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<td>108</td>
<td></td>
</tr>
<tr>
<td>Senecio madagascariensis</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>Silene vulgaris</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Silybum marianum variegated</td>
<td>124</td>
<td></td>
</tr>
<tr>
<td>Solanum elaeagnifolium</td>
<td>113</td>
<td></td>
</tr>
<tr>
<td>Solanum linnaeum</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Stratiosites aloides</td>
<td>127</td>
<td></td>
</tr>
<tr>
<td>Striga spp. witchweeds</td>
<td>131</td>
<td></td>
</tr>
<tr>
<td>Tamarix aphylla</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Tamarix parviflora</td>
<td>119</td>
<td></td>
</tr>
<tr>
<td>Tamarix ramosissima</td>
<td>119</td>
<td></td>
</tr>
<tr>
<td>Toxicodendron radicans</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>Toxicodendron succedaneum</td>
<td>108</td>
<td></td>
</tr>
<tr>
<td>Trachyandra divaricata</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Trapa natans</td>
<td>126</td>
<td></td>
</tr>
<tr>
<td>Tribulus terrestris</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Ulex europaeus gorse</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Vachellia nilotica subsp. indica</td>
<td>107</td>
<td></td>
</tr>
<tr>
<td>Watsonia meriana var. bulbilfera</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Xanthium spinosum Bathurst burr.</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Xanthium strumarium sp. agq.</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>Zantedeschia aethiopica</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>
ABOUT THIS BOOK

This book provides information on how to control South Australia’s declared plants. The first section of the book provides information regarding declared plants, weed control methods and the important legal, environmental and work health and safety (WHS) considerations when using herbicides for weed control.

The second section is a table of treatment options to manage or control these weeds, including rates and application methods of herbicides for each weed. These treatments were compiled with assistance from people with experience in controlling South Australia’s declared plants including Natural Resources Officers, bush regenerators and agronomists. All control methods that involve herbicides are checked annually against the current registered labels and permits.

The table lists declared plants in alphabetical order by their common name. Herbicide active ingredient(s) are then listed in alphabetical order for each plant along with the registered or permitted application rate, method and timing, the herbicide’s mode of action and general comments regarding the treatment method. Please note that one example product name has been included for each herbicide; there are often many products with the same active ingredient and users should shop around in choosing a product with the correct active ingredient(s).

All herbicide treatments listed in the table are registered or permitted for use by the Agricultural Pesticides and Veterinary Medicines Authority (APVMA). Users should refer to the label or permit for specific details about the situation within which the herbicide may be used. Some herbicide treatments that are registered in South Australia are included for particular weeds that are noted as being on the label only in some other States. Throughout the table, registered uses are labelled ‘registered’ and permit numbers (e.g. PER 1234) are provided for permitted uses.

IMPORTANT: The herbicide treatments provided in this book should be considered a guide only and users of agricultural chemical products must always READ THE LABEL before using a product and strictly comply with the directions on the label and/or conditions of any permit.
DECLARED PLANTS

Declared plants are plants that are regulated under the Natural Resources Management Act 2004 due to their weed threat to South Australia’s primary industries, natural environments and public safety. Plant species are declared under various provisions of the Act relating to:

- **Movement** – The declared plant must not be moved on a public road (e.g. as a cutting, seed or potted specimen). Inadvertent movement of the plant on animals, soil, vehicles, machinery or produce may also be prohibited.
- **Sale** – The declared plant must not be sold at any outlet including nurseries, pet shops and market stalls. Sale of any animal, soil, vehicle, machinery or produce contaminated with the plant may also be prohibited.
- **Notification** – The presence and locations of the declared plant must be reported to the regional NRM Authority by the owner of the land.
- **Control** – Landowners are required to take action to destroy or control certain declared plant species present on their property. NRM Authorities are also responsible for controlling these declared plants on road reserves, and may have the power to recover costs of control from the adjoining landowners.

Some or all of these provisions apply to each declared plant depending on the region where the plant occurs. Details of plant declarations can be found at www.pir.sa.gov.au/biosecurity/weeds_and_pest_animals/weeds_in_sa/plant_policies.

Land owners, including the Crown, are responsible for the control of declared weeds on their own land. The regional NRM Authorities are responsible for co-ordinating weed control in each region. If a weed species is targeted for enforced control on properties, the Authority has responsibility for its control on road reserves, and may recover the costs of this work from the owners of adjoining land.

Within Local Government areas, control of all non-declared weeds on a road reserve is a responsibility of the local Council. Outside Local Government areas or on controlled access roads such as expressways, it is a responsibility of the Department of Planning, Transport and Infrastructure (DPTI). Any land owners who wish to carry out work on a road reserve must obtain permission from their local Council and should also consult their Natural Resources Centre for advice. Outside Local Government areas or on controlled access roads they must obtain permission from DPTI.

The responsibilities of land owners and others also include preventing the inadvertent movement of declared plants on livestock, soil, vehicles, machinery or produce.
Weeds of National Significance (WoNS)

Included in South Australian declared plant list are all Weeds of National Significance (WoNS). WoNS have been identified as national threats due to their invasiveness, economic and environmental impacts. There are national strategic plans for their management. These weeds are denoted as ‘WoNS’ in the treatment options table.

ALERT WEEDs

ALERT WEEDs are also included in South Australia’s declared plant list. ALERT WEEDs are high threat species that, should they enter the state, have the potential to invade and cause significant economic and environmental impacts. All people should be on the lookout and report ALERT WEEDs to their local NRM Authority. ALERT WEEDs may also be WoNS weeds. These weeds are denoted with ‘AW’ in the table.

Importance of Early Intervention

All weed management has costs, and these are paid by the community. Weed management benefits the community in terms of production and asset protection.

Prevention of entry is the most cost-effective form of weed control; eradication of a new introduction is also good value. Containment may have worthwhile returns on investment when a weed with high impacts is still absent from vulnerable lands. Beyond this stage, decisions on control effort are made by land managers according to value of the asset and the impact of the weed.

Economic Returns

Based on information from Invasive Plants and Animals Policy Framework, Department of Primary Industries Victoria.
HERBICIDE USE

Herbicide registration

Agricultural chemical products must be registered by the Australian Pesticide and Veterinary Medicines Authority (APVMA) in accordance with the Agricultural and Veterinary Code Act 1994 (AGVET code) and the Agricultural and Veterinary Chemicals Administration Act 1994. In South Australia the main legislation controlling the use of agricultural and commercial pesticides is the Agricultural and Veterinary Products (Control of Use) Act 2002 (AGVET Control of Use Act) and the Agricultural and Veterinary Products (Control of Use) Regulations 2004 (AGVET Control of Use Regulations). This legislation is administered and enforced by PIRSA.

Each registered product has a label providing instructions on safety, use and disposal as well as identifying the active constituents and other ingredients of the product. Labels also outline the pests, crops and situations where the herbicide may be applied. In certain situations the APVMA may issue a minor use permit for use of a herbicide in a situation not specified on the label. Permits need to be applied for and will have specific conditions and expiry dates that must be adhered to.

Following label or permit instructions ensures that herbicides are used effectively and do not have a negative impact on the environment, health, safety and trade. It is an offence to use unregistered pesticides unless you have a permit. To search for registered and permitted products visit the APVMA on line database at: https://portal.apvma.gov.au/pubcris

The use of herbicides in a manner that varies from the label instructions is called off-label use. A herbicide may only be used on a crop or situation for which it is registered, and at a rate not exceeding the maximum rate specified on the label for that use, unless the off-label use is covered by a currently valid permit issued by APVMA. For example, if a herbicide is registered only for use in tree crops it is not legal to use it on pastures.

In South Australia limited off-label use is allowed for activities deemed low risk. In these situations:

- You may use a pesticide at less than the label rate of application.
- You may use a pesticide less frequently than advised on the label.
- You may use a pesticide to treat a pest not mentioned on the label as long as the crop is specified and you follow all other label conditions.
- If there are no instructions for the use of the product on a crop in South Australia, then the product may be used on that crop if it is listed for another state. The product must not be used at a higher rate or frequency than listed for the crop in the other state, and must not be used if the label specifies that it is not for use in South Australia.

It should also be understood that the manufacturer makes no claim for the efficacy of the herbicide if it is used in any off-label way.
Herbicide toxicity

Many herbicides are hazardous chemicals toxic to humans and other living things and their inappropriate use can cause harm. Where possible choose herbicides with a low toxicity to humans and animals. The degree of toxicity of a herbicide is outlined on the label as a poison schedule. Poison scheduling is the national system used to classify substances based on their potential health risks.

When using herbicides personal protection equipment (PPE) must always be worn to avoid contact with and absorption into the body. The degree of PPE required may depend on the application method and the herbicide’s toxicity; however, users should always wear:

- Chemical impervious, PVC or nitrile gloves,
- eye protection,
- a respirator (with a filter appropriate to the level of toxicity), and
- clothes, a hat and boots that cover the whole body.

For higher risk herbicides more PPE and additional precautions may apply, including wearing a full face respirator and chemical resistant overalls.

### HERBICIDE POISON SCHEDULING

<table>
<thead>
<tr>
<th>SIGNAL HEADING</th>
<th>SCHEDULE</th>
<th>DEGREE OF HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>No signal heading required; ‘Keep out of the reach of children’ only</td>
<td>Unscheduled</td>
<td>Low toxicity</td>
</tr>
<tr>
<td>Unscheduled</td>
<td>Not considered poisons however they may be capable of causing minor adverse effects to human beings in normal use.</td>
<td></td>
</tr>
<tr>
<td>‘Caution’</td>
<td>Schedule 5</td>
<td>Slight degree of hazard</td>
</tr>
<tr>
<td>‘Poison’</td>
<td>Schedule 6</td>
<td>Moderate degree of hazard</td>
</tr>
<tr>
<td>‘Dangerous Poison’</td>
<td>Schedule 7</td>
<td>High degree of hazard</td>
</tr>
</tbody>
</table>

By law, Schedule 7 chemicals must not be sold to or be used by persons who have not completed appropriate training (e.g. ChemCert or equivalent) and shall not be used in domestic settings.
Herbicide spray drift

The drift of fine spray droplets away from the target area can cause off-target damage to plants, aquatic environments or humans. All herbicides are capable of drift; however the extent and damage caused by the drift will depend on the amount of drift, type of herbicide used and the susceptibility of the non-target plants and animals.

All users have a moral and legal responsibility to prevent herbicides (and other pesticides) from drifting and contaminating or damaging neighbouring properties and off-target species.

Spray drift can result in chemical trespass, the term used to describe the trespass of chemicals to off-target properties, crops or the environment that causes:

- Actual or potential contamination of land, animals or plants outside the target area.
- Actual or potential harm to human health and safety (within or outside the target area).
- Actual or potential environmental harm (within or outside the target area).

Chemical trespasses can be reported to the Rural Chemicals division of Biosecurity SA, who will trigger an investigation and appropriate response to the incident. Penalties can apply.

How to avoid spray drift and chemical trespass

Where possible choose herbicides that are selective to the weed, are the least toxic to humans, animals and the environment, and pose the least threat to surrounding off target plants

Prior to spraying:

- Check for nearby sensitive areas such as houses, schools, riparian (waterway) areas and susceptible crops/pastures,
- Notify neighbours of planned herbicide treatments,
- Check the expected weather conditions and do not spray if windy, still, humid or hot conditions are forecast during spray activities, and
- Read and follow the label drift reduction recommendations.

During spraying:

- Carefully monitor weather conditions and the drift hazard
  - Do not spray when temperatures exceed 28 degrees Celsius
  - Do not spray under still or very windy conditions
  - Suitable wind speeds for spraying are 7-10 km/h (a light breeze)
  - Do not spray after 11am in summer to avoid midday turbulence and
  - Do not spray during low relative humidity conditions,
- Maintain a downwind buffer from neighbouring properties/paddocks,
- Do not spray upwind of sensitive areas,
- Minimise spray release height (as low to the ground as possible),
- Always use the least volatile formulation of herbicide, and
- Use nozzles and spray settings that produce a minimum proportion of small, drift-prone droplets (e.g. lower pressure, large droplets and higher spray volume).
Herbicide use near waterways

Many herbicides can damage aquatic ecosystems. Plants, invertebrates, amphibians and fish may be harmed when herbicides contaminate a body of water. Inappropriate use of herbicides may also cause significant risks to human health where water is pumped from a bore for domestic use, or flows to a reservoir. Herbicides can enter water bodies either directly through spray or spray drift, or they can move into water bodies via surface water run-off or leaching and sub-surface draining.

When planning to undertake weed control within or immediately adjacent to a water body, the use of herbicides should be avoided where practical - can the use of biological control, mowing, slashing or hand removal be employed instead of herbicides?

If herbicides must be used near waterways choose products registered for use in aquatic areas, for example some glyphosate products. Always read the label carefully.

Herbicides more appropriate for use near waterways will have the following characteristics:

- low eco-toxicity,
- nil or low volatility at all temperatures to reduce spray drift potential,
- low water solubility to reduce potential for leaching to groundwater,
- high soil absorption coefficient to reduce potential for leaching into groundwater,
- a short half-life.

Because of the sensitivity of aquatic environments, it is recommended that only trained, licensed contractors carry out spraying operations near water bodies. However, if you feel you can select the appropriate chemical, apply it according to best practice and avoid environmental or personal harm, then the following points are critical.

Important points to remember when applying herbicides near aquatic areas

- Use only herbicides registered for use near waterways and always read and follow the label directions carefully,
- Where possible use methods that avoid the need to spray herbicides e.g. cut stump and stem injection,
- Never spray herbicides over a water body unless they are registered for this specialised use,
- When you are working near the edge of a water body, direct the spray away from the water body where possible,
- Spray only to the extent of covering foliage with droplets,
- Spray when weather is calm; strong winds may carry herbicide drift into water bodies.
- Use a flat fan nozzle and a low pump/spray pressure to reduce the likelihood of spray drift, and
- Do not spray when rainfall is forecast within six hours as herbicide can be washed off the pest plant and run off into aquatic ecosystems.

For more information about control of weeds near waterways refer to Safe and Effective Herbicide Use: A handbook for near-water application produced by the Environment Protection Authority.

Herbicide mode of action and herbicide resistance

Herbicides act by interfering with specific processes in plants; this is known as the herbicide’s mode of action. Different herbicides may have the same mode of action and herbicides with the same mode of action are grouped from A to Z – see table below for examples. The herbicide group of the active ingredient(s) is clearly shown on each product label.

**HERBICIDE POISON SCHEDULING**

<table>
<thead>
<tr>
<th>HERBICIDE GROUP LABEL - MODE OF ACTION</th>
<th>HERBICIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Inhibition of acetyl CoA carboxylase (ACCase)</td>
<td>fluazifop-p; cyhalofop butyl and others</td>
</tr>
<tr>
<td>B Inhibition of acetolactate synthase ALS</td>
<td>chlorsulfuron; flumetsulam; imazapyr; imazethapyr; metsulfuron-methyl; triasulfuron and others</td>
</tr>
<tr>
<td>C Inhibition of photosynthesis (PS II inhibitors)</td>
<td>bromoxynil; hexazinone; tebuthiuron and others</td>
</tr>
<tr>
<td>D Inhibition of microtubule assembly</td>
<td>chlorthal-dimethyl; trifluralin</td>
</tr>
<tr>
<td>I Disruption of plant cell growth (synthetic auxins)</td>
<td>triclopyr; picloram, dicamba; MCPA; 2,4-D; clopyralid, fluoroxypr and others</td>
</tr>
<tr>
<td>J Inhibition of lipid synthesis</td>
<td>flupropanate; 2-2-DPA</td>
</tr>
<tr>
<td>L Inhibition of photosynthesis (PS I Inhibitors)</td>
<td>diquat</td>
</tr>
<tr>
<td>M Inhibition of EPSP synthase</td>
<td>glyphosate</td>
</tr>
<tr>
<td>N Inhibition of glutamine synthetase</td>
<td>glufosinate</td>
</tr>
<tr>
<td>Z Unknown</td>
<td>MSMA</td>
</tr>
</tbody>
</table>

Herbicide resistance is the inherent ability of weeds to survive a herbicide treatment that would normally control them. Herbicide resistant plants are usually present in weed populations at low frequencies. These resistant individuals do not become apparent until a herbicide with the same mode of action is used repeatedly and the resistant weeds are allowed to survive, set seed and multiply while susceptible plants are killed. Resistant individuals can thus become more common over time.

If herbicide resistance develops, other herbicides (with a different mode of action) or other control methods (non-chemical) will need to be used. Once herbicide resistance occurs it will persist for many years.

To minimise the chance of herbicide resistance it is important to use a range of weed control methods and alternate between different herbicide groups. For further information, please see the WeedSmart Website, www.weedsmart.org.au

**Herbicide compatibility**

Using more than one herbicide in a herbicide mix can be an effective method of controlling hard to kill weeds or kill a broader range of weeds; however not all herbicides are compatible. When using more than one herbicide in a mix, users must ensure they are compatible. Compatible herbicides will be listed on the product label.
Herbicide adjuvants

An adjuvant is any additive intended to improve a herbicide's effectiveness. There are many adjuvants available that help herbicides adhere to and penetrate the weed (see table below). The most commonly used ones are surfactants (also known as wetters), penetrants and dyes. Only ever use adjuvants that are compatible with the herbicide chosen; these will be listed on the herbicide label.

<table>
<thead>
<tr>
<th>HERBICIDE ADJUVANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adjuvants that enhance product efficiency</strong></td>
</tr>
<tr>
<td>Surfactants/ Wetters / Spreaders - enhance adhesion to and spreading of spray droplets on target surfaces by reducing the surface tension of the pesticide formulation and improving coverage, such as;</td>
</tr>
<tr>
<td>• Non-ionic surfactants – non-reactive, i.e. they do not have a negative charge or a positive charge; they remain on the leaf once dry and allow rewetting after rain, permitting additional pesticide uptake</td>
</tr>
<tr>
<td>• Anionic surfactants – negative charge</td>
</tr>
<tr>
<td>• Cationic surfactants – positive charge</td>
</tr>
<tr>
<td>• Amphoteric surfactants</td>
</tr>
<tr>
<td>• Organo-silicate surfactants</td>
</tr>
<tr>
<td>• Acidified surfactants</td>
</tr>
<tr>
<td>Stickers - increase adhesion of pesticides to target surfaces.</td>
</tr>
<tr>
<td>Penetrants - improve the transfer of active ingredients from the target surface to interior tissues.</td>
</tr>
<tr>
<td>Extenders - enhance the amount of time the active ingredient remains toxic by increasing resistance to environmental degradation.</td>
</tr>
<tr>
<td>Humectants - increase the density/drying time of an aqueous spray deposit.</td>
</tr>
<tr>
<td><strong>Adjuvants that improve ease of application</strong></td>
</tr>
<tr>
<td>Acidifying/buffering agents - agents adjust the pH of alkaline or acidic water and minimise decomposition of the pesticide through alkaline hydrolysis.</td>
</tr>
<tr>
<td>Anti-foaming/de-foaming agents - reduce or suppress the formation of foam in the spray tank preventing foam overflow.</td>
</tr>
<tr>
<td>Compatibility agents - permit the mixing of different agrochemicals by preventing antagonism between different ingredients in the spray solution.</td>
</tr>
<tr>
<td>Drift control agents - alter the viscoelastic properties of the spray solution yielding a coarser spray with greater mean droplet sizes.</td>
</tr>
<tr>
<td>Dyes - commonly used for spot or boom spraying herbicides to detect missed spots or avoid spraying a plant or area twice.</td>
</tr>
<tr>
<td>Water conditioners - prevent reaction between hard water ions in spray solutions and suppress formation of precipitates or salts.</td>
</tr>
</tbody>
</table>
WEED CONTROL METHODS

There are a number of methods available to treat weeds and choosing the most suitable option will depend on:

- The aim of the control,
- The scale of the problem,
- The resources available,
- Time constraints, and
- The situation and location of the weeds.

Herbicides alone should not be relied upon for weed control; instead, an integrated Weed Management (IWM) approach should be taken. Integrated Weed Management (IWM) combines appropriate weed control options including physical removal, chemical control, biological control and cultural control to achieve effective long term control.

TIPS FOR SUCCESSFUL WEED CONTROL

PREVENTION IS CHEAP
- Ensure vehicles, machinery, livestock and produce do not carry weed seeds.
- Report sales of declared plants to your local Natural Resources centre or Biosecurity SA.
- Pay particular attention to ALERT WEEDs – most have yet to become established in SA.

FIND WEEDS EARLY
- Get to know plants in your area/on your property and quickly identify and deal with new threats.

WATCH YOUR SPREAD
- Take measures to contain weed infestations and prevent further weed dispersal.

PLAN YOUR CONTROLS
- Obtain information about managing your target weed.
- Map infestations.
- Treat weeds when they are young.
- Use the recommended control method. Minimise damage to non-target plants. Establish and promote competing vegetation.

UNDERTAKE FOLLOW UP CONTROL
- Continue follow up treatments over several years. Some plants may have been missed, some may not have died and new seedlings may emerge.
Minimising weed spread

One of the commonest ways in which weeds are spread is via vehicles and other machinery that has travelled through an infested area.

The easiest way to prevent weed spread is to thoroughly clean vehicles and machinery before leaving a site. The most effective cleaning options include:

- Air blast hard-to-reach spots such as cavities and joints while the vehicle and any contaminants are still dry.
- Wash the vehicle down using a low or high pressure cleaner, or a spray tank and pump. A commercial car wash will also remove the majority of weed seeds. Clean the vehicle from the top down. Spray the tyres and move the vehicle forward to ensure the whole tyre is clean.
- Vacuum inside the cab to remove contaminants.
- Use a brush or scraping implement to remove contaminants such as burrs and clods of mud from tynes or tyres.

Also consider

- Using detergents to assist the removal of grease, dirt and mud, which may contain weed seeds.
- Clean the undercarriage, springs and axles of trailers.
- For boats, check the floor and sides, propellers, anchor wells, cooling system inlet, bilges and bait wells.
- Clean footwear and remove weeds seeds from socks and other clothing.
- Use the same site for cleaning and monitor it regularly for weeds.

Contaminated material must be disposed of in a way that ensures all weeds and seeds removed cannot spread or grow.

NON-HERBICIDE CONTROL METHODS

Hand pulling

Hand pulling is an option for small numbers of plants with tap roots that are not too deep. It is suitable for seedlings, herbaceous weeds and some grasses, and is easiest when the soil is moist. A hand tool called the Tree Popper has been produced for levering out larger woody weeds.

When hand pulling, ensure the majority of the tap root has been removed and take measures to minimise soil disturbance. If the plant has the ability to vegetatively reshoot from fragments or has mature seeds attached, carefully pull, bag, remove and destroy the plants appropriately, taking care not to spill seeds along the way. Remember your work health and safety when doing physical activities.

Grubbing and/or digging out

This method involves digging weeds out using a mattock, spade or hoe and is suitable when there are a small number of plants. Grubbing and digging out can be useful for weeds that have their growing points at ground level or below the surface of the ground such as weeds with corms, bulbs, rhizomes, clumped or fibrous root systems and grasses. This method involves removing all the above and underground parts of the plant (including bulbs, corms, etc.) to prevent any part of the plant from regrowing. Often a great deal of soil disturbance can result from this method and follow-up monitoring for new germinations or regrowth is required. For some plants the above or underground parts of the plants (bulbs, corms etc.) will need to be carefully removed from the site and disposed of appropriately.
Mechanical control methods

Mechanical control refers to the removal or manipulation of weeds using power tools or machinery and is usually used for large, dense infestations. Commonly employed methods include:

- Using a slasher or mower to reduce weed growth and restrict flowering at critical times of the plant’s lifecycle.
- Using a tractor to blade plough woody weeds out of the ground and destroy their root system.
- In a cultivated paddock, using a tractor and disc plough to sever roots and/or bury weeds.
- Using a mulcher to turn woody weeds into a thick mulch layer which is spread back over the area to suppress regrowth and new germinations.
- Using a mechanical weed puller attached to a tractor to pull woody weeds out of the ground.

Mechanical control using heavy machinery (such as bulldozers) can result in a great deal of disturbance and may increase erosion, damage native vegetation and/or promote further weed seed germinations. When considering the use of heavy machinery ensure that it is suited to the situation.

Fire

In some situations fire can be a useful method to reduce weed biomass, clear an area for follow-up chemical control and, for some fire sensitive species, destroy the plant altogether. Areas that have been burnt need to be monitored to ensure desirable species re-establish and weed species are suppressed through follow-up control.

Some weeds such as buffel grass may actually benefit from fire. If the area contains rare or endangered species, or desirable species not adapted to fire, fire may destroy these plants and their seed bank. If undertaken in the wrong season, burning may result in a hot fire and lead to long-term damage or increased erosion. The use of fire as a weed management tool must therefore be used with extreme care.

Before any planned burn, all necessary permissions must be obtained from the Local Council, Native Vegetation Authority and the South Australian Country Fire Service.

Competition

Competition using planted or regenerating native plants or pastures is an essential part of long-term weed management. Encouraging and maintaining cover of desired species will suppress weed growth, flowering and weed seed production by reducing access to available sunlight, nutrients and moisture.

On grazing land, managing grazing pressure to avoiding patches of bare ground is an important preventative strategy for weed management. Weeds will typically invade overgrazed, high traffic areas where the ground is bare. Maintaining sustainable grazing pressure and moving stock regularly can ensure that weeds are less likely to find places to colonise.

Biological control

Plants introduced into Australia usually arrive without the natural enemies that kept their populations in check within their natural range. Without these natural enemies introduced plants are able to rapidly reproduce and spread, becoming weeds.

Biological control is the use of a weed’s natural enemies, such as insects, mites or pathogens (bacteria or fungi), which affect the health of the weed by either feeding or parasitising on it. Usually, the biological control agents come from the country of origin of the weed. A well-known example was the release of the Cactoblastis moth to control prickly pear in Queensland in 1926; within 6 years the moth virtually eliminated all major stands of prickly pear. Biological controls are not usually this successful but serve as an important tool to limit the growth and spread of the target weed and hence reduce the cost of other control methods.

It is critical that biological control agents introduced into Australia do not become pests themselves. Therefore, prior to introduction, rigorous testing is done on the agent to ensure it is specific only to the target weed they are intended for.

