

Aligning policy and practice – managing WoNS in the South Australian context

Shauna Potter¹, Greg Patrick² and Justine Drew³

¹Biosecurity SA, GPO Box 1671, Adelaide, SA 5001

²SA Arid Lands Natural Resources Management Board, PO Box 78, Port Augusta, SA 5700

³South East Natural Resources Management Board, PO Box 30, Mount Gambier, SA 5290

(Shauna.Potter@sa.gov.au)

Summary Weeds of National Significance (WoNS) have a varied distribution within South Australia that requires a strategic approach to the identification of priority sites to control. Athel pine, for example, is scattered across northern SA and does not lend itself to a traditional containment line approach to prevent spread. All weed declarations and policies are currently under review in South Australia, which provides the opportunity to ensure that policy management actions are proposed in accordance with risk; and are supporting regional and national management plans for WoNS and other species.

Keywords Weeds of National Significance, weed policy, legislation.

INTRODUCTION

Of the 32 Weeds of National Significance (WoNS), approximately half have naturalised in South Australia (refer Table 1). Some species are widespread, such as African boxthorn (*Lycium ferocissimum* Miers), the common form of bridal creeper (*Asparagus asparagoides* (L.) Druce) and blackberry (*Rubus* spp.), but others, including gorse (*Ulex europaeus* L.) and athel pine (*Tamarix aphylla* (L.) Karst.) are more scattered in their distribution and are considered eradication or outlier control targets at the regional, state and/or national level. Other species have not naturalised within the state, but have the potential to establish, or pose a risk to other jurisdictions through formal and informal trade pathways.

Successful weed management programs require careful planning, coordination, resourcing, long term commitment, and the availability of effective control options. An additional component to achieve management objectives are appropriate weed declarations and policies that provides legal support to management programs and commit resources to the control of a weed, through activities such as extension and compliance.

Biosecurity SA (BSA), in conjunction with the Department of Environment, Water and Natural Resources (DEWNR) and regional Natural Resource Management (NRM) Boards, is currently undertaking a review of declared weeds to capture new weed

threats, changes in weed management approaches and to more accurately reflect weed risk assessment outcomes. A number of recent declaration changes and recommendations for change have been made and will be discussed in relation to several WoNS and their management priorities at multiple levels.

STRATEGIC PLANNING FOR WONS

Strategic plans for WoNS identify the national benefits that can be realised through implementing priority management actions. These actions detail what is required to improve WoNS management, including on-ground control activities, research, education and capacity building. The identification of control options follows the principles of the weed invasion curve (see Figure 1) (DPI 2009), focussing on what can be achieved in the areas of prevention, eradication, containment and asset protection. It is important that

Table 1. WoNS naturalised in SA.

Common name	Species name
African boxthorn	<i>Lycium ferocissimum</i>
Asparagus weeds (includes bridal creeper)	<i>Asparagus</i> spp.
Athel pine	<i>Tamarix aphylla</i>
Boneseed	<i>Chrysanthemoides monilifera</i> ssp. <i>monilifera</i>
Blackberry	<i>Rubus</i> spp.
Brooms	<i>Genista monspessulana</i> , <i>G. linifolia</i> , <i>Cytisus scoparius</i>
Chilean needle grass	<i>Nassella neesiana</i>
Gorse	<i>Ulex europaeus</i>
Madeira Vine	<i>Anredera cordifolia</i>
Mesquite	<i>Prosopis</i> spp.
Opuntioid cacti	<i>Opuntia</i> spp., <i>Cylindropuntia</i> spp., <i>Austrocylindropuntia</i> spp. (excludes <i>O. ficus-indica</i>)
Parkinsonia	<i>Parkinsonia aculeata</i>
Prickly acacia	<i>Acacia nilotica</i> ssp. <i>indica</i>
Sagittaria	<i>Sagittaria platyphylla</i>
Silverleaf nightshade	<i>Solanum elaeagnifolium</i>
Willows	<i>Salix</i> spp.

these control actions are supported by state/territory weed declarations and policies that align with objectives of the strategic plans.

CURRENT DECLARATIONS

Weeds are declared under the South Australian *Natural Resources Management Act 2004* (NRM Act) in response to the risk they pose to primary industries, the natural environment and public health and safety (Cooke 2006). The NRM Act, through its various provisions, gives scope to the management of established weeds, with the aim of reducing further spread and minimising impact to priority assets, as well as containing early invaders and preventing new weeds that have not yet established in SA. Relevant sections of the Act include section 175 (prohibition of transport) to prevent further introductions; section 177 (prohibition of sale) to prevent spread by sale or contaminated produce; section 180 (notification) to ensure new infestations are reported; and section 182 (control of declared weeds) to ensure weeds are controlled (Cooke 2006).

