NSW GOVERNMENT

New South Wales Weed Control Handbook

A guide to weed control in non-crop, aquatic and bushland situations

2025

Less
Weeeeds

More
Wildlife
Produce
Pastures
Livestock
Clean water
Native plants

www.dpi.nsw.gov.au/biosecurity/weeds

New South Wales Weed Control Handbook
A guide to weed control in non-crop, aquatic and bushland situations

8th Edition

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Important: ALWAYS READ THE LABEL

Users of agricultural chemical products must always read the label and any Permit, before using the product and strictly comply with the directions on the label and conditions of any Permit. Users are not absolved from compliance with the directions on the label or conditions of the Permit by reason of any statement made or omitted to be made in this publication.

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Integrated Weed Management

Integrated weed management means using a variety of control methods. It can reduce reliance on herbicides and save money, especially in the long term. It increases the chances of successful control or eradication. Integrated weed management programs require long-term planning, knowledge of a weed's biology and ecology and appropriate weed control methods.

Weed identification

The NSW WeedWise website https://weeds.dpi.nsw.gov.au and free app https://www.dpi.nsw.gov.au/biosecurity/weeds/nsw-weedwise-app have details about over 340 weeds in NSW. There are also other free apps available that can identify weeds from photographs including iNaturalist and Pl@ntNET. Your local council weeds officer or agronomist can provide information about which weeds are likely to occur on your property and assistance identifying weeds.

Prevention

Checking

Regularly check your property for weeds. You will have more chance of eradicating new weeds if they are treated early. It is also important to check treated sites for new seedlings and regrowth.

If you find any weeds that you suspect are prohibited matter, please call the NSW Biosecurity helpline 1800 680 244.

Weed hygiene

Weeds can be spread if seeds or plant fragments are moved around. To prevent weed spread:

- clean vehicles, slashers, mowers and other machinery that have been on infested sites before they move to a clean site
- check and clean clothing, footwear and equipment to remove weed seeds, plant fragments, or soil
- sow registered weed-free seed
- request a fodder declaration form when purchasing fodder
- hold new livestock in a paddock to allow seeds to pass through them into a restricted area that can be checked regularly for weeds
- hold livestock in a holding paddock if required to allow weed seeds to pass through them before moving them to a new clean area.

Aquatic weeds

To prevent the spread of aquatic weeds:

- Do not dump pond or aquarium plants in waterways.
- Avoid running motors or paddling through water plants.
- Check your boat, watercraft, trailer and equipment for plant material before you leave a site and before launching at a new site. Check the inside of boats, live wells, bilge and bait containers.
- Remove all plant material that you find before you leave a site and before launching at a new site.

Control techniques

Hand removal

Hand removal is labour intensive, which may be expensive. However, it limits disturbance to other desirable plants and the soil. It is suitable for small or scattered infestations. Weeds may be hand pulled or dug out using tools such as shovels, hoes or mattocks. Hand removal is also useful as a follow up method after other treatments. Removal is often easier after rain when the soil is softer. Appropriate protective clothing should be worn especially when dealing with thorny, prickly or poisonous plants.

Crowning

A knife or sharp trowel is used to cut away all of the roots from the central crown. The crown is then levered out of the ground. This method is useful for many weedy asparagus species.

Raking

Ground cover weeds (e.g. trad) in sensitive bushland sites can be raked. The weeds are raked into a pile and can be treated by covering in plastic mulch or using herbicides. Follow up is often necessary to treat any missed fragments that have regrown.

Biological control

Biological control of weeds uses a plant's natural enemies such as insects, mites and plant diseases to reduce infestations. It is an economical and environmentally sound method. However, it is a long-term method and may take many years to be effective. Biological control agents are safe to use. Extensive trials check that they do not harm any desirable plants including native plants or crops.

Biological control is most suitable for larger infestations of widespread weeds such as Patterson's curse, many cacti and salvinia. Biocontrol reduces the infestation but does not eradicate the weed.

Biological control agents are released onto the weeds at sites with large infestations. Do not use other control methods on the release site. This is so the biological control agent's population can increase with a large food supply. Monitor the size of the population and the impacts of the agents at the site. More releases may be needed, or the site could become a collection site.

A few biological control agents are applied like herbicides. This includes plant diseases such as rusts and fungi applied as a treatment. An example is the capsules that can be inserted into Parkinsonia.

Contact your local council weeds officer for advice about using biological control on weeds.

The Biological control of weeds: A practitioner's guide for south-east Australia is available from: https://www.dpi.nsw.gov.au/biosecurity/weeds/weed-control/biological-control/biological-control-of-weeds-manual

Disposal

Carefully dispose of all seeds and any plant parts that can regrow. Some weeds can be buried deeply, e.g. cacti need to be buried at least one metre below the surface. A hot fire can be used to burn some plants and kill the seeds. Whichever method is used, disposal sites should be checked regularly for new plants or regrowth. For advice about off-site disposal, contact your local council.

Mechanical removal

Large machinery such as backhoes and bulldozers can be used to dig out large infestations of weeds. They can be useful for woody weeds and large prickly weeds such as cacti. Machinery is most suitable for flat easily accessed areas away from native vegetation.

Disadvantages of using large machinery include:

- causing soil erosion
- creating ideal conditions for new weeds to grow
- soil compaction in wet conditions.

Permits may be required for using machinery to remove plants, especially along waterways. Contact NSW Local Land Services for advice on the required approvals for your site.

Aquatic weeds

Mechanical removal of aquatic weeds includes using:

- Floating broadscale harvesting machines in waterways with dense infestation of weeds such as Salvinia.
- Scoops attached to the bow of small boats.
- Amphibious vehicles that can access shallow areas. They can rake, cut and harvest weeds.
- Suction based harvesters can suck floating weeds or cut and suck anchored aquatic weeds.

Cultivation

Cultivation is particularly effective on young weeds. It breaks the weeds into pieces and separates shoots from roots. Some cultivation techniques bury the weeds deep enough so they cannot regrow. Other techniques pull all of the weeds to the surface so they can dry out and die. Use the correct implements for the desired result.

Cultivation is more effective if weeds are cultivated before they flower and during dry conditions.

Some types of weeds can be controlled with repeated cultivation. Perennial weeds may be difficult to control with cultivation, especially those that easily shoot from root or stem fragments.

Slashing and mowing

Slashing is cheaper than cultivation. It preserves ground cover, reducing soil erosion and allowing access in wet weather. Slashing is suitable for pastures and between rows in orchards.

Slashing will not usually eradicate weeds. Continual slashing may provide control if a desirable pasture species or other ground covers outcompete the weeds. Slashing can:

- prevent tall weeds from flowering and seeding
- remove unpalatable or inedible weeds left after stock have selectively grazed a paddock
- temporarily control weeds until they re-shoot
- control vegetation and weeds along roadsides
- provide access through large, dense infestations so that other weed control methods can be carried out e.g. slashing paths through lantana to give access for people using splatter guns.

Slash before weeds fruit, to prevent the spread of seeds. Avoid slashing plants that can grow from stem fragments and be spread by slashers. Slashes and mowers should be cleaned before moving between sites.

Mulching

Mulches exclude sunlight, which prevents or reduces weed growth. Mulches may be expensive and are only suitable for some situations. Mulches include:

- black plastic which is used between low-growing crops such as strawberries and to treat environmental weeds such as trad in natural environments
- woven weed matting, which is useful along roadsides, steep banks and cuttings where areas need to be revegetated or stabilised.
- organic matter such as woodchips, straw, grass clippings, paper, cardboard, sawdust or manure, which can be used when revegetating areas, or in horticulture.

Organic matter can improve the soil but there can be a risk of introducing weed seeds in the mulch material. Organic mulches are more effective on annual herbs than perennial weeds that can grow through the organic material.

Fire

Fire is a major control method for woody weeds in western regions of NSW. It can also be useful for controlling other plants if the conditions are suitable. Fire can be more cost effective than herbicide or mechanical methods. Follow up with other methods is often required.

Spot fires or controlled burns can be used to manage weeds. A controlled burn:

- minimises damage to the environment
- avoids damage to property and livestock
- helps restore land to an open condition suitable for pasture
- creates access for further weed control.

When using fire, ensure all relevant permits are obtained.

Flaming

Liquefied petroleum gas or propane is used in flame weeders. The weeds do not need to be burnt. The flame ruptures the plant's cell membranes by raising its water content to temperatures above 100°C. Small seedlings are generally more susceptible to flaming. Upright plants with thin leaves are more sensitive than low growing plants. Flaming has been used for weed control on organic farms and general weed control on hard surfaces in urban areas, e.g. footpaths.

Steaming

The combination of heat and water pressure breaks down the cellular structure of the weeds. Field trials have shown that steaming kills annual weeds in 24 hours. The foliage from some perennial plants also dies within 24 hours. However perennial plants can regrow within one or two weeks. Councils have trialled the equipment with mixed results.

Herbicides

See pages 7-10 for details about herbicide control techniques.

Land management

Land management strategies that help to reduce weed problems include:

- maintaining dense pastures or desirable ground covers
- reducing soil disturbance and tillage
- reducing nutrient run-off
- managing livestock and grazing to reduce and not spread weeds
- early weed identification
- good weed hygiene.

Grazing and pasture management

Vigorous pastures can outcompete weeds. Improve pastures by adding fertilisers and lime according to soil test results. Some pasture plants are more competitive than others. Seek advice from agronomists for the best pasture plants for your property. Weeds establish more easily in overgrazed pastures. Manage stocking rates to prevent overgrazing.

Goats

Goats browse and eat the foliage, bark, stems and flowers of many weeds. They eat a variety of weeds that sheep and cattle avoid, such as blackberry, sweet briar, scotch broom, thistles, Paterson's curse and horehound. The nutritional value of these species can be quite high.

Goats can be integrated with sheep, cattle and cropping enterprises to provide weed control and pasture improvement. They can be used for medium to long term weed control. Goats are also useful in inaccessible areas where conventional control methods are not possible.

Reafforestation

Reafforestation is suitable over large areas where other forms of weed control are uneconomic or impractical. Mature trees compete for moisture, nutrients and sunlight and can restrict weed establishment and growth. It can take 5 to 10 years before trees form a dense canopy. During this establishment phase other methods of weed control are needed. A competitive, desirable, shade-tolerant grass or legume can assist with weed control. Reafforestation includes planting native species and plantation forests. Regularly check sites because some weeds can grow in dense shade. Initial costs of reafforestation can be very expensive.

Control techniques using herbicides

Herbicides are available as liquids, gels, granules, dissolvable tablets and capsules. The following issues need to be considered when choosing the best application method:

- what is permitted on the labels and any relevant permits
- whether the weed is growing in water or on land
- site type e.g. are the weeds in pastures, roadsides or forests
- the size of the infestation
- size and growth stage of the weeds
- proximity to waterways and other sensitive areas
- access
- the available resources and personal preferences.

Always read and follow the product labels and any relevant permits before using a herbicide.

Foliar spraying

Foliar spraying can be used on a wide variety of weeds in situations where all of the foliage can be covered by the herbicide mixture. Foliar spraying has potential for spray drift and off-target damage. Marker dye is useful to help show treated areas.

Foliar spraying includes spot spraying and blanket spraying.

- Spot spraying targets individual weeds or small areas of weeds. It is also used to follow up after initial control to treat regrowth.
- Blanket spraying covers a larger area than spot spraying. Selective herbicides are often used for blanket spraying e.g. herbicides that only kill broad leaf plants and not grasses.

Foliar sprays can be applied using

- Boom sprayers which are usually attached behind a tractor. They can quickly treat large areas with infestations up to 1 m high.
- High volume handguns may be used for taller infestations or in areas that are difficult to access. The handgun is connected by a hose to a herbicide tank and pump, carried by a tractor or vehicle.
- Knapsack or backpacks are suitable for smaller infestations and areas that cannot be accessed by vehicles.

Spraying with a gas gun/splatter gun

Gas guns or splatter guns apply a low volume of high concentration herbicide to the weeds. They are suitable in steep or other difficult to reach areas and for dense infestations of weeds. The herbicide is squirted from a gas-powered gun, placing very large droplets onto the leaves from 6–10 m away. The splatter is arched over the tops of bushes and down their sides, at specific intervals.

For some applications, only a small portion of the foliage needs to be treated , minimising off-target damage and reducing chemical usage. Follow the label to determine the coverage required. Marker dye is useful to help show treated areas.

Rope/wick applicators

A wick or rope is soaked in herbicide that is pumped from a reservoir (either by hand or with a 12-volt pump). The wetted wick is used to wipe or brush herbicide over the weeds. Commercially available equipment such as wick wipers are available in sizes ranging from hand-held to vehicle- or tractor-mounted.

Manual wiping

Manual wiping is labour intensive, but can be useful for small infestations especially when treating weeds that are very close to desirable plants. Commercial hand held weed wipers are available. Gels or herbicide mixtures are applied to the leaves and or stems. Check the label or permit for information about the number of leaves that need to be covered e.g. some gels state that half of the rosette leaves need to be wiped.

For soft plants, use a hard tool (e.g. knife blade) to provide resistance down the back of the stem or leaf, while manually wiping herbicide down the front.

Vehicle or tractor mounted wiping in pastures

For machinery mounted wipers, ensure weeds are at least 15 cm above species to be retained. Apply herbicide when weeds are actively growing. Heavy grazing before application will help keep the desirable pasture plants lower to the ground than the weeds. In ungrazed areas, slash or burn and allow for regrowth to target weeds species. If possible, conduct two passes in opposite directions to obtain sufficient coverage of weed foliage. Ground speed should not exceed 8 km/hr. Calibrate application so that wiper remains moist but does not drip excessively, and a continuous patch of weeds does not receive more than the amount of herbicide that would be applied using a broadacre treatment.

Basal barking

Basal barking controls thin-barked woody weeds and trees. It is also an effective way to treat saplings, regrowth, multi-stemmed shrubs and weeds in inaccessible areas such as steep banks. This method creates little or no spray drift or off-target damage. It can control difficult-to-kill weeds at any time of the year. Do not apply to wet bark or plants with very thick bark.

Mix an oil-soluble herbicide with diesel (or in some cases biodiesel, or kerosene). Spray or brush the herbicide mixture all the way around the trunk or stem of the plant, from ground level to a height of 30 cm (check labels as heights may vary) (*Figure 1*). It is important to saturate the full circumference of the trunk, and to treat every stem or trunk arising from the ground.

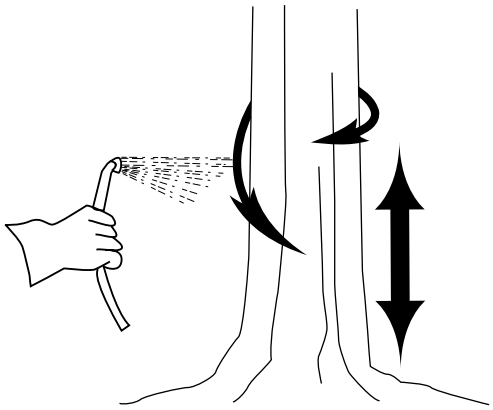

Figure 1. Basal bark spraying.

The diesel helps move the herbicide through the bark and into the underground storage organs of the plant, slowly killing it.

Stem injection methods

Stem injection is used on woody weeds such as trees and large shrubs. Only weeds that can be safely left to die and rot should be treated this way. If the tree or shrub is to be felled after treatment, allow it to die completely before felling.

Cut or drill holes through the bark into the sapwood tissue all the way around the trunk. Apply the herbicide to the holes or cuts within 15 seconds. The aim is to reach the sapwood layer just under the bark (the cambium layer), where the herbicides will be transported throughout the plant.

Stem injection - drill and fill method

This method is for trees and woody weeds with stems or trunks greater than 50 cm in circumference. Use a battery-powered drill to make downward-angled holes in the sapwood approximately 5 cm apart (*Figure 2*). Herbicide is then injected in measured doses using a backpack reservoir and syringe.

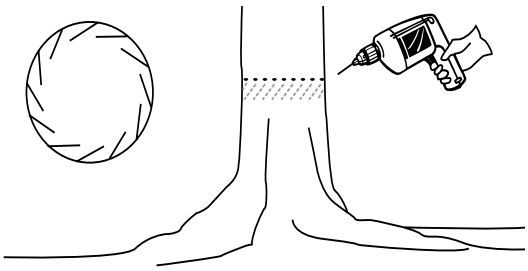

Figure 2. Stem injection, drill holes all the way around the trunk.

Stem injection - axe cut method

The axe cut method can be used for trees and woody weeds with stems or trunks greater than 50 cm in circumference. Use an axe or tomahawk to make horizontal cuts into the sapwood all the way around the circumference of the trunk (*Figure 3*). While still in the cut, lean the axe or tomahawk out to make a downward angled pocket. This allows the herbicide to pool. The herbicide is then immediately injected into the pocket or if using a gel herbicide apply a layer of gel to the lower surface of the cut, Cuts should be close together usually 2- 4 cm apart. This method is also referred to as frilling. Do not ringbark the trunk, as this will decrease the uptake of the herbicide into the plant.

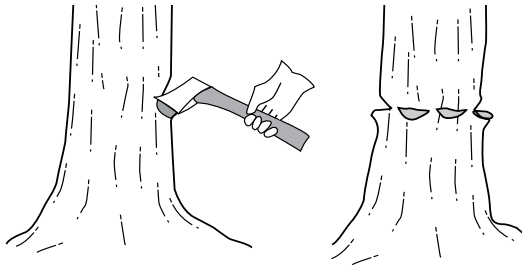

Figure 3. Stem injection, make axe cuts all the way around the trunk.

Chain saw or pruning saw method

This is very similar to the method above except that the cuts are made by saws. Make the cuts using a downward action so that the herbicide will stay in the cut rather than flow down the stem.

Cut stump

This method is used for trees, shrubs and woody vines with thick trunks. The advantage of this method is that the weed is removed immediately.

Cut the plants at the base (preferably no higher than 15 cm from the ground), using a chainsaw, axe, brush cutter or machete. Apply herbicide to the exposed surface of the cut stump emerging from the ground (some labels also include applying herbicide to the sides of the stump) (*Figure 4*). Coloured dye helps to mark the stumps that have been treated. Apply the herbicide as soon as the trunk or stem is cut. A delay of more than 15 seconds between cutting and applying the chemical will give poor results. Dispose of the cut plant appropriately. Some plants can regrow if left in contact with the soil.

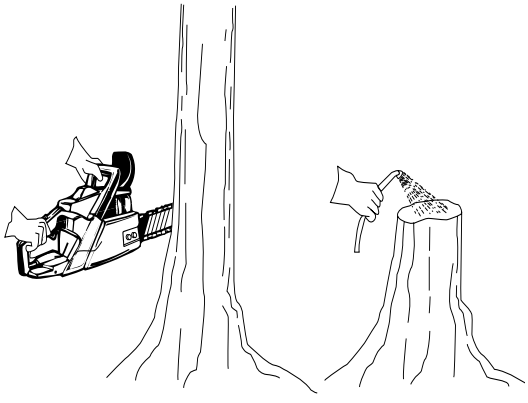

Figure 4. Cut the trunk then treat the stump.

This method is more efficient with two operators working as a team. The herbicide can be applied:

- from a knapsack
- with a paintbrush
- from a drench gun
- using a hand spray bottle
- as a gel from a squeeze bottle.

Cut and paint

This method is similar to the cut stump method. It is suited to smaller vines and multi-stemmed shrubs. Completely cut the stems close to the ground. Apply herbicide immediately to the cut surface emerging from the ground. Apply the herbicide using a paint brush or gel applicator.

If the vines have aerial tubers (e.g. madeira vine), both ends of the cut stems must be treated with herbicide.

Stem-scraping

Stem-scraping is mainly used for vines. Use a sharp knife to scrape a very thin layer of bark from a 15–30 cm section of the stem. Do not scrape all the way around the stem (*Figure 5*). Immediately apply herbicide to the exposed soft underlying green tissue. Paint the herbicide on with a brush or applicator for gels. In the case of madeira vine, all tubers within reach should be collected, removed and composted or destroyed before starting the scraping. The bark can be peeled off some woody weeds.

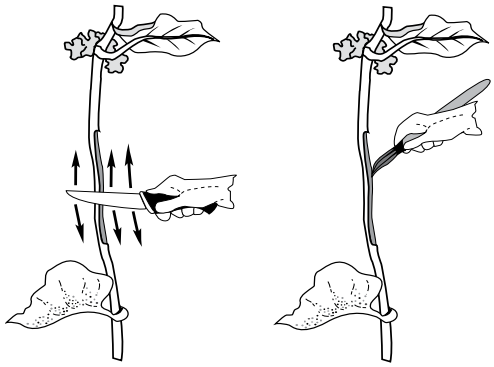

Figure 5. Scrape the stem on one side then treat with herbicide.

Tree spearing

This method uses a specifically designed tree spear. Thrust the spear into the tree at an angle of 30° to 40° from the vertical. This cuts the tree and applies the appropriate amount of herbicide. The process is repeated, forming a row of cuts approximately 5 cm apart all the way around the tree.

Granular applications

Granular herbicides are applied to the soil under weeds. No water or other liquids are added when applying the granules. The labels give rates per m^2. The granules may be distributed aerially or on the ground using a calibrated applicator.

The best time to apply the granules is before a rainfall event, but not if the rain is likely to cause run-off.

Capsule injection

Capsule herbicides contain water-dispersible herbicide granules. They are used for woody weeds.

Measure the circumference of the trunk and read the label to determine the number of capsules and the spacing between the holes. Each trunk needs to be treated on multiple-stemmed plants.

An applicator is used to drill a hole and deliver each capsule into the sapwood layer beneath the bark. The hole is then plugged to retain moisture and allow the herbicide to translocate through the tree.

Dissolvable tablets

Dissolvable effervescent tablets effectively control some species of water weeds. The tablets can control floating, submerged and emergent water weeds. Anyone using this type of herbicide needs to complete specific training. You must calculate the volume of water to be treated before applying this type of herbicide. The tablets may be placed directly into the waterbody to dissolve, or they can be dissolved in water and sprayed onto emergent waterweeds.

Applying herbicides: managing your legal responsibilities

The following legislation details legal requirements for the safe use and storage of pesticides:

- *NSW Pesticides Act 1999*
- *NSW Pesticide Regulation 2017*
- *The Work Health and Safety Act 2011*
- Work Health and Safety Regulation 2017.

Legislation can be viewed online at https://legislation.nsw.gov.au/

Herbicide users must always read the label and any Permit, before using the product. Users must comply with all directions on the label and the conditions of any Permit.

All herbicide users should take reasonable care to protect their own health and the health of others when using herbicides. They should also make every reasonable attempt to prevent damage to the environment. Damage includes off-target drift onto sensitive areas or harm to endangered or protected species.

Records of herbicide use

All commercial herbicide users must keep records of their herbicide application. Records must be:

- completed as soon as practicable, no later than 48 hours after use
- kept for three years.

The NSW Pesticide Regulation 2017 includes a list of information to be recorded. Details are available via the EPA website: https://www.epa.nsw.gov.au/Your-environment/Pesticides/compulsory-record-keeping

Accreditation

The Pesticides Regulation 2017 states that a person must not use, or engage a person to use a pesticide unless the applicator is qualified. Domestic use, such as home gardens, is excluded, provided the pesticide is a specific domestic/home garden product.

The minimum qualification is AQF2, unit code AHCCM201 Apply Chemicals under Supervision. This allows use of pesticides under the supervision of someone accredited with the AQF3.

To be AQF3 accredited these units must be completed:

- AHCCM307 Prepare and apply chemicals to control pest, weeds and diseases
- AHCCM304 Transport and store chemicals.

These units are valid for 5 years.

A Ground Applicators Licence may also be required in some situations. Details about licences are online: https://www.epa.nsw.gov.au/sites/default/files/18p1066-ground-applicator-licence-fact-sheet.pdf

Examples of training organisations include:

- SMARTtrain https://www.tocal.nsw.edu.au/courses/short-courses/smarttrain-chemical-safety-and-training
- ChemCERT https://www.chemcert.com.au/courses/

Spray drift

All herbicides must be applied in a way that minimises drift hazards. Minimising drift maximises herbicide effectiveness on target weeds and. reduces damage to and/or contamination of off-target crops, pastures and environmental areas. There are moral and legal responsibilities to prevent herbicides from drifting. Even small quantities of drifting herbicide can cause severe damage to highly sensitive plants.

Many labels have drift reduction recommendations that must be followed. These recommendations include wind speed, temperature, droplet size and buffer zones.

Information about limiting spray drift is available on the Australian Pesticides & Veterinary Medicines Authority (APVMA) website https://www.apvma.gov.au/resources/using-chemicals/spray-drift

Withholding periods

Withholding periods are legal requirements that are listed on all herbicide labels. The withholding period is the minimum period of time that must elapse between:

a. the last application of a chemical (herbicide) to any plant, crop, or pasture, and

b. the harvesting, cutting or grazing of animals on the plant, crop or pasture or the shearing, slaughter, collection of milk, or collection of eggs from animals grazed on the plant, crop or pasture.

This is to ensure that the chemical's residues in the treated produce fall below the maximum permitted level known as the Maximum Residue Limit.

Herbicide resistance

Herbicide resistance is the inherent ability of a weed to survive treatment with a herbicide that would normally kill that species. If a resistant plant is allowed to reproduce, the resistance spreads resulting in more resistant plants. This is different from poor herbicide performance. Once herbicide resistance occurs it will persist indefinitely.

Herbicides act by interfering with specific processes in plants, known as the herbicide's mode of action. Herbicides with the same modes of action are grouped from Group 0 to Group 24 (previously groups A to Z). The herbicide groups are on the herbicide labels. The risk of herbicide resistance developing is higher in certain Groups. One example is that, Groups 1 (previously group A) and 2 (previously group B) are more likely to develop resistance than Groups 4, 22 and 9 (previously Groups I, L and M)

Manage herbicide resistance by combining herbicide use with non-chemical control options, also by:

- ensuring any resistant plants do not set seed
- monitoring the results of herbicide treatments and looking for resistant plants
- undertaking herbicide resistance testing on suspect plants that survive herbicide treatments
- not relying on the same herbicide Group for regular weed control (rotate treatments using herbicides from different Groups).

Adjuvants

An adjuvant is any herbicide additive, used to improve effectiveness. There are a wide number of adjuvants available for different purposes. The three main types of adjuvant used include:

1. Non-ionic surfactants (e.g. BS1000), which reduce surface tension of spray increasing coverage. They also reduce the average droplet size and increase spray drift risk.

2. Oil + surfactant mix (e.g. Uptake®), which can increase spray adherence and coverage. They increase average droplet size.

3. Penetrants (e.g. Pulse® Penetrant (organosilicone)), which reduce the surface tension of the spray solution. They increase coverage and can facilitate spray movement through the leaves. Penetrants may increase drift risk and will evaporate from the leaf surface over a few hours.

Additional adjuvant may also be recommended on the label or permit when:

- higher application volumes are recommended causing a dilution of the existing adjuvant and potentially reducing herbicide retention on the leaf surface
- the target weed is difficult to wet due to its leaf surface such as waxy or hairy.

Always read the herbicide and adjuvant labels. More information about adjuvents is available on the following website: https://grdc.com.au/resources-and-publications/all-publications/publications/2019/adjuvants-booklet

Weeds with state priority biosecurity duties in NSW

Weeds are regulated under the *NSW Biosecurity Act 2015* according to the risk they pose to the environment, community and economy. Weeds that create the highest level of risk are called priority weeds. State priority weeds pose a high risk to the entire state of NSW. Specific legal requirements apply to state priority weeds. State priority weeds include:

- **Prohibited matter:** A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the NSW Department of Primary Industries and Regional Development (NSW DPIRD).

Call the NSW Biosecurity Helpline 1800 680 244 if you suspect you have seen prohibited matter.

- **Control Orders:** Owners and occupiers of land on which the weed is present must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. Details of each control order are online: https://www.dpi.nsw.gov.au/about-us/legislation/list/biosecurity-act-2015
- **Biosecurity zones:** These plants are regulated within zones. Within the Biosecurity Zone these weeds must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone.
- **Mandatory measures - Prohibition on dealings:** These plants must not be imported into the state, sold, bartered, exchanged or offered for sale.

General biosecurity duty: All pest plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, or knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

Duty to notify on importation into the State: If a plant is not currently present in NSW, a person must not import it without notifying the NSW DPIRD weeds@dpird.nsw.gov.au of the plant and its proposed location.

NSW WeedWise: visit weeds.dpi.nsw.gov.au for information about each plant and its associated biosecurity duties.

The following weeds are regulated at the state level in NSW under the *NSW Biosecurity Act 2015*.

Prohibited matter

Common name	Scientific name
Anchored water hyacinth	*Eichhornia azurea*
Black knapweed (Meadow knapweed)	*Centaurea x moncktonii*
Bridal veil creeper	*Asparagus declinatus*
Broomrapes	*Orobanche* species (all species except the native *O. cernua* var. *australiana* and *O. minor)*
Eurasian water milfoil	*Myriophyllum spicatum*
Frogbit	*Limnobium laevigatum*
Gamba grass	*Andropogon gayanus*
Hawkweeds	*Hieracium* species (all species except *Hieracium murorum) Pilosella* spp. (all species)
Hydrocotyl	*Hydrocotyle ranunculoides*
Karoo acacia	*Vachellia karroo*
Kochia	*Bassia scoparia* (excluding subsp. *trichophylla)*
Koster's curse	*Clidemia hirta*
Lagarosiphon	*Lagarosiphon major*
Mexican feather grass	*Nassella tenuissima*
Miconia	*Miconia* species
Mikania vine	*Mikania micrantha*
Mimosa	*Mimosa pigra*
Parthenium weed	*Parthenium hysterophorus*
Pond apple	*Annona glabra*
Prickly acacia	*Vachellia nilotica*
Rubber vine	*Cryptostegia grandiflora*
Siam weed	*Chromolaena odorata*
Spongeplant	*Limnobium spongia*
Spotted knapweed	*Centaurea stoebe* subsp. *micranthos*
Water caltrop	*Trapa* species
Water soldier	*Stratiotes aloides*
Witchweeds	*Striga* species (except the native *S. parviflora)*
Yellow burrhead	*Limnocharis flava*

Biosecurity Control Order

Common name	Scientific name
Boneseed	*Chrysanthemoides monilifera* subsp. *monilifera*
Chinese violet	*Asystasia gangetica*
Parkinsonia	*Parkinsonia aculeata*
Tropical soda apple	*Solanum viarum*

Biosecurity Zone

Common name	Scientific name
Alligator weed	*Alternanthera philoxeroides*
Bitou bush	*Chrysanthemoides monilifera* subsp. *rotundata*
Water hyacinth	*Eichhornia crassipes*

Prohibition on dealings

Common name	Scientific name
African boxthorn	*Lycium ferocissimum*
Alligator weed	*Alternanthera philoxeroides*
Athel pine	*Tamarix aphylla*
Bellyache bush	*Jatropha gossypiifolia*
Bitou bush	*Chrysanthemoides monilifera* subsp. *rotundata*
Black willow	*Salix nigra*
Blackberry	*Rubus fruticosus* species aggregate
Boneseed	*Chrysanthemoides monilifera* subsp. *monilifera*
Bridal creeper	*Asparagus asparagoides*
Cabomba	*Cabomba caroliniana*
Cape broom	*Genista monspessulana*
Cat's claw creeper	*Dolichandra unguis-cati*
Chilean needle grass	*Nassella neesiana*
Climbing asparagus	*Asparagus africanus*
Climbing asparagus fern	*Asparagus plumosus*
Fireweed	*Senecio madagascariensis*
Flax-leaf broom	*Genista linifolia*
Gorse	*Ulex europaeus*
Grey sallow	*Salix cinerea*
Ground asparagus	*Asparagus aethiopicus*
Hymenachne	*Hymenachne amplexicaulis* and hybrids
Lantana	*Lantana camara*
Madeira vine	*Anredera cordifolia*
Mesquite	*Prosopis* species
Parkinsonia	*Parkinsonia aculeata*
Parthenium weed	*Parthenium hysterophorus*
Prickly pears	*Austrocylindropuntia* species
Prickly pears	*Cylindropuntia* species
Prickly pears	*Opuntia* species (except for *O. ficus indica)*
Sagittaria	*Sagittaria platyphylla*
Salvinia	*Salvinia molesta*
Scotch broom	*Cytisus scoparius* subsp. *scoparius*
Serrated tussock	*Nassella trichotoma*
Silverleaf nightshade	*Solanum elaeagnifolium*
Snakefeather	*Asparagus scandens*
Water hyacinth	*Eichhornia crassipes*
Willows	*Salix* species

Weed control in non-crop, aquatic and bushland situations

This publication is presented as a guide to assist users in planning their weed control in pastures, aquatic and bushland situations. Registration of a herbicide is not a recommendation from the NSW DPIRD for the use of that herbicide in a particular situation. Users must satisfy themselves that the herbicide they choose is the best one for the situation and weed. Users must also carefully study the herbicide label before using any herbicides, and follow all of the conditions on the label.

If there is any omission or error in this list of chemicals, please notify the NSW DPIRD via email weed.resource@dpird.nsw.gov.au

Product names

The product names in this publication are supplied on the understanding that no preference between equivalent products is intended, and that the inclusion of a product does not imply endorsement by NSW DPIRD over any other equivalent product from another manufacturer. Various products is stated where there are a number of products on the market with the same active ingredient/s.

Unit abbreviations	
ha	hectare
g	gram
mg	milligram
kg	kilogram
mL	millilitre
L	litre
m	metre

Minor-use permits

Minor-use permits allow for an 'off-label' use of a registered herbicide. The Australian Pesticides & Veterinary Medicines Authority (APVMA) issues permits based on careful decisions about the stability and efficacy of a herbicide product for a particular use and the extent to which use of the product might pose economic, environmental or social risks.

Before using a herbicide under a permit issued by the APVMA, users must obtain a copy and read the permit. Users must comply with the details, critical use conditions and restrictions.

Permits are listed in the following tables in the far left column where applicable e.g PER9907

Permits are available via the APVMA Permit portal:
https://portal.apvma.gov.au/permits

Aaron's beard prickly pear – *Opuntia leucotricha*

Non-chemical options: Small or isolated plants can be dug out by hand. Larger infestations may be dug out by machinery. Ensure the roots are dug out and that all plant parts are disposed of appropriately.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant with herbicide mix to the point of runoff. Follow the label instructions as per prickly pear (common). Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Spray actively growing plants, wetting all areas of the plant to ground level.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant. Follow the label instructions as per prickly pear (common). To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel.	Spray actively growing plants, thoroughly cover all of the plant. Follow the label instructions as per common prickly pear (*Opuntia* spp.).
	Triclopyr 600 g/L Garlon® 600	3.0 L per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant to the point of runoff. Follow the label instructions as per common prickly pear (*Opuntia* spp.) To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.

