Western Regional Strategic Strategic Weed Management Plan
2017 - 2022

Developed in partnership with the Western Regional Weed Committee
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Acknowledgment of Country

The Local Land Services Western Region covers, in whole or in part, the traditional lands of 28 Aboriginal tribal groups (see Figure i below).

The Western Local Board acknowledges and pays its respects to Elders, both past and present of these nations. We acknowledge that the protection and promotion of Aboriginal culture, heritage, traditional land management practices and spiritual beliefs is an issue of great importance to the traditional owners of these lands and waters and is of benefit to the whole community.

Stronger shared cultural values, will ensure a more reconciled and resilient community in the Western region.

Figure i: Traditional lands of Aboriginal nations in the Western region
Acknowledgment of contributors

This plan was developed by the Western Regional Weed Committee on behalf of the Western Local Board, for endorsement by the Board.

The Western Local Board wishes to acknowledge the work of the committee and regional support staff in developing this plan.

The Board would also like to thank the State Weeds Committee (particularly the technical sub-committee) for support in weed risk prioritisation and the Office of Environment and Heritage and NSW Department of Primary Industries for their guidance in the development of this document.

We also wish to acknowledge that some text within this plan was drawn from a range of NSW Department of Primary Industries publications, including the draft Invasive Species Plan, NSW Biosecurity Strategy 2013 – 2021 and the Biosecurity Act 2015 Discussion Paper: Weeds. A full list of references used can be found in Chapter 10: References on page 58.

The involvement of the following individuals, who provided additional information essential to the compilation of this plan is also gratefully acknowledged.

- Lis Arundell, Project Officer, Macquarie Valley Weeds Advisory Committee
- David Creeper, Manager - Biosecurity, Local Land Services Western Region
- Paula Bosse, Regional Noxious Weeds Project Officer, Murray and Riverina Weed Action Programs
- Steve Watts, Weeds Officer – Wentworth Shire Council
- Dr. Stephen Johnson, Weed Ecologist, NSW Department of Primary Industries
- Jasmine Wells. Senior Land Services Officer, Local Land Services Western Region
- Paul Erkelenz, Astrebla Agribusiness & NRM Consulting

Development of this plan was supported through NSW Weeds Action Program funding from the NSW Government.

**Burr Ragweed - Ambrosia confertiflora.**
Chair’s foreword

Tom Hynes
Chairperson - Western Local Board

Covering 40 per cent of the land mass of NSW, the Western region is a vast area with a unique blend of industries, natural resources and communities.

While it is dominated by arid and semi-arid rangelands, it supports a diverse range of industries including extensive livestock grazing, dryland agriculture, irrigated agriculture, mining and tourism. Other land uses, such as nature conservation and for urban and cultural purposes, are also significant.

The Western Local Board plays a leading role in setting priorities and developing strategies for the delivery of programs and related services associated with agricultural production, biosecurity, natural resource management and emergency management. Through this, and the efforts of Local Land Services Western Region staff and other organisations we collaborate with, we will make a significant contribution to the achievement of our vision of “resilient communities in productive, healthy landscapes” in the Western region.

Biosecurity risks, including weeds, pose a significant threat to the achievement of this vision. Developing and facilitating the delivery of appropriate programs to better manage these risks is a clear priority of this Board, as highlighted in our recently released local strategic plan.

Weeds are already estimated to cost NSW agriculture $1.4 billion annually, let alone the environmental and social impacts. Ongoing changes to factors such as climate, land use, transportation and trade in agricultural produce could greatly increase these risks and costs, unless a well thought-out, proactive and integrated approach to weed management is taken.

This regional strategic weed management plan will play a key part in developing such an approach. It takes the strategies and actions outlined in our local strategic plan relating to weed management a step further.

Developed in collaboration with our regional partners, it will not only guide where resources and effort will be focussed in the coming years but also provide a clear local context for Landholders and other community members to enable them to carry out their general biosecurity duty for weeds, under the new Biosecurity Act 2015.

I am very confident that its development will be seen as a significant moment in the protection and future development of the region's natural resources, industries and communities.

I would like to warmly acknowledge the efforts and expertise of the Western Regional Weeds Committee, staff of Local Land Services Western Region and other stakeholders from industry, the community and state and local government in developing this plan.
On behalf of the Western Regional Weed Committee, I am pleased to present this Regional Strategic Weed Management Plan to the Western Local Board and by extension, to our stakeholders, collaborators and the wider community of Western NSW.

The Western region has a number of characteristics that make the effective management of weeds particularly challenging. The diversity of land uses and management aims often mean that a plant that is considered a great threat by one landholder is considered unimportant (or even useful) by another.

The region's vast areas and distances, combined with a small, mostly scattered, population make it difficult to identify new outbreaks of weeds quickly, as well as control existing ones. Taking into account these factors and others, we believe it is essential that a strategic approach to managing the risks posed by weeds be taken. This plan is an important first step in implementing such an approach.

The purposes of this plan are to guide the allocation of resources and investment in weed management in the region, and to inform landholders and the community on how best to meet their general biosecurity duty for weeds under the Biosecurity Act 2015.

Combined with other sources of information such as the existing knowledge and experience of landholders, best practice management guides and the advice of experts in the field, we believe it will be an essential tool for anyone in the region who needs to make decisions about preventing weed spread and controlling existing outbreaks.

The plan has been developed using a “risk based” approach. This has not only allowed us to better identify which particular weed species are considered the higher priorities for our region but also the most appropriate “mix” of measures that need to be undertaken to best manage the risks posed by each species.

This plan has not been developed in isolation. It has drawn upon numerous past and existing plans and incorporates the knowledge, experience and aspirations of our stakeholders, collaborators and our regional community. We therefore believe that it reasonably reflects our community's current position and expectations in relation to best practice weed management. It will be a key task of this Regional Weed Committee to continue to develop community ownership of this plan and encourage active involvement in its implementation.

The development of this plan under such tight time frames would not have been possible without the efforts of a number of individuals and organisations. I would particularly like to acknowledge the staff of Local Land Services Western Region, all members of the Western Regional Weed Committee, the State Weeds Committee and staff of the NSW Department of Primary Industries and NSW Office of Environment and Heritage.
Executive summary

The Western region supports a diverse and distinct mixture of landscape, livelihood, cultural and lifestyle values. Strategic and coordinated regional weed management is critical to building the sustainability of the primary industries, natural environments and local communities in the Western region.

NSW is in the process of reforming its weed, pest and disease biosecurity legislation. Together, the NSW Biosecurity Strategy 2013-2021 and NSW Biosecurity Act 2015 (which repeals the Noxious Weeds Act 1993 and is expected to be operational in early 2017) provide a modernised and clear vision for safeguarding our primary industries, natural environments and communities from a range of biosecurity threats (pests, diseases and weeds), and the role of community-wide shared responsibility.

The Western Regional Strategic Weed Management Plan is a direct response to this legislative reform. It was prepared by the Western Regional Weed Committee on behalf of the Western Local Board, with guidance from the State Weeds Committee and Local Land Services Western Region. It covers weed risks that impact:

- animal and plant industries, including agriculture, aquaculture, recreational and commercial fishing in our freshwater systems and forestry
- biodiversity and the natural (terrestrial and aquatic) and urban and peri-urban environments
- human health, lifestyle, cultural values, recreation and social amenity
- infrastructure and service industries, including energy, transport and water supplies.

The plan sets the vision for weed management in the Western region for the five years from 2017, and outlines strategies and actions to achieve goals that focus on shared responsibility for weed management, sustainable landscapes and collaborative leadership and innovation.

The plan supports the reform by providing a sound basis for a cooperative and coordinated approach to landscape scale weed management in the Western region. It articulates what “shared responsibility” means for the region’s communities and stakeholders, and how they will work together to identify, minimise, respond to and manage high risk weeds, both now and into the future.

The Biosecurity Act 2015 applies equally to all land in the region, whether public or private (i.e. it is tenure neutral), and as such contains a range of new regulatory tools and a general biosecurity duty that support this approach to managing weed biosecurity risk. This plan outlines these new tools and how they will be applied. The tools include prohibited matter, biosecurity zones, mandatory measures and control orders.

The plan also outlines landholder obligations under the general biosecurity duty in the region, which for weeds is broadly defined as: any person dealing with plant matter must take measures to prevent, minimise or eliminate the biosecurity risk (as far as is reasonably practicable).

An expert panel has used best available evidence and an internationally-recognised risk-based prioritisation system to develop the priority weed list for this plan.

Appendix 1 of this plan includes regional priority weeds to which recommended measures to discharge the general biosecurity duty have been identified and also includes state level priority weeds for the region.

Appendix 2 lists other priority weeds identified in the prioritisation process as a further focus for weed management in the region.

Local Land Services has responsibility for implementing a number of key recommendations under the reforms which includes the formation of statutory Regional Weed Committee’s.

The Western Regional Weed Committee has been established in response to this reform recommendation and is one of 11 regional committees across the state. The first term of the committee has focused on the development of this plan and the role of the committee is likely to evolve as the focus shifts to implementing this plan.

The committee works closely with the State Weeds Committee that has been established to ensure a consistent, coordinated and strategic approach to weed management in NSW.
A range of stakeholders have played an important role in the evolution of weed management planning in the region over many years. This plan has built on past planning efforts and has gained immeasurably from the accumulated experience and expert local knowledge of committee members and their networks.

Much of this experience sits on the Western Regional Weed Committee, which includes representatives from local government, Macquarie Valley Weeds Advisory Committee, NSW Department of Primary Industries, NSW Office of Environment and Heritage (including the National Parks and Wildlife Service), Pastoralists Association of West Darling, NSW Farmers Association, Western Landcare, NSW Aboriginal Land Council, the Mallee Sustainable Farming group, Dried Fruits Australia, Department of Industry – Lands and Local Land Services Western Region.

The Regional Weed Committee, through its members, will play an important role in coordinating the implementation of the plan. Stakeholders will come together to develop key processes that facilitate the delivery of:

- shared responsibility
- standardised, tenure neutral and prioritised approaches to weed management planning, investment and delivery across the region
- strategic approaches to communicating locally relevant key messages and engaging partners, stakeholders and the broader community
- coordinated and integrated information management and research capacity
- regional measures of performance that track the progressive impacts of our programs and interventions, investment in priorities and progress towards outcomes for shared responsibility for weed management, sustainable landscapes and collaborative leadership and innovation
- robust monitoring, reporting evaluation and improvement processes that allow for measuring the performance of this plan, the effectiveness of the region’s overall investment in weed management and how we can improve our weed management projects, programs and policies.

Identifying local implementation roles, responsibilities and partnerships will be integral to these processes.
1. Intent of plan

1.1 Introduction and scope

Biosecurity is vital for the health, wellbeing and prosperity of everyone in NSW. It is about protecting the economy, environment and community from the negative impacts of pests, diseases and weeds.

The Western Regional Strategic Weed Management Plan focuses on managing weed biosecurity. The plan supports regional implementation of the NSW Biosecurity Act 2015, through articulating community expectations in relation to effective weed management and facilitating a consistent and coordinated approach to weed management in the region. The plan relates to all lands and waters in the Local Land Services Western Region of NSW (see Figure 3.1 on page 24 for map of region).

The plan is based on best available local knowledge, research and technology and a rigorous assessment of biosecurity risks posed by weeds. It will guide resource allocation and investment in the region and provide a consistent basis for regional planning and delivery.

Biosecurity is everyone’s responsibility. This plan supports development of that culture and guides the community in effective management of weeds and how to meet their statutory obligations.

The Western Regional Strategic Weed Management Plan is a local strategic plan under the Local Land Services Act 2013 and implements the NSW Weed Reforms, Biosecurity Strategy and Invasive Species Plan in relation to weeds for the Western region. It has been prepared by the Western Regional Weed Committee on behalf of the Western Local Board, and covers weed risks that impact:

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

Background information on the weed reforms and the committee is provided on pages 15 – 18. This plan sets the vision, goals and objectives for weed management in the Western region for the next five years and outlines the strategies and actions through which these goals will be achieved.
1.2 Purpose, vision, goals and objectives

The plan provides a sound basis for a cooperative and coordinated approach to weed management, and delivers outcomes at a landscape scale, consistent with the weed reforms for NSW.

It also supports a strong, resilient and inclusive weed management culture that will enable the Western region’s landholders and community to better manage future weed biosecurity challenges.

The vision for this plan is:

*Government, industry and the people of the Western region working together to protect the environment, economy and community from the negative impacts of weeds for the benefit of all people in the region.*

The plan outlines how government, industry and the community share responsibility and will work together to identify, minimise, respond to and manage high risk weeds.

The goals and objectives for this plan align with those of the NSW Biosecurity Strategy 2013-2021 and the Western Local Strategic Plan 2016-2021, which provide the overarching policy framework.

Our goals for the Western region are that:

1. Responsibility for weed biosecurity is shared by all people of the Western region
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 outcomes we expect to see in achieving our vision and goals and the more specific and measurable aims (objectives) and strategies to achieve them, are shown in Table 1.1.

Outcomes for this plan are consistent with outcomes for the NSW Biosecurity Strategy 2013-2021.
# Western Regional Strategic Weed Management Plan 2017 - 2022

## Table 1.1: Vision, goals, outcomes, objectives and strategies

<table>
<thead>
<tr>
<th>Vision</th>
<th>Government, industry and the people of the Western region working together to protect the environment, economy and community from the negative impacts of weeds for the benefit of all people in the region.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals</td>
<td></td>
</tr>
<tr>
<td>1. Responsibility for weed biosecurity is shared by all people</td>
<td>2. Weed biosecurity supports profitable, productive and sustainable primary industries</td>
</tr>
<tr>
<td>Outcomes</td>
<td>• Community, industry and government are sharing responsibility for weed management and have a clear understanding of their roles and obligations.</td>
</tr>
<tr>
<td></td>
<td>• People have the skills, knowledge, capacity and capability to deliver weed management activities.</td>
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<td></td>
<td>• Strong, supportive partnerships improve weed management for all partners.</td>
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<tr>
<td></td>
<td>• Awareness of weed management in the region has improved, with communication and engagement, proactive and inclusive.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Objectives</td>
<td>Strategies</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>• Communicate a clear strategic vision and build support for a strong and integrated biosecurity system for the region.</td>
<td>• Improve surveillance, reporting and tracing systems for weeds.</td>
</tr>
<tr>
<td>• Provide the foundation for all customers and stakeholders to work together, and to fully utilize knowledge and expertise across all groups.</td>
<td>• Improve prevention, preparedness and response to weed emergencies.</td>
</tr>
<tr>
<td>• Foster accountability for weed management in the region at all levels.</td>
<td>• Eradicate or prevent the spread of new weeds.</td>
</tr>
<tr>
<td></td>
<td>• Contain and manage impacts of widespread weeds.</td>
</tr>
<tr>
<td></td>
<td>• Support and embrace weed science, technology and research.</td>
</tr>
<tr>
<td></td>
<td>• Assess and respond to changing risks under a changing climate.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>• Improve effectiveness in prevention and response to new weed incursions.</td>
<td>• Provide a framework for more detailed planning, monitoring and reporting of weed management programs.</td>
</tr>
<tr>
<td>• Prevent, eradicate, control and manage the impacts of weeds.</td>
<td>• Provide guidance for weed management prioritization, decision making and actions at a regional level.</td>
</tr>
<tr>
<td>• Understand and have regard for the impacts of a changing climate on weed biosecurity.</td>
<td>• Support consistent and coordinated regional weed management planning and local delivery.</td>
</tr>
<tr>
<td></td>
<td>• Support leading practice in weed management through ongoing creation and sharing of knowledge and spatial information.</td>
</tr>
<tr>
<td></td>
<td>• Provide governance and leadership that supports collaborative, effective and efficient weed management.</td>
</tr>
<tr>
<td></td>
<td>• Adopt adaptive, contemporary planning and processes.</td>
</tr>
<tr>
<td></td>
<td>• Develop a regional invasive weed knowledge base and information system that supports state standards.</td>
</tr>
<tr>
<td></td>
<td>• Develop consistent systems for monitoring, evaluating and reporting on the effectiveness of weed management.</td>
</tr>
</tbody>
</table>
1.3 A more strategic approach to weed management

1.3.1 Drivers

A range of developments are increasing the need to manage weeds more strategically and efficiently:

- Globalisation is integrating the world economy with rapid growth in trade, tourism, passenger and cargo movements. International and interstate “on-line” trade in a range of goods, including plants, has also increased exponentially. This is increasing the risk of pest, disease and weed incursions.

