This includes non-government organisations such as Landcare, Conservation Volunteers, Greening Australia and Bushcare. Activities undertaken by these groups include weed removal and monitoring activities, bush regeneration, biodiversity conservation projects and rehabilitation of aquatic habitats on private and public lands. Building on this foundation is essential in sharing responsibility for weed management.

Individual community members also have an important role to play in helping to minimise the impacts of weeds in the region. The community provides much needed “eyes and ears” to detect and report new incursions and support eradication. Community participation also provides crucial support to the actions of responsible authorities, land managers and external funding programs. Private land owners and occupiers play an important role in the ongoing management of established weeds on their own land and in collaboration with their neighbours and the surrounding community.

## **6.5 Investment**

Investment in weed management across the Riverina region is delivered by public and private sectors and applied across the full range of land tenures. For land managers across the region this investment is targeted primarily at controlling weeds that pose the greatest risk to natural assets and productivity.

Since weeds affect all land tenures in the region, the regional cost of managing weeds must be borne by all stakeholders. However, management of some weed species and/or infested sites will require additional investment from external sources (typically government) to achieve control outcomes. State

and local governments prioritise these weed species and sites based on four key goals of the NSW draft Invasive Species Plan:

1. Exclude new weeds
2. Eradicate or contain new incursions
3. Effectively manage widespread weeds at priority sites
4. Capacity building

State government provides funding to the Riverina region to help manage priority weed species and sites. The Riverina Weeds Action Program 2015-2020 outlines how funding of such priorities will be delivered across the region to support program partners.

Local Control Authorities and public land managers invest operational funds for weed management. These may be supplemented through weed and environmental levies, cost recovery charges of weed inspection and control, and external funding sources such as the NSW Environmental Trust and Australian government programs.

Other land managers may access grant funding through Riverina LLS, state or federally-funded environmental, and community programs, to address weeds of environmental importance or as part of a community program which may target weeds of concern in the area.

## 6.6 Community engagement

Consistent with the guiding principles for weed management, increasing community capacity through awareness, education and training is an important means of supporting effective regional weed management. Local Control Authorities, Riverina LLS and other key stakeholders also provide a range of advisory services to landholders, and will help improve awareness and link landholders to appropriate material and training.

The Riverina RWC, in collaboration with key stakeholders, will target investment and resources to achieve regionally-consistent management of weeds. Investment will focus primarily on prevention, eradication and other high-leverage activities and will be consistent with the guiding principles for weed management.

Along with, and supporting this Plan, may be further documents, such as best-practice guidelines and standards that contain more detailed information to support the community in discharging their General Biosecurity Duty.



## 7. Measuring success and continuous improvement

Measuring and reporting on progress against key performance indicators is particularly important, as are practices that promote reflection and learning to inform decision making. This section covers how we intend to address and document to what extent goals have been achieved, as well as evaluating performance, and reviewing our activity and focus.

### 7.1 Measuring performance

In common with other agencies and businesses, Riverina Local Land Services has a responsibility to demonstrate to its customers, investors and stakeholders that its strategies are sound and effective. Underpinning all strategies, programs and systems will be a requirement to monitor, evaluate and report on performance.

The committee will work with Riverina Local Land Services to establish a monitoring, evaluation, reporting and improvement process (MERI) that is consistent with the Riverina Local Land Services and Natural Resource Commission standards. This MERI framework will facilitate the review of results against planned immediate, intermediate and long-term outcomes. It will also enable a systematic and objective assessment of the effectiveness and efficiency of actions, policies, projects and programs.

This plan depends on collaboration and sound partnerships for strategic weed planning, implementation and reporting. The development of measures to track the establishment of a workable collaborative approach is important to support tenure neutral implementation. The committee will also track resources secured and aligned for implementing the plan.

#### 7.1.1 Performance indicators and reporting

Standardised MERI systems will be used to compile and report on the efforts and achievements of stakeholders in contributing to this plan. Achieving consistency will require the use of:

- key performance indicators
- standard local monitoring and reporting protocols that support region and state-wide needs
- evaluation by partners and the committee to guide improvement in weed management projects, programs and policies.

Performance indicators will be developed to enable tracking of the progressive impacts of interventions and investment in priorities and will relate to the goals for this plan as outlined below.

#### **Shared responsibility (Goal 1)**

- Adoption of leading practice (by sector)
- Awareness and education programs delivered with uptake indicated by community involvement in weed control
- Community capacity and capability to undertake weed biosecurity (knowledge, skills, barriers addressed, networks, resources) increased.

#### **Sustainable landscapes (Goals 2 and 3)**

- Establishment of new incursions of priority weeds avoided
- New incursions of priority weeds eradicated or destroyed
- Spread of priority weeds prevented
- Impacts of widespread weeds on high priority assets reduced
- Sources of weed invasion identified and managed
- Weed impacts on natural ecosystems reduced or avoided.
- Weed risks or impacts to production / industries reduced (economic goal).

#### **Collaborative leadership and innovation (Goal 4)**

- Percentage of supporting plans and processes completed (see section 6.3)

Available metrics can be used in the short term based on existing knowledge, while we refine metrics to provide more accurate measures of progress. A wide range of metrics are in use by committee member organisations, stakeholders and through the Weeds Action Program 2015-2020 and other programs. These will take time to collate and assess. Agreed metrics will be considered by the committee in consultation with the State Weeds Committee.

Review and reporting on performance against this plan will occur annually. A component of this review will be an evaluation of our regional contribution to the new biosecurity reforms and their influence on weed management in the Riverina.

The approach to MERI must meet the needs of customers, investors and stakeholders and facilitate reporting on investment outcomes at a range of scales – local, sub-regional, and regional. Standardised reporting should support:

- individual stakeholder needs for local level reporting
- state level reporting and reporting to investors
- annual reporting on implementation and progress of this plan and progress.

### **7.1.2 Information management**

Data collection and management is crucial to the adoption of standardised approaches for the region, and for the implementation of MERI procedures.

The committee will work with Local Land Services to oversee the coordinated development of systems for:

- adopting standard regional data (including weed mapping) capture, storage, record keeping and retrieval protocols
- collecting, synthesising and storing data in a form useful for multiple stakeholders
- contributing weed data and management information to the Biosecurity Information System
- contributing to local, regional and state-wide weed information and knowledge platforms that support research capacity and capability
- ensuring that weed information and data are readily available to stakeholders for use in research, updating management plans and reporting.