African boxthorn – *Lycium ferocissimum*

Non-chemical options: Small seedlings can be dug out by hand. Mechanical tree removal is best immediately after rain. Cultivation can help control regrowth. Maintaining vigorous pastures can limit seedling growth. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Stem inject or stem scrape application.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	1.3 L per 100 L of water	Spray soil to drip line. Thorough soil coverage is essential. Spray prior to budburst. Treat small plants only.
	Glyphosate 360 g/L Various products	0.7–1.0 L per 100 L	Spray the foliage with low rate on young bushes and high water rate on mature bushes. Do not spray in hot dry summer periods.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray plants less than 2 m tall when bushes have good leaf cover, growth and no leaf fall.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Tebuthiuron 200 g/kg Various products	2 g per m^2	Granular herbicide. Estimate the area within 30 cm beyond the drip line of tree or group of trees. Calculate the amount of herbicide required and distribute onto the soil evenly. Do not apply near desirable trees.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application can be used for plants with stems up to and in excess of 5 cm diameter at the base. Treat all stems on multi-stem plants.

	Chemical and Concentration	Rate	Comments
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray when bushes have good leaf cover and no leaf fall. Only apply to plants less than 2 m tall.
	Triclopyr 600 g/L Garlon® 600	2.0 L per 60 L of diesel	Basal bark application up to 5 cm basal diameter. Cut stump application plants is suitable for a range of sizes including those over 5 cm diameter.

African feather grass – *Cenchrus macrourus*

Non-chemical options: For small infestations, plants can be dug out by hand. Repeated cultivation can help destroy the rhizomes but best followed by establishing vigorous pastures. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	3 L per ha	Boom spray for selective broadacre control. See permit for critical use comments.
PER9792	Flupropanate 745 g/L Various products	300 mL in 100 L of water	Spot spray. See permit for critical use comments.
PER9792	Flupropanate 745 g/L Various products	500 mL in 10 L of water	Wiper application. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	6 L per ha	Boom spray for non-selective broadacre control. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	1 L in 100 L of water	Spot spray. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	3.3 L in 10 L of water	Wiper application. See permit for critical use comments.

African lovegrass - *Eragrostis curvula*

Non-chemical options: Small plants can be dug out by hand. Remove all the crown to prevent regrowth. If seedheads are present, cut them off before digging out the plants. Maintaining healthy pastures can reduce re-establishment. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	1.5–3.0 L/ha	Ground and aerial boom application. See permit for critical use comments.
PER9792	Flupropanate 745 g/L Various products	150–300 mL per 100 L water	Spot spray application. See permit for critical use comments.
	Flupropanate 745 g/L Various products	300 mL per 100 L of water	Spot spray application. Apply July to December.
	Flupropanate 745 g/L Various products	3.0 L/ha	Ground boom spray using 150 L water/ha. Apply July to December.
	Glyphosate 360 g/L Various products	10 mL per 10 L of Water	Spot spray actively growing plants with a handgun or knapsack.
	Glyphosate 360 g/L Various products	6.0 L per Ha	Boom application for actively growing plants.

African olive – *Olea europaea* subsp. *cuspidata*

Non-chemical options: Seedlings can be hand pulled or dug out. Remove all of the roots.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray seedlings and coppice shoots.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate per 1.5 parts of water	Cut stump or cut, scrape and paint. Alternatively drill, frill or axe and then injection.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide. See critical comments on the label for details on how to apply and seal the capsule into the sapwood layer of the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 600 g/L Garlon® 600	4.0 L per 60 L diesel	Basal bark application up to 5 cm basal diameter. Cut stump application for plants up to or over 5 cm basal diameter.

African turnip weed – eastern – *Sisymbrium thellungii*

Non-chemical options: Seedlings can be hand pulled, and larger plants dug out. Remove all of the roots. Dispose of flowering or seeding plants carefully.

	Chemical and Concentration	Rate	Comments
	Oxyfluorfen 240 g/L Goal Herbicide	3 to 4 L per hectare	Spray in forestry - pre-emergence application.
	Simazine 900 g/kg Various products	5 kg per ha or 500 g /100 L of water	Spray bare moist ground to provide control of germinating weeds.
	Simazine 900 g/kg Various products	24 kg per ha (or 2.4 kg /100 L of water) OR 48 kg per ha (or 4.8 kg /100 L of water)	Spray rates for long residual control in heavy soils. Apply to bare moist soil. Lower rates for winter rainfall areas. Higher rates for summer rainfall areas.
	Simazine 900 g/kg Various products	10 kg per ha (or 1 kg /100 L of water) OR 24 kg per ha (or 2.4 kg /100 L of water)	Spray rates for long residual control in light soils. Apply to bare moist soil. Lower rates for winter rainfall areas. Higher rates for summer rainfall areas.
	2,4-D amine 625 g/L various	0.56-1.7 L/ha	Pastures & non-agricultural 2 leaf to rosette stage
	Dicamba + MCPA 340 + 80 g/L Kamba® M	6.5 L in 250 - 400L water per	Fields & parks

African turnip weed – western – *Sisymbrium runcinatum*

Non-chemical options: Seedlings can be hand pulled, and larger plants dug out. Remove all of the roots. Dispose of flowering or seeding plants carefully.

	Chemical and Concentration	Rate	Comments
	Oxyfluorfen 240 g/L Goal Herbicide	3 to 4 L per ha	Forestry: pre-emergence application
	Simazine 900 g/kg Various products	5 kg per ha or 500 g /100 L of water	Spray bare moist ground to provide control of germinating weeds.
	Simazine 900 g/kg Various products	10 kg per ha (or 1 kg /100 L of water) OR 24 kg per ha (or 2.4 kg /100 L of water)	Spray rates for long residual control light soils. Apply to bare moist soil. Lower rates for winter rainfall areas. Higher rates for summer rainfall areas.
	Simazine 900 g/kg Various products	24 kg per ha (or 2.4 kg /100 L of water) OR 48 kg per ha (or 4.8 kg /100 L of water)	Spray rates for long residual control heavy soils. Apply to bare moist soil. Lower rates for winter rainfall areas. Higher rates for summer rainfall areas.
	Simazine 900 g/kg Various products	1.6 to 6.7 kg per ha	Spray for forestry - pre-emergence application.

Aleman grass – *Echinochloa polystachya*

Non-chemical options: Small individual plants can be dug up when the soil is not waterlogged. Grazing can suppress growth, especially if plants are grazed low enough so that leaves are all submerged when water levels rise.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	Up to 200 mL in 10 L of water	Spot spray application.

Alligator weed – *Alternanthera philoxeroides*

Non-chemical options: Biological control is effective in some situations, contact your local council weeds office for information. If removing small infestations by hand, every fragment must be removed to prevent regrowth. Machinery can remove large infestations. Clean machinery before moving out of an infested area.

	Chemical and Concentration	Rate	Comments
PER84772	Imazapyr 250 g/L Various products	500 mL in 100 L of water to a maximum of 3L/ha plus Hasten or Uptake Spraying oil at 0.5 L/ha.	For terrestrial situations only including riparian zones. Do not apply more than once per annum. Use of this permit is limited to Council employees and Government Officers or contractors under their direction. See permit for further critical use comments.
PER14733	Dichlobenil 40 g/kg Casoron 4G Herbicide	43–63 g per square metre	Granular application for home gardens in residential areas. Treat dormant plants. Use the higher rate for heavier weed infestations. See permit for further critical use comments.
PER14733	Glyphosate 360 g/L Various products	10 mL in 1 L of water	Spot spray actively growing plants. For control in home gardens in residential areas. Use coarse droplets and low pressure and avoid run-off. See permit for further critical comments.
PER14733	Metsulfuron-methyl 600 g/kg Various products	1 g in 10 L of water	Spot spray actively growing plants. For control in home gardens in residential areas. Use coarse droplets and low pressure and avoid run-off. See permit for further critical comments.

	Chemical and Concentration	Rate	Comments
PER14734	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L water (to a maximum rate of 600 L/ha of weed surface)	Aquatic and terrestrial areas across NSW. Only apply as a spot spray using a hand directed spray. Do not apply more than 3 applications per growing season. See permit for further critical comments.
PER14200	Metsulfuron-methyl 600 g/kg Various products	10 g in 100 L of water	Hand gun application within the local government areas of Port Stephens Council, Maitland City Council and Hawkesbury River County Council. See permit for critical use comments.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 37.5 cubic metres of water to achieve 400 parts per billion.	For use on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. See label for further instructions and restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 37.5 cubic metres. Each tablet dissolved in at least 20 L of water + 0.5-1.0% adjuvant/surfactant	For use on dense or established weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20 L per tablet) mix thoroughly and then inject the solution directly into the water body.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Spray 12 -15 L of solution per 100 m^2. Solution = 1 tablet per 100 L water + 0.5-1.0% adjuvant/ surfactant.	Spray on low density, establishing or re-establishing weeds in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger still water bodies. See label for restrictions.
	Glyphosate 360 g/L Only products registered for aquatic use	150 mL per 15 L of water	Spot spray from a knapsack. Apply to actively growing plants from summer through winter. Floating form only.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 100 L of water plus an adjuvant (e.g. BS1000) at 100 mL/100 L	Spot spray application, for terrestrial situations only. Follow-up applications over at least two seasons are essential for complete control.

Anchored water hyacinth – *Eichhornia azurea*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
	Amitrole 250 g/L Various products	280 mL to 100 L of water	Apply immediately prior to flowering. For use in aquatic areas including drains, channels, margins of streams, lakes and dams. Follow the label instructions as per water hyacinth.
	Diquat 200 g/L Reglone®	400 mL /ha plus 150 mL Agral / 100 L water	Small areas: spray to wet weeds thoroughly. About 1 mL of product should be sufficient to treat 1 square metre of weeds. Follow the label as per instructions for water hyacinth.
	Diquat 200 g/L Reglone®	5.0 to 10.0 L/ha	Apply as overall spray, wet foliage thoroughly. Use higher rates for heavy infestations or for deep or dirty water. Do not spray more than a 1/4 of the area at a time to prevent oxygen depletion. Follow the label instructions as per water hyacinth.
	Glyphosate 360 g/L Only products registered for aquatic use	150 to 200 mL per 15 L of water	Spot spray application. Follow label instructions as per water hyacinth. Apply when actively growing and at or beyond the early bloom stage. Use the higher rate on dense infestations.

Annual ragweed – *Ambrosia artemisiifolia*

Non-chemical options: Small plants can be hand pulled or dug out. Slash or mow young plants before they flower. Minimise infestations by maintaining healthy, competitive pastures. Two biological control agents are present in NSW, they provide limited control.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray plants less than 1.5 metres tall from October to May. For areas of native vegetation and non-cropland areas. See permit for critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Spray plants less than 1.5 metres tall from October to May. For areas of native vegetation and non-cropland areas. See permit for critical comments.
	Bromacil 800 g/kg Various products	3.5 to 6.5 kg per ha	Boom spray or handgun for commercial and industrial areas, rights of way fence lines and around agricultural buildings. The lowest rate suited to lower rainfall areas (250 mm or less).
	Dicamba 750 g/L Kamba® 750	87 mL per 15L of water. Add a surfactant.	Spot spray prior to flowering. For non-crop situations. 15 L knapsack treats 150 square metres.
	Dicamba 750 g/L Kamba® 750	5.9 L/ ha. Use a minimum of 1500 L of solution per ha. Add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	Dicamba 750 g/L Kamba® 750	400 mL per 100 L of water. Add a surfactant.	Spray prior to flowering. For non-crop situations.
	Glyphosate 360 g/L Various products	10 mL per 1 L of Water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.

Arrowhead – *Sagittaria calycina* var. *calycina*

Non-chemical options: Small infestations can be removed by hand. Larger infestations can be excavated with machinery. Remove all plant fragments including roots and rhizomes to ensure they cannot float downstream. Clean all machinery before leaving infested sites.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 9 parts water	Splatter gun.

Artichoke thistle – *Cynara cardunculus*

Non-chemical options: Plants can be dug out, remove as much of the taproot as possible. Maintaining healthy pastures can limit seedling growth. Contact your local agronomist for pasture advice in your region. Cultivation can be effective if repeated regularly.

	Chemical and Concentration	Rate	Comments
	Dicamba 750 g/L Kamba® 750	1.1 L/ha Add a non-ionic surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	Dicamba 750 g/L Kamba® 750	67 mL per 100 L of water. Use a minimum of 1500 L solution per ha. Add a non-ionic surfactant.	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	16 mL per 15 L of water. Add a non-ionic surfactant.	Spot spray prior to flowering. For non-crop situations.
	Glyphosate 360 g/L Various products	10 ml per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.
	Glyphosate 360 g/L Weedmaster Duo	75mL per 15L water	Knapsack spray. Apply at the rosette-early head stage.
	MCPA 250 g/L MCPA 250	8.5 L/ha	Boom spray for pastures and cereal crops. High volume 120-240 L water per ha. Add wetting agent. Repeat treatment following year.

Arum lily – *Zantedeschia aethiopica*

Non-chemical options: Plants can be dug out with hand tools. Remove as much of the roots as possible. Repeated rotary hoeing can control plants. Remove flowers as soon as possible to stop the plant from seeding.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL - 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Arundinaria reed – *Arundinaria species*

Non-chemical options: The rhizomes can be dug out by hand. It is easier if the canes are cut first.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump. Retreatment necessary.

Asparagus fern – *Asparagus virgatus*

Non-chemical options: Small plants can be hand pulled or dug out. Ensure all of the rhizomes have been removed. Dispose of the plants as rhizomes can reshoot and green fruit can contain viable seeds.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L of water	Spot spray application
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray application, best done between flowering and berries forming.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump / stem scrape application
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g per 100 L of water plus surfactant.	Spot spray application, best done between flowering and berry formation.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Rhizome application: prune the shoots to get access to the rhizome apply a 3-5 mm layer of gel across the cut surface on the rhizome. See label for further critical comments.

Athel pine – *Tamarix aphylla*

Non-chemical options: Seedlings can be easily hand pulled or dug out in sandy soil. Large trees can be removed by ripping and bulldozing if there is no risk of damaging native trees or causing erosion. Remove as much of the root as possible.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 (ratio glyphosate to water) plus 1 g metsulfuron to 1 L water	Stem injection
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	Undiluted	Cut stump application: Apply a 3–5 mm layer of gel for stems less than 20 mm. Apply 5 mm layer on stems above 20 mm.

Balloon vine – *Cardiospermum grandiflorum*

Non-chemical options: Seedlings can be hand pulled or dug out. If the vines are climbing over desirable plants, cut them and leave the top part of the vine to die. Ensure that all of the roots are removed.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray. Spray regrowth up to 0.5 m tall.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump. Retreatment may be necessary.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	200 mL of glyphosate plus 1.5 g of metsulfuron- methyl in 10 L of water	Spot spray application.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump: Apply a 3–5 mm layer of gel for stems less than 20 mm diameter. Apply 5 mm layer on stems above 20 mm diameter.

Bamboo – *Bambusa species*

Non-chemical options: Small, isolated plants can be dug out by hand. It is easier if the stems are cut first. Machinery can be used to dig out large infestations. Ensure all of the rhizomes are removed from the soil.

	Chemical and Concentration	Rate	Comments
PER11916	Glyphosate 360 g/L Various products	1 part glyphosate to 50 parts water	Spot spray regrowth at 0.5 m tall. For use in urban bushland, forests and coastal reserves. See permit for critical comments.
	Glyphosate 360 g/L Various products	1 L per 100 L of water.	Spray all of the foliage on actively growling plants between 1 and 2 m tall.
	Glyphosate 360 g/L Various products	1 part glyphosate to 6 parts water	Cut stump method. Cut stems to 20 cm. Pour mixture down stem or wet cut.

Banana passionfruit – *Passiflora tarminiana*

Non-chemical options: Small plants can be hand pulled or dug out. Continuously cutting the plants at ground level will eventually kill them. Collect fruit to prevent new seedlings.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. See permit for further critical comments.
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark: Spray or paint herbicide mix around the base of each stem from ground level up to at least 30 cm, wetting the bark to the point of runoff. Apply to dry bark. Old rough bark will require more spray than smooth or young thin bark.
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray actively growing plants.
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray actively growing plants.
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark: Spray or paint herbicide mix around the base of each stem from ground level up to at least 30 cm, wetting the bark to the point of runoff. Only apply to dry bark. Old rough bark will require more spray than smooth or young thin bark.
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray actively growing plants.
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut, scrape and paint
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 -20 g per 100 L water plus surfactant	Spot spray actively growing plants.

Barleria – *Barleria prionitis*

Non-chemical options: Small plants can be hand pulled or dug out. Remove all of the roots if possible.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus non-ionic surfactant	Spot spray

Bathurst burr – *Xanthium spinosum*

Non-chemical options: Cultivation can control seedlings. Slashing before flowering will limit seed production. Maintain competitive pastures can reduce weed growth. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	1 L per ha	Boom spray application
	2,4-D amine 625 g/L Various products	80–110 mL per 150 L water	Spot spray actively growing seedlings.
	2,4-D LV ester 680g/L Estercide® Xtra	1.7 to 3.3 L per hectare	Boom spray application, use higher rates on mature plants
	Fluroxypyr 200 g/L Various products	75 mL per 100 L of water	Spray actively growing seedlings and young and plants up to 40 cm high.
	Fluroxypyr 333 g/L Starane™ Advanced	45 mL per 100 L water	Spray actively growing plants up to 40 cm tall.
	MCPA 500 g/L Various products	1-2 L/ha	Spray for young seedlings only.

Bear-skin fescue – *Festuca gautieri*

Non-chemical options: Plants can be dug out using hand tools. This best done before seeding, but if they are seeding, cut the seed heads off before digging the plants out to limit seed fall.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in Domestic areas (Home gardens), Commercial, Industrial and Public Service areas, Agricultural buildings and other farm situations.

Bellyache bush – *Jatropha gossypifolia*

Non-chemical options: The shallow roots make it easy to hand pull or dig out small plants. Slashing plants that have leaves and flowers, but no fruit can kill the plants.

	Chemical and Concentration	Rate	Comments
	Fluroxypyr 333 g/L Staranetm Advanced	300 mL in 100 L of water	Spot spray seedlings and young plants up to the flowering stage.
	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water (plus an organosilicone penetrant 100 mL/100L)	Spray with a handgun in native pastures, rights of way, commercial and industrial areas.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Bitou bush – *Chrysanthemoides monilifera* subsp. *rotundata*

Non-chemical options: Hand pull or dig out seedlings and small plants. Encourage native regeneration to outcompete weeds. Biological control agents can supress growth, contact your local council weeds officer for more information. Fire can be effective for some sites.

	Chemical and Concentration	Rate	Comments
PER12251	Glyphosate 360 g/L Various products	2 L /ha	Aerial boom spray applications. Refer to the critical use comments in the permit.
PER12251	Metsulfuron-methyl 600 g/kg Various products	20–30 g /ha	Aerial boom spray applications. Refer to the critical use comments in the permit.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL per 100 L of water	Spray to wet all foliage thoroughly. Treat at flowering to fruiting stage.
	Glyphosate 360 g/L Various products	5 or 10 mL per 1 L of water	Spray actively growing plants at peak flowering during winter with a handgun or knapsack. Wet all foliage. Do not apply during droughts. Use the higher rate for plants over 1.5 m.
	Glyphosate 360 g/L Various products	1 part per 29 parts water or 1 part per 19 parts water	Gas gun / Splatter gun application. Use the higher rate on bushes over 1.5 m
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 100 L of water plus always add a wetter 100 mL/100L (Titan Wetter 1000 or BS1000 or equivalent).	Spray to thoroughly wet all foliage, but not run-off.
	Metsulfuron-methyl 600 g/kg Various products	1 g of herbicide per 1 L of water + 2 mL organosilicone penetrant per 1 L of water	Gas gun / Splatter gun application. Apply as close as possible to the flowering stage.
	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water plus non-ionic surfactant 100 mL per 100 L of spray volume	Spray to the point of run-off. Ensure all of the plant is covered.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Only use on large stems. Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Black knapweed (Meadow knapweed) – *Centaurea x moncktonii*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L of water	Spray actively growing plants from September to May. Cover all of the foliage. A follow up treatment may be necessary.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Use leaf wiping application technique. Apply to at least 50% of the leaves of the rosette plant by wiping the applicator along the middle of each leaf. For use in non-crop areas, including native vegetation, conservation areas, gullies, reserves and parks.

Black locust – *Robinia pseudoacacia*

Non-chemical options: Seedlings can be hand pulled or dug out. Brush cutting or slashing root suckers will suppress growth, but not kill the plant.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray plants less than 1.5 metres tall from October to May. See permit for critical use comments.
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 glyphosate to water + 1 g metsulfuron to 1 L water	Stem injection

Black willow – *Salix nigra*

Non-chemical options: Dig out or hand pull small seedlings up to 50 cm tall. Small roots left in the ground do not usually regrow. Only use excavators or bulldozers to remove larger trees and root systems in dry areas. In wet areas machinery pushes broken branches into the ground which produces many new plants.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	1.0–1.3 L in 100 L of water	Spray to wet all foliage. Use the higher rate for trees 1–2 m high.
	Glyphosate 360 g/L Various products	Undiluted	Stem injection. For trees with a basal diameter of 0 - 25 cm use 1 mL/cut. For trees with a basal diameter of 25 - 60 cm use 2 mL /cut.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 15 L of diesel (or biodiesel such as Biosafe).	Cut stump application method for plants with stems more than 10 cm diameter at the base. Complete control may not occur due to the multi-stem growth of plant and difficulty treating all stems. See label for information about biodiesel.

Blackberry – *Rubus fruticosus* species aggregate

Non-chemical options: Small plants can be dug out by hand, remove all of the roots. Large plants may be dug out with machinery. The rust fungus *Phragmidium violaceum* is a widespread biological control that works best in areas with more than 750 mm of annual rainfall. Improved pastures with a vigorous perennial species will limit weeds.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10–13 mL per 1 L of water	Spot spray when flowering to leaf fall. Use higher rate on old, dense infestations.
	Hexazinone 250 g/L Velpar® L	Undiluted (4 mL per spot)	Spray bushes up to 1 m in height. Hexazinone will move downslope with water, read "Protections" on the label.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 100 L of water + Uptake Spraying Oil (500 mL/100 L) or Pulse Penetrant (200 mL/100 L)	Spray to thoroughly wet all foliage and canes. Ensure peripheral runners are sprayed. Follow-up applications over at least two seasons are essential for complete control. Due to widespread picking of blackberries by the public, it is not recommended to apply to bushes bearing mature fruit.
	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water + Mineral Crop Oil (1 L per 100 L of water)	Apply when bushes are actively growing. Thoroughly wet all foliage and canes and ensure peripheral runners are sprayed.
	Metsulfuron-methyl 600 g/kg Various products	1 g per 1 L of water + organosilicone penetrant (10 mL per 5 L of water)	Gas gun / Splatter gun application. Thoroughly wet all foliage and canes. Commence application at flowering as this indicates good growing conditions.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 or 500 mL per 100 L water	Treat in late spring to autumn. Use an adjuvant. Do not burn off, cut or clear blackberry for at least 6 months after spraying.
	Picloram 20 g/kg Tordon® Granules	35–45 g /m^2	Apply granules over an area extending from main stem to 30 cm outside the drip line. Note: very mobile with water, read "protection of crops, natives and other non-target plants" on label.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 200 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water plus an adjuvant 500mL/100L water	Spray late spring to autumn treatment. Always use an adjuvant. See label for compatible types.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 or 500 mL per 100 L of water	Late spring to autumn when bushes are actively growing. Use the higher rate on plants which have been damaged by livestock or insects.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	335 mL per 10 L of water	Gas gun / Splatter gun application. Apply to actively growing bushes.
	Triclopyr 600 g/L Garlon® 600	170 mL per 100 L of water	Late spring to early autumn. Actively growing bushes. Do not use under dry conditions.
	Triclopyr 600 g/L Garlon® 600	280 mL per 10 L of water	Gas gun / Splatter gun application. Good control will be achieved, similar to high volume application, where bush size enables good coverage of entire bush. The use of marking agent is recommended.

Blind cactus – *Opuntia rufida*

Non-chemical options: Small or isolated plants can be dug out using a mattock or other tools. Wear appropriate protective clothing and gloves to protect against injuries from the spines and bristles. Larger infestations may be controlled by machinery. Ensure the roots are dug out and that all plant parts are disposed of appropriately.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant with herbicide mix to the point of runoff. Follow the label instructions as per prickly pear (common). Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Spray actively growing plants, wetting all areas of the plant to ground level.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant. Follow the label instructions as per prickly pear (common). To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel.	Spray actively growing plants, thoroughly cover all of the plant. Follow the label instructions as per common prickly pear (*Opuntia* spp.).
	Triclopyr 600 g/L Garlon® 600	3.0 L per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant to the point of runoff. Follow the label instructions as per common prickly pear (*Opuntia* spp.) To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.

Blue heliotrope – *Heliotropium amplexicaule*

Non-chemical options: Isolated plants can be dug out. Improved pastures with vigorous perennial species can outcompete weeds. The blue heliotrope leaf-beetle *(Deuterocampta quadrijuga)* is a biological control suitable for some regions. Contact your local weeds officer for more information.

	Chemical and Concentration	Rate	Comments
PER89493	Amitrole 250 g/L +Ammonium thiocyanate 220 g/L Various products	1.1 L per 100 L of water	Spray actively growing plants in riparian areas immediately prior to flowering. Do not broadcast spray over water. See permit for further restrictions and critical comments.
PER94283	Metsulfuron-methyl 600 g/kg Various products	10 grams per 100 L of water plus non-ionic surfactant at a rate of 100 mL per 100 L	Spray when plants are actively growing from late spring to autumn at commencement of flowering and before seed set. See permit for further restraints and critical comments.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	1.0 L per 100 L of water	Grass pastures only. Spot spray. Apply to young actively growing plants.
	Dicamba 750 g/L Kamba® 750	87 mL per 15 L of water. Add a surfactant.	Spot spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	400 mL per 100 L of water. Add a surfactant.	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	5.9 L/ha. Use a minimum of 1500 L/ha water carrier. Add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	Fluroxypyr 200 g/L Various products	1.0 L per 100 L of water	Spot spray during flowering.
	Fluroxypyr 333 g/L Starane™ Advanced	600 mL per 100 L of water	Spot spray during flowering.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L water	Spray flowering plants with a handgun to the point of run-off. Apply a minimum spray volume of 1250 L/ha.
	Tebuthiuron 200 g/kg Various products	0.5 g /square metre	Pellet herbicide. Estimate the area within 30 cm beyond the drip zone of each target weed or group of weeds and calculate the amount of needed. Distribute the pellets uniformly within this area. Do not use within 30 m of trees. Do not apply to areas greater than 0.5 ha in size.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray flowering plants with a handgun to the point of run-off. Apply a minimum spray volume of 1250 L/ha.

Blue hound's tongue – *Cynoglossum creticum*

Non-chemical options: Small plants may be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g per 100 L of water plus a non-ionic surfactant.	Spot spray
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in Domestic areas (Home gardens), Commercial, Industrial and Public Service areas, Agricultural buildings and other farm situations.

Blue passionflower – *Passiflora caerulea*

Non-chemical options: Small plants can be hand pulled or dug out. Continuously cutting the plants at ground level will eventually kill them. Collect fruit to prevent new seedlings.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. See permit for further critical comments.
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark: Spray or paint herbicide mix around the base of each stem from ground level up to at least 30 cm, wetting the bark to the point of runoff. Apply to dry bark. Old rough bark will require more spray than smooth or young thin bark.
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray actively growing plants.
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray actively growing plants.
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark: Spray or paint herbicide mix around the base of each stem from ground level up to at least 30 cm, wetting the bark to the point of runoff. Only apply to dry bark. Old rough bark will require more spray than smooth or young thin bark.
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray actively growing plants.
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut, scrape and paint
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray actively growing plants.

Blue periwinkle – *Vinca major*

Non-chemical options: Small plants can be dug out. Ensure that all of the root and stem fragments are disposed of to prevent them sprouting.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut, scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Spot spray

Boneseed – *Chrysanthemoides monilifera* subsp. *monilifera*

Non-chemical options: Hand pull or dig out seedlings and small plants. Encourage native regeneration to outcompete weeds. Biological control agents can supress growth, contact your local council weeds officer for more information. Fire can be effective for some sites.

	Chemical and Concentration	Rate	Comments
PER12251	Glyphosate 360 g/L Various products	2 L /ha	Aerial boom spray applications. Refer to the critical use comments in the permit.
PER12251	Metsulfuron-methyl 600 g/kg Various products	20–30 g /ha	Aerial boom spray applications. Refer to the critical use comments in the permit.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL per 100 L of water	Spray to wet all foliage thoroughly. Treat at flowering to fruiting stage.
	Glyphosate 360 g/L Various products	5 or 10 mL per 1 L of water	Spray actively growing plants at peak flowering during winter with a handgun or knapsack. Wet all foliage. Do not apply during droughts. Use the higher rate for plants over 1.5 m.
	Glyphosate 360 g/L Various products	1 part per 29 parts water or 1 part per 19 parts water	Gas gun / Splatter gun application. Use the higher rate on bushes over 1.5 m
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 100 L of water plus always add a wetter 100 mL/100L (Titan Wetter 1000 or BS1000 or equivalent).	Spray to thoroughly wet all foliage, but not run-off.
	Metsulfuron-methyl 600 g/kg Various products	1 g of herbicide per 1 L of water + 2 mL organosilicone penetrant per 1 L of water	Gas gun / Splatter gun application. Apply as close as possible to the flowering stage.
	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water plus non-ionic surfactant 100 mL per 100 L of spray volume	Spray to the point of run-off. Ensure all of the plant is covered.

	Chemical and Concentration	Rate	Comments
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Only use on large stems. Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Boxing glove cactus – *Cylindropuntia fulgida* var. *mamillata*

Non-chemical options: Small plants dug out or be mechanically removed carefully. The cochineal insect (*Dactylopius tomentosus 'cholla'* linage) eats the cactus, which then eventually collapses and dies. Contact your local council weeds officer for information about this biological control agent.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water.	Follow the label instructions as per Prickly pear (common), smooth tree pear. Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Follow the label instructions as per prickly pear common. To improve uptake of add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	1 L per 75 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Brazilian nightshade – *Solanum seaforthianum*

Non-chemical options: The seedlings can be pulled out when young. Older plants can be pulled or dug out if the soil is not too hard. Take care to remove all of the roots. Ensure that all fruit are disposed of appropriately.

	Chemical and Concentration	Rate	Comments
PER11916	Glyphosate 360 g/L Various products	1 part product to 100 parts water plus surfactant	Spray in urban bushland, forests and coastal reserves.
PER12942	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Only products registered for aquatic use	2 L + 10 g per 100 L of water + Uptake Spray Oil or an equivalent wetter must be used at a rate of 500 mL/100 L	Spot spray in riparian areas. Ensure spray covers all foliage and stems as incomplete application will result in regrowth. See permit for further critical comments.
PER12942	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350-500 mL per 100 L water + Uptake Spray Oil (or equivalent) must be used at a rate of 500 mL per 00 L.	Spot spray plants in urban bushlands. Do not use within 5 m of waterbodies. Ensure spray covers all foliage and stems as incomplete application will result in regrowth. See permit for further critical comments.
PER12942	Triclopyr 300 g/L + Picloram 100 g/L with Metsulfuron-methyl 600 g/kg Various products	350-500 mL per 100 L water +10 g metsulfuron-methyl per 100 L water + Uptake Spray Oil (or equivalent) must be used at a rate of 500 mL per 100 L	Spot spray plants in urban bushlands and forests. Do not use within 5 m of waterbodies. Ensure spray covers all foliage and stems as incomplete application will result in regrowth. See permit for further critical comments.

Bridal creeper – *Asparagus asparagoides*

Non-chemical options: Small plants can be hand pulled or dug out. All rhizomes and fruit need to be removed to prevent regrowth. The bridal creeper rust fungus and bridal creeper leafhopper are biological control agents that work well together. Redistribution is not needed for most sites, contact your local council weeds officer for biological control information.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL per 100 L of water	Spot spray from mid-June to late August.
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300-600 mL per 100 L of water	Spot spray from mid-June to late August.
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spray August to September only.
PER9907	Glyphosate 360 g/L Various products	Undiluted to 500 mL in 10 L of water	Wipe onto leaves.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	Up to 2 L of glyphosate and 15 g of metsulfuron methyl per 100 L of water	Spot spray from mid-June to late August.
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g metsulfuron-methyl to 100 L water	Spray August to September only. Follow up applications over 2 consecutive seasons are required. To minimise damage to native vegetation use water volumes of 500-800 L/ha.

Bridal veil creeper – *Asparagus declinatus*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray application
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump / scrape stem application
PER9907	Metsulfuron-methyl 600 g/kg Various products	1-2 g in 10 L of water plus a non-ionic surfactant 10 mL per 10 L	Spot spray

Broad-leaf pepper tree – *Schinus terebinthifolia*

Non-chemical options: Small seedlings can be hand pulled or dug out. Large trees can be cut down and the stump removed. Wear personnel protective clothing and equipment to avoid contact with the sap.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spray seedlings and coppice shoots.
PER11916	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump/scrape stem application for saplings. Stem injection application large trees and shrubs.
	Fluroxypyr 333 g/L Starane™ Advanced	2.1 L per 100 L of diesel	Basal bark application for plants up to 5 cm in diameter at the base.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Broomrapes – *Orobanche species*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading. All broomrapes are prohibited matter except for Clover broomrape (*O. minor*), and Australian broomrape (*O. cernua* var. *australiana*).

	Chemical and Concentration	Rate	Comments
	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray

Brown-spined Hudson pear – *Cylindropuntia tunicata*

Non-chemical options: Small plants dug out or be mechanically removed carefully. The cochineal bug (*Dactylopius tormentosus 'acanthacarpa* var. *echinocarpa' linage*) provides effective control. Contact your local council weeds officer for more information about biological control agents.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water.	Follow the label instructions as per Prickly pear (common), smooth tree pear. Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Follow the label instructions as per prickly pear common. To improve uptake of add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	1 L per 75 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Brown-top bent – *Agrostis capillaris*

Non-chemical options: For very small infestations plants can be hand pulled or dug out. Remove the stolons and as much of the root system as possible. Improving soil fertility and planting competitive species can help in pastures. Contact your local agronomist for advice on pastures in your area.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	500 mL per 100 L of water	Spot spray actively growing plants in late spring when they have some seed head development but before summer moisture stress.
	Propyzamide 500 g/L Kerb	1.5 to 2.0 L per ha	Spray using calibrated equipment. Apply pre-or early post weed emergence. For use in lucerne, clovers, medics or other crops grown for forage, seed or hay production. Use higher rates on heavy soils.