- Our climate is becoming more variable, with more extreme weather events, increasing average temperatures and other changes expected for many years to come. These changes are likely to favour the establishment, spread or shift of some weeds and limit the distribution and impact of others.

- 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 Department of Primary Industries, 2015). Impacts on biodiversity and natural environments are harder to quantify, but equally significant.

- 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 demand. We need to do everything we can to protect our capacity to produce food from factors that negatively affect productivity, including weeds.

- Pressure to maintain profitability and increase efficiency are ongoing in government, industry and business sectors, with an aging 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 also creating opportunities to improve the cost effectiveness of on-ground weed control, improving our capacity to coordinate our efforts and 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.

In consideration of these drivers, the NSW Biosecurity Strategy 2013-2021 established a clear vision for how we can safeguard our primary industries, natural environments and communities from biosecurity threats. The most effective way to manage invasive species is to prevent their incursion in the first place. Invasive species have the ability to establish rapidly in new areas and successful eradication requires a timely and rapid response.

1.3.2 Weed management reforms

In May 2013, the NSW Government released the NSW Biosecurity Strategy 2013-2021. With 14 different pieces of legislation dealing with biosecurity in NSW at the time, a key goal of the strategy was to ensure that biosecurity is underpinned by a responsive and consistent legislative framework. To inform the development of new legislation and other strategies, a Review of Weeds Management in NSW was undertaken by the Natural Resources Commission for the NSW Government in 2013-2014. The Review identified a number of key themes that were accepted as important areas for weed management reform by the NSW government. These included:

- community-wide shared responsibility
- consistent and transparent state level guidance
- consistent and coordinated regional planning and local delivery
- effective prevention measures and response to new incursions
- improved management of high-risk pathways
- improved accountability for weed management at all levels
- improved research and development.

The government also saw the need to focus on underlying causative factors driving the spread of weeds, rather than just the weeds themselves.
With a clear need for weed management reform, a new Biosecurity Act was developed to consolidate and modernise the way all biosecurity is managed in NSW. During consultation on the framework for the proposed Act in 2014, weeds were the most mentioned biosecurity threat in public submissions, reflecting significant interest in weed management, especially in rural and regional areas.

The Biosecurity Act 2015 repeals the Noxious Weeds Act 1993, which previously provided regulatory controls and powers to manage noxious weeds in NSW. The Biosecurity Act 2015 provides the opportunity to streamline and modernise the way weeds are managed in NSW as it:

- embeds the principle of shared responsibility for biosecurity risks (including weeds) across government, community and industry
- is tenure neutral, meaning that the Act will apply equally to all land in the state, regardless of whether it is publicly or privately owned
- supports regional planning and management for weeds, as recommended by the Review of Weeds Management in NSW 2014.

Under the Noxious Weeds Act 1993 (repealed) private landholders had different weed control obligations to those of public landholders. The tenure neutral approach recommended in the Review of Weeds Management 2014 and adopted under the Biosecurity Act 2015 and this plan is consistent with the principle that biosecurity is everyone’s responsibility.

### 1.3.3 Implementing the weed management reforms

This plan implements part of the weed reforms and lists weeds prioritised for management action, investment and compliance effort in the region. Box 1 explains the status of this plan with respect to regulation of weeds.

**Box 1: Status of this plan with respect to regulation**

This plan is made under the Local Lands Services Act 2013 to closely link to the Local Land Services region as the (weeds) coordinating body and to the Western Local Strategic Plan, which defines the priorities and strategy in respect of delivery of services.

In relation to the relevance of this plan to enforceable weed management, the primary instrument is the Biosecurity Act 2015. This statute provides the processes for defining and enforcing requirements concerning Biosecurity Matter (weeds). This plan articulates the priorities and strategies the region (and the community, through the Board, Regional Weed Committee and consultation) have determined as reasonable standards for weed management. The role of the document in regulation is to provide an agreed standard for people to meet (within reason) and the plan development and weed risk prioritisation process provides evidence of the considered and agreed position.

While this plan is not enforceable in its own right, it does provide “evidence” of the communities will in the matter and of the need (through the Weed Risk Management System and other evaluation processes) to manage particular weeds in certain ways.

To implement the weed reforms, the Western Local Board was given responsibility for:

- forming a statutory Regional Weed Committee and ensuring it functions appropriately
- producing and coordinating the delivery of the Western Regional Strategic Weed Management Plan
- facilitating and coordinating strategic planning for weed management in the region
- assisting with education and community outreach programs.

These responsibilities are consistent with the recommendations of the Natural Resources Commission and the Local Land Services Act 2013.

Statutory Regional Weed Committees (11) were established under Section 33 of the Local Land Services Act 2013 and have taken over many of the strategic roles and responsibilities previously provided by the former Regional Weeds Advisory Committees (14). The Macquarie Valley Weeds Advisory Committee has continued in existence in the Western region, with modified responsibilities.
The Western Regional Weed Committee was given responsibility for:

- developing and endorsing the Western Regional Strategic Weed Management Plan
- supporting implementation of the weeds component of the NSW Biosecurity Strategy, the Biosecurity Act 2015 and the NSW Invasive Species Plan
- allocating state funding to Local Control Authorities based on this plan and ensuring consistency across land tenancies
- developing education and awareness programs.

The committee includes representatives from local government, NSW Department of Primary Industries, NSW Office of Environment and Heritage (including the National Parks and Wildlife Service), Pastoralists Association of West Darling, NSW Farmers, Western Landcare, Macquarie Valley Weeds Advisory Committee, NSW Aboriginal Land Council, the Mallee Sustainable Farming group, Dried Fruits Australia, Department of Industry – Lands and Local Land Services Western Region.

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 in decision making.

A State Weeds Committee was also established and has a role in overseeing implementation of the weed management reforms, auditing, evaluating weed declarations and state-level oversight and governance. That role includes developing service delivery standards for weed compliance and commissioning audits.

The relationship between Local Land Services, the Regional Weed Committee, the State Weeds Committee and other stakeholders is shown in Figure 1.1. 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.

How the plan will be managed and implemented and the roles of Local Land Services, the Regional Weed Committee and key stakeholders in implementing this plan are covered in Chapter 6: Implementation.

This plan is a partnership between the committee, stakeholders, the community and Local Land Services Western Region. Working together, the committee has developed this plan on behalf of the Western Local Board. The Board has ultimate responsibility for this plan, which is a local strategic plan under section 46 the Local Land Services Act 2013.
Figure 1.2 below shows the relationship between the committee, the Western Local Board and other Community Advisory Groups. The Board is accountable for establishment of the committee with appropriate representation and ensuring it continues to function effectively. Local Land Services Western Region provides executive support to the committee.

The committee can also raise significant weed policy issues to the State Weed Committee for their consideration and the State Weed Committee or its members can liaise directly with the committee through its secretariat. The committee will support the State Weeds Committee in the development and delivery of performance standards for service delivery.
1.4 How the plan was developed

The Western Regional Weed Committee was tasked with producing the Western Regional Strategic Weed Management Plan for the Western region based on the:

- Natural Resources Commission’s recommendations for weed reform adopted by the NSW government
- Biosecurity Act 2015

The State Weed Committee and Local Land Services provided guidance on overall content. Committee member participation in the planning process was critical for ensuring that this plan and its requirements are appropriate, equitable and serviceable.

A key part of developing this plan was a review and prioritisation of weeds in the region. This was done to develop a priority weed list (Appendix 1) and other regional weed lists (Appendix 2), using a risk based approach that is internationally recognised.

Use of local expertise, data and weed distribution information, were essential inputs to the process. The results were peer reviewed and assessed for consistency with the prioritisation system and the Biosecurity Act 2015. The process and how weeds were assessed in the region are covered on pages 35 – 36.

With the benefit of a clear path for reform and new legislative arrangements, this plan has built on past planning efforts, and has drawn on past experience in weed management and accumulated knowledge in the region.

This plan has benefited from extensive consultation and collaboration with key stakeholders to date, and the accumulated experience and expert local knowledge of committee members and their networks.

Further community and stakeholder feedback on this plan will guide further refinements in strategic weed planning and implementation in the Western region.

---

*Hudson’s Pear – Cylindropuntia rosea.*
2. Policy and planning framework

2.1 Overview of key plans and legislation

The Regional Weed Committee has considered a range of plans and strategies directly relevant to development of this plan, at national, state and local levels. Figure 2.1 shows the framework of national, state and local plans relevant to this plan.

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

Figure 2.2 shows the planning framework for this plan within the region. The list of plans and policies to implement the plan is shown in Figure 2.2 and will be refined as implementation proceeds. Some business planning components and policies already exist or simply need refining (for example rapid response planning) while others are yet to be developed. The development of these supporting plans and policies will be prioritised in collaboration with Local Land Services Western Region, Local Control Authorities and other key stakeholders.

Figure 2.2: Regional planning framework for the Western Regional Strategic Weed Management Plan.

The Western Regional Strategic Weed Management Plan will be underpinned by the local implementation and operational plans of the regions key stakeholders. Specific local actions, targets and time frames for delivery will be outlined in more detail in these underpinning documents and will be reported against annually or as required. Further information on implementation of this plan is covered Chapter 6: Implementation (pages 46 – 52).
2.3 Guiding legislation

The NSW Biosecurity Act 2015, Local Land Services Act 2013 and Local Government Act 1993 are the key legislation directing the implementation of this plan. The Biosecurity Act 2015 will take effect with publication of the regulations in the NSW Government Gazette in the first half of 2017. This Act is administered by NSW Department of Primary Industries.

A range of other state and national legislation relevant to the management of crown land tenures, plant pests, plant diseases and weeds will also influence how the plan is implemented. Key NSW legislation relevant to weed management in this region that will continue to operate in tandem with the Biosecurity Act 2015, are:

- 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
- Native Vegetation Act 2003
- Crown Lands Act 1989
- Crown Lands (Continued Tenures) Act 1989
- Commons Management Act 1989
- Western Lands Act 1901
- The Crown Lands Management Act 2016 recently passed the NSW Parliament and the new Act is likely to repeal the Crown Lands Act 1989, the Western Lands Act 1901 and certain other legislation early in 2018.


The way biodiversity in NSW is managed is also being reformed, with the NSW government implementing recommendations from the Independent Biodiversity Legislation Review Panel. Schedule 4 of the new Biodiversity Conservation Act 2016 lists a range of weed related key threatening processes. There will also be associated changes to existing laws and the committee will liaise with the State Weeds Committee on the effect of any changes flowing from these reforms.

The Biosecurity Act 2015 introduces several new regulatory tools for managing weeds. These are outlined in Table 2.1 below. Prohibited matter, control orders and biosecurity zones relevant to the Western region are covered in Appendix 1. These are set by NSW Department of Primary Industries as the administrator of the Biosecurity Act 2015.

The Biosecurity Act 2015 also includes a number of other tools that can be used to manage weeds in NSW.

**Mandatory measures regulation:** May require persons to take specific actions with respect to weeds or carriers of weeds. Mandatory measures will be defined in the Regulations and will include such things as a requirement to notify NSW Department of Primary Industries with regard to any new plants coming into the state.

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

**Biosecurity Direction:** An enforceable instruction to a person or class of persons to take action to:
- prevent, eliminate or minimise a biosecurity risk
- prevent, manage or control a biosecurity impact
- enforce any instrument under the Biosecurity Act 2015.

**Biosecurity Undertaking:** A written undertaking by a person, accepted by an authorised officer. This sets out the measures a person has agreed to implement to remedy a contravention, likely contravention, or suspected contravention of the Biosecurity Act 2015.
Table 2.1: Tools of the *Biosecurity Act 2015*.

<table>
<thead>
<tr>
<th>Biosecurity Act tool</th>
<th>Intended outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prohibited matter:</strong> For declaration and management of significant weeds not present in NSW, or parts of NSW.</td>
<td>Weeds prevented from entering the state</td>
</tr>
<tr>
<td><strong>Control order:</strong> For managing weeds under approved eradication programs. Control Orders last for five years, but can be renewed for longer-term eradication programs.</td>
<td>Weeds to be eradicated</td>
</tr>
<tr>
<td><strong>Biosecurity zone:</strong> For weeds subject to on-going ‘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.</td>
<td>Weeds to be contained</td>
</tr>
<tr>
<td><strong>General biosecurity duty:</strong> For managing the spread of all weeds that present a biosecurity risk. Any person dealing with biosecurity matter must take measures to prevent, eliminate or minimise the biosecurity risk (as far as is reasonably practicable). The general biosecurity duty applies equally to a carrier of biosecurity matter and to any person who knows or ought to know of the biosecurity risks associated with the activity. For priority weeds, recommended measures to reduce biosecurity risk are detailed in Appendix 1 of this Plan.</td>
<td>Spread and/or impact of all weeds that pose a biosecurity risk is managed. The general biosecurity duty is in addition to any requirements included in a control order, biosecurity zone or other instrument made under the <em>Biosecurity Act 2015</em>.</td>
</tr>
</tbody>
</table>

How these regulatory tools of the *Biosecurity Act 2015* will be applied is addressed on pages 37 – 40.

*Athel Pine - Tamarix aphylla.*
3. Weed management in the region

3.1 Regional overview

Location and communities

The Western region is the largest Local Land Services (LLS) region in NSW, covering 314,500 km², or 40 per cent of the state.

It is larger than the areas of Victoria and Tasmania combined. It shares a border with three other States; Queensland, South Australia and Victoria and is bounded to the east by the North West, Central West, Riverina and Murray Local Land Service areas.

![Local Land Services Western Region](image)

Figure 3.1: Local Land Services Western Region.

The region is sparsely populated; out of a total population of approximately 43,000, only the mining communities of Broken Hill (18,800) and Cobar (3,800) have urban populations greater than 3,000. Aboriginal people make up approximately 13 per cent of the region’s population.

Distances between even the smaller communities are considerable; return road journeys of 400 – 600 km within the region are not uncommon. Nearly one-third of the area (94,000 km²) is unincorporated, meaning that it has no formal local government.
Climate

The vast majority of the Western region is located in the Hot (persistently dry) Desert and Grassland climatic zones, according to the modified Köppen classification system used by the Bureau of Meteorology. Both of these zones are characterised by their low and unpredictable rainfall, hot to very hot summers (maximum daily temperatures averaging 35 – 38 °C and not infrequently reaching the low 40 °C's) and very low minimum temperatures during mid-winter (frosts are a common occurrence).

The southernmost fringes of the region, in the areas adjacent to the Murray and Murrumbidgee rivers, are in the warm (persistently dry) grasslands climatic zone. This zone is characterised by low and somewhat unpredictable rainfall, and warm to hot summers.

Rainfall in the region is low and highly variable, tending to summer dominant in the north and winter dominant in the south. Annual rainfall is highest in the north-eastern parts of the region and lowest in the west; annual average totals ranging from 411 mm at Brewarrina, to 323 mm at Balranald to 260 mm at Broken Hill. Drought is a common part of the climatic cycle in the Western region.

