

WEED MANAGEMENT


Australia's National Weed Strategy defines weeds as a plant that requires some form of action to reduce its harmful effects on;

1. The economy
2. The environment
3. Human health and amenity

A weed is a plant growing in the wrong place.

Tasmania contains some of the most productive agricultural land in Australia; the climate, soils and rainfall are good for growth and the weeds benefit from these conditions too.

We want to protect our agricultural industries and the environment, by keeping weeds to a minimum.



"Weeds reduce farm and forest productivity, displace native species and contribute to land degradation. The cost of weeds to agricultural industries is estimated at about \$4 billion a year. The cost of weeds to the environment is difficult to calculate but could be greater than the estimated cost to agricultural industries"

- Department of Agriculture, Fisheries and Forestry

There are different types of weeds:

DECLARED listed under the *Tasmanian Weed Management Act 1999*, these weeds **MUST** be controlled under the law.

AGRICULTURAL invades crops and pasture and costs money, time and control measures can impact on the natural environment.

ENVIRONMENTAL often garden plants which escape and multiply in the natural environment and out compete native plants.

Currently there are approximately 115 weeds declared under the *Weed Management Act 1999* in Tasmania. Particular plants become listed as declared weeds because of the level of threat they present.

There are a number of declared weeds that are widespread and common in the region / state such as gorse, brooms, blackberry, Spanish heath, and willows. Control measures for these weeds should be implemented to ensure that further spread in the state / region is prevented and their impacts on the environment and Tasmania's agriculture are reduced.

These are listed on the Department of Primary Industries Parks Water and Environment (DPIPWE) website.

It is important to be able to recognise different weeds and the DPIPWE website is very helpful with many photos.

The declared weeds which create our biggest problems in Southern Tasmania include:

- gorse *Ulex europaeus*
- ragwort *Senecio jacobaea*
- pampas *Cortaderia* spp.
- blackberry *Rubus fruticosus* agg.
- broom *Genista monspessulana* and *Cytisus scoparius*
- spanish heath *Erica lusitanica*
- californian thistle *Cirsium vulgare*
- willows *Salix* spp.
- african boxthorn *Lycium ferocissimum*
- boneseed *Chrysanthemoides monilifera*
- St John's Wort *Hypericum perforatum*

Like all plants, different weeds have particular preferences for habitat. For example amongst the declared weeds you will mainly find Boneseed, African boxthorn and Asparagus species near the coast.

A weed management plan (WMP) has been written for all Tasmanian declared weeds. The WMP will state according to each municipality whether a particular declared weed is widespread or isolated in occurrence, and therefore if the goal is eradication or control.

Environmental Weeds

Environmental weeds are often common garden plants and usually spread by birds or garden waste dumped inappropriately. Coastal properties and bush areas can be particularly vulnerable to environmental weeds such as:

- asparagus fern (also declared)
- cotoneaster
- fuchsia
- agapanthus
- holly
- ivy
- mirror bush
- foxglove
- sweet pittosporum
- perriwinkle



Gorse *Ulex europaeus*
Photo: N. Crane

weed control

When controlling weeds a big decision is what method to employ, and the options include mechanical, chemical, biological or manual removal. By far the best outcome though is covered by the saying “prevention is better than cure” so good hygiene is very important. Ensure contractors only bring clean machinery onto your property because “one year’s seeds makes seven years of weeds”.

Weed Spread

Weeds spread in the environment as plant material or through seed dispersal. Plant material might be dumped garden waste, whereas seeds are naturally dispersed by:

- animals and birds
- wind and water
- soil movement
- seed pod actions

Unintentional spread of weeds occurs with:

- topsoil on machinery moved from one area to another;
- gravel and quarried materials contaminated with seed such as gorse and broom;
- soil on peoples’ boots;
- along roadsides where vehicles produce air currents which move wind blown seed;
- hay making machinery or hay bales moved from one area to another;
- fodder, grain or birdseed.

Agricultural Weeds

Some agricultural weeds are also declared weeds, such as ragwort and californian thistle. Other agricultural weeds, for example, wild radish and capeweed, are not declared but can be costly to control, and in many cases are toxic to stock. These include:

- spear thistle
- capeweed
- wild radish
- dock
- cumbungi
- *Glyceria maxima (Poa aquatica)* reed sweetgrass

PLANNING WEED CONTROL

When planning weed control consider:

- Which method or combination of methods – mechanical, chemical, biological or manual
- Mechanical control may result in weed heaps which need to be burnt, therefore the placement of the heaps needs to be thought out, and whether a fire permit will be necessary
- Special precautions if using chemicals in waterways
- Estimate a patch size that you can manage to control, and only take on an area where you know you can carry out **follow up** work. A lot of time, effort and money is wasted in weed control by not being able to **follow up**
- Making your plan site specific
- New weed incursions which may result from drought, fire, flood, contaminated vehicles and farm equipment, imported feed and other materials
- Practicing strict bio-security measures and designating specific vehicle and equipment wash-down areas, monitor for new weed incursions, for example in new feed out areas for livestock
- Start with smaller, outlier patches and work into the largest patch
- Time of year is critical for successful weed management, herbicide treatment should only be employed on actively growing plants before they flower and set seed
- The mantra for effective weed control is **follow up follow up follow up**
- All plants are like us and need a space to live. Weeds are often plants which rapidly colonise bare ground and out compete other plants. When planning weed management, don’t leave bare ground for more weeds to re-colonise. The timing for re-planting with beneficial plants is critical though, not too soon in case soil stored seed germinates, but before other weeds take over the bare ground.