The data and information collected will be integrated into state-wide data sets and be accessible through open government wherever possible. It will contribute to whole-of-NSW reporting on the state and trend of asset conditions including the State of the Environment report and reporting against objectives for the Invasive Species Plan.

### 7.1.3 Strengthening science and research capacity

Research plays an important role in evaluating and informing practice, supporting innovation and informing future directions. Engaging proactively with the research community is fundamental to improving the region's weed management planning and practice. Through links with the SWC, the regional Committee will contribute to :

- engagement with weed science researchers, community, the aboriginal community, government, and industry to identify current knowledge gaps and to document weed species research priorities
- stronger partnerships and active participation in industry, government and university collaboration for weeds research
- new and updated regional and sub-regional weed risk assessments
- development of new technologies and innovative approaches to the management of weed risks
- investigation of biological control programs for priority weeds
- a better understanding in the region of the impacts of a changing climate on weed behaviour and the interplay between natural systems and weeds
- incorporation of research findings into weed management decision-making (this is part of adaptive management).

## 7.2 Adaptive management and continuous improvement

The Riverina Regional Weed Committee will foster adaptive management and continual improvement in weed management. Adaptive management is used in changing environments, where optimal management procedures have not been determined. It is based on a continuous improvement cycle: “plan–do–learn”. This is underpinned by monitoring, reporting and evaluation processes, and the subsequent improvement of planning and delivery based on lessons learned.

Local Land Services applies learning at the following scales to drive continuous improvement:

- project (where learning focuses on improving project design and practices),
- program (where learning focuses on improving strategies, targets and assumptions),
- organisational (where learning focuses on improving governance and systems).

This approach is outlined in the Riverina Local Land Services Local Strategic Plan and will provide the basis of MERI for this plan.

## 7.3 Plan review

A mid-term review of this plan will be undertaken at year 3 (2020) and a full review will be undertaken nearing the end of the five year term for this plan (2022). Weed risk assessments will be updated as

needed from time to time and a particular focus at year 3 will be on evaluation and review of weed lists in this plan (Appendix 1 and 2).

## 8. Abbreviations

<b>BIS</b>	Biosecurity Information System
<b>DPI</b>	NSW Department of Primary Industries
<b>GBD</b>	General Biosecurity Duty
<b>LCA</b>	Local Control Authority
<b>LLS</b>	Local Land Services
<b>MERI</b>	Monitoring, evaluation, reporting and improvement
<b>OEH</b>	The NSW Office of Environment and Heritage
<b>NPWS</b>	NSW National Parks and Wildlife Service
<b>NRC</b>	Natural Resources Commission
<b>RSWMP</b>	Regional Strategic Weed Management Plan
<b>RWC</b>	Regional Weed Committee
<b>SWC</b>	State Weeds Committee
<b>TSR</b>	Travelling stock reserve
<b>WAP</b>	NSW Weeds Action Program

## 9. Glossary

**Aboriginal cultural heritage:** Aboriginal cultural heritage consists of places and items that are of significance to Aboriginal people because of their traditions, observances, lore, customs, beliefs and history. It provides evidence of the lives and existence of Aboriginal people before European settlement through to the present. Aboriginal cultural heritage is dynamic and may comprise physical (tangible) or non-physical (intangible) elements.

**Adaptive management:** A management approach based on the science of learning by doing. It involves testing the response of a system then applying this understanding to future decisions.

**Asset protection:** Preventing the spread of weed species to high value assets of economic, environmental and/or social value or reducing the impact on the high value asset for weeds already present.

**Best practice:** A technique or methodology that, through experience and research, has proven to reliably lead to a desired result. Also see leading practice.

**Biodiversity:** The variety of all life forms: the different species of plants, animals, fungi, bacteria and other micro-organisms, the genes they contain and the ecosystems (the variety of habitats, biotic communities and ecological processes) of which they form a part.

**Biosecurity:** Protecting the economy, environment and community from the negative impacts of pests, diseases and weeds.

**Collaboration:** Working together to develop an understanding of all issues and interests to work out alternatives and identify preferred solutions for joint decision making.

**Containment:** Preventing the spread of weed species beyond a predefined area and reducing the impact where it occurs.

**Country:** A term used by Aboriginal people to refer to the land to which they have a traditional attachment to.

**Customer:** Any land manager within the state or region, irrespective of whether they are private or public land managers, ratepayers or non-ratepayers.

**Emergency Management:** Management related to preparedness, response and recovery for actual or imminent animal pest and disease and plant pest and disease emergencies, natural disasters and other emergencies impacting on primary production or animal health and safety.

**Eradication:** To permanently remove a weed species and its propagules from an area such that there is little or no likelihood of re-invasion occurring.

**Governance:** The framework of rules, structures, interactions and practices by which the Riverina Local Land Services Board exercises power, responsibility and decision making to ensure accountability, fairness, and transparency in relationship to the Riverina region's customers, stakeholders and investors.

**General Biosecurity Duty:** Under the NSW *Biosecurity Act 2015* a General Biosecurity Duty applies to all weed species that present a biosecurity risk. For weeds, the General Biosecurity Duty means that any person dealing with plant matter who knows or ought reasonably to know the biosecurity risk posed by that dealing, must take measures to prevent, minimise or eliminate the biosecurity risk (as far as is reasonably practicable). 'Dealing' has a broad definition in the act. Plant matter includes plants, parts of plants and seeds.

**Habitat:** A place suitable for survival and/or reproduction of a particular plant or animal.

**Investor:** Organisations and individuals who invest in Local Land Services and leverage outcomes from this investment.

**Landscape:** Any section of land or coast and its natural features, including rivers and other water bodies. Represents the overlay of the variety and arrangement of physical landforms (e.g. rivers, escarpment, rocky reefs), communities of people (e.g. Aboriginal, rural) and land uses (e.g. urban, conservation, agricultural).

**Leading practice:** Currently accepted best practice.

**Prevention:** To prevent a weed species arriving and establishing in an area.

**Stakeholder:** Organisations that collaborate and partner with Local Land Services directly to support customer service delivery.

**Travelling stock reserve:**

- route or camping place reserved for travelling stock route or camping place under the *Crown Lands Act 1989*
- reserve for travelling stock, water reserve, reserve for access or crossing (where the reserve is for the purpose of providing travelling stock with access to or a crossing of water, whether expressly notified for that purpose or not), or
- stock watering place.