Current predictions point to a number of significant changes in the region’s climate over the coming decades including:

- an increase in average daily minimum and maximum temperatures over most seasons
- an increase in evaporation rates in most seasons, particularly in the Far West of the region
- a shift from winter/spring rainfall to summer/autumn rainfall (see Figures 3.2 and 3.3 below)
- more extreme impacts of La Nina (i.e. bigger floods) and El Nino (i.e. longer droughts) events.

These changes are likely to see shifts in the density and distribution of certain existing weed populations in the region, increase the risk of certain weed species being introduced and establishing while decreasing the risks associated with other species.

![Figure 3.2: Predicted change (%) in mean precipitation for spring period (September – November) in Western region, 1990 – 2009 (base) to 2020 - 2039.](image_url)
**Landscapes, vegetation and soils**

Arid and semi-arid rangelands dominate the region. It is a predominantly flat landscape, with small areas of low, stony ranges in its westernmost and easternmost parts. The region is bisected by the Barwon-Darling River system, which runs for approx. 1,400 km north east to south west via a mostly confined series of channels and wetlands. The headwaters for this system (and a number of other smaller rivers) originate in Queensland, increasing the risk of new incursions. The region is also bounded by the Murray and Murrumbidgee rivers to the south and the Lachlan River to the south east. There are numerous other smaller, mostly ephemeral, rivers and creeks across the region.

A diversity of vegetation communities are present in the region (see Figure 3.4), varying from the mulga woodlands and chenopod shrublands of the west, the mallee and Murray pine woodlands of the south, the brigalow-gidgee woodlands of the north and riparian vegetation associated with the river systems and floodplains. Approximately 95 per cent of the region remains uncleared; however much of the vegetation has been modified to some degree due to the impacts of total grazing pressure and changed fire regimes.

Soil profiles vary considerably within the region, with sandy soil types predominant in north western parts, trending towards loams the further one moves east. Clay soils are strongly associated with the rivers and floodplains of the region.

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**Figure 3.3: Predicted change (%) in mean precipitation for summer period (December – February) in Western region, 1990 – 2009 (base) to 2020 - 2039.**
Land tenure

Nearly all the land in the Western region is held under Western Lands Leases, granted under the Western Lands Act 1901, with only a small area under freehold.

Most Western Lands Leases are perpetual (ongoing) and can only be used for a designated purpose. The Department of Industry — Lands administers more than 6,600 Western Lands Leases, including 4,300 for grazing, 505 for agriculture, 1,593 for residence and 179 for businesses.

Western Lands Leases granted for the purposes of residential, business, agriculture, mixed farming, cultivation or similar purposes are eligible to be converted to freehold. However, at this time leases held for grazing or pastoral purposes cannot be converted to freehold.

In addition, the Department administers 16 Crown Reserves leases, 104 Crown and Irrigation Area leases, and 816 licences to occupy Crown land. These include lands reserved for purposes such as public recreation, commons, urban services, showgrounds, public halls, cemeteries, schools and hospitals. They also include a substantial area (approximately 1.5 million hectares) of travelling stock reserves, which effectively overlay a Western Lands Lease and remain available as part of the lease, for the lessees exclusive use, subject to the lands remaining available for the bona fide passage of travelling stock.
Land use and the regional economy

The Western region is estimated to generate in excess of $1 billion in earnings per annum, predominantly from agriculture, mining and tourism.

The vast majority of the region is used for extensive grazing of domestic livestock (sheep, cattle and goats) on native pastures.

The size of these pastoral properties varies considerably; some properties in the far west of the region can be up to 200,000 hectares (2,000 km²) in size, while properties around Wentworth and Balranald are usually smaller (5,000 – 6,000 hectares). Organic production systems are being adopted on an increasing number of these properties.

In recent decades, the region has seen an increase in more intensive forms of agriculture, with dryland farming (i.e. cereals in the southern mallee areas) and irrigated agriculture (i.e. cotton, horticulture and viticulture) being significant, particularly along the eastern and southern margins. There are important irrigation centres along the Barwon-Darling, Murray, Murrumbidgee and Lachlan rivers.

A significant proportion of the region is under some form of protection for conservation and/or cultural purposes. These areas can be found in most districts and, in some cases, are far larger than nearby properties used for other purposes. They include Mungo NP (within the Willandra Lakes World Heritage Area), the Menindee lake system and Mutawintji National Park (also a declared Wilderness), three Ramsar wetlands - Narran Lakes, Paroo River Wetlands and Lake Pinaroo. A number of endangered ecological communities and threatened species are found in these and other areas of the region. The region contains significant Aboriginal cultural assets that need protection from a range of weed species. A large and growing tourism industry is strongly associated with these areas and is an important part of the regional economy.

While mining is a major contributor to the regional economy, it occupies a relatively insignificant area of land, being mostly restricted to small areas in or adjacent to Broken Hill and Cobar.

Figure 3.5: Land use in the Western region NSW.
Key natural resource management issues

Given its history, size and diversity of land uses and natural environments, it is to be expected that the Western region has a number of natural resource management issues that are of concern to landholders and the general community. Many of the issues are inter-related. Issues considered to be of most significance are:

- **Uncontrolled total grazing pressure** – domestic livestock, native grazers (e.g. kangaroos) and other feral grazers (e.g. rabbits, goats etc.) all utilise the same native pasture base. Excessive grazing pressure at any given time reduces the number and biomass of desirable plant species, exposes the soil surface to wind and water erosion, compromises landscape function (i.e. the ability of land to capture and cycle moisture and nutrients) and can provide a niche for undesirable plants (i.e. invasive native species and exotic weeds) to establish. This negatively impacts on the productivity of grazing enterprises and reduces biodiversity.

- **Invasive native species** – total grazing pressure (see above) and changed fire regimes are held to be largely responsible for the increase in density of some species of native shrubs and trees (e.g. turpentine bush, purity bush etc.) in some parts of the region. Extensive, dense stands have established in many cases, which precludes the growth of useful native pasture species, restricts the movement of livestock and humans, compromises landscape function and reduces biodiversity. The management and control of invasive native species is subject to the provisions of the NSW Native Vegetation Regulation 2013; they are not subject to the provisions of the *Biosecurity Act 2015* and thus are not covered by this plan. For a list of plants currently recognised as Invasive Native Species under the NSW Native Vegetation Regulation 2013, please refer to the Landholder Guide accessible via the following weblink. ([http://www.environment.nsw.gov.au/resources/vegetation/150010lhguide-ins.pdf](http://www.environment.nsw.gov.au/resources/vegetation/150010lhguide-ins.pdf))

- **Incursion of new weeds** – the region is fortunate to have relatively few examples of widespread species of weeds, thanks in part to its relatively intact native vegetation and low rainfall. However, a number of factors including the size and remoteness of the region, changing land uses, the presence of a number of important incursion pathways (i.e. rivers, road corridors, increased movement of stock, fodder and machinery) and a changing climate mean that the risk of new species of weeds being introduced and establishing is increasing. While agriculture is likely to be most affected by any new incursions, a significant threat is also posed to the region’s natural and cultural values and the enterprises (such as tourism) that rely on these areas being maintained.

- **Unmanaged feral animals** – native pest animals (especially kangaroos) and other exotic feral species (e.g. rabbits, goats, pigs, foxes and wild dogs) have various impacts on the agriculture and biodiversity of the region, from contributing to total grazing pressure (see above), to predation of domestic livestock and endangered native fauna. Some species (e.g. goats and pigs) are potential vectors of exotic animal diseases, should an outbreak occur in the region.

- **Functioning aquatic environments** – the region includes some of the state’s major river systems, including the iconic Barwon-Darling system (and its tributaries), the Murrumbidgee, Murray and Lachlan rivers and a number of internationally recognised wetlands. The proper functioning of these rivers and wetlands is not only essential to the health of the associated natural ecosystems and the maintenance of the high cultural value that the region’s aboriginal people place on them, but also to the agricultural enterprises and communities that rely on these waterways for adequate supplies of good quality water for irrigation and domestic purposes.
Key regional drivers

Landholder, stakeholder, technical and scientific input has identified several key drivers which will continue to shape land use, social structures and natural resource management in the Western region. They are as follows:

- **Climate variability** – the Western region has a highly variable and unpredictable climate. As is the case in other arid and semi-arid regions of Australia, its native plants and animals have adapted to this. Coupled with the variability in soil types mentioned previously, the region’s agricultural systems have also had to adapt. The result is a patchwork of natural environments and agricultural systems, which vary considerably in their productivity over space and time. This variability is likely to increase (i.e. more extremes) under climate change.

- **Remoteness** – as noted previously, the region is a large area, characterised by a small population, mostly living in small communities or on isolated properties, with significant distances between them. The people of the region have generally adapted well to this. However, it does increase the level of difficulty in accessing many public and private services, modern communications and markets for agricultural produce. It also complicates their ability to engage in and influence political and business decision making processes. This can significantly affect their ability to identify and effectively respond to change.

- **Market and financial fluctuations** – the region’s economy is largely underpinned by agriculture and mining, and a growing tourism sector. Most business units are small to medium sized, family owned and operated and are reliant on one or two commodities for the majority of their income. Prices received for commodities produced can vary significantly over time. Costs of production, while generally increasing, can also vary significantly from year to year. These factors greatly affect the profitability of these businesses and thus their ability to invest back into improved land management and biosecurity practices. While landholders in all other regions are also subject to these factors, their impact in this region tends to be exacerbated by interplay with the ‘Climate Variability’ and ‘Remoteness’ drivers mentioned previously.

- **Technology** – technology is changing rapidly; particularly in the fields of communication, finance and marketing and to a lesser (but still significant) degree in the fields of agricultural production and land management. This creates some clear opportunities for the people and businesses of the Western region; information can be accessed more readily and some options to increase enterprise productivity and improve land management outcomes cost-effectively, that didn’t exist previously, are now available. However, the speed of change can often outpace the ability of the region’s (particularly communication) infrastructure to deliver such technology and/or the community’s capacity to understand and adopt it.
3.2 Recent strategic weed management in the region

Past planning efforts

Coordinated management of weeds in the Western region dates back to the 1980s, through the involvement of a number of local control authorities from the northern and eastern parts of the region in the Macquarie Valley Weeds Advisory Committee. While its membership was originally based on local control authorities, the Macquarie Valley Weeds Advisory Committee has since broadened its base to include many other organisations who play a role in the coordination, funding and implementation of weed management programs in the region. These include Local Land Services, NSW Department of Industry – Lands and the NSW Office of Environment and Heritage.

In a similar vein, the Western Riverina Noxious Weeds Advisory Group was formed in 1997; including all key stakeholders involved in what is now the south western portion of the Local Land Services Western Region. Members included representatives from local control authorities, NSW Office of Environment and Heritage, Crown Lands, Murrumbidgee Irrigation, Murrumbidgee Private Irrigators Inc., and the then Livestock Health and Pest Authorities and Catchment Management Authorities.

A primary focus of both the Macquarie Valley Weeds Advisory Committee and the Western Riverina Noxious Weeds Advisory Group has been to develop a series of regional weed management plans, so that a more coordinated approach to the management of priority weed species could be taken across the whole, or parts, of the region. Most of these plans are still current.

Both organisations have also played a leading role in providing opportunities for the professional development of local weeds officers and the implementation of a number of community weed awareness initiatives. The groups took on a more formal coordinating role in 2010, with the advent of the NSW Weeds Action Program. A number of plans were required to be developed or updated as part of this program.

Thus, there has been a significant previous regional weed management planning effort that the Western Regional Strategic Weed Management Plan was able to draw upon. Plans of particular note include:

- Regional Weed Management Plans – Macquarie Valley for African Boxthorn, Athel Pine, Blackberry, Chilean Needle Grass, Coolatai Grass, Mimosa, Parthenium Weed, Prickly Pear and Harrisia Cactus, Serrated Tussock and Silver-leaf Nightshade
- Macquarie Valley High Risk Pathway Management Plan
- Macquarie Valley Incursion Plan 2012
- Regional Weed Strategy – Lower Murray Darling Catchment (2nd edition)
Current situation and efforts

Strategic weed management in the Western region has been in a state of transition since the implementation of the NSW weed reforms.

The Western Local Board has formal responsibility for the strategic management of weeds in the region and is currently in the process of taking over most of the planning and coordination functions previously provided by the Weed Advisory Committees. It is doing this via the Western Regional Weed Committee, which was formed in May 2016. Amongst its other roles, the Western Regional Weed Committee is responsible for developing this Regional Strategic Weed Management Plan, prioritising target weed species, promoting effective coordination of weed management and developing education and awareness programs based on local and/or regional priority weeds.

Members of the Western Regional Weed Committee currently include:

- Shane Wilson (Chairperson) – Carrathool Shire Council
- Trevor Joliffe and Roy Coburn – Balranald Shire Council
- Stephen Watts – Wentworth Shire Council
- Peter Maxwell and Melissa Gunn – Cobar Shire Council
- William Loughnan and Peter Hutchinson – Brewarrina Shire Council
- Kane Kneck and Paul Everett – Central Darling Shire Council
- David Zhao and Libby Guest – Broken Hill City Council
- Carolyn Crain – Bourke Shire Council
- Lis Arundell – Macquarie Valley Weeds Advisory Committee
- Ken Turner and Lachlan Gall – Pastoralists Association of West Darling
- Henry Gregory – Western Landcare
- Mark King – Dried Fruits Australia
- Ian Edson – NSW Farmers
- Chloe Bennett – NSW Aboriginal Lands Council (Far West)
- Stuart Putland – Mallee Sustainable Farming
- Mary Knowles – NSW Water
- TBA – Roads and Marine Services NSW
- TBA – John Holland Rail
- Joshua Higgins and Shaun Barker – Department of Industry – Lands
- Ben Matthias – NSW National Parks and Wildlife Service
- Michael Michelmore and Stephen Johnson – NSW Department of Primary Industries
- Hillary Cherry and Matt Sheehan – NSW Office of Environment and Heritage
- David Creeper and Jasmine Wells – Local Land Services Western Region

The Macquarie Valley Weeds Advisory Committee has continued its role as the lead group in the region for the coordination of projects under the 2015 – 2020 round of the NSW Weeds Action Program; with projects now being aligned to the new Local Land Services boundaries rather than the previous Weeds Advisory Committee boundaries. A Regional Project Officer is employed to manage the WAP projects and to work with the new Regional Weed Committee’s in developing strategic documents. While many of its former roles are being transferred to the new Regional Weed Committees, the Macquarie Valley Weeds Advisory Committee has decided to remain active to assist in the transition. It is in the process of considering what its role may be in the longer term.

With a portion of its area being assigned to the Local Land Services Western Region, and given the impending transfer of most of its roles and responsibilities to the Regional Weed Committees, the Western Riverina Noxious Weeds Advisory Group decided to formally dissolve in October 2015.
3.3 Community involvement

Current capacity and involvement

Community involvement in, and capacity for, weed management in the region is variable.

Local control authorities, mostly based on local government (excepting the unincorporated areas where the Department of Industry – Lands acts as the local control authority), remain the mainstay of weed management in the Western region. Ten local government areas (see Figure 3.5 below) fall in whole or part within the boundaries of the Local Land Services Western Region and all currently employ local weeds officers on a full or part time basis.

The primary roles of the local control authorities are to collect data on the presence and prevalence of weeds in their area, control weeds on council managed lands and ensure compliance with the legislation on all other lands (public and private).

Local weeds officers are also actively involved in a number of community awareness and extension activities. Most local control authorities in the region also maintain physical control capacity, in the form of spray equipment etc., which enable them to carry out weed control measures directly if required.

Figure 3.5: Local government areas in the Western region.

