

Braidwood grazing industry weed management plan



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Introduction

The Queanbeyan-Palerang region in south east of New South Wales covers 5,319km² and supports 56,000 residents. Agriculture is a leading export industry¹, contributing around \$40 million to the regional economy each year. Livestock production dominates the agricultural industry, particularly cattle in the Braidwood sub-region^{2,3}.

Agricultural production areas face a range of threats to their sustainable productivity. Weed invasion poses a major impact on the grazing industry by reducing productivity through competition with desirable pasture species and reducing the quality of agricultural products. Ongoing weed control is also a significant input cost for most producers. Other threats, that often compound the impacts of weeds, include weather conditions and feral animals.

Weed management to protect a local grazing industry requires a coordinated approach across many properties. Integrated weed management, where a combination of techniques are applied for more effective control, is also important. An ongoing commitment from all landholders can stop the establishment and spread of new weeds. The impacts of widespread weeds can also be minimised, particularly on priority assets like highly productive agricultural land. While the NSW *Biosecurity Act 2015* requires the control of pest plants that pose an impact on the economy, environment and community⁴, it is also in the best interest of the local community to maintain a program of weed control beyond legal requirements.

This plan defines the most productive concentration of continuous agricultural land within the Queanbeyan-Palerang region, the Braidwood grazing industry priority asset area (Figure 1). An integrated and cooperative program of weed management is outlined to guide biosecurity management actions to protect this priority asset from the impacts of priority weeds.

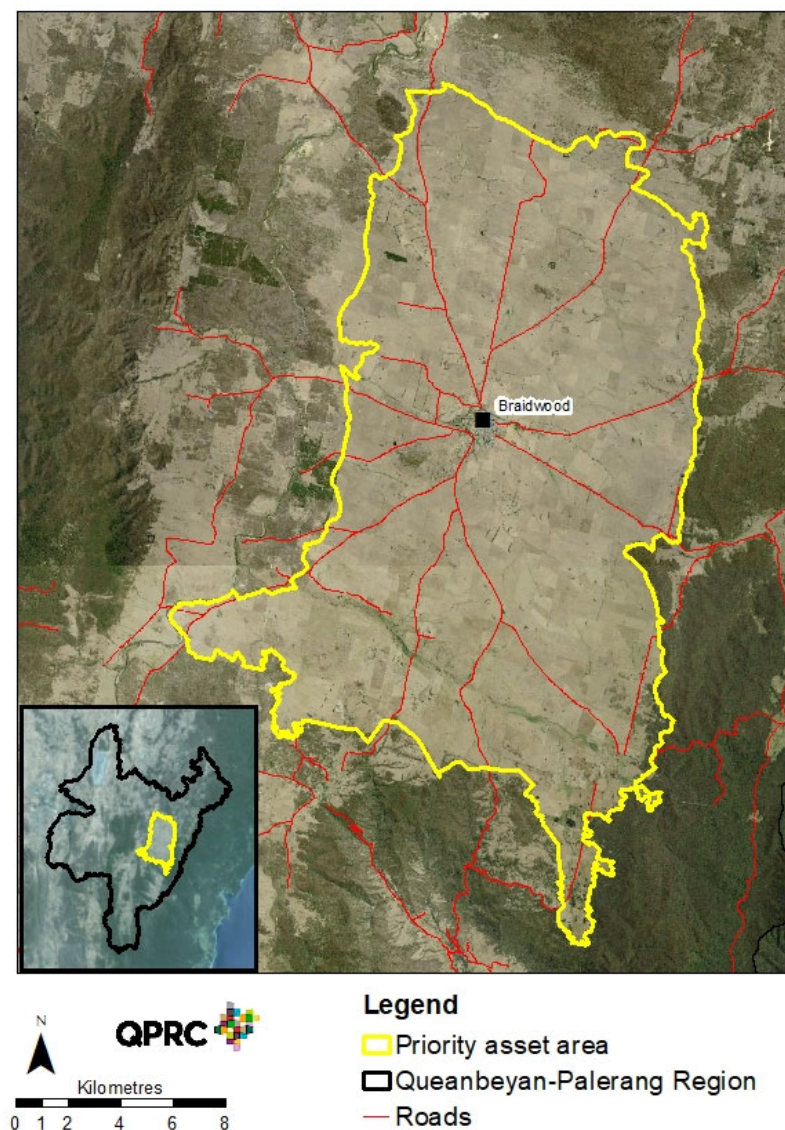


Figure 1. Location of the Braidwood grazing industry priority asset.