Examples of biological agents established in South Australia include: the crown weevil on Salvation Jane; the spider mite on gorse; the plume moth on horehound; a leaf rust fungus on blackberry; the leaf buckle mite on boneseed; a leaf hopper, a rust and a leaf beetle on bridal creeper; and many more. Current information about these agents can be found in Ivory and Mantel (2013), A Guide to Biological Control in South Australia.
### BIOCONTROL AGENTS CURRENTLY PRESENT ON DECLARED WEEDS IN SOUTH AUSTRALIA

<table>
<thead>
<tr>
<th>WEED COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>AGENT COMMON NAME</th>
<th>SCIENTIFIC NAME</th>
<th>MODE OF ACTION</th>
<th>NRM REGIONS WHERE RELEASED</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boneseed</td>
<td>Chrysanthemoides monilifera</td>
<td>Leaf buckle mite</td>
<td>Aceria sp.</td>
<td>Induces the formation of galls on developing leaves causing distorted leaf growth.</td>
<td>AMLR, SAMDB, SE</td>
<td>Not available for community distribution due to variable establishment and lack of field collection sites.</td>
</tr>
<tr>
<td>Bridal creeper</td>
<td>Asparagus asparagoides</td>
<td>Leafhopper</td>
<td>Zygina sp.</td>
<td>Adult and nymph feed on leaves, bleaching leaves and defoliating plants.</td>
<td>AMLR, EP, KI, NY, SAMDB, SE</td>
<td>Insects available from SE Natural Resources Management Region field sites in most years.</td>
</tr>
<tr>
<td>Rust fungus</td>
<td>Puccinia myrsiphylli</td>
<td>Fungus</td>
<td></td>
<td>Fungus infects leaves, stems reducing above ground plant biomass.</td>
<td>AMLR, EP, KI, NY, SAMDB, SE</td>
<td>Use spore water technique for distribution. Rust available in most regions.</td>
</tr>
<tr>
<td>Leaf beetle</td>
<td>Crioceris sp.</td>
<td>Larva</td>
<td></td>
<td>Larva feed on young shoots, leaves during early stage of the season.</td>
<td>EP, SE, AMLR</td>
<td>Not available for community distribution due to variable establishment and lack of field collection sites.</td>
</tr>
<tr>
<td>Cape broom</td>
<td>Genista monspessulana</td>
<td>Cape broom psyllid</td>
<td>Arytinnis hakani</td>
<td>Nymph feeds on leaves and buds, sucking sap.</td>
<td>AMLR, SAMDB, SE</td>
<td>Psyllid is well distributed across most of the range. Check plants first for nymphs and adults and characteristic sugar deposits at growing tips. Tie a cutting infested with psyllid nymphs and adults onto uninfected plants.</td>
</tr>
<tr>
<td>Drooping tree pear</td>
<td>Opuntia moncanthana</td>
<td>Cochineal</td>
<td>Dactylopius sp.</td>
<td>Adult female bug sucks sap</td>
<td>AMLR</td>
<td>Limited distribution.</td>
</tr>
<tr>
<td>Engelmann's prickly pear</td>
<td>Opuntia engelmannii</td>
<td>Cochineal</td>
<td>Dactylopius sp.</td>
<td>Adult female bug sucks sap</td>
<td>SAAL</td>
<td>Variable establishment and impact</td>
</tr>
<tr>
<td>English broom</td>
<td>Cytisus scoparius</td>
<td>Broom twig mining moth</td>
<td>Leucoptera spartifoliella</td>
<td>Larva mines (bores into) stems</td>
<td>AMLR</td>
<td>Not available for community distribution due to lack of field collection sites.</td>
</tr>
<tr>
<td>Broom psyllid</td>
<td>Arytainilla spartiophila</td>
<td>Adult and nymph feed on buds or shoots by sucking sap.</td>
<td>AMLR, SAMDB</td>
<td>Not available for community distribution due to unknown establishment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gall mite</td>
<td>Aceria genistae</td>
<td>Mite induces leaf and flower galls potentially restricting photosynthesis and flower production</td>
<td>AMLR, SAMDB</td>
<td>Limited distribution in AMLR Natural Resources Region.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>European blackberry</td>
<td>Rubus fruticosus agg.</td>
<td>Leaf rust fungus</td>
<td>Phragmidium violaceum</td>
<td>Rust infects leaves, defoliates plant</td>
<td>AMLR, EP, SAMDB, SE</td>
<td>New strains not available for community distribution due to lack of field collection sites.</td>
</tr>
<tr>
<td>WEED COMMON NAME Scientific name</td>
<td>AGENT COMMON NAME Scientific name</td>
<td>MODE OF ACTION</td>
<td>NRM REGIONS WHERE RELEASED</td>
<td>COMMENTS</td>
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<tr>
<td><strong>Gorse</strong> <em>Ulex europaeus</em></td>
<td><strong>Seed weevil</strong> <em>Exapion ulics</em></td>
<td>Larva feeds on developing seeds in pods over spring and summer</td>
<td>AMLR, SAMDB</td>
<td>Well distributed across range. Open pods in late spring summer and check that weevils are not already present.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spider mite</strong> <em>Tetranychus lintearius</em></td>
<td><strong>Mite colonies feed on leaves, extract cell contents bleaching plants</strong></td>
<td>AMLR, NY, SAMDB, SE</td>
<td>When collecting spider mite from the field be sure to collect the last 5cm of an infested branch to avoid redistributing known predators.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Thrips</strong> <em>Sericothrips staphylinus</em></td>
<td>Adults and juveniles suck out cell contents of leaves</td>
<td>AMLR, SAMDB</td>
<td>Not available for community distribution due to lack of field collection sites</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Soft-shoot moth</strong> <em>Agonopterix ulicetella</em></td>
<td>Caterpillars feed on new buds, shoots restricting growth</td>
<td>AMLR</td>
<td>Not available for community distribution due to early stage in release program.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Horehound</strong> <em>Marrubium vulgare</em></td>
<td><strong>Horehound plume moth</strong> <em>Wheeleria spilodactylus</em></td>
<td>Larva feeds on growing tips, defoliates plant</td>
<td>ALL</td>
<td>Collect leaves with larvae present in late spring early summer and deposit leaves on to new plants.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clear-wing moth</strong> <em>Hamaesphecia mysiniformis</em></td>
<td>Larva feeds on growing tissue in roots, stems</td>
<td>SAAL, SAMDB</td>
<td>Not available for community distribution due to need for lab rearing. Insects will distribute naturally from established release sites.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Hudson pear</strong> <em>Cylindropuntia rosea</em></td>
<td><strong>Cochineal</strong> <em>Dactylopius tomentosus</em></td>
<td>Adult female bug sucks sap</td>
<td>SAMDB, NY</td>
<td>Limited distribution, Long time lag before impact occurs. Variable control depending on biotype and host provenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Prickly pear</strong> <em>Opuntia stricta</em></td>
<td><strong>Cochineal</strong> <em>Dactylopius opuntiae</em></td>
<td>Adult female bug sucks sap</td>
<td>AMLR, EP, NY, SAAL, SAMDB</td>
<td>Varying levels of establishment</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cactoblastis</strong> <em>Cactoblastis cactorum</em></td>
<td>Caterpillars feed communally inside aerial parts of plant</td>
<td>EP, NY, SAAL</td>
<td>Varying levels of establishment. Doesn't appear to kill plants.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Salvation Jane</strong> <em>Echium plantagineum</em></td>
<td><strong>Leaf mining moth</strong> <em>Dialectica scalariella</em></td>
<td>Larva mines leaves</td>
<td>ALL</td>
<td>Well distributed across most of acceptable climatic range.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flea beetle</strong> <em>Longitarsus echii</em></td>
<td>Larva feeds on roots in winter and early spring</td>
<td>AMLR, EP, KI, NY, SAAL, SAMDB, SE</td>
<td>Collect beetles with a sweep net in winter when plants at the rosette stage. Contact the local Natural Resources Management Region for collect site details.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crown weevil</strong> <em>Mogulones larvatus</em></td>
<td>Larva feeds in growing rosette in autumn and winter</td>
<td>AMLR, EP, KI, NY, SAAL, SAMDB, SE</td>
<td>Well distributed across most of acceptable climatic range. Check plants in winter for characteristic black/purple “goo” in the centre of rosettes. Collect adult weevils in summer with a sweep net from flowers. Contact your Natural Resources Region for site details.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Root weevil</strong> <em>Mogulones geographicus</em></td>
<td>Larva feeds in roots in autumn and winter</td>
<td>AMLR, EP, KI, NY, SAMDB, SE</td>
<td>Collect adult weevils in summer with a sweep net from flowers. Contact the local Natural Resources Region for collect site details limited sites available</td>
<td></td>
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</tr>
<tr>
<td><strong>Pollen beetle</strong> <em>Meligethes planiusculus</em></td>
<td>Adult and larva feed on developing seed in spring and early summer</td>
<td>AMLR, EP, KI, NY, SAMDB, SE</td>
<td>Collect adult beetles in spring with a sweep net from flowers. Contact the local Natural Resources Region for collect site details. Limited known sites available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEED COMMON NAME</td>
<td>SCIENTIFIC NAME</td>
<td>MODE OF ACTION</td>
<td>RNM REGIONS WHERE RELEASED</td>
<td>COMMENTS</td>
<td></td>
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</tr>
<tr>
<td>Skeleton weed</td>
<td>Chondrilla juncea</td>
<td>Gall midge</td>
<td>Larva feeds on rosettes and flowering stems</td>
<td>EP</td>
<td>Limited and variable (unconfirmed) establishment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cystiphora schmiti</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rust fungus</td>
<td>Rust infects leaves and stems</td>
<td>EP, SAMDB</td>
<td>Limited and variable establishment. Attacks only one form of the weed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puccinia chondrillina</td>
<td></td>
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</tr>
<tr>
<td>Slender thistle</td>
<td>Carduus tenuiflorus</td>
<td>Rust fungus</td>
<td>Rust infects leaves and flowering stems</td>
<td>AMLR, SAMDB, SE</td>
<td>Variable establishment and impact</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puccinia cardui-pycnocephali</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Spear thistle</td>
<td>Cirsium vulgare</td>
<td>Spear thistle gall fly</td>
<td>Inducing galls in the flower head reducing seed production</td>
<td>SE, SAMDB, AMLR</td>
<td>Thought to have naturally dispersed from Victoria into SE Natural Resources Management region. Flies currently sourced from Victoria.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Urophora stylata</td>
<td></td>
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</tr>
<tr>
<td>Velvet tree pear</td>
<td>Opuntia tomentosa</td>
<td>Cochineal</td>
<td>Adult female bug sucks sap</td>
<td>AMLR</td>
<td>Limited distribution.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dactylopius sp.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel cactus</td>
<td>Opuntia robusta</td>
<td>Cochineal</td>
<td>Adult female bug sucks sap</td>
<td>SAAL, SAMDB, NY</td>
<td>Varying levels of establishment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dactylopius sp.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White-spined prickly pear</td>
<td>Opuntia streptacantha</td>
<td>Cochineal</td>
<td>Adult female bug sucks sap</td>
<td>SAMDB</td>
<td>Limited distribution.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dactylopius sp.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willows</td>
<td>Salix spp.</td>
<td>Willow sawfly</td>
<td>Larva feeds on leaves</td>
<td>AMLR, SAMDB</td>
<td>Established but variable. No field collection sites known. Not actively distributed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nematus oligospilus</td>
<td></td>
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</tr>
</tbody>
</table>
Grazing

In grazing situations stock will usually choose more palatable species over less palatable weeds such as soldier thistle and salvation Jane; however, spraying some weeds with the correct herbicide at the correct time of year increases their palatability to stock. This method, known as spray grazing is used in pastures to suppress weed populations making pasture species more competitive.

NON-HERBICIDE CONTROL METHODS

Foliar spray

The foliar spray method involves spraying the foliage of the target plant, usually to before the point of run-off (i.e. until each leaf is wetted but not dripping) with a hand gun or boom spray. This method is suitable for herbaceous plants, shrubs, grasses and vines where complete coverage can be achieved. Foliar spray can be done in a number of ways depending on the nature of the weed, the size of the infestation and the presence of off-target plants.

Boom spraying involves the use of a boom spray unit attached to a vehicle (4WD or tractor) to spray large areas of dense infestations or spray weeds within crops and pastures where selective herbicides can be used to kill the undesirable weeds and not the crop or pasture. Boom spraying is suitable for control of weeds up to 1m in height.

Spray rigs must be calibrated to ensure that the correct rate is applied and also to minimise spray drift. Check flow rates by placing a jug under each to nozzle collect the water output over a known spraying time. Rate of application (L/ha) can then be calculated from the output per nozzle (L/minute) multiplied by 600 and divided by driving speed (km/hour) multiplied by the spacing between nozzles (metres).

\[
\text{application rate} = \frac{600 \times \text{output per nozzle}}{\text{speed} \times \text{nozzle spacing}}
\]

Spot spraying usually involves the use of either a hand held spray unit with a pneumatic pump or vehicle mounted spray unit with electric or petrol powered pump. The herbicide mix is delivered to the foliage of the plant via a hand gun. Spot spray is useful for weeds at low to high densities or weeds within desirable vegetation where the user can minimise off-target damage through careful application.

Splatter gun method is a form of foliar spray where a splatter gun is used to apply a low volume of concentrated herbicide mix to foliage. A specialised nozzle produces a solid stream of large droplets of herbicide that can be applied from a distance of 6-10 m away. Only a small portion of the foliage needs to be sprayed so non-target damage can be minimised. This technique is particularly useful in areas of difficult access and where water supply is limited.
Wiper Application

Wiper application is used for control of weeds including tufted grasses that grow higher than a crop or pasture species. The method involves applying herbicide solution to an absorbent surface, such as a length of rope or wick. The wetted surface is then used to wipe herbicide over the weed. The wetted surface is usually attached to a small boom and passed over pastures at a certain height to contact weeds that grow higher than the pasture species.

Cut stump method

This method is useful for vines, multi-stemmed shrubs and medium to large trees, and even for some large herbs such as arum lily. The term cut and swab is also often used to describe this method. The main stem(s) or trunk(s) are cut off at their base by chainsaw, axe, brush cutter or machete and the stump immediately (within 10-15 seconds) sprayed or painted with herbicide mixture to the point of run-off. It is necessary to apply the herbicide promptly before the plant begins to seal the cut preventing penetration of the herbicide into the sap stream. The stump should be cut as close to the ground as possible. For some species care must be taken to remove cut branch fragments off and away from areas of moist soil such as a creek bed, swamp or low lying area where they may regenerate.

Stem injection method

Stem injection applies to trees and shrubs with single woody trunks 5-10 cm or more in diameter. It involves cutting or drilling into the bark and injecting herbicide into the sap stream.

Frill and fill method uses a narrow-bladed axe (5-7cm wide) to make a horizontal cut the width of the blade at an angle of about 45 degrees through the bark of the tree into the sap stream in the trunk. It is important not to make cuts too deep. The herbicide is then immediately applied (within 3 seconds) into the cut.

Drill and fill method uses a cordless drill to drill (with a 9mm drill bit) 4cm holes around the base of the tree into the sapwood. Holes should be about 4cm deep (or deeper for trees with thick bark), angled down at 45 degrees and at 5-10 cm intervals. Herbicide is then immediately (within 3 seconds) injected into each hole. It is necessary to inject the herbicide quickly before the plant seals the cut, thus barring the chemical from entering the sap stream.

For cactus species a sheep drenching needle (or equivalent) is used to inject a measured dose of herbicide into the stem of the plants.

Basal bark method

This method is used to treat saplings and multi-stemmed shrubs and regrowth with a basal diameter of less than 5 cm. The herbicide, usually mixed with diesel (for preference, biodiesel such as Biosafe™) at label rates, is applied to all sides of every stem from ground up to a height of around 30cm. Stems should be dry, free of fire charring and not have debris (e.g. from floods) accumulated around them.

Scrape and paint method

Scrape and paint is used for vines (e.g. blackberry) where it is desirable to leave the vine intact or in sensitive areas such as native vegetation where it is desirable to minimise risks to off-target species. A sharp knife is used to scrape a thin layer of bark from a 15-30cm section of stem. Herbicide is then immediately applied to the exposed sap tissue.

Pellet or granular soil application method

This method can be used to treat isolated outlying plants that are not easy to treat using other methods. Herbicide pellets are evenly applied to the soil under the target weed from the stem out to 30cm beyond the canopy drip line. Pellets should not be thrown at the base of the tree trunk - this will waste material and may result in poor control. The herbicide acts by moving into the root zone of the weed following rain and from there it is absorbed by the roots.
WEED CONTROL ADVICE IS AVAILABLE FROM ALL REGIONAL NRM OFFICES:

ADELAIDE & MOUNT LOFTY RANGES

dewn.amrlr@sa.gov.au

Black Hill Natural Resources Centre
115 Maryvale Road, Athelstone SA 5076
08 8336 0901

Eastwood Natural Resources Centre
205 Greenhill Road, Eastwood SA 5063
08 8273 9100

Gawler Natural Resources Centre
8 Adelaide Road, Gawler South SA 5118
08 8523 7700

Victor Harbor Natural Resources Centre
3 Eyre Terrace, Victor Harbor SA 5211
08 8552 3677

Willunga Natural Resources Centre
5 Aldinga Road, Willunga SA 5172
08 8550 3400

Woodside Natural Resources Centre
87 Onkaparinga Valley Road, Woodside SA 5244
08 8336 0901

ALINYTJARA WILURARA

Natural Resources Office - Adelaide
Level 2, 1 Richmond Road, Keswick SA 5035
08 8463 4860

Natural Resources Centre - Ceduna
50B McKenzie Street
PO Box 569, Ceduna SA 5690
08 8625 3144

NORTHERN AND YORKE

DEWNR.NRNY@sa.gov.au

Natural Resources Centre - Clare
Unit 2/17 Lennon Street, Clare SA 5453
08 8841 3400

SOUTH AUSTRALIAN ARID LANDS

SAAridlands@sa.gov.au

Natural Resources Centre
Level 1, 9 Mackay Street
PO BOX 78, Port Augusta SA 5700
08 8648 5300

SOUTH AUSTRALIAN MURRAY DARLING BASIN

SAMDBEnquiries@sa.gov.au

Natural Resources Centre - Berri
2 Wade Street, Berri SA 5343
08 8580 1800

Natural Resources Centre - Murray Bridge
110A Mannum Road, Murray Bridge SA 5253
08 8532 9100

Community Natural Resources Centre – Strathalbyn
6 Catherine Street, Strathalbyn SA 5255
08 8536 5600

Natural Resources Office - Burra
2 Kingston Street, Burra SA 5417
08 8892 3033

Natural Resources Office - Cambrai
Deane Street, Cambrai SA 5353
08 8564 5154

Natural Resources Office - Karoonda
3 Peake Terrace, Karoonda SA 5307
08 8578 1493

Natural Resources Office - Lameroo
74 Railway Terrace North, Lameroo SA 5302
08 8576 3400

Natural Resources Office - Mount Barker
Upper level, Corner Mann & Walker Street,
Mount Barker SA 5251
08 8391 7500

KANGAROO ISLAND

rory.wiadrowski@sa.gov.au

Natural Resources Centre - Kingscote
37 Dauncey Street, Kingscote 5223
PO Box 39 Kingscote SA 5223
08 8553 4444

SOUTH EAST

reception@senrm.sa.gov.au

Natural Resources Centre - Mount Gambier
11 Helen Street
PO Box 1046, Mount Gambier SA 5290
08 87351177

Natural Resources Office, Keith
Anzac Terrace, Keith SA 5267
08 8755 1620

Adelaide and
Mount Lofty Ranges

Alinytjara Wilurara

Eyre Peninsula

Kangaroo Island

Northern and Yorke

South Australian Arid Lands

South Australian Murray-Darling Basin

South East
When using herbicides it is important to consider a few key factors that will increase effectiveness and reduce risks to users and non-target plants. These factors are:

- Apply herbicide only when plants are actively growing.
- Do not apply herbicides when the plant is under stress, e.g. extreme heat or cold, drought, water-logging or disease,
- Do not spray when wet or windy weather is anticipated,
- Use herbicides only in situations specified on the label.

**IMPORTANT:** the herbicide control treatments provided in this book should be considered a guide only and users of agricultural chemical products must always **READ THE LABEL** before using a product and strictly comply with the directions on the label and/or conditions of any permit.

**SA WEED CONTROL APP**

The SA Weed Control App for Android or iOS contains all the text and images from this book, regularly updated control information, plus features that allow you to record the weeds you find and send reports to your regional NRM weed officer.

Get it free from the App Store or Googleplay via this link.
## African boxthorn
*Lycium ferocissimum*

### WoNS
**FORMS PRICKLY THICKETS IN NATIVE VEGETATION AND PASTURE**
Large dense shrub. Light green fleshy leaves. Flowers are white with purple blotches. Round red berries. Stems are much branched, rigid, and spine-tipped.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical removal</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>glyphosate (450g/L) + triclopyr (600g/L)</td>
<td>Roundup CT® + Garlon 600®</td>
<td>M, I</td>
<td>Cut stump</td>
<td>333mL + 33mL/1L</td>
<td>All.</td>
<td>Any time</td>
<td>Cut stem and apply herbicide immediately.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (540g/kg)</td>
<td>Knockout Pro 540®</td>
<td>I</td>
<td>Spot spray</td>
<td>470-670mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>July - September</td>
<td>Apply to actively growing plants. Do not apply to drought stressed plants. Further treatment may be necessary to restrict seedling re-establishment. Non selective, avoid contact with desirable plants. Use lower rates on seedlings and higher rates on large mature bushes.</td>
<td>Registered</td>
</tr>
<tr>
<td>hexazinone (250g/L)</td>
<td>Velpar L®</td>
<td>C</td>
<td>Ground spot applicator</td>
<td>Undiluted 4mL/ spot</td>
<td>Non-crop areas and pastures.</td>
<td>On moist soil or before rain.</td>
<td>One spot for each metre of bush height, up to 3 metres. Place spot between base and dripline of the plant. Do not apply over root zone of desirable trees. Soil active.</td>
<td>Registered</td>
</tr>
<tr>
<td>picloram (20g/kg)</td>
<td>Tordon® Granules</td>
<td>I</td>
<td>Granular application</td>
<td>35 to 45g/square metre</td>
<td>Non-crop areas and pastures.</td>
<td>Any time unless plants stressed.</td>
<td>Suitable for isolated outlying plants only. Soil active; do not apply near native vegetation or other desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Non-crop areas and pastures.</td>
<td>Any time</td>
<td>Apply a 3-5 mm thick layer of gel to freshly cut stump.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (240g/L) + picloram (120g/L)</td>
<td>Access®</td>
<td>I</td>
<td>Basal bark or cut stump</td>
<td>1L/60L biodiesel or diesel</td>
<td>Non-crop areas and pastures.</td>
<td>Any time</td>
<td>Treat basal bark on stems up to 5 cm diameter. Cut larger trunks and apply herbicide immediately.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra®</td>
<td>I</td>
<td>Spot spray</td>
<td>500mL per 100L</td>
<td>Non-crop areas and pastures.</td>
<td>When plants have good leaf cover.</td>
<td>Bushes less than 2m tall only, with good growth and no leaf fall.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Basal bark or cut stump</td>
<td>2L/60L biodiesel or diesel</td>
<td>Non-crop areas and pastures.</td>
<td>Any time</td>
<td>Treat basal bark on stems up to 5 cm diameter. Cut larger trunks and apply herbicide immediately.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Agvantage Glyphosate 450®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-crop areas.</td>
<td>July - September</td>
<td>Repeat application will be required. Non selective, avoid contact with desirable plants.</td>
<td>Product and use are registered, but this weed is not on the label</td>
</tr>
<tr>
<td>picloram (75g/L) + 2,4D (300g/L)</td>
<td>Tordon 75-D®</td>
<td>I</td>
<td>Spot spray</td>
<td>1.3L per 100L</td>
<td>Non-crop areas and pastures.</td>
<td>Prior to bud burst.</td>
<td>Small plants only. Thorough coverage essential, spray soil to drip line.</td>
<td>Product and use are registered, but this weed is on the label for Qld, NSW, Victoria and WA only.</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
### African feathergrass  
*Cenchrus macrourus*

**COMPETES WITH PASTURE. FIRE HAZARD**

Perennial grass forming large tussocks of rough, densely growing leaves with slender seed heads on stems to 2 m tall.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Boom spray</td>
<td>3L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>Early in the season.</td>
<td>A slow-working residual. If spraying late in the season add glyphosate for faster knockdown. Add a non-ionic surfactant. Do not graze or cut for stockfeed for at least 4 months after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Spot spray</td>
<td>300mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>Early in the season.</td>
<td>A slow-working residual. Add a non-ionic surfactant. If spraying late in the season add glyphosate for faster knockdown. Do not graze or cut for stockfeed for at least 14 days after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Non-crop areas and pastures.</td>
<td>Early in the season.</td>
<td>Add a non-ionic surfactant. Do not graze or cut for stockfeed for at least 14 days after application.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>Herbicide and Adjuvant</td>
<td>Sprayer Type</td>
<td>Application Rate</td>
<td>Area</td>
<td>Application Timing</td>
<td>Application Notes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup CT®</td>
<td>J,M Boom spray</td>
<td>3L + 300-500mL/ha</td>
<td>Non-crop areas and pastures</td>
<td>Early in the season.</td>
<td>Apply to fresh foliage. Add a non-ionic surfactant. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Use higher rate on dense infestations. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years. PER 9792 (exp. 2020)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup CT®</td>
<td>J,M Spot spray</td>
<td>300mL + 260mL/100L</td>
<td>Non-crop areas and pastures</td>
<td>Early in the season.</td>
<td>Apply to fresh foliage. Add a non-ionic surfactant. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Use higher rate on dense infestations. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years. PER 9792 (exp. 2020)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup CT®</td>
<td>J,M Wiper</td>
<td>500mL + 260mL/10L</td>
<td>Non-crop areas and pastures</td>
<td>Early in the season.</td>
<td>Apply to fresh foliage. Add a non-ionic surfactant. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years. PER 9792 (exp. 2020)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants. Add an organosilicone penetrant. PER 13371 (exp. 2022)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M Boom spray</td>
<td>4.8L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants. Add an organosilicone penetrant. PER 9792 (exp. 2020)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M Spot spray</td>
<td>800mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants. Add an organosilicone penetrant. PER 9792 (exp. 2020)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M Wiper</td>
<td>2.6L/10L</td>
<td>Non-crop areas and pastures.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants. Add an organosilicone penetrant. PER 9792 (exp. 2020)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
### CONTROL OPTION

<table>
<thead>
<tr>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Removal</td>
<td>Grub individual plants</td>
<td>All.</td>
<td>Any time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Boom spray</td>
<td>6L/ha</td>
<td>Pasture renovation.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants.</td>
</tr>
<tr>
<td>Glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-crop areas and pastures.</td>
<td>While actively growing.</td>
<td>Re-treatment and/or pasture improvement is recommended to restrict seedling regrowth. Non selective, avoid contact with desirable plants.</td>
</tr>
<tr>
<td>Glyphosate (450g/L)</td>
<td>Agvantage Glyphosate 450*</td>
<td>M</td>
<td>Spot spray</td>
<td>800mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>January - March</td>
<td>Non selective, avoid contact with desirable plants. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness.</td>
</tr>
<tr>
<td>Flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Spot spray</td>
<td>300mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>January - March</td>
<td>A slow-working residual. Add a non-ionic surfactant. If spraying late in the season add glyphosate for faster knockdown. Do not graze or cut for stockfeed for at least 14 days after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
</tr>
<tr>
<td>Flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Non-crop areas and pastures.</td>
<td>January - March</td>
<td>A slow-working residual. Add a non-ionic surfactant. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
</tr>
</tbody>
</table>

### AFRICAN LOVEGRASS

**Eragrostis curvula**

**COMPETES WITH PASTURE**

Perennial grass forming tussocks. Leaves fine, to 30 cm long with rough edges and curled tips. Densely branched grey-green, arching seed heads on stems to 1.5 m tall.
<table>
<thead>
<tr>
<th>Herbicide (g/L)</th>
<th>Adjuvants</th>
<th>Application Rate</th>
<th>Treatment Area</th>
<th>Application Time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup CT®</td>
<td>J,M Boom spray 1.5-3L + 300-500mL/ha</td>
<td>Non-crop areas and pastures.</td>
<td>January - March</td>
<td>Apply glyphosate alone for seed set suppression; or for control mix flupropanate with glyphosate. Use higher rate if the weed is dense. Add a non-ionic surfactant. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup CT®</td>
<td>J,M Spot spray 150-300mL + 270mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>January - March</td>
<td>Apply glyphosate alone for seed set suppression; or for control mix flupropanate with glyphosate. Add a non-ionic surfactant. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M Boom spray 4.8L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>January - March</td>
<td>Non selective, avoid contact with desirable plants. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M Spot spray 1.3L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>January - March</td>
<td>Non selective, avoid contact with desirable plants. Add a spray oil. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M Wiper 2.6L/10L</td>
<td>Non-crop areas and pastures.</td>
<td>January - March</td>
<td>Non selective, avoid contact with desirable plants.</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
African rue
*Peganum harmala*

**INVADES RANGELAND PASTURES. UNPALATABLE**


<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Cut stump</td>
<td>Undiluted</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td></td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing before flowering</td>
<td>Non selective, avoid contact with desirable plants. Add an organosilicone penetrant.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

Aleppo pine
*Pinus halepensis*

**INVADES NATIVE VEGETATION. FIRE HAZARD**

Large spreading tree. Branches have silvery bark, narrow grey-green needles in pairs, and smooth reddish brown cones.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fell and remove</td>
<td></td>
<td></td>
<td>Cut down</td>
<td></td>
<td>All.</td>
<td>Any time</td>
<td>Cut as close to the ground or below the lowest branch. Regrowth does not occur from stumps, but follow-up may be needed to control seedlings.</td>
<td></td>
</tr>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies and parks.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. Do not use in urban home gardens.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Stem injection</td>
<td>Undiluted</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing</td>
<td>Drill holes in trunk to place herbicide. Regrowth does not occur from stumps, but follow-up may be needed to control seedlings.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>
### Alisma

**Alisma lanceolatum**

#### INVADES WETLANDS AND WATERWAYS

Aquatic perennial with creeping underwater stems and narrow oval leaves emerging from the water. Flowers with three white petals, on branched stalks.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Wetlands, streams.</td>
<td>While actively growing.</td>
<td>Seek advice from an NRM Authority, and confirm identity of all plants before treating. Avoid confusion with very similar native species. Suitable for use in waterways. Non-selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

### Alkali sida

**Malvella leprosa**

#### WEED OF PASTURES AND CROPS.

Perennial herb. Olive green oval to fan-shaped leaves. Solitary pale yellow flowers in leaf axils. Cone or disc-shaped dry fruits.

<table>
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<tr>
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<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D®</td>
<td>I</td>
<td>Spot spray</td>
<td>150mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>Before flowering</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (75g/L) + aminopyralid (7.5g/L)</td>
<td>FallowBoss Tordon®</td>
<td>I</td>
<td>Boom spray</td>
<td>3.5L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>Before flowering</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
### Alligator weed
*Alternanthera philoxeroides*

**WoNS ALERT WEED**

**INVADES FLOODPLAINS AND WATERWAYS**

Aquatic perennial with creeping hollow stems, a pair of bright green oblong leaves at each node, and papery, white ball-shaped flower clusters.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
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<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Hand pull</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot Spray</td>
<td>1L/100L</td>
<td>Aquatic and wetland sites.</td>
<td>Summer-autumn.</td>
<td>Dig out large infestations with machinery and dispose by drying out - seek advice from an NRM Authority. Monitor site until eradication has been achieved.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate dual salt (360g/L)</td>
<td>Weedmaster Duo®</td>
<td>M</td>
<td>Spot spray</td>
<td>150mL/15L</td>
<td>Over water.</td>
<td>While actively growing in summer-autumn.</td>
<td>For use over water on the floating form. Nonselective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

### Apple-of-sodom
*Solanum linnaeum*

**INVADES PERENNIAL PASTURES**

Perennial subshrub to 1 m high. Deeply lobed elliptic leaves, dark green with star-shaped hairs and prickles to 15 mm long. Blue flowers with five petals. Large, round green berries that turn brown when ripe.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Cut stump</td>
<td>1L/30L biodiesel or diesel</td>
<td>Non-crop areas and pastures.</td>
<td>Spring - summer</td>
<td>Cut stem and apply immediately. Poisonous if swallowed; may irritate eyes and skin.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
</tbody>
</table>
**Arum Lily**
*Aethiopica*

**Invases Wetlands**
Large perennial herb growing from a rhizome, hairless, remaining green all year. Broad arrowhead leaves to 50 cm long on fleshy stalks. Inflorescence a yellow spike wrapped in a large white bract. Fruit is a cluster of green berries.

<table>
<thead>
<tr>
<th>Control Option</th>
<th>Example of Product Names</th>
<th>Herbicide Group</th>
<th>Application Method</th>
<th>Application Rate*</th>
<th>Situation</th>
<th>Timing</th>
<th>Comments</th>
<th>Legal Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Cut and swab</td>
<td>10 - 50 mL/L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>Glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Wiper or brush</td>
<td>10 - 50 mL/L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>Metsulfuron-methyl (600g/kg)</td>
<td>Brush-Off®</td>
<td>B</td>
<td>Cut and swab</td>
<td>0.05 - 0.1 g/L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Soil active.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>Metsulfuron-methyl (600g/kg)</td>
<td>Brush-Off®</td>
<td>B</td>
<td>Wiper or brush</td>
<td>0.05 - 0.1 g/L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Soil active.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>Glyphosate (360g/L) + Metsulfuron-methyl (600g/kg)</td>
<td>Roundup Biactive® + Brush-Off®</td>
<td>M,B</td>
<td>Cut and swab</td>
<td>10 - 50 mL/L, glyphosate + 0.05 to 0.1 g/L metsulfuron-methyl</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>Glyphosate (360g/L) + Metsulfuron-methyl (600g/kg)</td>
<td>Roundup® + Brush-Off®</td>
<td>M,B</td>
<td>Wiper or brush</td>
<td>10 - 50 mL/L, glyphosate + 0.05 - 0.1 g/L metsulfuron-methyl</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
Asparagus fern
Asparagus scandens

**WoNS**

**INVADES WOODLANDS, SMOthers NATIVE PLANTS**

Climber with perennial rhizome. Narrow, lance-shaped cladodes in threes give branches a fern-like appearance. Small white flowers followed by orange-red berries.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>HERBICIDE GROUP</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Manual removal. Ensure that tubers are removed totally</td>
<td></td>
<td>All.</td>
<td>June - August</td>
<td>Suitable for small plants and outliers only. Can result in a high level of soil disturbance therefore reduce soil disturbance as much as practical.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Non selective, avoid contact with desirable plants. Follow up application over at least 2 years will be required.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup CT® + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>1L + 3g /100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>”Add an organosilicone penetrant. Follow up application over at least 2 years will be required.”</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate dual salt (360g/L)</td>
<td>Weedmaster Duo®</td>
<td>M</td>
<td>Wiper sponge or brush</td>
<td>1L/3L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

Athel pine
Tamarix aphylla

**WoNS**

**EXCLUDES NATIVE PLANTS ALONG WATERCOURSES**

Tree with weeping branches. Grey-green shoots have tiny scale leaves that exude salt. Small, pale pink flowers.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>fluroxypyr (333g/L)</td>
<td>Starane Advanced®</td>
<td>I</td>
<td>Spot spray</td>
<td>600mL/100L</td>
<td>Non-cropping areas in and near dry ephemeral waterways.</td>
<td>Spring-Autumn</td>
<td>Young plants less than 50cm tall.</td>
<td>PER 81696 (exp. 2020) (NT only)</td>
</tr>
</tbody>
</table>
### Austrocylindropuntia cacti
**including cane cactus and Eve’s pin cactus**
*Austrocylindropuntia* spp.