**Weed:** Plants (foreign to the Region) that are unwanted in a given situation and which usually have detectable negative economic, environmental or social impacts.

**Weeds Action Program (WAP):** NSW Government funding program supporting delivery of priority weed investment to local government, Local Land Services and local control authorities.

## 10. References

Australian Government, Weeds in Australia.

<http://www.environment.gov.au/biodiversity/invasive/weeds/weeds/why/factors.html>

Chippendale, J.F. (1991). Potential returns to research on rubber vine (*Cryptostegia grandiflora*). Master of Agricultural Studies Thesis, University of Queensland, Brisbane.

Coutts-Smith, A.J. and Downey, P.O. (2006) Impact of weeds on threatened biodiversity in New South Wales. Technical Series no. 11, CRC for Australian Weed Management, Adelaide, SA.

Environmental Weeds Working Group (2007). Guidelines and procedures for managing the environmental impacts of weeds on public lands in Victoria 2007. Department of Sustainability and Environment, Melbourne.

Department of Primary Industries (2013). NSW Biosecurity Strategy 2013 – 2021. Department of Primary Industries a division of NSW Department of Trade and Investment, Regional Infrastructure and Services. 28p.

Department of Primary Industries (2015). NSW Biosecurity Act 2015 Discussion Paper: Weeds. Department of Primary Industries a division of NSW Department of Trade and Investment, Regional Infrastructure and Services. 19p.

Hobbs, R.J. and Humphries, S.E. (1995). An integrated approach to the ecology and management of plant invasions. Conservation Biology 9, pp. 761-70.

Riverina Local Land Services (2016). Riverina Local Strategic Plan. Local Land Services, Wagga Wagga, NSW.

Natural Resources Commission (2014) Weeds – Time to get serious. Review of weed management in NSW. Final report and recommendations May 2014. Natural Resources Commission, Sydney, NSW.

Natural Resources Commission (2016). NSW Government response: Weeds – Time to get serious. Review of weed management in NSW, Sydney, NSW.

NSW Department of Primary Industries and Office of Environment and Heritage (2011). Biodiversity priorities for widespread weeds. Report prepared for the 13 Catchment Management Authorities by NSW Department of Primary Industries and Office of Environment & Heritage, Orange, NSW.



---

## Appendix 1: Priority weeds for Riverina Local Land Services Region

This appendix covers State level priority weed species (A1.1) as set by NSW DPI and regional level priority weeds (A1.2) as determined by the regional weed prioritisation and expert review process outlined in Section 4.2.

The NSW *Biosecurity Act 2015* and NSW *Biosecurity Regulation 2017* provide specific legal requirements for state level priority weeds (A1.1). For each state level priority weed, the management objective, and specific requirements for its management (as stated in the NSW *Biosecurity Act 2015* and regulations) is included. These specific requirements include Prohibited Matter, Biosecurity Zones, Control Orders and Mandatory Measures.

A1.2 identifies regional level priority weeds and outcomes to demonstrate compliance with the General Biosecurity Duty. Recommended measures for these weeds are provided in the NSW DPI web and mobile based application WeedWise, as practical advice on achieving these outcomes.

## A1.1 State level priority weeds:

State Priority Weed Objective – PREVENTION: <i>The following weeds are currently not found in the state, pose a significant biosecurity risk and prevention is reasonably practicable</i>	
Weed species	Biosecurity Act 2015 requirements
All species of vascular plant ( <i>Tracheophyta</i> )	<p><b>Mandatory Measure (Division 8, Clause 34) Duty to notify of importation of plants into the State:</b></p> <p>(1) A person must not import into the State a species of vascular plant (<i>Tracheophyta</i>) if the species is not currently present in the State unless the person has, at least 20 working days before the plant is imported into the State, notified the species of plant and its proposed location within the State.</p> <p>(2) The notification is to be given to the Secretary and is to be given in accordance with Part 6</p> <p>(3) A species of plant is taken not to be present in the State if the National Herbarium of New South Wales does not show it as being present in the State. Note. See <a href="http://plantnet.rbgsyd.nsw.gov.au/">http://plantnet.rbgsyd.nsw.gov.au/</a></p> <p><b>Regional Strategic Response:</b> Increased priority placed on the identification and mapping of unrecorded weed species, including the collection and submission of specimens to the Plant Information Network System of the Royal Botanic Gardens.</p>
Bridal veil creeper - <i>Asparagus declinatus</i>	<p><b>Prohibited Matter (Part 4, Biosecurity Act, 2015):</b> A person who deals with any biosecurity matter that is Prohibited Matter throughout the State is guilty of an offence.</p> <p><b>Mandatory Measure (Part 2, Division 8, Clause 33, Biosecurity Regulation 2017):</b> A person must not import into the State or sell.</p>
Rubber vine - <i>Cryptostegia grandiflora</i>	
Parthenium weed - <i>Parthenium hysterophorus</i>	<p><b>Prohibited Matter (Part 4, Biosecurity Act, 2015):</b> A person who deals with any biosecurity matter that is Prohibited Matter throughout the State is guilty of an offence.</p> <p><b>Mandatory Measure (Division 8, Clause 35, Biosecurity Regulation, 2017) - Parthenium weed carriers - machinery and equipment</b></p> <p>(1) This clause applies to the following equipment:</p> <ul style="list-style-type: none"> <li>(a) grain harvesters (including the comb or front)</li> <li>(b) comb trailers (including the comb or front)</li> <li>(c) bins used for holding grain during harvest operations</li> <li>(d) augers or similar equipment used for moving grain</li> <li>(e) vehicles used for transporting grain harvesters</li> <li>(f) vehicles used as support vehicles with grain harvesters and that have been driven in paddocks during harvest operations</li> <li>(g) mineral exploration drilling rigs and vehicles used for transporting those rigs.</li> </ul> <p>(2) A person must not import into the State from Queensland any equipment to which this clause applies.</p> <p><b>NOTE:</b> See Part 2 Clause 98,99, 100 of <i>Biosecurity Order Permitted Activities 2017</i>, which notes exceptions to this clause.</p>

**State Priority Weed Objective – PREVENTION:**

*The following weeds are currently not found in the state, pose a significant biosecurity risk, and prevention is reasonably practicable*

