Weed management on watercourses

This summary guide has been prepared to help individual landholders and the community develop a plan for weed management activities within riparian lands. This is a companion to the more extensive guide (available online via Water>Managing water resources>Watercourses at http://www.naturalresources.sa.gov.au/northernandyorke/water/managing-water-resources/watercourses) and highlights the Weeds of National Significance (WoNS), declared weeds and the steps to develop a weed management plan.

Riparian land and weed management

The Northern & Yorke Region contains four priority catchments: Willochra, Broughton, Wakefield and Light. These catchments cover an area of 1,460,000 hectares and contain native riparian vegetation corridors within a largely cleared landscape of primarily introduced species. These catchment areas support two nationally threatened ecological communities: peppermint box grassy woodland and iron-grass natural temperate grassland. There are also currently 25 nationally threatened plant species in the area. Weeds now dominate riparian areas and most properties in the Northern & Yorke Region have agricultural or environmental weeds that need to be controlled to some degree.

Why should we manage weeds within the catchment?

Riparian land is an important part of Australian ecosystems because it is often the most diverse and productive part of the landscape. Riparian land contains a wide range of habitats and food types; is close to water; has a less extreme microclimate; and can provide refuge. Today, weed invasion in riparian areas is a serious threat to local landowners and ecological communities. Riparian land that has become degraded by past land use and affected by flood or wildfire is at increased risk of weed invasion. Weed seeds can disperse by wind, water from upstream or through the droppings of birds and animals.

Weeds of National Significance

- Bridal creeper (*Asparagus asparagoides*)
- Blackberry (*Rubus fruticosus*)
- Boneseed (*Chrysanthemoides monilifera*)
- Gorse (*Ulex europaeus*)

Declared weeds

- African boxthorn (*Lycium ferocissimum*)
- Wild Artichoke (*Cynara cardunculus*)
- Horehound (*Marrubium vulgare*)
- Dog rose (*Rosa canina*)
- Wild olive *(Olea europaea*)
- Scotch Broom (*Cytisus scoparius*)
- Montpellier broom (*Genista monspessulana)*

Developing a weed management plan

Prevention is the first and most important part of weed management and represents good land management. This is true for both environmental and agricultural weeds as prevention is more cost effective than treatment.

There are four main steps to develop a weed management plan.

Step 1 Assessing the site
Land managers should be familiar with the vegetation of their local area so they can react to new weed infestations before they become difficult or costly to control. Monitor and map the weeds on the property and determine their density. This will help to prioritise weed control efforts and assess how well they have worked. Identify weed-free areas and keep them free of weeds.

Step 2 Setting objectives
Determine which weeds are the highest management priority, taking into account the impact level of each weed on site and the viability of their control. Set realistic timeframes for control and prepare a financial plan to allocate funds to weed control. Always start work in the least weed-infested areas and then move to the most weed-infested areas.

Step 3 Selecting weed control options
There are four main treatment options that can be used alone or together to provide effective weed management.

Chemical

There is a very high risk of off-target damage from herbicides within riparian areas as many herbicides are toxic to aquatic ecosystems. Additional care needs to be taken in riparian areas: avoid spraying near watercourses and select minimal use, direct application methods such as cut and swab in these situations.

Mechanical

Mechanised weeding with large earthmoving equipment may be necessary where large infestations occur, although this isn't common. Scalping, or the removal of all plants and surface soil with a bulldozer, can be undertaken to ensure crowns and the majority of roots are dug out.

Biological

Biological control uses the natural enemies of a weed to reduce its population to below an economic or environmental threshold. Biological control will not provide instant control, but will reduce weed populations over many years.

Hand weeding

Hand weeding is only effective under very limited circumstances. Even seedlings and small plants can be difficult to pull out by hand.

Step 4 Monitoring and recording
Recording information helps us to understand how a site changes over time. Monitoring changes in the density and area of weed cover and recording any new weed species will help land managers to understand how a site changes over time.

For more information

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Primary Industry and Resources South Australia (PIRSA) has also produced a *Weed Control Handbook for Declared Plants in South Australia* which is available at www.pir.sa.gov.au/__data/assets/pdf_file/0009/187686/Full_Document_Final_Weeds.pdf