*COMPETE WITH NATIVE VEGETATION. FORMS PRICKLY THICKETS.*

Succulent, shrubby perennials. Stems green, cylindrical, with linear leaves that are soon dropped and short spines. Produce large red or pink flowers followed by green egg-shaped fruits at ends of branches.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Deep burial under 1m of topsoil</td>
<td>Native vegetation, gardens and other non-crop areas.</td>
<td>Any time</td>
<td>Remove, collect and bury all fragments.</td>
<td>Product and use are registered, but this weed is not on the label</td>
<td></td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600*</td>
<td>I</td>
<td>Spot spray</td>
<td>3L/100L</td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>While actively growing</td>
<td>Poisonous if swallowed; may irritate eyes and skin.</td>
<td>PER 13371 (exp. 2022)</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600*</td>
<td>I</td>
<td>Basal bark</td>
<td>800mL/60L biodiesel or diesel</td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>While actively growing</td>
<td>Poisonous if swallowed; may irritate eyes and skin.</td>
<td>Product and use are registered, but this weed is not on the label</td>
</tr>
<tr>
<td>glyphosate 450g/L</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Stem inject</td>
<td>Undiluted</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing</td>
<td>Inject a measured dose of herbicide into the pads using a drill, drenching needle (or similar).</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600*</td>
<td>I</td>
<td>Stem injection</td>
<td>Undiluted</td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>While actively growing</td>
<td>Use cordless drill to make holes around the base into the sapwood. Inject herbicide immediately.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
Azarola
*Crataegus sinaica*

**GARDEN ESCAPE. ENVIRONMENTAL WEED IN THE ADELAIDE & MOUNT LOFTY RANGES REGION**

Tree/shrub, with deeply lobed wedge shaped leaves. White or pinkish 5-petalled flowers, and shiny, rounded green berries maturing to red.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>glyphosate (540g/L)</td>
<td>Knockout Pro 540®</td>
<td>M</td>
<td>Spot spray</td>
<td>660-870mL/100L</td>
<td>From flowering to leaf fall</td>
<td>Add an organosilicone penetrant. Use the higher rates for plants larger than 2m. Non selective, avoid contact with desirable plants</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>triclopyr (240g/L) + picloram (120g/L)</td>
<td>Access®</td>
<td>I</td>
<td>Cut stump/ basal bark</td>
<td>1L/60L biodiesel or diesel</td>
<td>Spring to autumn</td>
<td>Use on medium to large azarola.</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Cut Stump</td>
<td>Undiluted Conservation areas, bushland and other non-crop areas.</td>
<td>Spring to autumn</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup CT® + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>800mL + 3g /100L Conservation areas, bushland and other non-crop areas.</td>
<td>From flowering to leaf fall</td>
<td>Add an organosilicone penetrant. Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup® + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>1L + 3g/100L Conservation areas, bushland and other non-crop areas.</td>
<td>From flowering to leaf fall</td>
<td>Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
<td></td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Spot spray</td>
<td>170mL/100L Native vegetation and roadsides.</td>
<td>From flowering to leaf fall</td>
<td>Poisonous if swallowed; may irritate eyes and skin.</td>
<td>PER 12932 (exp. 2021)</td>
<td></td>
</tr>
</tbody>
</table>
### Bathurst burr

**Xanthium spinosum**

**BURRS CONTAMINATE WOOL. SPINY STEMS**

Annual herb to 1 m tall. Leaves to 8 cm long, dark green on top, and light green underneath, with large 3-branched spines at base. Flowers inconspicuous, green. Burrs covered in small spines.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Ozcrop 2,4-D amine 625*</td>
<td>I</td>
<td>Boom spray</td>
<td>Rate depends on crop type and crop stage - refer to label</td>
<td>Cereal crops</td>
<td>Before flower and burr formation</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Ozcrop 2,4-D amine 625*</td>
<td>I</td>
<td>Boom spray</td>
<td>1.7 - 2.2L/ha</td>
<td>Pasture and other non-crop areas.</td>
<td>Seedlings</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Ozcrop 2,4-D amine 625*</td>
<td>I</td>
<td>Spot spray</td>
<td>17-22mL/10L</td>
<td>Pasture and other non-crop areas.</td>
<td>Seedlings</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>Glyphosate (450g/L)</td>
<td>Touchdown 450*</td>
<td>M</td>
<td>Boom spray</td>
<td>1.5-2.4L/ha</td>
<td>Fallows and pre-planting in cropping paddocks.</td>
<td>Before flower and burr formation</td>
<td>Add an organosilicone penetrant. Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>Glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Pasture and other non-crop areas.</td>
<td>Before flower and burr formation</td>
<td>Add an organosilicone penetrant. Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (340g/L) + dicamba (80g/L)</td>
<td>Kamba M*</td>
<td>I</td>
<td>Boom spray</td>
<td>2.8-4L/ha</td>
<td>Grass pastures.</td>
<td>Before flower and burr formation</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Spray seedlings, use higher rates on larger plants or plants in late flower.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (340g/L) + dicamba (80g/L)</td>
<td>Kamba M*</td>
<td>I</td>
<td>Spot spray</td>
<td>190-270 mL/100L</td>
<td>Grass pastures.</td>
<td>Before flower and burr formation</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Spray seedlings, use higher rates on larger plants or plants in late flower.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (750g/L)</td>
<td>Agritone 750*</td>
<td>I</td>
<td>Boom spray</td>
<td>1.35L/ha</td>
<td>Cereal crops.</td>
<td>Seedlings</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
**Bellyache bush**  
*Jatropha gossypiifolia*  

**WoNS**  
**WEED OF NORTHERN RANGELANDS. TOXIC TO HUMANS AND ANIMALS**  
Multi-stemmed shrub with conspicuous glandular hairs. New growth is purple and sticky, turning dark green. Leaves large, 3-lobed, on long stalks. Flowers in stalked clusters, small, red with yellow centres. Round green seed capsules.

<table>
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<tr>
<th>CONTROL OPTION</th>
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<th>TIMING</th>
<th>COMMENTS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Not known to occur in South Australia. Please report any occurrences to your regional NRM Authority or Biosecurity SA, and obtain advice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fluroxypyr (333g/L)</td>
<td>Starane Advanced®</td>
<td>I</td>
<td>Spot spray</td>
<td>300mL/100L</td>
<td>Non-crop areas.</td>
<td>Seedlings to pre-flowering.</td>
<td>Thoroughly cover foliage and stems to the point of runoff.</td>
<td>Registered</td>
</tr>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies and parks.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. For multi-stemmed plants treat at least 80% of stems including main stems.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Add an organosilicone penetrant. Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Spot spray</td>
<td>170mL/100L</td>
<td>Nature reserve and other native vegetation, roadsides, urban open space and forests.</td>
<td>While actively growing.</td>
<td>Poisonous if swallowed; may irritate eyes and skin.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
</tbody>
</table>

---

**Berry heath**  
*Erica baccans*  

**INVADES BUSHLAND**  
Dense shrub to 2 m tall with needle-shaped, pale green leaves 6 mm long. Flowers globular, pink, in groups of 4. Tiny seeds in capsules.

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<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies and parks.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. For multi-stemmed plants treat at least 80% of stems including main stems.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Add an organosilicone penetrant. Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Spot spray</td>
<td>170mL/100L</td>
<td>Nature reserve and other native vegetation, roadsides, urban open space and forests.</td>
<td>While actively growing.</td>
<td>Poisonous if swallowed; may irritate eyes and skin.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
</tbody>
</table>
**Bifora**

*Bifora testiculata*

**CROP WEED. NATURALISED IN SOUTH AUSTRALIA**

Annual herb smelling of coriander. Leaves hairless, pale green, divided into narrow segments. Umbrella-shaped clusters of small white flowers. Fruit dry, globular in pairs.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Mechanical control</td>
<td></td>
<td></td>
<td>Slashing</td>
<td></td>
<td>All</td>
<td>Any time</td>
<td>Slashing will not kill blackberry but will improve the results of follow up herbicide treatment. Regrowth needs to be approximately 0.5-1 m high before undertaking follow up spraying.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive*</td>
<td>M</td>
<td>Spot Spray - Do not add surfactants if using near aquatic areas</td>
<td>1-1.3L/100L</td>
<td>November - April</td>
<td>Suitable for use near watersways - refer to label. Non selective, avoid contact with desirable plants. Use higher rate for plants 1-2m high. Repeat applications will be required.</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>glyphosate (835g/kg) + metsulfuron-methyl (10g/kg)</td>
<td>Trounce Brush-Pack*</td>
<td>M,B</td>
<td>Spot spray</td>
<td>173g/100L</td>
<td>Non-crop areas, bushland and pastures.</td>
<td>November - April</td>
<td>Add an organosilicone penetrant. Apply from flowering until before leaf yellowing. Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

---

**Blackberry, European**

*Rubus fruticosus sp. agg.*

**WoNS**

**FORMS IMPENETRABLE THICKETS. INVADES BUSHLAND AND PASTURE**

Scrambling perennial shrub with prickles. Long stems/canes curve down and form roots at end. Leaves of 3-5 leaflets are dark green above, hairy with short prickles on underside. White or pink flowers followed by berries ripening to black.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical control</td>
<td></td>
<td></td>
<td>Slashing</td>
<td></td>
<td>All</td>
<td>Any time</td>
<td>Slashing will not kill blackberry but will improve the results of follow up herbicide treatment. Regrowth needs to be approximately 0.5-1 m high before undertaking follow up spraying.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive*</td>
<td>M</td>
<td>Spot Spray - Do not add surfactants if using near aquatic areas</td>
<td>1-1.3L/100L</td>
<td>November - April</td>
<td>Suitable for use near watersways - refer to label. Non selective, avoid contact with desirable plants. Use higher rate for plants 1-2m high. Repeat applications will be required.</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>glyphosate (835g/kg) + metsulfuron-methyl (10g/kg)</td>
<td>Trounce Brush-Pack*</td>
<td>M,B</td>
<td>Spot spray</td>
<td>173g/100L</td>
<td>Non-crop areas, bushland and pastures.</td>
<td>November - April</td>
<td>Add an organosilicone penetrant. Apply from flowering until before leaf yellowing. Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Trade Name</th>
<th>Application</th>
<th>Rate</th>
<th>Area(s)</th>
<th>Timing</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Brush-Off®</td>
<td>Spot spray</td>
<td>10g/100L</td>
<td>Non-crop areas, bushland and pastures.</td>
<td>November - April</td>
<td>Add spray oil, 1L/100L. Soil active herbicide, may damage desirable vegetation. Registered</td>
</tr>
<tr>
<td>picloram (20g/kg)</td>
<td>Tordon® Granules</td>
<td>Granular application</td>
<td>35 to 45g/square metre</td>
<td>Non-crop areas and pastures.</td>
<td>Suitable for isolated outlying plants only. Soil active; do not apply near native vegetation or other desirable plants. Registered</td>
<td></td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS®</td>
<td>Boom spray</td>
<td>10L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>November - April</td>
<td>Where herbicides other than Group I have been used, allow two seasons regrowth before respraying with Grazon DS. May damage eucalypts. Do not burn, cut or clear blackberry for at least 6 months after spraying. Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS®</td>
<td>Spot spray</td>
<td>350-500mL/100L</td>
<td>Non-crop areas, bushland and pastures.</td>
<td>November - April</td>
<td>Use higher rates on plants damaged by grazing stock or insects or on hard to kill plants. Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra®</td>
<td>Spot spray</td>
<td>350-500mL/100L</td>
<td>Non-crop areas, bushland and pastures.</td>
<td>November - April</td>
<td>Use higher rates on plants damaged by grazing stock or insects or on hard to kill plants. Where herbicides other than Group I have been used, allow two seasons regrowth before respraying with Grazon Extra. Registered</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>Controlled droplet application</td>
<td>170mL/1L</td>
<td>Non-crop areas, bushland and pastures.</td>
<td>November - April</td>
<td>Poisonous if swallowed; may irritate eyes and skin. Registered</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>Spot spray</td>
<td>170mL/100L</td>
<td>Non-crop areas, bushland and pastures.</td>
<td>November - April</td>
<td>Poisonous if swallowed; may irritate eyes and skin. Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>Cut and paint the canes - paint brush applicator</td>
<td>undiluted</td>
<td>Non-crop areas.</td>
<td>Suitable for outliers, small infestations or sensitive areas PER 13371 (exp.2022)</td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>Cut stump - note 1:1 provides the best viscosity for sponge application</td>
<td>250mL-1L/1L</td>
<td>Non-crop areas.</td>
<td>Suitable for outliers, small infestations or sensitive areas PER 13371 (exp.2022)</td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup® + Brush-Off®</td>
<td>Spot spray</td>
<td>1L + 3g /100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>November - April</td>
<td>Add an organosilicone penetrant. Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation. PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate dual salt (360g/L)</td>
<td>Weedmaster Duo®</td>
<td>Cut stump</td>
<td>1L/1L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Non selective, avoid contact with desirable plants. PER 13371 (exp.2022)</td>
<td></td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>Cut stump</td>
<td>1L/30L biodiesel or diesel</td>
<td>Non-crop areas, bushland and pastures.</td>
<td>Diesel can be replaced with water for ease of application. PER 12932 (exp. 2021)</td>
<td></td>
</tr>
</tbody>
</table>
**Bladder campion**  
*Silene vulgaris*

**COMPETES WITH CROPS AND PASTURES. HARD TO KILL**
Perennial herb to 60 cm tall with creeping roots and blue-green basal leaves to 8 cm. Flowers long-stalked with a balloon-shaped calyx below white petals.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D*</td>
<td>I</td>
<td>Spot spray</td>
<td>650mL/100L</td>
<td>Pastures, commercial and industrial areas, and other non-crop areas.</td>
<td>August, before flowering.</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops.</td>
<td>Registered</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Ozcrop Dicamba 500 SL*</td>
<td>I</td>
<td>Spot spray</td>
<td>80mL/100L</td>
<td>Non-crop areas.</td>
<td>August - December while actively growing before flowering</td>
<td>Add a surfactant.</td>
<td>Registered</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Ozcrop Dicamba 500 SL*</td>
<td>I</td>
<td>Boom spray</td>
<td>1.2L/ha</td>
<td>Non-crop areas.</td>
<td>August - December while actively growing before flowering</td>
<td>Use at least 1500 L/ha water. Add a surfactant.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

**Blue mustard**  
*Chorispora tenella*

**ALERT WEED**
Annual to 60 cm tall with tiny sticky hairs and unpleasant smell. Leaves undivided, with shallowly-toothed margins. Flowers with four mauve petals. Seeds in long pods.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Not yet known to occur in South Australia. If found, please collect a specimen and report to your regional NRM Authority or Biosecurity SA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Bluebell creeper**  
*Billardiera fusiformis and Billardiera heterophylla*

**SMOTHERS NATIVE PLANTS**
Climber with permanent woody stems. Oblong dark-green leaves to 6 cm long. Blue, rarely purple or white flowers, followed by sausage-shaped blue berries.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II*</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Non-crop areas, including native vegetation and parks.</td>
<td>Any</td>
<td>Cut stems no more than 10 cm above ground and immediately apply a 3-5 mm thick layer. Treat at least 80% of stems including main stems. Do not use in urban home gardens</td>
<td>Registered for this use on woody weeds in general.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Cut stump</td>
<td>1L/4L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (360g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup* + Brush-Off*</td>
<td>M,B</td>
<td>Spot spray</td>
<td>1L + 3g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Add an organosilicone penetrant. Seedlings or small plants; larger plants will require follow-up treatment.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

**Boneseed**  
*Chrysanthemoides monilifera*

**WoNS**
INVADERS BUSHLAND. DISPLACES NATIVE VEGETATION
Woody erect shrub to 2 metres tall. Broad bright green, waxy leaves with some white down. Yellow daisy flower heads followed by green-black berries.

<table>
<thead>
<tr>
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<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Removal</td>
<td></td>
<td></td>
<td>Uprooting</td>
<td></td>
<td>All</td>
<td></td>
<td>Pull out by hand or Tree Popper; ensure that the tap root system is removed.</td>
<td></td>
</tr>
<tr>
<td>Burn</td>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Brush-Off*</td>
<td>B</td>
<td>Spot spray</td>
<td>10g/100L</td>
<td>Native pastures, bushland and other non-crop areas.</td>
<td>August - September</td>
<td>Soil active herbicide, may damage desirable vegetation.</td>
</tr>
<tr>
<td>Burn</td>
<td>2,4-D amine (475g/L)</td>
<td>Surpass 475*</td>
<td>I</td>
<td>Spot spray</td>
<td>105mL/10L</td>
<td>Pastures, rights of way and industrial areas.</td>
<td>While actively growing.</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Wet foliage thoroughly. Refer to drift warnings on the label.</td>
</tr>
<tr>
<td>Burn</td>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Cut stump - note 1:1 provides the best viscosity for sponge application</td>
<td>Undiluted or up to 1:5</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time</td>
<td>Non selective, avoid contact with desirable plants.</td>
</tr>
<tr>
<td>Burn</td>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>August - September</td>
<td>Non selective, avoid contact with desirable plants.</td>
</tr>
<tr>
<td>Burn</td>
<td>glyphosate (360g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup* + Brush-Off*</td>
<td>M,B</td>
<td>Spot spray</td>
<td>1L + 10g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>August - September</td>
<td>Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
</tr>
<tr>
<td>Burn</td>
<td>glyphosate dual salt (360g/L)</td>
<td>Weedmaster Duo*</td>
<td>M</td>
<td>Cut stump</td>
<td>1L/1L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time</td>
<td>Non selective, avoid contact with desirable plants.</td>
</tr>
<tr>
<td>Burn</td>
<td>triclopyr (600g/L)</td>
<td>Garlon 600*</td>
<td>I</td>
<td>Cut stump</td>
<td>1L/30L biodiesel or diesel</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time</td>
<td>Diesel can be replaced with water for ease of application.</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
**Box elder**
*Acer negundo*

**INVADES NATIVE RIPARIAN VEGETATION**
Deciduous tree with spreading branches. Twigs green, later developing grey bark. Leaves in opposite pairs, pinnate with 3-7 leaflets. Flowers tiny, green, without petals. Female trees produce pairs of winged, one-seeded fruits.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies, and parks.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. Do not use in urban home gardens</td>
<td>Registered for this use on woody weeds in general.</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Cut stump</td>
<td>1L/30L biodiesel or diesel</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time</td>
<td>Fell tree and apply herbicide immediately to the cut stump.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
</tbody>
</table>

**Bridal creeper**
*Asparagus asparagoides*

**WoNS**

**SMOTHERS NATIVE PLANTS**
Herbaceous climber with perennial rhizome and tubers. Stems twining, hairless, present autumn to spring, with shiny oval pale green cladodes resembling leaves. Tiny white flowers followed by round orange-red berries.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td>...</td>
<td>...</td>
<td>Manual removal.</td>
<td></td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Suitable for very small infestations and outliers only. Ensure that all underground rhizomes are removed. Can cause a high level of soil disturbance.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Non selective, avoid contact with desirable plants. Follow up application over at least 2 years will be required.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>
**Bridal veil**  
*Asparagus declinatus*  
**WoNS**  
**SMOTHERS NATIVE PLANTS**

Herbaceous climber with perennial rhizome and tubers. Stems twining or sprawling, present autumn to spring, with awl-shaped blue-green foliage. Tiny white flowers followed by large green-whitish berries.

<table>
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<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tubers are removed totally.</td>
<td>other non-crop areas.</td>
<td></td>
<td>of soil disturbance therefore reduce soil disturbance as much as</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>practical.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and</td>
<td>June - August</td>
<td>Non selective, avoid contact with desirable plants. Follow up application</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>other non-crop areas.</td>
<td></td>
<td>over at least 2 years will be required.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup® + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>800mL + 3g /100L</td>
<td>Conservation areas, bushland and</td>
<td>June - August</td>
<td>Non selective, avoid contact with desirable plants. Soil active</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>other non-crop areas.</td>
<td></td>
<td>herbicide, may damage desirable vegetation.</td>
<td></td>
</tr>
<tr>
<td>glyphosate dual salt (360g/L)</td>
<td>Weedmaster Duo*</td>
<td>M</td>
<td>Wiper sponge or brush</td>
<td>1L:3L</td>
<td>Conservation areas, bushland and</td>
<td>June - August</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>other non-crop areas.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Brush-Off®</td>
<td>B</td>
<td>Spot spray</td>
<td>1.5g/100L</td>
<td>Conservation areas, bushland and</td>
<td>June - August</td>
<td>Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>other non-crop areas.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
Broomrapes
Orobanche spp.

**ALERT WEED**
PARASITE ON BROADLEAF CROP PLANTS

Parasitic annuals with underground rootstocks attached to hosts; no part of the plant is green. Stems briefly emerge in spring. Leafless apart from a few scales. Flowers tubular, cream to blue. Numerous tiny seeds in capsules.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Report occurrences to your regional NRM Authority or Biosecurity SA. Collect a specimen to confirm identity.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>paraquat (135g/L) + diquat (115g/L)</td>
<td>Raystar Paraquat Diquat SL ®</td>
<td>L</td>
<td>Boom/ spot spray</td>
<td>Rate depends on size and species of host weeds. Consult label.</td>
<td>Fallows and non-crop areas.</td>
<td>Pre-sowing</td>
<td>Controls host weeds. Nonselective. Poisonous to humans, follow safety directions on label.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Boom spray</td>
<td>up to 1.5 L/ha</td>
<td>Fallows and non-crop areas.</td>
<td>Pre-sowing</td>
<td>Controls early host weed germinations. Nonselective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625*</td>
<td>I</td>
<td>Boom/ spot spray</td>
<td>Rate depends on size and species of host weeds. Consult label.</td>
<td>Cereal crops and pastures.</td>
<td>Post emergence</td>
<td>Controls host weeds. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>clopyralid (300g/L)</td>
<td>Lontrel®</td>
<td>I</td>
<td>Boom/ spot spray</td>
<td>Rate depends on size and species of host weeds. Consult label.</td>
<td>Cereal crops and pastures.</td>
<td>Post emergence</td>
<td>Controls host weeds</td>
<td>Registered</td>
</tr>
<tr>
<td>flumetsulam (800g/kg)</td>
<td>Broadstrike®</td>
<td>B</td>
<td>Boom spray</td>
<td>Rate depends on size and species of host weeds. Consult label.</td>
<td>Fallows and non-crop areas.</td>
<td>Pre-sowing</td>
<td>Control host weeds before the growing season.</td>
<td>Registered</td>
</tr>
<tr>
<td>flumetsulam (800g/kg)</td>
<td>Broadstrike®</td>
<td>B</td>
<td>Boom spray</td>
<td>25 g/ha</td>
<td>Pastures and non-crop areas.</td>
<td>July - August</td>
<td>Controls annual broadleaf host plants including brassicas. Add 500 mL/100L Uptake® spray oil.</td>
<td>Registered</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Ally®</td>
<td>B</td>
<td>Boom spray</td>
<td>5-7g/ha</td>
<td>Cereal crops.</td>
<td>July - September</td>
<td>Post emergent control of annual broadleaf host weeds including brassicas. Soil active herbicide, may damage desirable vegetation.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
# Buffel grass

*Cenchrus ciliaris* and *Cenchrus pennisetiformis*

**INVADES RANGELAND. ELIMINATES NATIVE SPECIES. FIRE HAZARD**

Tussock grass, usually perennial, to 1.5 m tall. Leaves flat, to 30 cm long. Seedheads form a dense, hairy cylindrical spike.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
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<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>diquat 115g/L+135g/L paraquat</td>
<td>Pacific Diquat/Paraquat 250*</td>
<td>L</td>
<td>Spot spray</td>
<td>240-320mL/100L</td>
<td>Non-crop areas.</td>
<td>Up to flowering.</td>
<td>Poisonous if swallowed; may irritate eyes and skin. Thoroughly wet foliage. Use the high rate for denser weed growth.</td>
<td>Registered for this use, but this weed is not on the label.</td>
</tr>
<tr>
<td>flupropanate granules (86.9 g/kg)</td>
<td>GP Flupropanate Granular®</td>
<td>J</td>
<td>Granules dispersed on ground</td>
<td>15 kg/ha</td>
<td>Non-crop areas and pastures.</td>
<td>While actively growing.</td>
<td></td>
<td>Registered for this use, but this weed is not on the label.</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Taskforce®</td>
<td>J</td>
<td>Boom spray</td>
<td>3L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>December - March. After summer rains</td>
<td>Add a non-ionic surfactant. A slow-working residual. If spraying late in the season add glyphosate for faster knockdown. Do not graze or cut for stockfeed for at least 4 months after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Taskforce®</td>
<td>J</td>
<td>Spot spray</td>
<td>300mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>December - March. After summer rains</td>
<td>Add a non-ionic surfactant. A slow-working residual. If spraying late in the season add glyphosate for faster knockdown. Do not graze or cut for stockfeed for at least 14 days after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Taskforce®</td>
<td>J</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Non-crop areas and pastures.</td>
<td>December - March. After summer rains</td>
<td>Add a non-ionic surfactant. A slow-working residual. If spraying late in the season add glyphosate for faster knockdown. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Taskforce® + Roundup CT®</td>
<td>JM</td>
<td>Boom spray</td>
<td>3L + 300-500mL/ha</td>
<td>Non-crop areas and pastures.</td>
<td>December - March. After summer rains</td>
<td>Add a non-ionic surfactant. Apply to fresh foliage. Apply glyphosate alone for seed set suppression; or for control mix flupropanate with glyphosate. Use the higher rate if the weed is dense. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
### Herbicide Group Table

<table>
<thead>
<tr>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE</th>
<th>SITUATION</th>
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<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2-DPA (740g/kg)</td>
<td>Dalapon 7405P Systemic Grasskiller*</td>
<td>Spot spray</td>
<td>100g/10L</td>
<td>Non-crop areas</td>
<td>July - August just before flowering stem emerges</td>
<td>Use 10L spray per 100 square metres. Do not graze pasture or cut for stock feed for 2 days after application. Residues in soil may inhibit germination of sensitive plants for 30 days or more.</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive*</td>
<td>Sponge application</td>
<td>1L/3L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>September - November</td>
<td>Suitable for use near waterways - refer to label. Use higher rate for plants 1-2m high. Repeat applications will be required. Non selective, avoid contact with desirable plants. Non-crop situations only.</td>
</tr>
</tbody>
</table>

### Bulbil Watsonia

**Watsonia meriana var. bulbillifera**

**Competes with pasture and native vegetation**

Perennial growing in winter from a corm. Erect, tough, hairless sword-shaped leaves. Flowering stem to 2 m high in spring with clusters of bulbils. Red tubular flowers 3-4 cm long.

<table>
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<th>COMMENTS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Boom spray</td>
<td>4.8L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness.</td>
<td>PER 9792 (exp.2020)</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Spot spray</td>
<td>800mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness.</td>
<td>PER 9792 (exp.2020)</td>
</tr>
<tr>
<td>haloxyfop-p (520g/L)</td>
<td>Verdict 520®</td>
<td>A</td>
<td>Spot spray</td>
<td>160mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>While actively growing.</td>
<td>Weeds must not be moisture stressed. Add Uptake* spraying oil at 500 mL/100 L</td>
<td>PER 9792 (exp.2020)</td>
</tr>
</tbody>
</table>
glyphosate (450g/L) | Roundup CT* | M | Sponge application | 1L/3L | Conservation areas, bushland and other non-crop areas. | September - November | Non selective, avoid contact with desirable plants. Non-crop situations only. | PER 13371 (exp.2022)

glyphosate (450g/L) | Roundup CT* | M | Spot spray | 1L/100L | Conservation areas, bushland and other non-crop areas. | September - November | Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. | PER 13371 (exp.2022)

glyphosate (450g/L) + metsulfuron-methyl (600g/kg) | Roundup CT* + Associate* | M,B | Spot spray | 1L + 10g/100L | Conservation areas, bushland and other non-crop areas. | September - November | Non selective, avoid contact with desirable plants. Non-crop situations only. Soil active herbicide, may damage desirable vegetation. | PER 13371 (exp.2022)

metsulfuron-methyl (600g/kg) | Brush-Off* | B | Spot spray | 10g/100L | Conservation areas, bushland and other non-crop areas. | September - early November | Soil active herbicide, may damage desirable vegetation. Non-crop situations only. | PER 13371 (exp.2022)

**Bundy blackberry**

*Rubus laudatus*

**ALERT WEED**

**INVADES BUSHLAND AND PASTURE. FORMS THICKETS. NOT PRESENT IN SA**

Scrambling perennial shrub with prickles. Long stems/canes curve down and form roots at end. Leaves of usually 3 leaflets, bright green above, felted hairy on underside. White flowers followed by berries ripening to red.