Buffalo burr – *Solanum rostratum*

Non-chemical options: Plants can be dug out. Be careful of the burrs.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray. Seedlings only. See permit for situations and critical comments.
PER12942	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spot spray. Only for urban bushland situations. See permit for critical comments.
	2,4-D LV ester 680g/L Estercide® Xtra	800 mL -1.15 L / Ha	Use in grass pastures only. Seedling to pre-flowering. Use higher rate as plants mature.

Bunny ears cactus – *Opuntia microdasys*

Non-chemical options: Small or isolated plants can be dug out using a mattock or other tools. Wear appropriate protective clothing and gloves to protect against injuries from the spines and bristles. Larger infestations may be controlled by machinery. Ensure the roots are dug out and that all plant parts are disposed of appropriately.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant with herbicide mix to the point of runoff. Follow the label instructions as per prickly pear (common). Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Spray actively growing plants, wetting all areas of the plant to ground level.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant. Follow the label instructions as per prickly pear (common). To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel.	Spray actively growing plants, thoroughly cover all of the plant. Follow the label instructions as per common prickly pear (*Opuntia* spp.).
	Triclopyr 600 g/L Garlon® 600	3.0 L per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant to the point of runoff. Follow the label instructions as per common prickly pear (*Opuntia* spp.) To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.

Burr ragweed – *Ambrosia confertiflora*

Non-chemical options: Small plants can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray plants less than 1.5 metres tall from October to May. For areas of native vegetation and non-cropland areas. See permit for critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Spray plants less than 1.5 metres tall from October to May. For areas of native vegetation and non-cropland areas. See permit for critical comments.

	Chemical and Concentration	Rate	Comments
	Dicamba 750 g/L Kamba® 750	5.9 L / ha Use a minimum of 1500 L/ ha water carrier. Add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	Dicamba 750 g/L Kamba® 750	400 mL /100 L of water	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	87 mL / 15 L of water. Add a surfactant.	Spot spray prior to flowering. For non-crop situations.
	Glyphosate 360 g/L Various products	10 mL /1 L water	Spot spray. For general weed control in Domestic areas (Home gardens), Commercial, Industrial and Public Service areas, Agricultural buildings and other farm situations.

Cabomba – *Cabomba caroliniana*

Non-chemical options: Draining water from small dams or ponds can dry out and kill plants. Ensure cabomba is not spread to other areas via drained water. A black plastic cover can control cabomba after 3–4 months. Very small infestations can be removed from the water by hand. Aquatic weed harvesters can suppress large infestations.

	Chemical and Concentration	Rate	Comments
	Carfentrazone-ethyl 240 g/L Shark™ Aquatic Herbicide	830 mL per 100,000 L of water [2 ppm (2 mg/L) carfentrazone-ethyl]	For non-flowing water bodies. Subsurface injection, boom spray application or high-pressure handheld wand application with fixed low drift nozzles. Apply onto, or below the surface where cabomba is growing. Do not apply to more than 50% of the volume of the water body in a single application. See label for more critical comments.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 37.5 cubic metres of water to achieve 400 parts per billion.	For use on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. Alternatively, if weeds grow in clusters, concentrate the tablet application on the densest areas. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 75 cubic metres of water to achieve 200 parts per billion.	For use on low density, establishing or re-establishing weeds in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. Alternatively, if weeds grow in clusters, concentrate the tablet application on the densest areas. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 37.5 cubic metres. Each tablet dissolved in at least 20L of water + 0.5 -1.0% adjuvant/surfactant	For use on dense or established weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20L per tablet) mix thoroughly and then inject the solution directly into the water body.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 75 cubic metres. Each tablet dissolved in at least 20L of water + 0.5 -1.0% adjuvant/ surfactant	For use on low density, establishing or re-establishing weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20L per tablet) and additives in a spray tank, mix thoroughly and then inject the solution directly into the water body. See label for restrictions.

Californian burr – *Xanthium orientale*

Non-chemical options: Isolated plants can be dug out with hand tools. Repeated cultivation can control seedlings. Maintaining ground cover in pastures limits growth. Contact your local agronomist for advice on pastures in your area.

	Chemical and Concentration	Rate	Comments
	2,4-D amine 625 g/L Various products	0.8 – 1.1 L/ha	Boom spray for seedlings only.
	2,4-D LV ester 680g/L Estercide® Xtra	800 mL/ha	Boom spray application, from seedlings to pre-flowering.

Camel thorn – *Alhagi maurorum*

Non-chemical options: Seedlings can be hand pulled or dug out. Remove as much of the root as possible. This method is only practical for small, isolated plants and works best when soils are moist.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray (smaller plants)
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Camphor laurel – *Cinnamomum camphora*

Non-chemical options: Seedlings can be hand pulled or dug out. Larger trees can be cut down and the stump removed with machinery. Repeated ringbarking may eventually kill small trees.

	Chemical and Concentration	Rate	Comments
PER89544	Glyphosate 360 g/L Weedmaster Duo	Undiluted	Stem injection. Apply 4 mL product per cut/drill hole. Mid North Coast, Northern Rivers and Far North Coast of NSW only.
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water.	Spray seedlings and coppice shoots.
	Glyphosate 360 g/L Various products	1 part glyphosate to 1 part water, 2 mL per cut	Stem injection for basal diameter up to 25 cm.
	Glyphosate 360 g/L Various products	Undiluted, 2 mL per cut.	Stem injection for basal diameter 25 cm to 60 cm.
	Glyphosate 700 g/kg Di-Bak G	1 capsule for every 10 cm of circumference (minimum of 2 capsules per tree)	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule in the tree trunk.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 or 500 mL per 100 L water	Spray actively growing plants, thoroughly cover all of the foliage. Use higher rate on trees over 2 m tall.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 200 g/L + Picloram 100 g/L Various products	1 part per 4 parts water	Stem injection application.

	Chemical and Concentration	Rate	Comments
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1 L per 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 10 cm diameter at the base. Cut stump application for plants with stems greater than 10 cm diameter at the base. Do not treat dormant plants in winter.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 10 L of water	Gas gun / Splatter gun application. Apply to actively growing bushes.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 or 500 mL per 100 L of water	Spray all of the foliage. Use higher rate on trees over 2 metres tall.
	Triclopyr 600 g/L Garlon® 600	170 mL per 100 L of water	Spray seedlings up to 3 m tall.

Cane cactus – *Austrocylindropuntia cylindrica*

Non-chemical options: Small plants dug out or be mechanically removed carefully.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water.	Follow the label instructions as per Prickly pear (common), smooth tree pear. Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Follow the label instructions as per prickly pear common. To improve uptake of add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	1 L per 75 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Cane needle grass – *Nassella hyalina*

Non-chemical options: Individual plants in small infestations can be dug out. Dispose of any seed heads carefully to prevent spread.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	500 mL per 10 L water	Wiper suppression. See permit for critical use comments.
PER9792	Flupropanate 745 g/L with Glyphosate 360 g/L Various products	200 mL flupropanate plus 150 mL glyphosate 360g/L per 100 L of water	Spot spray application. Apply to actively growing plants from spring to autumn, once per year.
PER9792	Glyphosate 360 g/L Various products	3 L per ha	Broadacre control - boom spray. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	1 L per 100 L of water	Spot spray. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	3.3 L per 10 L water	Wiper suppression. See permit for critical use comments.
	Flupropanate 745 g/L Various products	1.5 to 3 L /ha	Broadacre control. See label for critical comments.

	Chemical and Concentration	Rate	Comments
	Flupropanate 745 g/L Various products	100 to 300 mL per 100 L of water	Spot spray control. Apply to actively growing and stress free plants. Apply once per year. See label for further critical use comments.
	Flupropanate 86.9 g/kg GP Flupropanate	22.5 kg/ ha	Granular application. Apply February to December inclusive, to actively growing and stress-free plants. Graze to reduce cover of desirable species before application.
	Flupropanate 86.9 g/kg GP Flupropanate	2.25 g/ square metre	Granular spot application: apply year-round. Apply to actively growing plants.

Canna lily – *Canna indica*

Non-chemical options: Young plants may be dug out with hand tools. Ensure that all of the rhizome is removed. It is difficult to remove large infestations as plants can regrow from small rhizome fragments left in the soil.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spay.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Prune all of the shoots horizontally at the rhizome. Apply a 3–5 mm layer of gel across the cut surface on the rhizome.

Cape broom – *Genista monspessulana*

Non-chemical options: Plants can be dug out by hand or by machinery, for large infestations. The cape broom psyllid is an effective biological control agent for this weed, contact your local council weeds officer for more information.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250 or 350 mL per 100 L water	Use higher rate on trees over 2m tall. Apply as a thorough foliar spray.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	250 or 350 mL per 100 L of water	Spring to mid-summer prior to pod formation. Apply as a thorough foliage spray.
	Triclopyr 600 g/L Garlon® 600	170 mL per 100 L of water	Spray spring to mid-summer prior to pod formation.

Cape ivy – *Delairea odorata*

Non-chemical options: Small plants may be hand pulled. Larger plants can be dug out. Runners can be rolled up and removed by hand. Any stems in contact with the soil may regrow.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray evenly to cover all foliage.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump/scrape stem.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Rhizome application: prune the shoots to get access to the rhizome apply a 3-5 mm layer of gel across the cut surface on the rhizome. See label for further critical comments.

Cape tulip - one leaf – *Moraea flaccida*

Non-chemical options: Individual plants can be dug out. Remove all of the corms. Cultivating to a depth of at least 15 cm kills most plants. Repeat the cultivation treatment for 4 years to kill the dormant corms in the soil.

	Chemical and Concentration	Rate	Comments
	2,4-D LV ester 680g/L Estercide® Xtra	1.7–3.3 L/ha	Boom spray. Spray before flowering.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	10 g/ha and always add a wetter 200 mL per 100 L of water	For pastures only. Spray at bulb exhaustion, usually during July/early August. Repeat treatments may be required. See label for suitable wetting agents.
	Metsulfuron-methyl 600 g/kg Various products	5 g/ha	Spray at bulb exhaustion, usually during July/early August. Repeat treatments may be required.

Cape tulip - two-leaf – *Moraea miniata*

Non-chemical options: Individual plants can be dug out. Remove all of the corms. Cultivating to a depth of at least 15 cm kills most plants. Repeat the cultivation treatment for 4 years to kill the dormant corms in the soil.

	Chemical and Concentration	Rate	Comments
	2,4-D LV ester 680g/L Estercide® Xtra	1.7–3.3 L/ha	Boom spray. Spray before flowering.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	10 g/ha and always add a wetter 200 mL per 100 L of water	For pastures only. Spray at bulb exhaustion, usually during July/early August. Repeat treatments may be required. See label for suitable wetting agents.
	Metsulfuron-methyl 600 g/kg Various products	5 g/ha	Spray at bulb exhaustion, usually during July/early August. Repeat treatments may be required.

Carrion flower – *Orbea variegata*

Non-chemical options: Plants can be easily removed by hand pulling. Remove the whole plant and dispose of any plant material appropriately to prevent regrowth or spread.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Spot spray
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Apply as an overall spray wetting all areas of the plant. Regrowth may occur, so a follow-up application may be necessary. Follow the label instructions as per Prickly pear (common) Smooth tree pear.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Apply as an overall spray wetting all areas of the plant. Regrowth may occur, so a follow-up application may be necessary. Follow the label instructions as per Prickly pear (common) Smooth tree pear.

Cassia – *Senna pendula* var. *glabrata*

Non-chemical options: Young seedlings can be hand pulled, and larger plants dug out. Collect any seedpods and dispose of them appropriately.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	1 part per 1.5 parts of water	Stem injection/cut stump application.
PER9907	Glyphosate 360 g/L Various products	200 mL glyphosate per 10 L water	Spot spray application.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	200 mL glyphosate plus 1.5 g metsulfuron-methyl per 10 L water	Spot spray application.
PER9907	Metsulfuron-methyl 600 g/kg Various products	1.0–2.0 g metsulfuron-methyl per 10 L water	Spot spray application.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Castor oil plant – *Ricinus communis*

Non-chemical options: Small plants can be hand pulled our dug out. Wear appropriate protective clothing while handling this poisonous plant. Large infestations can be slashed or mown, followed by cultivation. Keep cultivation shallow to stop seeds from being buried deeply.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spray seedlings and coppice shoots.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump/scrape stem application for saplings. Stem injection application large trees and shrubs.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 600 g/L Garlon® 600	1.0 L per 60 L of diesel	Basal bark application for plants up to 5 cm basal diameter. Cut stump application for plants with larger basal diameter.

Cat's claw creeper – *Dolichandra unguis-cati*

Non-chemical options: Small plants may be dug out, ensure all of the tubers are removed. There are two biological control agents for this weed. Contact your local council for more information about distributing the agents.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spray to kill regrowth
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump/scrape stem/inject
PER13914	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	400 mL per 100 L of water.	Handgun application for vines on the ground in riparian zones. Do not use within 5 metres of a waterway. See permit for further critical comments.
PER13914	Triclopyr 300 g/L + Picloram 100 g/L Various products	400 mL product per 100 L water.	Handgun application for vines on the ground in riparian zones. Do not use within 5 metres of a waterway. See permit for further critical comments.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Cayenne snakeweed – *Stachytarpheta cayennensis*

Non-chemical options: Small plants can be hand pulled, and larger plants can be dug out. Remove as much of the roots as possible. Slashing before flowering will limit seed set. Healthy well managed pastures can help reduce weed growth. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in Domestic areas (Home gardens), Commercial, Industrial and Public Service areas, Agricultural buildings and other farm situations.

Cecropia – *Cecropia* species

Non-chemical options: Seedlings can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump application.
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spray seedlings and coppice shoots.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Cha-om – *Senegalia pennata* subsp. *insuavis*

Non-chemical options: Small plants can be dug out.

	Chemical and Concentration	Rate	Comments
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Cherry guava – *Psidium cattleyanum*

Non-chemical options: Small plants can be dug out. Remove as much of the root as possible.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35 mL per 1 L of diesel	Basal bark application. Spray or paint the mixture all the way around the base of each stem from ground level to 30 cm from the ground. Wet the bark to the point of runoff.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump/ stem injection
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Chicken dance cactus – *Opuntia schickendantzii*

Non-chemical options: The cochineal insect, *(Dactylopius ceylonicus)* can control this cactus. Contact your local council weeds officer for information. Small infestations can be dug out.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Follow the label instructions as per Prickly pear (common). Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Apply as an overall spray, wetting all areas of the plant to ground level.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Spray actively growing plants. Follow the label instructions as per prickly pear common. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Chilean needle grass – *Nassella neesiana*

Non-chemical options: Individual plants in small infestations can be dug out. Dispose of any seed heads carefully to prevent spread. Grazing management combined with a pasture improvement program will limit infestations. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	500 mL / 10 L water	Wiper suppression. Ensure weeds are at least 15 cm above species to be retained. Apply when weeds are actively growing. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	1 L per 100 L water	Spot spray. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	3 L/ha	Boom spray. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	3.3 L /10 L water	Wiper suppression. Ensure weeds are at least 15 cm above species to be retained. Apply when weeds are actively growing. See permit for critical use comments.
	Flupropanate 745 g/L Various products	1.5–3.0 L/ha	Boom application. Apply to actively growing plants from spring to autumn, once per year.
	Flupropanate 745 g/L with Glyphosate 360 g/L Various products	200 mL flupropanate plus 150 mL glyphosate 360g/L per 100 L of water	Spot spray application. Apply to actively growing plants from spring to autumn, once per year.
	Flupropanate 86.9 g/kg GP Flupropanate	22.5 kg/ ha	Granular herbicide: Apply February to December inclusively to actively growing plants. Graze to reduce cover of desirable species before application.
	Flupropanate 86.9 g/kg GP Flupropanate	2.25 g per square metre	Spot application granular herbicide: apply year-round. Apply to actively growing plants. Graze to reduce cover of desirable species before application.

Chinese celtis – *Celtis sinensis*

Non-chemical options: Seedlings up to 30 cm tall can be hand pulled. Small, isolated plants may be dug out. Larger trees can be cut down and the stump dug out to prevent regrowth.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spray seedlings and coppice shoots.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump/scrape stem application for saplings. Stem injection application large trees and shrubs.
	Fluroxypyr 333 g/L Staranetm Advanced	2.1 L per 100 L of diesel	Basal bark application, for plants up to 2m high
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Chinese knotweed – *Persicaria chinensis*

Non-chemical options: Seedlings and small plants can be dug out. Dispose of fruit carefully.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 -20 g per 100 L water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Spot spray.
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves
	Dicamba 750 g/L Kamba® 750	12-24 mL per 15 L of water	Knapsack spray. Apply early summer. Follow label instructions as per creeping knotweed.
	Dicamba 750 g/L Kamba® 750	800 mL -1.6 L/ ha plus non-ionic surfactant.	Boom spray early summer. Follow label instructions as per creeping knotweed.

Chinese rain tree – *Koelreuteria elegans* subsp. *formosana*

Non-chemical options: Seedlings can be hand pulled or dug out, but there may be hundreds of seedlings near the parent tree.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 glyphosate to water + 1 g metsulfuron to 1 L water	Stem injection

Chinese tallow tree – *Triadica sebifera*

Non-chemical options: Seedlings can be hand pulled, and small trees can be dug out. Remove as much of the root as possible.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	Tank mix of 1:1.5 of glyphosate plus 1 g of metsulfuron-methyl in 1 L of water	Stem injection method.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Chinese violet – *Asystasia gangetica*

Non-chemical options: If you see new infestations, call your local council weeds officer or the NSW DPI Biosecurity Helpline 1800 680 244. Plants may be pulled out by hand. Contact your local council for disposal advice.

	Chemical and Concentration	Rate	Comments
PER13678	MCPA 150 g/L + Dicamba 25 g/L Richgro Bindii & Clover Weedkiller	30 mL in 10 L water per 20 square metres	For use in home gardens. Spot spray application. Apply to actively growing weeds before viable seed is present on the plant. Do not allow children and pets to enter the treated areas until spray has dried. Do not mow 7 days before or after spraying. See permit for other critical use comments.
PER13678	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	100 mL per 15 L of water per 150 square metres (1 L per 10 square metres)	For use on roadsides and turfed recreation areas. Spot spray application. Apply to actively growing weeds before seed set on the plants. See permit for other critical use comments.

Cineraria – *Cineraria lyratiformis*

Non-chemical options: Individual plants or small infestations can be easily hand pulled or dug out. Remove all of the plant to prevent regrowth. Heavy grazing by sheep can slow down or control cineraria infestations especially if grazed before flowering. Slashing before flowering will suppress but not kill the weeds.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farms situations.

Climbing asparagus – *Asparagus africanus*

Non-chemical options: Small seedlings can be hand pulled. For larger plants: remove stems and foliage to access the crown. Use a sharp tool to cut all roots around the crown. Lever the crown out of the ground and dispose of it. Slashing plants before flowering will weaken but not kill plants.

	Chemical and Concentration	Rate	Comments
PER11916	Glyphosate 360 g/L Various products	200 mL per 10 L of water plus 10 mL non-ionic surfactant	Spot spray application, best done between flowering and berries forming. See permit for critical comments.
PER9907	Fluroxypyr 200 g/L Various products	500 mL per 100 L of Water	Spot spray mid-June to late August.
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300-600 mL per 100 L of water	Spot spray mid-June to late August.
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600mL per 100 L of water	Spot spray application
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	Up to 2 L of glyphosate and 15 g of metsulfuron methyl per 100 L of water	Spot spray mid-June to late August.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump/scrape stem.
PER9907	Metsulfuron-methyl 600 g/kg Various products	1-2 g in 10 L of water plus non-ionic surfactant 100 mL per 100 L of spray volume	Spot spray application
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Rhizome application: prune the shoots to get access to the rhizome apply a 3-5 mm layer of gel across the cut surface on the rhizome. See label for further critical comments.

Climbing asparagus fern – *Asparagus plumosus*

Non-chemical options: Small seedlings can be hand pulled. For larger plants: remove stems and foliage to access the crown. Use a sharp tool to cut all roots around the crown. Lever the crown out of the ground and dispose of it. Slashing plants before flowering will weaken but not kill plants.

	Chemical and Concentration	Rate	Comments
PER11916	Glyphosate 360 g/L Various products	200 mL per 10 L of water plus 10 mL non-ionic surfactant	Spot spray application, best done between flowering and berries forming. See permit for critical comments.
PER9907	Fluroxypyr 200 g/L Various products	500 mL per 100 L of Water	Spot spray mid-June to late August.
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300-600 mL per 100 L of water	Spot spray mid-June to late August.
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600mL per 100 L of water	Spot spray application
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	Up to 2 L of glyphosate and 15 g of metsulfuron methyl per 100 L of water	Spot spray mid-June to late August.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump/scrape stem.
PER9907	Metsulfuron-methyl 600 g/kg Various products	1-2 g in 10 L of water plus non-ionic surfactant 100 mL per 100 L of spray volume	Spot spray application
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Rhizome application: prune the shoots to get access to the rhizome apply a 3-5 mm layer of gel across the cut surface on the rhizome. See label for further critical comments.

Clockweed – *Oenothera curtiflora*

Non-chemical options: Seedlings and small plants can be hand pulled or dug out. This is easier in damp soil. Remove the whole plant and dispose of any plant parts appropriately to prevent regrowth or spread.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g per 100 L water plus non-ionic surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus non-ionic surfactant	Wipe onto leaves
	2,4-D amine 700 g/L Amicide Advance 700	285 mL in 100 L water	Spray at the rosette stage. For pastures, rights of way and industrial areas

Cockspur coral tree – *Erythrina crista-galli*

Non-chemical options: Small seedlings can be dug out. Larger trees may be chopped down and the roots dug out with machinery. Take care when removing this plant as all parts can potentially regrow.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray plants less than 1.5 metres tall from October to May. Spray reshooting cut limbs. See permit for critical use comments.
PER88282	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL / 100 L water plus surfactant.	This permit is only for Mid North Coast, Northern Rivers and Far North Coast of NSW. Apply from October to May by foliar application using knapsack or handgun. Read permit and label for more conditions.
PER88282	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL / 100 L water plus surfactant.	This permit is only for Mid North Coast, Northern Rivers and Far North Coast of NSW. Apply from October to May by foliar application using knapsack or handgun. Read permit and label for more conditions.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut stump/drill/axe cut/inject
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Cocos palm – *Syagrus romanzoffiana*

Non-chemical options: Cut the trunk anywhere below the lowest leaf. Trunks do not need to be treated with herbicides as they will not re-grow. After cutting the trunk remove fruit from the area to reduce the number of new seedlings. Very small seedlings can be hand pulled.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray plants less than 1.5 m tall. See permit for critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray plants less than 1.5 m tall. See permit for critical comments.
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray (for smaller plants). For general weed control in Domestic areas (Home gardens), Commercial, Industrial and Public Service areas, Agricultural buildings and other farm situations.

Columbus grass – *Sorghum x almum*

Non-chemical options: Individual plants can be dug out. Maintaining a competitive pasture will help to prevent reinfestation. Contact your local agronomist for pasture advice in your region

	Chemical and Concentration	Rate	Comments
	Flupropanate 745 g/L Various products	1.0 L per 100 L of water	Spray when plants are actively growing, preferably from November to April.
	Flupropanate 745 g/L Various products	200 mL per 15 L of water	Knapsack spray when plants are actively growing, preferably from November to April.
	Glyphosate 450 g/L Various products	10 mL per 1 L of water	Apply at early flowering to actively growing plants.

Common pear – *Opuntia stricta*

Non-chemical options: Biological control using the Cactoblastis moth *(Cactoblastis cactorum)* and the cochineal bug (*Dactylopius opuntiae* '*stricta*' linage) together provides effective control. Contact your local weeds officer for information about using biological control. Small plants can be dug out. Machinery can be used for large infestations, ensure the roots are dug out.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL in 100 L of water	Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 240 g/L + Picloram 120 g/L Accesstm	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Apply as an overall spray, wetting all areas of the plant to ground level. See label for information about using biodiesel.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL in 100 L of water	Spot spray application. Spray actively growing plants. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL in 60 L of diesel	Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3.0 L in 100 L of water	Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Common tansy – *Tanacetum vulgare*

Non-chemical options: Plants can be dug out. Wear gloves and other protective clothing to avoid skin contact with the plant.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.

Common thornapple – *Datura stramonium*

Non-chemical options: Plants can be hand pulled or dug out. Cultivating large infestations of seedlings works well. Slashing plants before they flower can suppress seed production but not kill the plants.

	Chemical and Concentration	Rate	Comments
	2,4-D amine 625 g/L Various products	1.6 to 2.4 L per ha	Spray seedlings in pasture only.
	2,4-D amine 700 g/L Amicide Advance 700	285 mL in 100 L of water	Spray young, actively growing weeds, ensuring thorough coverage. For pastures, non-agricultural, rights of way, and Industrial areas
	Bromacil 800 g/kg Various products	Spray 3.5 or 6.5 kg per ha	Spray in industrial weed control, commercial & industrial areas; rights of way, fence lines; around agricultural buildings. The lowest rate will provide control in low rainfall areas (250 mm or less). Total control with soil residual. Best applied to bare soil.
	Glyphosate 450 g/L Various products	1.6 to 2.4 L per ha	Boom spray. Use higher rate on weeds over 15 cm or where dense weed cover limits spray coverage.
	Glyphosate 450 g/L Various products	400 to 560 mL per 100 L of water	Handgun spraying: Use higher rate on weeds over 15 cm or where dense weed cover limits spray coverage or when applying less than 5 L spray per 100 sqm.
	Glyphosate 450 g/L Various products	60 to 80 mL per 15 L of water	Knapsack spraying: Use higher rate on weeds over 15 cm or where dense weed cover limits spray coverage or when applying less than 5 L spray per 100 sqm.
	Imazapyr 250 g/L Various products	4 L per ha. Should be applied using spray volumes ranging between 50 and 200L/ha.	For handgun or knapsack, apply sufficient spray to wet the surfaces visibly without producing run-off. Applications can be made pre-or post-emergent. Post emergent application will also give residual control. For agricultural buildings and other farm non-crop situations, commercial, industrial, and public service areas, rights of way and waste lands.

Coolatai grass – *Hyparrhenia hirta*

Non-chemical options: Individual plants can be pulled by hand or dug out.

	Chemical and Concentration	Rate	Comments
PER9792	Glyphosate 360 g/L Various products	2L in 100 L of water	Spot spray to the point of run-off from leaf surfaces using high volume spot spray applicators. See permit for critical use comments.
PER9792	Glyphosate 360 g/L with Flupropanate 745 g/L Various products	2 L glyphosate plus 200 mL flupropanate per 100 L of water	Spot spray actively growing plants before flowering. This herbicide mixture is most effective between July and October. See permit for critical use comments.
	Flupropanate 745 g/L Various products	300 mL per 100 L water	High volume spot spray applicators. Apply to the point of run-off from leaf surfaces in winter and spring between July and October.

Coral creeper – *Barleria repens*

Non-chemical options: Small plants can be hand pulled or dug out. Remove all of the roots if possible.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus non-ionic surfactant	Spot spray

Corky passionfruit – *Passiflora suberosa*

Non-chemical options: Small plants can be hand pulled or dug out. Continuously cutting the plants at ground level will eventually kill them. Collect fruit to prevent new seedlings.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. See permit for further critical comments.
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark: Spray or paint herbicide mix around the base of each stem from ground level up to at least 30 cm, wetting the bark to the point of runoff. Apply to dry bark. Old rough bark will require more spray than smooth or young thin bark.
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray actively growing plants.
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray actively growing plants.
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark: Spray or paint herbicide mix around the base of each stem from ground level up to at least 30 cm, wetting the bark to the point of runoff. Only apply to dry bark. Old rough bark will require more spray than smooth or young thin bark.
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray actively growing plants.
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut, scrape and paint
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray actively growing plants.

Corn sowthistle – *Sonchus arvensis*

Non-chemical options: Small infestations and individual plants can be hand pulled or dug out using hand tools.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	300 mL per hectare	Commercial and industrial areas, rights of way, pastures and non-crop areas
	Glyphosate 540 g/L Various products	1.35 to 2 L per ha	Boom spray. Use higher rate on weeds over 15 cm or where dense weed cover limits spray coverage.
	Glyphosate 540 g/L Various products	330 - 480 mL per 100 L of Water	Handgun. Use higher rate on weeds over 15 cm
	Glyphosate 540 g/L Various products	50 - 70 mL per 15 L of water	Knapsack spray: use higher rate on weeds over 15 cm and when applying less than 5 L spray per 100 sqm.

Cotoneaster – *Cotoneaster glaucophyllus*

Non-chemical options: Seedlings and small plants can be hand pulled. Ensure all roots are removed.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray plants less than 1.5 metres tall from October to May. See permit for critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray plants less than 1.5 metres tall from October to May. See permit for critical comments.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate per 1.5 parts of water	Cut stump or drill/axe cut/inject.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Creeping knapweed – *Rhaponticum repens*

Non-chemical options: Small plants can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	1.3–2.0 L/100 L of water	Spot spray late spring to summer in non-crop areas.
	Amitrole 250 g/L + Ammonium thiocyanate 220 g/L Various products	1.1 L per 100 L of water	Spray when weeds are actively growing, immediately prior to flowering. Respraying will be necessary to destroy regrowth and seedlings.
	Dicamba 750 g/L Kamba® 750	87mL per 15 L of water. Add Nufarm activator.	Spot spray at flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	400 mL per 100 L of water. Add Nufarm activator.	Spray at flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	5.9 L/ha Add Nufarm activator.	Boom spray for non-crop situations. Spray at flowering.

Creeping lantana – *Lantana montevidensis*

Non-chemical options: Small infestations and individual plants can be hand pulled or dug out using hand tools. Remove plants from the site to prevent regrowth. Cultivation and repeated slashing of large infestations can reduce shooting.

	Chemical and Concentration	Rate	Comments
	Dichlorprop 600 g/L Lantana 600®	1 L per 200 L of water	Spray: completely wet all leaves and stems. For best results spray when flowering.
	Fluroxypyr 200 g/L Various products	500 mL per 100 L of water	Spray when flowering.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 mL or 500 mL or 750 mL per 100 L of water	Use the lowest rate for plants less than 1 m tall and add an adjuvant. Use higher rates for plants 1-2 m tall. The highest rate for varieties that are known to be harder to kill.

Creeping pear – *Opuntia humifusa*

Non-chemical options: Small or isolated plants can be dug out by hand, larger infestations may be controlled by machinery. Ensure the roots are dug out and that all plant parts are disposed of appropriately. The cactoblastis moth *(Cactoblastis cactorum)* can effectively control creeping cactus, contact your local council weeds officer for information.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant with herbicide mix to the point of runoff. Follow the label instructions as per prickly pear (common). Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Spray actively growing plants, wetting all areas of the plant to ground level.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant. Follow the label instructions as per prickly pear (common). To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel.	Spray actively growing plants, thoroughly cover all of the plant. Follow the label instructions as per common prickly pear (*Opuntia* spp.).
	Triclopyr 600 g/L Garlon® 600	3.0 L per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant to the point of runoff. Follow the label instructions as per common prickly pear (*Opuntia* spp.) To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.

Crofton weed – *Ageratina adenophora*

Non-chemical options: Pull or dig out small areas of scattered plants. Remove crowns to prevent regrowth. Goats will eat mature plants. Maintaining vigorous pastures can limit seedling growth. Crofton weed rust fungus is a biological control. Contact your local council weeds officer for information about biological control.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL per 100 L of water	For use in grass pasture when weed is actively growing.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	700 mL in 100 L of water	Spot spray application. Apply to actively growing plants from October to April
	Fluroxypyr 200 g/L Various products	500 mL per 100 L of water	Apply to actively growing seedlings and young plants up to flowering.
	Fluroxypyr 333 g/L Starane™ Advanced	300 mL in 100 L of water	Spray actively growing seedlings and young plants up to flowering.
	Glyphosate 360 g/L Various products	500 mL per 100 L of water	Actively growing plants with full foliage.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	190–270 mL per 100 L of water	Spray during active growth. For use in grass pastures. Use the higher rate on larger weeds
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	2.8–4.0 L/ha	Spray during active growth. For use in grass pastures.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	30 g per 100 L of water plus a non-ionic surfactant at a rate of 100 mL per 100 L.	Spray to thoroughly wet all foliage but not to cause run-off. Best results obtained on younger plants. If regrowth occurs, retreat in the subsequent growth period.
	Metsulfuron-methyl 600 g/kg Various products	15 g per 100 L of water plus a non-ionic surfactant at a rate of 100 mL per 100 L.	Spray to wet all foliage but not to runoff. Apply up to early flowering. Ensure good penetration when bushes are in thickets.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL in 100 L of water	Spray all foliage of actively growing plants to point of run-off (spring to autumn).
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 mL per 100 L of water	Spray all foliage on actively growing plants to point of run-off from spring to autumn.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 10 L of water	Gas gun / Splatter gun application. Apply to actively growing bushes less than 1.5 m high.

Cumbungi – *Typha latifolia*

Non-chemical options: After flowering, the stems can be cut back to 15 cm below the surface of the water. If the water level is constant this can kill the plants. Isolated plants can be dug out, removing all of the rhizomes. Infestations can be mechanically removed.

	Chemical and Concentration	Rate	Comments
	Amitrole 250 g/L Various products	2.3 L per 100 L of water	Spot spray application. Apply during flowering between January and May.
	Glyphosate 360 g/L Only products registered for aquatic use	13 mL per 1 L of water	Spot spray application. Apply to actively growing plants at early flowering (summer, autumn)
	Imazapyr 150 g/L + Glyphosate 150 g/L Arsenal Express®	5 L per hectare	Only for irrigation channels which are lockable or lead to reticulation dams or settling ponds. Do not apply to water. See label for further critical comments. Pre or post emergent application.
	Imazapyr 250 g/L Various products	3 L/ha	Boom spray 50-200 L water/ha. Hand gun spray to wet surfaces visibly, without producing run-off. For irrigation channels and drains leading to recirculation dams only. Do not apply to water.

Cutch tree – *Senegalia catechu*

Non-chemical options: Seedlings and small plants can be hand pulled. Remove as much of the root system as possible.

	Chemical and Concentration	Rate	Comments
	Clopyralid 750 g/L Lontrel 750 SG Herbicide	200 g of product diluted into 2.5 L water (Apply 1 or 2 mL per cut @ 10-13 cm centres)	Stem injection: Use 1 mL per cut for single stems less than 25 cm diameter at base. Use 2 mL per cut for multi-stem trees or stems more than 25 cm at the base. Follow label instructions for *Acacia* species and check label for critical comments.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Cyperus – *Cyperus bracheilema*

Non-chemical options: Small plants can be dug out.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.