State government agencies are a significant part of the weed management capacity of the region. Approximately one third of the region (in the Far West) is outside the boundaries of local government. The Department of Industry – Lands is responsible for ensuring compliance with the requirements of weeds legislation in these areas. Officers of the department carry out some weeds awareness, survey and enforcement activities as part of their broader role in working with the landholders of the area. Other units and individuals within NSW Department of Primary Industries have significant technical expertise in, or are carrying out research highly applicable to, the weed management issues of the region. They often play a key part in extension and community awareness activities. The NSW National Parks and Wildlife Service (a division of the NSW Office of Environment and Heritage) manage a large estate of parks and reserves in the region. They maintain a number of control assets to enable them to manage weed issues on these lands.
Individual landholder involvement in, and capacity for, weed management is highly variable. As noted previously, much of the region is used for the extensive grazing of domestic livestock on native pastures, mostly on large properties.

Landholders on these properties generally have limited knowledge of weed issues and little to no capacity to carry out weed control programs. In areas with more intensive farming systems, (i.e. irrigated agriculture, dryland farming), landholders tend to have better knowledge of weed risks relevant to their area, and have the capacity and willingness to actively control those weeds that they perceive as a threat to their enterprises. The capacity of agribusiness (i.e. rural suppliers, consultants etc.) in the region follows the same pattern; it is very limited in the pastoral areas and greater in areas where more intensive agriculture is practiced.

The prevalence of absentee landholders is also increasing markedly in some parts of the region and is having a significant impact on the ability of the community to monitor and manage weeds effectively. This is due to less people being “on the ground” in the first place and weeds being less of a priority for some new landholders, who often purchase a property for purposes other than production or active conservation.

**Other stakeholders**

A number of other organisations are seen as having the potential to play an important part in the management of weeds in the region. These include:

- Pastoralists Association of West Darling
- NSW Farmers Association
- NSW Aboriginal Land Council
- Mallee Sustainable Farming group
- Dried Fruits Australia local branches (Pomona and Coomealla)
- NSW Roads and Maritime Services
- NSW Water
- Australian Rail Track Corporation
- John Holland Group (manager of the Nyngan to Cobar rail line)

The nature of the involvement that these organisations could play in weed management in the region varies. The first five named are producer or indigenous landholder representative bodies, who could play a significant part in influencing regional weed priorities and programs, and through actively raising the awareness of weed issues amongst their membership.

The latter four named are significant managers of land in their own right, on which existing outbreaks of priority weeds are currently present and/or are important potential corridors for the spread of new weeds into the region. Efforts are being made to engage with these organisations, initially at the strategic level, through membership of the Western Regional Weed Committee and consultative processes.
4. Weed risk - assessment and prioritisation

4.1 Weed management prioritisation

The Western Regional Weed Committee in consultation with technical experts has identified a number of invasive plants of particular concern in the region. The biosecurity impacts of these weeds varies across the region, so an objective and repeatable risk assessment was required, to ensure limited resources are used wisely and management requirements are appropriate to the risk. This section outlines the principles and assessment process used to prioritise weeds for management across the region.

Appendix 1 of this plan identifies state level priority weeds for the region and regional priority weeds to which recommended measures to discharge the general biosecurity duty have been applied following a regional weed prioritisation process.

Appendix 2 lists other priority weeds identified as a further focus for weed management in the region.

4.1.1 Weed management principle

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), sequentially) 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 cost-effective, and this principle is a foundation of the weed prioritisation process used in this plan. Consistent with the NSW Weed Risk Management system (Johnson, 2009 a & b) and the draft NSW Invasive Species Plan, weed management can be grouped into four management objectives:

**Prevention** - implementing measures with the objective of preventing the arrival of weed species that are likely to have a significant impact and are not known to be present.

**Eradication** - the detection and permanent removal of weed species that are likely to have a significant impact and are known to be present in small localised populations. The aim is to eradicate the weed before it can establish self-sustaining populations. The permanent removal includes all individual plants and propagules from a defined area. There must also be little or no likelihood of re-invasion occurring.

**Containment** - preventing the spread of weed species beyond a predefined area. At this stage the weed has established self-sustaining populations, but is not yet established across its potential range. Eradication is not considered viable with current techniques and resourcing and the aim is to prevent the ongoing spread of the weed species.

**Asset protection** - preventing the spread of weed species to high value assets or reducing the impact on the high value asset for weeds already present. By now the weed is well established and widespread. Assets to protect typically have high economic, environmental and/or social value.

This last objective represents an important shift in the focus, from controlling the weed species to limiting the impact it may have on important assets.

Using the NSW Weed Risk Management system for prioritisation ensures that recognised weed management principles are incorporated in the prioritisation process.
Figure 4.1: Weed invasion curve illustrating the basis for the allocation of management objectives.

4.1.2 NSW weed risk management system

The NSW Weed Risk Management system provides a standard, nationally accepted and transparent process to help make decisions about the introduction, prioritisation and declaration of weed species.

The NSW Weed Risk Management system was developed in 2009 by NSW Department of Primary Industries to assist weed managers to determine priorities for weed management at state, regional and local levels and has previously been used as a basis for weed declarations under the NSW Noxious Weeds Act 1993. Similar systems are used across Australia, all conforming to the Australian and New Zealand Standard handbook “National Post-Border Weed Risk Management Protocol” (2006).

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.

A score for weed risk is determined through a scoring a series of parameters (invasiveness, impacts, potential distribution) and likewise a score for feasibility of coordinated 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 Biosecurity Act 2015.
4.2 State-level management requirements

The Biosecurity Act 2015 and Regulations provide specific legal requirements for state level priority weeds and high risk activities.

Prohibited matter

Prohibited matter is listed in Schedule 2 of the Biosecurity Act 2015 and is aimed at prevention. This list includes weeds that are nationally targeted for eradication and which are not presently in NSW.

Control orders

Weed Control Order 2017 under the Biosecurity Act 2015 will include weeds that are subject to a control order for the purpose of eradication. Control orders will be proposed as required to address subsequent eradication campaigns where appropriate.

Biosecurity zones

Biosecurity zones are listed in Part 5 of the draft Biosecurity Regulation 2016. These zones are created to allow ongoing strategic management. Zones are aimed at containment. However, each species may be subject to recommended measures tailored by the region either within the zone or outside it.

Mandatory measures

Mandatory measures are listed in Division 8 of the draft Biosecurity Regulation 2016. They are used where specific action is required to mitigate the biosecurity risk of the named species or activity. The mandatory measures include prohibition on certain dealings - including Weeds of National Significance (WoNS) (Clause 29), parthenium weed carriers - machinery and equipment (Clause 31) and duty to notify of importation of plants into the state (Clause 30).

The state level weeds and requirements relevant to the region have been included in Appendix 1 together with the high risk priority weeds from the regional prioritisation process outlined below.

Giant Reed - *Arundo donax*. 
4.3 Weed management categories applied at the regional scale

Species undergoing assessment for regional management priority are allocated into management categories. These categories are consistent with the weed invasion curve and weed management objectives outlined in Figure 4.1.

Table 4.1 provides a summary of the categories and the groups of species to which they apply.

<table>
<thead>
<tr>
<th>Category</th>
<th>Objective</th>
<th>Weeds in this category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention</td>
<td>To prevent the weed species arriving and establishing in the region.</td>
<td>Are high 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. These species are not known to be present in the region.</td>
</tr>
<tr>
<td>Eradication</td>
<td>To permanently remove the species and its propagules from the region.</td>
<td>Have a very high weed risk and very high feasibility of coordinated control. <strong>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.</strong></td>
</tr>
<tr>
<td></td>
<td>Or, to destroy infestations to reduce the extent of the weed in the region or a part of it with the aim of local eradication.</td>
<td></td>
</tr>
<tr>
<td>Containment</td>
<td>To prevent the ongoing spread of the species in all or part of the region.</td>
<td>Have a limited distribution. 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).</td>
</tr>
</tbody>
</table>

Table 4.1: Regional weed management categories.

4.4 Regional prioritisation process

A regional weed prioritisation process was undertaken using the NSW Weed Risk Management system. This was carried out using an expert regional panel on behalf of the Western Regional Weed Committee. The panel brought together practitioners from organisations with long term on-ground experience with high priority species, including Local Control Authorities, Local Land Services Western Region, Department of Industry – Lands, National Parks and Wildlife Service, NSW Department of Primary Industries and the Macquarie Valley Weeds Advisory Committee.

For each weed species assessed, the key considerations that the regional weed prioritisation process sought to take into account were:

- Has a weed risk assessment been carried out? What was the result of that assessment?
- Are there any current and/or potential impacts that can be attributed to that weed?
- What is the likelihood of success and economic feasibility of control for the weed?
- Does the weed appear on an existing list of priority weeds (e.g. currently declared weeds, Weeds of National Significance (WoNS), Biodiversity Priority, High Risk Species lists etc.)?
Weed risk management system assessments were undertaken at the regional scale to ensure that the outcome reflected regional conditions. Where there was significant sub-regional variation in weed risk or weed distribution, these assessments were conducted at a sub-regional and/or land use level to determine if a different management response was warranted for the sub-regional area and/or land use.

In identifying weed management priorities, other considerations such as expert opinion and spatial information on weed distribution were taken into account to fill information gaps or check the validity of the risk management system assessments results.

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 recommended measures developed for the region. This ensured consistency and alignment with the weed risk management system and the *Biosecurity Act 2015*. The Technical Subcommittee also provided guidance to regional weed committees on recommended measures. The management categories used in the assessment are summarised in Table 4.1.

### 4.4.1 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). The list also identifies recommended measures as to how a person may discharge the general biosecurity duty for those species. Management requirements for weeds, whether that includes specific regulatory measures (state level priorities) or recommended measures to discharge the general biosecurity duty (regional priority weeds), are listed also in Appendix 1.

The measures applied to a particular weed will depend on factors such as the behaviour and ecology of the weed, the land use(s) in which it occurs, the size of the infestation, potential pathways for reinestation and others. These factors have been taken into account in determining the suite of recommended measures and strategic responses for the priority weeds listed in Appendix 1 to this plan. As with all components of this plan, these obligations apply to all private and public landholders in the region.

### 4.4.2 Other regional weed lists

Appendix 2 outlines other weeds of concern identified by the Western Regional Weed Committee (in addition to the priority weed list) as a further focus for weed management and plan implementation in the region. This list is made up of species for which a consistent and/or collaborative approach to management will provide the best outcome across the region, consistent with the weed reforms. They include weeds such as:

- **Herbicide resistant weeds** – certain weed species in agricultural, horticultural and right-of-way (i.e. roads, railways etc.) situations have, as a result of repeated exposure to herbicides over a prolonged period, developed resistance to specific herbicide groups. This limits the options for control and makes management of these weed populations difficult.

- **Amenity weeds** – weeds, generally of urban environments, that have a high risk of causing injury or illness to human beings and/or detract from the enjoyment of public spaces (i.e. ovals, parks, playgrounds etc.)

- **Toxic plants** – some native and exotic plant species are known to be associated with livestock poisoning in certain seasons.

While all weeds identified within Appendix 2 are also subject to the general biosecurity duty and have been identified to highlight their importance and the risk they pose, any specific programs focusing on these weeds will place the emphasis on raising awareness, education, research and/or working with industries and communities affected by the plants.  

The priority weed list for the region (Appendix 1) and the other regional weed lists (Appendix 2) may be amended as necessary in accordance with state level reviews and the regional review process outlined on page 55.
Box 2: General biosecurity duty (GBD)

A general biosecurity duty applies to all weed species regardless of whether they are listed in this plan or not. For weeds, the general biosecurity duty means that any person dealing with plant matter must take measures to prevent, minimise or eliminate the biosecurity risk (as far as is reasonably practicable). Dealing, has a broad definition in the Biosecurity Act 2015 and the general biosecurity duty applies equally to a carrier of plant matter and to any person who knows or ought to know of the biosecurity risks associated with the activity.

In general if you deal with or carry plant matter as part of a commercial, professional, volunteer or recreational activity or lifestyle, you would be considered to know or ought to know the risks. Plant matter includes plants, parts of plants and seeds. Biosecurity is everyone’s responsibility and further information on the general biosecurity duty is available from http://www.dpi.nsw.gov.au/content/biosecurity/biosecurity-act-2015/general-biosecurity-duty, Local Land Services Western Region offices, your local control authority and NSW Department of Primary Industries.

Weeds considered to be having an adverse risk but not listed in this plan, will generally be addressed through extension to ensure the landholder understands the biosecurity risk posed by the weed and that the general biosecurity duty applies. An authorised officer may accept a Biosecurity Undertaking from the landholder detailing actions and timeframes to reduce the risk. If the landholder still fails to address the problem, a biosecurity direction can be issued and will provide more detail on the actions the landholder must take to manage the weed. Weed control may be enforced in these situations whether or not there is a direct reference to the weed in this plan provided there is a biosecurity risk.

4.5 Regional management responses

The primary focus of this plan is on encouraging and working with the community and landholders to achieve weed management objectives. Monitoring and compliance for weed management in the region will focus primarily on weeds listed in Appendix 1 to this plan. For high risk weeds, prevention and early intervention is the most effective and efficient approach and timing is crucial. Prompt and responsible action is essential to avoid significant impacts on other landholders, industry and the environment.

Local control authorities (the ten local government bodies previously mentioned on pages 33 – 34 and the Department of Industry – Lands in the unincorporated areas) are responsible for the implementation of priority weed control including enforcing the Biosecurity Act 2015, conducting inspections and providing education, training and resources for both the public and for staff.

Authorised officers under the Biosecurity Act 2015 enforce the act and its regulations, including the regulatory tools covered in Table 2.1. Authorised Officers appointed by the Secretary of the Department of Industry (or their delegate) will be able to exercise all of the functions of an authorised officer specified in the Biosecurity Act 2015. Local control authority weed officers will be appointed as Authorised Officers under the 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.

4.5.1 Supporting weed management in the region

Consistent with the guiding principles for weed management listed on page 35, increasing community capacity through awareness, education and training is an important means of supporting effective weed management in the region. Local control authorities, Local Land Services Western Region and other key stakeholders (including the Macquarie Valley Weeds Advisory Committee) also provide a range of advisory services to landholders and will help improve awareness and link landholders to appropriate material and training.

The Western Regional Weed Committee, 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 (page 35).

Along with, and supporting this Regional Strategic Weed Management Plan, there may be further documents developed such as best practice guidelines and standards that contain more detailed information to support the community in discharging their GBD.
5. Strategic direction

5.1 Overview

This section covers actions that will be put in place to achieve our goals.

The purpose, vision, goals and objectives and strategies for this plan were covered on pages 11 – 14. Our goals align directly with the goals for the NSW Biosecurity Strategy 2013-2021 and the Western Local Strategic Plan 2016-2021. In essence Goals 2 and 3 are focussed on weed management outcomes, while goals 1 and 4 focus on how weed management occurs.

- **Goal 1:** Responsibility for weed biosecurity is shared by all people of the Western region.
- **Goal 2:** Weed biosecurity supports profitable, productive and sustainable primary industries.
- **Goal 3:** Weed biosecurity supports healthy, diverse and connected natural environments.
- **Goal 4:** Weed biosecurity is supported by coordinated, collaborative and innovative leadership.

Our strategies and actions and associated regional measures of performance (see 5.3), are based on the best available information and credible science with direct relevance to weed biosecurity.

The strategies and actions provided in Table 5.1 summarise the strategic action plan for achieving the above four goals.

5.2 Actions

Strategies and actions for each goal are presented in Table 5.1 on the following three pages. How different parties are involved in implementing actions and this plan is outlined on pages 46 – 52.

