

# Appendix D

## Weed Control Measures

# Appendix 3: Cumberland Plain weeds and their treatment

## Herbaceous weed and grass control

Common name	Scientific name	Hand remove	Cut and paint	Spraying Roundup Biactive® rate	Possible selective herbicide and other techniques
African Love Grass	<i>Eragrostis curvula</i>	•		1:100	Slash or mow, spray regrow with Roundup®. Spot-spray also possible.
Alligator Weed	<i>Alternanthera philoxeroides</i>			1:100	
Amaranth	<i>Amaranthus</i> sp.	•	•	1:100	
Asparagus Fern	<i>Asparagus aethiopicus</i>	•		1:75	Brush-off
Asthma Weed	<i>Parietaria judaica</i>	•		1:100	
Black Thistle	<i>Cirsium vulgare</i>	•	•	1:100	
Blackberry Nightshade	<i>Solanum nigrum</i>	•	•	1:100	
Cobbler's Peg	<i>Bidens pilosa</i>	•	•	1:100	
Common Couch	<i>Cynodon dactylon</i>	•		1:75	
Creeping Buttercup	<i>Ranunculus repens</i>	•		1:100	
Crofton Weed	<i>Ageratina adenophora</i>	•		1:100	
Drain Sedge	<i>Cyperus eragrostis</i>	•		1:100	
Ehrharta	<i>Ehrharta erecta</i>	•		1:100- 1:500	
Fat Hen	<i>Chenopodium album</i>	•	•	1:100	
Fennel	<i>Foeniculum vulgare</i>	•			
Fireweed	<i>Senecio madagascariensis</i>	•		1:100	
Flatweed	<i>Hypochaeris radicata</i>	•		1:100	
Fleabane	<i>Conyza</i> spp.	•	•	1:100	
Giant Bamboo	<i>Bambusa</i> sp.		•		
Giant Reed	<i>Arundo donax</i>		•		
Guinea Grass	<i>Panicum maximum</i>	•		1:75	
Ink Weed	<i>Phytolacca octandra</i>	•	•	1:100	
Johnson's Grass	<i>Sorghum halpense</i>	•			
Kikuyu	<i>Pennisetum clandestinum</i>	•		1:100	
Ludwigia	<i>Ludwigia peruviana</i>	•	•	1:100	
Mist Flower	<i>Ageratina riparia</i>	•		1:100	
Needle Grass	<i>Nassella</i> sp.	•			
Paddy's Lucerne	<i>Sida rhombifolia</i>	•	•	1:100	Grazon, Garlon®
Pampas Grass	<i>Cortaderia selloana</i>	•	•	1:75	
Paspalum	<i>Paspalum dilatatum</i>	•		1:100	
Patterson's Curse	<i>Echium</i> sp.	•		1:100	
Plantain	<i>Plantago lanceolata</i>	•		1:100	
Prairie Grass	<i>Bromus catharticus</i>	•		1:100	
Prickly Lettuce	<i>Lactuca serriola</i>	•		1:100	
Quaking Grass	<i>Briza</i> sp.	•		1:100	
Rhodes Grass	<i>Chloris gayana</i>	•		1:100	
Ryegrass	<i>Lolium perenne</i>	•		1:100	
Salvinia	<i>Salvinia molesta</i>			1:100	
Sowthistle	<i>Sonchus oleraceus</i>	•		1:100	
Spider Plant	<i>Chlorophytum comosum</i>	•		1:75	
Spiny Rush	<i>Juncus acutus</i>	•		1:75	
St John's Wort	<i>Hypericum perforatum</i>	•			Garlon®, Grazon
Summer Grass	<i>Digitaria sanguinalis</i>	•		1:100	
Wandering Jew	<i>Tradescantia fluminensis</i>	•		1:75	Starane; other techniques include raking where no native groundcovers are present
Veldt Grass	<i>Ehrharta longiflora</i>	•		1:100	
Wild Oats	<i>Avena</i> sp.	•		1:100	
Water Hyacinth	<i>Eichhornia crassipes</i>	•			

The information above has been prepared and provided by Greening Australia (NSW).