Devil's claw – purple-flowered – *Proboscidea louisianica*

Non-chemical options: Plants can be dug out, preferably before any pods form. Machinery can be used to dig out large infestations. Dispose of flowering or seeding plants carefully.

	Chemical and Concentration	Rate	Comments
	2,4-D LV ester 680g/L Estercide® Xtra	1.15 to 1.7 L per ha	Boom spray application, before pods form. For non-legume pastures.

Devil's claw – yellow-flowered – *Ibicella lutea*

Non-chemical options: Plants can be dug out, preferably before any pods form. Machinery can be used to dig out large infestations. Dispose of flowering or seeding plants carefully.

	Chemical and Concentration	Rate	Comments
	2,4-D ester 680 g/L Various products	1.15 to 1.7 L per ha	Boom spray application, before pods form. For non-legume pastures.

Devil's fig – *Solanum torvum*

Non-chemical options: Plants can be cut and the roots dug out. Dispose of fruit appropriately. Wear protective clothing to prevent injury from the prickles.

	Chemical and Concentration	Rate	Comments
PER12942	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Only products registered for aquatic use	A mix of 2 L glyphosate 360 herbicide plus 10 g of metsulfuron-methyl herbicide per 100 L of water + Uptake Spray Oil or an equivalent wetter must be used at a rate of 500 mL/100 L.	Spray actively growing plants, ensure all of the foliage is covered. For use in riparian areas. See permit for further critical comments.
PER12942	Triclopyr 300 g/L + Picloram 100 g/L with Metsulfuron-methyl 600 g/kg Various products	A mix of 350 to 500 mL herbicide containing Triclopyr and Picloram plus 10g of herbicide containing metsulfuron-methyl per 100 L of water + Uptake Spray Oil or an equivalent wetter must be used at a rate of 500 mL/100 L.	Spray actively growing plants, ensure all of the foliage is covered. For urban bushlands and forests. Do not use within 5 m of a waterway. See permit for further critical comments.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350-500 mL per 100 L of water	Spray actively growing plants, ensure all of the foliage is covered. Follow label instructions as per wild tobacco tree. Note application rates vary for different plant heights.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Dipogon – *Dipogon lignosus*

Non-chemical options: Seedlings and small plants can be dug out. Cut larger climbing plants and leave to dry out in the canopy. Remove as much of the roots as possible.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Dodder – *Cuscuta* species

Non-chemical options: Fire will control dodder. Maintain a grass pasture free of host plants for a minimum period of 5 years to exhaust seed supply in the soil.

	Chemical and Concentration	Rate	Comments
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	2 g per 100 L of water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Spray with a handgun to the point of run-off before flowering. Follow the label instructions as per Golden dodder.
	Metsulfuron-methyl 600 g/kg Various products	1 g per 100 L of water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Apply as a spot spray to point of run before flowering. Surfactants include BS1000 and equivalents. Follow the label instructions as per Golden dodder.

East Indian hygrophila – *Hygrophila polysperma*

Non-chemical options: Small infestations can be removed from the water by hand. Sites will need to be checked regularly as any small fragments left behind will reshoot.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 9 parts water	Splatter gun

Elodea – *Elodea canadensis*

Non-chemical options: Cutting, hand pulling, cultivating, or using draglines and booms can contain Elodea. Be careful not to disperse plant fragments. If possible, drain channels or small dams and allow the bed to dry out. Shade can reduce the growth. Revegetating riparian areas can increase shade.

	Chemical and Concentration	Rate	Comments
	Diquat 200 g/L with Various products	5 L per Megalitre of water	Apply by injection below the surface or as a surface spray. Follow label as for pond weeds.

Espartillo – broad kernel – *Amelichloa caudata*

Non-chemical options: Small clumps can be dug out. Cultivation before seeding can control an infestation. Maintaining a competitive pasture can outcompete espartillo Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	1.5 to 3 L per ha	Broadacre control. See permit for critical use comments.
PER9792	Flupropanate 745 g/L Various products	100 to 300 mL per 100 L of water	Spot spray. See permit for critical use comments.
PER9792	Flupropanate 745 g/L Various products	500 mL per 10 L water	Wiper suppression. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	3 L per ha	Broadacre control. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	1 L per 100 L of water	Spot spray. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	3.3 L per 10 L water	Wiper suppression. See permit for critical use comments.

Espartillo – narrow kernel – *Amelichloa brachychaeta*

Non-chemical options: Small clumps can be dug out. Cultivation before seeding can control an infestation. Maintaining a competitive pasture can outcompete espartillo Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	1.5 to 3 L per ha	Broadacre control
PER9792	Flupropanate 745 g/L Various products	100 to 300 mL per 100 L of water	Spot spray control
PER9792	Flupropanate 745 g/L Various products	500 mL per 10 L water	Wiper suppression
PER9792	Glyphosate 360 g/L Various products	3 L per ha	Broadacre control
PER9792	Glyphosate 360 g/L Various products	1 L per 100 L of water	Spot spray
PER9792	Glyphosate 360 g/L Various products	3.3 L per 10 L water	Wiper suppression

Eurasian water milfoil – *Myriophyllum spicatum*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
	Dichlobenil 40 g/kg Casoron 4G Herbicide	2.9 to 3.9 kg per 100 m^2	Spread the granules over exposed soil. For best results apply to moist soils as close as is practicable to when the area will be flooded. Use higher rate for heavier infestations. DO NOT apply to water which will be used for crop irrigation, livestock watering, or human consumption.
	Dichlobenil 40 g/kg Casoron 4G Herbicide	287 to 388 kg per ha or 2.87 to 3.88 kg per 100m^2	Water less than 1m deep. Apply to standing (i.e. not moving) water and toward the end of the plant's dormant period, preferably July – August. Use higher rate for heavier infestations DO NOT apply to water which will be used for crop irrigation, livestock watering, or human consumption.
	Dichlobenil 40 g/kg Casoron 4G Herbicide	388 to 574 kg per ha or 3.88 to 5.74 kg per 100m^2	Water more than 1 m deep. Apply to standing (i.e. not moving) water and toward the end of the plant's dormant period, preferably July – August. Use higher rate for heavier weed infestations DO NOT apply to water which will be used for crop irrigation, for livestock watering, or for human consumption.

European hackberry – *Celtis australis*

Non-chemical options: Isolated seedlings can be hand pulled or dug out. Large trees may be cut down and the stump dug up and removed by machinery.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 glyphosate to water + 1 g metsulfuron to 1 L water	Stem injection
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spray seedlings.
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection.

Eve's needle cactus – *Austrocylindropuntia subulata*

Non-chemical options: Small plants dug out or be mechanically removed carefully.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water.	Follow the label instructions as per Prickly pear (common), smooth tree pear. Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Follow the label instructions as per prickly pear common. To improve uptake of add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	1 L per 75 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

False yellowhead – *Dittrichia viscosa*

Non-chemical options: Small infestations can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Feral olive – *Olea europaea* subsp. *europaea*

Non-chemical options: Plants up to 10 cm tall can be hand pulled when the soil is moist. Larger plants can be dug out. Remove as much of the tap root as possible.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray (smaller plants less than 1 m) For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood layer of the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 600 g/L Garlon® 600	4 L per 60 L diesel	Basal bark application up to 5 cm diameter at the base of the trunk. Cut stump application for plants up to or over 5 cm diameter at the base.

Fine-bristled burr grass – *Cenchrus brownii*

Non-chemical options: Plants can be dug out if the infestation is small, remove as much of the root as possible. Maintain dense perennial pasture and minimise exposed soil. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	2 to 3 L per ha	Boom spray when plants are actively growing. Follow the directions on the label as per spiny burrgrass.
	Glyphosate 360 g/L Various products	500 to 700 mL per 100 L of water	Handgun spray actively growing plants. Use the lower rate on weeds up to 15 cm tall and higher on weeds over 15 cm tall. Follow the directions on the label as per spiny burrgrass.
	Glyphosate 360 g/L Various products	75 to 100 mL per 15 L of water	Knapsack spray actively growing plants. Use the lower rate on weeds up to 15 cm tall and higher on weeds over 15 cm tall. Follow the directions on the label as per spiny burrgrass.

Firethorn – *Pyracantha species*

Non-chemical options: Seedlings and small plants can be hand pulled or dug out. Remove as much of the root as possible.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spot spray seedlings.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 glyphosate to water + 1 g metsulfuron to 1 L water	Stem injection

Fireweed – *Senecio madagascariensis*

Non-chemical options: Plants can be hand pulled if the infestation is small. Pasture improvement and grazing management will assist with control. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	Aminocyclopyrachlor 240 g/L Method® 240 SL	200-500 mL per 100 L of water	Spot spray with a handgun, hand-held sprayer or backpack sprayer. Thoroughly and uniformly wet the foliage but avoid spraying to the point of run off.
	Bromoxynil 200 g/L Bromicide®	1.4 L/ha	Boom spray seedlings. Apply during the Autumn-Winter period when weeds are young and actively growing. Not effective on mature plants.
	Bromoxynil 200 g/L Bromicide®	2.8 L/ha	Boom spray plants in the early flowering stage. Apply during the Autumn-Winter period when weeds are young and actively growing. Not effective on mature plants.
	Bromoxynil 250 g/L + Diflufenican 25 g/L Jaguar	500 mL per ha	Booms spray application, up to 4 leaf stage
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL in 100 L of water	Spray flowering plants up to 30 cm tall.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	1.5 L/ha	Spray seedling plants up to flowering
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL in 100 L of water	Spray flowering plants, cover the foliage thoroughly.

Flax-leaf broom – *Genista linifolia*

Non-chemical options: Seedlings and small plants can be hand pulled or dug out, removing as much of the root as possible. Mechanical removal can be used, including deep ploughing to remove the roots. The roots then can be raked and burned.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250 mL per 100 L water	Spray spring to mid-summer prior to pod formation. Agricultural non-crop areas, Commercial and industrial areas, forests, pastures and rights of way.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL per 100 L water	Spray autumn to winter. Agricultural non-crop areas, Commercial and industrial areas, forests, pastures and rights of way.
	Picloram 240 g/L with Triclopyr 750 g/L Various products	105 g/L picloram plus 100 mL triclopyr per 100 L water	Spring to mid-summer prior to podding. Apply as a thorough foliage spray.
	Picloram 240 g/L with Triclopyr 750 g/L Various products	145 mL Picloram plus 140 mL triclopyr (750) per 100 L Water	Autumn to Winter. Apply as a thorough foliage spray.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stems close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 600 g/L Garlon® 600	170 mL per 100 L of water	Spray spring to summer prior to pod formation.

Fleabane – *Conyza species*

Non-chemical options: Individual plants in small infestations can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
	Aminocyclopyrachlor 240 g/L Method® 240 SL	200-500 mL per 100 L of water	Spot spray with a handgun, hand-held sprayer or backpack sprayer. Thoroughly and uniformly wet the foliage but avoid spraying to the point of run off.
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray at rosette stage from October to May. For areas of native vegetation and non-cropland areas. See permit for critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Spray at rosette stage from October to May. For areas of native vegetation and non-cropland areas. See permit for critical comments.
PER11916	Glyphosate 360 g/L Various products	100 mL per 10 L of water	Spot spray actively growing plants. Only for use in these situations: urban bushland, forests and coastal reserves.
	2,4-D amine 700 g/L Amicide Advance 700	285 mL in 100 L of water	Spray young, actively growing plants, ensuring thorough coverage. For use in pastures, rights of way and industrial areas.
	Glufosinate-ammonium 200 g/L Basta®	3 to 5 L per ha	Boom spray for Commercial and industrial areas, forest plantations, rights-of-way and other non-agricultural areas.
	Glufosinate-ammonium 200 g/L Basta®	500 mL in 100 L of water	Spot spray: Commercial and industrial areas, forest plantations, rights-of-way and other non-agricultural areas.
	Glufosinate-ammonium 200 g/L Basta®	75 mL in 15 L of water	Knapsack spray for commercial and industrial areas, forest plantations, rights-of-way and other non-agricultural areas.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L with Glyphosate 450 g/L Various products	2 L/ha of Grazon Extra + 2.4 L/ha glyphosate (450g/L) plus non-ionic surfactant (Uptake® Spraying Oil or equivalent) at a rate of 200 mL per 100 L.	Spray up to 8 leaf stage or rosettes up to 10 cm diameter. Commercial and industrial areas, rights of way, pastures and agricultural non-crop areas.

Fountain grass – *Cenchrus setaceus*

Non-chemical options: Small plants can be dug out. If seedheads are present, cut them off before digging out the plants.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	3 L per ha	Selective broadacre control
PER9792	Flupropanate 745 g/L Various products	300 mL in 100 L of water	Spot spray
PER9792	Flupropanate 745 g/L Various products	500 mL in 10 L of water	Wiper suppression.
PER9792	Glyphosate 360 g/L Various products	6 L per ha	Non-selective broadacre control
PER9792	Glyphosate 360 g/L Various products	1 L in 100 L of water	Spot spray
PER9792	Glyphosate 360 g/L Various products	3.3 L in 10 L of water	Wiper suppression.

Foxtail fern – *Asparagus densiflorus*

Non-chemical options: Small plants can be hand pulled or dug out. Ensure all of the rhizomes have been removed. Dispose of the plants as rhizomes can reshoot and green fruit can contain viable seeds.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300-600 mL per 100 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spot spray application.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Stem scrape application.
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g per 100 L water plus non-ionic surfactant 100 mL per 100 L	Spot spray application.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Rhizome application: prune the shoots to get access to the rhizome apply a 3-5 mm layer of gel across the cut surface on the rhizome. See label for further critical comments.

Freckle face – *Hypoestes phyllostachya*

Non-chemical options: Seedlings and small plants can be hand pulled. Larger plants can be dug out. Remove as much of the root as possible to prevent regrowth.

	Chemical and Concentration	Rate	Comments
PER11916	Glyphosate 360 g/L Various products	1 part product to 100 parts water plus surfactant	Spray for weeds in urban bushland, forests and coastal reserves.

Frogbit – *Limnobium laevigatum*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER92971	Metsulfuron-methyl 600 g/kg Various products	10 g / 100 L water (add wetter at 200 mL per 100 L)	Only for enclosed water bodies. Areas within 400 m of potable water supply uptakes are excluded. ONLY apply as a foliar spot spray during non-frost periods using a high volume sprayer/knapsack fitted with calibrated spray equipment. Apply a maximum of 3 applications per year at minimum intervals of 90 days. WARNING: Very toxic to aquatic plants and algae. See permit for more restraints and critical use comments.
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 9 parts water	Splatter gun
	Diquat 200 g/L Reglone®	5 L of product per megalitre of water	Apply by injection below the surface or as a surface spray.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 37.5 cubic metres of water to achieve 400 parts per billion.	For use on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. See label for restrictions.

	Chemical and Concentration	Rate	Comments
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 75 cubic metres of water to achieve 200 parts per billion.	For use on low density, establishing or re-establishing weeds in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Spray 12-15 L of solution per 100 m^2. Solution = 1 tablet per 50 L water + 0.5-1.0 % adjuvant/ surfactant.	Spray on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Spray 12-15 L of solution per 100 m^2. Solution = 1 tablet per 100 L water + 0.5-1.0% adjuvant/surfactant.	Spray on low density, establishing or re-establishing weeds in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger still water bodies. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 37.5 cubic metres. Each tablet dissolved in at least 20L of water + 0.5-1.0% adjuvant/surfactant	For use on dense or established weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20L per tablet) mix thoroughly and then inject the solution directly into the water body.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 75 cubic metres. Each tablet dissolved in at least 20L of water + 0.5-1.0% adjuvant/surfactant	For use on low density, establishing or re-establishing weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20L per tablet) and additives in a spray tank, mix thoroughly and then inject the solution directly into the water body. See label for restrictions.

Galenia – *Galenia pubescens*

Non-chemical options: Individual plants can be hand pulled or dug out. Remove the large taproot to prevent regrowth.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray with a handgun. Use 200 L spray mixture per ha (i.e. 20 L/100 m2 infested area). Thoroughly cover all of the foliage to the point of run-off.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	3-5 L/ha (Apply a minimum volume of 200 L of spray mixture/ha)	Boom spray fresh growth during spring to summer. Use the low rate for seedling weeds less than 50 cm after significant rain of 25 mm or more. When using the lower rate add Pulse ™ Penetrant at 100 mL/100 L for best control.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray all of the foliage to the point of run off. Fresh spring/summer growth. For a handgun use 2000 L mixture / ha (i.e. 20 L/ 100 m2). For knapsack use 2 L /10 m^2.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	5 L/ha	Boom spray application (Apply a minimum volume of 200 L of spray mixture/ha).

Gallon's curse – *Cenchrus biflorus*

Non-chemical options: Small infestations can be hand pulled or dug out. Remove as much of the roots as possible. Maintaining perennial pastures with little bare soil and avoiding heavy grazing can limit infestations. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	2 to 3 L per ha	Boom spray when plants are actively growing. Use the lower rate on weeds under 15 cm tall. Follow the label for Spiny burrgrass Cenchrus species.
	Glyphosate 360 g/L Various products	500 to 700 mL per 100 L of water	Spot spray when plants are actively growing. Use the lower rate on weeds under 15 cm tall. Follow the label for Spiny burrgrass Cenchrus species.
	Glyphosate 360 g/L Various products	75 to 100 mL per 15 L of water	Knapsack spray when plants are actively growing. Use the lower rate on weeds under 15 cm tall. Follow the label for Spiny burrgrass Cenchrus species.

Gamba grass – *Andropogon gayanus*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	300 mL per 100 L of water	Spot spray. Apply when seedlings emerge. Follow directions as per "Other introduced tussock grasses" in table 6 of the permit.
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun

Garden geranium – *Pelargonium alchemilloides*

Non-chemical options: Contact your local council weeds officer if you suspect you have found this plant.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Giant bramble – *Rubus alceifolius*

Non-chemical options: Small plants can be dug out. Regular slashing before fruiting will limit growth.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water. For best results add spraying oil 100 mL /100 L of water	Spray spring to autumn. Respraying may be needed for thick clumps. Spray oil: use Uptake® Spraying Oil, BS1000 Biodegradable Surfactant or equivalent. Respraying may be needed for thick clumps.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel for stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water. For best results add spraying oil 100 mL /100 L of water	Spray spring to autumn. Spray oil: use Uptake® Spraying Oil, BS1000 Biodegradable Surfactant or equivalent. Respraying may be needed for thick clumps.

Giant devil's fig – *Solanum chrysotrichum*

Non-chemical options: Plants can be cut and the roots dug out. Dispose of fruit appropriately. Wear protective clothing to prevent injury from the prickles.

	Chemical and Concentration	Rate	Comments
PER12942	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Only products registered for aquatic use	A mix of 2 L glyphosate 360 herbicide plus 10 g of metsulfuron-methyl herbicide per 100 L of water + Uptake Spray Oil or an equivalent wetter must be used at a rate of 500 mL/100 L.	Spray actively growing plants, ensure all of the foliage is covered. For use in riparian areas. See permit for further critical comments.
PER12942	Triclopyr 300 g/L + Picloram 100 g/L with Metsulfuron-methyl 600 g/kg Various products	A mix of 350 to 500 mL herbicide containing Triclopyr and Picloram plus 10g of herbicide containing metsulfuron-methyl per 100 L of water + Uptake Spray Oil or an equivalent wetter must be used at a rate of 500 mL/100 L.	Spray actively growing plants, ensure all of the foliage is covered. For urban bushlands and forests. Do not use within 5 m of a waterway. See permit for further critical comments.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350-500 mL per 100 L of water	Spray actively growing plants, ensure all of the foliage is covered. Follow label instructions as per wild tobacco tree. Note application rates vary for different plant heights.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Giant Parramatta grass – *Sporobolus fertilis*

Non-chemical options: Individual, isolated plants or very small infestations can be dug out. If the plants have seed heads, cut them off and bag them before digging plants out to limit the spread of seeds. Nigrospora crown rot fungus *(Nigrospora oryzae)* is a biological control suitable for localised distribution, contact your local council weeds officer for information.

	Chemical and Concentration	Rate	Comments
PER9792	Glyphosate 360 g/L Various products	3.3 L per 10 L of water	Wiper suppression. Apply when plant is actively growing.
	Flupropanate 745 g/L Various products	200 mL per 100 L of water	High volume spot spray. In Northern NSW apply from July to December inclusive, during the drier time of year. To obtain better herbicide selectivity and less damage to desirable pasture species, apply when the pasture is dormant, semi-dormant.
	Flupropanate 745 g/L Various products	1.5–2.0 L/ha	Boom spray. Use the higher rate for heavy infestations. In Northern NSW apply from July to December inclusive, during the drier time of year. To obtain better herbicide selectivity and less damage to desirable pasture species, apply when the pasture is dormant, semi-dormant.
	Flupropanate 86.9 g/kg GP Flupropanate	15 kg /ha	Evenly distribute granules. Apply when the pasture is dormant or semi-dormant. Optimum application time is autumn and early spring. Do not apply in severe droughts or to weeds retarded by burning.
	Flupropanate 86.9 g/kg GP Flupropanate	1.5 g/m^2	Spot application of granules can be applied all year round.
	Glyphosate 360 g/L Various products	10–15 mL per 1 L of water	Spot spray. Apply when plants are actively growing in the vegetative stage to early seed head stage. Follow up treatments will be required.
	Glyphosate 360 g/L Various products	6.0 L/ha OR 3L followed by 3L/ ha split treatment	Boom application for pasture replacement/ improvement and best done as a split treatment after at least 20 cm of new growth.

Giant rat's tail grass – *Sporobolus pyramidalis*

Non-chemical options: Individual, isolated plants or very small infestations can be dug out. If the plants have seed heads, cut them off and bag them before digging plants out to limit the spread of seeds. Nigrospora crown rot fungus *(Nigrospora oryzae)* is a biological control suitable for localised distribution, contact your local council weeds officer for information.

	Chemical and Concentration	Rate	Comments
PER9792	Glyphosate 360 g/L Various products	3.3 L per 10 L of water	Wick wiper application when plant is actively growing. Graze before treatment to reduce the height of desirable species. See permit for critical use comments.
	Flupropanate 745 g/L Various products	200 mL per 100L of water	High volume spot spray. In Northern NSW apply from July to December inclusive, during the drier time of year. For less damage to desirable pasture species, apply when the pasture is dormant or semi-dormant.
	Flupropanate 745 g/L Various products	1.5–2.0 L/ha	Boom spray. Use the higher rate for heavy infestations. In Northern NSW apply from July to December inclusive, during the drier time of year. For less damage to desirable pasture species, apply when the pasture is dormant or semi-dormant.
	Flupropanate 86.9 g/kg GP Flupropanate	15 kg /ha	Evenly distribute granules. Apply when the pasture is dormant or semi-dormant. Optimum application time is autumn and early spring. Do not apply in severe droughts or to weeds retarded by burning.
	Flupropanate 86.9 g/kg GP Flupropanate	1.5 g/m^2	Spot application of granules can be applied all year round.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10–15 mL per 1 L water	Handgun application for when plants are actively growing.
	Glyphosate 360 g/L Various products	6.0 L/ha OR 3L followed by 3 L/ha split treatment	Boom application for pasture replacement/ improvement and best done as a split treatment after at least 20 cm of regrowth. Apply when plants are actively growing.

Giant reed – *Arundo donax*

Non-chemical options: Small individual plants may be dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts of water	Cut stump application.

Ginger lily – *Hedychium gardnerianum*

Non-chemical options: Small individual plants can be hand pulled or dug out using hand tools.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	200 mL of glyphosate plus 1.5 g of Metsulfuron methyl in 10 L of water	Spot spray application, add a surfactant.

Glaucous starthistle – *Carthamus leucocaulos*

Non-chemical options: Individual plants and small infestations can be dug out. Remove at least 5 cm of the tap root, preferably at the rosette stage, before flowering. Avoid heavy grazing. Mowing or slashing before flowing can limit seed production.

	Chemical and Concentration	Rate	Comments
	Dicamba 750 g/L Kamba® 750	1.1 L per ha. Use a minimum of 1500 L/ ha water carrier.	Non-crop situation: Spray prior to flowering. Add activator. Follow label directions as per star thistle.
	Dicamba 750 g/L Kamba® 750	67 mL in 100 L of water. Use a minimum of 1500 L/ha water carrier.	Non-crop situation: Spray prior to flowering. Add activator. Follow label directions as per star thistle.
	Dicamba 750 g/L Kamba® 750	16 mL in 15 L of water	Non-crop situation: Spray prior to flowering. Add activator. Follow label directions as per star thistle.
	Dicamba 750 g/L Kamba® 750	185 mL to 375 mL per ha for seedlings. 375 mL to 757 mL per ha for young mature plants	Grass pastures and perennial grasses. When applying by boom spray use 110-280 L of mixture per hectare. Add activator. Follow label directions as per star thistle.
	Dicamba 750 g/L Kamba® 750	27 mL per 100 L of water for seedlings and 50 mL per 100 L of water for young mature plants.	Grass pastures and perennial grasses. Add activator. Follow label directions as per star thistle.
	Dicamba 750 g/L Kamba® 750	7 mL per 15 L water for seedlings and 12 mL per 15 L of water for young mature plants	Grass pastures and perennial grasses. Add activator. Follow label directions as per star thistle.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	2.8 to 4.0 L per ha	Grass pastures. Use higher rate on larger weeds.

	Chemical and Concentration	Rate	Comments
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	190 to 270 mL per 100 L of water	Grass pastures. Use higher rate on larger weeds.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	60 mL per 15 L of water	Grass pastures

Glory lily – *Gloriosa superba*

Non-chemical options: Small seedlings can be dug out. If digging out larger plants, make sure all of the tubers are removed.

	Chemical and Concentration	Rate	Comments
PER11916	Glyphosate 360 g/L Various products	1 part glyphosate to 50 parts water + surfactant	Spray regrowth evenly to cover all of the foliage. For use in urban bushlands, forests and coastal reserves. See permit for critical comments.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts of water	Cut stump/ scrape stem application.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	200 mL glyphosate plus 1.5 g metsulfuron- methyl per 10 L of water	Spot spray.

Golden dodder – *Cuscuta campestris*

Non-chemical options: Controlling the host weeds and practising good hygiene can limit the spread of this weed.

	Chemical and Concentration	Rate	Comments
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	2 g in 100 L of water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Apply as a spot spray to point of run-off before flowering. Follow the label instructions as per Golden Dodder *(Cuscuta australis)*.
	Metsulfuron-methyl 600 g/kg Various products	1 g per 100 L of water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Apply as a spot spray to point of run-off before flowering. Follow the label instructions as per Golden Dodder *(Cuscuta australis)*.

Golden thistle – *Scolymus hispanicus*

Non-chemical options: Small infestations can be dug out. Remove as much of the tap root as possible.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	300 mL per 100 L of water	Spray seedlings and rosette stage. For agricultural non-crop areas, commercial and industrial areas, pastures and rights of way.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	3.5 L per ha	Spray seedlings and rosette stage. For agricultural non-crop areas, commercial and industrial areas, pastures and rights of way.
	2,4-D LV ester 680g/L Estercide® Xtra	3.3 L per ha	Spray at the rosette stage for pasture without legumes.
	Clopyralid 600 g/L Lontrel® Advanced	125 mL per 100 L of water.	For pastures and fallow land. Spray actively growing rosette stage prior to stem elongation.
	Clopyralid 750 g/L with MCPA 500 g/L Various products	20-28 g/ha of Clopyralid (750g/kg) and 1.0-1.5 L MCPA (500g/L)/ha	For pastures and fallow land. Spray actively growing rosette stage prior to stem elongation. Follow label for “Thistles including: Nodding, Variegated, Scotch, Spear, Slender, Saffron, St Barnaby’s thistle”
	Clopyralid 750 g/L Lontrel 750 SG Herbicide	100 g per 100 L of water.	For pastures and fallow land. Spray actively growing rosette stage prior to stem elongation.

Goldflower – *Hypericum kouytchense*

Non-chemical options: Seedlings and small plants can be hand pulled. Remove all the roots to prevent regrowth. A trowel or knife can be used to help loosen the soil before removal.

Chemical and Concentration	Rate	Comments
Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.

Gorse – *Ulex europaeus*

Non-chemical options: Plants can be dug out by hand, remove the whole plant, including all roots. There are four biological control agents for gorse, which can be used in areas with dense infestations. Contact your local council weeds officer for information.

Chemical and Concentration	Rate	Comments
Glyphosate 360 g/L Various products	1 L per 100 L of water plus wetter 200 mL/ 100 L	Apply to actively growing bushes. Spray to wet all foliage. Apply all year round, but only to actively growing plants. Always add PULSE or equivalent penetrant otherwise reduced results will occur.
Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	30 g per 100 L of water + Pulse Penetrant (200 mL/100 L)	Spray bushes up to 2 m tall. Ensure thorough spray penetration and coverage of the whole plant.
Metsulfuron-methyl 600 g/ kg with Glyphosate 360 g/L Various products	A mix of 10 g metsulfuron methyl herbicide plus 200 mL of glyphosate(360) per 100 L of water.	Apply to bushes up to two metres tall. Ensure thorough spray penetration and coverage of whole plant.
Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250 or 350 mL per 100 L of water	High volume spray rate, cover all the foliage to the point of runoff. In spring and summer use the lower rate for plants 1-1.5 m tall and higher rate for plants over 1.5 m. In autumn use the higher rate for all plants. For best results add a compatible wetter at 100 mL per 100 L of water (see label for compatible wetters)
Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL in 100 L of water	Winter treatment. High volume spray rate, cover all the foliage to the point of runoff. For best results add a compatible wetter at 100 mL per 100 L of water (see label for compatible wetters).
Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
Triclopyr 200 g/L + Picloram 100 g/L Various products	375 mL per 100 L of water	Spray actively growing plants from September to March with a handgun. Thoroughly cover all of the foliage to the point of run-off.
Triclopyr 300 g/L + Picloram 100 g/L Various products	250 or 350 mL per 100 L of water	High volume spray rate, cover all the foliage to the point of runoff. In spring and summer use the lower rate for plants 1-1.5 m tall and higher rate for plants over 1.5 m. In autumn use the higher rate for all plants. For best results add a compatible wetter at 100 mL per 100 L of water (see label for compatible wetters)
Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Winter treatment. High volume spray rate, cover all the foliage to the point of runoff. For best results add a compatible wetter at 100 mL per 100 L of water (see label for compatible wetters).
Triclopyr 600 g/L Garlon® 600	170 or 340 mL per 100 L water	Spray spring to mid-summer. Use the higher rate on older hardened plants. Add non-ionic wetting agent at rate of 125 mL/100 L water.

Grader grass – *Themeda quadrivalvis*

Non-chemical options: If there are only a few plants, they can be dug out. If the plants have seeds, they can be destroyed by burning. Slashing plants below the flowering head before they set seed (but in the early flowering stage) will not kill the plants but will limit seeding.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L of water	Handgun/ knapsack spot spray. Follow directions on label as per Kangaroo grass *(Themeda australis/ Themeda triandra)*.
	Glyphosate 360 g/L Various products	6 L /ha	Boom spray. Follow directions on label as per Kangaroo grass *(Themeda australis/ Themeda triandra)*.

Green cestrum – *Cestrum parqui*

Non-chemical options: Small seedlings can be hand pulled or dug out. Remove all parts of the plant, especially yellow roots. Repeated cutting, digging or pushing out by mechanical equipment can control green cestrum. Dense pasture can suppress green cestrum seedlings. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 1.5 parts water	Cut, scrape and paint. See permit for additional conditions.
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray. See permit for additional conditions.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL per 100 L of water	Handgun application on actively growing bushes in full leaf.
	Amitrole 250 g/L + Ammonium thiocyanate 220 g/L Various products	1.1 L per 100 L of water	Handgun application on active growth, before flowering.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL in 100 L of water	Spray from late spring to early autumn. Thoroughly cover all of the foliage to the point of run-off. Any regrowth and seedlings should be resprayed when approximately 1 m high.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump method can be used for larger plants.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray from late spring to early autumn. Thoroughly cover all of the foliage to the point of run-off. Any regrowth and seedlings should be resprayed when approximately 1 m high.
	Triclopyr 600 g/L Garlon® 600	170 mL per 100 L of water	Spray plants 1-2 m tall. Some regrowth may be expected the following season which can be sprayed after hardening off.
	Triclopyr 600 g/L Garlon® 600	2 L per 60 L of diesel	Basal bark: for plants up to 5 cm basal diameter. Follow the label instructions as per African boxthorn. Liberally spray or paint the bark all the way around the stem from ground level up to 30 cm high, wetting thoroughly to the point of runoff.

Grey sallow - *Salix cinerea*

Non-chemical options: Seedlings up to 0.5 m tall can be dug out or hand pulled. Small roots left in the ground do not usually regrow. Only use excavators or bulldozers to remove larger trees and root systems in dry areas. In wet areas machinery pushes broken branches into the ground which produces many new plants.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	1.0 to 1.3 L in 100 L of water	Spray to wet all foliage. Use the lower rate for trees under 1 m and the higher rate for trees 1 to 2 m tall
	Glyphosate 360 g/L Various products	Undiluted.	Stem injection. For trees with a basal diameter of 0 -25 cm use 1 mL/cut. For trees with a basal diameter of 25 -60 cm use 2 mL /cut.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	4 L in 15 L of diesel	Cut stump application for stems greater than 10 cm. Need to treat all stems

Ground asparagus – *Asparagus aethiopicus*

Non-chemical options: Hand pull very small seedlings. For larger plants: remove stems and foliage to access the crown. Use a sharp tool to cut all roots around the crown. Lever the crown out of the ground and dispose of it.

	Chemical and Concentration	Rate	Comments
PER11916	Glyphosate 360 g/L Various products	Undiluted	Cut stump/scrape stem.
PER9907	Fluroxypyr 200 g/L Various products	500 mL per 100 L of water	Spot spray from mid-June to late August.
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL in 100 L of water	Spot spray from mid-June to late August.
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spot spray application, best done between flowering and berries forming.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	Tank mix of up to 2 L glyphosate + 15 g metsulfuron-methyl per 100 L water.	Spot spray. Use a penetrant in coastal areas where the asparagus plants have a formed a waxy coating. For the treatment of this weed in areas of native vegetation, e.g. subtropical rainforest remnants, littoral rainforest and other bushland reserves.
PER9907	Metsulfuron-methyl 600 g/kg Various products	1–2 g/10 L water plus non-ionic surfactant (0.1 % or 1 mL/L)	Spot spray application, best done between flowering and berries forming.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Rhizome application: prune the shoots to get access to the rhizome, apply a 3-5 mm layer of gel across the cut surface on the rhizome. See label for further critical comments.