HEAVY MACHINERY

Heavy machinery such as an excavator or dozer can be used for raking up dense woody weed infestations, for example gorse, or removing willows from rivers and streams in conjunction with the cut stump and paint method.

A mulching machine or meri-crusher attached to a tractor is another method of gorse control which mulches the gorse material.

Heavy machinery can be a good, initial option if weed infestations such as gorse or broom are large and dense. However, mechanical control creates soil disturbance, so landholders need to be aware that after the initial control, a mass germination will occur from soil stored seed, and the mantra **follow up** control, is imperative.

An excavator can also be used for the removal of riparian and aquatic weeds *Glyceria maxima* (*Poa aquatica*) and cumbungi *Typha* spp. The benefits of mechanical control mean that less chemical is being applied, particularly if the target weeds occur in a waterway. However the machine operator needs to be very careful not to alter the structure of the waterway. Also consider that the excavated material (gorse or *Glyceria* or willows) still needs to be disposed of, which may require burning the heap.



MANUAL REMOVAL

The Bradley method was pioneered by two sisters in Sydney who wanted to remove weeds from bush areas.

The method revolves around minimal disturbance, hand weeding if possible, and allowing native vegetation to re-establish naturally. Importantly start with the outliers, small isolated patches and work into the thickest patch of weeds. Also don't clear large patches of weeds at one time which results in bare ground and weeds recolonising; give natives a chance to germinate and establish ground cover before removing the next patch of weeds.

Hand pulling can be very successful as long as it is followed up. Other manual removal methods are: cut and paint method where the stem or trunk of the weed (gorse for example, is cut with a saw and then Glyphosate is applied to the cut stump, within 30 seconds of cutting). This method results in much less chemical in the environment, the chemical is not applied with a sprayer so is safer for the operator and results in targeted application. The cut material will still need to be disposed of appropriately.

Controlling weeds in or near waterways is especially challenging. By law a person must not apply chemicals within 0.5 km up-stream of potable water intake in flowing water (a river or stream), or within 0.5 km of a potable water intake in a standing body of water such as a lake, pond or reservoir. Roundup Bioactive® or Weedmaster 360® without added surfactants are the only safe option for infestations near waterways (these are the only herbicides registered for use near waterways).

Remember to correctly identify your target weed. There are several native plants which are similar to some target weeds such as:

gorse *Ulex europaeus* - native gorse *Daviesia ulicifolia*

spanish heath *Erica lusitanica* - common heath *Epacris impressa*

cumbungi *Typha* spp. - 2 species are introduced, 1 species is native

Currant bush *Coprosma quadrifida* - spiny and may look a worry, but is a native and produces berries for native birds



BIOLOGICAL

A number of different biological control agents are used in Tasmania. For example, the gorse spider mite lives in colonies on the host, covered by a web and feeds on the gorse plant. Often biological control weakens the host, or interferes with the fertility of the plant, but may not kill the host.

CHEMICAL

We would all like to use fewer chemicals in the environment, but sometimes the careful use of chemicals can result in less physical disturbance to a site.



In a particular situation it may be possible to use the cut and paint method, or drill and fill which are very target specific applications, rather than spraying which has the potential to harm non-target plants. The most important message for chemical use is to **READ THE LABEL**, and mix only at the rates as directed. Use the correct chemical for the task and please consider your own safety and biodiversity. It is possible to look at chemical labels and Material Safety Data Sheets (MSDS) on line before purchasing chemicals, and guidelines are also given on DPIPWE weed website under the chemical control link for specific weeds.

ChemCert courses are run periodically in all states; these courses are accredited and cover safe chemical handling and use. For more information visit their website: www.chemcert.com.au. Wearing the correct protective equipment is essential, and can include gloves, face mask, long sleeved shirt and trousers as a minimum.

FURTHER INFORMATION

The DPIPWE website provides a wealth of information on weeds including management options and plans, follow the tabs on invasive species and the weed index: <http://www.dpipwe.tas.gov.au>

An Australian Weeds Committee National Initiative: <http://www.weeds.org.au/>

DPIPWE - Guidelines for Safe and effective Herbicide Use Near Waterways: <http://dpipwe.tas.gov.au/Documents/HerbicideGuidelines.pdf>

IWM – Integrated Weed Management: <http://www.csiro.au/outcomes/food-and-agriculture/iwm>

Weeds Of National Significance <http://www.weeds.org.au/WoNS/>

Washdown Guidelines for Weed and Disease Control - Edition 1 downloadable from: <http://dpipwe.tas.gov.au/Documents/Washdown-Guidelines-Edition-1.pdf>

Southern Tasmanian Weed Strategy 2005 -10 and other regional weed information can be downloaded from: <http://stca.tas.gov.au/weeds/downloads/> (For local council weed management strategies contact your local council)

Richardson FR, Richardson FG, Shepherd RCH. 2011. Weeds of the South-East: An Identification Guide for Australia. RG and FJ Richardson.

Blood K. 2003. Environmental Weeds: A Field Guide for SE Australia. Blooming Books.

Hyde-Wyatt BH, Morris DI. 2011. Tasmanian Weed Handbook: A Guide to the identification of the main weeds of crops and pastures in Tasmania. Department of Agriculture Tasmania.

Moore J, Wheeler J. Southern Weeds & their Control. Department of Agriculture and Food.

Fixed point photography guide: <http://www.nrmsouth.org.au/wp-content/uploads/2014/08/Photo-Monitoring-Fact-Sheet-NRM-South.pdf>

For more information please refer to NRM South's Healthy Farming & Environment Reference Guide: <http://www.nrmsouth.org.au/>