The list of selective herbicides included in this chart is by no means extensive.

For detailed information consult NSW Agriculture 2004 (available at [www.agric.nsw.gov.au/reader/weeds-general/nox-weeds-splash.htm](http://www.agric.nsw.gov.au/reader/weeds-general/nox-weeds-splash.htm)).

For further options you can search the Australian Veterinary Medicine and Pesticide Authority website at [www.apvma.gov.au](http://www.apvma.gov.au)

## Vine control

Common name	Scientific name	Hand remove	Cut and paint	Scrape and paint	Spraying Roundup Biactive rate	Possible selective herbicide and other techniques
Turkey Rhubarb	<i>Acetosa sagittata</i>	•			1:100	Starane
Madiera Vine	<i>Anredera cordifolia</i>	•		•	1:75	Starane
Moth Vine	<i>Araujia sericifera</i>	•		•	1:50	
Balloon Vine	<i>Cardiospermum grandiflorum</i>	•	•	•	1:100	
Cape Ivy	<i>Delairea odorata</i>	•			1:75	
English Ivy	<i>Hedera helix</i>	•		•	1:100	
Coastal Morning Glory	<i>Ipomoea cairica</i>	•		•	1:100	
Morning Glory	<i>Ipomoea indica</i>	•		•	1:100	Garlon®
Honeysuckle	<i>Lonicera japonica</i>	•		•	1:75	
Bridal Creeper	<i>Asparagus asparagoides</i>	•			1:75	Brush-off used under permit is effective. Must apply herbicide at flowering. Note some natives, e.g. <i>Bursaria</i> , are sensitive to Brush-off. Spray in combination with hand removal.

The information above has been prepared and provided by Greening Australia (NSW).

The list of selective herbicides included in this chart is by no means extensive.

For detailed information consult NSW Agriculture 2004 (available at [www.agric.nsw.gov.au/reader/weeds-general/nox-weeds-splash.htm](http://www.agric.nsw.gov.au/reader/weeds-general/nox-weeds-splash.htm)).

For further options you can search the Australian Veterinary Medicine and Pesticide Authority website at [www.apvma.gov.au](http://www.apvma.gov.au)

Lissanthe strigosa flowers. (P. Watson)



## Woody weed control

Woody weed seedlings can often be treated by spot spraying with a Roundup Biactive® solution (check herbicide label for dilution rates). The addition of a surfactant can improve results. Additionally, several selective herbicides can also be used in this way.

Medium-sized woody weeds can be treated using a technique known as basal spraying. A prescribed solution of diesel and selective herbicide (often Garlon®) is applied to the leaves and stems. This can be an effective treatment but consideration must be given to the risk of off-target damage and the impacts on future regeneration. This method should not be used in areas where native regeneration is expected.