Weed species	Biosecurity Act 2015 requirements
Anchored water hyacinth - <i>Eichhornia azurea</i>	<p><b>Prohibited Matter (Part 4, Biosecurity Act, 2015):</b> A person who deals with any biosecurity matter that is Prohibited Matter throughout the State is guilty of an offence.</p>
Black knapweed - <i>Centaurea xmoncktonii</i>	
Broomrape - <i>Orobanch</i> spp. (all species except the native <i>O. cernua</i> var. <i>australiana</i> and <i>O. minor</i> )	
Eurasian water milfoil - <i>Myriophyllum spicatum</i>	
Frogbit / Spongeplant - <i>Limnobium</i> spp.	
Gamba grass - <i>Andropogon gayanus</i>	
Hawkweed - <i>Hieracium</i> spp (all species)	
Hydrocotyl/Water pennywort - <i>Hydrocotyle ranunculoides</i>	
Karoo acacia - <i>Vachellia karroo</i> (syn. <i>Acacia karroo</i> )	
Kochia - <i>Bassia scoparia</i> (excluding subsp. <i>trichophylla</i> )	
Koster's curse - <i>Clidemia hirta</i>	
Lagarosiphon - <i>Lagarosiphon major</i>	
Mexican feathergrass - <i>Nassella tenuissima</i> (syn. <i>Stipa tenuissima</i> )	
Miconia - <i>Miconia</i> spp. (all species)	
Mikania Vine - <i>Mikania micrantha</i>	
Mimosa - <i>Mimosa pigra</i>	
Pond apple - <i>Annona glabra</i>	
Prickly acacia - <i>Vachellia nilotica</i> (syn. <i>Acacia nilotica</i> )	
Siam weed - <i>Chromolaena odorata</i>	
Spotted knapweed - <i>Centaurea stoebe</i> subsp. <i>Micranthos</i>	
Water caltrop - <i>Trapa</i> spp. (all species)	
Water soldier - <i>Stratiotes aloides</i>	
Witchweed - <i>Striga</i> spp. (except the native <i>S. parviflora</i> )	
Yellow burrhead - <i>Limnocharis flava</i>	

**State Priority Weed Objective – ERADICATION:**

*The following weeds are present in limited distribution and abundance in some parts of the state. Elimination of the biosecurity risk posed by these weeds is a reasonably practicable objective.*

Weed species	Biosecurity Act 2015 requirements
Boneseed - <i>Chrysanthemoides monilifera</i> spp. <i>monilifera</i>	<p><b>Biosecurity (Boneseed) Control Order 2017</b></p> <p><b>1. Control measures for owners and occupiers of land</b></p> <p>Pursuant to section 62(1)(b) of the Act, an owner or occupier of land in the Boneseed Control Zone on which there is Boneseed must:</p> <ul style="list-style-type: none"> <li>(a) notify the local control authority for the area if the Boneseed is part of a new infestation on the land: <ul style="list-style-type: none"> <li>i) as soon as practicable after becoming aware of the new infestation;</li> <li>ii) verbally or in writing;</li> <li>iii) giving the following: <ul style="list-style-type: none"> <li>(1) the person's full name and contact number;</li> <li>(2) the location of the Boneseed, including the property identification code for the land (if this is known); and</li> <li>(3) any other information reasonably requested by the local control authority; and</li> </ul> </li> </ul> </li> <li>(b) immediately destroy all Boneseed on the land;</li> <li>(c) ensure that subsequent generations of Boneseed are destroyed; and</li> <li>(d) the land is kept free of Boneseed.</li> <li>(e) The owner or occupier does not need to comply with (a) above if they know that notification of the infestation on the land has already been given to the local control authority for the area.</li> </ul> <p><b>2. Control measures for persons dealing with carriers</b></p> <p>Pursuant to section 62(1)(b) of the Act, a person who deals with a carrier of Boneseed in the Boneseed Control Zone, in circumstances where the person knows or ought reasonably to know of the presence of Boneseed on the land or in or on the carrier, must:</p> <ul style="list-style-type: none"> <li>(a) ensure that Boneseed (including any seed and propagules) is not moved from the land; and</li> <li>(b) immediately notify the local control authority for the area: <ul style="list-style-type: none"> <li>i) as soon as practicable after becoming aware of the presence of Boneseed;</li> <li>ii) verbally or in writing;</li> <li>iii) giving the following: <ul style="list-style-type: none"> <li>(1) the person's full name and contact number;</li> <li>(2) the location of the Boneseed, including the property identification code for the land (if this is known); and</li> </ul> </li> </ul> </li> </ul>

	<p>iv) any other information reasonably requested by the local control authority.</p> <p>(c) The person who deals with a carrier of Boneseed does not need to comply with (b) above if they know that notification of the infestation on the land has already been given to the local control authority for the area.</p> <p><b>Mandatory Measure (Part 2, Division 8, Clause 33, Biosecurity Regulation 2017):</b> A person must not import into the State or sell.</p>
<p>Parkinsonia - <i>Parkinsonia aculeata</i></p> <p><b>(Note – Regional priority weed objective is Prevention. See A1.2 for regional requirements)</b></p>	<p><b>Biosecurity (Parkinsonia) Control Order 2017</b></p> <p><b>1. Control measures for owners and occupiers of land</b></p> <p>Pursuant to section 62(1)(b) of the Act, an owner or occupier of land in the Parkinsonia Control Zone on which there is Parkinsonia must:</p> <p>(f) notify the local control authority for the area if the Parkinsonia is part of a new infestation of Parkinsonia on the land:</p> <ol style="list-style-type: none"> <li>i) as soon as practicable after becoming aware of the new infestation;</li> <li>ii) verbally or in writing;</li> <li>iii) giving the following: <ol style="list-style-type: none"> <li>(1) the person's full name and contact number;</li> <li>(2) the location of the Parkinsonia, including the property identification code for the land (if this is known); and</li> <li>(3) any other information reasonably requested by the local control authority; and</li> </ol> </li> </ol> <p>(g) immediately destroy all Parkinsonia on the land; and</p> <p>(h) ensure that subsequent generations of Parkinsonia are destroyed; and</p> <p>(i) the land is kept free of Parkinsonia.</p> <p>(j) The owner or occupier does not need to comply with (a) above if they know that notification of the infestation on the land has already been given to the local control authority for the area.</p> <p><b>2. Control measures for persons dealing with carriers</b></p> <p>Pursuant to section 62(1)(b) of the Act, a person who deals with a carrier of Parkinsonia in the Parkinsonia Control Zone, in circumstances where the person knows or ought reasonably to know of the presence of Parkinsonia on the land or in or on the carrier, must:</p>

