

Chapter 11

Environmental Weeds

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Defining environmental weeds

A common definition of a weed is ‘a plant growing where it is not wanted’. When we think of bushland or remnant native vegetation, a weed is a plant that is not a local original plant and considered to be out of place. The occasional non-local native plant growing in remnant vegetation is usually not a problem, however many of these plants invade and harm remnant vegetation and can be considered *environmental weeds*.

Plants can be weeds in terms of both agriculture and remnant vegetation, but many are specific to either one or the other. Some plants are desirable in one situation but a weed in another. Phalaris is a desirable farm plant, but an environmental weed when it invades native vegetation, which could include the roadside remnant on the other side of the fence beside the paddock. So it is the situation or context that determines a plant’s status, not the plant itself.

Apart from actual clearing of native vegetation, environmental weeds and grazing are the greatest threats to the long-term viability of remnant vegetation in agricultural areas. As Stella Humphries found in the 1991 CSIRO study on environmental weeds, ‘weed invasions pose one of the most serious nature conservation problems in Australia’.

Environmental weed invasion is an insidious problem, not unlike salinity. Many people see gum trees (eucalypts) and assume that all is well in the bush. Few people can identify understory plants (shrubs, grasses, herbs) and often we are not aware that many of our ‘understorey plants’ are weeds. Some environmental weeds could be mistaken for native plants.

Native plants can also be environmental weeds, such as Black Rolyoly (*Sclerolaena muricata*) and Cootamundra Wattle (*Acacia baileyana*), that grow outside their home territory and/or are invasive.

Harmful effects of environmental weeds

Environmental weeds take up the physical space where locally native plants would normally grow, hence reducing the numbers of such plants by crowding them out. There are often few natural predators of weed species to keep them in check. Environmental weeds also have many other detrimental effects that may be not so obvious.

Environmental weeds affect regeneration of locally native plants by changing the environmental conditions – providing more shade and humidity; producing chemicals that inhibit germination of other plants; producing different leaf

litter; and using up nutrients and moisture.

They alter the balance of fauna by favouring some species, particularly introduced animals. When weeds reduce the number of locally native plants, they reduce the food supply for animals that rely on these plants. Animals play a large part in the health and regeneration of native vegetation, for example by keeping insects in check, pollinating plants, spreading seeds and helping leaf litter to decompose. It is often rare species that are most affected, as they tend to have specific needs and do not have the capacity to use other food or resources. Many changes are probably occurring on a level that we do not notice. The consequences of such changes are yet to be discovered. It is not easy, for example, to notice what is happening to insect and reptile populations, yet they have a direct relationship to the health of remnant vegetation.

Weeds can cause “genetic pollution”, such as, the native environmental weed Cootamundra Wattle (*Acacia baileyana*) being able to hybridise with the indigenous Silver Wattle (*Acacia dealbata*).

Weeds can change the way our natural systems work. They can increase the risk of fire or change the temperature of burning, for example Wild Oats (*Avena fatua*) after it has died off, burns hotter than smaller, summer active native grasses such as Red-leg Grass (*Bothriochloa macra*). Much of the vegetation in this area is closely associated with fire and depends on particular fire regimes for its survival. Weeds can change water flows. For example, willows often cause changes in creek courses.

Weeds simplify ecosystems by reducing their diversity. Diversity of structure

(provided by trees, shrubs and ground covers) and diversity of species is desirable for the health of remnant vegetation.

The spread of environmental weeds

There are various methods through which weeds are spread. Seeds are transported in soil (particularly along roadsides by graders, in car tyres, and in soil used for road construction), by animals, wind, water and human activities.

Disturbing the soil encourages seeds to establish. Sometimes invasive plants are planted near remnant vegetation due to a lack of understanding of the threats or consequences.

Any plant with a small or medium sized berry (eg. Pepper Tree (*Schinus areira*)) has the potential to be spread by birds. Foxes are known to spread Blackberry (*Rubus* spp.) and Briar Rose (*Rosa rubiginosa*) seed in their droppings after eating the fruit. Cattle spread seeds of Black Locust (*Robinia pseudoacacia*) and grasses. Seeds are carried on the coats of animals.

Water and wind are seed dispersers, for example spreading seeds of Tree Lucerne (*Chamaecytisus palmensis*) and Fleabane (*Conyza* species).

Dumping of garden prunings spreads seeds, bulbs and cuttings. This method of spreading appears to have increased since garbage tips began charging for rubbish disposal.