Common name	Scientific name	Hand remove	Cut and paint	Scrape and paint	Stem Injection	Garlon® or Access-preferred herbicide	Possible selective herbicide and other techniques
African Box Thorn	<i>Lycium ferocissimum</i>	•	•		•	•	The use of Garlon® and diesel is a very effective herbicide for this species.
African Olive	<i>Olea europaea</i> subsp. <i>Africana</i>	•	•		•	•	The use of Garlon® and diesel is a very effective herbicide for this species. Best techniques are cut and paint.
Boneseed	<i>Chrysanthemoides monilifera</i> subsp. <i>Monilifera</i>	•	•		•		
Blackberry	<i>Rubus fruticosus</i>	•	•	•		•	Hand prune or slash to encourage new growth, spray new growth with herbicide. Follow-up may be needed.
Briar Rose	<i>Rosa rubiginosa</i>		•				
Box Elder	<i>Acer negundo</i>	•	•		•		
Camphor Laurel	<i>Cinnamomum camphora</i>	•	•	•			For small plants apply herbicide by vertically scraping the stem with a knife blade and applying herbicide.
Cassia	<i>Senna pendula</i>	•	•		•		
Castor Oil Plant	<i>Ricinus communis</i>	•	•				
Coral Tree	<i>Erythrina xyskiesii</i>	•	•		•		
Cotoneaster	<i>Cotoneaster glaucophyllus</i>	•	•		•		
Cox's Coral Tree	<i>Erythrina crista-galli</i>	•	•		•		
English Broom	<i>Cytisus scoparius</i>	•	•		•		
Gleditsia	<i>Gleditsia tricanthos</i>		•		•		Stem injection best from early spring to autumn.
Gorse	<i>Ulex europaeus</i>		•				
Green Cestrum	<i>Cestrum parqui</i>	•		•	•	•	Garlon® and diesel is a very effective herbicide for adults of this species. Some degree of reshooting may occur with all treatments requiring follow-up.
Hackberry	<i>Celtis occidentalis</i>	•	•		•	•	
Indian Hawthorn	<i>Raphiolepis indica</i>	•	•		•		
Broad-leaved Privet	<i>Ligustrum lucidum</i>	•	•		•		
Montpellier Broom	<i>Genista monspessulana</i>	•	•		•		
Mulberry	<i>Morus alba</i>	•	•		•		
Ochna	<i>Ochna serrulata</i>			•	•		
Pittosporum	<i>Pittosporum undulatum</i>	•	•		•		
Radiata Pine	<i>Pinus radiata</i>	•	•		•		
Rhus Tree	<i>Toxicodendron succedaneum</i>	•	•		•		
Narrow-leaved Privet	<i>Ligustrum sinense</i>	•	•		•		
Wild Tobacco	<i>Solanum mauritianum</i>	•	•				
Tree-of-Heaven	<i>Ailanthus altissima</i>			•	•	•	Tordon is effective in treating this species using the cut and paint technique. Basal bark application of Garlon® and diesel also effective.
Willow	<i>Salix</i> spp.	•	•	•	•		
Willow Leaf Wattle	<i>Acacia saligna</i>	•	•		•		

The information above has been prepared and provided by Greening Australia (NSW).

The list of selective herbicides included in this chart is by no means extensive.

For detailed information consult NSW Agriculture 2004 (available at [www.agric.nsw.gov.au/reader/weeds-general/nox-weeds-splash.htm](http://www.agric.nsw.gov.au/reader/weeds-general/nox-weeds-splash.htm)).

For further options you can search the Australian Veterinary Medicine and Pesticide Authority website at [www.apvma.gov.au](http://www.apvma.gov.au)

## Major Cumberland Plain noxious weed species

The following species are known to have an impact on the endangered ecological communities of the Cumberland Plain and have been listed as noxious under the *Noxious Weeds Act 1993* for some local government areas of the Cumberland Plain.

Actions for control categories are shown below.