	<p>(d) ensure that Parkinsonia (including any seed and propagules) is not moved from the land; and</p> <p>(e) immediately notify the local control authority:</p> <ul style="list-style-type: none"> <li>i) as soon as practicable after becoming aware of the presence of Parkinsonia;</li> <li>ii) verbally or in writing;</li> <li>iii) giving the following: <ul style="list-style-type: none"> <li>(1) the person's full name and contact number;</li> <li>(2) the location of the Parkinsonia, including the property identification code for the land (if this is known); and</li> </ul> </li> <li>iv) any other information reasonably requested by the local control authority.</li> </ul> <p>(f) The person who deals with a carrier of Parkinsonia does not need to comply with (b) above if they know that notification of the infestation on the land has already been given to the local control authority for the area.</p> <p><b>Mandatory Measure (Part 2, Division 8, Clause 33, Biosecurity Regulation 2017):</b> A person must not import into the State or sell.</p>
<p>Tropical soda apple - <i>Solanum viarum</i></p> <p><b>(Note – Regional priority weed objective is Prevention. See A1.2 for regional requirements)</b></p>	<p><b><u>Biosecurity (Tropical Soda Apple) Control Order 2017</u></b></p> <p><b><u>1. Control measures for owners and occupiers of land</u></b></p> <p>Pursuant to section 62(1)(b) of the Act, an owner or occupier of land in the Tropical Soda Apple Control Zone on which there is Tropical Soda Apple must:</p> <ul style="list-style-type: none"> <li>(a) notify the local control authority for the area if the Tropical Soda Apple is part of a new infestation of Tropical Soda Apple on the land: <ul style="list-style-type: none"> <li>i) as soon as practicable after becoming aware of the new infestation;</li> <li>ii) verbally or in writing;</li> <li>iii) giving the following: <ul style="list-style-type: none"> <li>(1) the person's full name and contact number;</li> <li>(2) the location of the Tropical Soda Apple, including the property identification code for the land (if this is known); and</li> <li>(3) any other information reasonably requested by the local control authority; and</li> </ul> </li> </ul> </li> <li>(b) destroy all Tropical Soda Apple on the land, including fruit; and</li> <li>(c) ensure that subsequent generations of Tropical Soda Apple are destroyed; and</li> <li>(d) that the land is kept free of Tropical Soda Apple.</li> <li>(e) The owner or occupier does not need to comply with (a) above if they know that notification of the infestation on the land has already been given to the local control authority for the area.</li> </ul> <p><b><u>2. Control measures for persons dealing with carriers</u></b></p> <p>Pursuant to section 62(1)(b) of the Act, a person who deals with a carrier of Tropical Soda Apple in the Tropical Soda Apple Control Zone, in circumstances where the person knows or ought reasonably to know of the presence of Tropical Soda Apple on the land or in or on the carrier, must:</p> <ul style="list-style-type: none"> <li>(a) ensure that Tropical Soda Apple (including any seed and propagules) is not moved from the land; and</li> <li>(b) immediately notify the local control authority for the area: <ul style="list-style-type: none"> <li>i) as soon as practicable after becoming aware of the presence of Tropical Soda Apple;</li> <li>ii) verbally or in writing;</li> </ul> </li> </ul>

	<p>iii) giving the following:</p> <ul style="list-style-type: none"> <li>(1) the person's full name and contact number;</li> <li>(2) the location of the Tropical Soda Apple, including the property identification code for the land (if this is known); and</li> <li>iv) any other information reasonably requested by the local control authority.</li> </ul> <p>(c) The person who deals with a carrier of Tropical Soda Apple does not need to comply with (b) above if they know that notification of the infestation on the land has already been given to the local control authority for the area.</p>
--	---

#### State Priority Weed Objective – CONTAINMENT:

*These weeds are widely distributed in some parts of the state. While broad scale elimination is not practicable, minimisation of the biosecurity risk posed by these weeds is reasonably practicable.*

Land area where requirements apply	Biosecurity Act requirements & Strategic Response in the region
Alligator weed - <i>Alternanthera philoxeroides</i>	
<p>A Biosecurity Zone, to be known as the <b>Alligator Weed Biosecurity Zone</b>, is established for all land within the state except land in the following regions:</p> <ul style="list-style-type: none"> <li>(a) Greater Sydney,</li> <li>(b) Hunter (but only in respect of land in the local government area of City of Lake Macquarie, City of Maitland, City of Newcastle or Port Stephens).</li> </ul>	<p><b>Biosecurity Regulation 2017 - Part 5, Division 2 (Biosecurity Zone)</b></p> <p>An owner or occupier of land in the Alligator Weed Biosecurity Zone on which there is the weed <i>Alternanthera philoxeroides</i> (Alligator Weed) must:</p> <ul style="list-style-type: none"> <li>(a) if the weed is part of a new infestation of the weed on the land, notify the local control authority for the land as soon as practicable in accordance with Part 6, and</li> <li>(b) eradicate the weed or if that is not practicable destroy as much of the weed as is practicable and suppress the spread of any remaining weed.</li> </ul> <p><b>Mandatory Measure (Division 8, Clause 33, Biosecurity Regulation 2017):</b> A person must not import into the State or sell.</p> <p><b>Refer A1.2 for Regional Strategic Response and Outcomes to demonstrate compliance with the General Biosecurity Duty.</b></p>

State Priority Weed Objective – CONTAINMENT:	
These weeds are widely distributed in some parts of the state. While broad scale elimination is not practicable, minimisation of the biosecurity risk posed by these weeds is reasonably practicable.	
Land area where requirements apply	Biosecurity Act requirements & Strategic Response in the region
Bitou bush - <i>Chrysanthemoides monilifera</i> subsp. <i>Rotundata</i>	<p><b>Biosecurity Regulation 2017 - Part 5, Division 3 (Biosecurity Zone)</b>            An owner or occupier of land in the bitou bush Biosecurity Zone on which there is the weed <i>Chrysanthemoides monilifera</i> subsp. <i>rotunda</i> (Bitou Bush) must:</p> <ul style="list-style-type: none"> <li>(a) if the weed is part of a new infestation of the weed on the land, notify the local control authority for the land as soon as practicable in accordance with Part 6, and</li> <li>(b) eradicate the weed or if that is not practicable destroy as much of the weed as is practicable and suppress the spread of any remaining weed.</li> </ul> <p><b>Mandatory Measure (Division 8, Clause 33, Biosecurity Regulation 2017):</b> A person must not import into the State or sell.</p> <p><b>Refer A1.2 for Regional Strategic Response and Outcomes to demonstrate compliance with the General Biosecurity Duty.</b></p>
Water hyacinth <i>Eichhornia crassipes</i>	