Braidwood grazing industry

The physical capacity of land to sustain different land uses has been defined by the NSW land and soil capability assessment⁵. The Queanbeyan-Palerang region has no Class 1 or 2 land and only isolated pockets of Class 3 (High Capability) land. There is a reasonable extent of Class 4 (Moderate Capability) land⁶, defined as:

Land has moderate to high limitations for high-impact land uses. Will restrict land management options for regular high-impact land uses such as cropping, high-intensity grazing and horticulture. These limitations can only be managed by specialised management practices with a high level of knowledge, expertise, inputs, investment and technology.⁵

The town of Braidwood is surrounded by open grazing land covering nearly 400 square kilometres, mostly classed as Moderate Capability⁶. For the purposes of this plan, the extent of the Braidwood grazing industry priority asset area is defined as the continuous mass of Moderate Capability land bounded by woody land cover and the Shoalhaven River. Encompassed within this area are the lower capability Jembaicumbene Creek line and islands of both lower capability land and woody land cover (Figure 2). It is estimated that the Braidwood grazing asset area is worth around \$10 million per year, based on 2015-16 agricultural census data for the Braidwood Statistical Area (SA2)^{2,3} and an analysis of land capability mapping⁶.

Beyond the Braidwood grazing industry priority asset area the Queanbeyan-Palerang region has smaller areas of High and Moderate Capability land plus lower capability land that also support grazing. These areas may be considered for future weed management plans pending the success of the current plan in achieving improved protection of this priority economic asset from the impacts of weed invasion.