*Mesquite - Prosopis spp.*
<table>
<thead>
<tr>
<th>Strategies</th>
<th>Actions</th>
</tr>
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</table>
| 1.1 Improve community and stakeholder awareness and engagement in weed management | 1.1.1 Develop and implement a strategic marketing and communication plan that promotes delivery of weed management in the Western region.  
1.1.2 Develop products promoting the profile of weed management in the Western region, including promotional campaigns and events, sponsorship, media releases, social media, websites, e-newsletters and publications and brochures. |
| 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 their delivery of weed management.  
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 Develop, promote and assist with interpretation of information outlining stakeholder roles, obligations and implications in weed management.  
1.3.2 Enhance existing communication networks to increase effective dissemination of information and understanding of shared responsibility and a whole of community approach to weed management.  
1.3.3 Enhance education, training and community based programs that increase community capacity to manage priority weeds. |

**Goal 2: Weed biosecurity supports profitable, productive and sustainable primary industries**

**Goal 3: Weed biosecurity supports healthy, diverse and connected natural environments**

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Actions</th>
</tr>
</thead>
</table>
| 2-3.1 Improve surveillance, reporting and tracing systems for weeds | 2-3.1.1 Improve surveillance, reporting and tracing for weeds:  
• develop and/or implement early detection tools, systems and services  
• build community capacity to assist  
• undertake coordinated surveillance activities for high risk species.  
2-3.1.2 Support state-wide processes in development of more efficient ways of demonstrating proof of freedom from weeds. |
## Goal 2: Weed biosecurity supports profitable, productive and sustainable primary industries

**Goal 3: Weed biosecurity supports healthy, diverse and connected natural environments (cont.)**

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Actions</th>
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</table>
| 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 strategic intentional 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 high priority weeds. |
| 2-3.3 Eradicate or prevent the spread of new weeds   | 2-3.3.1 Develop standardised and consistent planning for:  
• weeds listed in Appendix 1 to this plan  
• new weed incursions, including rapid response plans and associated cost sharing arrangements.  
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 high priority weeds in alignment with 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 guidelines to minimise the spread and reduce the impacts of established 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 priority weeds.  
2-3.4.3 Ensure management occurs for high priority weeds at 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 embrace weed science, technology and research | 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.  
2-3.5.2 Strengthen research partnerships and actively participate the development of new technologies and innovative approaches to the management of weed risks and implement. |
| 2-3.6 Assess and respond to changing risks under a changing climate | 2-3.6.1 Identify the social, environment and economic values that will be more vulnerable to invasive weeds under a changing climate.  
2-3.6.2 Implement actions that facilitate adaptation to high risk invasive weeds under a changing climate. |
### Goal 4: Weed biosecurity is supported by coordinated, collaborative and innovative leadership

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Actions</th>
</tr>
</thead>
</table>
| 4.1 Provide governance and leadership that supports collaborative, effective and efficient weed management | 4.1.1 Work in a collaborative partnership with the Western Regional Weed Committee 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 update; 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 underpin 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 Develop new and update existing Regional and Sub-regional weed risk assessments where and when required.  
4.2.4 Share information with other jurisdictions and regions on approach, progress and innovation with weed management. |
| 4.3 Develop a regional invasive weed knowledge base and information system that supports state standards | 4.3.1 Support the development and adoption of standard regional data (including weed mapping) capture, storage, record keeping and retrieval processes.  
4.3.2 Contribute weed distribution and impacts data and management information to the Biosecurity Information System.  
4.3.3 Ensure that weed information and research data are readily available to stakeholders for use in research, updating management plans and reporting. |
| 4.4 Develop consistent systems for monitoring, evaluating and reporting on the effectiveness of weed management | 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 Develop and implement approaches for evaluating and improving the performance of Western region weed management projects, plans, programs, policies and reforms. |
5.3 Performance measures

Regional measures of performance are used to track progress towards intended outcomes and the effectiveness of our strategies in progressing toward our goals.

Regional measures of performance will be provided by indicators, that track the progressive impacts of our programs and interventions, investment in priorities and progress towards outcomes.

These indicators will be developed post plan approval and will sit within three broad categories that relate to our goals for this plan.

Shared responsibility (Goal 1)
- adoption of leading practice (by sector)
- awareness and education programs delivered
- community capacity and capability to undertake weed biosecurity (knowledge, skills, networks, resources - social goal) increased.

Sustainable landscapes (Goals 2 and 3)
- new incursions of high priority weeds avoided
- new incursions of high priority weeds eradicated or destroyed
- spread of emerging high priority weeds prevented
- impacts of high priority widespread weeds reduced
- causes of weed invasion identified and managed
- weed impacts on natural resources reduced or avoided
- weed risks or impacts to production / industries reduced (economic goal).

Collaborative leadership and innovation (Goal 4)
- percentage of business planning components completed (see Figure 2.2)
- further indicators to be developed following approval of this plan.
6. Implementation

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

6.1 Governance

This plan sits under the Western Local Strategic Plan 2016-2021 and will be implemented in collaboration with key stakeholders, the community, investors and Local Land Services Western Region. Collaboration and building capacity of landholders is central to plan implementation. 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.

6.1.1 Local Land Services and the regional weed committee

The Western Regional Weed Committee and its member organisations will facilitate implementation of this plan with executive support from Local Land Services Western Region and overarching guidance from the Western Local Board. Figure 1.2 shows the relationship between the committee and the Board.

The first term of the committee has focused on the development of this plan, and the role of the committee is likely to evolve as the focus shifts to implementation following approval of the plan. The likely roles of the committee in its implementation are outlined below.

• Promote weed policy, risk assessments, best practice and control outcomes to member organisations and community.
• Oversee the implementation of the plan on a region-wide perspective, using committee expertise and best available knowledge, research and technology.
• Facilitate development and implementation of regional communication, education, training and awareness programs, that are consistent with this Regional Strategic Weed Management Plan.
• Promote effective coordination of weed management across agencies and tenure, including appropriate resource and information sharing between member organisations.
• Identify opportunities for funding and delivery of priority projects and synergies from collaboration.
• Identify information and research needs and appropriate collaborative actions.
• Oversee measurement and evaluation of weed control activities in the region to ensure it is consistent with the plan and continues to inform management actions and planning.
• Monitor, evaluate and report on outcomes of committee collaborative planning and delivery processes.
• Advise the NSW State Weeds Committee on new weed risks and other strategic weed matters in the region.
• Liaise with neighbouring Regional Weed Committees, especially with respect to any significant incursions and potential movement of priority weeds from one region to another.
6.1.2 Guiding principles for implementation

The following principles will be used to guide weed management planning and implementation and are consistent with the NSW 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 the timing of, are critical to the prevention and reduction in spread and impact of weeds.
- Weeds are managed in a strategic and coordinated 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.

The investment principles of the Western Local Strategic Plan, detailed on page 25 of that plan, provide additional guidance on governance and overall implementation of this plan.

6.2 Regional plans and processes supporting implementation

A range of plans and processes support implementation of this plan and these are outlined in Figure 2.2. The Western Regional Weed Committee regards development of these business planning components as important to ensuring successful implementation and their completion is a high priority for the committee. The committee will oversee development of these plans and processes in the region following plan approval, in collaboration with Local Land Services Western Region and key stakeholders.

A key element of this plan is a collaborative and coordinated approach to weed management across all tenures. Business planning components will include policies, processes and procedures for collaborative planning and action with key stakeholders in the region. Business planning components will assist member organisations and key stakeholders with translating this plan into local area priorities, actions, collaboration and partnerships that integrate weed management across tenures and stakeholders in the region.

Some planning components already exist or will be developed based on a range of existing stakeholder policies, plans and procedures. Other components will be completely new such as a regional communication and marketing plan, and procedures which will address processes for review of listings to Appendix 1 and 2 of this plan. Responsibility for amendments to state determined priorities rest with NSW Department of Primary Industries and the State Weeds Committee. The Western Regional Weed Committee will raise any identified issues with changes to listings for state determined priorities via the State Weeds Committee to ensure consistency and alignment.
6.3 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 their delivery. Broad roles and responsibilities are determined, and responsibilities for specific actions will be agreed following plan approval. 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 and it is recognised that commitments may be contingent upon availability of resources at a given point in time.

6.3.1 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 finalised following plan approval through development of relevant business planning components. 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.

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

National government

The Australian government has a role in preventing new weed incursions at national borders, in research and development, funding and national legislation. National agreements also 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

The NSW government leads the development of policies and strategies that encourage a comprehensive and responsive weed biosecurity system. They also ensure that there is a strong legislative and regulatory framework underpinning the system. The Department of Primary Industries is the lead agency for weed management within the NSW Government, with support from the Office of Environment and Heritage in relation to environmental weed management across NSW.

Key roles and responsibilities for these two agencies include:

- administration of key legislation relating to priority weeds (Biosecurity Act 2015 – Department of Primary Industries and Biodiversity Conservation Act 2016 – Office of Environment and Heritage)
- increasing awareness of weeds amongst 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 species 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 leads and coordinates the prevention, preparedness, response and recovery for weed emergencies. This agency also develops and maintains regulatory mechanisms that support weed programs. It also leads the statewide Weeds Action Program 2015-2020, a NSW Government initiative to reduce the impact of weeds and is guided by the **NSW Biosecurity Strategy 2013-2021**.

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**.

**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. The Department develops, funds and implements invasive species management strategies on land under its direct control. It also supports activities undertaken by community groups and other stakeholders that manage land on its behalf, including community Trusts and local government.

The 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. Nearly all land in the Western region is Crown land, primarily held under Western Lands Leases, administered by the Department. While the responsibility for control of weeds on Western Lands Leases rests with the lessees, the Department 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. On behalf of the Western Lands Commissioner, the Department acts as the local control authority for the unincorporated area (i.e. not within a local government area) of the Western region.

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

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 landholder, 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 minimize the adverse impacts of pests and weeds on biodiversity, protected areas and the community by identifying the highest priority programs and focusing on these, ensuring that actions are achievable, and delivering measurable outcomes. The strategies also demonstrate NPWS responsibilities in delivering the NSW Biosecurity Strategy 2013-2021.

**Local government**

Local government will continue to play a significant role in biosecurity and particularly in the management of weeds. It has an important role to play in engaging local communities, managing public lands and assisting with emergency management.

Other than for the unincorporated areas of the region (see Department of Industry – Lands above) the local control authorities are the local shires and councils within the region. Local control authorities are responsible for the implementation of priority weed control including:

- delivering components of the Weeds Action Program in their area
- enforcing weed management obligations
- conducting inspections
- controlling weeds on lands managed by the local control authority
- input into weed strategy and policy
- providing education, training and resources for both the public and for staff.
Other managers of Crown land and linear reserves

A number of organisations and government agencies manage crown land allocated for specific purposes. These include lands reserved for harvesting timber (Forestry Corporation of NSW, a state owned corporation), for environmental and heritage protection, or transport infrastructure such as road and rail corridors (Roads and Maritime Services, Australian Rail Track Corporation and John Holland Rail Pty Ltd) and corridors for energy infrastructure. All landholders have an important role in the management of weeds in the region and their role includes the development and implementation of management strategies and the education of the community and other stakeholders.

Unlike other parts of NSW, the management (including management of weeds) of travelling stock reserves is not the responsibility of Local Land Services Western Region. In the Western Division of NSW, travelling stock reserves effectively “overlay” a Western Lands Lease and remain available as part of the lease, for the lessees exclusive use, subject to the lands remaining available for the bona fide passage of travelling stock. Lessees are also responsible for the management of any Travelling Stock Reserves present on their lease, including weed management.

Aboriginal landholders

The role of the Aboriginal community in weed management is consistent with that for other community organisations and the general community, but with cultural factors influencing that management. Aboriginal traditional owners have obligations under traditional law and custom to care for Country, as well as obligations as landholders and managers. This may result in Aboriginal people having priorities for weed management to address threats to cultural sites or threats to an important cultural resource (Office of Environment and Heritage, 2016).

Throughout the region there are a number of different types of land ownership and management by Aboriginal people. Several Indigenous Land Use Agreements (ILUAs) are currently being, or are likely to be negotiated in the Western region, which will help clarify obligations of public and private landholders where Native Title is recognised over the land they manage (Office of Environment and Heritage, 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 (water weeds), collectors, agriculture, horticulture, aquaculture and biofuels etc
- preventing the establishment of weeds, through movement of goods, produce and equipment or related activities such as the extraction and transport of road building materials.

Community groups, volunteers and individuals

Community groups and volunteers play an important role in the management of weeds in the region. This includes Western Landcare, a community based organisation that encourages and coordinates over 15 Landcare and other producer groups in the region.

Community groups and volunteers support community engagement and assist in hands on weed management. This includes leading volunteer groups that undertake weed removal and monitoring activities, bush regeneration, biodiversity conservation projects and rehabilitation of aquatic habitats on private and public lands. Building on this foundation to share in responsibilities for weed management, is essential.

Individual community members 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” on the ground to detect and report new incursions and support eradication. The community also provides crucial support to the actions of responsible authorities, landholders and external funding programs. Likewise programs that build resilience in the natural environment and help reduce the risks from pests, diseases and weeds rely on community participation.
Private land owners and occupiers have roles to play in the ongoing management of established weeds on their own land and in collaboration with their neighbours and the surrounding community. Along with others they have a general biosecurity duty under the *Biosecurity Act 2015*.

### 6.4 Investment

Currently the most significant investors in weed management in the Western region are:

- **NSW government** – through its funding of the Weeds Action Program 2015-2020, funds spent controlling weeds on its own lands and state border biosecurity arrangements.
- **local government** – through co-investment in local control authorities and through funds spent controlling weeds on its own lands.
- **landholders** – through control of weeds on their properties deemed by them to be of economic and/or environmental importance and/or to fulfil obligations under the *Biosecurity Act 2015*.
- **Australian government** – through investing in the planning for and management of a number of weeds of national significance (WoNS) present in the region and national border biosecurity arrangements.

While each of the above (and other less significant) investors has their own set of drivers, aims and preferences, recent efforts to coordinate weed management planning and programs in the region have seen these aims and preferences become better aligned over time. Through its identification of shared priorities, this Regional Strategic Weed Management Plan will assist this process of alignment to continue and thereby enable the plan’s goals to be met.

Clear definition of partner roles and responsibilities will be critical to ensuring that stakeholders can continue to satisfy their individual investors, whilst also delivering results that complement and value add to a greater set of outcomes (e.g. coordinated local control authority compliance, high risk incursion and rapid response planning will contribute to broader regional weed biosecurity). The Western Regional Weed Committee has a critical role in this regard.

It can be seen from the above investment profile that government plays a prominent role in the funding of weed management in this region, due to its size and remoteness and the strong “market failure” case associated with many of the weed species being managed. However, there is continuing downward pressure on the availability of government funding generally and current State funding models for weed management appear to place the Western region at a disadvantage. The achievement of this plan’s goals will not be possible unless adequate resources to implement it are available. The Western Regional Weed Committee will continually work with the NSW government to ensure funding for weed management in the region is both sufficient and equitable.

It is also recognised however that there are opportunities to leverage existing funding sources through a coordinated approach and access any new streams of funding as they arise. The Regional Weed Committee will play a critical role in sourcing investment, brokering partnerships, and facilitating coordination of stakeholder investment to ensure that the region’s weed biosecurity needs are met. The committee will provide advice on options for tailoring both new and existing stream of investment so that they best fit the region’s new management approaches. The committee will also facilitate exploration of opportunities for integrating the existing efforts of stakeholders, along with options for stakeholders to work in collaboration on new initiatives.