**State Priority Weed Objective – CONTAINMENT:**

*These weeds are widely distributed in some parts of the state. While broad scale elimination is not practicable, minimisation of the biosecurity risk posed by these weeds is reasonably practicable.*

**Land area where requirements apply**

A Biosecurity Zone, to be known as the **Water Hyacinth Biosecurity Zone**, is established for all land within the State except land in the following regions:

- (a) Greater Sydney or North Coast,
- (b) North West or Northern Tablelands (but only land in those regions that is in the local government area of Inverell, Moree Plains or Tenterfield),
- (c) Hunter (but only land in that region that is in the local government area of City of Cessnock, City of Lake Macquarie, City of Maitland or Port Stephens),
- (d) South East (but only land in that region that is in the local government area of Eurobodalla, Kiama, City of Shellharbour, City of Shoalhaven or City of Wollongong).

**Biosecurity Act requirements & Strategic Response in the region**

**Biosecurity Regulation 2017 - Part 5, Division 4 (Biosecurity Zone)** An owner or occupier of land in the Water Hyacinth Biosecurity Zone on which there is the weed *Eichhornia crassipes* (Water Hyacinth) must:

- (a) if the weed is part of a new infestation of the weed on the land, notify the local control authority for the land as soon as practicable in accordance with Part 6, and
- (b) eradicate the weed or if that is not practicable destroy as much of the weed as is practicable and suppress the spread of any remaining weed.

**Mandatory Measure (Division 8, Clause 33, Biosecurity Regulation 2017):** A person must not import into the State or sell.

**Refer A1.2 for Regional Strategic Response and Outcomes to demonstrate compliance with the General Biosecurity Duty.**

**State Priority Weed Objective :**

*The following weeds are Weeds of National Significance (WoNS) not already listed as a State Priority Weed or Regional Priority weed in A1.1 or A1.2.*

Weed species	Biosecurity Act 2015 requirements
African boxthorn - <i>Lycium ferocissimum</i>	<p><b>Mandatory Measure (Part 2, Division 8, Clause 33, Biosecurity Regulation 2017):</b> A person must not import into the State or sell.</p>
Asparagus weeds - <i>Asparagus aethiopicus</i> , <i>A. africanus</i> , <i>A. asparagoides</i> Western Cape form, <i>A. plumosus</i> , <i>A. scandens</i> (Excludes <i>A. officinalis</i> , <i>A. racemosus</i> )	
Athel Pine - <i>Tamarix aphylla</i>	
Bellyache Bush <i>Jatropha gossypifolia</i>	
Blackberry - <i>Rubus fruticosus</i> agg. (Blackberry except the varieties Chester Thornless, Dirksen Thornless, Loch Ness, Silvan, Black Satin, Murrindindi, Smooth Stem, Thornfree and Chehalem)	
Cabomba - <i>Cabomba caroliniana</i>	
Cat's Claw Creeper - <i>Dolichandra unguis-cati</i>	
Flax-leaf broom - <i>Genista linifolia</i>	
Hymenachne - <i>Hymenachne amplexicaulis</i>	
Lantana - <i>Lantana camara</i>	
Madeira Vine - <i>Anredera cordifolia</i>	

Opuntia - <i>Opuntia spp.</i> , <i>Cylindropuntia spp.</i> , <i>Austrocylindropuntia spp.</i> (Excludes <i>O. ficus-indica</i> ) ( <i>opuntoid cacti</i> )	
Silver-leaf nightshade - <i>Solanum elaeagnifolium</i>	
Willows – <i>Salix</i> spp. except <i>S. babylonica</i> , <i>S. X calodendron</i> and <i>S. X reichardtiji</i> (except weeping willows, pussy willow and sterile pussy willow)	

## A1.2 Regional priority weeds for the Riverina Region:

Regional Priority Weed Objective – PREVENTION: <i>The following weeds are currently not found in the region, pose a significant biosecurity risk, and prevention of the biosecurity risk posed by these weeds is reasonably practicable objective.</i>	
Outcomes to demonstrate compliance with the General Biosecurity Duty	Strategic response in the region
Parkinsonia - <i>Parkinsonia aculeata</i>	Whole of region
Tropical soda apple - <i>Solanum viarum</i>	
<ul style="list-style-type: none"> <li>The plant is eradicated from the land and the land is kept free of the plant.</li> <li>Land managers mitigate the risk of the plant being introduced to their land.</li> <li>The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>Prevent entry to the region</li> <li>Implement site specific biosecurity and hygiene protocols</li> <li>Undertake high risk sites &amp; pathways analysis to identify potential introduction areas and preventative options</li> <li>Implement rapid response plan</li> </ul> <p><b>Refer A1.1 for the Control Order and Mandatory Measures for Parkinsonia</b> <b>Refer A1.1 for the Control Order for Tropical soda apple</b></p>
Chinese violet – <i>Asystasia gangetica</i> subspecies <i>micrantha</i>	Whole of region
Heteranthera / Kidneyleaf mud plantain – <i>Heteranthera reniformis</i>	
Horsetail – <i>Equisetum</i> spp.	
Senegal tea plant – <i>Gymnocoronis spilanthoides</i>	
Water lettuce - <i>Pistia stratiotes</i>	

<ul style="list-style-type: none"> <li>• The plant is eradicated from the land and the land is kept free of the plant.</li> <li>• Land managers mitigate the risk of the plant being introduced to their land.</li> <li>• The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>• Prevent entry to the region</li> <li>• Implement site specific biosecurity and hygiene protocols</li> <li>• Undertake high risk sites &amp; pathways analysis to identify potential introduction areas and preventative options</li> <li>• Implement rapid response plan</li> <li>• Monitor progress towards eradication.</li> </ul>
--	--