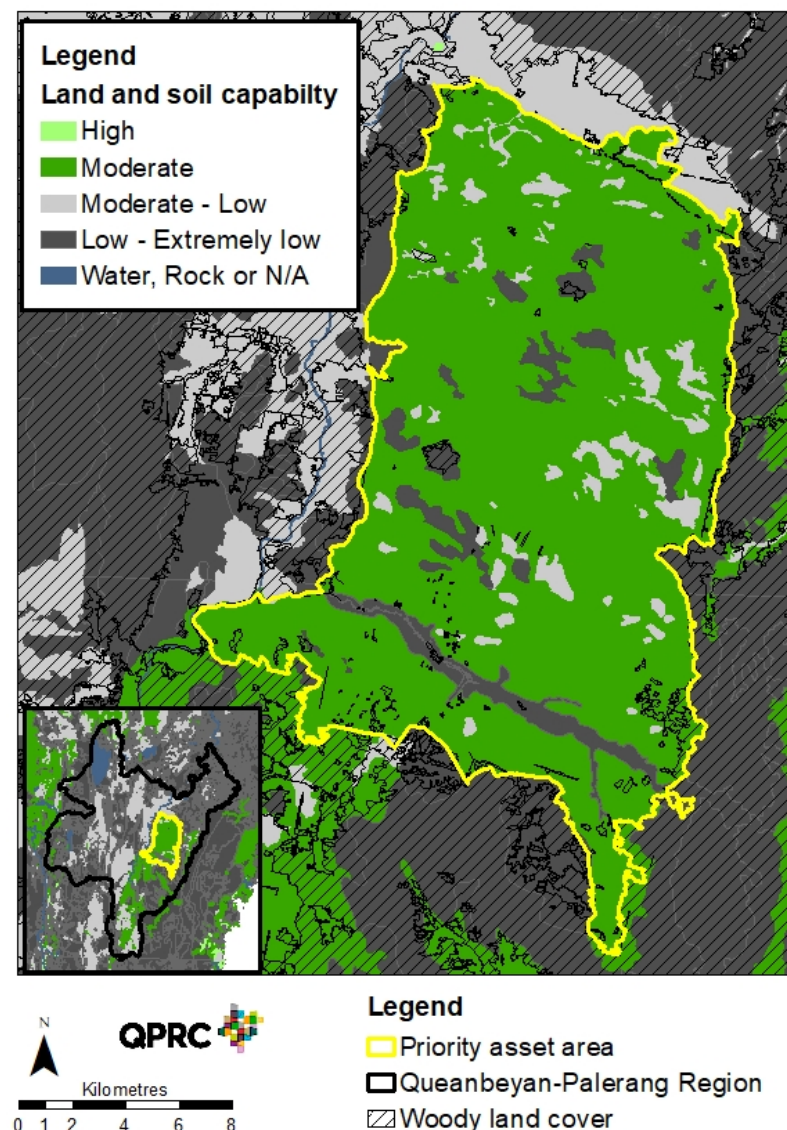


Figure 2. Environmental features defining the Braidwood grazing industry.

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Weed threats

Weeds present a serious threat to the Braidwood grazing industry. In particular, a number of introduced plant species with low value as stock feed can out-compete more favourable pasture species.

The NSW Weed Risk Management system⁷ was used to assess weed risks and prioritise their management. The highest priority is put on preventing new high risk weeds from entering the area, followed by the eradication of small infestations. Once weeds become established there are a range of management outcomes to minimise their impacts (Figure 3).

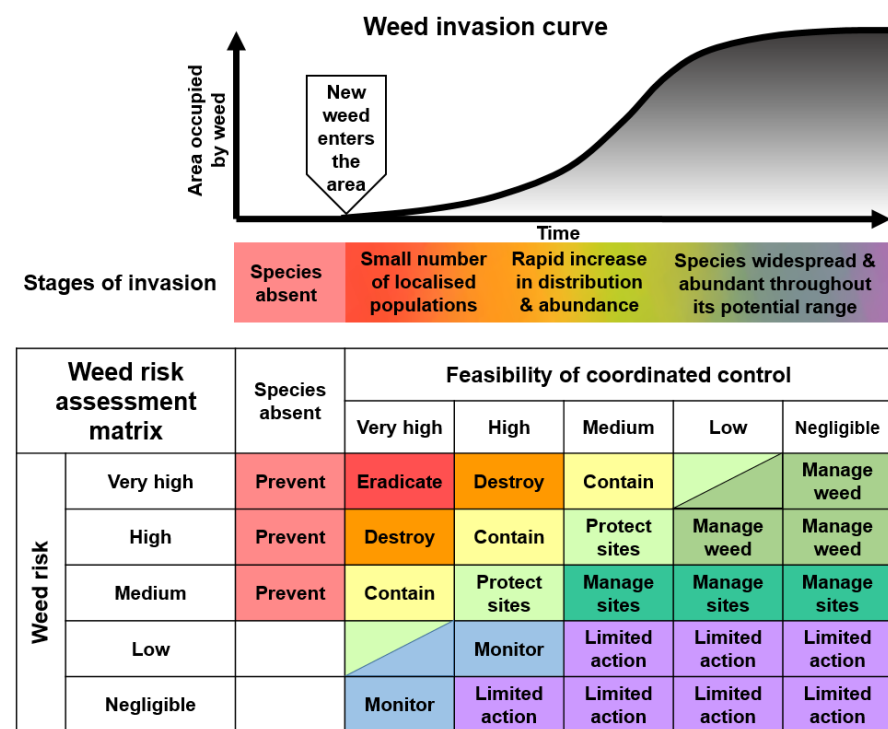


Fig 3. Weed invasion curve, risk assessment matrix and management^{7,8}.

The regional weed plan⁸ lists State and Regional priority weeds along with their control requirements. More localised risk assessments have also been completed to fine tune these requirements to meet a general biosecurity duty under the *Biosecurity Act 2015*.

Species that are currently thought to be absent but have previously been found nearby, and have the potential to impact on pasture production and/or livestock, include Fireweed and Gorse. In addition, cattle and fodder being imported from further afield than usual during drought increases the risk of a wider range of new weeds being imported⁹ – please keep an eye out for and report anything unusual.

Weed species that currently occur within the asset protection area in small numbers and have the potential to spread widely and impact grazing include Blackberry and Sweet Briar. Other weeds with limited distribution, such as Scotch broom, can invade and establish alongside key landscape features such as waterways, reducing access and the diversity of native species.