Common name	Botanical name	Control category
Turkey Rhubarb	<i>Acetosa sagittatus</i>	W4b
Crofton Weed	<i>Ageratina adenophora</i>	W2
Alligator Weed	<i>Alternanthera philoxeroides</i>	W1
Madeira Vine	<i>Anredera cordifolia</i>	W4c
Giant Reed	<i>Arundo donax</i>	W4a
Bridal Creeper/Baby Smilax	<i>Asparagus asparagoides</i>	W4c
Mother of Millions	<i>Bryophyllum delagoense</i>	W2 or W3
Balloon Vine	<i>Cardiospermum grandiflorum</i>	W4c
Green Cestrum	<i>Cestrum parqui</i>	W2 or W3
Bitou Bush/Boneseed	<i>Chrysanthemoides monilifera</i>	W2 or W3
Camphor Laurel	<i>Cinnamomum camphora</i>	W4d
Pampas Grass	<i>Cortaderia selloana</i>	W2
Cotoneaster	<i>Cotoneaster glaucophyllus</i>	W4b
Cotoneaster	<i>Cotoneaster pannosus</i>	W4b
English Broom	<i>Cytisus scoparius</i>	W2
Cape Ivy	<i>Delairea odorata</i>	W4d
Paterson's Curse	<i>Echium plantagineum</i>	W3
Water Hyacinth	<i>Eichhornia crassipes</i>	W1 or W2
Montpellier Broom	<i>Genista monspessulana</i>	W4b
St John's Wort	<i>Hypericum perforatum</i>	W2
Morning Glory	<i>Ipomea indica</i>	W4c
Lantana (pink-flowered) Lantana (red-flowered)	<i>Lantana camara</i>	W2
Broad-leaved Privet	<i>Ligustrum lucidum</i>	W4b
Narrow-leaved Privet	<i>Ligustrum sinense</i>	W4b
Water Primrose	<i>Ludwigia peruviana</i>	W2
African Boxthorn	<i>Lycium ferocissimum</i>	W2
Cat's Claw Creeper	<i>Macfadyena unguis-cati</i>	W4c
Chilean Needle Grass	<i>Nassella neesiana</i>	W2
Serrated Tussock	<i>Nassella trichotoma</i>	W2 or W3
Ochna/Mickey Mouse Plant	<i>Ochna serrulata</i>	W4b
African Olive/Wild Olive	<i>Olea europaea</i> subsp. <i>africana</i>	W4b
Prickly Pear	<i>Opuntia stricta</i>	W4f
Sticky Weed/Asthma Weed	<i>Parietaria judaica</i>	W3
Bamboo	<i>Phyllostachys</i> spp.	W4a
Castor Oil Plant	<i>Ricinus communis</i>	W2
Sweet Briar	<i>Rosa rubiginosa</i>	W2
Blackberry	<i>Rubus fruticosus</i> (agg. spp.)	W2 or W3
Willow	<i>Salix</i> spp.	W4g
Salvinia	<i>Salvinia molesta</i>	W1 or W2
Cassia	<i>Senna pendula</i>	W4b
Johnson Grass	<i>Sorghum halepense</i>	W2 or W3
Rhus Tree	<i>Toxicodendron succedaneum</i>	W2
Wandering Jew	<i>Tradescantia fluminensis</i>	W4c
Gorse	<i>Ulex europaeus</i>	W2
Noogoora Burr	<i>Xanthium</i> spp.	W3

### Action for control categories

- W1 The presence of the weed must be notified to the local control authority and the weed must be fully and continuously suppressed and destroyed.
- W2 The weed must be fully and continuously suppressed and destroyed.
- W3 The weed must be prevented from spreading and its numbers and distribution reduced.
- W4a The weed must not be sold, propagated or knowingly distributed and any part of the weed must be prevented from growing within 3 metres of the boundary of a property.
- W4b The weed must not be sold, propagated or knowingly distributed and any existing weed must be prevented from flowering and fruiting.
- W4c The weed must not be sold, propagated or knowingly distributed and the weed must be prevented from spreading to an adjoining property.
- W4d The weed (a) must not be sold, propagated or knowingly distributed and (b) must be fully and continuously suppressed and destroyed unless it is –
- ❖ listed on the state heritage register under the *Heritage Act 1977*
  - ❖ listed for preservation or protection as a heritage item under an environmental planning instrument under the *Environmental Planning and Assessment Act 1979*
  - ❖ listed for preservation or protection in a council tree preservation order for the local government area
  - ❖ included for preservation or protection in a plan of management for a local government area under section 40 of the *Local Government Act 1993*, or
  - ❖ included for preservation or protection in a noxious weed policy or a noxious weed control program approved by the local control authority for the area for which it is the local control authority.
- W4e The weed must be fully and continuously suppressed and destroyed. All reasonable precautions must be taken to ensure produce, soil, livestock, equipment and vehicles are free of the weed before sale or movement from an infested area of the property.
- W4f The weed must not be sold, propagated or knowingly distributed. Any biological control or other control program directed by the local control authority must be implemented.
- W4g The weed must not be sold, propagated or knowingly distributed.