<b>Regional Priority Weed Objective – ERADICATION:</b> <i>The following weeds are present in limited distribution and abundance. Elimination of the biosecurity risk posed by these weeds is reasonably practicable.</i>	
Outcomes to demonstrate compliance with the General Biosecurity Duty	Strategic response in the region
Alligator weed - <i>Alternanthera philoxeroides</i> Bitou bush - <i>Chrysanthemoides monilifera</i> subsp. <i>rotundata</i>	Whole of region
<ul style="list-style-type: none"> <li>• The plant is eradicated from the land and the land is kept free of the plant.</li> <li>• Land managers mitigate the risk of the plant being introduced to their land.</li> <li>• The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>• Destruction of all infestations</li> <li>• Undertake high risk sites &amp; pathways inspections</li> <li>• Implement site specific biosecurity and hygiene protocols</li> <li>• Detailed surveillance and mapping to locate all infestations</li> <li>• Monitor progress towards eradication.</li> </ul> <p><b>Refer A1.1 for details of the Biosecurity Zone and Mandatory Measure for these species.</b></p>
Black willow – <i>Salix nigra</i> Chilean needle grass – <i>Nassella neesiana</i> Fireweed - <i>Senecio madagascariensis</i> Gorse - <i>Ulex europaeus</i> Grey willow - <i>Salix cinerea</i>	Whole of region

Mesquite - <i>Prosopis</i> spp.	
Sagittaria – <i>Sagittaria platyphylla</i>	
Salvinia - <i>Salvinia molesta</i>	
Serrated tussock – <i>Nassella trichotoma</i>	
<ul style="list-style-type: none"> <li>The plant is eradicated from the land and the land is kept free of the plant.</li> <li>Land managers mitigate the risk of the plant being introduced to their land.</li> <li>The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Mandatory Measure (Part 2, Division 8, Clause 33, Biosecurity Regulation 2017):</b> A person must not import into the State or sell.</p> <p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>Destruction of all infestations</li> <li>Undertake high risk sites &amp; pathways inspections</li> <li>Implement site specific biosecurity and hygiene protocols</li> <li>Detailed surveillance and mapping to locate all infestations</li> <li>Monitor progress towards eradication.</li> </ul>

### Regional Priority Weed Objective – ERADICATION:

The following weeds are present in limited distribution and abundance. Elimination of the biosecurity risk posed by these weeds is reasonably practicable.

Outcomes to demonstrate compliance with the General Biosecurity Duty	Strategic response in the region
Cane needlegrass – <i>Nassella hyalina</i>	Whole of region excluding Wagga Wagga City Council
<ul style="list-style-type: none"> <li>The plant is eradicated from the land and the land is kept free of the plant.</li> <li>Land managers mitigate the risk of the plant being introduced to their land.</li> <li>The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>Destruction of all infestations</li> <li>Undertake high risk sites &amp; pathways inspections</li> <li>Implement site specific biosecurity and hygiene protocols</li> <li>Detailed surveillance and mapping to locate all infestations</li> <li>Monitor progress towards eradication</li> </ul> <p><b>Refer to <i>Regional Priority Weed Objective: Containment</i> below for further measures for Cane needlegrass for Wagga Wagga City Council.</b></p>
Coolatai grass - <i>Hyparrhenia hirta</i>	Whole of region
Mother of millions – <i>Bryophyllum</i> spp.	
Perennial ground cherry - <i>Physalis longifolia</i>	
Prairie ground cherry - <i>Physalis hederifolia</i>	
Ragwort – <i>Senecio jacobaea</i>	

<ul style="list-style-type: none"> <li>• The plant is eradicated from the land and the land is kept free of the plant.</li> <li>• Land managers mitigate the risk of the plant being introduced to their land.</li> <li>• The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>• Destruction of all infestations</li> <li>• Undertake high risk sites &amp; pathways inspections</li> <li>• Implement site specific biosecurity and hygiene protocols</li> <li>• Detailed surveillance and mapping to locate all infestations</li> <li>• Monitor progress towards eradication</li> </ul>
<p>Montpellier broom - <i>Genista monspessulana</i></p>	<p>Whole of region excluding Snowy Valleys Council</p>
<p>Scotch broom - <i>Cytisus scoparius</i></p>	
<ul style="list-style-type: none"> <li>• The plant is eradicated from the land and the land is kept free of the plant.</li> <li>• Land managers mitigate the risk of the plant being introduced to their land.</li> <li>• The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Mandatory Measure (Part 2, Division 8, Clause 33, Biosecurity Regulation 2017):</b> A person must not import into the State or sell.</p> <p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>• Destruction of all infestations</li> <li>• Undertake high risk sites &amp; pathways inspections</li> <li>• Implement site specific biosecurity and hygiene protocols</li> <li>• Detailed surveillance and mapping to locate all infestations</li> <li>• Monitor progress towards eradication.</li> </ul> <p><b>Refer to <i>Regional Priority Weed Objective: Containment</i> below for further measures for Montpellier &amp; Scotch broom for Snowy Valleys Council.</b></p>

<p><b>Regional Priority Weed Objective – ERADICATION:</b>  <i>The following weeds are present in limited distribution and abundance. Elimination of the biosecurity risk posed by these weeds is reasonably practicable.</i></p>	
<p><b>Outcomes to demonstrate compliance with the General Biosecurity Duty</b></p>	<p><b>Strategic response in the region</b></p>
<p>Water hyacinth - <i>Eichhornia crassipes</i></p>	<p>Whole of region</p>

<ul style="list-style-type: none"> <li>• The plant is eradicated from the land and the land is kept free of the plant.</li> <li>• Land managers mitigate the risk of the plant being introduced to their land.</li> <li>• The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>• Destruction of all infestations</li> <li>• Undertake high risk sites &amp; pathways inspections</li> <li>• Implement site specific biosecurity and hygiene protocols</li> <li>• Detailed surveillance and mapping to locate all infestations</li> <li>• Monitor progress towards eradication.</li> </ul> <p><b>Refer A1.1 for details of the Biosecurity Zone and Mandatory Measure for this species.</b></p>
--	---