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<tbody>
<tr>
<td>Report</td>
<td>Not yet known to occur in South Australia. Report occurrences to your regional NRM Authority or Biosecurity SA, and seek advice. Collect a pressed specimen to confirm identity.</td>
<td></td>
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</tr>
</tbody>
</table>
| glyphosate (450g/L) | Roundup CT* | M | Cut and paint the canes - paint brush applicator | undiluted | Conservation areas, bushland and other non-crop areas. | November - April | Suitable for outliers, small infestations or sensitive areas. | PER 13371 (exp.2022)
| glyphosate (360g/L) + metsulfuron-methyl (600g/kg) | Roundup® + Brush-Off® | M,B | Spot spray | 1L + 3g/100L | Conservation areas, bushland and other non-crop areas. | November - April | Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation. | PER 13371 (exp.2022)
| glyphosate dual salt (360g/L) | Weedmaster Duo* | M | Cut stump | 1L/1L | Conservation areas, bushland and other non-crop areas. | November - April | Non selective, avoid contact with desirable plants. | PER 13371 (exp.2022)

*Application Rate - with water unless indicated*
**Triclopyr (600g/L) Garlon 600®**

*Application Method: Cut stump*

*Rate: 1L/30L biodiesel or diesel*

*Situation: Conservation areas, bushland and other non-crop areas.*

*Timing: November - April*

*Comments: Diesel oil may be replaced with water for ease of application.*

*Legal Status: PER 12932 (exp. 2021)*

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**Cabomba**

*Cabomba caroliniana*

**WoNS**

**Invases Ponds, Shallow Lakes and Slow Moving Streams**

Grows submerged with bright green divided leaves singly along the stems. Tiny flowers just above water level with 6 white petals.

<table>
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<tr>
<th>Control Option</th>
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<th>Situation</th>
<th>Timing</th>
<th>Comments</th>
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</tr>
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<tbody>
<tr>
<td>Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Dredging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Dredge plants out of water and dispose by composting or drying.*

---

**Calomba Daisy**

*Oncosiphon suffruticosum*

**Invases Annual Pastures. Unpalatable**

Winter annual to 1 m tall. Grey, finely-divided leaves with camomile scent. Numerous small, yellow flower heads.

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<tbody>
<tr>
<td>Glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Boom spray</td>
<td>400 - 800mL/ha</td>
<td>Fallows in cropping land.</td>
<td>Before sowing a crop.</td>
<td>Non selective, for use on seedlings less than 8 cm.</td>
<td>Registered</td>
</tr>
<tr>
<td>Glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Boom spray</td>
<td>800mL-1.2/ha</td>
<td>Fallows in cropping land.</td>
<td>Before sowing a crop.</td>
<td>Non selective, for use on larger plants over 8 cm.</td>
<td>Registered</td>
</tr>
<tr>
<td>Glyphosate (450g/L) + Metolosulfuron-methyl (600g/kg)</td>
<td>Roundup CT® + Ally®</td>
<td>M,B</td>
<td>Boom spray</td>
<td>800 -1000mL + 5-7g/ha</td>
<td>Wheat, barley, triticale and cereal rye crops.</td>
<td>Fallow and pre-planting.</td>
<td>Apply when plants are small. Use higher rates for larger or dense weeds. Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
**Caltrop**  
*Tribulus terrestris*

**SPINY BURRS. TOXIC TO LIVESTOCK**

Prostrate summer annual. Creeping stems from a central root. Blue-green leaves divided into oblong leaflets in 2 rows. Flowers have 5 yellow petals. Burrs with sharp spines.

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<tbody>
<tr>
<td>Competing vegetation</td>
<td>Management to maintain a dense ground cover.</td>
<td>Pastures and amenity areas.</td>
<td>Long term</td>
<td>Caltrop is favoured by bare ground, and does not compete effectively with other plants. Ground cover significantly reduces germination; grass cover crops allow overspraying with selective broadleaf herbicides.</td>
<td>Registered for this use on annual weeds in general.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical</td>
<td>Cut plants off at root and dispose.</td>
<td>Urban and amenity areas.</td>
<td>When noticed.</td>
<td>Scrape off surface soil containing seeds and bury it at least 50 cm deep.</td>
<td>Registered for this use on annual weeds in general.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nonanoic acid (525 g/L)</td>
<td>Slasher Organic Weedkiller®</td>
<td>Spot spray</td>
<td>700mL/10L</td>
<td>Urban areas. Suitable for use in organic gardens.</td>
<td>September - March. Young plants.</td>
<td>Spray to completely cover weed surface. Non persistent, retreatment may be needed for later germinations. Non selective, avoid contact with desirable plants.</td>
<td>Registered for this use on annual weeds in general.</td>
<td></td>
</tr>
<tr>
<td>flumetsulam (800g/kg)</td>
<td>Broadstrike®</td>
<td>B Spot spray</td>
<td>25g/100L</td>
<td>Agricultural non-crop areas.</td>
<td>September - March. Before flowering.</td>
<td>Add 500 mL/100L Uptake® spray oil. Lasts 2-3 months, less if conditions are wet or soil is disturbed.</td>
<td>Registered for this use on annual weeds in general.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M Spot spray</td>
<td>500-700mL/100L</td>
<td>Urban areas and other non-crop situations.</td>
<td>September - March. Before flowering.</td>
<td>Treat within 3 weeks of seed germination. Non selective, avoid contact with desirable plants.</td>
<td>Registered for this use on annual weeds in general.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M Boom spray</td>
<td>2-3L/ha</td>
<td>Urban areas and other non-crop situations.</td>
<td>September - March. Before flowering.</td>
<td>Treat within 3 weeks of seed germination. Non selective, avoid contact with desirable plants.</td>
<td>Registered for this use on annual weeds in general.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M Boom spray</td>
<td>1.6-2.4L/ha</td>
<td>Fallows.</td>
<td>At beginning of fallow period.</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>Registered for this use on annual weeds in general.</td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
**Cane needlegrass**

*Nassella hyalina*

**ALERT WEED**

**INVADES PASTURES AND NATIVE GRASSLANDS. SHARP SEEDS**

Perennial stipoid grass. Leaves are linear. Seedhead is an open panicle with many spikelets. Seeds have a long awn, which is twice bent. Nut-like stem seeds are also produced in the leaf sheath.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Grub individual plants</td>
<td>Any.</td>
<td>While actively growing, autumn to spring.</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Spot spray</td>
<td>100-300mL/100L</td>
<td>Non-crop situations.</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Non-crop situations.</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup*</td>
<td>J,M</td>
<td>Spot spray</td>
<td>150-300mL + 270mL/100L</td>
<td>Non-crop situations.</td>
<td>Add a non-ionic surfactant. Use the higher rate for dense infestations. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
</tbody>
</table>
## Cape broom

*Genista monspessulana*

**WoNS**

*InvaDes bushland. Fire hazard*

Erect, evergreen leguminous shrub. Leaves with three downy leaflets. Yellow pea flowers in clusters. Short hairy pods with hard, round seeds.

<table>
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<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Any</td>
<td>Seedlings</td>
<td>Hand pull when soil is moist.</td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Any</td>
<td>Established bushes</td>
<td>Use a Tree Popper to uproot.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive*</td>
<td>M</td>
<td>Spot Spray</td>
<td>1-1.3L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>September - December, before pod formation</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
<td>Registered for this use, but this weed is not on the label.</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS*</td>
<td>I</td>
<td>Spot spray</td>
<td>250mL/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>September - December, before pod formation</td>
<td>Apply thorough foliage spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS*</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Autumn to winter</td>
<td>Apply thorough foliage spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra*</td>
<td>I</td>
<td>Spot spray</td>
<td>250mL/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Spring to early summer before pod formation</td>
<td>Apply thorough foliage spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra*</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Autumn to winter</td>
<td>Apply thorough foliage spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Cut stump - note</td>
<td>1:1 provides the best viscosity for sponge application</td>
<td>Undiluted to 1:5</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time</td>
<td>Apply herbicide immediately to the cut stump.</td>
</tr>
<tr>
<td>glyphosate (360g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup® + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>200mL + 10g /100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>September - December, before pod formation</td>
<td>Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
triclopyr (600g/L) | Garlon 600* | I | Cut stump | 1L/30L biodiesel or diesel | Conservation areas, bushland and other non-crop areas. | Any time | Apply herbicide immediately to the cut stump. Diesel oil can be replaced with water for easier application. | PER 12932 (exp. 2021)

triclopyr (600g/L) | Garlon 600* | I | Spot spray | 170mL/100L | Conservation areas, bushland and other non-crop areas. | September - December, before pod formation | Add a marking agent. | PER 12932 (exp. 2021)

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**Cape tulip (one and two leafed)**  
*Moraea flaccida* and *Moraea miniata*

**TOXIC TO LIVESTOCK. SERIOUS PASTURE WEED**

Herb growing in winter from corms. Large flowers with 6 pink to orange petals. *M. flaccida* has one long, flat leaf and long narrow seed pods. *M. miniata* has two or three leaves per plant and clusters of small fleshy bulbils in the leaf axils.

---

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td>Grub or hand pull.</td>
<td>All.</td>
<td>May - October</td>
<td>Only useful for isolated plants. Pull each plant, ensuring that the underground corms are removed.</td>
<td></td>
<td></td>
<td></td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup CT* + Ally*</td>
<td>M,B</td>
<td>Boom spray</td>
<td>800mL + 5g /ha</td>
<td>Non-cropping areas.</td>
<td>July - September</td>
<td>Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup CT* + Ally*</td>
<td>M,B</td>
<td>Spot spray</td>
<td>800mL + 5g /100L</td>
<td>Non-cropping areas. Pastures tolerant to metsulfuron-methyl (not clover based pastures).</td>
<td>July - September</td>
<td>Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup CT* + Ally*</td>
<td>M,B</td>
<td>Wiper</td>
<td>800mL + 1g/100L</td>
<td>Pastures tolerant to metsulfuron-methyl (not clover based pastures).</td>
<td>July - September</td>
<td>Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>Registered</td>
</tr>
<tr>
<td>glufosinate-ammonium (200 g/L)</td>
<td>Fascinate 200 SL*</td>
<td>N</td>
<td>Boom spray</td>
<td>2.0-3.0L/ha</td>
<td>Non-crop areas.</td>
<td>July - August</td>
<td>Non selective, avoid contact with desirable plants. Spray when flower stem begins to grow. Seed set suppression only.</td>
<td>Registered</td>
</tr>
<tr>
<td>glufosinate-ammonium (200 g/L)</td>
<td>Fascinate 200 SL*</td>
<td>N</td>
<td>Spot spray</td>
<td>300mL/100L</td>
<td>Non-cropping areas.</td>
<td>July - August</td>
<td>Non selective, avoid contact with desirable plants. Spray when flower stem begins to grow. Seed set suppression only.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
## Carrion flower

*Orbea variegata*

**INVADES NATIVE SHRUBLANDS, UNPALATABLE TO LIVESTOCK**

Prostrate succulent with fleshy leafless stems. Large, foul smelling, starfish-shaped flowers mottled dull purple and yellow. Seeds wind-dispersed from large pods.

<table>
<thead>
<tr>
<th>Control Option</th>
<th>Example of Product Names</th>
<th>Herbicide Group</th>
<th>Application Method</th>
<th>Application Rate*</th>
<th>Situation</th>
<th>Timing</th>
<th>Comments</th>
<th>Legal Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Hand-pull all stems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>glyphosate (450g/L)</em></td>
<td>Roundup CT*</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>July – October</td>
<td>Saturate all parts of plant. Non selective, avoid contact with desirable plants. Add Pulse* penetrant and spray oil</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td><em>glyphosate (450g/L)</em></td>
<td>Roundup CT*</td>
<td>M</td>
<td>Brush</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>July – October</td>
<td>Apply by brush or weed wand to all parts of plant. Add Pulse* penetrant and spray oil</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
### Cats claw creeper
*Dolichandra unguis-cati*

**WoNS**

**SMOTHERS NATIVE VEGETATION IN TROPICAL AUSTRALIA. NATIONAL BAN ON SALE**

Vine. Leaves have two leaflets with 3-clawed tendril growing between them. Large, bright yellow bell-shaped flowers. Pods contain numerous papery seeds.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>HERBICIDE GROUP</th>
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<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Cut stems, dig out tubers.</td>
<td>Any time</td>
<td></td>
<td></td>
<td>Not a weed in SA, but gardeners may find it necessary to remove an unwanted plant. Cut stems and dispose; dig out the large tubers at the base of plant.</td>
<td></td>
</tr>
</tbody>
</table>

### Chilean needlegrass
*Nassella neesiana*

**WoNS**

**INVADES PASTURES AND BUSHLAND. SHARP SEEDS**

Small perennial tussock grass. Seedhead is an open panicle with many purplish spikelets. Seeds with an awn surrounded at its base by a crown of bristles.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Report occurrences to your regional NRM Authority or Biosecurity SA. Collect a pressed specimen to confirm identity.</td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Grub individual plants</td>
<td>Any</td>
<td>When found.</td>
<td></td>
<td>Very small infestations and outliers only</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Boom spray</td>
<td>1.5-3L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>July - September</td>
<td>Add a non-ionic surfactant. A slow-working residual. If spraying late in the season add glyphosate for faster knockdown. Do not graze or cut for stockfeed for at least 4 months after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Spot spray</td>
<td>100-300mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>July - September</td>
<td>Add a non-ionic surfactant. A slow-working residual. If spraying late in the season add glyphosate for faster knockdown. Do not graze or cut for stockfeed for at least 14 days after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>Herbicide</td>
<td>Concentration</td>
<td>Application Form</td>
<td>Rate</td>
<td>Application Area</td>
<td>Timing</td>
<td>Application Notes</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Non-crop areas and pastures</td>
<td>July - September</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™+ Roundup CT®</td>
<td>Boom spray</td>
<td>1.5-3L + 300-500mL/ha</td>
<td>Non-crop areas and pastures</td>
<td>While actively growing, autumn to spring</td>
<td>Add a non-ionic surfactant. Use the higher rates on dense infestations. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™+ Roundup CT®</td>
<td>Spot spray</td>
<td>150-300mL + 270mL/100L</td>
<td>Non-crop areas and pastures</td>
<td>While actively growing, autumn to spring</td>
<td>Add a non-ionic surfactant. Use the higher rates on dense infestations. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>Boom spray</td>
<td>2.4L/ha</td>
<td>Non-crop situations</td>
<td>While actively growing, autumn to spring</td>
<td>Results may be variable - Suppression only. Non selective, avoid contact with desirable plants.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>Spot spray</td>
<td>800mL/100L</td>
<td>Non-crop areas and pastures</td>
<td>While actively growing, autumn to spring</td>
<td>Results may be variable. Non selective, avoid contact with desirable plants.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>Boom spray</td>
<td>2.4L/ha</td>
<td>Non-crop situations</td>
<td>While actively growing, autumn to spring</td>
<td>Results may be variable - suppression only. Non selective, avoid contact with desirable plants.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>Spot spray</td>
<td>800mL/100L</td>
<td>Non-crop areas and pastures</td>
<td>While actively growing, autumn to spring</td>
<td>Results may be variable. Non selective, avoid contact with desirable plants.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>Wiper</td>
<td>2.6L/10L</td>
<td>Non-crop areas and pastures</td>
<td>While actively growing, autumn to spring</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
Climbing asparagus fern
*Asparagus plumosus*

**WoNS**

**INVADES BUSHLAND, SMOthers NATIVE PLANTS**

Perennial climber with rhizome, wiry stems, flattened sprays of fine needle-shaped cladodes giving a fern-like appearance. Small white flowers, producing black berries on female plants.

<table>
<thead>
<tr>
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<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Removal</td>
<td></td>
<td></td>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Anytime</td>
<td>Suitable for small plants and outliers only. Can result in a high level of soil disturbance therefore reduce soil disturbance as much as practical.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Non selective, avoid contact with desirable plants. Non-crop situations only. Follow up application over at least 2 years will be required.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (360g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup® + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>1L + 3g /100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Follow up application over at least 2 years will be required. Non selective, avoid contact with desirable plants. Non-crop situations only. Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Brush-Off®</td>
<td>B</td>
<td>Spot spray</td>
<td>1.5g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Non-crop situations only. Not suitable for native vegetation and under desirable trees. Follow up application over at least 2 years will be required.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>
Coastal tea-tree

*Leptospermum laevigatum*

**INVADES NATIVE VEGETATION**

Small tree or shrub with papery bark on gnarled trunks. Grey-green oval leaves to 3 cm long. White flowers with 5 petals, wheel-shaped seed capsules with numerous slender seeds.

<table>
<thead>
<tr>
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<th>APPLICATION RATE*</th>
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<th>TIMING</th>
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<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Cut and grub out</td>
<td></td>
<td>Any time</td>
<td>Dispose of tea-tree promptly, or seed will fall as plants dry out. Machinery will be needed to remove large plants. Follow-up to control seedlings.</td>
<td>PER 12932 (exp. 2021)</td>
<td></td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Cut stump</td>
<td>1L/30L biodiesel or diesel</td>
<td>Conservation areas, bushland and other non-crop areas. While actively growing</td>
<td>Diesel can be replaced with water for ease of application.</td>
<td>Registered</td>
<td></td>
</tr>
</tbody>
</table>

Common lantana

*Lantana camara*

**WoNS**

**INVADES PASTURE AND BUSHLAND IN OTHER STATES. TOXIC TO STOCK. NATIONAL BAN ON SALE**

Densely branched scrambling shrub. Flowers in various colour combinations of red, yellow, orange, pink, cream or purple. Rough, hairy ovate leaves. Clusters of shiny, purple-black berries.

<table>
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<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Cut, grub out and dispose.</td>
<td></td>
<td>Any time</td>
<td>Gardeners may find it necessary to remove unwanted plants. Machinery may be needed to remove large plants.</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>glyphosate (835g/kg)</td>
<td>+ metsulfuron-methyl (10g/kg)</td>
<td>M,B</td>
<td>Spot spray</td>
<td>173g/100L</td>
<td>Non-crop areas and bushland. While actively growing, not when drought stressed</td>
<td>Add an organosilicone penetrant. Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>Registered</td>
<td></td>
</tr>
</tbody>
</table>
**Coolatai grass**  
*Hyparrhenia hirta*

**INVADES PASTURES AND BUSHLAND. FIRE HAZARD**

Large perennial grass. Leaves to 35 cm long, 5 mm wide, rough like sandpaper. V-shaped pairs of spikelets on branched flowering stems.

<table>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Removal</td>
<td>Grub tussocks.</td>
<td>J</td>
<td>Boom spray</td>
<td>3L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>Any</td>
<td>When found.</td>
<td>Pull out each tussock with a spade and dispose.</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™ J</td>
<td>Boom spray</td>
<td>3L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>July - October</td>
<td>Add a non-ionic surfactant. Apply herbicide solution to the point of run-off from leaf surfaces – 1000-2000 L / Ha. A slow-working residual. Apply early in the season. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™ J</td>
<td>Spot spray</td>
<td>300mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>July - October</td>
<td>Add a non-ionic surfactant. Apply herbicide solution to the point of run-off from leaf surfaces – 1000-2000 L / Ha. A slow-working residual. Apply early in the season. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™ J</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Non-crop areas and pastures.</td>
<td>July - October</td>
<td>Add a non-ionic surfactant. Apply once per season. A slow-working residual. Apply early in the season.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup® J,M</td>
<td>Boom spray</td>
<td>3L + 300-500mL/ha</td>
<td>Non-crop areas and pastures.</td>
<td>July - October</td>
<td>Add a non-ionic surfactant. Use the higher rate for dense infestations. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Apply glyphosate alone for seed set suppression; or for control mix flupropanate with glyphosate. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup® J,M</td>
<td>Spot spray</td>
<td>200mL + 1.6L/100L</td>
<td>Non-crop areas and pastures.</td>
<td>July - October</td>
<td>Use the higher rate for dense infestations. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup® J,M</td>
<td>Wiper</td>
<td>500mL + 60mL/10L</td>
<td>Non-crop areas and pastures.</td>
<td>July - October</td>
<td>Use the higher rate for dense infestations. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>CONTROLOPTION</td>
<td>EXAMPLE OF PRODUCT NAMES</td>
<td>HERBICIDE GROUP</td>
<td>APPLICATION METHOD</td>
<td>APPLICATION RATE*</td>
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<td>TIMING</td>
<td>COMMENTS</td>
<td>LEGAL STATUS</td>
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<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D®</td>
<td>I</td>
<td>Spot spray</td>
<td>1.3L/100L</td>
<td>Non-crop areas.</td>
<td>Late spring to summer</td>
<td>Soil residual. Do not use near desirable vegetation. Do not apply near susceptible crops.</td>
<td>Registered</td>
</tr>
<tr>
<td>clopyralid (300g/L)</td>
<td>Lontrel®</td>
<td>I</td>
<td>Boom spray</td>
<td>4L/ha</td>
<td>Grass pastures and fallows</td>
<td>While actively growing, spring to summer.</td>
<td>Do not use on pasture legumes.</td>
<td>Registered (Vic and Qld only)</td>
</tr>
<tr>
<td>clopyralid (300g/L)</td>
<td>Lontrel®</td>
<td>I</td>
<td>Spot spray</td>
<td>500mL/100L</td>
<td>Grass pastures and fallows</td>
<td>While actively growing, spring to summer.</td>
<td>Do not use on pasture legumes. Use 200 - 250 L water per hectare.</td>
<td>Registered (Vic and Qld only)</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Agvantage Glyphosate 450®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-agricultural areas.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants. Repeat application as required. Suppression only.</td>
<td>Product and use are registered, but this weed is not on the label.</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated

**Creeping knapweed**
*Rhaponticum repens*

**COMPETES WITH CROPS AND PASTURES**
Perennial herb with deep root system and creeping rhizomes. Leaves blue-green leaves in a basal rosette and along the vertical stems. Mauve thistle-like flower heads.
**Cutleaf mignonette**  
*Reseda lutea*

**COMPETES WITH CROPS AND PASTURES**  
Perennial herb with deep root system. Leaves divided into narrow segments. Yellow flowers in erect spikes, and green seed capsules.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td>Manual removal</td>
<td></td>
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<td></td>
<td>Any</td>
<td>At rosette stage.</td>
<td>Suitable for individual plants and small infestations; regrowth from deep roots is likely.</td>
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</tr>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D®</td>
<td>I</td>
<td>Spot spray</td>
<td>650mL/100L</td>
<td>Pastures and non-cropping areas.</td>
<td>Before flowering</td>
<td>Soil residue do not use near desirable vegetation or in waterways. Do not apply near susceptible crops.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (500g/L)</td>
<td>Conquest MCPA 500*</td>
<td>I</td>
<td>Boom spray</td>
<td>2.1L/ha</td>
<td>Pastures and non-cropping areas.</td>
<td>At early rosette stage.</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Non crop situations. For rates within crops refer to label.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (500g/L)</td>
<td>Conquest MCPA 500*</td>
<td>I</td>
<td>Spot spray</td>
<td>140mL/100L</td>
<td>Pastures and non-cropping areas.</td>
<td>At early rosette stage.</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Ally*</td>
<td>B</td>
<td>Boom spray</td>
<td>7g/ha</td>
<td>Cereal crops.</td>
<td>While actively growing before flowering</td>
<td>Repeat treatment may be required. Soil active herbicide.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (475g/L) + glyphosate (450g/L)</td>
<td>Surpass 475® + Agvantage Glyphosate 450 ®</td>
<td>I, M</td>
<td>Spot spray</td>
<td>145mL + 1L /100L</td>
<td>Fallows</td>
<td>Summer</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Non-selective, avoid contact with desirable plants.</td>
<td>Product and use are registered, but this weed is not on the label.</td>
</tr>
</tbody>
</table>
**Cylindropuntia cacti** *(devils rope, Hudson pear, coral cactus)*

*Cylindropuntia* spp.

**WoNS**

*COMPETE WITH NATIVE VEGETATION. FORMS PRICKLY THICKETS. CAN INJURE ANIMALS*

Succulent, shrubby perennials. Stems cylindrical, green, ribbed, leafless with large surface spines. Produce large flowers of various colours. Most produce colourful, fleshy fruits.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Deep burial</td>
<td></td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>Any time</td>
<td>Remove, collect and bury all fragments. Any that are left or dropped during transport to the burial site will regrow.</td>
<td></td>
</tr>
<tr>
<td>MSMA (800g/L)</td>
<td>Daconate*</td>
<td>Z</td>
<td>Spot spray</td>
<td>1L/40L</td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>Summer</td>
<td>Apply using a power sprayer when air temp is above 30°C. Thoroughly cover all pad surfaces. Re-spray any regrowth.</td>
<td>Registered</td>
</tr>
<tr>
<td>MSMA (720g/L)</td>
<td>Daconate 720*</td>
<td>Z</td>
<td>Spot spray</td>
<td>1.1L/40L</td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>Summer</td>
<td>Apply using a power sprayer when air temp is above 30°C. Thoroughly cover all pad surfaces. Re-spray any regrowth.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (240g/L) + picloram (120g/L)</td>
<td>Access*</td>
<td>I</td>
<td>Spot spray</td>
<td>1L/60L biodiesel or diesel</td>
<td>Fencelines, forestry, pasture, commercial, industrial and other non-crop areas.</td>
<td>While actively growing</td>
<td>Apply as an over all spray, wetting all parts of the plant to ground level. Do not allow herbicide to contact non-target species.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra*</td>
<td>I</td>
<td>Spot spray</td>
<td>500mL/100L</td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>While actively growing</td>
<td>Apply as thorough foliage spray; follow-up may be needed to treat regrowth.</td>
<td>Product and use are registered, but this weed is not on the label.</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
Desert ash
Fraxinus angustifolia

INVADES NATIVE VEGETATION ALONG STREAMS
Deciduous tree. Leaves in opposite pairs, pinnate with 3-9 leaflets. Flat, winged single-seeded fruits.
Distichlis (seed bearing forms)

*Distichlis spicata*

**POTENTIAL INVADER OF SALINE WETLANDS**

Perennial grass spreading by runners. Short pointed grey-green leaves in two rows. Small seed heads on the end of short leafy stems.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>800mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>While actively growing.</td>
<td>Add an organosilicone penetrant. Non selective, avoid contact with desirable plants. Variable results.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
</tbody>
</table>

Dodder

*Cuscuta spp.*

**ALERT WEED**

**PARASITE ON LUCERNE AND OTHER CROPS**

Annual, leafless climber. Fine tangled white to orange stems attach to host plants. Masses of tiny white flowers in summer. Seeds in globular capsules.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>HERBICIDE GROUP</th>
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<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Report occurrences to your regional NRM Authority and obtain advice.</td>
<td></td>
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</tbody>
</table>
Burn to kill the host plant and destroy the seed bank.

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Application Method</th>
<th>Application Rate*</th>
<th>Situation</th>
<th>Timing</th>
<th>Comments</th>
<th>Legal Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burn to kill the host and destroy the seed bank. Use a weed burner, or burn hay on the spot where safe to do so. Subject to seasonal restrictions on burning.</td>
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</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-crop situations.</td>
<td>September - February</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Avantage Glyphosate 450*</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-crop situations.</td>
<td>September - February</td>
</tr>
<tr>
<td>glyphosate (450g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Avantage Glyphosate 450* + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>800mL + 3-5g / 100L</td>
<td>Non-crop situations.</td>
<td>September - February</td>
</tr>
</tbody>
</table>

**Dog rose**
*Rosa canina*

**FORMS PRICKLY THICKETS, INVADES PASTURE**
Large deciduous shrub. Erect or scrambling with prickly stems and leaves. Scented, pale pink flowers. Red fruits (hips). Distinguished from sweet briar by smooth flower stalks and fruit.

**CONTROL OPTION**
**EXAMPLE OF PRODUCT NAMES**
**HERBICIDE GROUP**
**APPLICATION METHOD**
**APPLICATION RATE*”**
**SITUATION**
**TIMING**
**COMMENTS**

- Manual removal
  - Grub individual plants.

- glyphosate (360g/L)
  - Roundup Biactive®
  - M
  - Spot spray
  - 1.5-2L/100L
  - Non-agricultural areas.
  - October - January
  - Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.
  - Product and use are registered, but this weed is not on the label

- glyphosate (540g/L)
  - Roundup Powermax®
  - M
  - Spot spray
  - 1L/100L
  - Non-agricultural areas.
  - October - January
  - Non selective, avoid contact with desirable plants. Add a non-ionic surfactant.
  - Registered for woody weeds in general

- triclopyr (300g/L) + picloram (100g/L)
  - Grazon DS®
  - I
  - Spot spray
  - 350mL/100L
  - Non-agricultural areas.
  - October - January
  - For plants up to 1.5m tall. Add a non-ionic surfactant.
  - Product and use are registered, but this weed is not on the label

- triclopyr (600g/L)
  - Garlon 600*
  - I
  - Basal bark spray
  - 1L/30L biodiesel or diesel
  - Non-agricultural areas.
  - While actively growing.
  - Saturate basal bark.
  - Product and use are registered, but this weed is not on the label

- triclopyr (600g/L)
  - Garlon 600*
  - I
  - Cut stump
  - 1L/30L biodiesel or diesel
  - Non-agricultural areas.
  - While actively growing.
  - Apply herbicide immediately to the cut stump. Diesel can be replaced with water for ease of application.
  - Product and use are registered, but this weed is not on the label

- glyphosate (450g/L)
  - Roundup CT®
  - M
  - Cut stump
  - Undiluted or up to 1:4
  - Conservation areas, bushland and other non-crop areas.
  - While actively growing.
  - Apply to cut stump immediately.
  - PER 13371 (exp.2022)
glyphosate (360g/L) + metsulfuron-methyl (600g/kg) | Roundup®* + Brush-Off® | M,B | Spot spray | 800mL-1L + 10g /100L | Conservation areas, bushland and other non-crop areas. | October - January | Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation. | PER 13371 (exp.2022) |

metsulfuron-methyl (600g/kg) | Brush-Off® | B | Spot spray | 15g/100L | Conservation areas, bushland and other non-crop areas. | October - January | Soil active herbicide, may damage desirable vegetation. | PER 13371 (exp.2022) |

triclopyr (600g/L) | Garlon 600®* | I | Spot spray | 170mL/100L | Conservation areas, bushland and other non-crop areas. | October - January | Add a marking agent. | PER 12932 (exp. 2021) |

**Dolichos pea**
*Dipogon lignosus*

**INVADES BUSHLAND, SMOOTHERS VEGETATION**


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<tbody>
<tr>
<td>Manual removal</td>
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<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies, and parks.</td>
<td>Any time</td>
<td>Cut stems and apply 3-5 mm thick layer immediately. For multi-stemmed plants treat at least 80% of stems including main stems.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate dual salt (360g/L)</td>
<td>Weedmaster Duo®</td>
<td>M</td>
<td>Cut stump</td>
<td>1L/4L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time</td>
<td>Cut stems and apply herbicide immediately.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (360g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup®* + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>1L + 3g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Seedlings or small plants; larger plants will require follow-up treatment. Add a surfactant.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
### Dune onion weed

*Trachyandra divaricata*

**INVADES COASTAL SAND DUNES, TOXIC TO STOCK**
Perennial with fleshy, strap-like basal leaves. Flower stems to 80 cm, branches spreading laterally among the leaves. Flowers with 6 white tepals. Seeds round in dry capsules.