Groundsel bush – *Baccharis halimifolia*

Non-chemical options: Plants can be dug out by hand or machinery if large. Healthy pastures can supress seedlings. Cultivation followed by sowing competitive pastures will supress regrowth. Slashing before flowering will supress seed production. Biological control agents can limit localised populations but do not control large infestations.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L Affray 300	100 mL in 10 L of water	Knapsack spray for non-crop and pastures. Thorough even coverage of the plant is necessary.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL per 100 L of water	Spray actively growing plants, thoroughly covering all of the foliage.
	2,4-D amine 625 g/L Various products	320 mL per 100 L of water	Spray actively growing bushes. Thorough coverage.
	Clopyralid 600 g/L Lontrel® Advanced	165 - 250 mL per 100 L of water	Handgun application for active growth, lower rate on seedlings, higher rate on bushes over 2 m high.
	Glyphosate 360 g/L Various products	700 mL to 1.0 L per 100 L of water	Spray actively growing bushes to wet all foliage. Use higher rate on plants over 2 m tall. Do not apply during winter or summer drought stress.
	Glyphosate 360 g/L Various products	1 part per 9 parts water	Gas gun / Splatter gun application. Apply 2 x 2 mL doses per 0.5 m of bush height
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250 or 350 mL in 100 L of water	Spray all the foliage to the point of runoff. In spring and summer use the lower rate for plants 1-1.5 m tall and higher rate for plants over 1.5 m. In autumn use the higher rate for all plants
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stems close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application for plants with stems up to and more than 5 cm diameter at the base. Apply herbicide immediately after the cut.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	250 or 350 mL per 100 L of water	Spray all the foliage to the point of runoff. In spring and summer use the lower rate for plants 1-1.5 m tall and higher rate for plants over 1.5 m. In autumn use the higher rate for all plants
	Triclopyr 600 g/L Garlon® 600	160 mL per 100 L of water	Spray seedlings 1 to 2 m tall.
	Triclopyr 600 g/L Garlon® 600	320 mL per 100 L of water	Spray plants 2 - 3 m tall.

Harrisia cactus – *Harrisia* species

Non-chemical options: Small individual plants can be dug out. Large infestations may be removed by machinery if there are no desirable plants amongst them. The biological control agent, cactus mealybug *(Hypogeococcus festerianus)* provides minor control. Contact you weeds officer for information about biological control.

	Chemical and Concentration	Rate	Comments
	Dichlorprop 600 g/L Lantana 600®	1.0 L per 60 L of water	Good soil moisture essential and spray at fruiting.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL in 100 L water	Follow the label instructions as per Prickly pear (common), smooth tree pear. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 60 L of diesel (or biodiesel such as Biosafe).	Apply as an overall spray, wetting all areas of the plant to ground level. See label for information about using biodiesel.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L water	Follow the label instructions as per prickly pear common. Spot spray application. Spray actively growing plants. To improve uptake add a paraffinic oil e.g. Uptake®, Titan Paraffin or Apparent Paraffinic spraying oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.

Hawkweeds - Hieraciums – *Hieracium* species

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER95047	Picloram 20 g/kg Tordon® Granules	45 g/m^2	Apply as a spot application by hand or hand spreader. Do not apply more than 1 application per year. See permit for further critical comments.
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14558	Clopyralid 300 g/L Lontrel®	5 mL in 1 L of water	Spot spray application only for National Parks and non-agricultural adjoining lands. Only for use by NPWS employees and contractors, See permit for further critical comments.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Use leaf wiping application technique. Apply to at least 50% of the leaves of the rosette plant by wiping the applicator along the middle of each leaf. For use in non-crop areas, including native vegetation, conservation areas, gullies, reserves and parks.

Hawkweeds - Pilosellas – *Pilosella* species

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER95047	Picloram 20 g/kg Tordon® Granules	45 g/m^2	Apply as a spot application by hand or hand spreader. Do not apply more than 1 application per year. See permit for further critical comments.
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14558	Clopyralid 300 g/L Lontrel®	5 mL in 1 L of water	Spot spray application only for National Parks and non-agricultural adjoining lands. Only for use by NPWS employees and contractors, See permit for further critical comments.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Use leaf wiping application technique. Apply to at least 50% of the leaves of the rosette plant by wiping the applicator along the middle of each leaf. For use in non-crop areas, including native vegetation, conservation areas, gullies, reserves and parks.

Hawthorn – *Crataegus monogyna*

Non-chemical options: Small plants can be hand pulled or dug out, removing as much of the root as possible. Plants can be removed mechanically. Make sure all of the crown is removed and the top few centimetres of the root.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	100 mL per 10 L of water	Spot spray.
	Glyphosate 360 g/L Various products	10 to 13 mL per litre of water	Spray all foliage of actively growing plants from flowering to leaf fall. Use the higher rate on bushes over 2 m tall. For domestic (home gardens), commercial, Industrial and public service areas, agricultural buildings and other farm situations.
	Glyphosate 360 g/L Various products	1 part product to 9 parts water	Splatter gun or gas gun low volume spraying.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 100 L of water plus always add a Wetter 100 mL/100L (Titan Wetter 1000 or BS1000 or equivalent).	Spray to thoroughly wet all foliage but not cause run-off.
	Metsulfuron-methyl 600 g/kg with Glyphosate 360 g/L Various products	10 g metsulfuron-methyl + 200 mL of Glyphosate 360 per 100 L of water. Add a non-ionic surfactant 100 mL per 100 L.	Spray to point of run off using a handgun or knapsack.
	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water. Add a non-ionic surfactant 100 mL per 100 L.	Spray actively growing bushes using a handgun. Thoroughly wet all foliage but not to cause run-off.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray plants up to 2 m tall from late spring to early autumn.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Late spring to early autumn application

Heather – *Calluna vulgaris*

Non-chemical options: Small plants can be dug out, preferably before seed set. Remove as much of the root as possible. Intense sheep grazing especially in spring, will suppress new growth and flowering. Slashing large plants will give sheep access.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g per 100 L water. Add non-ionic surfactant (BS-1000 or equivalent) 100 mL per 100 L	Spot spray

Hemlock – *Conium maculatum*

Non-chemical options: Small infestations may be dug out. Wear protective clothing when dealing with this poisonous plant.

	Chemical and Concentration	Rate	Comments
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	80 mL per 15 L of water	Knapsack spray.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	350 mL per 100 L of water	High volume spot spray.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	5.2 L/ha	Boom spray rate. Young active growth, repeat treatments may be necessary.

Hoary cress – *Lepidium draba*

Non-chemical options: For small infestations, young plants can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
	2,4-D amine 625 g/L Various products	1.1–1.7 L/ha	Boom spray application, at rosettes to pre-flowering.
	2,4-D LV ester 680g/L Estercide® Xtra	1.7 to 2.1 L/ha	Boom spray application, from late rosette to pre-flowering
	Glyphosate 360 g/L Various products	500 mL per 100 L of water	Spray actively growing plants with a handgun. For maximum long term reduction, apply from late July to September when plants are in late rosette to flowering stage.
	Glyphosate 360 g/L Various products	1.5 L/ha	Boom spray actively growing plants. For maximum long term reduction, apply from late July to September when plants are in late rosette to flowering stage.
	Glyphosate 360 g/L Various products	75 mL per 15 L of water	Spray actively growing plants with a knapsack. For maximum long term reduction, apply from late July to September when plants are in late rosette to flowering stage.

Holly fern – *Cyrtomium falcatum*

Non-chemical options: Seedlings and small plants can be hand pulled or dug out. Weeding will be easier in damp soil. Dispose of plant material (including leaves with spores) appropriately to stop regrowth or spread.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 -20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Holly leaved senecio – *Senecio glastifolius*

Non-chemical options: Seedlings can be hand pulled, and larger plants dug out. Remove all plant material from the site and dispose of it. Contact your local council for disposal advice.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves

	Chemical and Concentration	Rate	Comments
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Wipe onto leaves

Honey locust – *Gleditsia triacanthos*

Non-chemical options: Mechanical control is possible but will require follow up treatments. Deep ploughing can treat regrowth. Fire can reduce the bulk of plants and allow access for other treatments.

	Chemical and Concentration	Rate	Comments
	Fluroxypyr 333 g/L Staranetm Advanced	300 mL per 100L of water	Foliar application, up to 2 m in height.
	Fluroxypyr 333 g/L Staranetm Advanced	900 mL per 100 L of diesel	Basal bark application. Plants up to 10 cm basal diameter.
	Fluroxypyr 333 g/L Staranetm Advanced	1.8 L per 100 L of diesel	Basal bark application. Plants 10–20 cm basal diameter.
	Fluroxypyr 333 g/L Staranetm Advanced	3 L per 100 L of diesel	Basal bark application. Plants above 20 cm basal diameter.
	Fluroxypyr 333 g/L Staranetm Advanced	3 L per 100 L of diesel	Cut stump application.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 240 g/L + Picloram 120 g/L Accesstm	1 L per 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems less than 5 cm diameter at the base. Spray the bark around the stem from ground level to 30 cm high, wetting thoroughly to the point of runoff. Cut stump application for plants with stems over 5 cm in diameter.

Horehound – *Marrubium vulgare*

Non-chemical options: Isolated plants can be dug out. Fire can be used on dense infestations but will need follow up using cultivation or heavy grazing with sheep or goats. Biological control agents, horehound plume moth (*Wheeleria spilodactylus*) and clearwing moth (*Chamaesphecia mysiniformis*) are available. Contact your weeds officer for more information.

	Chemical and Concentration	Rate	Comments
	2,4-D LV ester 680g/L Estercide® Xtra	1.7 to 3.3 L/ha	Boom spray application for seedlings in pastures without legumes, from late autumn to early spring
	Dicamba 750 g/L Kamba® 750	53 mL per 100 L of water. Add a surfactant.	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	800 mL/ha Use a minimum of 1500 L of solution per ha. Add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	MCPA 500 g/L Various products	3 L per hectare	Boom spray application. Apply in Autumn when plants are at the seedling stage.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL in 100 L of water	Apply as foliar spray pre-flowering
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 mL in 100 L of water	Apply as a foliar spray pre-flowering.

Horsetails – *Equisetum* species

Non-chemical options: Digging plants out by hand is effective over small areas if all rhizomes and plant material is removed and disposed of.

	Chemical and Concentration	Rate	Comments
PER13917	Dichlobenil 67.5 g/kg Casoron G®	18 g /m^2	For use by persons employed or contracted by local control authorities or NSW DPIE. Spread granules evenly over the soil of area to be treated and immediately water in after application. DO NOT apply to water which will be used for crop irrigation, livestock watering, or human consumption.

Hudson pear – *Cylindropuntia pallida*

Non-chemical options: Small plants dug out or be mechanically removed carefully. The cochineal bug (*Dactylopius tormentosus* '*californica* var. *parkeri*' linage) provides effective control. Contact your local council weeds officer for more information about biological control agents.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water.	Follow the label instructions as per Prickly pear (common), smooth tree pear. Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Follow the label instructions as per prickly pear common. To improve uptake of add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	1 L per 75 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Hydrocotyl – *Hydrocotyle ranunculoides*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading..

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 9 parts water	Splatter gun

Hygrophila – *Hygrophila costata*

Non-chemical options: Small plants or infestations can be dug up, bagged and removed.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	100 mL in 10 L of Water	Spot spray application.

Hymenachne – *Hymenachne amplexicaulis* and hybrids

Non-chemical options: Physical removal of small or individual plants may be effective. Take care to remove all plant material and dispose of by deep burial or drying and burning.

	Chemical and Concentration	Rate	Comments
PER13921	Glyphosate 360 g/L Only products registered for aquatic use	14 L / hectare	Apply by boom, handgun or knapsack, a maximum of 4 times a year. Refer to permit for further critical comments.

Illyrian thistle – *Onopordum illyricum*

Non-chemical options: Individual plants can be dug out. Remove at least 5 cm of root. Maintaining vigorous pastures can limit weed growth. Contact your local agronomist for pasture advice in your region. Biological control agents are available. Contact your local council weeds officer for information about biological control agents.

	Chemical and Concentration	Rate	Comments
	Dicamba 750 g/L Kamba® 750	27 mL per 100 L water. Add a non-ionic surfactant.	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	400 mL/ha Use a minimum of 1500 L water per ha. Add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL in 100 L of water	Hand gun application for plants in the rosette stage prior to stem elongation.

Indian fig – *Opuntia ficus-indica*

Non-chemical options: Small plants can be dug out. Machinery can be used for large infestations if there will be no damage to desirable plants. Ensure the roots are dug out and that all plant parts are disposed of. Cochineal insects (*Dactylopius opuntiae* 'ficus' lineage) can control this cactus. Contact your local council weeds officer for information.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Follow the label instructions as per Prickly pear (common). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake add a paraffinic spraying oil at the rate of 500 mL per 100 L of water. Follow-up may be needed.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1 L per 60 L of diesel or biodiesel	Apply as an overall spray, wetting all the plant to ground level. Follow label instructions as per "Cacti including: Common pest pear....Tree pear"
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray actively growing plants. Follow the label instructions as per prickly pear common. To improve uptake, add a paraffinic spraying oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3L per 100L of water	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake add a paraffinic spraying oil at the rate of 500 mL per 100 L of water.

Indian hawthorn – *Rhaphiolepis indica*

Non-chemical options: Small individual plants can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	400 mL of glyphosate in 600 mL of water	Cut stump application
PER9907	Glyphosate 360 g/L Various products	200 mL in 10 L of water	Spot spray application

Italian cockleburr – *Xanthium italicum*

Non-chemical options: Isolated plants can be dug out with hand tools. Repeated cultivation can control seedlings. Maintaining ground cover in pastures limits growth. Contact your local agronomist for advice on pastures in your area.

	Chemical and Concentration	Rate	Comments
	2,4-D amine 625 g/L Various products	0.8 – 1.1 L/ha	Boom spray for seedlings only.
	2,4-D LV ester 680g/L Estercide® Xtra	800 mL/ha	Boom spray application, from seedlings to pre-flowering.

Japanese honeysuckle – *Lonicera japonica*

Non-chemical options: Seedlings can be hand pulled. Larger plants can be dug out when the soil is moist. Remove all of the crown and roots.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Thoroughly cover the foliage of plants up to 1.5 m tall via knapsack or handgun. Apply from October to May. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Thoroughly cover the foliage via knapsack or handgun. Only use on plants up to 1.5 m tall and apply from October to May. See permit for further critical comments.
PER9907	Glyphosate 360 g/L Various products	400 mL in 600 mL of water	Cut stump application
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g in 100 L of water plus surfactant at 100mL/ 100L of final spray volume.	Spot spray application.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Japanese sunflower - *Tithonia diversifolia*

Non-chemical options: Seedlings can be hand pulled, and larger plants can be dug out. Slashing before flowering prevents seed production. Follow up by digging out plants, continuously slashing, or spot spraying to prevent the plants from reaching maturity.

	Chemical and Concentration	Rate	Comments
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g in 100 L of water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Spray with a hand gun. Surfactant - use Apparent 100 or BS1000 or equivalent.
	Metsulfuron-methyl 600 g/kg Various products	10 g in 100 L of water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Apply to actively growing plants after full leaf expansion but before seed set. Surfactants use BS1000 or equivalent.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL in 100 L of water	Apply as foliar spray pre-flowering
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stems close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 mL in 100 L of water	Apply as a foliar spray pre-flowering.

Japanese walnut - *Juglans ailantifolia*

Non-chemical options: Small plants can be hand pulled year-round.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 glyphosate to water + 1 g metsulfuron to 1 L water	Stem injection
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spray seedlings and coppice shoots.
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Jasmine – *Jasminum polyanthum*

Non-chemical options: Small plants can be dug out. Remove as much of the plant as possible and dispose of stems because they can resprout if left on the ground.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of Water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Job's tears – *Coix lacryma-jobi*

Non-chemical options: Dig up small immature plants if the infestation is small. Remove all of the roots and remove the plants from the site because the rhizomes can regrow. Collect all of the seeds

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	1 part herbicide per 9 parts water	Splatter gun application. See permit for conditions.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	Tank mixes of up to 2 L glyphosate + 15 g metsulfuron methyl per 100 L water.	Spot spraying application. See permit for conditions.
PER9907	Glyphosate 360 g/L Various products	Rate of up to 1:50 herbicide to water.	Spot spray. See permit for conditions.

Johnson grass – *Sorghum halepense*

Non-chemical options: Dig out individual plant in small infestations, remove all rhizomes.

	Chemical and Concentration	Rate	Comments
	Flupropanate 745 g/L Various products	200 mL per 15 L of water	Knapsack spray when plants are actively growing and not less than 30 cm high. Spray thoroughly to the point of run-off.
	Flupropanate 745 g/L Various products	1.0 L per 100 L of water	High volume spot spray when plants are actively growing and not less than 30 cm high. Spray thoroughly to the point of run-off.
	Glyphosate 360 g/L Various products	1.0 L per 100 L of water	Spot spray with a handgun. Apply to actively growing plants at the early head stage.
	Glyphosate 360 g/L Various products	6.0 L/ha	Boom spray actively growing plants at early head stage.
	Glyphosate 360 g/L Various products	1.0 L glyphosate per 2 L of water	Wiper equipment a minimum of 10 cm above the crop or pasture. Weeds should be at least 15 cm above the crop or pasture. Speed of travel 8 km/h or less. Best results are achieved at lower speeds and where two applications are made in opposite directions.
	Imazapyr 750 g/kg Various products	2 kg/ha	Boom spray application of soluble granule herbicide for pre-and post-emergent control.

Jumping cholla – *Cylindropuntia prolifera*

Non-chemical options: Small plants dug out or be mechanically removed carefully. . The cochineal bug (*Dactylopius tormentosus* '*californica* var. *parkeri*' linage) provides effective control. Contact your local council weeds officer for more information about biological control agents.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water.	Follow the label instructions as per Prickly pear (common), smooth tree pear. Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Follow the label instructions as per prickly pear common. To improve uptake of add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	1 L per 75 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Karoo acacia – *Vachellia karroo*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 glyphosate to water + 1 g metsulfuron to 1 L water	Stem injection
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Kei apple – *Dovyalis afra*

Non-chemical options: Small plants can be hand pulled or dug out. Wear gloves, sturdy clothes and shoes and other personal protective equipment to avoid injuries from the spines.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 glyphosate to water + 1 g metsulfuron to 1 L water	Stem injection
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spray seedlings and coppice shoots.
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection.

Khaki weed – *Alternanthera pungens*

Non-chemical options: Individual plants can be dug out. Maintaining healthy turf or lawns can suppress seedling growth.

	Chemical and Concentration	Rate	Comments
PER12362	Triclopyr 300 g/L + Picloram 100 g/L Various products	2.0 L/ha	Only for use in sown tropical pastures. Spray when weeds are small and actively growing, preferably before flowering and when secondary roots are present on the shown pasture. See permit for further critical comments.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL in 100 L of water	Active growth in full leaf.
	2,4-D amine 625 g/L Various products	1.1 – 2.2 L/ha	Spray in pastures, seedlings only.

	Chemical and Concentration	Rate	Comments
	Amitrole 250 g/L + Ammonium thiocyanate 220 g/L Various products	1.1 L in 100 L of water	Spot spray when weeds are actively growing, immediately prior to flowering. Respraying will be necessary to destroy regrowth and seedlings. For non-crop areas around buildings commercial and industrial areas, domestic and public service areas, right-of ways.
	Dicamba 750 g/L Kamba® 750	6 mL per 15 L	Knapsack spray at the rosette stage when actively growing.
	Dicamba 750 g/L Kamba® 750	400 mL per ha.	Boom spray at the rosette stage when actively growing.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	4-7 L per ha	Boom spray for grass pastures. When necessary, a second treatment may be made after 4 weeks.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	100 mL per 15 L	Knapsack spray for grass pastures. When necessary, a second treatment may be made after 4 weeks.

Kidney-leaf mud plantain – *Heteranthera reniformis*

Non-chemical options: Small individual plants can be carefully manually removed.

	Chemical and Concentration	Rate	Comments
PER92971	Metsulfuron-methyl 660 g/kg Various products	10 g / 100 L water (plus wetter at 200 mL per 100 L)	Only for enclosed water bodies (excludes areas within 400 m of potable water supply) Spray using high volume sprayer/knapsack. See permit for restraints and critical use comments.
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 mL per 10 L of water	Foliar application
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water	Foliar application in terrestrial situations only.

King devil hawkweed – *Pilosella piloselloides*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER95047	Picloram 20 g/kg Tordon® Granules	45 g/m^2	Apply as a spot application by hand or hand spreader. Do not apply more than 1 application per year. See permit for further critical comments.
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14558	Clopyralid 300 g/L Lontrel®	5 mL in 1 L of water	Spot spray application only for National Parks and non-agricultural adjoining lands. Only for use by NPWS employees and contractors, See permit for further critical comments.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Use leaf wiping application technique. Apply to at least 50% of the leaves of the rosette plant by wiping the applicator along the middle of each leaf. For use in non-crop areas, including native vegetation, conservation areas, gullies, reserves and parks.

Klein's cholla – *Cylindropuntia kleiniae*

Non-chemical options: Small plants dug out or be mechanically removed carefully. The cochineal bug *(Dactylopius tormentosus)* provides effective control. Contact your local council weeds officer for more information about biological control agents.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water.	Follow the label instructions as per Prickly pear (common), smooth tree pear. Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Follow the label instructions as per prickly pear common. To improve uptake of add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	1 L per 75 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Kochia – *Bassia scoparia*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g per 100 L water plus surfactant	Spot spray

Koster's curse – *Clidemia hirta*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Kudzu – *Pueraria lobata*

Non-chemical options: Repeated grazing or cutting the aboveground parts can eventually kill the plant. Young plants may be dug out. Removing by hand is difficult because of the large underground tubers

	Chemical and Concentration	Rate	Comments
PER11604	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water plus non-ionic surfactant.	For riparian areas and areas with native vegetation. Apply to plants in full leaf, mid to late spring, followed by a second application in autumn. See permit for critical use conditions.
PER11604	Triclopyr 600 g/L Garlon® 600	50 mL per 15 L of water.	For riparian and native vegetation areas. Apply to plants in full leaf, mid to late spring, followed by a second application in autumn. See permit for critical use conditions.
PER11604	Triclopyr 600 g/L Garlon® 600	330 mL per 100 L of water	For riparian and native vegetation areas. Apply by high pressure handgun, to the point of runoff on plants in full leaf, mid to late spring. Follow up in autumn. See permit for further critical comments.

Lacy ragweed – *Ambrosia tenuifolia*

Non-chemical options: Small seedlings can be dug out by hand. Collect as much of the roots as possible.

	Chemical and Concentration	Rate	Comments
	Dicamba 750 g/L Kamba® 750	400 mL per 100 L of water	High volume spot spray. Spray prior to flowering. For non-crop situations.
	Glyphosate 360 g/L Various products	10 mL per 1 L of Water	For general weed control in Domestic areas (Home gardens), Commercial, Industrial and Public Service areas, Agricultural buildings and other farm situations.

Lady-of-the-night – *Cestrum nocturnum*

Non-chemical options: Small plants can be dug out. Stems left in contact with the soil may regrow. Wear gloves and other protective clothing when handling this poisonous plant.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20g per 100 L water plus surfactant	Spot spray
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray from late spring to early autumn. Follow label instructions as per green cestrum. Thoroughly cover all of the foliage to the point of run-off.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray from late spring to early autumn. Follow label instructions as per green cestrum. Thoroughly cover all of the foliage to the point of run-off.

Lagarosiphon – *Lagarosiphon major*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

Chemical and Concentration	Rate	Comments
Diquat 200 g/L Reglone®	5 L per megalitre water	Apply by stem injection below the surface or as a surface spray

Lantana – *Lantana camara*

Non-chemical options: Small plants can be hand pulled or dug out. Remove all the roots. Slashing or bulldozing can be used on large infestations to supress but not kill the plants. Dense pastures or native plant regeneration can limit growth. Multiple biological control agents are widespread and there is no need to redistribute them.

Chemical and Concentration	Rate	Comments
2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL per 100 L of water	High volume spot spray. Thoroughly wet foliage and soil around the base of plant during March to May.
2,4-D amine 625 g/L Various products	320 m/L in a 100 L of water	Spray actively growing bushes.
Aminocyclopyrachlor 240 g/L Method® 240 SL	200-500 mL per 100 L of water	Spot spray with a handgun, hand-held sprayer or backpack sprayer. Thoroughly and uniformly wet the foliage but avoid spraying to the point of run off.
Dichlorprop 600 g/L Lantana 600®	1.0 L per 200 L of water	Spot spray application, completely wet all leaves and stems.
Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL OR 700 mL per 100 L of water	Spray actively growing plants. Low rate for seedlings and regrowth 0.5–1.2 m high. Higher rate for plants over 1.2-2.0 m high.
Fluroxypyr 200 g/L Various products	500 mL or 1.0 L per 100 L of water	Spray actively growing bushes from October to April. Use lower rate on seedlings or bushes to 1.2 m high, higher rate on bushes over 1.2 m.
Fluroxypyr 333 g/L Staranetm Advanced	300 - 600 mL in 100 L of water	Spray actively growing bushes from October to April. Use lower rate on seedlings or bushes to 1.2 m high, higher rate on bushes over 1.2 m.
Glyphosate 360 g/L Various products	1.0 L per 100 L of water	Spray actively growing plants with full foliage. Avoid summer stress.
Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	10 g metsulfuron-methyl plus 200 mL glyphosate per 100 L of water. Add organosilicon penetrant.	Spray plants up to 2 m high. Thoroughly wet all foliage and stems.
Glyphosate 360 g/L Various products	1 part per 9 parts water	Gas gun / Splatter gun application. Apply 2 x 2 mL doses per 0.5 m of bush height
Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g in 100 L of water plus non-ionic surfactant 100 mL/100 L of spray volume	Apply to bushes up to 2 m tall. Spray to thoroughly wet all foliage and stems. Spray should penetrate throughout the bush. Retreat regrowth.
Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water plus non-ionic surfactant 100 mL/100 L of spray volume	Spray plants up to 2 m tall. Wet all foliage and stems. Re-treatment will be necessary.
Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 - 500 mL in 100 L of water	Spray from summer to autumn. Use higher rate on plants 1–2 m tall. Low rates for plants up to 1 m tall.
Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

	Chemical and Concentration	Rate	Comments
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application for plants with a diameter up to and more than 5 cm at the base. Apply herbicide immediately after the cut.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 - 500 mL per 100 L of water	Spray from summer to autumn. Wet thoroughly, use higher rate on large bushes, 1–2 m tall. Low rates for bushes up to 1 m tall.
	Triclopyr 600 g/L Garlon® 600	1.0 L per 60 L of diesel	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application for plants with a diameter more than 5 cm at the base.

Laurel clock vine – *Thunbergia grandiflora*

Non-chemical options: Small plants can be dug out, remove the tubers and roots. Cutting the vines of larger plants at ground level will help smothered plants survive but vines will regrow.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves
	Imazapyr 250 g/L Various products	7.5 mL per 1 L of water	Apply sufficient spray to wet the surface visibly to the point of run-off.

Leaf cactus – *Pereskia aculeata*

Non-chemical options: Small plants can be dug out. Larger plants are difficult to remove by hand due to the spines and the way they climb over other plants. Leaf cactus cut near the base will survive in the canopy.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Follow the label instructions as per Prickly pear (common), smooth tree pear. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Follow the label instructions as per prickly pear common. Spot spray application. Spray actively growing plants. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3.0 L per 100 L of water	Follow the label instructions as per prickly pear common. Spot spray application. Spray actively growing plants. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Leafy elodea – *Egeria densa*

Non-chemical options: Cutting, hand pulling and mechanical harvesting can all contain the weed. Avoid spreading plant fragments to prevent regrowth.

	Chemical and Concentration	Rate	Comments
	Diquat 200 g/L Reglone®	5 L per Megalitre of water	Apply by injection below the surface or as a surface spray. Follow label as for pond weeds.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 37.5 cubic metres of water to achieve 400 parts per billion.	For use on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. See label for further instructions and restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 37.5 cubic metres. Each tablet dissolved in at least 20L of water + 0.5-1.0% adjuvant/ surfactant	For use on dense or established weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20 L per tablet) mix thoroughly and then inject the solution directly into the water body.

Leucaena – *Leucaena leucocephala*

Non-chemical options: Small plants can be dug out by hand. Larger trees may be cut down and the roots mechanically removed.

	Chemical and Concentration	Rate	Comments
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Liberally spray the bark around the stem from ground level to 30 cm high, wetting thoroughly to the point of runoff. Cut stump application for plants with a diameter up to and more than 5 cm at the base. Apply herbicide immediately after the cut is made.

Lippia – *Phyla canescens*

Non-chemical options: Ploughing can control lippia. Competitive dense pastures can out compete lippia. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	Dichlorprop 600 g/L Lantana 600®	1 L of herbicide per 200 L of water	Spray application - completely wet all leaves and stems of target plants.
	Dichlorprop 600 g/L Lantana 600®	5 mL per 1 L of water	Spot spray, knapsack rate. Completely wet plants.
	Dichlorprop 600 g/L Lantana 600®	5.0 L/ha	Boom spray using high water volumes – minimum 100L/hectare. For best results spray at flowering.

Lobed needle grass – *Nassella charruana*

Non-chemical options: Individual plants in small infestations may be dug out. This is best done before plants are seeding.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	100 to 300 mL per 100 L of water	Spot spray control. Apply to actively growing and stress free plants. Apply once per year. See label for further critical use comments.
PER9792	Flupropanate 745 g/L Various products	500 mL per 10 L water	Wiper suppression
PER9792	Glyphosate 360 g/L Various products	3 L per ha	Broadacre control
PER9792	Glyphosate 360 g/L Various products	1 L per 100 L of water	Spot spray
PER9792	Glyphosate 360 g/L Various products	3.3 L per 10 L water	Wiper suppression
	Flupropanate 745 g/L Various products	1.5 to 3 L per ha	Broadacre control. Apply to actively growing plants from spring to autumn. Apply once per year.
	Flupropanate 86.9 g/kg GP Flupropanate	22.5 kg/ ha	Granular herbicide. Apply February to December inclusive to actively growing and stress-free plants. Graze to reduce cover of desirable species before application.
	Flupropanate 86.9 g/kg GP Flupropanate	2.25 g per square metre	Spot application of granular herbicide apply year-round. Apply to actively growing and stress-free plants. Graze to reduce cover of desirable species before application.

Long-leaf willow primrose – *Ludwigia longifolia*

Non-chemical options: Small plants may be pulled or dug out preferably before seeding. Remove all the roots.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Only products registered for aquatic use	1.0 L per 100 L of water	Handgun spray application. Follow the label instructions for *Ludwigia peruviana*.

Long-style feather grass – *Cenchrus longisetus*

Non-chemical options: Young plants can be dug out with hand tools. Cultivating and establishing pasture cover can suppress growth and reduce reinvasion.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	300 mL per 100 L of water	Spot spray. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	1 L in 100 L of water	Spot spray actively growing plants. See permit for critical use comments.

Ludwigia – *Ludwigia peruviana*

Non-chemical options: Small plants can be dug out, preferably before seeding. Dense stands can be slashed and burnt. Take care not to spread the seed.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Only products registered for aquatic use	1 L in 100 L of water	Spray actively growing plants at or beyond the early bloom stage of growth but before autumn change of colour. Cover all foliage for best results.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stems close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Madeira vine – *Anredera cordifolia*

Non-chemical options: Small seedlings and tubers can be hand pulled or dug out, bagged and composted. Make sure all of the plant including tubers and leaves are removed from the site. The madeira vine leaf beetle *(Plectonycha correntina)* gives minor control. Contact your local council weeds officer for more information.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	Undiluted glyphosate	Stem scraping application.
PER9907	Glyphosate 360 g/L Various products	100 mL glyphosate per 10 L of water	Spot spray for seedling control.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	200 mL glyphosate plus 1.5 g metsulfuron-methyl in 10 L of water	Spot spray for seedling control.
PER13914	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	400 mL per 100 L of water	Handgun application for vines on the ground in riparian zones. Do not use within 5 metres of a waterway. See permit for further critical comments.
PER13914	Triclopyr 300 g/L + Picloram 100 g/L Various products	400 mL in 100 L of water	Handgun application for vines on the ground in riparian zones. Do not use within 5 metres of a waterway. See permit for further critical comments.
	Fluroxypyr 200 g/L Various products	500 mL in 100 L of water	Apply at times of active growth. Avoid drift on to desirable plants.
	Fluroxypyr 333 g/L Starane™ Advanced	300 mL in 100 L of water	Apply at times of active growth. Avoid drift on to desirable plants.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stems close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Mahonia – *Berberis lomariifolia*

Non-chemical options: Small individual plants can be pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	400 mL of glyphosate in 600 mL of water	Cut stump application
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Mesquite – *Prosopis species*

Non-chemical options: Plants can be blade ploughed, pulled or dug out by machinery. Dig at least 30 cm deep to remove roots. Small plants may be dug out with hand tools. Biological control agents have been released but do not need redistribution.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL per 100 L of water For best results add a wetting agent: 100 mL/100 L of water	Controls seedlings, plants in full leaf and flowering before podding. Thoroughly wet all foliage, stems and soil around the base of the plants. Do not spray plants bearing pods. Wetting agent: BS1000 Biodegradable Surfactant or equivalent.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

	Chemical and Concentration	Rate	Comments
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Basal bark plants with stems less than 5 cm diameter at the base. Spray the bark around the stem from ground level to 30 cm high, wetting thoroughly to the point of runoff. Cut stump application for plants with stems up to and over 5 cm in diameter.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 mL in 100 L of water. For best results add a wetter at 100 mL/100 L of water.	Controls seedlings, plants in full leaf and flowering before podding. Thoroughly wet all foliage, stems and soil around the base of the plants. Add a wetting agent to increase efficacy. Do not spray plants bearing pods.

Mexican feather grass – *Nassella tenuissima*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	1.5 to 3 L per ha	Broadacre control. Best results are achieved when applied to actively growing stress free weeds, particularly in warm periods. See permit for critical comments.
PER9792	Flupropanate 745 g/L Various products	100 to 300 mL per 100 L of water	Spot spray control. Best results are achieved when applied to actively growing stress free weeds, particularly in warm periods. See permit for critical comments.
PER9792	Flupropanate 745 g/L Various products	500 mL per 10 L water	Wiper suppression. Ensure weeds are at least 15 cm above species to be retained. Apply when weeds are actively growing. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	3 L per ha	Broadacre control. Apply to actively growing, stress free plants. Best control occurs when weeds are at the early seed head stage. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	1 L per 100 L of water	Spot spray actively growing, stress free plants. Best control occurs when weeds are at the early seed head stage. See permit for critical use comments.
PER9792	Glyphosate 360 g/L Various products	3.3 L per 10 L water	Wiper suppression. Ensure weeds are at least 15 cm above species to be retained. Apply when weeds are actively growing. See permit for critical use comments.