<b>Regional Priority Weed Objective – CONTAINMENT:</b> <i>While broad scale elimination is not practicable, minimisation of the biosecurity risk posed by these weeds is reasonably practicable.</i>	
Outcomes to demonstrate compliance with the General Biosecurity Duty	Strategic response in the region
Cane needlegrass – <i>Nassella hyalina</i>	Wagga Wagga City Council
<ul style="list-style-type: none"> <li>• The plant is eradicated from the land and the land is kept free of the plant.</li> <li>• Land managers mitigate the risk of the plant being introduced to their land.</li> <li>• The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>• Undertake high risk sites &amp; pathways inspections</li> <li>• Implement site specific biosecurity and hygiene protocols</li> <li>• Detailed surveillance and mapping to locate all infestations</li> <li>• Monitor change in current distribution</li> </ul> <p><b>Refer to <i>Regional Priority Weed Objective Eradication</i> for further measures for Cane needlegrass in remainder of Region</b></p>
Montpellier / cape broom - <i>Genista monspessulana</i>	Snowy Valleys Council
Scotch broom - <i>Cytisus scoparius</i>	
<ul style="list-style-type: none"> <li>• The plant is eradicated from the land and the land is kept free of the plant.</li> </ul>	<p><b>Mandatory Measure (Part 2, Division 8, Clause 33, Biosecurity Regulation 2017):</b> A person must not import into the State or sell.</p>

<ul style="list-style-type: none"> <li>Land managers mitigate the risk of the plant being introduced to their land.</li> <li>The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>Undertake high risk sites &amp; pathways inspections</li> <li>Implement site specific biosecurity and hygiene protocols</li> <li>Detailed surveillance and mapping to locate all infestations</li> <li>Monitor change in current distribution</li> </ul> <p>Refer to <i>Regional Priority Weed Objective Eradication</i> for further measures for Montpellier and Scotch broom in remainder of Region.</p>
---	--

<b>Regional Priority Weed Objective – CONTAINMENT:</b> <i>While broad scale elimination is not practicable, minimisation of the biosecurity risk posed by these weeds is reasonably practicable.</i>	
Outcomes to demonstrate compliance with the General Biosecurity Duty	Strategic response in the region
Ox-eye daisy - <i>Leucanthemum vulgare</i>	Whole region
Water poppy - <i>Hydrocleys nymphoides</i>	
Yellow waterlily - <i>Nymphaea mexicana</i>	
<ul style="list-style-type: none"> <li>The plant is eradicated from the land and the land is kept free of the plant.</li> <li>Land managers mitigate the risk of the plant being introduced to their land.</li> <li>The plant or parts of the plant are not traded, carried, grown or released into the environment</li> </ul>	<p><b>Regional Strategic Response:</b></p> <ul style="list-style-type: none"> <li>Undertake high risk sites &amp; pathways inspections</li> <li>Implement site specific biosecurity and hygiene protocols</li> <li>Detailed surveillance and mapping to locate all infestations</li> <li>Monitor change in current distribution</li> </ul>

## Appendix 2: Other weeds of concern to the Riverina Region that have been risk assessed

Appendix 2 outlines other weeds of concern identified by the committee in consultation with the community. These are species for which a consistent and/or collaborative approach to management will provide the best outcome across the region.

Weeds identified within Appendix 2 are also subject to the General Biosecurity Duty and may be a focus for local management plans and coordinated campaigns by the community and other stakeholders in the region.

Common name	Scientific name
African boxthorn	<i>Lycium ferocissimum</i>
African lovegrass	<i>Eragrostis curvula</i> complex
Athel pine	<i>Tamarix aphylla</i>
Bathurst burr	<i>Xanthium</i> spp.
Bear-skin fescue	<i>Festuca gautieri</i>
Bitter Stonecrop	<i>Sedum acre</i>
Blackberry (except the varieties Chester Thornless, Dirksen Thornless, Loch Ness, Silvan, Black Satin, Murrindindi, Smooth Stem, Thornfree and Chehalem)	<i>Rubus fruticosus</i> (agg)
Blue heliotrope	<i>Heliotropium amplexicaule</i>
Bridal creeper	<i>Asparagus asparagoides</i>
Buffalo burr	<i>Solanum rostratum</i>
Caltrop	<i>Tribulus terrestris</i>
Cape tulips	<i>Moraea flaccida</i> and <i>M. miniata</i>
Columbus grass	<i>Sorghum x almum</i>
Devil's claw	<i>Ibicella lutea</i> or <i>Proboscidea louisianica</i>
Galvanised burr	<i>Sclerolaena birchii</i>
Golden dodder	<i>Cuscuta campestris</i>
Green cestrum	<i>Cestrum parqui</i>
Harrisia cactus	<i>Harrisia martinii</i> and <i>H. tortuosa</i>
Himalaya honeysuckle	<i>Leycesteria formosa</i>
Honey locust	<i>Gleditsia triacanthos</i>
Horehound	<i>Marrubium vulgare</i>
Indian fig	<i>Opuntia ficus-indica</i>
Johnson grass	<i>Sorghum halepense</i>
Khaki weed	<i>Alternanthera pungens</i>
Lippia	<i>Phyla canescens</i>
Long-leaf willow primrose	<i>Ludwigia longifolia</i>
Pampas grass	<i>Cortaderia</i> spp.
Prickly pear	<i>Cylindropuntia</i> spp.
Prickly pear	<i>Opuntia</i> spp.
Privet (broad-leaf)	<i>Ligustrum lucidum</i>
Privet (narrow-leaf)	<i>Ligustrum sinense</i>
Reed Canary Grass	<i>Phalaris arundinacea</i>



Reed Sweetgrass	<i>Glyceria maxima</i>
Rhus tree	<i>Toxicodendron succedaneum</i>
Scotch & Illyrian thistles	<i>Onopordum</i> spp.
Silk forage sorghum	<i>Sorghum</i> spp. hybrid cv.Silk
Silverleaf nightshade	<i>Solanum elaeagnifolium</i>
Spanish heath	<i>Erica lusitanica</i>
Spiny burrgrass	<i>Cenchrus incertus</i> & <i>C. longispinus</i>
Spiny emex	<i>Emex australis</i> Steinh
St Barnaby's thistle	<i>Centaurea solstitialis</i>
St John's wort	<i>Hypericum perforatum</i>
Sweet briar	<i>Rosa rubiginosa</i>
Tangled Hypericum	<i>Hypericum triquetrifolium</i>
Tree of heaven	<i>Ailanthus altissima</i>

# Regional Strategic Weed Management Plan 2017 - 2022



Local Land  
Services  
Riverina