# Appendix 4: Weed removal techniques

[The information in this appendix has largely been sourced with permission from the Bush Regenerators' Handbook by the National Trust of Australia (NSW) (1991). The illustrations have been supplied by the Australian Association of Bush Regeneration (AABR) and the National Trust of Australia (NSW).]

## Hand removal

### Weeds with shallow roots

**Weed examples:** Crofton Weed, Cobbler's Peg, Fleabane, Purple Top, small grasses and most seedlings

Small soft weeds and seedlings, annuals and tufted grasses that root directly from the base usually have shallow roots. These plants can be pulled out by hand. Even tough perennials like Paddy's Lucerne can be removed this way. Be warned, however, that if some of the rootstock stays in the ground, a different method will be needed.

For seedlings and small plants, take hold of the plant at ground level and pull. If you pull at any higher point on the stem, it may break and the plant re-shoot.

For larger plants, take hold of the stem at ground level and gently rock the plant back and forth until it comes away cleanly. If the plant has a spreading root system, it may be necessary to pull individual lateral roots. Always pull roots horizontally through the soil towards the stem of the plant. This causes the least disturbance to the soil and reduces the chance that the root will break. Never pull large lateral roots upwards as they may break and will then need to be dug out.

Replace any disturbed soil and lightly sweep the mulch back over the spot. All weed debris should be removed. If this is not possible, seedlings and most soft, leafy weeds can be left lying on the ground. Larger plants with substantial roots should be placed upside down on a rock or propped up so that the roots do not make contact with the soil. Ensure that all weeds that are left on-site cannot set seed.

**Note:** Annual weeds can be sprayed with herbicide before flower and fruit set. If annuals are treated while in flower, there may be enough stored food in the plant to allow the plant to set seed before it dies. Seedling perennials can be sprayed with herbicide as long as the plant contains enough green tissue to absorb the poison. Grasses are best treated with herbicide when the plant is actively growing.



AABR/V. Bear

### Weeds with brittle or readily fragmented stems

**Weed example:** Wandering Jew

Each of the weeds in this group needs careful weeding and regular follow-up. Any fragmented piece of stem that bears a node can regenerate, so all plants must be bagged and removed from the site.

### Hand pulling

Use this method if you are working entirely by hand.

1. Take hold of one runner and pull it gently along the ground towards you.
2. When the runner disappears under vegetation or mulch, stop pulling and scrape back the mulch until you get another grip further along the stem. Continue to pull gently until the runner comes away from the soil, then bag it immediately. If the runner breaks, trace it out.

This method is suitable for isolated or moderate infestations, particularly those which are tangled with more desirable species. If the infestation is dense, however, several more efficient methods are available.

### Rolling

When Wandering Jew is growing thickly on a hard surface, such as a rock-face or compacted soil, the weed can be rolled up like a carpet.

1. Locate a convenient starting point and two side boundaries. Use a sharp knife to cut along these three sides. This weed has very shallow roots which hold little soil so it is possible to roll the carpet up into convenient lengths.
2. Cut the roll off and bag the lot. Continue in this manner until the weed is completely removed.

If necessary, return to the site and hand-pull all the small pieces that were missed or broken off. A stiff broom will finish the job.

### Raking

If no native groundcover plants are present, large infestations can be raked up and bagged. This method is probably the most efficient for large infestations on a base of soil. It is important to return to the site several times and remove the small portions that were passed over. Maintenance and perseverance are the key to eradicating this weed.

**Note:** Other weed species growing among Wandering Jew should be removed using the appropriate method.

## Removal using a knife or trowel

### Weeds with large root systems

**Weed examples:** Plantain, Dock, Cat's Ear, Flatweed

This technique is useful for small soft leafy plants with a larger root system or tap roots or hardy perennials which rely on a swollen root system.