Mexican poppy – *Argemone ochroleuca* subsp. *ochroleuca*

Non-chemical options: Plants can be hand pulled or dug out before they flower. Mowing or slashing seedlings can help control infestations. Maintain healthy pastures to outcompete this weed. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	2,4-D LV ester 680g/L Estercide® Xtra	800 mL to 1.15 L per ha	Pastures (non-legume), rights of way and industrial areas.
	Glyphosate 360 g/L	10 mL/ L water	For general weed control in Domestic areas (Home gardens), Commercial, Industrial and Public Service areas, Agricultural buildings and other farm situations.

Miconia – *Miconia species*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate per 1.5 parts water	Cut stump or stem-scraping application.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Mikania vine – *Mikania micrantha*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut, scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Mimosa – *Mimosa pigra*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 glyphosate to water + 1 g metsulfuron to 1 L water	Stem injection

	Chemical and Concentration	Rate	Comments
	Fluroxypyr 333 g/L Staranetm Advanced	1 L per 100 L diesel or biodiesel	Basal bark for plants up to 5 cm diameter at the base. Apply when actively growing.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Mimosa bush – *Vachellia farnesiana*

Non-chemical options: Small plants can be hand pulled or dug out. Remove as much of the roots as possible. Larger plants can be removed with machinery, but they will regrow if any roots are left.

	Chemical and Concentration	Rate	Comments
PER14929	Clopyralid 300 g/L Lontrel®	500 mL in 100 L of water	High volume foliar application. Apply to actively growing plants in full leaf. Add a surfactant.
PER13891	Tebuthiuron 200 g/kg Various products	2 g per square metre	Follow both the permit and label instructions.
	Fluroxypyr 333 g/L Staranetm Advanced	180 mL per 100 L of diesel (or biosafe)	Basal bark application for trees with a basal diameter up to 5 cm.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 240 g/L + Picloram 120 g/L Accesstm	1.0 L per 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application can be used for plants with stems up to and in excess of 5 cm diameter at the base. Treat all stems on multi-stem plants.

Ming asparagus fern – *Asparagus macowanii*

Non-chemical options: Small seedlings can be hand pulled. For larger plants remove stems and foliage to access the crown. Use a sharp tool to cut all roots around the crown. Lever the crown out of the ground and dispose of it.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spot spray application
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate in 1.5 parts water	Cut stump / scrape stem application
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g in 100 L of water, plus non-ionic surfactant 100 mL per 100 L of spray volume	Spot spray application
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Rhizome application: prune the shoots to get access to the rhizome apply a 3-5 mm layer of gel across the cut surface on the rhizome. See label for further critical comments.

Mintweed – *Salvia reflexa*

Non-chemical options: Maintaining strong, competitive pastures helps prevent invasion and suppresses mintweed. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	2,4-D amine 625 g/L Various products	1.1 L/ha	Boom spray application
	Glyphosate 360 g/L Various products	500–700 mL per 100 L of water	High volume spot spray.
	Glyphosate 360 g/L Various products	2.0–3.0 L/ha	Boom spray. Apply to actively growing plants.
	MCPA 500 g/L Various products	2.0 L/ha	Boom spray application for actively growing seedlings.

Mirror bush – *Coprosma repens*

Non-chemical options: Small plants can be hand pulled or dug out, remove as much of the roots as possible.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray

Mistflower – *Ageratina riparia*

Non-chemical options: Plants may be hand pulled or dug out, preferably before flowering. Maintaining competitive pastures limits growth. White-smut fungus and Mistflower gall fly are widespread biological control agents, contact your local council weeds officer for more information.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL per 100 L of water	Spray actively growing bushes.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	700mL per 100 L of water	Spray actively growing plants from October to April.
	Fluroxypyr 200 g/L Various products	500 mL per 100 L of water	Spray actively growing seedlings and young bushes before flowering.
	Fluroxypyr 333 g/L Staranetm Advanced	300 mL in 100 L of water	Apply to actively growing seedlings and young plants before flowering
	Glyphosate 360 g/L Various products	5 mL per 1 L of water	Spray with a knapsack or handgun. For actively growing bushes with full foliage.
	Glyphosate 360 g/L Various products	1.0 L per 9 L water (3 mL per square metre)	Gas Gun or Splatter Gun application.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	10 g per 100 L of water (always add a non-ionic wetter 100 mL/100L)	Spray with a hand gun. Adjuvant: Wetter 1000g/L non-ionic alcohol alkoxylate (TITAN WETTER 1000 or BS1000 or equivalent).

	Chemical and Concentration	Rate	Comments
	Metsulfuron-methyl 600 g/kg Various products	5 g per 100 L of water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Spray actively growing plants before flowering.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL in 100 L of water	Spray actively growing plants from spring to autumn. Thoroughly cover all of the foliage to the point of run-off.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 mL per 100 L of water	Spray actively growing plants, covering all of the foliage from spring to autumn.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 10 L of water	Gas gun / Splatter gun application. Apply to actively growing bushes.

Monkey's comb – *Pithecoctenium crucigerum*

Non-chemical options: Small plants can be hand pulled or dug out. Do not leave stem fragments in contact with the soil as this could help spread the plant. Dispose of plant material appropriately.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut, scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Montbretia – *Crocosmia x crocosmiiflora*

Non-chemical options: Plants can be dug out. All of the bulbs and bulbils need to be removed to prevent regrowth.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	1.0 L in 50 L of water	Spray between flowering and fruiting.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate per 1 part water	Weed wand application.

Moonflower – *Ipomoea alba*

Non-chemical options: Seedlings and small plants can be hand pulled or dug out. For larger vines cut the stems at ground level and then dig out as much of the roots as possible. Dispose of plants because the stems can regrow if they are in contact with the soil.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. Use higher rates for larger plants. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. Use higher rates for larger plants. See permit for further critical comments.
PER11916	Glyphosate 360 g/L Various products	1 part product to 50 parts water plus surfactant	Spot spray: Urban bushland, forests and coastal reserves.
PER11916	Glyphosate 360 g/L Various products	Undiluted	Scrape stem/cut stump: Urban bushland, forests and coastal reserves.
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut, scrape and paint
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Morning glory - coastal – *Ipomoea cairica*

Non-chemical options: Seedlings and small plants can be hand pulled (especially if in sandy soil) or dug out. Climbing stems can be cut and left hanging to wither and die. Make sure no cut stems have contact with the soil. Remove as much of the roots as possible to prevent regrowth.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. Use higher rates for larger plants. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. Use higher rates for larger plants. See permit for further critical comments.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate per 1.5 parts water	Stem scraping application.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	200 mL glyphosate plus 1.5g of metsulfuron-methyl in 10 L water	Spot spray application
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot-spray for seedling control.
	Dichlorprop 600 g/L Lantana 600®	1 L in 200 L of water	Completely wet all leaves and stem of target plants

Morning glory - common – *Ipomoea purpurea*

Non-chemical options: Seedlings and small plants can be hand pulled or dug out. Removal is easier in damp or sandy soil. Mulching with black plastic can kill small infestations that are not over desirable plants.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. Use higher rates for larger plants. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. Use higher rates for larger plants. See permit for further critical comments.
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut, scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 -20 g per 100 L water plus surfactant	Spot spray

Morning glory - purple – *Ipomoea indica*

Non-chemical options: Seedlings and small plants can be hand pulled (especially if in sandy soil) or dug out. Climbing stems can be cut and left hanging to wither and die. Make sure no cut stems have contact with the soil. Remove as much of the roots as possible to prevent regrowth.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. Use higher rates for larger plants. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Apply to the foliage of plants less than 1.5 m tall via knapsack or handgun. Use higher rates for larger plants. See permit for further critical comments.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate per 1.5 parts water	Stem scraping application.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	200 mL glyphosate plus 1.5g of metsulfuron-methyl in 10 L water	Spot spray application
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot-spray for seedling control.
	Dichlorprop 600 g/L Lantana 600®	1 L in 200 L of water	Completely wet all leaves and stem of target plants

Mossman River grass – *Cenchrus echinatus*

Non-chemical options: Plants can be hand pulled or dug out, preferably before seeding. Maintaining competitive pastures can limit invasion. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	3 L per ha	Selective broadacre control
PER9792	Flupropanate 745 g/L Various products	300 mL in 100 L of water	Spot spray
PER9792	Flupropanate 745 g/L Various products	500 mL in 10 L of water	Wiper application
PER9792	Glyphosate 360 g/L Various products	6 L per ha	Non-selective broadacre control
PER9792	Glyphosate 360 g/L Various products	1 L in 100 L of water	Spot spray
PER9792	Glyphosate 360 g/L Various products	3.3 L in 10 L of water	Wiper application

Moth vine – *Araujia sericifera*

Non-chemical options: Small plants can be hand pulled or dug out. Larger vines can be cut and the upper vine left to die. Remove roots from at least 10 cm below ground.

	Chemical and Concentration	Rate	Comments
PER11916	Glyphosate 360 g/L Various products	200 mL per 10 L of water plus a surfactant	Spot spray seedling plants. See permit for more details.
PER11916	Glyphosate 360 g/L Various products	Undiluted	Stem cut, scrape and paint application
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	Up to 2 L glyphosate plus 15 g metsulfuron-methyl in 100 L water	Spot spray plants. See permit for conditions and critical use comments.
PER9907	Metsulfuron-methyl 600 g/kg Various products	10–20 g per 100 L of water plus a surfactant	Spot spray. See permit for conditions and critical use comments.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	For plants with woody stems: Cut the stem close to the ground (10 cm or less). Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Mother-of-millions – *Bryophyllum* species

Non-chemical options: Plants can be hand pulled or dug out. Maintaining vigorous pastures can limit seedling growth. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
PER11916	Metsulfuron-methyl 660 g/kg Various products	1-2 g per 10 L water + 10 mL non-ionic surfactant	Spot spray. See permit for critical comments.
	2,4-D 300 g/L Affray 300	70 mL in 10 L of water	Knapsack spray. Thorough even coverage of leaves and plantlets is necessary.
	2,4-D amine 625 g/L Various products	400 mL per 100 L of water + non-ionic surfactant at a rate of 100 mL per 100 L	Spray in pastures rights of way and industrial areas. Thorough, even coverage of leaves and plantlets is necessary.
	Fluroxypyr 200 g/L Various products	600 mL per 100 L of water + non-ionic surfactant at 100 mL/ 100 L of spray mix.	Spray seedlings and young plants before flowering.

	Chemical and Concentration	Rate	Comments
	Fluroxypyr 333 g/L Starane™ Advanced	360 mL in 100 L of water + non-ionic surfactant at 100 mL/ 100 L of spray mix	Spray actively growing seedlings and young plants before flowering.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water + non-ionic surfactant at a rate of 100 mL per 100 L of water.	Spray when flowering.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water + non-ionic surfactant at a rate of 100 mL per 100 L	Spray when flowering.

Mouse-ear hawkweed – *Pilosella officinarum*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER95047	Picloram 20 g/kg Tordon® Granules	45 g/m^2	Apply as a spot application by hand or hand spreader. Do not apply more than 1 application per year. See permit for further critical comments.
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14558	Clopyralid 300 g/L Lontrel®	5 mL in 1 L of water	Spot spray application only for National Parks and non-agricultural adjoining lands. Only for use by NPWS employees and contractors, See permit for further critical comments.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Use leaf wiping application technique. Apply to at least 50% of the leaves of the rosette plant by wiping the applicator along the middle of each leaf. For use in non-crop areas, including native vegetation, conservation areas, gullies, reserves and parks.

Murraya – *Murraya paniculata*

Non-chemical options: Seedlings may be hand pulled, and larger plants dug out.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray plants up to 1.5 m tall from October to May. See permit for more critical use comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray plants up to 1.5 m tall from October to May. See permit for more critical use comments.
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Foliar application for seedlings/ coppice shoots.
PER9907	Glyphosate 360 g/L Various products	1 part per 1.5 parts of water	Stem injection / cut stump application, saplings to large shrubs.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the trunk close to the ground. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Mysore thorn – *Caesalpinia decapetala*

Non-chemical options: Small plants can be hand pulled or dug out. Remove as much of the roots as possible. Be careful of the sharp thorns.

	Chemical and Concentration	Rate	Comments
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 100 L of water and a wetting agent at 100 mL/100 L.	Thorough spray all the foliage and stems until wet. See list on label for suitable wetting agents.
	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water	Spray to thoroughly wet all foliage, but not to cause run off. Apply to actively growing plants before flowering. Add wetting agent.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the stump then apply a 3–5 mm layer of gel for stems less than 20 mm diameter. Apply 5 mm layer on stems above 20 mm diameter .

Nodding thistle – *Carduus nutans* subsp. *nutans*

Non-chemical options: Plants can be dug out, remove at least the top 10 cm of the root. Maintaining strong, competitive pastures helps prevent invasion and suppresses weeds. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	2,4-D LV ester 680g/L Estercide® Xtra	1.15 to 17 L per hectare	Boom spray application, rosette to preflowering
	Clopyralid 300 g/L Lontrel®	250 mL per 100 L of water	Spray at rosette to pre-flowering.
	Clopyralid 300 g/L with MCPA 500 g/L Various products	50-70 mL clopyralid plus 1.0–1.5 L MCPA /ha	Boom spray. Spray at rosette to pre-flowering.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL in 100 L of water	Hand gun application
	MCPA 500 g/L Various products	250 mL per 150 L of water	Spot spray application
	MCPA 500 g/L Various products	2.5 L/ha	Boom spray application, at early rosette stage, re-treatment is required.

Noogoora burr – *Xanthium occidentale*

Non-chemical options: Plants can be dug out. Biological control agents are widespread and there is no need for further distribution.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	1.0 L/ha	Boom spray application
	2,4-D amine 625 g/L Various products	800 mL–1.1 L/ha	Seedlings only.
	2,4-D LV ester 680g/L Estercide® Xtra	1.7 to 3.3 L per hectare	Boom spray application from seedlings to preflowering
	Fluroxypyr 200 g/L Various products	75 mL per 100 L of water	Apply to actively growing plants. Seedlings and young plants to 40 cm high.
	Fluroxypyr 333 g/L Staranetm Advanced	45 mL in 100 L of water	Apply to actively growing plants. Seedlings and young plants to 40 cm high.
	MCPA 500 g/L Various products	1.0–2.0 L/ha	Spray young seedlings only.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	14 g per 100 L of water (always add a Wetter 100 mL/100L)	Spray with handgun. Adjuvant: Wetter 1000g/L non-ionic alcohol alkoxylate (TITAN WETTER 1000 or BS1000 or equivalent).
	Metsulfuron-methyl 600 g/kg Various products	7.5 g per 100 L of water	Apply to actively growing plants. Do not apply to plants under stress.

Ochna – *Ochna serrulata*

Non-chemical options: Small plants (under 20 cm) can be dug out. Remove as much of the root as possible. The roots have a kink which makes hand pulling difficult.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray plants up to 1.5 m tall from October to May. See permit for more critical use comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray plants up to 1.5 m tall from October to May. See permit for more critical use comments.
PER9907	Glyphosate 360 g/L Various products	200 mL glyphosate per 10 L of water	Spot spray. Apply to seedlings/ coppice shoots and shrubs.
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate per 1.5 parts of water	Scrape stem, cut, and paint. Cut stump saplings. Stem injection large trees and shrubs.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	200 mL glyphosate plus 1.5g metsulfuron-methyl per 10 L of water	Spot spray application.
	Fluroxypyr 333 g/L Staranetm Advanced	600 mL in 100 L of water	Spot spray, Apply to plants up to 2 m tall
	Fluroxypyr 333 g/L Staranetm Advanced	300 mL per 10 L of water	Gas gun application to plants up to 1 m.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump/stem injection application. Apply a 3–5 mm layer of gel for stems less than 20 mm. Apply 5 mm layer on stems above 20 mm .

Oleander – *Nerium oleander*

Non-chemical options: Plants can be dug out. Handle all plant material with care, as all parts are highly toxic to both humans and livestock.

	Chemical and Concentration	Rate	Comments
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel to stems with a diameter less than 20 mm. Apply 5 mm layer on stems with a diameter more than 20 mm .
	Triclopyr 240 g/L + Picloram 120 g/L Accesstm	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application can be used for plants with stems up to and in excess of 5 cm diameter at the base.

Onion weed – *Asphodelus fistulosus*

Non-chemical options: Maintaining strong, competitive pastures helps prevent invasion and suppresses weeds. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	Aminocyclopyrachlor 240 g/L Method® 240 SL	200-500 mL per 100 L of water	Spot spray with a handgun, hand-held sprayer or backpack sprayer. Thoroughly and uniformly wet the foliage but avoid spraying to the point of run off.
PER11916	Glyphosate 360 g/L Various products	50 mL per 10 L of water.	Spray evenly to cover all foliage. Retreatment is essential after flowering. For use in urban bushlands, forests and coastal reserves. See permit for critical use comments.
	Amitrole 250 g/L + Ammonium thiocyanate 220 g/L Various products	1.1 L per 100 L of water	Active growth before flowering. Repeat treatments will be required.

Orange hawkweed – *Pilosella aurantiaca*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER95047	Picloram 20 g/kg Tordon® Granules	45 g/m^2	Apply as a spot application by hand or hand spreader. Do not apply more than 1 application per year. See permit for further critical comments.
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14558	Clopyralid 300 g/L Lontrel®	5 mL in 1 L of water	Spot spray application only for National Parks and non-agricultural adjoining lands. Only for use by NPWS employees and contractors, See permit for further critical comments.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Use leaf wiping application technique. Apply to at least 50% of the leaves of the rosette plant by wiping the applicator along the middle of each leaf. For use in non-crop areas, including native vegetation, conservation areas, gullies, reserves and parks.

Osage orange – *Maclura pomifera*

Non-chemical options: Small plants can be dug out of soft soil.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray actively growing plants. Follow the directions on the label for sweet briar.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1 L in 60 L of diesel	Basal bark application for plants with stems up to 15 cm diameter at the base. Cut stump application for any sized stem: apply herbicide immediately after the cut. Follow the label instructions as per chinee apple
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray actively growing plants. Follow the directions on the label for sweet briar.

Ox-eye daisy – *Leucanthemum vulgare*

Non-chemical options: Small plants can be hand pulled or dug out, preferably before they flower. This is easiest when the soil is damp and loose. Remove roots from at least 10 cm below ground to avoid regrowth.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray plants from October to May. See permit for critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Spray plants from October to May. See permit for critical comments.

	Chemical and Concentration	Rate	Comments
PER87431	Metsulfuron-methyl 600 g/kg Various products	10 g/100 L of water plus non-ionic surfactant	Spot spray actively growing plants in bushlands and native pastures. Apply up to the early flowering stage, ensuring thorough coverage. Do not apply more than 1 application per year. See permit for more critical comments.
PER89080	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L water	Spot spray terrestrial situations and margins of aquatic areas. Do not spray within 400 m of potable water. See permit for critical use comments.
PER14832	Metsulfuron-methyl 600 g/kg Various products	1-2 g per 10L of water. Apply in a volume of 50–80 L/ha.	Aerial boom spray applications. Limited to persons employed or contracted by NPWS and agencies represented on regional weed committees. Refer to the critical use comments in the permit.
	Dicamba 750 g/L Kamba® 750	5.9 L/ha Use a minimum of 1500 L/ha water carrier. Add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	Dicamba 750 g/L Kamba® 750	400 mL per 100 L of water. Add a surfactant.	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	87 mL per 15 L of water. Add a surfactant.	Spot spray prior to flowering. For non-crop situations.

Palm grass – *Setaria palmifolia*

Non-chemical options: Plants can be hand pulled or dug out. Dig out as much of the roots as possible.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	3 L per ha	Selective broadacre control. See permit for critical use comments for Setaria species.
PER9792	Flupropanate 745 g/L Various products	300 mL in 100 L of water	Spot spray. See permit for critical use comments for Setaria species.
PER9792	Flupropanate 745 g/L Various products	500 mL in 10 L of water	Wiper application. See permit for critical use comments for Setaria species.
PER9792	Glyphosate 360 g/L Various products	6 L per ha	Non-selective broadacre control. See permit for critical use comments for Setaria species.
PER9792	Glyphosate 360 g/L Various products	3.3 L in 10 L of water	Wiper application. See permit for critical use comments for Setaria species.
PER9907	Glyphosate 360 g/L Various products	150 mL in 15 L of water.	Spot spray.

Pampas grass – *Cortaderia* species

Non-chemical options: For small infestations dig out plants, removing all of the crown and rhizomes. Cut the leaves and stems to improve access before digging. Machinery can be used to remove large infestations.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	1 part herbicide per 9 parts water.	Gas gun or splatter gun. Apply 2 x 2 mL per 0.5 m height as an even spray to cover all foliage.
	Glyphosate 360 g/L Various products	10 mL or 13 mL per 1 L water	Spray using a handgun or knapsack. Treat actively growing plants, before flowering, spring to autumn. Use higher rate on plants over 1 m tall.

Pampas lily of the valley – *Salpichroa origanifolia*

Non-chemical options: Individual plants can be dug out, though this can be difficult as the roots may be extensive. Dispose of plant parts carefully as root fragments easily regrow.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray

Paper mulberry – *Broussonetia papyrifera*

Non-chemical options: Small individual plants can be dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	400 mL of glyphosate in 600 mL of water	Cut stump application
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spray seedlings and coppice shoots.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Parkinsonia – *Parkinsonia aculeata*

Non-chemical options: If you see new infestations, call your local council weeds officer or the NSW DPI Biosecurity Helpline 1800 680 244. Small plants can be dug out by hand or with machinery.

	Chemical and Concentration	Rate	Comments
	Hexazinone 250 g/L Velpar® L	4 mL per spot	One spot per bush up to 5 m tall.
	Hexazinone 250 g/L Velpar® L	1 mL per spot	One spot per bush up to 1 m tall. Do not use near desirable plants.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL per 100 L of water + spray oil at 500 mL/100 L of water	Spray plants under 2 m tall. Thoroughly cover all of the foliage. Avoid spraying under dry conditions or when plants are stressed or bearing pods. See label for suitable spray oils.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application for plants with stems up to and in excess of 5 cm diameter at the base.

Parrot's feather – *Myriophyllum aquaticum*

Non-chemical options: For small infestations, plants can be removed from the water by hand. Draining a waterbody and allowing the parrot›s feather to dry out can help with control. Clean all equipment to prevent spread of plant fragments.

	Chemical and Concentration	Rate	Comments
PER92971	Metsulfuron-methyl 660 g/kg Various products	10 g / 100 L water (plus wetter at 200 mL per 100 L)	Only for enclosed water bodies. Areas within 400 m of potable water supply uptakes are excluded. ONLY apply as a foliar spot spray during non-frost periods using a high volume sprayer/knapsack fitted with calibrated spray equipment. Apply a maximum of 3 applications per year at minimum intervals of 90 days. WARNING: Very toxic to aquatic plants and algae. See permit for more restraints and critical use comments.
	Dichlobenil 40 g/kg Casoron 4G Herbicide	2.9 to 3.9 kg per $10m^2$	Exposed soil. DO NOT apply to water which will be used for crop irrigation, for livestock watering, or for human consumption.
	Dichlobenil 40 g/kg Casoron 4G Herbicide	287 to 388 kg per ha or 2.87 to 3.88 kg per $100m^2$	Water less than 1m deep. Apply when weeds are dormant. DO NOT apply to water which will be used for crop irrigation, for livestock watering, or for human consumption.
	Dichlobenil 40 g/kg Casoron 4G Herbicide	388 to 574 kg per ha or 3.88 to 5.74 kg per $100m^2$	Water more than 1 m deep. Apply when weeds are dormant. DO NOT apply to water which will be used for crop irrigation, for livestock watering, or for human consumption.

Parthenium weed – *Parthenium hysterophorus*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	125 mL per 100 L of water	Spot spray. Rosette stage when plants are actively growing.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	3.0 L/ha	Boom application.
	Atrazine 900 g/kg Various products	3.3 L/ha	Protects against emerging seedlings.
	Dicamba 500 g/L Various products	40 mL per 100 L of water	Spot spray in non-crop areas, grass pastures and perennial grass seed crops
	Dicamba 500 g/L Various products	600 mL/ha	Boom spray. Apply to young, actively growing plants in non-crop areas.
	Hexazinone 250 g/L Velpar® L	70 mL per 100 L of water	Apply uniformly over the area. When spraying single plants treat soil for 1 m around. Do not use near desirable trees (see label for details).
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	10 g per 100 L of water plus a non-ionic surfactant at a rate of 100mL/ 100 L	Spray to thoroughly wet all foliage but not to cause run-off. Non-ionic surfactants includes BS1000 or equivalent.
	Metsulfuron-methyl 600 g/kg Various products	5 g per 100 L of water plus a non-ionic surfactant at a rate of 100mL/ 100L	Thoroughly wet all foliage to the point of run-off.

Paterson's curse – *Echium plantagineum*

Non-chemical options: Maintaining ground cover in pastures and good grazing management can limit infestations. Six biological control agents are available and some provide effective control, contact your local council weeds officer for more information.

Chemical and Concentration	Rate	Comments
2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	150 mL in 100 L of water	Spot spray. Rosettes to pre-flowering.
2,4-D amine 625 g/L Various products	170–220 mL in 150 L of water	Spot spray. Young rosettes.
2,4-D amine 625 g/L Various products	1.7–2.2 L/ha	Boom spray.
Dicamba 750 g/L Kamba® 750	185 mL/100L of water. Add an activator.	Spot spray before flowering. For non-crop areas.
Dicamba 750 g/L Kamba® 750	2.7 L/ha Use a minimum of 1500 L/ha water carrier. Add an activator.	Boom spray for non-crop situations. Spray prior to flowering.
Glyphosate 360 g/L Various products	500–700 mL /100 L of water	Spot spray actively growing plants. Use the lower rate on weeds up to 15cm tall; increase to the higher rate where weeds are over 15cm tall
Glyphosate 360 g/L Various products	2.0–3.0 L/ha. Use 75-200 L of solution/ha	Boom application when plants are actively growing. Use the lower rate on weeds up to 15cm tall; increase to the higher rate where weeds are over 15cm tall.
MCPA 500 g/L Various products	1.0–1.5 L/ha	Apply at early rosette stage
Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	10 g per 100 L of water (always add a Wetter 100 mL/100L)	Spray with a hand gun. See label for details on wetters.
Metsulfuron-methyl 600 g/kg Various products	5 g in 100 L of water	Apply to rosettes after full leaf expansion but before head emergence. Do not spray after emergence of first flowers, as seed set has occurred.
Metsulfuron-methyl 600 g/kg Various products	15 g/ha	Boom spray. Apply to rosettes after full leaf expansion but before head emergence. Do not spray after emergence of first flowers, as seed set has occurred.
Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250 mL in 100 L of water	Spot spray from rosette to flowering plants

Pellitory – *Parietaria judaica*

Non-chemical options: Plants can be hand pulled or dug up, preferably before they flower.

Chemical and Concentration	Rate	Comments
Glyphosate 360 g/L Various products	1.0 L in 100 L of water	Apply to actively growing plants before flowering. Re-treatments may be required to control seedlings.

Pencil cactus – *Cylindropuntia leptocaulis*

Non-chemical options: Small plants dug out or be mechanically removed carefully. The cochineal bug *(Dactylopius tormentosus)* provides effective control. Contact your local council weeds officer for more information about biological control agents.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water.	Follow the label instructions as per Prickly pear (common), smooth tree pear. Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Follow the label instructions as per prickly pear common. To improve uptake of add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	1 L per 75 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Peppercorn – *Schinus* species

Non-chemical options: Small plants can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray

Perennial ground cherry – *Physalis longifolia*

Non-chemical options: Small seedlings can be dug up or pulled out. Dispose of any fruit appropriately and do not leave the rhizomes on the ground as they can sprout.

	Chemical and Concentration	Rate	Comments
	Dicamba 750 g/L Kamba® 750	5.9 L/ha. Use a minimum of 1500 L of solution per ha. Add a non-ionic surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	Dicamba 750 g/L Kamba® 750	400 mL per 100 L of water. Add a surfactant.	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	87 mL per 15 L of water. Add a surfactant.	Spot spray prior to flowering. For non-crop situations.

Perennial ragweed – *Ambrosia psilostachya*

Non-chemical options: Small plants may be dug out. Ensure all of the roots are removed.

Chemical and Concentration	Rate	Comments
Dicamba 750 g/L Kamba® 750	400 mL per 100 L of water. Add a surfactant.	Spray prior to flowering. For non-crop situations.
Dicamba 750 g/L Kamba® 750	5.9 L/ha Use a minimum of 1500 L water per ha. Add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
Dicamba 750 g/L Kamba® 750	87 mL per 15 L of water. Add a surfactant.	Spot spray prior to flowering. For non-crop situations.

Perennial thistle – *Cirsium arvense*

Non-chemical options: Cultivation is ineffective in controlling this plant because of the perennial root system.

Chemical and Concentration	Rate	Comments
2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL per 100 L of water	Spot spray. Spray at budding stage.
2,4-D amine 625 g/L Various products	320–380 mL per 100 L of water	Spot spray.
2,4-D amine 625 g/L Various products	3.2–3.8 L/ha	Boom spray. Rosettes to early budding stage.
Dicamba 750 g/L Kamba® 750	185 mL per 100 L of water. Use a minimum of 1500 L of water per ha. Add a surfactant.	Spray prior to flowering. For non-crop situations.
Dicamba 750 g/L Kamba® 750	2.7 L/ha add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL in 100 L of water	Hand gun application.

Plume poppy – *Bocconia frutescens*

Non-chemical options: Small plants can be hand pulled.

Chemical and Concentration	Rate	Comments
Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel for stems less than 20 mm in diameter. Apply 5 mm layer on stems more than 20 mm in diameter.

Pond apple – *Annona glabra*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray. Do not treat plants growing in a body of water.
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray. Do not treat plants growing in a body of water.
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves. Do not treat plants growing in a body of water.
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus non-ionic surfactant 100 mL/ 100 L of water	Spot spray. Do not treat plants growing in a body of water.
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus non-ionic surfactant 100 mL/ 100 L of water.	Wipe onto leaves
	Fluroxypyr 333 g/L Starane™ Advanced	900 mL per 100 L of diesel	Basal bark: Plants up to 20 cm diameter at the base. Do not treat plants growing in a body of water. Thoroughly spray all the way around the tree, from the ground up to a height of 50 cm so that the spray mix soaks through the bark.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.

Prairie ground cherry – *Physalis hederifolia*

Non-chemical options: Small seedlings may be dug out. Cultivation is ineffective because of the perennial root system.

	Chemical and Concentration	Rate	Comments
	Amitrole 250 g/L + Ammonium thiocyanate 220 g/L Various products	1.1 L in 100 L of water	Spot spray. Active growth before flowering.
	Dicamba 750 g/L Kamba® 750	2.7 L/ha Use a minimum of 1500 L/ha water carrier. Add a non-ionic surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	Dicamba 750 g/L Kamba® 750	185 mL per 100 L of water. Add a surfactant.	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	40 mL per 15 L of water	Spot spray prior to flowering. For non-crop situations.

Praxelis – *Praxelis clematidea*

Non-chemical options: Small plants can be hand pulled before they flower.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Wipe onto leaves

Prickly acacia – *Vachellia nilotica*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
	Fluroxypyr 333 g/L Staranetm Advanced	900 mL per 100 L of diesel or Biosafe	Cut stump method for trees with a base diameter up to 10 cm. Cut the trunk then spray or paint the mixture around the base of each stem from ground level to a height of at least 30 cm from the ground, wetting the bark to the point of runoff. Do not apply to wet stems.
	Fluroxypyr 333 g/L Staranetm Advanced	450 mL in 100 L of water + Uptake® Spraying Oil or equivalent at the rate of 500 mL/100 L of spray mix.	Spot spray actively growing seedlings and young plants up to 2 m tall.
	Fluroxypyr 333 g/L Staranetm Advanced	900 mL per 100 L of diesel or Biosafe	Basal bark application for plants up to 10 cm diameter. Spray or paint the mixture around the base of each stem from ground level to at least 30 cm from the ground, wetting the bark to the point of runoff. Old rough bark will require more spray than smooth or young thin bark.
	Glyphosate 700 g/kg Di-Bak G	1 capsule for every 10 cm of circumference (minimum of 2 capsules per tree)	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Chemical and Concentration	Rate	Comments
Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 10 cm diameter at the base. Cut stump application for plants with stems greater than 10 cm diameter at the base.
Triclopyr 600 g/L Garlon® 600	500 mL in 60 L of diesel	Basal bark application for stems up to 10 cm diameter at the base. Spray or paint the mixture all the way around the stem from ground level up to 30 cm high, wetting to the point of runoff. Cut stump application for plants with stems up to and greater than 10 cm diameter at the base. Stems should be cut less than 15 cm above the ground. Do not apply to wet stems.

Privet - broad-leaf – *Ligustrum lucidum*

Non-chemical options: Small plants and seedlings can be hand pulled or dug out.

Chemical and Concentration	Rate	Comments
Glyphosate 360 g/L Various products	Undiluted (1–2 mL per cut)	Stem injection. Apply 1 mL/cut for trees with trunk diameter 25 cm or less at the base. Apply 2 mL/cut for trees with trunk diameter over 25 cm and up to 60 cm at the base,
Glyphosate 700 g/kg Di-Bak G	1 capsule for every 10 cm of circumference (minimum of 2 capsules per tree)	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule in the tree trunk.
Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 100 L of water plus non-ionic surfactant 100 mL/ 100 L of water	Handgun application. Apply to bushes up to 3 m high. Complete foliar spray coverage is essential for control.
Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 10 L of water plus organosilicon penetrant 20 mL per 10 L of water.	Low volume gas gun. Apply to bushes up to 3 m tall. Complete coverage is essential.
Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water plus non-ionic surfactant 100 mL/ 100 L of water	Apply to bushes up to 3 m high; complete coverage is essential.
Metsulfuron-methyl 600 g/kg Various products	1 g per litre of water + organosilicone penetrant (10 mL/5L)	Gas gun / Splatter gun application. Apply only to bushes up to 3 m high when in full leaf and actively growing. Thorough coverage is essential.
Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 30 L of diesel	Basal bark/cut stump application.
Triclopyr 600 g/L Various products	1.0 L per 12 L of diesel	Basal bark application for stems up to 10 cm diameter at the base. Cut stump application for plants with stems up to and greater than 10 cm diameter at the base. Treat any time of the year.