While investment and regulation will continue to be the key drivers for change in how weeds are managed in the Western region, it is recognised that there a number of other drivers, at the personal and individual community level, than can be very important factors in either enhancing or hindering change. These include:

- the personal economic incentive
- financial position of individual businesses
- the “Landcare”/environmental ethic (i.e. taking action to benefit the environment, for its own sake)
- community ethic (i.e. “community pride”, doing what is “right” for the community)
- personal knowledge and beliefs.
6.5 Community engagement and awareness

This plan recognises that, for positive change to the way we manage weeds in this region to be implemented and sustained over the long term, the region’s community needs to become aware of the plan and its implications, have input into its ongoing improvement and the capacity to play its part in its implementation.

Significant effort will be put into letting all stakeholders, landholders and other community members know about the plan, how weed management in the region has changed under the new biosecurity legislation, and the implications for how they manage weeds.

A communication and marketing strategy will be developed to identify community and stakeholder engagement needs, their sphere of influence, their roles in weed management, and the best ways to approach and involve them in weed management.

Clear and concise information products will be developed for specific sectors of the community (e.g. pastoral landholders, aboriginal landholders, horticulturalists etc.) and at local and sub-regional scales to assist community understand their obligations. These information products will be developed after the plan is approved.

Stakeholders will no doubt continue to engage and work with communities on their weed management programs. Stakeholder approaches to engaging community will need to accommodate the changes in weed management approach outlined in this plan.

The Regional Weed Committee will also support stakeholder networks to understand and promote changes in weed management including the requirements of the GBD, the tenure neutral approach, and the implications for their customers.

The plan supports targeted capacity building programs that focus on priority species. Communities differ in their capacity to be involved in weed management, and so programs will be tailored to meet local knowledge, skills, networks and resourcing needs. The Regional Weed Committee will also assist with the identification of need for and coordination of capacity building programs in priority areas.

African Boxthorn – *Lycium ferocissimum*. 
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 our decision making.

This section covers how we intend to address these important aspects of achieving our goals and reviewing our activity and focus.

7.1 Measuring performance

Local Land Services Western Region 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.

A monitoring, reporting, evaluation and improvement process through the committee will be used to track action delivery across the region consistent with the Local Land Services and Natural Resource Commission standards for Monitoring, Evaluation, Reporting and Improvement (MERI). This MERI framework will allow a comparison of results against planned immediate, intermediate and long-term outcomes. This enables a systematic and objective assessment of the appropriateness, effectiveness and efficiency of actions, policies, projects and programs.

An important aspect of this plan is the focus on collaboration and sound partnerships for strategic weed planning, implementation and reporting. Agreement on processes and measures to track our success in establishing a collaborative approach to weed management will be an important task post plan approval and will be part of the development of the business planning components outlined in 6.2. Likewise we will need to review and track processes developed and actioned, and resources secured and aligned for plan delivery.

7.1.1 Standardised approaches and reporting

Standardised MERI systems will be essential to compiling and reporting on the efforts and achievements of stakeholders in contributing to this plan. Achieving consistency will require the development of a core set of:

- key performance indicators that assess implementation of the strategies within this plan
- standard local monitoring and reporting protocols that support region and state-wide needs
- stakeholder performance evaluation that provide for improvement in the performance of weed management projects, programs and policies.

Performance measures will be further developed following approval of this plan and will allow us to track the progressive impacts of our interventions and investment in priorities. In measuring success we will use available metrics in the short term based on existing knowledge, as well as developing future metrics to provide real measures of progress towards outcomes. Together these will support better weed management in the region.

There are a wide range of metrics in use by committee member organisations, stakeholders and through the Weeds Action Program 2015-2020 and other programs and these will take time to collate and assess. Agreed metrics will be considered through the processes outlined in 6.2 and in consultation with the State Weeds Committee.

Review and reporting on the 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 Local Land Services Western Region.
Our approach to MERI must meet the needs of customers, investors and stakeholders. We must also be able to report on investment outcomes at a range of scales – local, sub-regional, and regional. Standardised reporting should ideally support:

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

The Western Regional Weed Committee will facilitate the identification of roles and responsibilities of member organisations and partners in meeting these needs following approval of this plan.

### 7.1.2 Information management

Our MERI framework will provide information that allows us to evaluate our performance and identify options for improving our approaches to weed management. Data collection and the strategic management of information is therefore crucial to the adoption of standardised approaches for the region.

The committee will 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 statewide 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 statewide 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

Appropriate research can play an important role in re-evaluating practice, supporting innovation and underpinning future directions. Engaging proactively with the research community is fundamental to improving weed risk assessments and the region’s weed management practice. Through links with the State Weeds Committee, the Western Regional Weed Committee will contribute to and facilitate:

- engagement with the community, the aboriginal community, government, industry and research providers to identify current knowledge gaps and to document weed species research priorities
- stronger partnerships and active participation in industry, government and university collaborations 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 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.
7.2 Learning and development

The Western Regional Weed Committee will foster adaptive management and continual improvement in weed management. In its simplest form, adaptive management is about 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 uses a “triple loop” learning approach which 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 our strategies, targets and assumptions),
- organisational (where learning focuses on improving our governance and systems).

This approach is outlined in the Western Local Strategic Plan and will provide the basis for our MERI. The application of triple loop learning to this plan will be addressed in consultation with lead organisations and delivery partners following plan approval.

7.3 Plan review

A mid-term review of this plan will be undertaken at year three and a full review will be undertaken nearing the end of the current term for this plan (year five). While weed risk assessments will be updated as needed from time to time, a particular focus at year three will be on evaluation and review of weed lists in this plan (Appendix 1 and 2).

Willow Rhus - Searsia lancea.
8. List of Abbreviations

BIS  Biosecurity Information System
DPI  NSW Department of Primary Industries
GBD  General biosecurity duty
km  kilometre
LLS  Local Land Services
MERI  Monitoring, evaluation, reporting and improvement
OEH  NSW Office of Environment and Heritage
NPWS  National Parks and Wildlife Service
NRC  Natural Resources Commission
RSWMP  Regional Strategic Weed Management Plan
RWC  Regional Weed Committee
SWC  State Weeds Committee
TSR  Travelling Stock Reserve
WoNS  Weed of National Significance

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. Biosecurity is vital for the health, wellbeing and prosperity of everyone in NSW.

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 landholder within the state or region, irrespective of whether they are private or public landholders, 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.

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

**General biosecurity duty:** Under the *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. Also see best practice.

**Local control authority:** The body responsible for the weed control functions of the *Biosecurity Act 2015*, other than for the unincorporated areas of the region (where the Department of Industry – Lands is the local control authority on behalf of the Western Lands Commissioner) the Local Control Authorities are the local shires and councils within the region.

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

**Recommended measure:** An agreed approach considered by the Regional Weed Committee that reflects community expectations.

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

**Travelling stock reserve:** Any:
- 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),
- In the Western Division of NSW, Travelling Stock Reserves effectively “overlay” a Western Lands Lease and remain available as part of the lease, for the lessees exclusive use, subject to the lands remaining available for the bona fide passage of travelling stock. They are rarely fenced or physically distinguishable on the ground from the surrounding natural environment.

**Triple loop learning:** Learning that redefines organisational actions, systems and processes as a basis for changes in governance at a range of scales.

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


Department of Environment, Climate Change and Water NSW (2010). NSW Climate Impact Profile


Macquarie Valley Weeds Advisory Committee (2016) pers comm. Arundell, L.

Murray and Riverina Weed Action Program (2016) pers comm. Bosse, P.


Local Land Services Western Region (2016). Western Local Strategic Plan.
Appendix 1:
Priority weeds for the Western Region

This appendix covers state level determined priorities (A1.1) and regionally determined priorities (A1.2). The Biosecurity Act 2015 and regulations provide specific legal requirements for state level priority weeds (A1.1) and high risk activities.

For each state level priority weed, the state objective and how this objective is achieved through specific requirements under the Biosecurity Act and regulations is covered.

These specific regulatory requirements include prohibited matter, biosecurity zones, mandatory measures and control orders (see Table 2.1 and Section 4.2).

A1.2 in this appendix identifies priority weeds for the region to which “recommended measures to discharge general biosecurity duty” have been applied and articulates community expectations for managing these weeds in the region.

These determinations are a result of the rigorous weed prioritisation and expert review process outlined in Section 4.4.

Silver-leaf nightshade - *Solanum elaeagnifolium*. 
### A1.1 State level determined priority weeds

**State priority weed objective – PREVENTION (whole of state):**
The following weeds are currently not found in some parts of the state, pose significant biosecurity risk and prevention of the biosecurity risk posed by these weeds is a reasonably practical objective.

<table>
<thead>
<tr>
<th>Species</th>
<th>Relevant legislation and strategic response</th>
</tr>
</thead>
</table>
| All species of vascular plant (Tracheophyta spp.) | **Mandatory measure (Division 8, Clause 30)** Duty to notify on importation of plants into the state:  
(1) A person must not import a species of vascular plant (Tracheophyta) into the state 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.  
(2) The notification is to be given to an authorised officer and is to be given in accordance with Part 6.  
(3) A species of plant is taken not to be present in the state if the Plant Information Network System of The Royal Botanic Gardens and Domain Trust does not show it as being present in the state.  
**Regional strategic response:** TBA |
| Anchored Water Hyacinth - *Eichhornia azurea* |  
**Prohibited matter (Part 4, Biosecurity Act, 2015):** A person who deals with any biosecurity matter that is Prohibited Matter throughout the state is guilty of an offence.  
**Regional strategic response:** TBA |
| Black Knapweed - *Centaurea xmoncktonii* | |
| Bridal Veil Creeper - *Asparagus declinatus* | |
| Broomrape - *Orobanche spp.* (all species except the native *O. cernua var. Australiana and O. minor*) | |
| Frogbit / Spongeplant – *Limnobium spp.* (all species) | |
| Gamba Grass - *Andropogon gayanus* | |
| Hawkweed - *Hieracium spp* (all species) | |
| Hydrocotyl/Water Pennywort - *Hydrocotyle ranunculoides* | |
| Karoo Acacia - *Vachellia karroo* (syn. *Acacia karroo*) | |
**State priority weed objective – PREVENTION (whole of state):**
The following weeds are currently not found in some parts of the state, pose significant biosecurity risk and prevention of the biosecurity risk posed by these weeds is a reasonably practical objective.

<table>
<thead>
<tr>
<th>Species</th>
<th>Relevant legislation and strategic response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kochia - <em>Bassia scoparia</em> (excluding <em>subsp. trichophylla</em>)</td>
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<tr>
<td>Koster’s Curse - <em>Clidemia hirta</em></td>
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<tr>
<td>Lagarosiphon - <em>Lagarosiphon major</em></td>
<td></td>
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</tbody>
</table>
| Mexican Feather Grass - *Nassella tenuissima* (syn. *Stipa tenuissima*) | **Prohibited matter (Part 4, Biosecurity Act, 2015):** A person who deals with any biosecurity matter that is Prohibited Matter throughout the state is guilty of an offence.  
**Regional strategic response:** TBA |
| Miconia – *Miconia spp.* (all species) | |
| Mikania Vine - *Mikania micrantha* | |
| Mimosa - *Mimosa pigra* | |
| Siam Weed - *Chromolaena odorata* | |
| Parthenium Weed - *Parthenium hysterophorus* | **Prohibited matter (Part 4, Biosecurity Act, 2015):** A person who deals with any biosecurity matter that is Prohibited Matter throughout the state is guilty of an offence.  
**Mandatory measure (Division 8, Clause 31, draft Biosecurity Regulation, 2016) - Parthenium weed carriers and equipment**

(1) This clause applies to the following equipment:
(a) grain harvesters and comb trailers
(b) bins used for holding grain during harvest operations
(c) augers or similar equipment used for moving grain
(d) vehicles used for transporting grain harvesters
(e) vehicles used as support vehicles with grain harvesters and that have been driven in paddocks during harvest operations
(f) mineral exploration drill rigs and vehicles used for transporting those rigs

(2) A person must not import any equipment to which this clause applies into the state from Queensland  
**Regional strategic response:** TBA |
State priority weed objective – PREVENTION (whole of state):
The following weeds are currently not found in some parts of the state, pose significant biosecurity risk and prevention of the biosecurity risk posed by these weeds is a reasonably practical objective.

<table>
<thead>
<tr>
<th>Species</th>
<th>Relevant legislation and strategic response</th>
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</thead>
<tbody>
<tr>
<td>Pond Apple - <em>Annona glabra</em></td>
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<tr>
<td>Prickly Acacia - <em>Vachellia nilotica</em> (syn.</td>
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<tr>
<td><em>Acacia nilotica</em>)</td>
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<tr>
<td>Rubber Vine - <em>Cryptostegia grandiflora</em></td>
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<tr>
<td>Spotted Knapweed - *Centaurea stoebe subsp.</td>
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<tr>
<td><em>micranthos</em></td>
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<tr>
<td>Water Caltrop - <em>Trapa spp. (all species)</em></td>
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<tr>
<td>Water Milfoil - <em>Myriophyllum spicatum</em></td>
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<tr>
<td>Water Soldier - <em>Stratiotes aloides</em></td>
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<tr>
<td>Witchweed - *Striga spp. (except the native</td>
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<tr>
<td><em>S. parviflora)</em></td>
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<tr>
<td>Yellow Burrhead - <em>Limnocharis flava</em></td>
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</tbody>
</table>

*Prohibited matter (Part 4, Biosecurity Act, 2015)*: A person who deals with any biosecurity matter that is Prohibited Matter throughout the state is guilty of an offence.

*Regional strategic response*: TBA
<table>
<thead>
<tr>
<th>Species</th>
<th>Relevant legislation and strategic response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boneseed - <em>Chrysanthemoides monilifera</em></td>
<td>Draft control order - <em>Chrysanthemoides monilifera subspecies monilifera</em> (Boneseed):</td>
</tr>
<tr>
<td></td>
<td>(a) The plant must be eradicated from the land and be fully and continuously suppressed and destroyed; and</td>
</tr>
<tr>
<td></td>
<td>(b) The lands must be kept free of the plant after eradication;</td>
</tr>
<tr>
<td></td>
<td>(c) Boneseed seeds and propagules must not be knowingly moved by stock, machinery, soil, turf or in plant material;</td>
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<tr>
<td></td>
<td>(d) A person who becomes aware of, or suspects the presence of this species is to immediately notify their local control authority; and</td>
</tr>
<tr>
<td></td>
<td>(e) A person is not required to notify if the person knows that the required notification has already been given by another person.</td>
</tr>
<tr>
<td></td>
<td><strong>Mandatory measure (Division 8, Clause 29, draft Biosecurity Regulation 2016)</strong>: A person must not move, import into the state or sell.</td>
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<td></td>
<td><strong>Regional strategic response</strong>: TBA</td>
</tr>
<tr>
<td>Mouse-eared Hawkweed - <em>Hieracium pilosella</em></td>
<td>Draft control order - <em>Hieracium pilosella</em> (Mouse-eared Hawkweed):</td>
</tr>
<tr>
<td></td>
<td>(a) The plant must be eradicated from the land and be fully and continuously suppressed and destroyed; and</td>
</tr>
<tr>
<td></td>
<td>(b) The lands must be kept free of the plant after eradication;</td>
</tr>
<tr>
<td></td>
<td>(c) A person who becomes aware of, or suspects the presence of this species is to immediately notify their local control authority; and</td>
</tr>
<tr>
<td></td>
<td>(d) A person is not required to notify if the person knows that the required notification has already been given by another person.</td>
</tr>
<tr>
<td></td>
<td><strong>Regional strategic response</strong>: TBA</td>
</tr>
<tr>
<td>Orange Hawkweed - <em>Hieracium aurantiacum</em></td>
<td>Draft control order - <em>Hieracium aurantiacum</em> (Orange Hawkweed):</td>
</tr>
<tr>
<td></td>
<td>(a) The plant must be eradicated from the land and be fully and continuously suppressed and destroyed; and</td>
</tr>
<tr>
<td></td>
<td>(b) The lands must be kept free of the plant after eradication;</td>
</tr>
<tr>
<td></td>
<td>(c) A person who becomes aware of, or suspects the presence of this species is to immediately notify their local control authority; and</td>
</tr>
<tr>
<td></td>
<td>(d) A person is not required to notify if the person knows that the required notification has already been given by another person.</td>
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<tr>
<td></td>
<td><strong>Regional strategic response</strong>: TBA</td>
</tr>
</tbody>
</table>
## State priority weed objective – ERADICATION (whole of state):
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 practical objective.