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<td>Report occurrences to your regional NRM Authority and obtain advice.</td>
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</tbody>
</table>

### Elodea

*Elodea canadensis*

**INVADES PONDS, LAKES AND STREAMS**
Aquatic, freshwater, perennial herb. Submerged stems are buoyant with roots at lower nodes. Narrow, oblong leaves in whorls of 3-4. White flowers attached to long thread-like stems float on surface of water.

<table>
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<td></td>
<td>Report occurrences to your regional NRM Authority or Biosecurity SA and obtain advice.</td>
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</tr>
<tr>
<td>Manual removal</td>
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<td></td>
<td>Dredge plants out of water and dispose by composting.</td>
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<td></td>
<td>Aquatic habitats</td>
<td>Summer</td>
</tr>
</tbody>
</table>
**English/Scotch broom**
*Cytisus scoparius*

**WoNS**

**INVADES BUSHLAND. FIRE HAZARD**

Erect, summer-deciduous, woody leguminous shrub. Leaves with 3 leaflets. Stems green, ridged stems becoming leafless. Large yellow pea flowers. Pods to 5 cm long with dark-brown shiny seeds.

<table>
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<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Any</td>
<td>Seedlings</td>
<td>Hand pull when soil is moist.</td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Any</td>
<td>Established bushes</td>
<td>Use a Tree Popper to uproot.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot Spray</td>
<td>1-1.3L/100L</td>
<td>Non-agricultural areas.</td>
<td>September - December, before pod formation</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS*</td>
<td>I</td>
<td>Spot spray</td>
<td>250mL/100L</td>
<td>Non-crop areas, forests, pastures and rights of way.</td>
<td>September - December, before pod formation</td>
<td>Apply thorough foliage spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra*</td>
<td>I</td>
<td>Spot spray</td>
<td>250mL/100L</td>
<td>Non-crop areas, forests, pastures and rights of way.</td>
<td>Spring to early summer before pod formation</td>
<td>Apply thorough foliage spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS*</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Non-crop areas, forests, pastures and rights of way.</td>
<td>Autumn to winter</td>
<td>Apply thorough foliage spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra*</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Non-crop areas, forests, pastures and rights of way.</td>
<td>Autumn to winter</td>
<td>Apply thorough foliage spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600*</td>
<td>I</td>
<td>Spot spray</td>
<td>170mL/100L</td>
<td>Non-crop areas, forests, pastures and rights of way.</td>
<td>September - December, before pod formation</td>
<td>Apply thorough foliage spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Cut stump - note 1:1 provides the best viscosity for sponge application</td>
<td>Undiluted or up to 1:1</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>September - December, before pod formation</td>
<td>Cut stems and apply herbicide immediately.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
### Glyphosate (450g/L) Roundup CT®
<table>
<thead>
<tr>
<th><strong>HERBICIDE GROUP</strong></th>
<th><strong>APPLICATION METHOD</strong></th>
<th><strong>APPLICATION RATE</strong></th>
<th><strong>SITUATION</strong></th>
<th><strong>TIMING</strong></th>
<th><strong>COMMENTS</strong></th>
<th><strong>LEGAL STATUS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>September - December, before pod formation</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

### Glyphosate (360g/L) + metsulfuron-methyl (600g/kg) Roundup® + Brush-Off®
<table>
<thead>
<tr>
<th><strong>HERBICIDE GROUP</strong></th>
<th><strong>APPLICATION METHOD</strong></th>
<th><strong>APPLICATION RATE</strong></th>
<th><strong>SITUATION</strong></th>
<th><strong>TIMING</strong></th>
<th><strong>COMMENTS</strong></th>
<th><strong>LEGAL STATUS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>M, B</td>
<td>Spot spray</td>
<td>1L + 3g /100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>September - December, before pod formation</td>
<td>Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

### Metsulfuron-methyl (600g/kg) Brush-Off®
<table>
<thead>
<tr>
<th><strong>HERBICIDE GROUP</strong></th>
<th><strong>APPLICATION METHOD</strong></th>
<th><strong>APPLICATION RATE</strong></th>
<th><strong>SITUATION</strong></th>
<th><strong>TIMING</strong></th>
<th><strong>COMMENTS</strong></th>
<th><strong>LEGAL STATUS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Spot spray</td>
<td>15g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>September - December, before pod formation</td>
<td>Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

### Triclopyr (600g/L) Garlon 600®
<table>
<thead>
<tr>
<th><strong>HERBICIDE GROUP</strong></th>
<th><strong>APPLICATION METHOD</strong></th>
<th><strong>APPLICATION RATE</strong></th>
<th><strong>SITUATION</strong></th>
<th><strong>TIMING</strong></th>
<th><strong>COMMENTS</strong></th>
<th><strong>LEGAL STATUS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Cut stump or basal bark application</td>
<td>1L/30L biodiesel or diesel</td>
<td>Nature reserves and other native vegetation, roadsides, urban open space and forests.</td>
<td>While actively growing.</td>
<td>Diesel can be replaced with water for ease of application.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
</tbody>
</table>

---

**Espartillo grasses**

*Amelichloa brachychaeta* and *Amelichloa caudata*

### ALERT WEED

**INVADE PASTURES, BUSHLAND AND RIPARIAN VEGETATION**

Perennial tussock grass. Resembles native spear grasses with branched seed heads. Leaves are narrow and ribbed on both sides. Seeds awned and surrounded at the base by a crown of bristles.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Grub individual plants</td>
<td>Any.</td>
<td>When found.</td>
<td>Inform your local NRM office. Monitor site and undertake follow up control until eradication has been achieved</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) Tussock™</td>
<td>J</td>
<td>Spot spray</td>
<td>100-300mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>July - September</td>
<td>Add a non-ionic surfactant. A slow-working residual. Do not graze or cut for stockfeed for at least 14 days after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) Tussock™</td>
<td>J</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Non-crop areas and pastures.</td>
<td>July - September</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
</tbody>
</table>
**Eurasian water milfoil**

*Myriophyllum spicatum*

**ALERT WEED**

*Forms dense underwater tangles that displace native aquatic species*

Perennial, aquatic herb. Emergent flower spike with tiny pink 4-petalled flowers. Not free-floating as the underwater stems are rooted to the base. Leaves are submerged, feathery and olive-green.

<table>
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<tr>
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<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Report occurrences to your regional NRM Authority or Biosecurity SA to confirm identification and obtain advice. Collect a pressed specimen. This species is not yet known to occur in Australia but many native water milfoils look very similar.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
### False caper

*Euphorbia terracina*

**INVADES PASTURES. UNPALATABLE TO LIVESTOCK**

Perennial herb containing milky sap. Erect, reddish stems to 80 cm tall. Leaves dull green, hairless, pointed. Light green, cup-shaped flowers in branched groups.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>APPLICATION RATE*</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Blade plough or disc</td>
<td></td>
</tr>
<tr>
<td>Establish competitive pastures.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-crop areas.</td>
<td></td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>Product and use are registered, but this weed is not on the label.</td>
</tr>
<tr>
<td>norflurazon (800g/kg)</td>
<td>Zoliar 800 DF®</td>
<td>F</td>
<td>Boom spray</td>
<td>2.5 - 5kg/ha</td>
<td>Citrus, vines, nuts, pome and stone fruit crops.</td>
<td>Seedlings only.</td>
<td>Selective residual herbicide. Rate is crop specific, refer to label.</td>
<td>Registered</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Brush-Off®</td>
<td>B</td>
<td>Spot spray</td>
<td>10g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td></td>
<td>Soil active herbicide, may damage desirable vegetation. Add a surfactant.</td>
<td>PER 13371 (exp. 2022)</td>
</tr>
</tbody>
</table>

### Field bindweed

*Convolvulus arvensis*

**COMPETES WITH CROPS AND PASTURE**

Perennial herb. Trailing/twining stems. Leaves oval, oblong to arrowhead shaped. Flowers are white and funnel-shaped.

<table>
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<tr>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D®</td>
<td>I</td>
<td>Spot spray</td>
<td>1.3L/100L</td>
<td>Pastures and non agricultural areas.</td>
<td>At bud stage.</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (340g/L) + dicamba (80g/L)</td>
<td>Kamba M®</td>
<td>I</td>
<td>Boom spray</td>
<td>5.2L/ha</td>
<td>Non-crop areas.</td>
<td></td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
### Field garlic

*Allium vineale*

**COMPETES WITH CROPS. CAN TAINT GRAIN**

Perennial herb. Leaves are sub-cylindrical and hollow. Loose inflorescences with bell-shaped, pink or greenish flowers and numerous bulbils on erect, hollow, cylindrical stems.

<table>
<thead>
<tr>
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<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>dicamba (500g/L) + dicamba (80g/L)</td>
<td>Kamba M*</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Non-crop areas.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>MCPA 500*</td>
<td>I</td>
<td>Boom spray</td>
<td>2L/ha</td>
<td>Non-crop areas.</td>
<td>At bud stage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCPA (500g/L)</td>
<td>MCPA 500*</td>
<td>I</td>
<td>Spot spray</td>
<td>1L/500L</td>
<td>Non-crop areas.</td>
<td>At bud stage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625*</td>
<td>I</td>
<td>Boom spray</td>
<td>1.1L/ha</td>
<td>Pastures and non agricultural areas.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625*</td>
<td>I</td>
<td>Spot spray</td>
<td>100mL/100L</td>
<td>Pastures and non agricultural areas.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
Fireweed  
*Senecio madagascariensis*

**WoNS**

**INVADES DEGRADED PASTURES, AND OTHER DISTURBED AREAS. TOXIC TO LIVESTOCK**

Annual or biennial herb. Variously toothed and divided leaves with stem-clasping bases. Yellow daisy flowerheads in loose clusters, each with 12-15 florets.

<table>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Fireweed is not yet known in South Australia but occurs in the eastern States. Report occurrences to your regional NRM Authority or Biosecurity SA. Collect a pressed specimen to confirm identity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Registered</td>
</tr>
<tr>
<td>bromoxynil (200g/L) + diflufenican (25g/L)</td>
<td>Jaguar*</td>
<td>C,F</td>
<td>Boom spray</td>
<td>500mL</td>
<td>Pasture</td>
<td>Up to the four leaf stage.</td>
<td></td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra*</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Flowering stage</td>
<td>Apply thorough foliage spray. Non-crop areas, pastures and rights of way.</td>
<td></td>
<td>Registered</td>
</tr>
</tbody>
</table>

Flax-leaf broom  
*Genista linifolia*

**WoNS**

**INVADES BUSHLAND. FIRE HAZARD.**


<table>
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<th>CONTROL OPTION</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td>Any. Seedlings Hand pull when soil is moist.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td>Any Established bushes Use a Tree Popper to uproot.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbicide</td>
<td>Brand</td>
<td>Application Form</td>
<td>Application Rate</td>
<td>Treatment Areas</td>
<td>Timing</td>
<td>Comments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS*</td>
<td>Spot spray</td>
<td>250mL/100L</td>
<td>Non-crop areas, forests, pastures and rights of way.</td>
<td>September - December, before pod formation</td>
<td>Apply thorough foliage spray. Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra*</td>
<td>Spot spray</td>
<td>250mL/100L</td>
<td>Non-crop areas, forests, pastures and rights of way.</td>
<td>Spring to early summer before pods formed</td>
<td>Apply thorough foliage spray. Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS*</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Non-crop areas, forests, pastures and rights of way.</td>
<td>Autumn to winter</td>
<td>Apply thorough foliage spray. Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra*</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Non-crop areas, forests, pastures and rights of way.</td>
<td>Autumn to winter</td>
<td>Apply thorough foliage spray. Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Brush-Off*</td>
<td>Spot spray</td>
<td>15g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>September - December, before pod formation</td>
<td>Soil active herbicide, may damage desirable vegetation. PER 13371 (exp.2022)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600*</td>
<td>Cut stump</td>
<td>1L/30L biodiesel or diesel</td>
<td>Nature reserves and other native vegetation, roadides, urban open space and forests.</td>
<td>Diesel can be replaced with water for ease of application. PER 12932 (exp. 2021)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600*</td>
<td>Spot spray</td>
<td>170mL/100L</td>
<td>Nature reserves and other native vegetation, roadides, urban open space and forests.</td>
<td>September - December, before pod formation</td>
<td>Add a marking agent. PER 12932 (exp. 2021)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
**Fountain grass**  
*Cenchrus setaceus*  
**INVADES PASTURES AND BUSHLAND**  

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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</tr>
</thead>
<tbody>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™ J</td>
<td>Spot spray</td>
<td>100-300mL/100L</td>
<td>Non-crop situations.</td>
<td>While actively growing</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT® M</td>
<td>Spot spray</td>
<td>800mL/100L</td>
<td>Non-crop situations.</td>
<td>While actively growing</td>
<td>Non selective, avoid contact with desirable plants. May give variable results.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
</tbody>
</table>

**Gamba grass**  
*Andropogon gayanus*  
**WoNS**  
**FORMS DENSE STANDS IN TROPICAL AUSTRALIA. GENERATES HOT FIRES. NATIONAL BAN ON SALE**  
Tall perennial grass. Stems and leaves are hairy. Loosely branched hairy inflorescences held high above the leaves.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Gamba grass is not known to occur in South Australia. Report any occurrence to your regional NRM Authority or Biosecurity SA and obtain advice. Collect a pressed specimen to confirm identity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PER 13371 (exp. 2022)</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT® M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp. 2022)</td>
<td></td>
</tr>
</tbody>
</table>
### Gazania
*Gazania spp.*

**INVADERS BUSHLAND, CROPS AND VINEYARDS**

Perennial herb forming tussocks or with creeping stems. Leaves are simple and narrow, or deeply divided; dark green above and felted with white hairs below. Large daisy flowerheads in yellow, white, orange or pink.

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<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup, Biactive*</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing</td>
<td>Surfactant or spray oil may be added.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

### Giant arrowhead
*Sagittaria montevidensis*

**ALERT WEED**

**INVADERS WETLANDS AND WATERWAYS**

Aquatic perennial with creeping underwater stems and large arrowhead-shaped leaves emerging from the water. Flowers with three white petals, on branched stems.

<table>
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<tr>
<th>CONTROL OPTION</th>
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<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Not currently known to be present in South Australia. Report occurrences to your regional NRM Authority or Biosecurity SA and obtain advice. Collect a pressed specimen to confirm identity.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup, Biactive*</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-crop areas including waterways.</td>
<td>While actively growing</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
<td>Product and use are registered, but this weed is not on the label.</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
**Giant reed**  
*Arundo donax*

**INVADER OF WETLANDS**
Giant perennial grass with leaves in two rows up bamboo-like stems to 3 m tall. Flower heads like dense white plumes at top of stem.

<table>
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<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-crop areas including waterways.</td>
<td>While actively growing</td>
<td>Suitable for use near waterways - refer to label. Most effective if used on regrowth after cutting. Non selective, avoid contact with desirable plants.</td>
<td>Product and use are registered, but this weed is not on the label.</td>
</tr>
</tbody>
</table>

**Gorse**  
*Ulex europaeus*

**WoNS**
SPINY THICKETS COMPETE WITH PASTURE AND NATIVE VEGETATION
Spiny, densely branched shrub to 2 metres tall. Leaves tiny, on green spine-like twigs. Large, golden-yellow pea flowers. Oblong hairy pods contain hard round seeds.

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Burning</td>
<td>Fire</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fire can be useful in reducing dense thickets of gorse to allow follow-up spraying of regrowth. Seek advice.</td>
<td></td>
</tr>
<tr>
<td>Slashing</td>
<td>Slashing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Slashing will not kill gorse but may improve the results of follow up herbicide treatment. Regrowth needs to be approximately 0.5-1 m high before undertaking follow up spraying.</td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-crop areas.</td>
<td>While actively growing.</td>
<td>Suitable for use near waterways - refer to label. Add Pulse® penetrant. Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS®</td>
<td>I</td>
<td>Spot spray</td>
<td>250mL/100L</td>
<td>Pastures and non-crop areas.</td>
<td>Spring to summer</td>
<td>On growth 1 to 1.5 metres tall. Add a non-ionic surfactant.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS®</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Pastures and non-crop areas.</td>
<td>Summer to autumn</td>
<td>If plants are taller than 1.5 metres or if treating in autumn. Add a non-ionic surfactant.</td>
<td>Registered</td>
</tr>
<tr>
<td>Herbicide</td>
<td>Application Rate</td>
<td>Treatment</td>
<td>Application Method</td>
<td>Soil Type</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Grazon DS*</td>
<td>I</td>
<td>Spot spray</td>
<td>500mL/100L</td>
<td>Pastures and non-crop areas. Winter</td>
<td>Add a non-ionic surfactant. Registered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigilant II*</td>
<td>I</td>
<td>Cut stump</td>
<td>15g/100L</td>
<td>Non-crop areas including native vegetation. Any time</td>
<td>Cut stems less than 10 cm from ground and apply 3-5 mm thick layer immediately. For multi-stemmed plants treat at least 80% of stems including main stems. Registered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grazon DS*</td>
<td>I</td>
<td>Spot spray</td>
<td>1L</td>
<td>Native pastures, rights of way, commercial and industrial areas. While actively growing, any time of the year except spring.</td>
<td>Bushes up to 2 m tall. Add an organosilicone penetrant. Soil active herbicide, may damage desirable vegetation. Registered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigilant II*</td>
<td>I</td>
<td>Cut stump</td>
<td>1L</td>
<td>Non-crop areas, bushland and pastures. While actively growing, any time of the year except spring.</td>
<td>Add an organosilicone penetrant. Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation. Registered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weedmaster Duo* + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>1L + 3g/100L</td>
<td>Conservation areas, bushland and other non-crop areas. December - April</td>
<td>Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation. PER 13371 (exp.2022)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weedmaster Duo*</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas. September - February</td>
<td>Non selective, avoid contact with desirable plants. PER 13371 (exp.2022)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weedmaster Duo*</td>
<td>M</td>
<td>Stem injection</td>
<td>Undiluted or up to 1:1</td>
<td>Non-crop areas. Use drill to make holes around the base into the sapwood. Inject herbicide immediately.</td>
<td>PER 13371 (exp.2022)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weedmaster Duo*</td>
<td>M</td>
<td>Cut stump</td>
<td>1L/1L</td>
<td>Conservation areas, bushland and other non-crop areas. Cut stems, apply herbicide immediately.</td>
<td>PER 13371 (exp.2022)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garlon 600*</td>
<td>I</td>
<td>Spot spray</td>
<td>170 mL/100L</td>
<td>Nature reserves and other native vegetation, roadides, urban open space and forests. September - February</td>
<td>Apply thorough foliage spray. Poisonous if swallowed; may irritate eyes and skin. PER 12932 (exp. 2021)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garlon 600*</td>
<td>I</td>
<td>Cut stump</td>
<td>1L/30L biodiesel or diesel</td>
<td>Nature reserves and other native vegetation, roadides, urban open space and forests. Any time</td>
<td>Diesel can be replaced with water for ease of application. PER 12932 (exp. 2021)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
**Ground asparagus**  
*Asparagus aethiopicus*

**WoNS**

**INVADES BUSHLAND, SMOthers NATIVE PLANTS**

Spreading perennial growing from rhizomes. Wiry stems with narrow oblong leaf-like cladodes. Small white flowers, producing orange-red berries.

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</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Dig out, ensuring that all the rhizome is removed.</td>
<td></td>
<td>Any time</td>
<td></td>
<td>Suitable for small plants and outliers only. Minimise soil disturbance as far as practicable.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Non selective, avoid contact with desirable plants. Non-crop situations only. Follow up application over at least 2 years necessary.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (450g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup CT® + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>800mL + 3g /100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Follow up application over at least 2 years necessary. Non selective, avoid contact with desirable plants. Non-crop situations only. Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Brush-Off®</td>
<td>B</td>
<td>Spot spray</td>
<td>1.5g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Non-crop situations only. Not suitable for native vegetation and under desirable trees. Follow up application over at least 2 years necessary.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>
**Hoary cress**  
*Cardaria draba*

**COMPETES WITH CROPS AND PASTURES**

<table>
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<tbody>
<tr>
<td>Cultivation and pasture management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pastures.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D®</td>
<td>I</td>
<td>Spot spray</td>
<td>1.3L/100L</td>
<td>Grass pastures and non-crop situations.</td>
<td>Rosettes</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops. May require repeat applications.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (475g/L)</td>
<td>Surpass 475®</td>
<td>I</td>
<td>Boom spray</td>
<td>1.8L/ha</td>
<td>Cereal crops.</td>
<td>Rosettes</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (475g/L)</td>
<td>Surpass 475®</td>
<td>I</td>
<td>Boom spray</td>
<td>1.9 - 2.15L/ha</td>
<td>Grass pastures.</td>
<td>Rosettes</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (475g/L) + glyphosate (450g/L)</td>
<td>Surpass 475® + Roundup®</td>
<td>I, M</td>
<td>Boom spray</td>
<td>1.8L + 1.2L/ha</td>
<td>Fallow or pre-planting.</td>
<td>Rosettes</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Non-selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (475g/L) + glyphosate (450g/L)</td>
<td>Surpass 475® + Roundup®</td>
<td>I, M</td>
<td>Spot spray</td>
<td>120mL + 800mL /100L</td>
<td>Fallow or pre-planting.</td>
<td>Rosettes</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Non-selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625®</td>
<td>I</td>
<td>Boom spray</td>
<td>1.4L/ha</td>
<td>Cereal crops</td>
<td>Rosettes.</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625®</td>
<td>I</td>
<td>Boom spray</td>
<td>1.7L/ha</td>
<td>Pastures.</td>
<td>Rosettes and pre-flowering.</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>chlorsulfuron (750g/kg)</td>
<td>Glean®</td>
<td>B</td>
<td>Boom spray</td>
<td>20g/ha</td>
<td>Cereal crops</td>
<td>When fully emerged.</td>
<td>Post emergence, for suppression only. Do not use near trees or other desirable vegetation.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Boom spray</td>
<td>1.2L/ha</td>
<td>Commencing a fallow.</td>
<td>Late rosettes to early flowering.</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Agvantage Glyphosate 450®</td>
<td>M</td>
<td>Spot spray</td>
<td>400mL/100L</td>
<td>Falls.</td>
<td>Late rosettes to early flowering.</td>
<td>Non selective, avoid contact with desirable plants. Cultivation can begin 7 days after spraying.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated

Product and use are registered, but this weed is on the label for ACT, NSW, Tasmania and Victoria only.
Horehound
*Marrubium vulgare*

**COMPETES WITH PASTURES. UNPALATABLE.**

Perennial herb, densely covered in white hairs. Leaves in opposite pairs, broad, crinkled. Tiny, white flowers. Small burrs in dense clusters.

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</thead>
<tbody>
<tr>
<td>Manual Removal</td>
<td></td>
<td></td>
<td>Manual Removal</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>MCPP (340g/L) + dicamba (80g/L)</td>
<td>Kamba M®</td>
<td>I</td>
<td>Boom spray</td>
<td>4-7 L/ha</td>
<td>Grass pastures and non-cropping areas.</td>
<td>August - September</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Repeat after 4 weeks if necessary.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPP (340g/L) + dicamba (80g/L)</td>
<td>Kamba M®</td>
<td>I</td>
<td>Spot spray</td>
<td>470mL/100L</td>
<td>Grass pastures and non-cropping areas.</td>
<td>August - September</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Repeat after 4 weeks if necessary.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625®</td>
<td>I</td>
<td>Boom spray</td>
<td>1.4L/ha</td>
<td>Cereal crops. Seedlings</td>
<td>August - September</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Slashing or burning old growth to promote fresh growth before spraying may increase kill rate.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625®</td>
<td>I</td>
<td>Boom spray</td>
<td>2.2-3.2L/ha</td>
<td>Grass pastures. Seedlings</td>
<td>August - September</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Slashing or burning old growth to promote fresh growth before spraying may increase kill rate.</td>
<td>Registered</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500®</td>
<td>I</td>
<td>Boom spray</td>
<td>280-560mL/ha</td>
<td>Grass pastures. Seedlings</td>
<td>August - September</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Add surfactant. Do not apply to legume-based pastures.</td>
<td>Registered</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500®</td>
<td>I</td>
<td>Boom spray</td>
<td>560mL-1.1L/ha</td>
<td>Grass pastures. Pre flowering</td>
<td>August - September</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Do not apply to legume-based pastures.</td>
<td>Registered</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500®</td>
<td>I</td>
<td>Spot spray</td>
<td>40mL/100L</td>
<td>Grass pastures. Seedlings</td>
<td>August - September</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Do not apply to legume-based pastures.</td>
<td>Registered</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500®</td>
<td>I</td>
<td>Spot spray</td>
<td>76mL/100L</td>
<td>Grass pastures. Pre flowering</td>
<td>August - September</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Do not apply to legume-based pastures.</td>
<td>Registered</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500®</td>
<td>I</td>
<td>Boom spray</td>
<td>1.2L/ha</td>
<td>Non-crop areas Pre flowering</td>
<td>August - September</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Use at least 1500 L/ha water. Add surfactant.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
Horsetails
*Equisetum* spp.

**ALERT WEED**

INVADES PASTURE AND WETLANDS. TOXIC TO LIVESTOCK

Perennial with deep creeping rhizomes. Erect, hollow, finely ribbed shoots with rings of scale leaves. Spores produced in cones at the top of stems.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Report occurrences to your regional NRM Authority or Biosecurity SA and obtain advice. Collect a pressed specimen to confirm identity.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Grub individual plants.</td>
<td>Any</td>
<td>When found.</td>
<td>Report to NRM authorities first. Grub and follow up with inspections after 6 and 12 months; horsetail has rhizomes that may be 2 metres deep.</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
### Hydrocotyle
*Hydrocotyle ranunculoides*

**ALERT WEED**

**INVADES WETLANDS, BLOCKS STREAMS**
Emergent perennial. Round or kidney shaped leaf blades float at surface or emerge above water on long stalks leading to underwater stems.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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</thead>
<tbody>
<tr>
<td>Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Dredge plants out of water and dispose by composting.</td>
<td></td>
<td>Aquatic habitats</td>
<td>When found.</td>
<td>Monitor site and undertake follow up control until eradication has been achieved</td>
<td></td>
</tr>
</tbody>
</table>

### Hymenachne
*Hymenachne amplexicaulis* and *Hymenachne calamitosa*

**WONS**

**INVADES TROPICAL WETLANDS. NATIONAL BAN ON SALE**
Perennial aquatic grass to 3 m tall with thick creeping stems, forming roots at the joints. Leaves to 45 cm long with broad bases clasping around the stem. Seed-head dense and spike-like, to 50 cm long.

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Report</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Actively growing</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>
## Innocent weed
*Cenchrus longispinus and Cenchrus spinifex*

**COMPETES WITH IRRIGATED CROPS. BURRS INJURE ANIMALS**

Annual summer-growing grasses to 70 cm tall with soft hairless leaves. Seed heads of several burrs about 7 mm wide with sharp spines.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grazing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pastures</td>
<td>December - January</td>
<td>Prevents seed set</td>
<td></td>
</tr>
<tr>
<td>Manual Removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Small infestations.</td>
<td>Any time</td>
<td>Grub each plant and dispose securely to avoid dropping burrs. Follow up in the next season or after summer rains.</td>
<td></td>
</tr>
<tr>
<td>trifuralin (480g/kg)</td>
<td>Treflan 480®</td>
<td>D</td>
<td>Boom spray</td>
<td>1.2L /ha</td>
<td>Lupins, sunflowers, soybeans</td>
<td>Pre-sowing.</td>
<td>Pre-emergent control in certain broadleaf crops. Spray from 4 weeks to just before sowing takes place. Registered</td>
<td></td>
</tr>
<tr>
<td>chlorothal-dimethyl (750g/kg)</td>
<td>AgProtect Chlorthal 750 WG®</td>
<td>D</td>
<td>Boom spray</td>
<td>9-15 kg/ha</td>
<td>Vegetable crops.</td>
<td>At time of sowing or transplanting.</td>
<td>Pre-emergent control. Use lower rate on lighter soils. Use at least 450 L water/ha. Registered</td>
<td></td>
</tr>
<tr>
<td>chlorothal-dimethyl (750g/kg)</td>
<td>AgProtect Chlorthal 750 WG®</td>
<td>D</td>
<td>Boom spray</td>
<td>11-15 kg/ha</td>
<td>Lucerne and perennial grasses</td>
<td>Autumn or early spring.</td>
<td>Pre-emergent control. Use at least 450 L water/ha. Registered</td>
<td></td>
</tr>
<tr>
<td>fluazifop-p (128g/L)</td>
<td>Fusilade Forte 128 EC®</td>
<td>A</td>
<td>Boom spray</td>
<td>1.24L/ha</td>
<td>Lucerne</td>
<td>Growing actively at 3-5 leaf stage before tillering starts</td>
<td>Selective herbicide to kill grasses. Apply in not less than 100 L/ha. Apply when lucerne is past the 2 to 3 trifoliate leaf stage. Do not graze or cut for stock feed for 6 weeks after application. Registered</td>
<td></td>
</tr>
<tr>
<td>fluazifop-p (128g/L)</td>
<td>Fusilade Forte 128 EC®</td>
<td>A</td>
<td>Boom spray</td>
<td>2.5L/ha</td>
<td>Citrus, grapes and stonefruit crops.</td>
<td>Growing actively at 5 leaf to early tillering.</td>
<td>Selective herbicide to kill grasses. Apply in not less than 200 L/ha</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Boom spray</td>
<td>800mL-1L/ha</td>
<td>Fallows, pre-sowing.</td>
<td>Summer</td>
<td>Prior to cultivation and sowing a crop or pasture. Use higher rates on larger plants. Non selectable, avoid contact with desirable plants. Product and use are registered, but this weed is not on the label.</td>
<td></td>
</tr>
<tr>
<td>glyphosate dual salt (360g/L)</td>
<td>Weedmaster Duo®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>December - January</td>
<td>Non selective, avoid contact with desirable plants. PER 13371 (exp. 2022)</td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
**Italian buckthorn**  
*Rhamnus alaternus*

**INVADES FOREST, WOODLAND AND COASTAL VEGETATION**
Shrub to 4 metres high. Leaves oval, leathery, dark-green and glossy. Flowers small, green. Female plants have red berries, ripening to black

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
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<th>APPLICATION RATE*</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Removal</td>
<td></td>
<td></td>
<td>Uprooting</td>
<td></td>
<td>All.</td>
<td>Any time</td>
<td>Suitable for small plants. Pull out by hand or Tree Popper; ensure that the tap root system is removed.</td>
<td></td>
</tr>
<tr>
<td>picloram (44.7g/L) +</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies, and parks.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. For multi-stemmed plants treat at least 80% of stems including main stems. Do not use in urban home gardens.</td>
<td>Registered</td>
</tr>
<tr>
<td>aminopyralid (4.7 g/L)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Cut stump</td>
<td>1L/4L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time</td>
<td>Apply herbicide immediately to cut stump.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (360g/L) +</td>
<td>Roundup® + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>1L + 3g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Effective on seedlings. Add a surfactant.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L) isopropylamine salt</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Stem injection by drill</td>
<td>Undiluted</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time.</td>
<td></td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate dual salt (360g/L)</td>
<td>Weedmaster Duo®</td>
<td>M</td>
<td>Stem injection by drill</td>
<td>1L/1L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time.</td>
<td></td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Basal bark spray</td>
<td>1L/30L biodiesel or diesel</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Saturate bark on trunk and any branches from ground level to up 30 cm. Poisonous if swallowed; may irritate eyes and skin.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
</tbody>
</table>
Khaki weed  
*Alternanthera pungens*

**INVADES PASTURES. SPINY SEEDS**
Summer growing perennial herb with a deep tap root system. Stems prostrate, hairy. Leaves broad ovate in opposite pairs. Round clusters of tiny flowers along upper stem. Pale sharp-tipped bracts form a burr around seeds.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Grub individual plants</td>
<td></td>
<td>Any</td>
<td>When found.</td>
<td>Ensure the complete removal of the tuber and tap root. Dig beside the root 100 mm down or more. Destroy any burrs found.</td>
<td></td>
</tr>
<tr>
<td>2,4-D amine (300g/L) + picloram (75g/L)</td>
<td>Kojak 75D*</td>
<td>I</td>
<td>Spot spray</td>
<td>600mL/100L</td>
<td>Non-crop situations.</td>
<td>Summer.</td>
<td>Treat plants in full leaf. Hormone type herbicide - use with caution near sensitive crops.</td>
<td>Registered</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500*</td>
<td>I</td>
<td>Spot spray</td>
<td>9mL/15L</td>
<td>Non-crop situations.</td>
<td>Before flowering</td>
<td>Hormone type herbicide - use with caution near sensitive crops.</td>
<td>Product and use are registered, but this weed is on the label for WA only.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Cut stump</td>
<td>1L/1L</td>
<td>Non-crop situations.</td>
<td>Before burrs mature</td>
<td>Cut plants off at the crown of the roots and apply immediately to the fresh cut on the roots. Weed wand or paint brush application is useful</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-crop situations.</td>
<td>Before burrs mature</td>
<td>Won't kill the root system, ongoing treatment required. Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

Kochia  
*Bassia scoparia*

**COMPETES WITH PASTURES AND CROPS**
Annual herb to 2 metres tall. Stems numerous, erect, densely branched. Leaves alternate on stems, narrow, bright green but turning red with age. Flowers tiny, green, in axils of upper leaves.