Privet - European – *Ligustrum vulgare*

Non-chemical options: Small plants and seedlings can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	Undiluted (1–2 mL per cut)	Stem injection. Apply 1 mL/cut for trees with trunk diameter 25 cm or less at the base. Apply 2 mL/cut for trees with trunk diameter over 25 cm and up to 60 cm at the base,
	Glyphosate 700 g/kg Di-Bak G	1 capsule for every 10 cm of circumference (minimum of 2 capsules per tree)	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule in the tree trunk.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 100 L of water plus non-ionic surfactant 100 mL/ 100 L of water	Handgun application. Apply to bushes up to 3 m high. Complete foliar spray coverage is essential for control.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 10 L of water plus organosilicon penetrant 20 mL per 10 L of water.	Low volume gas gun. Apply to bushes up to 3 m tall. Complete coverage is essential.
	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water plus non-ionic surfactant 100 mL/ 100 L of water	Apply to bushes up to 3 m high; complete coverage is essential.
	Metsulfuron-methyl 600 g/kg Various products	1 g per litre of water + organosilicone penetrant (10 mL/5L)	Gas gun / Splatter gun application. Apply only to bushes up to 3 m high when in full leaf and actively growing. Thorough coverage is essential.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 30 L of diesel	Basal bark/cut stump application.
	Triclopyr 600 g/L Various products	1.0 L per 12 L of diesel	Basal bark application for stems up to 10 cm diameter at the base. Cut stump application for plants with stems up to and greater than 10 cm diameter at the base. Treat any time of the year.

Privet - narrow-leaf – *Ligustrum sinense*

Non-chemical options: Small plants and seedlings can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	Undiluted (1–2 mL per cut)	Stem injection. Apply 1 mL/cut for trees with trunk diameter 25 cm or less at the base. Apply 2 mL/cut for trees with trunk diameter over 25 cm and up to 60 cm at the base,
	Glyphosate 700 g/kg Di-Bak G	1 capsule for every 10 cm of circumference (minimum of 2 capsules per tree)	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule in the tree trunk.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 100 L of water plus non-ionic surfactant 100 mL/ 100 L of water	Handgun application. Apply to bushes up to 3 m high. Complete foliar spray coverage is essential for control.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 10 L of water plus organosilicon penetrant 20 mL per 10 L of water.	Low volume gas gun. Apply to bushes up to 3 m tall. Complete coverage is essential.

	Chemical and Concentration	Rate	Comments
	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water plus non-ionic surfactant 100 mL/ 100 L of water	Apply to bushes up to 3 m high; complete coverage is essential.
	Metsulfuron-methyl 600 g/kg Various products	1 g per litre of water + organosilicone penetrant (10 mL/5L)	Gas gun / Splatter gun application. Apply only to bushes up to 3 m high when in full leaf and actively growing. Thorough coverage is essential.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 30 L of diesel	Basal bark/cut stump application.
	Triclopyr 600 g/L Various products	1.0 L per 12 L of diesel	Basal bark application for stems up to 10 cm diameter at the base. Cut stump application for plants with stems up to and greater than 10 cm diameter at the base. Treat any time of the year.

Ragwort – *Senecio jacobaea*

Non-chemical options: Small plants can be hand pulled, and larger plants can be dug out. Biological control agents are widespread and there is no need for redistribution.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray plants from October to May. See permit for critical comments.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	300 mL per 100 L of water	Spray application from the rosette to the cabbage stage.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	3.5 L/ha	Boom application, rosettes to cabbage stage.
	Dicamba 750 g/L Kamba® 750	185 mL per 100 L of water. Add a surfactant.	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	2.7 L/ha Use a minimum of 1500 L/ ha water carrier. Add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	190–270 mL per 100 L of water	Spot spray.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	2.8–4.0 L/ha	Boom spray. Apply at the young growth stage.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	10 g per 100 L of water (always add a Wetter 100 mL/100L)	Apply to actively growing plants at rosette to cabbage stage. Adjuvant: Wetter 1000g/L non-ionic alcohol alkoxylate (TITAN WETTER 1000 or BS1000 or equivalent).
	Metsulfuron-methyl 600 g/kg Various products	5 g per 100 L of water plus a non-ionic surfactant at a rate of 100mL/ 100L	Spot spray application.
	Metsulfuron-methyl 600 g/kg Various products	15 g/ha	Boom application, actively growing rosettes to cabbage stage.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 or 500 mL per 100 L of water	Spot spray actively growing plants.

Rattlepod – *Crotalaria beddomeana*

Non-chemical options: Small plants can be hand pulled or dug out, preferably before flowering.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spray evenly to cover all the foliage. See permit for critical use comments.
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.

Red cestrum – *Cestrum elegans*

Non-chemical options: Small plants can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	Up to 1:50 herbicide to water.	Spot spray. See permit for additional conditions.
PER9907	Glyphosate 360 g/L Various products	1:1.5 with water to undiluted herbicide.	Cut, scrape and paint. See permit for additional conditions.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Apply from late spring to early autumn. Any regrowth and seedlings should be resprayed when 1 m high. Follow the label instructions for green cestrum.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Red ludwigia – *Ludwigia repens*

Non-chemical options: Plants can be hand pulled or dug out. Make sure that no stem or root parts remain. Dispose of all the plant parts.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 mL per 10 L of water.	Spot spray
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 9 parts water	Splatter gun

Red rice – *Oryza rufipogon*

Non-chemical options: Red rice is very difficult to distinguish from desirable rice plants before flowering. Where rice is planted in rows, rice seedlings not growing in the row pattern can be hand pulled.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray.
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun

Rhizomatous bamboo – *Phyllostachys* species

Non-chemical options: Small, isolated plants can be dug out by hand. It is easier if the stems are cut first. Machinery can be used to dig out large infestations. Ensure all of the rhizomes are removed from the soil.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate to 6 parts water	Cut stump method. Cut stems to 20 cm. Pour mixture down stem or wet cut. Follow label instructions as per Bamboo (*Bambusa* spp.)

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	1 L per 100 L of water.	Spray all of the foliage on actively growling plants between 1 and 2 m tall. Follow label instructions as per Bamboo (*Bambusa* spp.)

Rhus tree – *Toxicodendron succedaneum*

Non-chemical options: This tree is very toxic, and the sap can severely burn the skin. Avoid contact with any parts of the tree. Do not mulch or chip for garden use. Wear personal protective equipment if digging out plants.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	Undiluted (1–2 mL per cut)	Stem injection technique, as per label. Use 1 m L for trees under 25 cm at the base and 2 mL for trees 25-60 cm at the base.
	Glyphosate 360 g/L Various products	1 part glyphosate to 1 part water	Cut stump application for trees up to 30 cm diameter at the base.
	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spray seedlings and coppice shoots.
	Glyphosate 700 g/kg Di-Bak G	1 capsule for every 10 cm of circumference (minimum of 2 capsules per tree)	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule in the tree trunk.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Rice paper plant – *Tetrapanax papyrifer*

Non-chemical options: Dig out small plants, remove as much of the roots as possible.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 -20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Riverina pear – *Opuntia elata*

Non-chemical options: Dig up small or isolated plants. Larger infestations may be controlled by machinery. The cactoblastis moth (*Cactoblastis cactorum*) and 2 species of cochineal bugs *Dactylopius opuntiae* ('*stricta*' and '*ficus*' lineages) and *Dactylopius ceylonicus* provide biological control. Contact your local council weeds officer for more information.

Chemical and Concentration	Rate	Comments
Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant with herbicide mix to the point of runoff. Follow the label instructions as per prickly pear (common). Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Spray actively growing plants, wetting all areas of the plant to ground level.
Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant. Follow the label instructions as per prickly pear (common). To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel.	Spray actively growing plants, thoroughly cover all of the plant. Follow the label instructions as per common prickly pear (*Opuntia* spp.).
Triclopyr 600 g/L Garlon® 600	3.0 L per 100 L of water	Spray actively growing plants, thoroughly cover all of the plant to the point of runoff. Follow the label instructions as per common prickly pear (*Opuntia* spp.) To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.

Rope pear – *Cylindropuntia imbricata*

Non-chemical options: Small plants dug out or be mechanically removed carefully. . The cochineal bug (*Dactylopius tormentosus* '*cylindropuntia*' linage) provides effective control. Contact your local council weeds officer for more information about biological control agents.

Chemical and Concentration	Rate	Comments
Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water.	Follow the label instructions as per Prickly pear (common), smooth tree pear. Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Follow the label instructions as per prickly pear common. To improve uptake of add a paraffinic oil at the rate of 500 mL per 100 L of water.
Triclopyr 600 g/L Garlon® 600	1 L per 75 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Rosewood – *Tipuana tipu*

Non-chemical options: Small seedlings can be dug out. Cattle eat seedlings and new growth.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 glyphosate to water + 1 g metsulfuron to 1 L water	Stem injection

Rubber vine – *Cryptostegia grandiflora*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER90342	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350-500 mL / 100 L water	Spot spray using hand held equipment. Can be used around domestic residences, homesteads gardens, sheds, and agricultural buildings when detected as part of an eradication program. See permit for further critical use comments.
PER90342	Triclopyr 240 g/L + Picloram 120 g/L Access™	1 L / 60 L diesel	Basal bark and cut stump application. Can be used around domestic residences, homesteads gardens, sheds, and agricultural buildings when detected as part of an eradication program. See permit for further critical use comments.
PER90342	Triclopyr 600 g/L Garlon® 600	1 L / 60 L of diesel	Basal bark and cut stump application. Can be used around domestic residences, homesteads gardens, sheds, and agricultural buildings when detected as part of an eradication program. See permit for further critical use comments.
	Metsulfuron-methyl 600 g/kg Various products	15 g per 100 L of water	Hand gun application. Do not apply to bushes more than 3 m tall. Apply October to April, ensuring thorough spray coverage of all foliage.
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 or 500 mL in 100 L of water	Hand gun application
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut the trunks as low to the ground as possible and apply herbicide immediately. Apply a 3–5 mm layer of gel for stems less than 20 mm diameter. Apply 5 mm layer on stems above 20 mm diameter.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1 L per 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application can be used for plants with stems up to and in excess of 5 cm diameter at the base. Treat all stems on multi-stem plants. See label for information about biodiesel. For Agricultural non-crop areas, commercial and industrial areas, fence lines, forestry, pastures and rights-of-way.
	Triclopyr 600 g/L Garlon® 600	1.0 L in 60 L of diesel	Cut stump method: cut all stems within 15 cm above the ground. Paint or spray the herbicide mix onto the cut surface and sides of the stem mixture within 15 seconds of cutting. For Agricultural non-crop areas, commercial and industrial areas, forests, pastures and rights of way.
	Triclopyr 600 g/L Garlon® 600	1 L per 60 L of diesel	Basal bark application for plants up to 5 cm basal diameter Liberally spray or paint all the way around the stem from ground level up to 30 cm high, wetting thoroughly to the point of runoff. DO NOT apply to wet stems as this can repel the diesel mixture. For Agricultural non-crop areas, commercial and industrial areas, forests, pastures and rights of way.

Saffron thistle – *Carthamus lanatus*

Non-chemical options: Control can be enhanced by slashing or pasture improvement.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	300 mL/ha	Boom spray application for young rosette or seedling plants.
	2,4-D amine 625 g/L Various products	110–170 mL per 150 L of water	High volume spot spray application.
	2,4-D amine 625 g/L Various products	1.1–1.7 L/ha	Boom application, apply when in rosette stage.
	2,4-D LV ester 680g/L Estercide® Xtra	800 mL to 2.5 L per ha	Boom spray application up to rosette stage
	Clopyralid 600 g/L Lontrel® Advanced	125 mL per 100 L water	Spot spray.
	Clopyralid 600 g/L with MCPA 500 g/L Various products	25 mL clopyralid per ha plus MCPA as per label	Boom spray. Actively growing rosettes; use higher rate on mature plants.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL in 100 L water	High volume hand gun application on actively growing plants.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	80 mL per 15 L of water	For thistle seedlings. Spot spray from a knapsack. A repeat application may be necessary.
	MCPA 500 g/L Various products	100–200 mL in 150 L water	Spot spray.
	MCPA 500 g/L Various products	1–2 L/ha	Boom spray. Apply when in rosette stage. Use higher rate for larger weeds.

Sagittaria – *Sagittaria platyphylla*

Non-chemical options: Small infestations can be removed from the water by hand. Machinery can be used to remove large infestations. Remove all of the corms and roots.

	Chemical and Concentration	Rate	Comments
PER89861	Glyphosate 360 g/L Only products registered for aquatic use	10 L product/100 L water	Spot spray. Only for use in Aquatic areas (Irrigation and drainage channels) within the Murrumbidgee Irrigation Limited areas of responsibility. DO NOT exceed a maximum of 40 L product/ha. See permit for other critical comments.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 37.5 cubic metres of water to achieve 400 parts per billion.	For use on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. At least 50% of the weed biomass must be below the water surface. See label for further instructions and restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 37.5 cubic metres. Each tablet dissolved in at least 20L of water + 0.5 -1.0% adjuvant/ surfactant	For use on dense or established weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20L per tablet) mix thoroughly and then inject the solution directly into the water body.

Salvinia – *Salvinia molesta*

Non-chemical options: Small infestations can be removed by taking plants out of the water by hand. Machinery can be used to harvest large infestations. Reducing nutrient run-off into the water can limit growth. The salvinia beetle is an effective biological control agent. Contact your local council weeds officer for biological control information.

	Chemical and Concentration	Rate	Comments
PER92971	Metsulfuron-methyl 600 g/kg Various products	10 g / 100 L water (plus wetter at 200 mL per 100 L)	Only for enclosed water bodies. Areas within 400 m of potable water supply uptakes are excluded. ONLY apply as a foliar spot spray during non-frost periods using a high volume sprayer/knapsack fitted with calibrated spray equipment. Apply a maximum of 3 applications per year at minimum intervals of 90 days. WARNING: Very toxic to aquatic plants and algae. See permit for more restraints and critical use comments.
PER14327	Glyphosate 360 g/L Only products registered for aquatic use	1 L in 100 L of water OR 6 - 9 L / Ha	Hand gun application. Use of this permit is limited to staff and contractors of NPWS and agencies/ organisations represented by Regional Weed Committees. See permit for further critical use comments.
	Diquat 200 g/L Reglone®	400 mL per 100 L of water plus 150 mL Agral / 100 L water	Spray to wet all foliage thoroughly. About 1 mL of product should be sufficient to treat 1 metre squared of weeds.
	Diquat 200 g/L Reglone®	5.0–10.0 L/ha	Apply as overall spray wetting foliage thoroughly. Use higher rates for heavy infestations or for deep or dirty water. Oxygen depletion of decaying weeds may occur therefore do not spray more than a quarter of the area at any one time.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 37.5 cubic metres of water to achieve 400 parts per billion.	For use on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. See label for further instructions and restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 37.5 cubic metres. Each tablet dissolved in at least 20 L of water + 0.5-1.0% adjuvant/ surfactant	For use on dense or established weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20L per tablet) mix thoroughly and then inject the solution directly into the water body.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Spray 12 - 15 L of solution per 100 m^2. Solution = 1 tablet per 100 L water + 0.5-1.0% adjuvant/ surfactant.	Spray on low density, establishing or re-establishing weeds in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger still water bodies. See label for restrictions.
	Orange oil 55.2 g/kg Water Clear®	1.0 L per 100 L of water	Spray on free-floating plants lightly, just enough to change their colour. For non-potable water in artificial and enclosed water bodies.

Scotch broom – *Cytisus scoparius* subsp. *scoparius*

Non-chemical options: Plants can be dug out by hand. Machinery can be used for larger plants if the roots are broken up and removed. Contact your local council weeds officer for biological control information.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	100–130 mL per 10 L of water	Foliar spot spray application.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250 or 350 mL in 100 L of water	Lower rate when actively growing mid-summer to pod formation. Higher rate for autumn-winter treatment.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	250 or 350 mL per 100 L of water	Lower rate when actively growing mid-summer to pod formation. Higher rate for autumn-winter treatment.
	Triclopyr 600 g/L Garlon® 600	170 mL per 100 L of water	Spray spring to mid-summer prior to pod formation. Spray actively growing plants Thoroughly cover all the foliage and stems to the point of runoff.

Scotch thistle – *Onopordum acanthium*

Non-chemical options: Maintaining competitive grass-based pastures helps prevent invasion. Contact your local agronomist for pasture advice in your region. Single plants can be dug out, remove at least 5 cm of root. Biological control agents are available, contact your local council weeds officer for more information.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL per 100 l of water.	Spot spray at budding stage.
	2,4-D LV ester 680g/L Estercide® Xtra	2.5-3.3 L/ha	Spray rosettes to flowering. For pastures without legumes. Follow the label directions as per stemless thistle.
	Clopyralid 600 g/L Lontrel® Advanced	125 mL in 100 L of water	High volume handgun application. Pastures and fallow land.
	Clopyralid 750 g/L with MCPA 500 g/L Various products	20 or 28 g/ha +1-1.5 L/ha MCPA amine (500 g/L)	Spray rosette before stem elongation in pastures and fallow land.
	Dicamba 750 g/L Kamba® 750	53 mL in 100 L of water. Add a non-ionic surfactant. Apply 1500 L/ha of spray solution.	Handgun application: Spray prior to flowering. For non-crop situations.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL per 100 L of water	Hand gun application.

Sea spurge – *Euphorbia paralias*

Non-chemical options: Individual plants and small infestations can be hand pulled. Seedlings are shallow-rooted and easy to pull up. Remove all of the crown to prevent regrowth.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 -20 g per 100 L water plus surfactant	Spot spray

Seeded banana – *Musa species*

Non-chemical options: Seedlings and small plants can be hand pulled or dug up. Use an axe or saw to cut down the trunk then dig up the roots and suckers. Remove all fruit and roots to prevent regrowth.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spot spray small plants.
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves of small plants.
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus a non-ionic surfactant at a rate of 100mL/ 100L.	Spot spray
	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus non-ionic surfactant	Wipe onto leaves of small plants. See permit and label for critical comments.

Senegal tea plant – *Gymnocoronis spilanthoides*

Non-chemical options: Do not attempt control on your own, as it can spread very easily from dislodged fragments.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 ml in 10 L of water	Spot spray application.

Serrated tussock – *Nassella trichotoma*

Non-chemical options: Individual plants in very small infestations may be dug out. The establishment of perennial pasture together with good grazing management can assist with control. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
PER9792	Glyphosate 360 g/L Various products	3.3 L per 10 L water	Wiper suppression. See permit for critical use comments.
	Flupropanate 745 g/L Various products	1.5–2.0 L/ha	Ground application. Apply September to March and June to August inclusive.
	Flupropanate 745 g/L Various products	150–200 mL per 100 L of water	Spot spray, can be applied all year round.
	Flupropanate 745 g/L Various products	1 L per 20 L of water	Rotating wiper applied September to March and June to August.
	Flupropanate 86.9 g/kg GP Flupropanate	15kg per ha	Granular application. Apply February to December inclusive, ideally during the vegetative stage of growth.
	Flupropanate 86.9 g/kg GP Flupropanate	1.5g/m^2	Spot application of granules. Apply all year round.
	Glyphosate 360 g/L Various products	0.7–1.3 L to 100 L of water	Spot spray application.
	Glyphosate 360 g/L Various products	4.0–6.0 L/ha	Boom spray. Apply to actively growing, stress-free plants.
	Glyphosate 360 g/L Various products	0.75–1.25 L/ha	Spray topping application. Apply to actively growing, stress-free plants.

Shoebutton ardisia – *Ardisia elliptica*

Non-chemical options: Small plants can be hand pulled or dug out. This is easiest when the soil is damp and loose.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus a non- ionic surfactant at a rate of 100mL/ 100L.	Spot spray. Follow label and permit directions and critical comments.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3-5 mm layer of gel for stems less than 20 mm in diameter. Apply a 5 mm layer of gel to stumps over 20 mm in diameter.

Siam weed – *Chromolaena odorata*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
	Fluroxypyr 333 g/L Staranetm Advanced	210 ml in 100L of water	Handgun application for plants up to 2 m high and flowering.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL in 100 L of water	Spray when plants are actively growing. For best results add a spray oil at the rate of 100 mL per 100L of water. See label for suitable wetting agents..
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Sicilian sea lavender – *Limonium hyblaeum*

Non-chemical options: Individual plants and small infestations can be easily pulled or dug out. This can be done year-round but will be easiest when the soil is damp. Remove all of the roots to prevent regrowth.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Sicklethorn – *Asparagus falcatus*

Non-chemical options: Small seedlings can be hand pulled. For larger plants: remove stems and foliage to access the crown. Use a sharp tool to cut all roots around the crown. Lever the crown out of the ground and dispose of it.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spot spray application
PER9907	Glyphosate 360 g/L Various products	1 part glyphosate in 1.5 parts water	Cut stump /scrape stem application
PER9907	Metsulfuron-methyl 600 g/kg Various products	1-2g in 10 L of water, plus a non-ionic surfactant	Spot spray application
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Rhizome application: prune the shoots to get access to the rhizome apply a 3-5 mm layer of gel across the cut surface on the rhizome. See label for further critical comments.

Silk forage sorghum – *Sorghum* species hybrid cultivar «Silk»

Non-chemical options: Heavy grazing can help control silk forage sorghum. Maintain strong, competitive pastures to prevent new infestations. Summer cultivation before seed heads form gives some control.

	Chemical and Concentration	Rate	Comments
	Flupropanate 745 g/L Various products	200 mL per 15 L of water	Knapsack spray when plants are actively growing and at least 30 cm tall. Spray to the point of run-off. Follow label directions as per Johnson grass.
	Flupropanate 745 g/L Various products	12 L/ha	Boom spray. Follow label directions as per Johnson grass.
	Flupropanate 745 g/L Various products	1 L per 100 L of water.	High volume spray to actively growing plants at least 30 cm tall. Spray to the point of run-off. Follow label directions as per Johnson grass.
	Glyphosate 360 g/L Various products	150 mL in 15 L of water.	Spot spray actively growing plants at the early head stage. Follow label directions as per Johnson grass.
	Glyphosate 360 g/L Various products	6.0 L per Ha	Boom spray actively growing plants at early head stage. Follow label directions as per Johnson grass.
	Glyphosate 360 g/L Various products	1.0 L per 2.0 L of water	Wiper control. Follow label directions as per Johnson grass.

Silverleaf nightshade – *Solanum elaeagnifolium*

Non-chemical options: The use of strong, competitive crops or pastures will give some control. Quarantine the infestation and prevent seeding. Cultivation is ineffective as it aids the spread from root pieces. Sheep can carry the seed in their digestive tract for periods of 7 days or more without affecting the germination capability.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL in 100 L of water	Spot spray. Spray to wet thoroughly. Extend treated areas beyond the last plant for 1m. Apply using a calibrated handgun (see label).
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	15.0 L/ha	Boom spray. Apply at early flowering before berry set.
	Fluroxypyr 333 g/L Staranetm Advanced	300 mL in 100L of water	Delay applications till majority of shoots have emerged. Follow-up treatment will be required
	Glyphosate 360 g/L Various products	2.0 L in 100 L of water	Apply at early flowering to berry set stage, spray thoroughly to wet. Use only with good soil moisture conditions.

Singapore daisy – *Sphagneticola trilobata*

Non-chemical options: Small infestations can be dug out. Remove as much of the root as possible.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	200 mL glyphosate plus 1.5 g metsulfuron-methyl per 10 L water	Spot spray application.
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 100 L of water plus a non-ionic surfactant at a rate of 100 mL per 100 L.	Spot spray
	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray. Foliar application.

Siratro – *Macroptilium atropurpureum*

Non-chemical options: Individual plants and small infestations can be dug out by hand year round, but best when soil is damp. Remove as much of the root as possible. Heavy grazing can control plants as they are very palatable.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	20 mL per 1 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	1 part product to 1.5 parts water	Scrape stems: Urban bushland, forests and coastal reserves.
	Glufosinate-ammonium 200 g/L Basta®	1 to 3L per Ha	Boom or directed sprayer. Commercial and industrial areas, rights of way and non-agricultural areas.
	Glufosinate-ammonium 200 g/L Basta®	300 mL to 100 L of water	Hand gun application. Commercial and industrial areas, rights of way and non-agricultural areas.
	Glufosinate-ammonium 200 g/L Basta®	45 mL to 15 L of water	Knapsack application. Commercial and industrial areas, rights of way and non-agricultural areas.

Skunk vine – *Paederia foetida*

Non-chemical options: Seedlings and small plants can be hand pulled or dug out. This is easiest when soil is damp and loose. Remove all roots and stems from the area as plants can regrow.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut scrape and paint
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Smooth tree pear – *Opuntia monacantha*

Non-chemical options: Small isolated plants can be dug out. The cochineal bug *(Dactylopius ceylonicus)* can help with control. Contact your local council weeds officer for more information about biological control.

Chemical and Concentration	Rate	Comments
Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL in 100 L of water	Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.
Triclopyr 240 g/L + Picloram 120 g/L Access™	1 L per 60 L of diesel.	Apply as an overall spray, wetting all areas of the plant to ground level.
Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL in 100 L of water	Apply to actively growing plants. Spray actively growing plants. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.
Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel	Apply as thorough foliage spray.

Smooth-stemmed turnip – *Brassica barrelieri* subsp. *oxyrrhina*

Non-chemical options: Plants can be dug out with hand tools.

Chemical and Concentration	Rate	Comments
Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.

Snake cactus – *Cylindropuntia spinosior*

Non-chemical options: Small plants dug out or be mechanically removed carefully. The cochineal bug (*Dactylopius tormentosus 'bigelovii'* linage) provides effective control. Contact your local council weeds officer for more information about biological control agents.

Chemical and Concentration	Rate	Comments
Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water.	Follow the label instructions as per Prickly pear (common), smooth tree pear. Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water.	Follow the label instructions as per prickly pear common. To improve uptake of add a paraffinic oil at the rate of 500 mL per 100 L of water.
Triclopyr 600 g/L Garlon® 600	1 L per 75 L of diesel	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

Snakefeather – *Asparagus scandens*

Non-chemical options: Small plants can be hand pulled. For larger plants, cut off the largest stems to get access to the crown. Use a knife to cut away all of the roots attached to the crown then dig out the crown.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL per 100 L of water	Spot spray mid-June to late August.
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray mid-June to late August.
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	Up to 200 mL of glyphosate and 1.5 g of metsulfuron methyl per 10 L of water	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus non-ionic surfactant	Spot spray
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Prune all shoots horizontally at the rhizome. Apply a 3-5 mm layer of gel across the cut surface on the rhizome. See label for further critical comments.

Soldier thistle – *Picnomon acarna*

Non-chemical options: Individual plants can be dug out with hand tools. This is easiest at the rosette stage. Cultivation can reduce large infestations. Slashing before fruiting can reduce seed production. Crash grazing while plants are bolting can reduce seed production.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	350 mL per 100L of water	For thistle seedlings. A repeat spray may be necessary.
	MCPA 340 g/L + Dicamba 80 g/L Kamba® M	80 mL per 15 L of water	For thistle seedlings. Spot spray from a knapsack. A repeat application may be necessary.

South American burr – *Xanthium cavanillesii*

Non-chemical options: Plants can be dug out. Be careful of the burrs.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. Spot spray. For general weed control in Domestic areas (Home gardens), Commercial, Industrial and Public Service areas, Agricultural buildings and other farm situations.

Spanish broom – *Spartium junceum*

Non-chemical options: Small seedlings can be hand pull or dug out, preferably before they produce seed.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g per 100 L water plus surfactant	Spot spray

Spanish heath – *Erica lusitanica*

Non-chemical options: Seedlings and small plants can be hand pulled. Pliers can be used to grip the stems. Remove all roots, including the crown or the plant can regrow.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray plants less than 1.5 metres tall from October to May. See permit for critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray plants up to 1.5 m tall from October to May. See permit for critical comments.
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g per 100 L water plus surfactant	Spot spray

Spear thistle – *Cirsium vulgare*

Non-chemical options: Small infestations can be dug out.

Chemical and Concentration	Rate	Comments
2,4-D amine 625 g/L Various products	1.1–1.6 L/ha	Boom spray. For pastures not containing legumes. Spray young rosettes.
2,4-D LV ester 680g/L Estercide® Xtra	1.15 to 2.1 L per hectare	Boom spray application, from seedling to rosette stage
Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL in 100 L of water	High volume hand gun application to actively growing plants
MCPA 500 g/L Various products	1.5–2.0 L/ha	Boom spray. Apply to rosettes actively growing; use higher rate on larger plants.
Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	150 mL in 100 L of water	High volume spray application for rosettes to flowering plants.

Spiny burrgrass – *longispinus - Cenchrus longispinus*

Non-chemical options: Individual plants in small infestation may be dug out. A strong, competitive summer pasture may out compete this weed. Contact your local agronomist for pasture advice in your region.

Chemical and Concentration	Rate	Comments
Glyphosate 360 g/L Various products	75-150 mL per 15 L of water.	Knapsack spray. Use the lower rate on weeds up to 15 cm tall and the higher rate for weeds over 15 cm tall.
Glyphosate 360 g/L Various products	2.0–3.0 L/ha.	Boom spray actively growing plants. Use the lower rate on weeds up to 15 cm tall and use the higher rate for weeds over 15 cm tall.
Glyphosate 360 g/L Various products	500–700 mL in 100 L of water	Spray with a handgun on actively growing. Use the lower rate on weeds up to 15 cm tall and the higher rate for weeds over 15 cm tall.

Spiny burrgrass – spinifex - *Cenchrus spinifex*

Non-chemical options: Individual plants in small infestation may be dug out. A strong, competitive summer pasture may out compete this weed. Contact your local agronomist for pasture advice in your region.

Chemical and Concentration	Rate	Comments
Glyphosate 360 g/L Various products	75-150 mL per 15 L of water.	Knapsack spray. Use the lower rate on weeds up to 15 cm tall and the higher rate for weeds over 15 cm tall.
Glyphosate 360 g/L Various products	2.0–3.0 L/ha.	Boom spray actively growing plants. Use the lower rate on weeds up to 15 cm tall and use the higher rate for weeds over 15 cm tall.
Glyphosate 360 g/L Various products	500–700 mL in 100 L of water	Spray with a handgun on actively growing. Use the lower rate on weeds up to 15 cm tall and the higher rate for weeds over 15 cm tall.

Spiny emex – *Rumex hypogaeus*

Non-chemical options: Small infestations and isolated plants can be dug out. Dispose of plants with seeds by burning them.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	300 mL per 100 L of water	Spot spray. For use in grass pastures.
	Glyphosate 360 g/L Various products	500–700 mL per 100 L of water	Spot spray.
	Glyphosate 360 g/L Various products	2.0–3.0 L/ha	Boom spray. Young, actively growing plants.

Spiny rush – *Juncus acutus*

Non-chemical options: Small plants may be dug out.

	Chemical and Concentration	Rate	Comments
PER11916	Glyphosate 360 g/L Various products	1 part herbicide to 75 parts water	Spray plants evenly to cover all of the foliage. For use in urban bushland, forests and coastal reserves. See permit for critical comments.
	Glyphosate 360 g/L Weedmaster Duo	1 L of herbicide in 2 L of water	Apply by wiper application to actively growing plants. Wiper application should be a minimum of 10 cm above the crop or pasture and weeds should be at least 15 cm above the crop or pasture, See label for more instructions.

Spongeplant – *Limnobium spongia*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 9 parts water	Splatter gun
	Diquat 200 g/L Reglone®	5 L of product per megalitre of water	Apply by injection below the surface or as a surface spray.

Spotted golden thistle – *Scolymus maculatus*

Non-chemical options: Individual plants can be dug out. Dense, improved pastures can out compete weeds. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	300 mL in 100 L of water	Spot spray.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	3.5 L/ha	Boom spray. Apply to seedling and rosette stages.
	Dicamba 750 g/L Kamba® 750	53 mL in 100 L of water. Add a surfactant.	Spray prior to flowering. For non-crop situations.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL in 100 L of water	Hand gun application

Spotted knapweed – *Centaurea stoebe* subsp. *micranthos*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Use leaf wiping application technique. Apply to at least 50% of the rosette leaves by wiping the applicator along the middle of each leaf.

St. Barnaby's thistle – *Centaurea solstitialis*

Non-chemical options: Strong, legume-based pastures can provide competition. Contact your local agronomist for pasture advice in your region. Slashing, if timed right, is effective.

	Chemical and Concentration	Rate	Comments
	2,4-D LV ester 680g/L Estercide® Xtra	1.15 -1.7 L per Hectare	Boom spray application
	Clopyralid 750 g/L with MCPA 500 g/L Various products	20 or 28g/ha plus 1-1.5 L/ha MCPA amine (500 g/L)/ha	Spray rosette stage prior to stem elongation. For pasture and fallow land.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL in 100 L of water	Hand gun application
	Glufosinate-ammonium 200 g/L Basta®	500 mL in 100 L of water	Hand gun application
	Glufosinate-ammonium 200 g/L Basta®	1.5–5.0 L/ha	Boom spray. Actively growing rosettes.

St. John's wort – *Hypericum perforatum*

Non-chemical options: The use of perennial pastures and grazing management, together with the use of biological control agents, will offer some control.

	Chemical and Concentration	Rate	Comments
	2,4-D LV ester 680g/L Estercide® Xtra	3.3–4.7 L/ha	Spray weeds in grass pastures, before flowering, when the plants are less than 40 cm high.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	700 mL in 100 L of water	Spray from flowering to early seed set
	Fluroxypyr 200 g/L Various products	500 mL in 100 L of water	Spray spring to summer.
	Fluroxypyr 200 g/L Various products	3.0 L/ha	Boom application.
	Fluroxypyr 333 g/L Staranetm Advanced	300 mL in 100 L of water	Spray from flowering to early seed set.
	Glyphosate 360 g/L Various products	3.0 L/ha	Spray from November to May, flowering to post-flowering.
	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	200 mL glyphosate plus 10g metsulfuron-methyl in 100 L of water	Spray to wet, but not to cause run-off.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL in 100 L of water	Spray from late spring to early summer, during flowering to early seed set.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	2.0–4.0 L/ha	Boom spray
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL in 100 L of water	Spray late spring to early summer, during flowering to early seed set.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	2.0–4.0 L/ha	Boom spray.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 10 L of water	Gas gun / Splatter gun application. Apply to actively growing bushes.

Star thistle – *Centaurea calcitrapa*

Non-chemical options: Plants dug out using hand tools remove at least 5 cm of the root. Competitive pastures can limit thistle growth. Contact your local agronomist for pasture advice in your region.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	300–500 mL in 100 L of water	Spot spray. Seedling to rosette stage. Use higher rate on older rosettes.
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	3.5–7.5 L/ha	Boom spray application. Use higher rate on older rosettes.
	2,4-D LV ester 680g/L Estercide® Xtra	1.15 to 1.7 L per hectare	Boom spray application, seedling to rosette stage
	Dicamba 750 g/L Kamba® 750	67 mL per 100 L of water	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	1.1 L/ha. Use at least 1500L water per ha. Add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL in 100 L of water	Hand gun application

Stemless thistle – *Onopordum acaulon*

Non-chemical options: Dense perennial pastures can outcompete weeds. Plants can be dug out, remove at least 5 cm of root. Biological control agents available, contact your local council weeds officer for more information.