The region also has many widespread weed species, including those posing higher risk to the grazing industry such as African lovegrass, Chilean needle grass and Serrated tussock. These have further potential to increase in density and impacts, particularly during drought periods when there can be limited competitive groundcover.

The following section recommends appropriate management of priority weeds that are already known to be present in the region and whose management objective includes asset protection or higher. Other weeds posing a lower risk are not specifically addressed in this plan, however there is still a general biosecurity duty under the *Biosecurity Act 2015* to manage all weeds that pose an impact on the economy, environment or community. In addition, vigilant hygiene practices and surveillance should be maintained to prevent and detect any new weeds that may impact this priority asset.

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Weed management

The vision of this plan is to adopt and promote a shared responsibility between Government, industry and the community for a coordinated approach to protect the Braidwood grazing industry from the economic impacts of weeds. Local weed risk assessments have identified the following priority weed species (Table 1). Their risk, feasibility of coordinated control and consequent management outcome have been calculated as shown. Appropriate local management actions are based on the NSW Weed Risk Management system guiding principles⁷. For further information on these weeds, including identification and control options, contact Council's Biosecurity Officers or refer to WeedWise¹⁰.

Table 1. Priority weed species and their risk assessment outcomes.

Species	Risk	Feasibility of control	Management outcome	Management action*
Fireweed <i>Senecio madagascariensis</i>	High	Not present	Alert	Ongoing surveillance, particularly sites of fodder imported from outside the region. [Note: previously detected and eradicated from many nearby sites within the region]
Gorse <i>Ulex europaeus</i>	Very high	Very high	Eradication	Locate, map and destroy all infestations including seed banks. Ongoing monitoring to ensure eradication.
St John's wort <i>Hypericum perforatum</i>	Very high	Medium	Contain spread	Control all infestations to prevent the spread of plants, aiming for a significant reduction in plant density within the Braidwood grazing industry priority asset area and a minimum 20m surrounding buffer zone.
Blackberry European sp. <i>Rubus, Rosaceae.</i>	Very high	Medium	Contain spread	Control all infestations occupying grazing land to prevent the spread of plants, aiming for a significant reduction in plant density within the Braidwood grazing industry priority asset area and a minimum 50m surrounding buffer zone.
Chilean Needle Grass <i>Nassella neesiana</i>	High	Low	Manage Weed	Apply integrated weed management techniques to reduce the density of infestations and reduce impacts on the economic values of the Braidwood grazing industry priority asset area including a minimum 50m surrounding buffer zone.
Serrated tussock <i>Nassella trichotoma</i>	Very high	Negligible	Manage weed	
Sweet Briar <i>Rosa rubiginosa</i>	Medium	Low	Manage weed	
African lovegrass <i>Eragrostis curvula</i>	Medium	Medium	Manage sites	Apply integrated weed management techniques to prevent an increase in density of infestations and maintain economic values within the Braidwood grazing industry priority asset area and a minimum 20m surrounding buffer zone.
Patterson's Curse <i>Echium plantagineum</i>	Low	Very High	Monitor & Protect Priority Sites	Monitor the spread of the species and if the risk increases then control infestations to significantly reduce weed density.

* Minimum buffer zone distances are specified to minimise the risk of weed material spreading into the priority asset area and should be extended at sites where the mode of spread is stronger, such as plants with wind-borne seed at upwind exposed sites or seed moved by livestock within a fenced paddock.

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Further information

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3. Australian Bureau of Statistics 2017, *ABS Maps of 2016 Statistical Area level 2 (SA2) and 2016 Local Government Area (LGA)*, viewed 22 October 2019, <https://itt.abs.gov.au/itt/r.jsp?ABSMaps>
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5. Office of Environment and Heritage 2012, *The land and soil capability assessment scheme – second approximation*, viewed 22 October 2019, <https://www.environment.nsw.gov.au/research-and-publications/publications-search/land-and-soil-capability-assessment-scheme>
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7. Department of Primary Industries 2019, *NSW Weed Risk Management system*, viewed 22 October 2019, <https://www.dpi.nsw.gov.au/biosecurity/weeds/strategy>
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