Useful plants as environmental weeds

A plant can be desirable in the farm or garden, but become an environmental weed in native vegetation. Phalaris is a serious environmental weed of remnant

vegetation on roadsides and creeks due to its invasive nature, but will continue to be planted because of its qualities as a pasture grass. We need to manage these types of situations for the benefit of both farmland and native vegetation. If a Phalaris paddock is next to remnant vegetation, a buffer area should be left. This could be planted with a shelter belt or farm forestry and managed so that the Phalaris does not invade. Buffer zones have protection value, as well as many other benefits, such as providing habitat, preventing erosion and keeping chemicals out of the water.

Willows (*Salix* spp) widely planted along watercourses for stabilising banks, have become the dominant feature of many watercourses at the expense of native vegetation and animals.

Tackling environmental weeds

While the environmental weeds problem was earlier compared to salinity, it is easier to rectify than salinity, and positive results can be seen in a much shorter time frame. However, the sooner environmental weeds are tackled, the better the chances of survival for native vegetation, as the remnant patches continue to degrade at an ever increasing rate.

Because our native vegetation has developed in a land of disturbances and unpredictability, particularly fire and drought, it has a significant capacity to regenerate naturally. Given some assistance, particularly the removal of environmental weeds, native vegetation tends to regenerate naturally. Fencing allows young plants to establish and other methods can be used to stimulate regeneration such as the use of fire (refer to Chapter 9).

Managing environmental weeds in remnant vegetation

Weeds tend to invade native vegetation when it is disturbed, so avoid disturbing it – keep to tracks, keep heavy machinery use to a minimum, do not overgraze, and do not over-burn. Use weed removal techniques that require the least disturbance (eg. cutting and poisoning and injecting trees rather than bulldozing).

Remove environmental weeds from native vegetation before they establish. If they have set and dropped seed, more seedlings will germinate, requiring removal. If weeds can be removed before they drop seed, the work needed to restore the native vegetation will be greatly reduced.

Find out about bush regeneration (see References and Further Reading below). There are techniques and strategies for controlling environmental weeds that gain maximum benefit for the native vegetation and avoid inadvertently harming the bush.

Become more familiar with locally native plants so that you can recognise remnant vegetation and weeds.

When planting windbreaks and shelter belts check that you are not planting environmental weeds. Planting locally native species is safest and has many other benefits.

When planting near bush use locally native species from locally collected seed, to avoid altering the gene pool (ie. ‘genetic pollution’) (see Chapter 9).

Weed invasion is usually worst around the edges of remnant vegetation. Try to minimise the length of the edges of areas of remnant vegetation (blocks have less edge than strips), and join isolated patches.

Avoiding environmental weeds in the garden

Gardens are a major source of environmental weeds, particularly in relation to native vegetation in or near urban areas. Plants known to be environmental weeds in your area should be removed. There are many locally native plants that make excellent garden specimens. Gardens do not have to be *either* native *or* exotic. Many native species blend well with exotic species. Locally native plants have many benefits in gardens: they need less water; they attract a variety of native birds and insects; they can have an important conservation value; and give the garden a 'local' flavour. Contrary to common belief, most native shrubs in a garden situation look better with pruning, so planting natives does not automatically mean a 'wild' garden, although many like this look. There are also many exotic plants that do not "escape".

Environmental weeds in the area covered by this Guide

Appendix ?? contains a list of many weed species found within the area covered by this Guide. It is not an exhaustive list, but may help you identify environmental weeds in remnant vegetation.

Woody weeds

Invasive native plants with woody stems are often called woody weeds. As distinct from environmental weeds that invade remnant vegetation, woody weeds invade agricultural land. However, within the area covered by this Guide, remnant vegetation and agricultural land (grazing) can be the same thing.

Woody weeds usually invade an area following some sort of disturbance. These can include overgrazing, altered fire regimes and clearing.

Woody weeds can harbour feral pests, reduce the carrying capacity of your land for domestic stock and restrict access to parts of your property making stock management difficult.

Woody weeds are controlled using a number of methods, which include fire (a controlled burn with specific management objectives), mechanical control, chemical control, a change to grazing management or a combination of these. However, it is important to note two things. Firstly, that native woody "weeds" still constitute native vegetation and you may require approval under the *Native Vegetation Conservation Act 1997* by the Department of Land and Water Conservation. Secondly, as with all weed control its important to be "outcome focussed" not just weed removal focussed. A weed control technique that removes the weed but does more damage to the bush in the long term is highly undesirable.

References and further reading

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