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<tbody>
<tr>
<td>Report</td>
<td></td>
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</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
**Lagarosiphon**  
*Lagarosiphon major*  
**ALERT WEED**  
**BLOCKS STREAMS, LAKES AND RESERVOIRS**  
Aquatic, freshwater perennial herb, free floating in deep water. Submerged stems with roots at lower nodes. Leaves are narrowly oblong and curved back, alternately arranged in a spiral on the stem. Flowers not found.

<table>
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</thead>
</table>
| Report         | Report occurrences to your regional NRM Authority or Biosecurity SA and obtain advice. Collect a pressed specimen to confirm identity.  
Lagarosiphon is not known to occur in SA. |  |  |  | Aquatic habitats | Summer |  |  |  |
| Manual removal | Dredge plants out of water and dispose by composting. |  |  |  | Aquatic habitats | Summer | Seek advice from the regional NRM Authority first. Monitor site and undertake follow up control until eradication has been achieved. |  |  |

**Leafy elodea**  
*Egeria densa*  
**ALERT WEED**  
**INVADES PONDS, LAKES AND STREAMS**  
Aquatic, freshwater, perennial herb. Submerged stems are buoyant with roots at lower nodes. Narrow, oblong leaves in whorls of 3-8. White flowers are attached to long thread-like stems and float on surface of water.

<table>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Not known to occur wild in South Australia but may be growing in ponds or aquaria. Report occurrences to your regional NRM Authority or Biosecurity SA and obtain advice.</td>
<td></td>
<td></td>
<td></td>
<td>Aquatic habitats</td>
<td>Summer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td>Dredge plants out of water and dispose by composting.</td>
<td></td>
<td></td>
<td></td>
<td>Aquatic habitats</td>
<td>Summer</td>
<td>Monitor site and undertake follow up control until eradication has been achieved</td>
<td></td>
</tr>
</tbody>
</table>
## Lincoln weed

*Diplotaxis tenuifolia*

**COMPETES WITH CROP AND PASTURE. UNPALATABLE**

Deep-rooted perennial herb. Leaves alternate, deeply divided. Yellow, 4-petalled flowers. Strong taste, used in salads as wild rocket.

### CONTROL OPTION | EXAMPLE OF PRODUCT NAMES | HERBICIDE GROUP | APPLICATION METHOD | APPLICATION RATE* | SITUATION | TIMING | COMMENTS | LEGAL STATUS
--- | --- | --- | --- | --- | --- | --- | --- | ---
2,4-D amine (475g/L) | Surpass 475® | I | Boom spray | 2.15L/ha | Arable land when no crop present; grass pastures. | Early rosette stage. | Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. | Registered |
2,4-D amine (475g/L) | Surpass 475® | I | Boom spray | 425mL - 1.8L/ha | Cereal crops | Early rosette stage. | Hormone type herbicide - use with caution near sensitive crops. Rate depends on stage and species of the crop. Refer to drift warnings on the label. | Registered |
2,4-D amine (625g/L) | Amine 625® | I | Boom spray | 1.7L/ha | Cereal crops | Early rosette stage. | Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. | Registered |
2,4-D amine (625g/L) | Amine 625® | I | Spot spray | 170mL/150L | Cereal crops | Early rosette stage. | Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. | Registered |
MCPA (500g/L) | Conquest MCPA 500® | I | Boom spray | 700mL/ha | Arable land when no crop present. | Rosette stage. | Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. | Registered |
MCPA (500g/L) | Conquest MCPA 500® | I | Spot spray | 7mL/10L | Crops, pasture and non-crop situations. | Rosette stage. | Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. | Registered |
chlorsulfuron (750g/kg) | Glean® | B | Boom spray | 15g/ha | Wheat or triticale crops. | Pre-sowing | Herbicide is incorporated in soil by sowing. Do not use near trees and other desirable vegetation. | Registered |
chlorsulfuron (750g/kg) | Glean® | B | Boom spray | 20g/ha | Wheat, barley, oats, triticale and cereal rye crops. | Post-emergence. | Do not use near trees and other desirable vegetation. | Registered |
metsulfuron-methyl (600g/kg) | Ally® | B | Boom spray | 7g/ha | Wheat, barley, triticale and cereal rye crops. | Late winter to spring. | Weeds emerging after spraying may not be controlled. Soil active herbicide, may damage desirable vegetation. | Registered |

*Application Rate - with water unless indicated*
Madeira vine  
*Anredera cordifolia*

**INVADES BUSHLAND ALONG WATERCOURSES**

Soft-stemmed creeper. Leaves fleshy, ovate, 2 to 8 cm long. Drooping spikes of small, white, fragrant flowers. Warty aerial tubers on the branches.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Cut stems and grub out the tubers at their base.</td>
<td></td>
<td>Any time</td>
<td>Grub individual plants and monitor regrowth.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Non-crop situations.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. Do not use in urban home gardens.</td>
<td>Registered for this use on woody weeds in general.</td>
</tr>
</tbody>
</table>

May or hawthorn  
*Crataegus monogyna*

**INVADES BUSHLAND**

Winter deciduous shrub or small tree with twigs ending in spines. Leaves are wedge-shaped with 3-7 lobes. White flowers with 5 petals. Fruits round, bright red, fleshy.

<table>
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<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>triclopyr (240g/L) + picloram (120g/L)</td>
<td>Access®</td>
<td>I</td>
<td>Cut stump/ basal bark</td>
<td>1L/60L biodiesel or diesel</td>
<td>Non-crop situations.</td>
<td>Spring to autumn.</td>
<td>Use on medium to large hawthorns.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D amine (475g/L)</td>
<td>Surpass 475®</td>
<td>I</td>
<td>Spot spray</td>
<td>105mL/10L</td>
<td>Pastures, rights of way and industrial areas.</td>
<td>While actively growing.</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Cut stump</td>
<td>Undiluted</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Spring to autumn.</td>
<td>Use on medium to large hawthorns.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>
**Mesquite**  
*Prospis spp.*

**WoNS - ALERT WEED INVADES RANGELANDS, FORM SPINY THICKETS**


<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
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</tr>
<tr>
<td>triclopyr (240g/L) + picloram (120g/L)</td>
<td>Access*</td>
<td>I</td>
<td>Basal bark</td>
<td>1L/60L biodiesel or diesel</td>
<td>Rangelands and native vegetation.</td>
<td>Any time</td>
<td>Suitable for shrubs and small trees. For smaller plants and shrubs spray the trunk from the ground up to 30cm. For large trees spray from the ground up to 100cm.</td>
<td>Product and use are registered, but this weed is not on the label.</td>
</tr>
<tr>
<td>triclopyr (240g/L) + picloram (120g/L)</td>
<td>Access*</td>
<td>I</td>
<td>Cut stump</td>
<td>1L/60L biodiesel or diesel</td>
<td>Rangelands and native vegetation.</td>
<td>Any time</td>
<td>Suitable for large trees. Apply herbicide immediately after cutting the stump.</td>
<td>Product and use are registered, but this weed is not on the label.</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS*</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Rangelands and native vegetation.</td>
<td>Spring - summer</td>
<td>Do not spray plants bearing pods.</td>
<td>Product and use are registered, but this weed is on the label for NSW, NT, Qld and WA only.</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
###Mexican feathergrass
*Nassella tenuissima*

**ALERT WEED**
INVADES PASTURES AND BUSHLAND. SHARP SEEDS
Small perennial tussock grass with fine, inrolled leaves. Long fine awns give the seeding heads a feathery appearance.

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<tr>
<th>CONTROL OPTION</th>
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<th>COMMENTS</th>
<th>LEGAL STATUS</th>
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</thead>
<tbody>
<tr>
<td>Report</td>
<td>Report any occurrences to your regional NRM Authority or Biosecurity SA and obtain advice. Collect a specimen to confirm identity. The sale or transport of Mexican feathergrass is prohibited, and should be reported.</td>
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<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Spot spray</td>
<td>100-300mL/100L</td>
<td>Pastures and native vegetation.</td>
<td>Spring</td>
<td>Add a non-ionic surfactant. A slow-working residual. Do not graze or cut for stockfeed for at least 14 days after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™</td>
<td>J</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Pastures and native vegetation.</td>
<td>Spring</td>
<td></td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup CT®</td>
<td>J,M</td>
<td>Spot spray</td>
<td>150-300mL + 270mL/100L</td>
<td>Pastures and native vegetation.</td>
<td>Spring</td>
<td>Use higher rate if the weed is dense. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>800mL/100L</td>
<td>Pastures and native vegetation.</td>
<td>Spring</td>
<td>Non selective, avoid contact with desirable plants. Variable results.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Wiper</td>
<td>2.6L/10L</td>
<td>Pastures and native vegetation.</td>
<td>Spring</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
</tbody>
</table>
### Miconia

*Miconia spp.*

**INVADES TROPICAL FORESTS. NATIONAL BAN ON SALE**

Small trees. Large oval leaves are dark green with three longitudinal veins and a pattern of pale lateral veins. Flower white to pink in large panicles. Small purple berries with numerous tiny seeds.

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Not known to be growing outdoors in South Australia. The sale or transport of any Miconia species is prohibited, and should be reported to Biosecurity SA.

### Mimosa

*Mimosa pigra*

**WoNS**

**INVADES TROPICAL WETLANDS. NATIONAL BAN ON SALE**


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<td>Report</td>
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</table>

Not known to be growing outdoors in South Australia. The sale and transport of mimosa is prohibited, and should be reported to Biosecurity SA.

### Mirror bush

*Coprosma repens*

**INVADES COASTAL VEGETATION**

Dense shrub to 3 m tall with shiny dark-green oblong leaves. Produces either small orange berries, or male flowers with dangling cream-green stamens.

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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Removal</td>
<td></td>
<td></td>
<td>Uprooting</td>
<td></td>
<td>All</td>
<td>Any time</td>
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<td></td>
</tr>
</tbody>
</table>

Suitable for small plants. Pull out by hand or Tree Popper; ensure that the tap root system is removed.

*Application Rate - with water unless indicated*
picloram (44.7g/L) + aminopyralid (4.7 g/L) Vigilant II® I Cut stump Undiluted gel Native vegetation, gullies, and parks. Any time Cut stump and apply 3-5 mm thick layer immediately. For multi-stemmed plants treat at least 80% of stems including main stems. Do not use in urban home gardens. Registered for this use on woody weeds in general.

glyphosate (450g/L) Roundup CT® M Cut stump Undiluted Conservation areas, bushland and other non-crop areas. July - October Apply when weed is actively growing. PER 13371 (exp.2022)

**Muskweed**
*Myagrum perfoliatum*

**COMPETES WITH BROADACRE CROPS. SEED CONTAMINANT**

Winter annual herb. Leaves variable in shape, with stem-clasping bases. Yellow flowers in spikes. Fruit is club-shaped, ridged and slightly warty.

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</tr>
</thead>
<tbody>
<tr>
<td>diquat 115g/L+135g/L paraquat</td>
<td>SpraySeed 250®</td>
<td>L</td>
<td>Boom spray</td>
<td>1.2-3.2L/ha depending on size of rosettes</td>
<td>Fallows and pre-planting</td>
<td>Rosettes to 20 cm wide</td>
<td>Non selective, avoid contact with desirable plants. Poisonous to humans, follow all safety directions on label.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (470g/L) Nufarm Weedmaster DST®</td>
<td></td>
<td>M</td>
<td>Boom spray</td>
<td>minimum 1.4L/ha, refer to label</td>
<td>Fallows and pre-planting</td>
<td>Up to rosette stage</td>
<td>Non selective, avoid contact with desirable plants. Product and use are registered, but this weed is not on the label.</td>
<td></td>
</tr>
<tr>
<td>2,4-D ethyl hexyl ester (680g/L) LVE 2,4-D 680®</td>
<td></td>
<td>I</td>
<td>Boom spray</td>
<td>800mL/Ha</td>
<td>Cereal crops</td>
<td>Up to rosette stage</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Product and use are registered, but this weed is on the label for Victoria only.</td>
<td></td>
</tr>
<tr>
<td>2,4-D ethyl hexyl ester (680g/L) LVE 2,4-D 680®</td>
<td></td>
<td>I</td>
<td>Spot spray</td>
<td>8mL/10L</td>
<td>Cereal crops</td>
<td>Up to rosette stage</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Product and use are registered, but this weed is on the label for Victoria only.</td>
<td></td>
</tr>
</tbody>
</table>
**Nightstock**
*Matthiola longipetala*

**COMPETES WITH BROADACRE CROPS. SEED CONTAMINANT**
Winter annual herb to 50 cm, covered with hairs like felt. Leaves lobed, grey-green. Flowers with four dull purple petals, strongly perfumed at night.

<table>
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</thead>
<tbody>
<tr>
<td>Nican-M® (50 g/L) + MCPA (250 g/L)</td>
<td>F.i</td>
<td>Boom spray</td>
<td>1L/ha</td>
<td>Cereal crops and pasture</td>
<td>Winter, up to 4 leaf stage</td>
<td>Apply in 70-100 L/ha water. Do not graze or cut for stock feed for 7 days after application.</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>Brodal® Options (500 g/L)</td>
<td>F</td>
<td>Boom spray</td>
<td>200mL/ha</td>
<td>Clover-based pastures and field legumes</td>
<td>Winter, up to 4 leaf stage</td>
<td>Consult label for tolerance of various crops and clover cultivars. Apply in 70-100 L/ha water. Do not graze or cut for stock feed for 7 days after application.</td>
<td>Registered</td>
<td></td>
</tr>
</tbody>
</table>

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**Noogoora burrs**
*Xanthium strumarium sp. agg.*

**COMPETES WITH PASTURE AND RIPARIAN VEGETATION. BURRS CONTAMINATE WOOL**
Summer-growing erect annual to 2 m tall. Leaves stalked, shallowly 3-lobed, to 15 cm wide, rough-textured. Flowers inconspicuous, green. Burrs covered in small hooked spines, with two beaks at the tip.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>MCPA (340g/L) + dicamba (80g/L)</td>
<td>Kamba M®</td>
<td>I</td>
<td>Boom spray</td>
<td>2.8-4L/ha</td>
<td>Grass pastures.</td>
<td>While actively growing, before flower and burr formation</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Grass pastures. Use higher rates on larger plants or plants in late flower.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (340g/L) + dicamba (80g/L)</td>
<td>Kamba M®</td>
<td>I</td>
<td>Spot spray</td>
<td>190-270mL/100L</td>
<td>Grass pastures.</td>
<td>While actively growing, before flower and burr formation</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Grass pastures. Use higher rate on late flowering or larger plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (750g/L)</td>
<td>Agritone 750®</td>
<td>I</td>
<td>Boom spray</td>
<td>1.35L/ha</td>
<td>Cereal crops and grass pastures.</td>
<td>Young seedlings.</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot Spray</td>
<td>500-700 mL/100L</td>
<td>Non-crop situations.</td>
<td>While actively growing, before flower and burr formation</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
<td>Product and use are registered, but this weed is on the label for NSW and Qld only.</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
### Nutgrass

*Cyperus rotundus*

**INVADES PASTURES, CROPS AND GARDENS, VERY HARD TO KILL**

Perennial sedge to 60 cm high with chains of brown underground tubers. Leaves grass-like, shiny, dark-green. Seed heads green, compact.

<table>
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</thead>
<tbody>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Non-crop situations</td>
<td>Feb-April, after flowering has begun.</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Boom spray</td>
<td>6L/ha</td>
<td>Arable land</td>
<td>Feb-April, after flowering has begun.</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants. Follow-up treatments necessary.</td>
<td>Registered</td>
</tr>
<tr>
<td>Product</td>
<td>Application Rate</td>
<td>Rate of Application</td>
<td>Type of Situation</td>
<td>Application Guidelines</td>
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<tr>
<td>Glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>Split application 700mL/100L + 700mL/100L Arable land and non-crop situations</td>
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<td>First application when at least 20% of plants flowering. Second application 6-8 weeks later.</td>
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<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants. Follow-up treatments necessary.</td>
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<tr>
<td>Glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Boom spray</td>
<td>Split application 3L/ha + 3/L/ha Arable land</td>
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<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants. Follow-up treatments necessary.</td>
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<td>Registered</td>
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<tr>
<td>Glyphosate (450g/L)</td>
<td>Agvantage Glyphosate 450®</td>
<td>M</td>
<td>Spot spray</td>
<td>800mL/L Non-crop situations. Feb-April, after flowering has begun.</td>
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<td>Non selective, avoid contact with desirable plants. Follow-up treatments necessary.</td>
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<td>Registered</td>
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<tr>
<td>Glyphosate (450g/L)</td>
<td>Agvantage Glyphosate 450®</td>
<td>M</td>
<td>Boom spray</td>
<td>4.8L/ha Non-crop situations Feb-April, after flowering has begun.</td>
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<td>Non selective, avoid contact with desirable plants. Follow-up treatments necessary.</td>
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<td>Registered</td>
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<tr>
<td>Glyphosate (450g/L)</td>
<td>Agvantage Glyphosate 450®</td>
<td>M</td>
<td>Spot spray</td>
<td>Split application 600mL/100L + 600mL/100L Arable land. First application when at least 20% of plants flowering. Second application 6-8 weeks later.</td>
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<td></td>
<td></td>
<td>Registered</td>
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</tr>
<tr>
<td>Glyphosate (450g/L)</td>
<td>Agvantage Glyphosate 450®</td>
<td>M</td>
<td>Boom spray</td>
<td>Split application 2.4L/ha + 2.4/L/ha Arable land. First application when at least 20% of plants flowering. Second application 6-8 weeks later.</td>
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<td></td>
<td>Non selective, avoid contact with desirable plants. Follow-up treatments necessary.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Registered</td>
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</tr>
<tr>
<td>Methyl Bromide (1000g/kg)</td>
<td>Methyl Bromide 1000* Fumigant</td>
<td>M</td>
<td>Soil injection</td>
<td>100g/square metre Non-crop situations. Any</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Highly poisonous fumigant, classed as Toxic Gas 2, Class 8A Insecticide. Can only be applied by a licenced operator.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Registered</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Olive (feral)
*Olea europaea* (excluding cultivated trees)

**INVADES BUSHLAND. FIRE HAZARD**

Evergreen tree to 15 metres high, often multi-stemmed. Leaves grey-green, glossy above, silvery underneath. Flowers small, creamy, with 4 petals. Fruits green, ripening to blue-black.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Basal bark</td>
<td>2L/60L biodiesel or diesel</td>
<td>Bushland, pastures and other non-crop areas.</td>
<td>Plants up to 5cm basal diameter</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Cut stump</td>
<td>2L/60L biodiesel or diesel</td>
<td>Bushland, pastures and other non-crop areas.</td>
<td>Any time</td>
<td>Apply immediately after cutting.</td>
<td>Registered</td>
</tr>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation and other non-crop areas.</td>
<td>Any time</td>
<td>For seedlings and saplings. Cut stump and apply 3-5 mm thick layer immediately.</td>
<td>Registered for this use on woody weeds in general.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Cut stump</td>
<td>Undiluted</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time</td>
<td>Effective on smaller plants only.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Stem injection</td>
<td>Undiluted, or up to 1:1</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing</td>
<td>Place herbicide in holes drilled around trunk.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (360g/L) + metsulfuron-methyl (600g/kg)</td>
<td>Roundup® + Brush-Off®</td>
<td>M,B</td>
<td>Spot spray</td>
<td>1L + 10g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing</td>
<td>Add organosilicone penetrant and spray oil. Suitable for controlling seedlings and saplings. Follow up control may be required. Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate dual salt (360g/L)</td>
<td>Weedmaster Duo®</td>
<td>M</td>
<td>Cut stump</td>
<td>1L/1L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time</td>
<td>Apply immediately after cutting.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate dual salt (360g/L)</td>
<td>Weedmaster Duo®</td>
<td>M</td>
<td>Stem injection</td>
<td>1L/1L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing</td>
<td></td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>
Opuntia cacti (prickly pear/wheel cactus)

_Opuntia_ spp. (except _O. ficus-indica_)

**WoNS**

_COMPETE WITH NATIVE VEGETATION. FORMS PRICKLY THICKETS. CAN INJURE ANIMALS*

Succulent, shurbby perennials. Stems flattened pad-shaped segments, leafless with long surface spines. Flowers large with numerous petals in various colours. Most produce red, fleshy fruits.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Spot spray</td>
<td>15g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing</td>
<td>Add a surfactant. Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600*</td>
<td>I</td>
<td>Stem injection</td>
<td>Undiluted</td>
<td>Bushland, pastures and other non-crop areas.</td>
<td>While actively growing</td>
<td>Place herbicide in holes drilled around trunk.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600*</td>
<td>I</td>
<td>Spot spray</td>
<td>170mL/100L</td>
<td>Bushland, pastures and other non-crop areas.</td>
<td>While actively growing</td>
<td>Add a marking agent. Suitable for controlling seedlings and saplings.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Concentration</th>
<th>Formulation</th>
<th>Dilution</th>
<th>Application Method</th>
<th>Treatment Areas</th>
<th>Application Time</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>500mL/100L</td>
<td>Spot spray</td>
<td></td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>While actively growing</td>
<td>Apply as thorough foliage spray; follow-up may be needed to treat regrowth.</td>
<td>Registered</td>
</tr>
<tr>
<td>Grazon Extra®</td>
<td>I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>3L/100L water</td>
<td>Spot spray</td>
<td></td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>While actively growing</td>
<td>Plants up to 10cm basal diameter; also cover all pads with spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>Garlon 600®</td>
<td>I</td>
<td>Basal bark</td>
<td>800mL/60L biodiesel or diesel</td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>While actively growing</td>
<td></td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>3L/100L water</td>
<td>Basal bark</td>
<td></td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>While actively growing</td>
<td></td>
<td>Registered</td>
</tr>
<tr>
<td>Garlon 600®</td>
<td>I</td>
<td>Stem injection</td>
<td>Inject 2 to 4mL undiluted into 4th pad</td>
<td>Non-arable and pastoral land</td>
<td>Summer</td>
<td>Suitable for wheel cactus (Opuntia robusta). Inject a measured dose of herbicide into the pad using a sheep drenching needle (or similar).</td>
<td>PER 84519 (exp. 2022)</td>
</tr>
<tr>
<td>MSMA (720g/L)</td>
<td>Z</td>
<td>Stem injection</td>
<td>Inject 2 to 4mL undiluted into 4th pad</td>
<td>Non-arable and pastoral land</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daconate 720®</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>glyphosate 450g/L</td>
<td>Undiluted</td>
<td>Stem injection</td>
<td></td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing</td>
<td>Suitable for wheel cactus (Opuntia robusta) and other opuntioid cacti. Inject a measured dose of herbicide into the pad using a drill, drenching needle (or similar).</td>
<td>PER 13371 (exp. 2022)</td>
</tr>
<tr>
<td>Roundup CT®</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate 450g/L</td>
<td>Undiluted</td>
<td>Stem injection</td>
<td>Inject 2 to 4mL undiluted into 4th pad</td>
<td>Non-arable and pastoral land</td>
<td>While actively growing</td>
<td>Suitable for wheel cactus (Opuntia robusta) and other opuntioid cacti. Inject a measured dose of herbicide into the pad using a sheep drenching needle (or similar).</td>
<td>PER 84519 (exp. 2022)</td>
</tr>
<tr>
<td>Titan Glyphosate 450 Herbicide®</td>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Undiluted</td>
<td>Stem injection</td>
<td></td>
<td>Native vegetation, rangeland, pasture and other non-crop areas.</td>
<td>While actively growing</td>
<td>Use cordless drill to make holes around the base into the sapwood. Inject herbicide immediately.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
<tr>
<td>Garlon 600®</td>
<td>I</td>
<td></td>
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</tr>
</tbody>
</table>

**Notes:**
- **Registered** indicates that the product is registered for use in South Australia.
- **PER 84519 (exp. 2022)** indicates the product has a permit with an expiry date of 2022.
**Orange hawkweed**  
*Hieracium aurantiacum*

**INVADES PASTURE IN THE HIGH COUNTRY OF THE EASTERN STATES, WHERE UNDER ERADICATION.**

Low-growing perennial herb. Leaves oblong, hairy, mostly basal. Flowerheads are orange daisies, grouped at the top of a leafless stem. Seeds on parachutes spread by wind.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Not known to be growing wild in South Australia. The sale and transport of orange hawkweed is prohibited, and should be reported to Biosecurity SA. Collect a pressed specimen to confirm identity.</td>
<td>Manual removal</td>
<td>Hand pull.</td>
<td>Any time</td>
<td>Remove plants from garden, collect and destroy any seed heads.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Ornamental asparagus**  
*Asparagus africanus*

**WoNS**

**INVADES BUSHLAND, SMOTHERS NATIVE PLANTS**

Perennial climber growing from rhizomes. Wiry stems with needle-like cladodes. Tiny white flowers followed by orange-red berries.

<table>
<thead>
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<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td>Dig out.</td>
<td>All.</td>
<td>Any time</td>
<td>Suitable for small plants and outliers only. Minimize soil disturbance as much as possible, but ensure that all rhizome is removed.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Surfactant or spray oil may be added. Non selective, avoid contact with desirable plants. Follow up applications will be required for at least 2 years.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
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<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>M,B</td>
<td>Spot spray</td>
<td>1L + 3g /100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Add a surfactant. Non selective, avoid contact with desirable plants. Follow up applications will be required for at least 2 years. Soil active herbicide, may damage desirable vegetation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HERBICIDE GROUP</th>
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<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Spot spray</td>
<td>1.5g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>June - August</td>
<td>Add a surfactant. May cause damage to native vegetation; use with care under desirable trees. Follow up applications will be required for at least 2 years.</td>
</tr>
</tbody>
</table>
## Pampas grasses
*Cortaderia spp.*

### ALERT WEED
**INVADES BUSHLAND. DISPLACES NATIVE VEGETATION. FIRE HAZARD**

Giant perennial tussock grasses. Leaves tough, grey-green with sharp serrated edges. Tall, fluffy flower spikes to 4m, may be pink at first, fading to white.

<table>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical removal</td>
<td></td>
<td></td>
<td>Grub out whole tussock with rhizome.</td>
<td></td>
<td>Any time</td>
<td>Large plants need machinery such as a bobcat to remove.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot Spray</td>
<td>1 - 1.3L/100L</td>
<td>Non-crop situations.</td>
<td>While actively growing.</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants. Repeat treatments necessary.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1.3L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Add spray oil. Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

## Parkinsonia
*Parkinsonia aculeata*

### WoNS – ALERT WEED
**INVADES WATERCOURSES IN SEMI-ARID REGIONS.**

Small tree. Spiny with zig-zag branches. Long green leaf stalks with tiny leaflets. Bright yellow flowers. Pods are light brown and swollen around each seed.