1. With your right hand push a narrow trowel or knife into the soil next to the plant (the knife should be pushed in with the side of the blade towards the plant). Push the handle towards the plant and pull the blade out of the soil.
2. Repeat at right angles, then carefully remove the plant. If the plant does not move, repeat the action around the other side of the plant, remembering to push the knife towards the plant. Repair any disturbance to the soil or mulch.

### Weeds with below-surface crowns

**Weed examples:** Paspalum, Pampas Grass, Ginger Plant, Asparagus Fern, Bamboo

This is useful for weeds which have their growing points below the surface (crowns, corms, rhizomes and clumped or tufted fibrous root systems).

1. Grasp the leaves or stems and hold them tightly so that the base of the plant is visible. Plants with sharp leaves or stems should be cut back first, before you attempt to get in close to the base.
2. Insert the appropriate tool (either knife or lever) close to the base of the plant at a slight angle, with the tip well under the root system.
3. Cut through the roots close to the crown or rhizome. Depending on the size of the plant, two or more cuts may be needed to sever all the roots.
4. Remove the plant. Make sure the hard crown, or base of the plant where the roots begin, is completely removed. If part of this is left in the ground, it will usually re-shoot.

**Note:** The water tubers of Asparagus Fern can be left in the ground once the crown has been removed, as they contain no food and cannot reproduce.



National Trust (NSW)/V. Bear

### Weeds with bulbs or tubers

**Weed examples:** Oxalis, Onion Weed, Watsonia, Turkey Rhubarb

Plants with bulbs, corms or small tubers must be completely removed from the soil. These reproductive parts can form small off-shoot bulbs or growing points which can form a new plant if broken off.

1. Prepare the area by moving back mulch and other vegetation. Using a trowel or larger spade, dig a narrow channel next to the stem until the main bulb is reached.
2. Check the soil for adjoining bulblets. If present, they must be removed with a substantial quantity of soil, and the whole lot bagged.
3. Periodically check for regrowth.

Plants which form underground tubers are especially difficult to eradicate as they may have several tubers connected by thin roots. Although you might remove the plant body and some tubers from the soil, other tubers which remain in the soil can re-establish the plant. These secondary tubers can develop even when buried deep in the soil.



AABR/V. Bear

### Weeds with surface or climbing runners

**Weed examples:** Honeysuckle, Morning Glory, Jasmine, Cape Ivy

The stems of many climbers or scramblers develop roots and new shoots from the nodes, so broken portions should not be left in or on the ground.

1. Take hold of one runner and gently pull it along the ground towards you. Follow the runners until the main root system is located. Either remove it manually or cut and paint it with herbicide.
2. Continue until all the runners have been removed. Small fibrous roots growing from the nodes along the runners can be cut with a sharp knife as long as there is no stem tissue attached.
3. Check for broken pieces of stem and large roots which may have been overlooked. Replace the mulch.
4. Follow up regularly. Regrowth from underground roots can be sprayed with herbicide or removed manually.

**Note:** Rampant vines such as Honeysuckle often have several major nodes with numerous runners branching in all directions. All of these runners must be removed. Major infestations of rampant vines can be sprayed with herbicide as long as no native species are present.



National Trust (NSW)/V. Bear

## Herbicide treatment

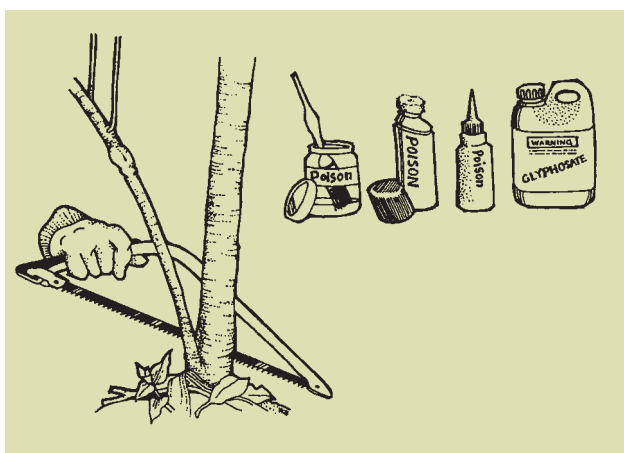
### Method 1: Cut and paint

This is useful for all small- to medium-sized woody weeds, and some soft, leafy perennials such as Privet, Ochna, Lantana, Wild Olive, Cotoneaster, Camphor Laurel, Ginger, Bamboo and Arundo.