<table>
<thead>
<tr>
<th>Species</th>
<th>Relevant legislation and strategic response</th>
</tr>
</thead>
</table>
| Parkinsonia - *Parkinsonia aculeata* | **Draft control order - *Parkinsonia aculeata* (Parkinsonia):**  
  (a) The plant must be eradicated from the land and be fully and continuously suppressed and destroyed; and  
  (b) The lands must be kept free of the plant after eradication;  
  (c) Parkinsonia seed and propagules must not be knowingly moved by stock, machinery, soil, turf or in plant material.  
  (d) a person who becomes aware of, or suspects the presence of this species is to immediately notify their local control authority; and  
  (e) The relevant local control authority must notify the Department of Primary Industries as soon as practicable after becoming aware of, or being notified of any infestation; and  
  (f) a person is not required to notify if the person knows that the required notification has already been given by another person.  
  **Mandatory measure (Division 8, Clause 29, draft Biosecurity Regulation 2016):** A person must not move, import into the state or sell.  
  **Regional strategic response:** TBA |
| Tropical Soda Apple - *Solanum viarum* | **Draft Control Order - *Solanum viarum* (Tropical Soda Apple):**  
  (a) The plant must be eradicated from the land and be fully and continuously suppressed and destroyed; and  
  (b) The lands must be kept free of the plant after eradication;  
  (c) Tropical Soda Apple seeds and propagules must not be knowingly moved by stock, machinery, soil, turf or in plant material;  
  (d) a person who becomes aware of, or suspects the presence of this species is to immediately notify their local control authority; and  
  (e) a person is not required to notify if the person knows that the required notification has already been given by another person.  
  **Regional strategic response:** TBA |
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 these weeds is reasonably practicable.*

<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
<th>Relevant legislation and strategic response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alligator Weed - Alternanthera philoxeroides</strong></td>
<td><strong>Draft Biosecurity Regulation 2016 - Part 5, Division 2 (Biosecurity Zone)</strong>&lt;br&gt;<strong>An owner or occupier of land in the Alligator Weed Biosecurity Zone on which there is the weed Alternanthera philoxeroides (Alligator Weed) must:</strong>&lt;br&gt;(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&lt;br&gt;(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.&lt;br&gt;&lt;br&gt;<strong>Mandatory measure (Division 8, Clause 29, draft Biosecurity Regulation 2016):</strong> A person must not move, import into the state or sell.&lt;br&gt;&lt;br&gt;<strong>Regional strategic response:</strong> TBA</td>
</tr>
<tr>
<td><strong>Bitou Bush - Chrysanthemoides monilifera</strong></td>
<td><strong>Draft Biosecurity Regulation 2016 - Part 5, Division 3 (Biosecurity Zone)</strong>&lt;br&gt;<strong>An owner or occupier of land in the Bitou bush Biosecurity Zone on which there is the weed Chrysanthemoides monilifera subsp. rotunda (Bitou Bush) must:</strong>&lt;br&gt;(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&lt;br&gt;(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.&lt;br&gt;&lt;br&gt;<strong>Mandatory measure (Division 8, Clause 29, draft Biosecurity Regulation 2016):</strong> A person must not move, import into the state or sell.&lt;br&gt;&lt;br&gt;<strong>Regional strategic response:</strong> TBA&lt;br&gt;&lt;br&gt;<strong>IMPORTANT NOTE:</strong> The regional objective for Bitou bush is ERADICATE in the Local Land Services Western Region</td>
</tr>
</tbody>
</table>
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 these weeds is reasonably practicable.

<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
<th>Relevant legislation and strategic response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Hyacinth <em>Eichhornia crassipes</em></td>
<td>Draft Biosecurity Regulation 2016 - Part 5, Division 4 (Biosecurity Zone)</td>
</tr>
</tbody>
</table>

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).

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 29, draft Biosecurity Regulation 2016)*: A person must not move, import into the state or sell.

*Regional strategic response*: TBA

*IMPORTANT NOTE*: The regional objective for Water Hyacinth is **PREVENT** in the Local Land Services Western Region.
State priority weed objective – ASSET PROTECTION (whole of state):

These weeds are widely distributed in some areas of the state. As Weeds of National Significance, their spread must be minimised to protect priority assets.

<table>
<thead>
<tr>
<th>Species</th>
<th>Relevant legislation and strategic response</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Boxthorn - <em>Lycium ferocissimum</em></td>
<td></td>
</tr>
<tr>
<td>Asparagus Weeds - <em>Asparagus aethiopicus</em>, <em>A. africanus</em>, <em>A. asparagoides</em> Western Cape form*, <em>A. plumosus</em>, <em>A. scandens</em></td>
<td></td>
</tr>
<tr>
<td>Athel Pine - <em>Tamarix aphylla</em></td>
<td></td>
</tr>
<tr>
<td>Bellyache Bush - <em>Jatropha gossypiiifolia</em></td>
<td></td>
</tr>
<tr>
<td>Blackberry - <em>Rubus fruticosus agg.</em></td>
<td></td>
</tr>
<tr>
<td>Cat’s Claw Creeper - <em>Dolichandra unguis-cati</em></td>
<td></td>
</tr>
<tr>
<td>Chilean Needle Grass - <em>Nassella neesiana</em></td>
<td></td>
</tr>
<tr>
<td>Fireweed - <em>Senecio madagascariensis</em></td>
<td></td>
</tr>
<tr>
<td>Lantana - <em>Lantana camara</em></td>
<td></td>
</tr>
<tr>
<td>Madeira Vine - <em>Anredera cordifolia</em></td>
<td></td>
</tr>
<tr>
<td>Mesquite - <em>Prosopis spp.</em></td>
<td></td>
</tr>
<tr>
<td>Opuntia - <em>Opuntia spp.</em>, <em>Cylindropuntia spp.</em>, <em>Austrocylindropuntia spp.</em> (Excludes <em>O. ficus-indica</em>) (opuntioid cacti)</td>
<td></td>
</tr>
<tr>
<td>Sagittaria - <em>Sagittaria platyphylla</em></td>
<td></td>
</tr>
<tr>
<td>Salvinia - <em>Salvinia molesta</em></td>
<td></td>
</tr>
<tr>
<td>Serrated Tussock - <em>Nassella trichotoma</em></td>
<td></td>
</tr>
<tr>
<td>Silver-leaf nightshade - <em>Solanum elaeagnifolium</em></td>
<td></td>
</tr>
</tbody>
</table>

**Mandatory measure (Division 8, Clause 29, draft Biosecurity Regulation 2016):** A person must not move, import into the state or sell.

**Regional strategic response:** TBA

**IMPORTANT NOTE:** Additional requirements apply to the following species in the Local Land Services Western Region; refer to A1.2 Regional Priority Weeds on pages 68 – 81.

- African Boxthorn - *Lycium ferocissimum*
- Bridal Creeper – *Asparagus asparagoides*
- Mesquite - *Prosopis spp.*
- Opuntia - *Opuntia spp.*, *Cylindropuntia spp.*, *Austrocylindropuntia spp.*
- Sagittaria - *Sagittaria platyphylla*
- Silver-leaf nightshade - *Solanum elaeagnifolium*
# A1.2 Regional priority weeds

**Regional priority weed objective – PREVENTION (whole of region):**

The following weeds are currently not found in the region, pose significant biosecurity risk and prevention of the biosecurity risk posed by these weeds is a reasonably practical objective.

<table>
<thead>
<tr>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coolatai Grass - <em>Hyparrhenia hirta</em></td>
<td></td>
</tr>
</tbody>
</table>

- The plant should be eradicated from the land and the land kept free of the plant.
- Landholders should mitigate the risk of new weeds being introduced to their land.
- The plant should not be bought, sold, grown, carried or released into the environment.
- Notify local control authority if found.

**Recommended measures:**

- Undertake high risk sites and pathways analysis to identify potential introduction areas and preventative options
- Conduct awareness and extension programs targeted at managers of high risk sites
- Implement quarantine and/or hygiene protocols

**New weed incursion response:**

- Trigger regional Rapid Response Protocol* and implement regional Incursion Plan* including resource allocation

**Supporting documents:**

- Coolatai Grass Management Fact Sheet
- Coolatai Grass Management Plan

* As currently published for the Macquarie Valley Weeds Advisory Committee area; to be updated for the Local Land Services Western Region.
Regional priority weed objective – PREVENTION (whole of region):
The following weeds are currently not found in the region, pose significant biosecurity risk and prevention of the biosecurity risk posed by these weeds is a reasonably practical objective.

<table>
<thead>
<tr>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hudson’s Pear – <em>Cylindropuntia rosea</em></td>
<td>Recommended measures:</td>
</tr>
<tr>
<td>• The plant should be eradicated from the land and the land kept free of the plant</td>
<td>• Undertake high risk sites &amp; pathways analysis to identify potential introduction areas and preventative options</td>
</tr>
<tr>
<td>• Landholders should mitigate the risk of new weeds being introduced to their land.</td>
<td>• Conduct awareness and extension programs targeted at managers of high risk sites</td>
</tr>
<tr>
<td>• The plant should not be bought, sold, grown, carried or released into the environment</td>
<td>• Implement quarantine and/or hygiene protocols</td>
</tr>
<tr>
<td>• Notify local control authority if found</td>
<td>New weed incursion response:</td>
</tr>
<tr>
<td></td>
<td>• Trigger regional Rapid Response Protocol* and implement regional Incursion Plan* including resource allocation</td>
</tr>
<tr>
<td></td>
<td>* As currently published for the Macquarie Valley Weeds Advisory Committee area; to be updated for the Local Land Services Western Region.</td>
</tr>
</tbody>
</table>

Supporting documents:
- Hudson’s Pear Management Fact Sheet
- Hudson’s Pear Management Plan (to be developed)

*Note: The general biosecurity duty is an outcomes focused duty to prevent, eliminate or minimise the biosecurity risk posed by these weeds. While achieving the outcomes listed will demonstrate compliance with the general biosecurity duty this list is not exhaustive, and additional or alternative outcomes may also demonstrate compliance.
Regional priority weed objective – PREVENTION (whole of region):
The following weeds are currently not found in the region, pose significant biosecurity risk and prevention of the biosecurity risk posed by these weeds is a reasonably practical objective.

<table>
<thead>
<tr>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sagittaria (Sagittaria spp.) – Sagittaria calycina (Arrowhead), Sagittaria platyphylla (Sagittaria),</td>
<td></td>
</tr>
<tr>
<td>• The plant should be eradicated from the land and the land kept free of the plant</td>
<td><strong>Recommended measures:</strong></td>
</tr>
<tr>
<td>• Landholders should mitigate the risk of new weeds being introduced to their land</td>
<td>• Undertake high risk sites &amp; pathways analysis to identify potential introduction areas and preventative options</td>
</tr>
<tr>
<td>• The plant should not be bought, sold, grown, carried or released into the environment</td>
<td>• Conduct awareness and extension programs targeted at managers of high risk sites</td>
</tr>
<tr>
<td>• Notify local control authority if found</td>
<td>• Implement quarantine and/or hygiene protocols</td>
</tr>
</tbody>
</table>

**Important Note:** The following legislative requirement also applies to Sagittaria platyphylla:

**Mandatory Measure (Division 8, Clause 29, draft Biosecurity Regulation 2016):** A person must not move, import into the State or sell.

**Recommended measures:**

**New weed incursion response:**

**Supporting documents:**

- Sagittaria platyphylla Fact Sheet
- Riverina Sagittaria Management Plan

*Note: The general biosecurity duty is an outcomes focused duty to prevent, eliminate or minimise the biosecurity risk posed by these weeds. While achieving the outcomes listed will demonstrate compliance with the general biosecurity duty this list is not exhaustive, and additional or alternative outcomes may also demonstrate compliance.
### Regional priority weed objective – ERADICATION (parts of region):

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

<table>
<thead>
<tr>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boxing Glove/Coral Cactus - <em>Cylindropuntia fulgida</em></strong></td>
<td><strong>Recommended measures:</strong>&lt;br&gt;• Destruction of all infestations, across all of the Local Land Services Western Region; aiming at local eradication where feasible&lt;br&gt;&lt;br&gt;<strong>Strategic response:</strong>&lt;br&gt;• Detailed surveillance and mapping to locate all infestations&lt;br&gt;• High level pathways analysis to identify potential introduction areas and preventative options&lt;br&gt;• Conduct awareness and extension programs targeted at managers of high risk sites&lt;br&gt;• Implement quarantine and/or hygiene protocols&lt;br&gt;• Monitor progress towards eradication</td>
</tr>
<tr>
<td><strong>Burr Ragweed - <em>Ambrosia confertiflora</em></strong></td>
<td><strong>Recommended measures:</strong>&lt;br&gt;Destruction of all infestations, on roadways, pastoral lands and in riparian areas, south of a line running from Menindee to Ivanhoe; aiming at local eradication where feasible&lt;br&gt;&lt;br&gt;<strong>Strategic response:</strong>&lt;br&gt;• Detailed surveillance and mapping to locate all infestations&lt;br&gt;• High level pathways analysis to identify potential introduction areas and preventative options&lt;br&gt;• Conduct awareness and extension programs targeted at managers of high risk sites&lt;br&gt;• Implement quarantine and/or hygiene protocols&lt;br&gt;• Monitor progress towards eradication</td>
</tr>
</tbody>
</table>

*Note: The general biosecurity duty is an outcomes focused duty to prevent, eliminate or minimise the biosecurity risk posed by these weeds. While achieving the outcomes listed will demonstrate compliance with the general biosecurity duty this list is not exhaustive, and additional or alternative outcomes may also demonstrate compliance.*
**Regional priority weed objective – ERADICATION (parts of region):**

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

### Clock Weed - *Oenothera curtiflora*

<table>
<thead>
<tr>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
</table>
| The plant should be eradicated from the land and the land kept free of the plant | **Recommended measures:**  
Destruction of all infestations, in irrigated horticultural areas in the Comealla and Curlwaa Irrigation Districts, aiming at local eradication where feasible |
| Landholders should mitigate the risk of new weeds being introduced to their land | **Strategic response:**  
  - Detailed surveillance and mapping to locate all infestations  
  - High level pathways analysis to identify potential introduction areas and preventative options  
  - Conduct awareness and extension programs targeted at managers of high risk sites  
  - Implement quarantine and/or hygiene protocols  
  - Monitor progress towards eradication |
| Notify local control authority if found | |
| Plant should not be bought, sold, grown, carried or released into the environment | |

### Willow Rhus - *Searsia lancea*

<table>
<thead>
<tr>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
</table>
| The plant should be eradicated from the land and the land kept free of the plant | **Recommended measures:**  
Destruction of all infestations, in riparian areas across all of the Local Land Services Western Region; aiming at local eradication where feasible |
| Landholders should mitigate the risk of new weeds being introduced to their land | **Strategic response:**  
  - Detailed surveillance and mapping to locate all infestations  
  - High level pathways analysis to identify potential introduction areas and preventative options  
  - Conduct awareness and extension programs targeted at managers of high risk sites  
  - Implement quarantine and/or hygiene protocols  
  - Monitor progress towards eradication |
| Notify local control authority if found | |
| Plant should not be bought, sold, grown, carried or released into the environment | |

*Note: The general biosecurity duty is an outcomes focused duty to prevent, eliminate or minimise the biosecurity risk posed by these weeds. While achieving the outcomes listed will demonstrate compliance with the general biosecurity duty this list is not exhaustive, and additional or alternative outcomes may also demonstrate compliance.*
### Regional priority weeds objective – CONTAINMENT: These weeds are widely distributed in the region. While broad scale elimination is not practicable, minimisation of the biosecurity risk posed these weeds is reasonably practicable.

