#### Weed Control Methods in Native Vegetation - Template

*June 2020*

**Purpose**

**This template outlines key weed control principles and methods that may be copied into a Native Vegetation Council SEB Management Plan (e.g. as an Appendix) where appropriate.**

**Key principles**

* **Improving the condition of native vegetation in an SEB area often requires the control of weeds. Removing weeds reduces competition, shading and other unwanted effects.**
* Weed control is a long-term project. Numerous follow-up treatments are often required to deplete weed seeds that have accumulated in the soil and control new invaders.
* To promote the replacement of weeds by native plants, rather than more weeds, start weed control work in the best areas of native vegetation and work in stages towards the more degraded areas. The exception may be if an isolated occurrence of a new invading weed species occurs, to eradicate it before it spreads.
* Minimise disturbance to existing native plants and to the soil as weeds are often favoured in disturbed areas.
* Where native animals are using the weed infestations as habitat, remove those weeds slowly so that the habitat can be replaced by native species.
* Consider slope stability and the risk of soil erosion if weeds are removed.
* If dead weeds are left standing consider how you will manage access for follow up work, particularly for dense prickly infestations.
* For local weed management advice, the local Landscape Board office may be contacted.

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**Herbicides**

If using herbicides it is recommended that you complete a basic Chemical Handling training session first to keep yourself, other people and your property safe.

Follow these key principles when using herbicides:

* Always read and follow the label on the herbicide container. It is a legal requirement that you act in accordance with the instructions and information on the label, or in some cases, in accordance with an Off-label Permit for that herbicide as issued by the Australian Pesticide and Veterinary Medicines Authority. Material Safety Data Sheets can provide further safety information.
* Always use the recommended safety equipment/clothing and have water available for washing should there be any herbicide contact with your skin.
* Only mix up the amount of herbicide that you will use in each weeding session.
* It is very important to mix herbicides to the correct dilution for the target weed, as per the label instruction, or in some cases the Off-label Permit instructions.
* Check on the label to see if a surfactant / wetting agent / penetrant is recommended.
* Weeds are often best treated when they are actively growing, but check label information for most effecting timing.

**Methods**

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| **Hand Pull**  Soft annual weeds and seedlings of woody weeds | Tools and Equipment: Gloves |
| Safety Equipment: None |
| Firmly grip the stem of the weed near ground level and pull the root out of the ground. Beware of back injury. Care must be taken to minimise soil disturbance by for example putting one foot on the ground on either side of the weed to keep the surrounding soil from lifting up and/or waiting until after rain when the soil is wet so the plant comes up more easily. |

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| **Digging or Grubbing**  Individual weeds with underground bulbs or tubers | Tools and Equipment: Narrow trowel, small grubbing tool |
| Safety Equipment: None |
| Dig out all of the underground part of the weed and remove it from the site. Replace dislodged soil and leaf litter after the weed is removed to minimise disturbance. |

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| **Cut and Swab**  Small to medium woody weeds | Tools and Equipment: Cut using secateurs, loppers, a handsaw or chainsaw depending on weed size. Herbicide application using a sponge-topped plastic bottle similar to a shoe polish bottle. |
| Safety Equipment: Safety glasses, strong rubber gloves, water for washing |
| Systemic herbicides are used in this method which move to and kill the roots of the weed. Cut the stem(s) close to or at ground level. Apply the herbicide to the cut stump within 30 seconds. Keep the applicator sponge clean as contact with the soil may inactivate the herbicide.  **Stem Scrape and Swab:** If the underground parts of the weed are extensive, more herbicide will be needed to kill it. In this case cut the stems higher above the ground and after cutting, scrape off the outer layer (skin) of the remaining part of the stem and apply herbicide to this area as well as to the cut. |

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| **Ringbark**  Trees that do not resprout (e.g. pines) | Tools and Equipment: Hatchet, machete, hand saw or chainsaw |
| Safety Equipment: Safety glasses, gloves |
| Close to the ground chop out a 2-5cm wide section of the bark and sap wood, exposing the heart wood, to form a cut ring that completely encircles the tree. For pines, no herbicide need be applied. For other treat as per the Cut and Swab information above. Ensure that when the tree dies and eventually falls that it will fall into safe place. |

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| **Wipe On**  Strap-leaf species such as *Watsonia* in areas where they are surrounded by native plants | Tools and Equipment: Wick-wand, or ‘Tongs of Death’ (kitchen tongs with sponges securely attached), and plastic squeeze bottle with a long narrow tube coming out of the lid |
| Safety Equipment: Safety glasses, strong rubber gloves, water for washing |
| Apply herbicide to the wick-wand or Tongs of Death and then wipe the leaves of the weed. Both sides of the leaf should be coated with herbicide. |

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| **Drill and Fill**  Larger woody weeds and medium to large trees that may re-shoot | Tools and Equipment: Cordless/battery drill with 6 mm drill bit. Plastic squeeze bottle with long narrow tube coming out of the lid. |
| Safety Equipment: Safety glasses, strong rubber gloves, water for washing |
| The weed can be left standing after treatment to minimise the labour required and maximise the habitat value.   1. Clear any low branches away to allow good access to the base of the weed. 2. Clear soil and leaf litter away from the base of the trunk. 3. Drill a series of holes:    1. at 2 – 4 cm spacing around the base of the trunk or lignotuber (this is a type of storage organ which looks like a swollen lump at the base of the trunk)    2. drill to a depth of 0.5 - 1 cm at a 45o angle (or steeper if possible). 4. Fill the holes with herbicide immediately. 5. Before leaving to start on another plant check the holes and refill them with herbicide if some has been absorbed.   **Frill and Fill** **variation**: A hatchet or machete is used to make lots of angled cuts ‘frills’ into the sap layer all around the base of the trunk so that each cut can hold the herbicide. Apply the herbicide as soon as possible after cutting. |

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| **Spot Spray**  Infestations of small to medium weeds where off-target damage to native species (e.g. spray drift) is unlikely | Tools and Equipment: Hand-held spray bottle and/or backpack spray unit or vehicle-mounted spray unit |
| Safety Equipment: Safety glasses, mask or ventilator, strong rubber gloves, water for washing, other equipment as specified on the herbicide label. |
| Big open areas may just fill up with weeds again. Only spray an area that is of manageable size to follow-up with either further weed control to promote native regeneration or to prepare for revegetation.  Spray cautiously in small target area and ensure a good cover of the herbicide on both sides of the leaves.  To minimise off-target damage from spray drift, adjust the nozzle to get droplets of the correct size to cover the leaf (not too small to blow away between the nozzle and the leaf and not too big to dribble off the leaf once it hits), use a shield over the spray nozzle and don’t spray on windy days. Don’t spray when rain is expected (refer to the label). |

**Acknowledgement**

The NVC has adapted this information from a guide produced by departmental Bush Management Advisors.

**Further information**

Biosecurity SA (2018) ‘*Weed Control Handbook for Declared Plants in South Australia*’ (see <https://www.pir.sa.gov.au/biosecurity/weeds_and_pest_animals/weeds_in_sa>)

Robertson, M., Grant, I. and Cragie, A. (2005) *Stop Bushland Weeds: A Guide to Successful Weeding in South Australian Bushland,* Nature Conservation Society of SA

For local advice, contact your local Landscape Board office: [Department for Environment and Water | Landscape Boards](https://www.environment.sa.gov.au/about-us/boards-and-committees/landscape-boards)