For larger specimens remove the top of the plant for easy access.

1. With an appropriate tool (secateurs, loppers or bush-saw), cut the base of the plant close to the ground with a straight, flat cut. The cut must be horizontal so that the herbicide rests on the cut area while being absorbed, rather than running away down the side of the stem. The cut should be as close as possible to the ground as stumps are unsightly and dangerous.
2. Immediately spray and paint herbicide solution onto the exposed surface (less than 10 seconds for water-based solutions and 1 minute for diesel solutions), as the sap ceases to flow once the tissues are severed. For convenience, use a paintbrush, eye dropper or small squeeze bottle. For larger specimens, wipe the poison around the outer rim of the cut only.

**Note:** If plants re-shoot, repeat the method. Ochna is especially difficult, but it has been successfully poisoned by scraping each side of the stem just below the cut. Plants growing in damp areas may require special attention as they are likely to re-shoot.



AABRV. Bear

### Method 2: Cut and swab

This method is similar to Method 1, but is suited to vines and multi-stemmed shrubs.

Here the plant stems are cut through completely, close to the ground. Herbicide is then applied immediately to the cut surface emerging from the ground, via spray or brush.

Some vines, such as Morning Glory, Balloon Vine or Moth Vine, have many stems which climb into the canopy. Handfuls of stems can be cut and painted with herbicide. The vines which remain in the canopy will soon die and decompose, and do not need to be removed.



National Trust (NSW)/V. Bear

### Method 3: Tree injection

Tree injection and frilling and chipping (see below) are used for trees and woody weeds with stems or trunk greater than five centimetres in circumference. They are also used on inaccessible sites where rubbish removal is a problem, or where the dead tree is going to be left for habitat.

1. Drill holes at an angle into the sapwood approximately five centimetres apart around the tree, using a cordless drill or brace and bit.
2. Place the correct dose of herbicide into each hole as it is cut. If necessary, wait until the liquid subsides then apply the remainder. It is important to follow the manufacturer's recommendations for the correct dose.

**Note:** Best results are achieved with plants which are actively growing. The success of any systemic herbicide relies on the plant's normal physiological activities to move the chemical through its tissue.



National Trust (NSW)/V. Bear

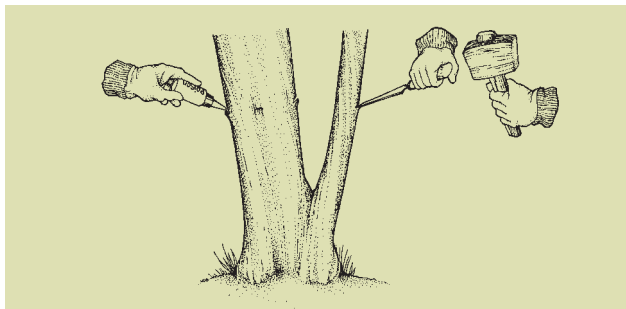


### Method 4: Frilling or chipping

This technique is used when a cordless drill is not available for tree injection.

1. With a sharp chisel or axe, make a deep horizontal cut into the sapwood at regular intervals (no farther than three centimetres apart) around the base of the tree. Take care not to ringbark the plant.
2. Immediately apply herbicide as described in Method 3 above.