The need for review The NRM Act follows a long history of weed legislation in SA, beginning with the *Thistle Act 1852*, however the last comprehensive review of declared weeds was undertaken in 1991. Much has changed since then, including the increase in new weeds to Australia (and SA), changes in land use and existing weed distribution; and improved knowledge of management practices and weed biology. The most notable difference is the introduction of weed risk assessment processes, such as the South Australian Weed Risk Management System (Virtue 2010), which has introduced scientific rigour to the evaluation of a weeds actual, rather than perceived, risk (Cooke 2006).

Weed policies for WoNS in South Australia acknowledge the weed's WoNS status, but may not reflect the current state and/or national management direction. As mentioned above, when knowledge of the distribution of a WoNS improves and options for eradication, containment or asset protection become clear, it is desirable that this is reflected in the policy direction for that species. Policies and declarations are now being reviewed to ensure they align with the regional, state and national priorities for WoNS, and are in turn supported by regional management plans and national strategies for WoNS.

Regional management plans, developed by NRM boards, identify how a declaration will be translated into action at the regional level and can include information on the weed's impacts, local distribution

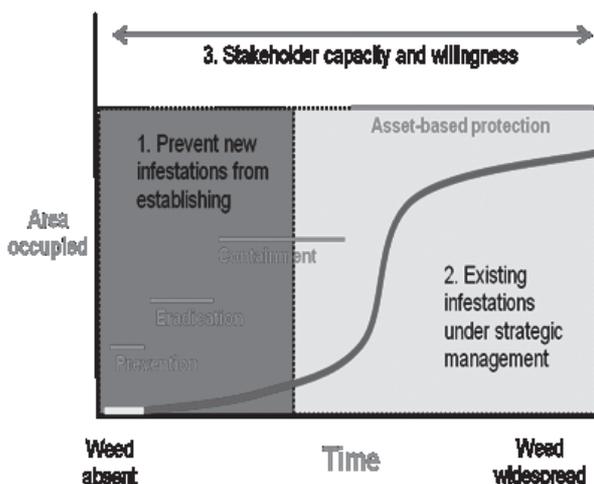


Figure 1. Strategic approach to WoNS management.

and management objectives. They describe, for example, what hygiene measures should be in place, whether containment zones are required and if control will be enforced by officers authorised under the NRM Act. The state policies and regional plans make an important contribution in delivering national management objectives.

ALIGNING POLICY AND PRACTICE

There has been much learnt about WoNS distribution, effective management and potential risk since the inception of the WoNS initiative over a decade ago. Strategic plans for the original 20 WoNS have recently been reviewed and national priorities have been addressed by various local, state and national control programs. The following case studies provide examples of actual and proposed changes to South Australian weed declarations and policy that provide further support and benefit to WoNS management.

Athel pine Athel pine occurs throughout SA rangelands and it was widely planted as a shade tree around homesteads, cattle yards, reserves and urban areas. As a result it is found in many regional towns and also features as a street tree within the suburbs of Adelaide. Athel pine is able to concentrate salt in its leaves, which when shed, damage roofs, sheds, fences and other infrastructure. Athel pine also limits the growth of native plant species, either through increased surface soil salinity, or direct competition and shading; these are the most significant threats in South Australia's arid environments.

Although athel pine is widely scattered in the north of the state (see Figure 2) risk assessment

indicates that the main asset at risk from athel pine are the intermittent river systems of the arid lands. When a risk assessment was made on riparian habitats (as opposed to all land uses) it determined both a reasonable level of risk, but also a high feasibility of control in these areas. As a result it was recommended that the declaration for athel pine to be changed from just preventing sale (section 177) to also requiring control of plants (section 182) within 100 metres of a watercourse in regions where athel pine poses a high risk. The change of declaration was adopted in 2008 and has given affected NRM regions greater capacity to undertake control programs across the landscape. Under the declared plants review, the policy for athel pine may be subject to further amendments to support regional management plans and objectives.

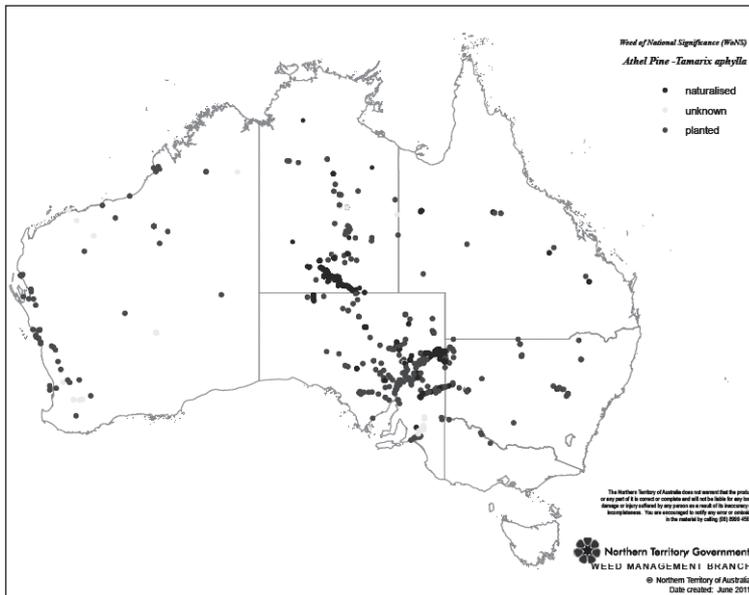


Figure 2. National athel pine distribution.