<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giant Reed - <em>Arundo donax</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| All rivers and natural watercourses south of a line running from Menindee to Ivanhoe | • Landholders should prevent spread from their land | **Recommended measures:**
|                                   |                                               | • Control of infestations in close proximity to key assets (rivers and natural watercourses), aiming for a significant reduction in weed density |
|                                   |                                               | **Strategic response:**
|                                   |                                               | • Surveillance and mapping to locate all infested properties and maintain currency of exclusion zone and objectives |
|                                   |                                               | • Identify key sites / assets for targeted management |
|                                   |                                               | • Monitor change in current distribution to ensure containment of spread |
|                                   |                                               | • High level pathways analysis to identify potential introduction areas and preventative options |
|                                   |                                               | • Conduct awareness and extension programs targeted at managers of high risk sites |
Regional priority weeds objective – CONTAINMENT: These weeds are widely distributed in the region. While broad scale elimination is not practicable, minimisation of the biosecurity risk posed these weeds is reasonably practicable.

<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesquite - <em>Prosopis spp.</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| All of the Local Land Services Western Region | • Landholders should prevent spread from their land  
• Landholders should mitigate the risk of new weeds being introduced to their land  
• Plant should not be bought, sold, grown, carried or released into the environment  
**IMPORTANT NOTE:** The following legislative requirement also applies:  
*Mandatory Measure (Division 8, Clause 29, draft Biosecurity Regulation 2016):* A person must not move, import into the state or sell  
|                                               | **Recommended measures:**  
• Control of infestations in close proximity to key production sites/assets (grazing areas, native vegetation), aiming for a significant reduction in weed density  
• Implement quarantine and/or hygiene protocols  
**Strategic response:**  
• Surveillance and mapping to locate all infested properties and maintain currency of exclusion zone and objectives  
• Identify key production sites/ assets for targeted management  
• Monitor change in current distribution to ensure containment of spread  
• High level pathways analysis to identify potential introduction areas and preventative options  
• Conduct awareness and extension programs targeted at managers of high risk sites  
• Facilitate strategic release of bio control agents  

*Note: The general biosecurity duty is an outcomes focused duty to prevent, eliminate or minimise the biosecurity risk posed by these weeds. While achieving the outcomes listed will demonstrate compliance with the general biosecurity duty this list is not exhaustive, and additional or alternative outcomes may also demonstrate compliance.*
### Regional priority weeds objective – CONTAINMENT:

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

<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother of Millions - <em>Bryophyllum spp.</em> and hybrids</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Whole Region:</strong></td>
<td></td>
<td><strong>Recommended measures:</strong></td>
</tr>
<tr>
<td>• Landholders should mitigate the risk of new weeds being introduced to their land</td>
<td>• Control of infestations in close proximity to key production sites/assets (grazing areas, native vegetation), aiming for a significant reduction in weed density</td>
<td><strong>Strategic response:</strong></td>
</tr>
<tr>
<td>• Plant should not be bought, sold, grown, carried or released into the environment (except in maintained gardens)</td>
<td>• Implement quarantine and/or hygiene protocols</td>
<td>• Surveillance and mapping to locate all infested properties and maintain currency of exclusion zone and objectives</td>
</tr>
<tr>
<td><strong>Abandoned gardens:</strong></td>
<td></td>
<td>• Monitor change in current distribution to ensure containment of spread</td>
</tr>
<tr>
<td>• The plant should be eradicated from the land and the land should be kept free of the plant</td>
<td></td>
<td>• High level pathways analysis to identify potential introduction areas and preventative options</td>
</tr>
<tr>
<td><strong>Maintained gardens:</strong></td>
<td></td>
<td>• Conduct awareness and extension programs targeted at managers of high risk sites</td>
</tr>
<tr>
<td>• Landholders should prevent spread from their land</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Regional priority weeds objective – CONTAINMENT: These weeds are widely distributed in the region. While broad scale elimination is not practicable, minimisation of the biosecurity risk posed these weeds is reasonably practicable.

<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
</table>
| Prickly Pears (Opuntia spp.) – Opuntia robusta (Wheel Cactus), Opuntia stricta (Prickly Pear), Opuntia tomentosa (Velvet tree pear), Opuntia aurantiaca (Tiger pear), Opuntia paraguayensis (Riverina pear), Opuntia monocantha (Smooth tree pear) (Note: excludes Opuntia ficus-indica (Indian fig) – see page 79) | • Landholders should prevent spread from their land  
• Landholders should mitigate the risk of new weeds being introduced to their land  
• Plant should not be bought, sold, grown, carried or released into the environment  

**IMPORTANT NOTE:** The following legislative requirement also applies:  
*Mandatory Measure (Division 8, Clause 29, draft Biosecurity Regulation 2016):* A person must not move, import into the state or sell | • Control of infestations in close proximity to key production sites/assets (grazing, conservation and urban areas), aiming for a significant reduction in weed density  
| Strategic response: | • Surveillance and mapping to locate all infested properties and maintain currency of exclusion zone and objectives  
• Identify key production sites/assets for targeted management  
• Monitor change in current distribution to ensure containment of spread  
• Facilitate strategic release of bio control agents  
• High level pathways analysis to identify potential introduction areas and preventative options  
• Conduct awareness and extension programs targeted at managers of high risk sites |

*Note: The general biosecurity duty is an outcomes focused duty to prevent, eliminate or minimise the biosecurity risk posed by these weeds. While achieving the outcomes listed will demonstrate compliance with the general biosecurity duty this list is not exhaustive, and additional or alternative outcomes may also demonstrate compliance.*
### Regional priority weeds objective – ASSET PROTECTION:

<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riparian areas and floodplains across all of the Local Land Services Western Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>African Boxthorn – Lycium ferocissimum</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Landholders should prevent spread from their land

**IMPORTANT NOTE:** The following legislative requirement also applies:

**Mandatory Measure (Division 8, Clause 29, draft Biosecurity Regulation 2016):** A person must not move, import into the state or sell

**Recommended measures:**
- Control infestations in close proximity to key sites/assets (riparian areas and floodplains) aiming for a significant reduction in weed density
- Growth of the plant should be managed in a manner that continuously inhibits the ability of the plant to spread

**Strategic response:**
- Surveillance and mapping to locate all infested properties
- Identify priority assets for targeted management
- Monitor change in current distribution to ensure containment of spread.
- High level pathways analysis to identify potential introduction areas and preventative options
- Conduct awareness and extension programs targeted at managers of high risk sites
<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riparian areas and horticultural areas across all of the Western region</td>
<td>• Landholders should prevent spread from their land</td>
<td></td>
</tr>
<tr>
<td>IMPORTANT NOTE: The following legislative requirement also applies:</td>
<td></td>
<td>Recommended measures:</td>
</tr>
<tr>
<td>*Mandatory Measure (Division 8, Clause 29, draft Biosecurity Regulation 2016): A person must not move, import into the state or sell</td>
<td></td>
<td>• Control infestations in close proximity to key production sites/assets, aiming for a significant reduction in weed density</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Refer to Weeds of National Significance Bridal Creeper Strategic Plan and National Management Action Map</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Strategic response:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Surveillance and mapping to locate all infested properties</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Identify priority assets for targeted management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Monitor change in current distribution to ensure containment of spread.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• High level pathways analysis to identify potential introduction areas and preventative options</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Conduct awareness and extension programs targeted at managers of high risk sites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Facilitate strategic release of biocontrol agents</td>
</tr>
</tbody>
</table>

*Note: The general biosecurity duty is an outcomes focused duty to prevent, eliminate or minimise the biosecurity risk posed by these weeds. While achieving the outcomes listed will demonstrate compliance with the general biosecurity duty this list is not exhaustive, and additional or alternative outcomes may also demonstrate compliance.
## Regional priority weeds objective – ASSET PROTECTION:

<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
</table>
| Devil's Rope - *Cylindropuntia imbricata* | • Landholders should prevent spread from their land | **Recommended measures:**  
  • Control of infestations in close proximity to key production sites/ assets (grazing conservation and urban areas), aiming for a significant reduction in weed density  
  **Strategic response:**  
  • Identify key production sites / assets for targeted management  
  • Monitor change in current distribution to ensure containment of spread  
  • Facilitate strategic release of bio control agents |
| Indian Fig - *Opuntia ficus-indica* | • Landholders should prevent spread from their land | **Recommended measures:**  
  • Populations of the plant should be managed in a manner that continuously inhibits the ability of the plant to spread  
  **Strategic response:**  
  • Identify key production sites / assets for targeted management  
  • Monitor change in current distribution to ensure containment of spread |

*Note: The general biosecurity duty is an outcomes focused duty to prevent, eliminate or minimise the biosecurity risk posed by these weeds. While achieving the outcomes listed will demonstrate compliance with the general biosecurity duty this list is not exhaustive, and additional or alternative outcomes may also demonstrate compliance.*
<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
<th>Outcomes to demonstrate compliance with the GBD*</th>
<th>Recommended measures and strategic responses</th>
</tr>
</thead>
</table>
| Harrisia Cactus - *Harrisia martinii* | Grazing, conservation and urban areas across all of the Local Land Services Western Region | **Recommended measures:**  
- Control of infestations in close proximity to key production sites/assets (grazing conservation and urban areas), aiming for a significant reduction in weed density  
**Strategic response:**  
- Identify key production sites / assets for targeted management  
- Monitor change in current distribution to ensure containment of spread  
- Facilitate strategic release of bio control agents  |
| Silver-leaf nightshade - *Solanum elaeagnifolium* | Dryland farming areas within the Local Land Services Western Region | **Recommended measures:**  
- The plant should be managed to suppress reproduction and prevent propagule movement  
**Strategic response:**  
- Surveillance and mapping to locate all infested properties  
- Identify priority assets for targeted management  
- Monitor change in current distribution to ensure containment of spread  
- High level pathways analysis to identify potential introduction areas and preventative options  
- Conduct awareness and extension programs targeted at managers of high risk sites |

**IMPORTANT NOTE:** The following legislative requirement also applies:  
*Mandatory Measure (Division 8, Clause 29, draft Biosecurity Regulation 2016):* A person must not move, import into the state or sell

*Note: The general biosecurity duty is an outcomes focused duty to prevent, eliminate or minimise the biosecurity risk posed by these weeds. While achieving the outcomes listed will demonstrate compliance with the general biosecurity duty this list is not exhaustive, and additional or alternative outcomes may also demonstrate compliance.*
Regional priority weeds objective – **ASSET PROTECTION:**

<table>
<thead>
<tr>
<th>Land area where requirements apply</th>
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<th>Recommended measures and strategic responses</th>
</tr>
</thead>
</table>
| Spiny Burrgrass - *Cenchrus longispinus, Cenchrus spinifex (syn. C. incertus)* | • Landholders should prevent spread from their land  
• Plant should not be bought, sold, grown, carried or released into the environment | **Recommended measures:**  
• Control infestations in close proximity to key sites/assets (horticultural areas, grazing lands and conservation area) aiming for a significant reduction in weed density  
• Implement quarantine and/or hygiene protocols  
**Strategic response:**  
• Surveillance and mapping to locate all infested properties  
• Identify priority assets for targeted management  
• Monitor change in current distribution to ensure containment of spread  
• High level pathways analysis to identify potential introduction areas and preventative options  
• Conduct awareness and extension programs targeted at managers of high risk sites |

*Note: The general biosecurity duty is an outcomes focused duty to prevent, eliminate or minimise the biosecurity risk posed by these weeds. While achieving the outcomes listed will demonstrate compliance with the general biosecurity duty this list is not exhaustive, and additional or alternative outcomes may also demonstrate compliance.*
Appendix 2: Other regional weed lists

A2.1 Additional species of concern

Species that are high risk, high priority for a number of current programs, though not feasible to contain or eradicate.

Regional strategic responses:

- work within existing widespread weed programs for strategic asset protection
- prioritise the application of the general biosecurity duty to assist with management of these species
- facilitate targeted research and development (including extension/awareness raising) activities where appropriate
- facilitate bio-control release programs in the region.

<table>
<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Herbicide resistant weeds</strong></td>
<td></td>
</tr>
<tr>
<td>Annual Ryegrass</td>
<td><em>Lolium rigidum</em></td>
</tr>
<tr>
<td>Barley Grass</td>
<td><em>Hordeum spp.</em></td>
</tr>
<tr>
<td>Blackberry Nightshade</td>
<td><em>Solanum nigrum</em></td>
</tr>
<tr>
<td>Brome Grass</td>
<td><em>Bromus spp.</em></td>
</tr>
<tr>
<td>Common Sow Thistle</td>
<td><em>Sonchus oleraceus</em></td>
</tr>
<tr>
<td>Flax-leaf fleabane</td>
<td><em>Conyza bonariensis</em></td>
</tr>
<tr>
<td>Indian hedge mustard</td>
<td><em>Sisymbrium oriental</em></td>
</tr>
<tr>
<td>Lincoln weed / Sand rocket</td>
<td><em>Diplotaxis tenuifolia</em></td>
</tr>
<tr>
<td>Silver grass / Squirrel-tailed fescue</td>
<td><em>Vulpia bromoides</em></td>
</tr>
<tr>
<td>Wild oat</td>
<td><em>Avena spp.</em></td>
</tr>
<tr>
<td>Wild radish</td>
<td><em>Raphanus raphanistrum</em></td>
</tr>
<tr>
<td>Wild turnip / Mediterranean turnip</td>
<td><em>Brassica tournefortii</em></td>
</tr>
<tr>
<td>Windmill grass</td>
<td><em>Chloris truncata</em></td>
</tr>
<tr>
<td><strong>Amenity weeds</strong></td>
<td></td>
</tr>
<tr>
<td>Castor oil plant</td>
<td><em>Ricinus communis</em></td>
</tr>
<tr>
<td>Cat-head</td>
<td><em>Tribulus terrestris</em></td>
</tr>
<tr>
<td>Khaki weed</td>
<td><em>Alternanthera pungens</em></td>
</tr>
<tr>
<td>Poison Ivy</td>
<td><em>Toxicodendron radicans</em></td>
</tr>
<tr>
<td>Rhus Tree</td>
<td><em>Toxicodendron succedaneum</em></td>
</tr>
<tr>
<td>Common name</td>
<td>Scientific name</td>
</tr>
<tr>
<td>----------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td><strong>Toxic pasture plants</strong></td>
<td></td>
</tr>
<tr>
<td>Cat-head</td>
<td><em>Tribulus terrestris</em></td>
</tr>
<tr>
<td>Common Heliotrope</td>
<td><em>Heliotropium europaeum</em></td>
</tr>
<tr>
<td>Darling Peas</td>
<td><em>Swainsona spp.</em></td>
</tr>
<tr>
<td>Pimelia</td>
<td><em>Pimelia simplex, Pimelia elongate, Pimelia trichostacha</em></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
</tr>
<tr>
<td>Pepper Tree</td>
<td><em>Schinus molle</em></td>
</tr>
<tr>
<td>Winged Sea Lavender</td>
<td><em>Limonium lobatum</em></td>
</tr>
<tr>
<td>Statice</td>
<td><em>Limonium sinuatum</em></td>
</tr>
</tbody>
</table>

Spiny Burrgrass - *Cenchrus longispinus, Cenchrus spinifex (syn. C. incertus).*