<table>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical removal</td>
<td></td>
<td></td>
<td>Grub out whole tussock with rhizome.</td>
<td></td>
<td>Any time</td>
<td>Large plants need machinery such as a bobcat to remove.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot Spray</td>
<td>1 - 1.3L/100L</td>
<td>Non-crop situations.</td>
<td>While actively growing.</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants. Repeat treatments necessary.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
**Parrot feather**  
*Myriophyllum aquaticum*

**INVADERS PONDS, SHALLOW LAKES AND SLOW MOVING STREAMS**
Submerged aquatic perennial with rhizomes. Leaves bright green, feather-like, in whorls of 4-6 evenly spaced along the stems. Flowers inconspicuous, in leaf axils emerging from water.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Report occurrences to your regional NRM Authority or Biosecurity SA and obtain advice. Collect a pressed specimen to confirm identity.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dredge plants out of water and dispose by composting.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic habitats Any time</td>
<td></td>
</tr>
</tbody>
</table>

**Parthenium weed**  
*Parthenium hysterophorus*

**WoNS – ALERT WEED**
COMPETITIVE IN PASTURE. TOXIC AND ALLERGENIC TO LIVESTOCK AND HUMANS
Erect summer-growing annual herb to 2 metres tall. Pale green, deeply lobed leaves with fine hairs. Small, white daisy flowerheads in clusters on stem tips.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not yet known to occur in South Australia. Report occurrences to your regional NRM Authority or Biosecurity SA. Collect a pressed specimen to confirm identity.</td>
<td>Registered</td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grub individual plants</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Any time Inform your regional NRM Authority. Monitor site and undertake follow up control until eradication has been achieved</td>
<td></td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500®</td>
<td>I</td>
<td>Spot spray</td>
<td>40mL/100L</td>
<td>Non-crop situations.</td>
<td>Rosette stage</td>
<td>Do not apply to crops or legume-based pastures.</td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
### metsulfuron-methyl (600g/kg)

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Removal</td>
<td>Grub individual plants.</td>
<td>B</td>
<td>Spot spray</td>
<td>5g/100L</td>
<td>Seedlings to 4 leaf stage.</td>
<td>Soil active herbicide, may damage desirable vegetation.</td>
<td>Product and use are registered, but this weed is on the label for NSW only.</td>
<td></td>
</tr>
</tbody>
</table>

### Perennial ragweed

*Ambrosia spp.*

**INVADES ROADSIDES, CREEK BANKS AND PASTURE. ALLERGENIC.**

Perennial herb to 2 m tall from a woody rootstock. Erect stems, deeply lobed aromatic leaves. Elongated spikes of greenish-yellow cup-shaped flower heads.

### CONTROL OPTION

<table>
<thead>
<tr>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500°</td>
<td>I</td>
<td>Spot spray</td>
<td>600mL/100L</td>
<td>Non-crop situations.</td>
<td>While actively growing.</td>
<td>Do not apply to crops or legume-based pastures.</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500°</td>
<td>I</td>
<td>Boom spray</td>
<td>8.8L/ha</td>
<td>Non-crop situations.</td>
<td>While actively growing.</td>
<td>Use at least 1500 L/ha water. Do not apply to crops or legume-based pastures.</td>
</tr>
</tbody>
</table>

### Perennial thistle

*Cirsium arvense*

**COMPETES WITH PASTURES**

Erect perennial herb. Extensive root system. Stems are ridged. Leaves have wavy, spiny margins and are white-woolly underneath. Flowers are red-purple to pink, and surrounded by layers of purplish bracts. Fruit is smooth and shiny with ring of feathery white hairs.

### CONTROL OPTION

<table>
<thead>
<tr>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D°</td>
<td>I</td>
<td>Spot spray</td>
<td>650mL/100L</td>
<td>Grass pastures and other non-crop situations.</td>
<td>Budding stage.</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops.</td>
</tr>
</tbody>
</table>
clovepyralid (300g/L) Lontrel® I Spot spray 250mL/100L Grass pastures and fallow. December -January. Add a surfactant. Hormone type herbicide - use with caution near sensitive crops. Product and use are registered, but this weed is on the label for Victoria and Tasmania only.

glyphosate (360g/L) Roundup Biactive® M Spot Spray 1L/100L Grass pastures and non-cropping areas. Flowering stage. Do not cultivate before spraying. Non selective, avoid contact with desirable plants. Product and use are registered, but this weed is on the label for Victoria and Tasmania only.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
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<th>APPLICATION RATE*</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Not known to occur outside suburban Adelaide. Report occurrences to your regional NRM Authority or Biosecurity SA. Collect a pressed specimen to confirm identity.</td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Grub individual plants</td>
<td>Any</td>
<td>When found.</td>
<td>Inform your regional NRM office and obtain advice. Monitor site and undertake follow up control until eradication has been achieved.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) Tussock™ J</td>
<td>Spot spray</td>
<td>100-300mL/100L</td>
<td>Non-crop situations.</td>
<td>While actively growing, autumn to spring.</td>
<td>Add a non-ionic surfactant. Slow-working residual. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™ J</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Non-crop situations.</td>
<td>While actively growing, autumn to spring.</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L) Tussock™ + Roundup CT® J,M</td>
<td>Spot spray</td>
<td>150-300mL + 270mL/100L</td>
<td>Non-crop situations.</td>
<td>While actively growing, autumn to spring.</td>
<td>Use higher rate if the weed is dense. Apply to fresh foliage. Slash to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated

Plumerillo
*Jarava plumosa*

**ALERT WEED**

**INVADES PASTURES AND NATIVE VEGETATION**

Perennial tussock grass. Leaves are narrow and inrolled. Seeds heads plume-like with twisted hairy awns.
Poison buttercup
*Ranunculus sceleratus*

**POISONOUS TO LIVESTOCK**
Annual herb. Leaves bright green, glossy and deeply divided into three lobes. Flowers have five small yellow petals, each forming numerous tiny, flattened green achenes (seeds) with small beaks.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot Spray</td>
<td>500-700mL/100L</td>
<td>Non-cropping situations.</td>
<td>While actively growing.</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
<td>Product and use are registered, but this weed is not on the label.</td>
</tr>
<tr>
<td>MCPA (340g/L) + Dicamba (80g/L)</td>
<td>Kamba M®</td>
<td>I</td>
<td>Spot spray</td>
<td>470mL/100L</td>
<td>Grass pastures and non-cropping areas.</td>
<td>While actively growing.</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

Poison ivy
*Toxicodendron radicans*

**ALLERGENIC GARDEN PLANT**
Deciduous, woody creeper with white toxic sap. Leaves with three leaflets, on long stalks, turning deep red in autumn. Not known to be in SA.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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</thead>
<tbody>
<tr>
<td>Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Report occurrences to your regional NRM Authority or Biosecurity SA. Not known to occur in South Australia.</td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Cut and grub out roots.</td>
<td></td>
<td>Gardens</td>
<td></td>
<td>Avoid contact with the toxic latex by wearing gloves, long sleeves and eye protection.</td>
<td></td>
</tr>
</tbody>
</table>
Polygala

*Polygala myrtifolia*

**INVADES AND COMPETES IN COASTAL VEGETATION**

Evergreen shrub to 4 m high. Leaves are oblong to oval. Pea-like flowers are mainly purple with a pair of large petal-like wings, and three petals, the lowest with a brushlike crest. Seeds in capsules.

<table>
<thead>
<tr>
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<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Any.</td>
<td>Seedlings</td>
<td>Hand pull when soil is moist.</td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Any.</td>
<td>Established bushes</td>
<td>Use a Tree Popper to uproot.</td>
<td></td>
</tr>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II*</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies, and parks.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. For multi-stemmed plants treat at least 80% of stems including main stems. Do not use in urban home gardens.</td>
<td>Registered for this use on woody weeds in general.</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600*</td>
<td>I</td>
<td>Spot spray</td>
<td>170mL/100L</td>
<td>Nature reserves and other native vegetation, roadsides, urban open space and forests.</td>
<td>October - January</td>
<td>Add a marking agent.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>August - September</td>
<td>Surfactant or spray oil may be added. Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

**Pond apple**

*Annona glabra*

**WoNS**

**INVADES MANGROVE SWAMPS IN NORTHERN AUSTRALIA. NATIONAL BAN ON SALE**

Tree to 12 m high. Leaves ovate, 8–15 cm long with a pointed tip, light to dark green. Flowers green with six overlapping petals. Fruit large, round, green to yellow. Not known to be in SA.

<table>
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<tbody>
<tr>
<td>Report</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Not expected to be growing outdoors in South Australia but could be in glasshouse cultivation. Collect a pressed specimen to confirm identity. The sale and transport of pond apple is prohibited, and should be reported to Biosecurity SA.</td>
<td>[PER 13371 (exp.2022)]</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
**Prickly acacia**  
*Acacia nilotica subsp. indica*

**WoNS**

**FORMS PRICKLY THICKETS IN PASTORAL ZONE**
Small spiny tree. Leaves bipinnate, finely hairy, with a pair of spines at the base. Flower heads globular, yellow, resembling a native wattle.

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</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Not known to be growing outdoors in South Australia. Collect a pressed specimen to confirm identity. The sale and transport of prickly acacia is prohibited, and should be reported to Biosecurity SA.</td>
<td></td>
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</tr>
</tbody>
</table>

**Primrose willow**  
*Ludwigia peruviana*

**ALERT WEED**

**INVADES AND OBSTUCTS STREAMS**
Aquatic shrub emerging from water to 2 m tall. Leaves are narrow with stalkless base and prominent veins. Yellow, four-petalled flowers.

<table>
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</thead>
<tbody>
<tr>
<td>Report</td>
<td>Report occurrences to your regional NRM Authority or Biosecurity SA. Collect a pressed specimen to confirm identity. Not yet known to occur in South Australia but established in the eastern States.</td>
<td></td>
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</tbody>
</table>

- **Mechanical removal**  
  - Grub individual plants  
  - Any time  
  - Inform your regional NRM authority. Ensure all parts of the plant are removed from the site and destroy by burning or deep burial. Monitor site and undertake follow up control until eradication has been achieved.

- **glyphosate (360g/L)**  
  - Roundup Biactive®  
  - M  
  - Spot Spray  
  - 1L/100L  
  - Aquatic and wetland habitats.  
  - Early flowering but before autumn change of colour.  
  - Ensure thorough coverage is achieved. Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.  
  - Registered (as general woody weeds)

- **picloram (44.7g/L) + aminopyralid (4.7 g/L)**  
  - Vigilant II®  
  - I  
  - Cut stump  
  - Undiluted gel  
  - Aquatic and wetland habitats  
  - Early flowering but before autumn change of colour.  
  - Cut stem and apply a 3-5 mm thick layer immediately. Ensure all parts of the plant are removed from the site and destroy by burning or deep burial.  
  - Registered for this use on woody weeds in general.
Ragwort
*Senecio jacobaea*

**COMPETES WITH PASTURES. TOXIC TO LIVESTOCK**
Biennial with tough branching stems. Leaves pinnately lobed, bright green, with unpleasant smell. Bright yellow daisy flower heads in flat-topped clusters. Not known to be in SA.

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<tr>
<td>Report</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Report occurrences to your regional NRM Authority or Biosecurity SA. Collect a pressed specimen to confirm identity. Not yet known to occur in South Australia but established in the eastern States.</td>
</tr>
</tbody>
</table>

Rhus tree
*Toxicodendron succedaneum*

**ALLERGENIC GARDEN PLANT**
Small deciduous tree with white toxic sap. Leaves pinnate, turn deep red in autumn. Small cream-green flowers followed by dry berries.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>COMMENTS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Cut</td>
<td></td>
<td>Gardens</td>
<td>Winter</td>
<td>Cut down the rhus tree and dispose safely; do not incinerate or compost. Avoid contact with the toxic latex by wearing gloves, long sleeves and eye protection. Seek advice from regional NRM or local Council.</td>
<td></td>
</tr>
</tbody>
</table>

Rubber vine
*Cryptostegia grandiflora*

**WoNS**
Evergreen woody climber with milky sap. Leaves glossy, oval, to 10 cm long. Large pink flowers. Seeds in pairs of large pods. Not known to be in SA.

<table>
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<tr>
<td>Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Report Not expected to be growing outdoors in South Australia but could be in glasshouse cultivation. Its sale and transport is prohibited, and should be reported to Biosecurity SA.</td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
**Sagittaria**

*Sagittaria graminea*

**WoNS**

**INVADES WETLANDS AND WATERWAYS**

Aquatic perennial with creeping underwater stems and narrow oval leaves emerging from the water. Flowers with three white petals, on branched stems.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Report occurrences to your regional NRM Authority or Biosecurity SA.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Aquatic and wetland habitats</td>
<td>Summer</td>
<td>Confirm ID before spraying. Seek advice from an NRM Officer. Apply herbicide to individual mats only - do not broadcast spray over water. Repeat control monthly until infestation eradicated.</td>
<td>Product and use are registered, but this weed is not on the label.</td>
</tr>
</tbody>
</table>

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**Salvation Jane**

*Echium plantagineum*

**COMPETES IN PASTURES. TOXIC TO LIVESTOCK**

Annual herb to 80 cm high, covered in short, bristly hairs. Leaves in basal rosettes, broad oval. Flowers purple on a branched stem in spring, each forming four seeds.

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>chlorsulfuron (750g/kg)</td>
<td>Glean®</td>
<td>B</td>
<td>Boom spray</td>
<td>15g/ha</td>
<td>Wheat or triticale crops.</td>
<td>Pre-sowing</td>
<td>Herbicide is incorporated in soil by sowing. Do not use near trees or other desirable vegetation.</td>
<td>Registered</td>
</tr>
<tr>
<td>chlorsulfuron (750g/kg)</td>
<td>Glean®</td>
<td>B</td>
<td>Boom spray</td>
<td>15g/ha</td>
<td>Wheat, barley, oats, cereal rye or triticale crops.</td>
<td>Post emergence</td>
<td>Do not spray if rain expected in next 4 hours. Do not use near trees or other desirable vegetation.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Boom spray</td>
<td>800mL - 1.2L/ha</td>
<td>Before sowing a crop or pasture with soil disturbance by cultivation.</td>
<td>Pre-sowing</td>
<td>Use 1 to 1.2 L rate on plants over 12 cm diameter. Non selective. Avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>Herbicide</td>
<td>Manufacturer</td>
<td>Application Rate</td>
<td>Spraying Method</td>
<td>Treatment Stage</td>
<td>Remarks</td>
<td></td>
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</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Boom spray</td>
<td>1.2 - 1.6L/ha</td>
<td>To commence a fallow, or pre-sowing with minimal tillage.</td>
<td>Fallows</td>
<td>Non selective. Avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (500g/L) + diuron (500g/L)</td>
<td>MCPA 500° + Farmoz Diuron 500 Flowable°</td>
<td>I</td>
<td>Boom spray</td>
<td>1L + 400mL/ha</td>
<td>Grass pastures</td>
<td>Early winter</td>
<td>Use as a late treatment, only if treatment had to be delayed until winter. Rosettes to 20 cm diameter. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Ally*</td>
<td>B</td>
<td>Boom spray</td>
<td>5-7g/ha</td>
<td>Wheat, barley, triticale and cereal rye crops.</td>
<td>Autumn</td>
<td>Soil active herbicide.</td>
<td>Registered</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Brush-Off°</td>
<td>B</td>
<td>Boom spray</td>
<td>15g/ha</td>
<td>Native pastures and non-crop areas.</td>
<td>Autumn</td>
<td>Soil active herbicide, may damage desirable vegetation.</td>
<td>Registered</td>
</tr>
<tr>
<td>terbutryn 275g/L + MCPA (160g/L)</td>
<td>Agtryne MA°</td>
<td>C,I</td>
<td>Boom spray</td>
<td>300-500mL/ha</td>
<td>Sub clover based pastures with ryegrass, phalaris or cocksfoot.</td>
<td>Cotyledon to 2-leaf stage</td>
<td>Use the higher rate when weeds are at the two-leaf stage. Do not add a surfactant or spraying oil. Some reduction of clover may occur.</td>
<td>Registered</td>
</tr>
<tr>
<td>terbutryn 275g/L + MCPA (160g/L)</td>
<td>Agtryne MA°</td>
<td>C,I</td>
<td>Boom spray</td>
<td>1L/ha</td>
<td>Wheat, barley, and some oat cultivars only.</td>
<td>At 2-6 leaf weed stage, 3-5 leaf crop stage.</td>
<td>Do not add a surfactant or spraying oil. Do not apply to crops undersown with legumes.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625°</td>
<td>I</td>
<td>Boom spray, as a spray-graze treatment</td>
<td>560mL/ha</td>
<td>Pastures.</td>
<td>From 6 weeks after opening rains until the end of August.</td>
<td>Seven days after spraying, graze with sheep at 4-5 times normal rate; full directions on label. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625°</td>
<td>I</td>
<td>Boom spray</td>
<td>1.1 - 2.4L/ha</td>
<td>Grass pastures and non-crop areas.</td>
<td>March - June</td>
<td>Not for use on legume pastures. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Refer to label.</td>
<td>Product and use are registered, but this weed is on the label for WA only.</td>
</tr>
<tr>
<td>MCPA (500g/L)</td>
<td>MCPA 500°</td>
<td>I</td>
<td>Boom spray</td>
<td>1 - 1.5L/ha, refer to label</td>
<td>Pastures.</td>
<td></td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Product and use are registered, but this weed is on the label for NSW and ACT only.</td>
</tr>
<tr>
<td>MCPA (500g/L)</td>
<td>MCPA 500°</td>
<td>I</td>
<td>Boom spray, as a spray-graze treatment</td>
<td>350mL - 1.4L/ha</td>
<td>Pastures.</td>
<td></td>
<td>Seven days after spraying, graze with sheep at 4-5 times normal rate; full directions on label. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Product is registered, but this use is on the label for NSW, ACT and Victoria only.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT°</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>When actively growing and before seed set.</td>
<td>Non selective, late season treatment or pre-planting. Avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
### Salvinia

**Salvinia molesta**

**WoNS – ALERT WEED**

**INVADES AND COVERS WATER BODIES.**

Aquatic floating fern with oval leaves forming chain-like structures at surface, covered in eggbeater-shaped hairs. Black roots hanging in water.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Dredge or skim plants out of the water.</td>
<td></td>
<td>Aquatic habitats</td>
<td>September - April</td>
<td>Seek advice from your regional NRM Authority. Dispose of weed by composting or drying. Monitor site and undertake follow up control until eradication has been achieved</td>
<td></td>
</tr>
<tr>
<td>diquat (200g/L)</td>
<td>Reglone®</td>
<td>L</td>
<td>Spot spray</td>
<td>400mL/100L</td>
<td>Aquatic habitats</td>
<td>September - April</td>
<td>Seek advice from your regional NRM Authority. Apply as an overall spray to wet foliage thoroughly. Clear water is necessary for best results. Add 150 mL Agral* surfactant per 100L. Repeat applications 7-14 days later may be necessary to control dense infestations.</td>
<td>Registered</td>
</tr>
<tr>
<td>orange oil (55.2g/kg)</td>
<td>Water Clear®</td>
<td></td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Water in artificial impoundments and enclosed bodies of water.</td>
<td>September - April</td>
<td>Spray on free floating plants. Do not use in natural water bodies or streams where it will reach natural water bodies. Do not use in dams holding water for human consumption.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

### Senegal tea plant

**Gymnocroronis spilanthoides**

**ALERT WEED**

**INVADES WETLANDS AND OBSTRUCTS MOVEMENT. NOT PRESENT IN SOUTH AUSTRALIA**

Perennial with creeping rhizomes. Stems are ribbed and hollow. Leaves are variable in shape. Flowers are white or pale purple in clusters at the ends of branches.

<table>
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<tr>
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<td></td>
</tr>
<tr>
<td>Report</td>
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</tr>
</tbody>
</table>

Not known to occur in South Australia. Report to your local NRM Authority or Biosecurity SA and seek advice. Collect a specimen to confirm identity.
**Serrated tussock**  
*Nassella trichotoma*

**WoNS – ALERT WEED**  
**COMPETES WITH PASTURES. NOT PRESENT IN SOUTH AUSTRALIA**

Perennial grass forming tussocks. Leaves thread-like, tightly rolled, with fine serrations near the base. Loose, drooping flower heads. Seeds small with long awns.

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<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Grub individual</td>
<td></td>
<td>Any</td>
<td>Before seed set</td>
<td>Monitor site and undertake follow up control until eradication has been achieved.</td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock®</td>
<td>J</td>
<td>Boom spray</td>
<td>1.5-2L/ha</td>
<td>Non-crop situations</td>
<td>While actively growing, autumn to spring</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock®</td>
<td>J</td>
<td>Spot spray</td>
<td>100-200mL/100L</td>
<td>Non-crop situations</td>
<td>While actively growing, autumn to spring</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock®</td>
<td>J</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Non-crop situations</td>
<td>While actively growing, autumn to spring</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock® + Roundup®</td>
<td>J,M</td>
<td>Boom spray</td>
<td>1.5-2L + 250-420mL/ha</td>
<td>Non-crop situations</td>
<td>While actively growing, autumn to spring</td>
<td>Add a non-ionic surfactant. Apply glyphosate alone for seed set suppression; or for control mix flupropanate with glyphosate. Use higher rate if the weed is dense. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock® + Roundup®</td>
<td>J,M</td>
<td>Spot spray</td>
<td>150-200mL + 270mL/100L</td>
<td>Non-crop situations</td>
<td>While actively growing, autumn to spring</td>
<td>Add a non-ionic surfactant. Apply glyphosate alone for seed set suppression; or for control mix flupropanate with glyphosate. Use higher rate if the weed is dense. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants.</td>
<td>PER 9792 (exp. 2020)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
### glyphosate (450g/L) Roundup CT®

**M**  
**Boom spray**  
**2.24-3.2L/ha**  
**Non-crop situations.**  
**While actively growing, autumn to spring.**  
**Use the lower rate on infertile lightly textured soils; use the higher rate on fertile basalt soils. Suppression only if serrated tussock plants are not actively growing with long green leaves. Non selective, avoid contact with desirable plants.**  
**PER 9792 (exp. 2020)**

### glyphosate (450g/L) Roundup CT®

**M**  
**Spot spray**  
**560-1000mL/100L**  
**Non-crop situations.**  
**While actively growing, autumn to spring.**  
**Use the lower rate on infertile lightly textured soils; use the higher rate on fertile basalt soils. Non selective, avoid contact with desirable plants.**  
**PER 9792 (exp. 2020)**

### glyphosate (450g/L) Roundup CT®

**M**  
**Wiper**  
**2.6L/10L**  
**Non-crop situations.**  
**While actively growing, autumn to spring.**  
**Non selective, avoid contact with desirable plants.**  
**PER 9792 (exp. 2020)**

### Silverleaf nightshade  
*Solanum elaeagnifolium*

**WoNS**

**COMPETES WITH CROPS AND PASTURES**


<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
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<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manual Removal</strong></td>
<td>Manual Removal</td>
<td>Manual Removal</td>
<td>Any</td>
<td>Any time, but plants should be no more than a year old.</td>
<td>Excavate soil to the depth of the root system, remove all shoots and roots. Permission to excavate may be required. Plants established for more than a year may have roots to 1 to 2 m deep.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mowing/Slashing</strong></td>
<td>Mowing/Slashing</td>
<td>Mowing/Slashing</td>
<td>Crop stubble, pasture and non-crop areas.</td>
<td>When green shoots present.</td>
<td>Carry out slashing before berry formation. Repeat as required throughout season. Does not control the root system.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2,4-D (300g/L) + picloram (75g/L)</strong> Tordon 75-D®</td>
<td>I</td>
<td>Spot spray</td>
<td>650mL/100L</td>
<td>Spring to Autumn. Berries present may form viable seeds.</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2,4-D (300g/L) + picloram (75g/L)</strong> Tordon 75-D®</td>
<td>I</td>
<td>Boom spray</td>
<td>15L/ha</td>
<td>Non-cropping areas, pastures, commercial and industrial areas and rights-of-way.</td>
<td>Spring to Autumn. Berries present may form viable seeds.</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>Herbicide</td>
<td>Manufacturer</td>
<td>Rate</td>
<td>Method</td>
<td>Areas</td>
<td>Application</td>
<td>Notes</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L) + aminopyralid (7.5g/L)</td>
<td>FallowBoss Tordon*</td>
<td>450-600mL/ha</td>
<td>Boom spray</td>
<td>Grass pastures.</td>
<td>Beginning of flowering (best) to early berry set.</td>
<td>Add Uptake® spray oil. Follow up treatment of regrowth is critical for best control.Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L) + aminopyralid (7.5g/L)</td>
<td>Starane Advanced®</td>
<td>6L/ha</td>
<td>Boom spray</td>
<td>Non-cropping areas, pastures, commercial and industrial areas and rights-of-way.</td>
<td>Spring to Autumn. Berries present may form viable seeds.</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fluroxypyr (333g/L)</td>
<td>Starane Advanced®</td>
<td>300mL/100L</td>
<td>Spot spray</td>
<td>Non-cropping areas, pastures, commercial and industrial areas and rights-of-way.</td>
<td>Beginning of flowering (best) to early berry set.</td>
<td>Wait until the majority of shoots have emerged. Follow up treatment of regrowth is critical for best control. Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fluroxypyr (333g/L)</td>
<td>Starane Advanced®</td>
<td>450-600mL/ha</td>
<td>Boom spray</td>
<td>Summer fallows.</td>
<td>Beginning of flowering (best) to early berry set.</td>
<td>Add Uptake® spray oil. Wait until the majority of shoots have emerged. Follow up treatment of regrowth is critical for best control. Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fluroxypyr (333g/L) + 2,4-D amine (625 g/L)</td>
<td>Starane Advanced® + Amine 625®</td>
<td>225mL/ha + 1.2-1.6L/ha</td>
<td>Boom spray</td>
<td>Grass pastures.</td>
<td>Beginning of flowering (best) to early berry set.</td>
<td>Add Uptake® spray oil. Follow up treatment of regrowth is critical for best control. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the 2,4-D label. Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (540g/L)</td>
<td>Knockout Pro 540*</td>
<td>6L/ha</td>
<td>Boom spray</td>
<td>Non-crop situations.</td>
<td>Spring to Autumn. Berries present may form viable seeds.</td>
<td>Add organosilicone penetrant. Non selective, avoid contact with desirable plants. Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (540g/L)</td>
<td>Knockout Pro 540*</td>
<td>1.35L/100L</td>
<td>Spot spray</td>
<td>Non-crop situations.</td>
<td>Spring to Autumn. Berries present may form viable seeds.</td>
<td>Add organosilicone penetrant. Non selective, avoid contact with desirable plants. Registered</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
## Skeleton weed
*Skeleton weed*  
*Chondrilla juncea*

**Completes with Crops**
Perennial herb with creeping roots. Leaves deeply toothed, in a basal rosette. Flowering stems wiry, almost leafless. Numerous, small, yellow flower heads.

<table>
<thead>
<tr>
<th>Control Option</th>
<th>Example of Product Names</th>
<th>Herbicide Group</th>
<th>Application Method</th>
<th>Application Rate*</th>
<th>Situation</th>
<th>Timing</th>
<th>Comments</th>
<th>Legal Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D*</td>
<td>I</td>
<td>Spot spray</td>
<td>650mL/100L</td>
<td>Pastures and non-crop situations.</td>
<td>Winter</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops. Suppression only. Follow up spray with glyphosate.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L) + 2,4-D amine (625g/L)</td>
<td>Tordon 75-D* + 2,4-D amine 624</td>
<td>I</td>
<td>Boom spray</td>
<td>300mL + 375mL/ha</td>
<td>Pastures and non-crop situations.</td>
<td>Winter</td>
<td>Soil active herbicide, may damage desirable vegetation. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Suppression only</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L) + 2,4-D amine (625g/L)</td>
<td>Tordon 75-D* + 2,4-D amine 625</td>
<td>I</td>
<td>Boom spray</td>
<td>300mL + 375mL/ha</td>
<td>Wheat, barley, oat or triticale crops.</td>
<td>Post emergent, young weed rosettes with up to 8 leaves.</td>
<td>Soil active herbicide, may damage desirable vegetation. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Suppression only</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (475g/L)</td>
<td>Surpass 475*</td>
<td>I</td>
<td>Spot spray</td>
<td>180mL/150L</td>
<td>Crops.</td>
<td>Winter</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Suppression only</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (475g/L) + glyphosate (450g/L)</td>
<td>Surpass 475* + Roundup CT®</td>
<td>I, M</td>
<td>Boom spray</td>
<td>760mL - 1.1L + 1L/ha</td>
<td>Conservation tillage.</td>
<td>November - January</td>
<td>Suppression only. Hormone type herbicide - use with caution near sensitive crops. Add LI700® surfactant. Refer to drift warnings on the label. Any glyphosate herbicide may be used, at the label rate. Non-selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>bromoxynil (200g/L) + diflufenican(25g/L)</td>
<td>Jaguar*</td>
<td>CF</td>
<td>Boom spray</td>
<td>1L/ha</td>
<td>Wheat, barley, triticale or cereal rye crops; pasture.</td>
<td>Up to 4 leaf stage</td>
<td>To provide control until harvest only.</td>
<td>Registered</td>
</tr>
<tr>
<td>clopyralid (300g/L)</td>
<td>Lontrel®</td>
<td>I</td>
<td>Boom spray</td>
<td>300mL/ha</td>
<td>Canola crops.</td>
<td>2 to 8 leaf crop stage.</td>
<td>Will provide control until harvest and reduce density in following season. Use with caution near sensitive crops, refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>clopyralid (300g/L) + MCPA 500*</td>
<td>Lontrel® + MCPA 500*</td>
<td>I</td>
<td>Boom spray</td>
<td>500mL + 1L/ha</td>
<td>Cereal crops.</td>
<td>5 leaf to late tillering crop stage.</td>
<td>Spray when rosettes are 5-15cm. Will provide control until harvest only. Use with caution near sensitive crops, refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Ally*</td>
<td>B</td>
<td>Boom spray</td>
<td>7g/ha</td>
<td>Wheat, barley, cereal rye or triticale crops.</td>
<td>Soil active herbicide, may damage desirable vegetation. Suppression only.</td>
<td>Registered</td>
<td></td>
</tr>
</tbody>
</table>
### Spiny rush

*Juncus acutus*

**INVADES WETLANDS AND PASTURE. UNPALATABLE AND OBSTRUCTS MOVEMENT**

Perennial forming large tussocks. Leaves cylindrical, ending in a sharp spine. Flowers brownish green in dense clusters. Seed capsules egg-shaped but pointed, about 5 mm long.