**Note:** For multi-stemmed plants, inject or chip below the lowest branch or treat each stem individually.

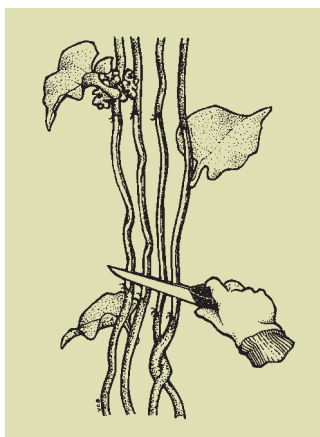


AABR/V. Bear

### Method 5: Stem scrape and paint

This is a technique used on many vines, such as Madeira Vine, which has aerial, not underground, tubers. Instead of producing seeds, in the Sydney region the plant drops thousands of these tubers or small 'potatoes' which develop along the stems. These fall to the ground and establish new plants.

1. For seedlings and small plants without aerial tubers, use the hand removal technique (above).
2. For mature vines with aerial tubers, scrape a very thin layer of bark from a 15 to 30 centimetre section of the stem and apply herbicide. The aerial tubers will slowly rot, so do not disturb the vine until all the tubers have shrivelled and fallen. This may take weeks or even months. Do not remove the roots from the soil, as this will prevent the herbicide from circulating through the whole plant.



AABR/V. Bear

### Method 6: Foliar spraying

Foliar spraying is the use of herbicide diluted with water or diesel at a specific rate, and sprayed over the foliage to the point where every leaf is wet, but not dripping. This method is most suited to shrubs, grasses and dense vines less than six metres tall. Foliar spraying can be done in a number of ways, depending on the size of the plant or infestation.

1. Blanket spraying using a boom spray mounted from a tractor or 4WD can be used to treat large areas completely infested with weeds.

2. For large infestations that need targeted applications of herbicide, a hose and handgun can be used to spray herbicide from a tractor or tank mounted on a 4WD.
3. Smaller infestations can be spot-sprayed using a backpack spray unit. Spot-spraying is used to treat individual weed plants or areas that have only small clumps of weeds.

### Method 7: Spraying of bulbous plants

Bulbous plants should be treated between flower and fruit set. The herbicide will enter the plant's underground storage organ, reducing its ability to store food for the next growing season. Spraying is useful for treating dense infestations of Blackberry.

1. Spray the plant when it is actively growing. Spraying in general should be undertaken between late summer and early autumn, between the flowering and the setting of fruit.
2. When the plant appears dead, remove it from the site using a McLeod tool, rake or brush hook if required.
3. Check for regrowth and treat it using one of the following methods: cut and paint the main stem again; spray the regrowth with herbicide; paint a few leaves directly with herbicide; or remove it manually.

**Note:** Wandering Jew has been successfully controlled with herbicide. The results vary greatly according to light intensity, season, chemical dosage rate and coverage.

### Method 8: Basal bark application

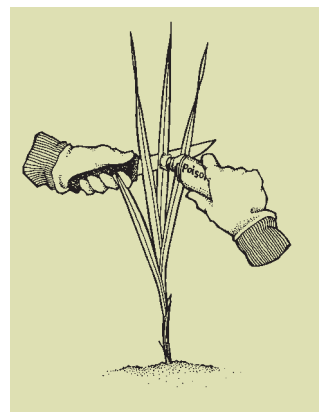
[The information on this method and Method 9 have been sourced from the Noxious and Environmental Weeds Control Handbook by NSW Agriculture (2004).]

This method involves mixing an oil-soluble herbicide in diesel and spraying the circumference of the trunk or stem of the plant. It is suitable for thin-barked woody weeds, undesirable trees, saplings, regrowth and multi-stemmed shrubs and trees.

The full circumference of the stem or trunk should be sprayed with herbicide solution from the ground to a height of 30 centimetres. It is important to saturate right around the trunk.

### Method 9: Rope/wick applicators and stem swiping

This method consists of a wick or rope soaked in herbicide from a reservoir attached to a handle or pumped to the wick. The wetted wick is used to wipe or brush herbicide over the weed. It is sometimes necessary to provide some resistance to the wiper when the weed leaf or stem is soft. Stem swiping involves using a knife to provide resistance down the back of the stem or leaf, while wiping herbicide down the front.



AABR/V. Bear