Gorse Introduced in the 1840s, gorse was first declared in SA under the *Weeds Act 1956*. Although present in six of eight NRM regions in SA it has the potential to spread further within the state and occurs as outlier infestations in the south east, Kangaroo Island, York and Eyre Peninsulas and eastern Mt Lofty Ranges. In these areas the management of gorse is covered by Memoranda of Understanding (MoU), which aim to eradicate gorse through several 25 year management commitments. This approach acknowledges the long term viability of gorse seed and the need to manage sites for many years to

achieve eradication. Biosecurity SA will recommend the revised draft policy for gorse acknowledge the MoUs and the eradication objective for areas covered by these agreements. This will require delimitation of infestations, control within 12 months and annual inspections of sites.

Western Cape bridal creeper This form of bridal creeper was identified in 2006 and has a more limited distribution than the common form, being found in only two areas of SA. The Western Cape form is considered a more aggressive invader, with larger tubers and thicker leaves (making herbicide control more difficult) and is also not affected by any of the biological control agents available for the common form.

There have been no changes to the declaration status of bridal creeper since the discovery of the Western Cape form, which is currently considered an unnamed infra-specific taxon, however a draft revised policy seeks to communicate the risk associated with the new form of bridal creeper, which also has a high feasibility of control, given its restricted distribution. The policy will also seek to support regional eradication and containment targets, which requires a different approach than that used for the widespread common form of bridal creeper.

Additional WoNS New WoNS were announced in April 2012 and for SA comprise a mix of widespread, scattered and absent weed

species. Potential changes to the existing declarations will include the prevention of sale and movement (sections 175 and 177) for all species, including those not present in the state such as cat's claw creeper (*Dolichandra unguis-cati* (L.) L.G. Lohman), bellyache bush (*Jatropha gossypifolia* L.) and gamba grass (*Andropogon gayanus* Kunth). In these instances declaring WoNS to prevent sale and trade helps protect at risk states/territories by preventing movement from SA, as was the case with lantana (*Lantana camara* L.), which although not naturalised, was declared in SA to halt nursery trade to the Northern Territory.

The new WoNS listing of brooms includes flax-leaf broom (*Genista linifolia* L.), which is naturalised but currently available through nurseries. This species will be reviewed to ensure control efforts are not hampered by legal sale and trade.

Other changes may include requirements to control (section 182) and a separation of *Asparagus* species (assigning bridal veil (*A. declinatus* L.) its own policy and declaration listing), which will support more targeted management of these species. All WoNS policies will reflect the new WoNS status and reference the strategic plans for these species. National plans assist with coordination across jurisdictional boundaries and help to minimise *ad hoc* management.

DISCUSSION

Whilst an independent assessment of WoNS candidate species is made prior to their endorsement (Lizzio *et al.* 2010) there is still a need to review state policy settings in order to best support the national objectives of the WoNS strategic plan. South Australia, through its review of declared plants, is moving towards an approach that robustly determines the risk of a weed species, is mindful of national objectives and establishes regional and state plans that are responsive in supporting these objectives. The review of declarations

will bring efficiencies to weed management in SA in terms of requiring control when there is a real benefit to do so and by investing in new incursions to prevent further spread and impact. These efficiencies will also flow to the management of WoNS in South Australia.

ACKNOWLEDGMENTS

The WoNS program is funded by the Australian Government and in South Australia supported by Primary Industries and Regions SA and the eight Natural Resources Management (NRM) regions.

REFERENCES

- Cooke, D. A. (2006). Weed Legislation in South Australia. *Weeds in the Media* pp. 69-71. (CRC for Australian Weed Management, Glen Osmond).
- Department of Primary Industries (2009). *Biosecurity Strategy for Victoria*, (Biosecurity Victoria).
- Lizzio, J., Richmond, L., Mewett, O., Hennecke, B., Baker, J. and Raphael, B. (2010). Methodology to prioritise Weeds of National Significance (WoNS) candidates. (Bureau of Rural Sciences, Canberra).
- Virtue, J.G. (2010). South Australia's Weed Risk Management System. *Plant Protection Quarterly* 25 (2) 90-94.