<table>
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<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Grub individual plants</td>
<td></td>
<td>Any</td>
<td>Any time.</td>
<td>Bag to minimise seed spread. Monitor site and undertake follow up control as necessary.</td>
<td></td>
</tr>
<tr>
<td>Mechanical removal</td>
<td></td>
<td></td>
<td>Slash.</td>
<td></td>
<td>Any</td>
<td>Summer</td>
<td>Use hedge trimmer with the blade set close to the ground. Follow up with glyphosate to control regrowth.</td>
<td></td>
</tr>
<tr>
<td>Cultivation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pastures and before cropping</td>
<td>Any time</td>
<td>Effective on young rushes.</td>
<td></td>
</tr>
<tr>
<td>Glyphosate (360 g/L)</td>
<td>Roundup Blative®</td>
<td>M</td>
<td>Wiper equipment</td>
<td>1L/2L</td>
<td>Pastures and non-crop areas</td>
<td>While actively growing</td>
<td>Non-selective. Where there is a large proportion of dead foliage, pre-slashing is recommended. Allow adequate re-growth before treatment. Best results are achieved at lower speeds and where two applications are made in opposite directions (double pass). Add an organosilicone surfactant.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

### Swamp oak

*Casuarina glauca and Casuarina obesa*

**INVADES NATIVE RIPARIAN VEGETATION**

Evergreen tree to 15 m tall forming dense colonies by suckering. Drooping, ribbed green branchlets with scale leaves at the joints. Female trees produce winged seeds in cones. Male trees produce pollen in drooping spikes to 5 cm long.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triclopyr (300g/L) + picloram (100g/L) + aminopyralid (8g/L)</td>
<td>Grazon Extra®</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Non-cropping areas, forests, pastures, commercial and industrial areas and rights-of-way</td>
<td>plants 1 to 3 m tall</td>
<td>Nonselective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
Sweet briar
*Rosa rubiginosa*

**PRICKLY THICKETS COMPETE WITH PASTURE.**

Large semi-deciduous shrub, erect or scrambling with prickly stems and leaves. Pale pink scented flowers. Red fruits (hips) with glandular hairs on their stalks.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>October - January</td>
<td>Grub individual plants, or use a Tree Popper.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>1.5-2L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>October - January</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (540g/L)</td>
<td>Knockout Pro 540®</td>
<td>M</td>
<td>Spot spray</td>
<td>1-1.35L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>October - January</td>
<td>Use higher rates for plants larger than 1.5m. Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (300g/L) + picloram (100g/L)</td>
<td>Grazon DS®</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Non-cropping areas, forests, pastures, commercial and industrial areas and rights-of-way.</td>
<td>October - January</td>
<td>For plants up to 1.5 metres tall. Thoroughly wet foliage with the spray.</td>
<td>Registered</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Basal bark</td>
<td>1L/30L biodiesel or diesel</td>
<td>Non-cropping areas, forests, pastures, commercial and industrial areas and rights-of-way.</td>
<td>October - January</td>
<td>Plants up to 5 cm stem diameter. Diesel can be replaced with water for ease of application.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
## Sweet pittosporum

*Pittosporum undulatum*

**INVADES NATIVE FOREST**

Evergreen tree to 13 m tall. Leaves broad, hairless, with wavy edges. Flowers cream, strongly scented, with 5 petals. Orange fruits with many sticky seeds.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II*</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies, and parks.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. Do not use in urban home gardens.</td>
<td>Registered for this use on woody weeds in general.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT*</td>
<td>M</td>
<td>Cut stump</td>
<td>Undiluted</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Any time</td>
<td>Apply to cut stump immediately</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

---

*Application Rate - with water unless indicated*
### Tamarisks

*Tamarix parviflora* and *Tamarix ramosissima*

**INVADE COASTAL AND RIPARIAN VEGETATION**

Small trees to 6 m tall. Branchlets covered in grey-green scale leaves that exude salt. Flowers small, very numerous, pale pink.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Cut stump</td>
<td>1L/30L biodiesel or diesel</td>
<td>Native vegetation and roadides.</td>
<td>Any time</td>
<td>Apply to cut stump immediately</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Stem injection</td>
<td>Undiluted</td>
<td>Native vegetation and roadides.</td>
<td>Any time</td>
<td>Drill into stem and inject herbicide.</td>
<td>PER 12932 (exp. 2021)</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Spot spray</td>
<td>170mL/100L</td>
<td>Native vegetation and roadides.</td>
<td>While actively growing</td>
<td></td>
<td>PER 12932 (exp. 2021)</td>
</tr>
</tbody>
</table>
## Texas needlegrass

*Nassella leucotricha*

**INVADES PASTURES AND BUSHLAND. SHARP SEEDS**

Perennial grass with a tussock of narrow basal leaves. Seedhead is an open panicle of many pale green spikelets. Seeds with an awn surrounded at its base by a crown of bristles.

### CONTROL OPTION

<table>
<thead>
<tr>
<th>HERBICIDE GROUP</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td>Grub individual plants</td>
<td>Any</td>
<td>When found.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™ J</td>
<td>Boom spray</td>
<td>1.5-3L/ha</td>
<td>Non-crop areas and pastures.</td>
<td>July - September</td>
<td>Add a non-ionic surfactant. A slow-working residual. If spraying late in the season add glyphosate for faster knockdown. Do not graze or cut for stockfeed for at least 4 months after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™ J</td>
<td>Spot spray</td>
<td>100-300mL/100L</td>
<td>Non-crop areas and pastures.</td>
<td>July - September</td>
<td>Add a non-ionic surfactant. A slow-working residual. If spraying late in the season add glyphosate for faster knockdown. Do not graze or cut for stockfeed for at least 14 days after application. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
</tr>
<tr>
<td>flupropanate (745g/L)</td>
<td>Tussock™ J</td>
<td>Wiper</td>
<td>500mL/10L</td>
<td>Non-crop areas and pastures.</td>
<td>July - September</td>
<td>Add a non-ionic surfactant. A slow-working residual. Apply early in the season. If spraying late in the season add glyphosate for faster knockdown. Residues in the soil may suppress weeds and other susceptible species for one to two years.</td>
</tr>
<tr>
<td>flupropanate (745g/L) + glyphosate (450g/L)</td>
<td>Tussock™ + Roundup CT® J,M</td>
<td>Boom spray</td>
<td>1.5-3L + 300-500mL/ha</td>
<td>Non-crop areas and pastures.</td>
<td>While actively growing, autumn to spring.</td>
<td>Add a non-ionic surfactant. Use the higher rates on dense infestations. Apply to fresh foliage. Slashing to promote fresh growth 2-3 weeks before spraying will increase effectiveness. Non selective, avoid contact with desirable plants.</td>
</tr>
</tbody>
</table>

Residues in the soil may suppress weeds and other susceptible species for one to two years.

*Application Rate - with water unless indicated*
**Three corner jack**  
*Emex australis*

**COMPETES IN PASTURES AND CROPS. SPINY SEEDS. TOXIC**

Winter growing annual with prostrate or semi-erect stems. Leaves ovate, stalked, hairless. Flowers tiny, green. Seeds in hard burrs each with 3 spines.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Boom spray</td>
<td>400-800mL/ha</td>
<td>Pre-sowing.</td>
<td>Rosettes less than 8 cm diameter</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Boom spray</td>
<td>800mL-1.2L/ha</td>
<td>Pre-sowing.</td>
<td>Rosettes more than 8 cm diameter</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Ally®</td>
<td>B</td>
<td>Boom spray</td>
<td>5-7g/ha</td>
<td>Wheat, barley, triticale and cereal rye crops.</td>
<td>Post emergence</td>
<td>Soil active herbicide, may damage desirable vegetation. Use the higher rate for larger weeds.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
### Three-cornered garlic

*Allium triquetrum*

**DOMINATES GROUND LAYER UNDER SHADE**

Perennial herb with a scent of garlic. White underground bulb with numerous bulblets at base. Fleshy, flat, shallowly channelled leaves are present autumn to spring. Flowers white, bell-shaped, in a group at the top of a 3-sided leafless stem.

**PRODUCT NAMES**

<table>
<thead>
<tr>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultivation and pasture improvement.</td>
<td>Boom spray</td>
<td>1L/ha</td>
<td>Arable land and pasture.</td>
<td>Any time</td>
<td>On arable land it can be controlled over 3-4 years of repeated cultivations. In pastures prevent seed production by mowing, slashing or heavy grazing of flowering stems. Combine this with pasture improvement.</td>
<td>Registered</td>
</tr>
<tr>
<td>Non-crop areas</td>
<td>Spot spray</td>
<td>80mL/100L</td>
<td>Actively growing, pre-flowering</td>
<td>Do not apply to crops or legume-based pastures.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Actively growing, pre-flowering</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
<td></td>
</tr>
<tr>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Wiper sponge or brush</td>
<td>1L/3L</td>
<td>Actively growing, pre-flowering</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
<td></td>
</tr>
<tr>
<td>Non-crop areas</td>
<td>Boom spray</td>
<td>10g/ha</td>
<td>Actively growing, pre-flowering</td>
<td>Soil active herbicide, may damage desirable vegetation. Use 400 L water per hectare.</td>
<td></td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Spot spray</td>
<td>2.5g/100L</td>
<td>Actively growing, pre-flowering</td>
<td>Soil active herbicide, may damage desirable vegetation.</td>
<td></td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
Three-horned bedstraw

*Galium tricornutum*

**COMPETES IN FIELD CROPS**

Winter-growing annual to 50 cm high. Stems 4-sided with recurved hairs along edges and leaves in whorls of 4-8 at each node. Flowers in clusters of 3, minute, green. Fruits of two rounded halves, rough texture.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>carfentrazone-ethyl (240g/L) + MCPA (750g/L)</td>
<td>Affinity Force® + Agritone 750®</td>
<td>G, I</td>
<td>Boom spray</td>
<td>85-100mL + 330mL/ha</td>
<td>Cereal crops</td>
<td>Post emergence</td>
<td>A tank mix. Addition of dicamba may improve control see label.</td>
<td>Registered</td>
</tr>
<tr>
<td>flumetsulam (800g/kg)</td>
<td>Broadstrike®</td>
<td>B</td>
<td>Boom spray</td>
<td>25g/ha</td>
<td>Field peas, chickpeas, lentils, lathyrus or serradella.</td>
<td>Post emergence</td>
<td>Weed up to 10 cm high with 6 node stems.</td>
<td>Registered</td>
</tr>
<tr>
<td>flumetsulam (800g/kg)</td>
<td>Broadstrike®</td>
<td>B</td>
<td>Boom spray</td>
<td>25g/ha</td>
<td>Cereal crops or lucerne.</td>
<td>Post emergence</td>
<td>Weed up to 10 cm high with 6 node stems. Add Uptake® or a wetter.</td>
<td>Registered</td>
</tr>
<tr>
<td>imazethapyr (700g/L)</td>
<td>Spinnaker 700®</td>
<td>B</td>
<td>Boom spray</td>
<td>70-100g/ha</td>
<td>Field peas or faba beans.</td>
<td>Pre-emergence</td>
<td>Refer to label for post-emergence use on some field pea cultivars.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

Toetoe

*Cortaderia richardii*

**ALERT WEED**

**WEEDS OF FOREST AND WETLANDS. NOT PRESENT IN SOUTH AUSTRALIA**

Perennial grass forming giant tussocks. Bluish-green leaf blades with hacksaw edges; sheaths with a waxy bloom. Flower spikes on stems to 5 m above the leaves, pale golden fading to white. Not known to be in SA.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1.3L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Add spray oil. Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>
**Tree heath**

*Erica arborea*

**INVADES BUSHLAND**

Dense shrub to 3 m tall with needle-like leaves to 5 mm long, and 4 mm long white flowers in dense clusters. Capsules with tiny seeds.

<table>
<thead>
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<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Whack base of plant with hammer and remove lignotuber</td>
<td></td>
</tr>
<tr>
<td>picloram (44.7g/L) +</td>
<td>Vigilant II⁺</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies, and parks.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. For multi-stemmed plants treat at least 80% of stems including main stems.</td>
<td>Registered for this use on woody weeds in general.</td>
</tr>
<tr>
<td>aminopyralid (4.7 g/L)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate dual salt</td>
<td>Weedmaster Duo*</td>
<td>M</td>
<td>Stem injection</td>
<td>1L/1L water</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Drill into stem and inject herbicide.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>(360g/L)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT⁺</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>While actively growing.</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

**Variegated thistle**

*Silybum marianum*

**COMPETES IN PASTURE. TOXIC. SPINY LEAVES**

Annual or biennial to 2 m tall, all parts with sharp spines. Basal rosette of deeply lobed leaves to 30 cm long, blotched with white veins. Flower heads purple, 3-5 cm wide, in groups at top of erect leafy stems.

<table>
<thead>
<tr>
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<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
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<th>TIMING</th>
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<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D⁺</td>
<td>I</td>
<td>Spot spray</td>
<td>150-300mL/100L</td>
<td>Non-crop areas, pastures, industrial land and rights-of-way.</td>
<td>Rosette stage to pre-flowering.</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops. Use the higher rate on large plants.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
<table>
<thead>
<tr>
<th>Herbicide/Mode of Action</th>
<th>Product</th>
<th>Application Method</th>
<th>Application Rate</th>
<th>Plant Stage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D*</td>
<td>Boom spray</td>
<td>2-4L</td>
<td>Non-crop areas, pastures, Industrial land and rights-of-way</td>
<td>Rosette stage to pre-flowering. Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops. Use the higher rate on large plants.</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625*</td>
<td>Spot spray</td>
<td>95mL/100L</td>
<td>Grass pastures and non-crop areas.</td>
<td>Actively growing rosettes. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
</tr>
<tr>
<td>2,4-D amine (625g/L)</td>
<td>Amine 625*</td>
<td>Boom spray</td>
<td>560mL-1.6L/ha</td>
<td>Conservation tillage, direct drilling, non-crop areas and fallow maintenance</td>
<td>Pre planting, on actively growing rosettes. Use higher rates for larger plants. Pasture legumes may be damaged unless well protected by grasses. Spot spraying is preferable. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
</tr>
<tr>
<td>clopyralid (300g/L) + MCPA (500g/L)</td>
<td>Lontrel® + MCPA 500*</td>
<td>Boom spray</td>
<td>50mL + 1L/ha</td>
<td>Wheat, barley, oats and triticale crops. Crop stage 4-5 leaf onwards.</td>
<td>Use with caution near sensitive crops. Refer to drift warnings on the label. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
</tr>
<tr>
<td>clopyralid (300g/L) + MCPA (500g/L)</td>
<td>Lontrel® + MCPA 500*</td>
<td>Boom spray</td>
<td>50-70mL + 1-1.5L/ha</td>
<td>Fallows and grass pastures. Rosette stage. Spray rosettes before stem elongation. Use higher rates on rosettes larger than 30cm in diameter. Use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td></td>
</tr>
<tr>
<td>MCPA (500g/L)</td>
<td>MCPA 500*</td>
<td>Spot spray</td>
<td>100-133mL/100L</td>
<td>Grass pastures and non-crop areas.</td>
<td>Seedlings Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Use the higher rates for larger plants.</td>
</tr>
<tr>
<td>MCPA (500g/L)</td>
<td>MCPA 500*</td>
<td>Boom spray</td>
<td>700 -2L/ha</td>
<td>Grass pastures and non-crop areas.</td>
<td>Seedlings or rosettes Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label. Use the higher rates for larger plants.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>Boom spray</td>
<td>800mL-1L/ha</td>
<td>Fallows pre planting. Rosettes to 12 cm diameter.</td>
<td>Prior to sowing a crop or pasture with full soil disturbance by cultivation or sowing with a tyned implement. Non selective, avoid contact with desirable plants.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>Boom spray</td>
<td>1-1.6L/ha</td>
<td>Fallows pre planting. Rosettes over 12 cm diameter.</td>
<td>Prior to sowing a crop or pasture with full soil disturbance by cultivation or sowing with a tyned implement. Non selective, avoid contact with desirable plants.</td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Non selective, avoid contact with desirable plants.</td>
</tr>
</tbody>
</table>
**Water caltrop**  
*Trapa natans*

**ALERT WEED**

**FORMS DENSE MATS OVER WATER. SPINY FRUITS. NOT PRESENT IN AUSTRALIA**

Annual aquatic herb. Can be free-floating or anchored to mud. Rosette of floating, fan-shaped leaves with toothed edges. Has small four-petalled white flowers. Fruits with four sharp spines.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
<th>EXAMPLE OF PRODUCT NAMES</th>
<th>HERBICIDE GROUP</th>
<th>APPLICATION METHOD</th>
<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Skim plants off the water and dispose by drying or composting.</td>
<td></td>
<td>Any time</td>
<td></td>
<td>Seek advice from your regional NRM Authority first. Monitor site until eradication has been achieved.</td>
</tr>
</tbody>
</table>

*Report Not yet known to occur in Australia. Report any occurrence to your regional NRM Authority or Biosecurity SA, and collect a specimen to confirm identity. Its sale and import is prohibited, and should be reported to Biosecurity SA.*

**Water dropwort**  
*Oenanthe pimpinelloides*

**COMPETES WITH PASTURES**

Perennial to 1 m tall, growing from tubers. Leaves finely divided, hairless. Flowers white, in flat-topped clusters on long stalks. Fruits dry, 1-seeded.

<table>
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<tr>
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<th>TIMING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasture renovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Heavily infested pasture</td>
<td>Autumn</td>
<td>Sow phalaris and white clover or sub clover by direct drilling.</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Blactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Pasture with scattered water dropwort</td>
<td>Spring</td>
<td>Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Blactive®</td>
<td>M</td>
<td>Boom spray</td>
<td>4L/ha</td>
<td>Pasture renovation</td>
<td>Early October</td>
<td>Direct drill phalaris and white clover or sub clover in the following autumn. Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
</tr>
</tbody>
</table>

*Product and use are registered, but this weed is not on the label.*

*Application Rate - with water unless indicated*
### Water hyacinth

*Eichhornia crassipes*

**WoNS – ALERT WEED**

**INVADES AND COVERS CREEKS AND DAMS**

Aquatic floating plant with black branching roots trailing underwater. Leaves with shiny oval blade and swollen bases. Large lilac and white flowers held just above the leaves.

<table>
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<tr>
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<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Skim plants off the water and dispose by drying or composting.</td>
<td>Any time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>diquat (200g/L)</td>
<td>Reglone®</td>
<td>L</td>
<td>Spot spray</td>
<td>400mL/100L</td>
<td>Aquatic habitats</td>
<td>Summer</td>
<td>Seek advice from regional NRM Authority. Caution, the herbicide is toxic to humans. Add 150mL Agral® surfactant per 100L of spray mixture. Apply as an overall spray to wet foliage thoroughly. Repeat applications 7-14 days later may be necessary for control of dense infestations.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>10-13mL/1L</td>
<td>Aquatic habitats</td>
<td>Summer; while actively growing</td>
<td>Seek advice from regional NRM Authority. Monitor site until eradication achieved. Use the higher rate on dense infestations. Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
</tbody>
</table>

Report Not known to be established in South Australia. Report occurrences to your regional NRM Authority or Biosecurity SA. Its sale and import is prohibited, and should be reported to Biosecurity SA.

### Water soldier

*Stratiotes aloides*

**ALERT WEED**

**INVADES AND COVERS STILL WATER. NOT PRESENT IN AUSTRALIA**

Aquatic floating plant, submerged to emergent. Long, narrow, tapering leaves with spiny margins. Flowers emerge from water on short stalks, with 3 white petals.

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Manual removal</td>
<td></td>
<td></td>
<td>Skim plants off the water and dispose by drying or composting.</td>
<td>Any time</td>
<td></td>
<td></td>
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</tbody>
</table>

Report Not yet known to occur in Australia. Report any occurrence to your regional NRM Authority or Biosecurity SA, and collect a specimen to confirm identity. Its sale and transport is prohibited, and should be reported to Biosecurity SA.
## White weeping brooms

*Retama monosperma and Retama raetam*

### INVADE NATIVE VEGETATION

Shrubs to 4m tall with grey-green drooping branchlets, leaves soon lost. White pea flowers to 1 cm long in clusters. Pods 1 cm long, 2-seeded.

<table>
<thead>
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<th>CONTROL OPTION</th>
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<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies, and parks.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. For multi-stemmed plants treat at least 80% of stems including main stems. Do not use in urban home gardens.</td>
<td>Registered for this use on woody weeds in general.</td>
</tr>
<tr>
<td>triclopyr (600g/L)</td>
<td>Garlon 600®</td>
<td>I</td>
<td>Basal bark spray</td>
<td>1L/30L biodiesel or diesel</td>
<td>Actively growing</td>
<td>Saturate bark on trunk and any branches from ground level to up 30 cm.</td>
<td>PER 12932 (exp. 2021)</td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L) as the isopropylamine salt</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Cut stump treatment</td>
<td>1L/1L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Actively growing</td>
<td>Apply herbicide to freshly cut stump.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (450g/L) as the isopropylamine salt</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Spot spray</td>
<td>1L/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Actively growing</td>
<td>Non selective, avoid contact with desirable plants.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Cut stump treatment</td>
<td>1L/1L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Actively growing</td>
<td>Apply herbicide to freshly cut stump.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
<tr>
<td>glyphosate dual salt (360g/L) + metsulfuron methyl (600g/kg)</td>
<td>Weedmaster Duo® + Brush-Off®</td>
<td>B, M</td>
<td>Spot spray</td>
<td>1L +3g/100L</td>
<td>Conservation areas, bushland and other non-crop areas.</td>
<td>Actively growing</td>
<td>Non selective, avoid contact with desirable plants. Soil active herbicide, may damage desirable vegetation.</td>
<td>PER 13371 (exp.2022)</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated*
### Wild artichoke
*Cynara cardunculus*

**INVADES ANNUAL PASTURES. SPINY LEAVES**

Large perennial thistle with rosette of blue-green leaves to 80 cm long, deeply divided into spine-tipped segments. Stems branching, to 1.5 metres tall, with cobwebby hairs. Flower heads purple, 4-6 cm wide.

<table>
<thead>
<tr>
<th>CONTROL OPTION</th>
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<th>HERBICIDE GROUP</th>
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<th>APPLICATION RATE*</th>
<th>SITUATION</th>
<th>TIMING</th>
<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Removal</td>
<td>Grub plants</td>
<td></td>
<td></td>
<td></td>
<td>All</td>
<td>Rosette stage</td>
<td>Ensure that the root system is removed to a depth of 150mm.</td>
<td></td>
</tr>
<tr>
<td>MCPA (500g/L)</td>
<td>MCPA 500*</td>
<td>I</td>
<td>Spot spray</td>
<td>140mL/100L</td>
<td>Grass pastures, non-crop areas, fallows, rights of way.</td>
<td>Rosette stage</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (500g/L)</td>
<td>MCPA 500*</td>
<td>I</td>
<td>Boom spray</td>
<td>2.1L/ha</td>
<td>Grass pastures, non-crop areas, fallows, rights of way.</td>
<td>Rosette stage</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (750g/L)</td>
<td>Agritone 750*</td>
<td>I</td>
<td>Boom spray</td>
<td>460mL - 1.45L/ha</td>
<td>Grass pastures and non-crop areas.</td>
<td>Rosette stage</td>
<td>Damage may occur to legumes if present. Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D*</td>
<td>I</td>
<td>Spot spray</td>
<td>125mL/100L</td>
<td>Non-crop areas, fallows, rights of way.</td>
<td>Late winter to spring.</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops. Use double rate at flowering.</td>
<td>Registered</td>
</tr>
<tr>
<td>2,4-D (300g/L) + picloram (75g/L)</td>
<td>Tordon 75-D*</td>
<td>I</td>
<td>Boom spray</td>
<td>2.5L/ha</td>
<td>Non-crop areas, fallows, rights of way.</td>
<td>Late winter to spring.</td>
<td>Soil residual. Do not use near desirable vegetation or in waterways. Do not apply near susceptible crops. Use double rate at flowering.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (340g/L) + dicamba (80g/L)</td>
<td>Kamba M*</td>
<td>I</td>
<td>Spot spray</td>
<td>350mL/100L</td>
<td>Non-crop areas, fallows, rights of way.</td>
<td>Pre flowering</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>MCPA (340g/L) + dicamba (80g/L)</td>
<td>Kamba M*</td>
<td>I</td>
<td>Boom spray</td>
<td>5.2L/ha</td>
<td>Non-crop areas, fallows, rights of way.</td>
<td>Pre flowering</td>
<td>Hormone type herbicide - use with caution near sensitive crops. Refer to drift warnings on the label.</td>
<td>Registered</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500*</td>
<td>I</td>
<td>Spot spray</td>
<td>100mL/100L</td>
<td>Non-crop areas</td>
<td>Pre flowering</td>
<td>Add a surfactant. Hormone type herbicide - use with caution near sensitive crops. Do not apply to crops or legume-based pastures.</td>
<td>Registered</td>
</tr>
<tr>
<td>dicamba (500g/L)</td>
<td>Kamba 500*</td>
<td>I</td>
<td>Boom spray</td>
<td>1.6L/ha</td>
<td>Non-crop areas</td>
<td>Pre flowering</td>
<td>Add a surfactant. Use at least 1500 L/ha water. Hormone type herbicide - use with caution near sensitive crops. Do not apply to crops or legume-based pastures.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
Willows

Salix spp.

WoNS

INVADE NATIVE RIPARIAN VEGETATION. CHANGES HABITAT OF STREAMS AND BANKS.

Deciduous trees usually growing near water. Leaves long and narrow or ovate and crinkly. Flowers in green catkins, male and female on separate trees. Seeds small, with woolly hairs.

<table>
<thead>
<tr>
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<th>APPLICATION RATE*</th>
<th>SITUATION</th>
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<th>COMMENTS</th>
<th>LEGAL STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Removal</td>
<td>Remove by hand or machinery</td>
<td>M</td>
<td>Cut stump</td>
<td>Undiluted</td>
<td>Unwanted trees</td>
<td>Any time</td>
<td>Fell willow trees and remove all material. Branches may form new roots, and roots may form suckers.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Cut stump</td>
<td>Undiluted</td>
<td>Unwanted trees</td>
<td>Actively growing</td>
<td>Trees less than 10 cm basal diameter. Cut stump and apply herbicide immediately. Suitable for use near waterways - refer to label.</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Stem injection (frilling)</td>
<td>Undiluted</td>
<td>Unwanted trees</td>
<td>Actively growing</td>
<td>Suitable for use near waterways - refer to label. Make 5cm oblique cuts to reach sapwood under the bark, in trunk below any branches. Basal diameter 0-25cm 1mL/cut, basal diameter 25-60cm 2mL/cut</td>
<td>Registered</td>
</tr>
<tr>
<td>glyphosate (360g/L)</td>
<td>Roundup Biactive®</td>
<td>M</td>
<td>Spot spray</td>
<td>1-1.3L/100L</td>
<td>Unwanted trees</td>
<td>Actively growing</td>
<td>For plants less than 2 metres tall. Use higher rate for plants 1-2 meters high. Suitable for use near waterways - refer to label. Non selective, avoid contact with desirable plants.</td>
<td>Registered</td>
</tr>
<tr>
<td>picloram (44.7g/L) + aminopyralid (4.7 g/L)</td>
<td>Vigilant II®</td>
<td>I</td>
<td>Cut stump</td>
<td>Undiluted gel</td>
<td>Native vegetation, gullies, and parks.</td>
<td>Any time</td>
<td>Cut stump and apply 3-5 mm thick layer immediately. Do not use in urban home gardens.</td>
<td>Registered for this use on woody weeds in general.</td>
</tr>
</tbody>
</table>

*Application Rate - with water unless indicated
**Witchweeds**  
*Striga spp.*  
**PARASITE ON TROPICAL GRASS CROPS**  
Parasitic annuals with underground rootstocks attached to grasses. Flowering stems with a few green leaves emerge briefly, flowers red or yellow. Numerous tiny seeds in capsules.

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</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>Report any occurrence to your regional NRM Authority or Biosecurity SA, and collect a specimen for the State Herbarium. A parasitic weed of tropical grasses, not yet known to occur in South Australia.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Yellow burrweed**  
*Amsinckia spp.*  
**COMPETES IN PASTURE. TOXIC TO LIVESTOCK**  
Slender annual herb to 50 cm high, covered in short, bristly hairs. Basal leaves narrow, to 10 cm long; stem leaves smaller. Flowers yellow, tubular, with 5-petals. Seeds dry, rough, 4 per flower.

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<tr>
<td>Manual removal</td>
<td>Manual Removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flumetsulam (800g/kg)</td>
<td>Broadstrike*</td>
<td>B</td>
<td>Boom spray</td>
<td>25g/ha</td>
<td>Pastures, cereal and legume crops - refer to label.</td>
<td>Rosettes up to 10 cm diameter.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glyphosate (450g/L)</td>
<td>Roundup CT®</td>
<td>M</td>
<td>Boom spray</td>
<td>800mL-1.2L/ha</td>
<td>Before sowing a crop or pasture.</td>
<td>Pre-sowing.</td>
<td>Non selective, avoid contact with desirable plants. Cultivate with a tyned implement before sowing. Use the higher rates late in the season or when treating under cold/overcast conditions.</td>
<td>Registered</td>
</tr>
<tr>
<td>metsulfuron-methyl (600g/kg)</td>
<td>Ally®</td>
<td>B</td>
<td>Boom spray</td>
<td>5 - 7g/ha</td>
<td>Wheat, barley, triticale or cereal rye crops.</td>
<td>Post emergence.</td>
<td>Use higher rate for larger weeds or dense infestations. Soil active herbicide, may damage desirable vegetation.</td>
<td>Registered</td>
</tr>
<tr>
<td>terbutryn 275g/L + MCPA amine (160g/L)</td>
<td>Agtryne MA®</td>
<td>CI</td>
<td>Boom spray</td>
<td>1L/ha</td>
<td>Wheat or barley crops.</td>
<td>Post emergence, weed at 2-6 leaf stage, crop at 3-5 leaf stage</td>
<td>Not effective if the weed is past the 12 leaf stage. May also be used on some oat cultivars.</td>
<td>Registered</td>
</tr>
<tr>
<td>triasulfuron (750g/kg)</td>
<td>Logran 750WG®</td>
<td>B</td>
<td>Boom spray</td>
<td>30g/ha</td>
<td>Wheat crops</td>
<td>Pre-sowing.</td>
<td>Apply to moist bare soil before sowing.</td>
<td>Registered</td>
</tr>
</tbody>
</table>
REFERENCES


USEFUL WEBSITES

Australian Pesticides and Veterinary Medicines Authority (APVMA) – Registered products and permit searches: portal.apvma.gov.au/pubcris

Australian Herbicide Resistance Initiative (AHRI) – Information on herbicide resistance: www.ahri.uwa.edu.au


Environment Protection Authority – Information regarding safe herbicide use: www.epa.sa.gov.au


Weed Management Society of South Australia Inc. – Weed identification and information: www.wmssa.org.au

Weeds Australia – Former national weed website, archived at: weeds.ala.org.au/
SA WEED CONTROL APP

The SA Weed Control App for Android or iOS contains all the text and images from this book, regularly updated control information, plus features that allow you to record the weeds you find and send reports to your regional NRM weed officer.

Get it free from the App Store or Googleplay via this link.