	Chemical and Concentration	Rate	Comments
	2,4-D LV ester 680g/L Estercide® Xtra	2.5 to 3.3 L per hectare	Boom spray application rosette stage to flowering
	Dicamba 750 g/L Kamba® 750	53 mL per 100 L of water. Add a surfactant.	Spray prior to flowering. For non-crop situations.
	Dicamba 750 g/L Kamba® 750	800 mL/ha Use a minimum of 1500 L of water per ha. Add a surfactant.	Boom spray for non-crop situations. Spray prior to flowering.
	Fluroxypyr 140 g/L + Aminopyralid 10 g/L Various products	500 mL in 100 L of water	Hand gun application

Sticky nightshade – *Solanum sisymbriifolium*

Non-chemical options: Small plants can be dug out. Make sure all root fragments are removed.

	Chemical and Concentration	Rate	Comments
PER12942	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	A mix of 2 L glyphosate 360 herbicide plus 10 g of metsulfuron-methyl herbicide per 100 L of water + Uptake Spray Oil or an equivalent wetter must be used at a rate of 500 mL/100 L.	Spray actively growing plants, ensure all of the foliage is covered. For use in riparian areas. See permit for further critical comments.
PER12942	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 to 500 mL per 100 L of water + Uptake Spray Oil or an equivalent wetter must be used at a rate of 500 mL/100 L.	Spray actively growing plants, ensure all of the foliage is covered. Only for urban bushlands. Do not use within 5 m of a waterway. Apply a maximum of 2 times per year at a minimal interval of 60 days. See permit for further critical comments.
PER12942	Triclopyr 300 g/L + Picloram 100 g/L with Metsulfuron-methyl 600 g/kg Various products	A mix of 350 to 500 mL herbicide containing Triclopyr and Picloram plus 10g of herbicide containing metsulfuron-methyl per 100 L of water + Uptake Spray Oil or an equivalent wetter must be used at a rate of 500 mL/100 L.	Spray actively growing plants, ensure all of the foliage is covered. For urban bushlands and forests. Do not use within 5 m of a waterway. See permit for further critical comments.
	Aminocyclopyrachlor 240 g/L Method® 240 SL	500 mL per 100 L of water	Spot spray with handgun, hand-held or backpack sprayer. Thoroughly and uniformly wet target weed. Avoid spraying to point of run off.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL per 100 L of water + Uptake Spraying Oil or an equivalent wetter at a rate of 500 mL/100 L.	Spray flowering plants up to 1 m tall. Follow the label as per the instructions for tropical soda apple.

Subterranean cape sedge – *Trianoptiles solitaria*

Non-chemical options: Please refer to NSW WeedWise at *weeds.dpi.nsw.gov.au* for further control information as it becomes available.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	One part glyphosate to 50 parts water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part glyphosate to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part glyphosate to 20 parts water	Wipe onto leaves

Sweet briar – *Rosa rubiginosa*

Non-chemical options: Plants can be dugout with hand tools or machinery. Grazing with goats gives some control.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL in 100 L of water	Full leaf as an overall spray.
	Glyphosate 360 g/L Various products	1.5–2.0 L in 100 L of water	Spray to wet all foliage, from late flowering to leaf fall. Use higher rate on bushes over 1.5 m high.
	Glyphosate 360 g/L Various products	1 part per 9 parts water	Gas gun / Splatter gun application. Apply 2 by 5 mL doses per 0.5 m of bush height.
	Hexazinone 250 g/L Velpar® L	Undiluted (4 mL per spot)	One spot per metre of height. Do not apply near desirable trees.
	Metsulfuron-methyl 300 g/kg + Aminopyralid 375 g/kg Various products	20 g per 100 L of water (always add a Wetter 100 mL/100L)	Spray to thoroughly wet all foliage but not run-off. Avoid spraying when leaf fall has started or after the end of February. Wetter 1000g/L non-ionic alcohol alkoxylate (TITAN WETTER 1000 or BS1000 or equivalent).
	Metsulfuron-methyl 600 g/kg Various products	10 g in 100 L of water plus non-ionic surfactant 100 mL per 100 L of spray volume	Apply to actively growing bushes to point of run. Do not apply after end of February.
	Metsulfuron-methyl 600 g/kg Various products	1 g/L + organosilicone penetrant	Gas gun / Splatter gun application. Apply during the flowering period. Ensure thorough coverage of all leaves and stems.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 or 500 mL in 100 L of water	Foliar application for plants up 1.5m tall
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application for plants with stems up to and more than 5 cm diameter at the base. Apply herbicide immediately after the cut. Do not treat in winter.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 or 500 mL in 100 L of water	Full leaf to ripe fruit prior to leaf fall. Use higher rate on bushes over 1.5 m high.
	Triclopyr 600 g/L Garlon® 600	1.0 L in 30 L of diesel	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application for plants with a diameter up to, or more than 5 cm at the base.

Taiwan lily – *Lilium formosanum*

Non-chemical options: Plants can be dug out. Remove all of the underground bulbs.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	2 L glyphosate plus 15 g metsulfuron-methyl per 100 L of water	Spot spray application between flowering and fruiting.
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g metsulfuron- methyl in 100 L of water plus surfactant	Spot spray application between flowering and fruiting.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Prune all of the shoots horizontally at the rhizome. Apply a 3–5 mm layer of gel across the cut surface on the rhizome.

Taurian thistle – *Onopordum tauricum*

Non-chemical options: Isolated plants can be dug out with hand tools. Remove as much of the taproot as possible to avoid regrowth.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations.

Telegraph weed – *Heterotheca grandiflora*

Non-chemical options: Small plants can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray actively growing plants. See permit for conditions and critical comments.

Texas blueweed – *Helianthus ciliaris*

Non-chemical options: Dig out plants and check for regrowth. Where possible, maintain vigorous, competitive pastures to prevent this weed from establishing. Livestock will graze young plants but tend to avoid mature plants.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Thatch grass – *Hyparrhenia rufa*

Non-chemical options: Small plants can be hand pulled or dig out. Slashing before seeding can limit seed production but not kill the plants.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	300 mL herbicide / 100 L water	Spot spray: for best results apply late winter to early spring. See permit for other critical comments.
PER9792	Flupropanate 745 g/L Various products	3 L /ha	Boom spray. Do not apply unless pesticide records indicate that no more than 3 L per hectare will be applied in any 12 month period. See permit for further critical comments.
PER9792	Glyphosate 360 g/L Weedmaster Duo	2 L herbicide / 100 L water	Spot spray. Optimal timing is late autumn to early winter, however applications outside this time have been satisfactory. See permit for further critical comments.

Tiger pear – *Opuntia aurantiaca*

Non-chemical options: Biological control using the Cactoblastis moth *(Cactoblastis cactorum)* and the cochineal bug *(Dactylopius austrinus)* together provides effective control. Contact your local weeds officer for information about using biological control. Small plants can be dug out. Machinery can be used for large infestations, ensure the roots are dug out.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL in 100 L of water	Follow the label instructions as per Prickly pear (common). Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 60 L of diesel	Apply as an overall spray, wetting all areas of the plant to ground level.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Apply to actively growing plants. Follow the label instructions as per prickly pear common. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	3.0 L per 100 L of water	Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel.	Apply thoroughly as a foliar spray.

Tobacco bush – *Solanum mauritianum*

Non-chemical options: Seedlings can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
	Aminocyclopyrachlor 240 g/L Method® 240 SL	200-500 mL per 100 L of water	Spot spray with a handgun, hand-held sprayer or backpack sprayer. Thoroughly and uniformly wet the foliage but avoid spraying to the point of run off.
PER9907	Glyphosate 360 g/L Various products	200 mL glyphosate per 10 L of water	Foliar application for seedlings.
PER9907	Glyphosate 360 g/L Various products	1 part per 1.5 parts of water	Cut stump/injection application.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL in 100 L of water	Spray all of the foliage on plants up to 2 m tall from spring to autumn.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Cut stump application. See label for information about biodiesel.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	350 mL in 100 L of water	Foliar application from spring to autumn for plants up to 2m tall.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 10 L of water	Gas gun/splatter gun application. Apply to actively growing plants less than 1.5 m tall.

Tobacco weed – *Elephantopus mollis*

Non-chemical options: Scattered plants and small infestations can be cultivated or dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus non-ionic surfactant at a rate of 100 mL per 100 L.	Spot spray
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	300 mL per 100 L of water	Spray actively growing plants. Cover all of the foliage to the point of run off. Add a spray oil for best results.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Wipe onto rosette leaves.

Trad – *Tradescantia fluminensis*

Non-chemical options: Small infestations can be manually removed and composted.

	Chemical and Concentration	Rate	Comments
PER11916	Glyphosate 360 g/L Various products	200 mL per 10 L of water + surfactant	Spray evenly to cover all of the foliage. For use in urban bushland, forests and coastal reserves. Treat in winter or early spring for best results. Spray regrowth: spray twice 6–8 weeks apart. Retreatment is essential. See permit for further critical comments.
	Fluroxypyr 200 g/L Various products	1.5 L in 100 L of water	Foliar application. Re-treatment necessary. Young plants up to and including flowering.
	Fluroxypyr 333 g/L Staranetm Advanced	900 mL in 100 L of water	Foliar application. Re-treatment necessary. Young plants up to and including flowering.

Tree-of-heaven – *Ailanthus altissima*

Non-chemical options: Mechanical removal of mature trees, unless wet, will cause suckering from the broken roots.

	Chemical and Concentration	Rate	Comments
	2,4-D 300 g/L + Picloram 75 g/L Tordon® 75-D	650 mL in 100 L of water	Foliar application, apply at full leaf.
	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	10 g metsulfuron-methyl plus 200 mL glyphosate in 100 Lof water	Apply to actively growing trees to point of run. Ensure all daughter plants are controlled.
	Hexazinone 250 g/L Velpar® L	4 mL per spot, one spot per metre of height	For use on bushes up to 3 m tall. Do not apply near desirable trees.
	Metsulfuron-methyl 600 g/kg Various products	10 g in 100 L of water plus non-ionic surfactant 100 mL per 100 L of spray volume	Apply to actively growing trees. Avoid spraying when stressed, when leaf fall has commenced, or after the end of February.

	Chemical and Concentration	Rate	Comments
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 10 cm diameter at the base. Cut stump application for plants with stems up to or over 10 cm diameter at the base. Do not treat dormant species in winter.
	Triclopyr 600 g/L Garlon® 600	1.0 L in 60 L of diesel	Basal bark application for plants with stems up to 10 cm diameter at the base. Cut stump application can be used for plants with stems up to and in excess of 10 cm diameter at the base.

Tropical soda apple – *Solanum viarum*

Non-chemical options: If you see new infestations, call your local council weeds officer or the NSW DPI Biosecurity Helpline 1800 680 244. Small plants can be pulled or dug out. Wear gloves or use pliers to grip the stems to avoid injury from prickles. Contact your local council for disposal advice.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	1 part per 1.5 parts of water	Cut stump application
PER12942	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Only products registered for aquatic use	2 L glyphosate plus 10g of metsulfuron in 100 L of water + wetter must be used at a rate of 500 mL/100 L.	Spray plants in riparian zones. Ensure spray covers all foliage and stems as incomplete application will result in regrowth. See permit for further critical comments.
PER12942	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	50 to 500 mL in 100 L of water + Uptake Spray Oil or an equivalent wetter must be used at a rate of 500 mL/100 L.	For urban bushlands only. Spot spray to cover all foliage and stems as incomplete application will result in regrowth. Do not use within 5 m of a waterway. See permit for further critical comments.
PER12942	Triclopyr 300 g/L + Picloram 100 g/L with Metsulfuron-methyl 600 g/kg Various products	A mix of 350 to 500 mL herbicide containing Triclopyr and Picloram plus 10g of herbicide containing metsulfuron-methyl per 100 L of water + Uptake Spray Oil or an equivalent wetter must be used at a rate of 500 mL/100 L.	Spray plants in urban bushlands. Do not use within 5 m of a waterway. Ensure spray covers all foliage and stems as incomplete application will result in regrowth. See permit for further critical comments.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	350 mL per 100 L of water add Uptake® Spraying Oil at 500 mL/100 L water.	For agricultural non-crop areas, commercial and industrial areas, forests, pastures and rights of ways. Spray flowering plants up to 1 m tall. Thorough coverage of foliage to the point of run-off is essential.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

Turkey rhubarb – *Rumex sagittatus*

Non-chemical options: Individual plants in small infestations can be dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL in 10 L of water	Spot spray application
PER9907	Glyphosate 360 g/L Various products	1 part per 1.5 parts of water	Scrape stem application

Tussock paspalum – *Paspalum quadrifarium*

Non-chemical options: Dig out individual plants in small infestations. Slashing will prevent seeding but not kill the plants.

	Chemical and Concentration	Rate	Comments
PER9792	Glyphosate 360 g/L Various products	1.0 L per 100 L of water	Spot spray application
	Flupropanate 745 g/L Various products	75 mL per 15 L water	Knapsack spot spray when plants are actively growing, preferably November to April.

Tutsan – *Hypericum androsaemum*

Non-chemical options: Small plants can be dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus non-ionic surfactant 1 mL per 1 L of water	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus non-ionic surfactant 1 mL per 1 L of water.	Wipe onto leaves

Umbrella tree – *Schefflera actinophylla*

Non-chemical options: Seedlings can be dug out.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Spray plants up to 1.5 m tall from October to May. See permit for further critical use comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray plants up to 1.5 m tall from October to May. See permit for further critical use comments.
PER11916	Glyphosate 360 g/L Various products	100 mL per 10 L of water + surfactant	Spray seedlings and coppice shoots. For use in urban bushlands, forest and coastal reserves. See permit for critical comments.
PER9907	Glyphosate 360 g/L Various products	1 part per 1.5 parts of water	Stem injection/cut stump application.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.

Uruguayan rice grass – *Piptochaetium montevidense*

Non-chemical options: Please refer to NSW WeedWise at weeds.dpi.nsw.gov.au for further control information as it becomes available.

	Chemical and Concentration	Rate	Comments
PER9792	Flupropanate 745 g/L Various products	1.5 to 3 L per ha	Broadacre control
PER9792	Flupropanate 745 g/L Various products	100 to 300 mL per 100 L of water	Spot spray control
PER9792	Flupropanate 745 g/L Various products	500 mL per 10 L water	Wiper suppression
PER9792	Glyphosate 360 g/L Various products	3 L per ha	Broadacre control
PER9792	Glyphosate 360 g/L Various products	1 L per 100 L of water	Spot spray
PER9792	Glyphosate 360 g/L Various products	3.3 L per 10 L water	Wiper suppression

Velvety tree pear – *Opuntia tomentosa*

Non-chemical options: Biological control using the cochineal bug (*Dactylopius opuntiae 'stricta'* linage) provides effective control. Contact your local weeds officer for information. Small plants can be dug out. Machinery can be used for large infestations, ensure the roots are dug out.

	Chemical and Concentration	Rate	Comments
	Metsulfuron-methyl 75 g/kg + Aminopyralid 93.7 g/kg Di-Bak AM	1 capsule for every 10 cm of circumference	Capsule herbicide: See critical comments on the label for details on how to apply and seal the capsule into the sapwood of the tree trunk.
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL in 100 L of water	Follow the label instructions as per Prickly pear (common), smooth tree pear. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1 L per 60 L of diesel	Apply as an overall spray, wetting all areas of the plant to ground level.
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Follow the label instructions as per prickly pear common. Spot spray application. Spray actively growing plants. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water	Spray actively growing plants. Thoroughly cover all of the plant to the point of run-off. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water. Follow the label instructions as per Common prickly pear (*Opuntia* spp.)
	Triclopyr 600 g/L Garlon® 600	800 mL per 60 L of diesel	Apply thoroughly as a foliar spray. Follow label instructions as per Common prickly pear (*Opuntia* spp.).

Viper's bugloss – *Echium vulgare*

Non-chemical options: Maintaining ground cover in pastures and good grazing management can limit infestations. Contact your local agronomist for pasture advice in your region. Biological control agents are available for this weed, contact your local council weeds officer for more information.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Wall hawkweed – *Hieracium murorum*

Non-chemical options: Small infestations can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER14249	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
PER14249	Triclopyr 300 g/L + Picloram 100 g/L Various products	250-500 mL per 100 L	Spray plants from October to May. Adding a surfactant, BS 1000 or equivalent at 100 mL per 100 L will improve uptake. See permit for further critical comments.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Use leaf wiping application technique. Apply to at least 50% of the leaves of the rosette plant by wiping the applicator along the middle of each leaf. For use in non-crop areas, including native vegetation, conservation areas, gullies, reserves and parks.

Water caltrop – *Trapa* species

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
	Diquat 200 g/L Reglone®	5 L of product per megalitre of water	Apply by injection below the surface or as a surface spray.

Water hyacinth – *Eichhornia crassipes*

Non-chemical options: Small infestations can be removed by hand. Waterweed harvesters can help with larger infestations. Clean equipment before moving off site. Biological control insects reduce flowering and occasionally cause the plant mats to sink. Contact your local council weeds office for biological control information.

	Chemical and Concentration	Rate	Comments
PER92971	Metsulfuron-methyl 600 g/kg Various products	10 g / 100 L water (add wetter at 200 mL per 100 L)	Only for enclosed water bodies (excluding within 400 m of potable water supply). ONLY apply as a foliar spot spray during non-frost periods using a high-volume sprayer/knapsack fitted with calibrated spray equipment. See permit for restraints and critical use comments.
	2,4-D 300 g/L Affray 300	1.0 L in 200 L of water	Avoid causing submersion of sprayed plants.
	Amitrole 250 g/L Various products	280 mL to 100 L of water	Apply immediately prior to flowering. For use in aquatic areas drains and channels, margins of streams, lakes and dams.
	Diquat 200 g/L Reglone®	400 mL /ha plus 150 mL Agral / 100 L water	Small areas: spray to wet weeds thoroughly. About 1 mL of product should be sufficient to treat 1 square metre of weeds. See label for more comments.
	Diquat 200 g/L Reglone®	5.0 to 10.0 L/ha	Apply as overall spray wetting foliage thoroughly. Use higher rates for heavy infestations or for deep or dirty water. Only spray a maximum of 1/4 of the area at any one time to prevent oxygen depletion.
	Glyphosate 360 g/L Only products registered for aquatic use	1.0–1.3 L in 100 L of water	Apply when actively growing, at or beyond the early bloom stage. Use higher rate on dense infestations.
	Glyphosate 360 g/L Only products registered for aquatic use	6.0–9.0 L/ha	Apply when actively growing, at or beyond the early bloom stage. Use higher rate on dense infestations.

Water lettuce – *Pistia stratiotes*

Non-chemical options: Small infestations can be removed by hand. Waterweed harvesters can remove larger infestations. Clean equipment before moving off site. The water lettuce weevil *(Neohydronomus affinis)* can control water lettuce. Contact your local council weeds office more information.

	Chemical and Concentration	Rate	Comments
PER92971	Metsulfuron-methyl 600 g/kg Various products	10 g / 100 L water (add wetter at 200 mL per 100 L)	Only for enclosed water bodies. Areas within 400 m of potable water supply uptakes are excluded. ONLY apply as a foliar spot spray during non-frost periods using a high volume sprayer/knapsack fitted with calibrated spray equipment. Apply a maximum of 3 applications per year at minimum intervals of 90 days. WARNING: Very toxic to aquatic plants and algae. See permit for more restraints and critical use comments.
	2,4-D 300 g/L Affray 300	1.0 L in 200 L of water	Avoid causing submersion of sprayed plants. Coverage: 200 L spray solution per 1000 square metres. For non-potable water. See label for other restraints.
	Diquat 200 g/L Reglone®	400 mL per 100 L of water. Add 150 ml Agral 600 wetter/ 100 L of water.	For small areas: Spray to wet weeds thoroughly. About 1 mL of product should be sufficient for 1 square metre of weeds.
	Diquat 200 g/L Reglone®	5.0–10.0 L/ha	Apply as overall spray wetting foliage thoroughly. Use higher rates for heavy infestations or for deep or dirty water. Oxygen depletion of decaying weeds may occur therefore do not spray more than a quarter of the area at any one time.

	Chemical and Concentration	Rate	Comments
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 37.5 cubic metres of water to achieve 400 parts per billion.	For use on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. Alternatively, if weeds grow in clusters, concentrate the tablet application on the densest areas. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 75 cubic metres of water to achieve 200 parts per billion.	For use on low density, establishing or re-establishing weeds in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Spray 12-15 L of solution per 100 m^2. Solution = 1 tablet per 50 L water + 0.5 to 1.0% adjuvant/ surfactant.	Spray on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. See label for restrictions
	Flumioxazin 15 grams /tablet Clipper® herbicide	Spray 12-15 L of solution per 100 m^2. Solution = 1 tablet per 100 L water + 0.5-1.0% adjuvant/ surfactant.	Spray on low density, establishing or re-establishing weeds in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger still water bodies. See label for restrictions.
	Glyphosate 360 g/L Only products registered for aquatic use	1.0–1.3 L in 100 L of water	Best results are obtained from mid-summer through to winter. Use higher rate on dense infestations.

Water mimosa – *Neptunia oleracea*

Non-chemical options: Notify your local council weeds officer if you think you have found this weed.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 9 parts water	Splatter gun

Water poppy – *Hydrocleys nymphoides*

Non-chemical options: Small infestations can be removed from the water by hand. Remove all parts of the plant from the soil and water body to prevent regrowth. Excavators can be used to remove large infestations. Clean machinery before moving off site.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 50 parts water	Spot spray actively growing plants. Only those herbicide products that have label approvals in place for aquatic use may be used in aquatic areas. See permit for critical use comments and additional conditions.
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 9 parts water	Use a splatter gun to spray actively growing plants. Only those herbicide products that have label approvals in place for aquatic use may be used in aquatic areas. See permit for critical use comments and additional conditions.

	Chemical and Concentration	Rate	Comments
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 37.5 cubic metres of water to achieve 400 parts per billion.	For use on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. Alternatively, if weeds grow in clusters, concentrate the tablet application on the densest areas. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 75 cubic metres of water to achieve 200 parts per billion.	For use on low density, establishing or re-establishing weeds in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. Alternatively, if weeds grow in clusters, concentrate the tablet application on the densest areas. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 37.5 cubic metres. Each tablet dissolved in at least 20 L of water + 0.5-1.0% adjuvant/surfactant	For use on dense or established weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20 L per tablet) mix thoroughly and then inject the solution directly into the water body. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 75 cubic metres. Each tablet dissolved in at least 20 L of water + 0.5 -1.0% adjuvant/surfactant	For use on low density, establishing or re-establishing weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20 L per tablet) and additives in a spray tank, mix thoroughly and then inject the solution directly into the water body. See label for restrictions.

Water soldier – *Stratiotes aloides*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 9 parts water	Splatter gun

Water star grass – *Heteranthera zosterifolia*

Non-chemical options: Small infestations can be removed from the water by hand. All plant parts need to be removed to prevent regrowth. Contact your local council for advice on how to dispose of these plants.

	Chemical and Concentration	Rate	Comments
PER92971	Metsulfuron-methyl 600 g/kg Various products	10 g / 100 L water (add wetter at 200 mL per 100 L)	Only for enclosed water bodies (excluding areas within 400 m of potable water supply uptakes). ONLY apply as a foliar spot spray during non-frost periods using a high volume sprayer/knapsack fitted with calibrated spray equipment. See permit for restraints and critical use comments.
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	200 mL per 10 L of water	Spot spray.
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	One part product to 9 parts water	Splatter gun
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 37.5 cubic metres of water to achieve 400 parts per billion.	For use on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. Alternatively, if weeds grow in clusters, concentrate the tablet application on the densest areas. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 75 cubic metres of water to achieve 200 parts per billion.	For use on low density, establishing or re-establishing weeds in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. Alternatively, if weeds grow in clusters, concentrate the tablet application on the densest areas. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 37.5 cubic metres. Each tablet dissolved in at least 20 L of water + 0.5-1.0% adjuvant/ surfactant	For use on dense or established weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20 L per tablet) mix thoroughly and then inject the solution directly into the water body.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 75 cubic metres. Each tablet dissolved in at least 20 L of water + 0.5 -1.0% adjuvant/surfactant	For use on low density, establishing or re-establishing weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20 L per tablet) and additives in a spray tank, mix thoroughly and then inject the solution directly into the water body. See label for restrictions.

Wheel cactus – *Opuntia robusta*

Non-chemical options: Cochineal insects (*Dactylopius opuntiae 'ficus'* lineage) can control wheel cactus. Contact your local council weeds officer for information. Small, isolated plants can be dug out. Mechanical removal may be suitable for some large infestations.

	Chemical and Concentration	Rate	Comments
	Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon® Extra	500 mL per 100 L of water	Follow the label instructions as per Prickly pear (common). Spray actively growing plants. Thoroughly cover all of the plant with herbicide mix to the point of runoff. Regrowth may occur, so a follow-up application may be necessary. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

	Chemical and Concentration	Rate	Comments
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1 L per 60 L of diesel	Apply as an overall spray, wetting all the plant to ground level. Follow the label as per "cacti including common pest pear....tree pear."
	Triclopyr 300 g/L + Picloram 100 g/L Various products	500 mL per 100 L of water	Spray actively growing plants. Follow the label instructions as per prickly pear common. To improve uptake, of add a paraffinic oil at the rate of 500 mL per 100 L of water.
	Triclopyr 600 g/L Garlon® 600	800 mL in 60 L of diesel.	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant.
	Triclopyr 600 g/L Garlon® 600	3 L per 100 L of water	Follow the label instructions as per common prickly pear (*Opuntia* spp.). Spray actively growing plants. Thoroughly cover all of the plant to the point of runoff. To improve uptake, add a paraffinic oil at the rate of 500 mL per 100 L of water.

White blackberry – *Rubus niveus*

Non-chemical options: Plants can be dug out. Dispose of fruit so that new plants do not grow. Be careful of the prickles.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	2L of Glyphosate plus 15 g of Brush-off in 100 L of water	Spot spray application, plus add a wetter.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.

White Spanish broom – *Cytisus multiflorus*

Non-chemical options: Small plants can be dug out, preferably before they set seed. Intensive grazing with goats or sheep helps control this weed, especially on new growth following fire.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 -20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

White weeping broom – *Retama raetam*

Non-chemical options: Seedlings can be dug out. They are difficult to hand pull.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray

Wild radish – *Raphanus raphanistrum*

Non-chemical options: Maintain a well-balanced pasture with good grazing management. Contact your local agronomist for pasture advice in your region

	Chemical and Concentration	Rate	Comments
	2,4-D amine 625 g/L Various products	800 mL–1.1 L/ha	Apply to rosettes before flowering.
	2,4-D LV ester 680g/L Estercide® Xtra	800 mL per ha	Boom spray application, up to rosette stage
	MCPA 500 g/L Various products	1.0 L/ha	Apply to rosettes before flowering.

Willow rhus – *Searsia lancea*

Non-chemical options: Small plants can be hand pulled or dug out. Shrubs and small trees are difficult to dig out because of their extensive deep root system.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Staranetm Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 1.5 parts water	Cut stump or stem injection.
PER9907	Glyphosate 360 g/L with Metsulfuron-methyl 600 g/kg Various products	1:1.5 glyphosate to water + 1 g metsulfuron to 1 L water	Stem injection
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray seedlings and suckers.

Willows – *Salix* species

Non-chemical options: Plants up to 50 cm tall can be dug out or hand pulled. Small roots left in the ground don›t usually regrow. Only use excavators or bulldozers to remove larger trees and root in dry areas. If machinery pushes broken branches into wet ground many new plants sprout.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	1.0–1.3 L in 100 L of water	Spray to wet all foliage. Use the higher rate for trees 1–2 m high. If trees are in riparian zones, use herbicide registered for aquatic use.
	Glyphosate 360 g/L Various products	Undiluted	Stem injection. For trees with a basal diameter of 0-25 cm use 1 mL/cut. For trees with a basal diameter of 25-60 cm use 2 mL /cut.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump for small plants: Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter. Stem inject trees: Make evenly spaced cuts 1.5-2 cm deep around the trunk. Apply a 5 mm layer of gel over the lower surface of the cut.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 15 L of diesel	Cut stump application for plants with a basal stem greater than 10 cm in diameter. Need to treat all stems.

Winter senna – *Senna septemtrionalis*

Non-chemical options: Small plants can be dug out or hand pulled when soil is damp or soft. Collect and dispose of seed pods. Dried seed pods can be burnt in a hot fire.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 200 g/L Various products	35 mL per L diesel/ kerosene	Basal bark
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	21 mL per L diesel/ kerosene	Basal bark
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Metsulfuron-methyl 600 g/kg Various products	10-20 g per 100 L water plus surfactant	Spot spray

Witchweeds – *Striga* species

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL in 100 L of water	Spot spray application
PER9907	Glyphosate 360 g/L Various products	200 mL per 10 L of water	Spot spray.

Yellow bells – *Tecoma stans*

Non-chemical options: Small trees and seedlings can be hand pulled or dug out.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Various products	1.0 L in 50 L of water	Spray seedlings.
PER9907	Glyphosate 360 g/L Various products	1 part per 1.5 parts of water	Stem injection or cut stem application.
	Picloram 44.7 g/L + Aminopyralid 4.47 g/L Vigilant II ®	Undiluted	Cut stump application. Apply a 3–5 mm layer of gel onto stems less than 2 cm diameter. Apply 5 mm layer on stems above 2 cm diameter.
	Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L in 60 L of diesel (or biodiesel such as Biosafe).	Basal bark application for plants with stems up to 5 cm diameter at the base. Cut stump application for plants with a diameter up to or more than 5 cm at the base. Some root suckering may occur. See label for information about using biodiesel.

Yellow burrhead – *Limnocharis flava*

Prohibited matter: Please do not attempt to treat or dispose of this weed yourself. Report this plant if you see it anywhere in NSW by calling the NSW Biosecurity Helpline 1800 680 244. NSW DPIRD Agriculture and Biosecurity will lead an initial response for the treatment and disposal of the plant to stop it from spreading.

	Chemical and Concentration	Rate	Comments
PER9907	Glyphosate 360 g/L Only products registered for aquatic use	Up to 200 mL in 10 L of water	Spot spray application

Yellow nutgrass – *Cyperus esculentus*

Non-chemical options: Repeated deep cultivation, just after shoots emerge, is effective.

	Chemical and Concentration	Rate	Comments
	Glyphosate 360 g/L Various products	10 mL per 1 L water	Spot spray. For general weed control in domestic areas (home gardens), commercial, industrial and public service areas, agricultural buildings and other farm situations

Yellow soldier – *Lachenalia reflexa*

Non-chemical options: In sandy soils, bulbs can be removed by hand from late August to early September. Cut the roots with a knife and pull out the bulb.

	Chemical and Concentration	Rate	Comments
PER9907	Fluroxypyr 200 g/L Various products	500 mL to 1 L per 100 L water	Spot spray
PER9907	Fluroxypyr 333 g/L Starane™ Advanced	300 to 600 mL per 100 L water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 50 parts water	Spot spray
PER9907	Glyphosate 360 g/L Various products	One part product to 9 parts water	Splatter gun
PER9907	Glyphosate 360 g/L Various products	One part product to 20 parts water	Wipe onto leaves
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 - 20 g per 100 L water plus surfactant	Spot spray
PER9907	Metsulfuron-methyl 600 g/kg Various products	10 g per 1 L of water plus surfactant	Wipe onto leaves

Yellow waterlily – *Nymphaea mexicana*

Non-chemical options: If removing by hand, all parts of the plant need to be removed to prevent regrowth. Large infestations can be harvested or excavated with machinery, though follow up will be needed to remove reshooting plants.

	Chemical and Concentration	Rate	Comments
	Diquat 20 g/L Watrol®	50–100 L/ha	Apply as an overall spray. Thoroughly wet foliage. Use higher rate if dense weed or dirty water.
	Diquat 200 g/L Reglone®	400 mL plus 150 mL Agral per 100 L water.	Spray wetting foliage thoroughly. Use the higher rate for heavy infestations or for deep or dirty water.
	Diquat 200 g/L Reglone®	5.0–10.0 L/ha	Apply as an overall spray wetting foliage thoroughly. Use the higher rate for heavy infestations or for deep or dirty water
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 37.5 cubic metres of water to achieve 400 parts per billion.	For use on dense or established weed populations in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. Alternatively, if weeds grow in clusters, concentrate the tablet application on the densest areas. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	1 tablet for every 75 cubic metres of water to achieve 200 parts per billion.	For use on low density, establishing or re-establishing weeds in enclosed water bodies, deeper than 0.5 m and larger than 37.5 cubic metres, or margins of larger, still water bodies. Throw tablets directly into the water to achieve uniform distribution of the herbicide. Alternatively, if weeds grow in clusters, concentrate the tablet application on the densest areas. See label for restrictions.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 37.5 cubic metres. Each tablet dissolved in at least 20 L of water + 0.5-1.0% adjuvant/ surfactant	For use on dense or established weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20 L per tablet) mix thoroughly and then inject the solution directly into the water body.
	Flumioxazin 15 grams /tablet Clipper® herbicide	Inject solution into water body. 1 tablet per 75 cubic metres. Each tablet dissolved in at least 20 L of water + 0.5 -1.0% adjuvant/surfactant	For use on low density, establishing or re-establishing weeds in water bodies less than 0.5 m deep or with a volume less than 37.5 cubic metres. Dissolve tablets in water (at least 20 L per tablet) and additives in a spray tank, mix thoroughly and then inject the solution directly into the water body. See label for restrictions.
	Glyphosate 360 g/L Only products registered for aquatic use	1 L to 100 L of water	Spray when there is a maximum emergence of floating leaves. Allow 2-3 weeks for symptoms to develop, then retreat unaffected plants.

Notes

Seen this plant?

Parthenium weed
Parthenium hysterophorus

How does this weed affect us?

Parthenium weed:

- invades pastures and crops
- causes severe respiratory problems and dermatitis in people
- can also cause health problems in livestock.

What does it look like?

Usually 1-1.5 m tall but can be up to 2 m. It has:

- pale green, hairy, deeply divided leaves (5-20 cm long)
- white star shaped flowers with 5 points (4-6 mm wide)
- many branches when flowering outcompetes native plants.

Where are you likely to find it?

Look for it where:

- livestock (including poultry) have been fed grain or hay, particularly if it has come from Queensland
- earthworks have taken place, particularly if the machinery has been in Queensland
- there is bare soil (cultivated areas, roadsides, poor pastures).

Seen it? **Call us**

NSW Biosecurity Helpline 1800 680 244

Help protect our health, farms and grazing lands

For control and biosecurity information visit NSW WeedWise:
weeds.dpi.nsw.gov.au/Weeds/PartheniumWeed

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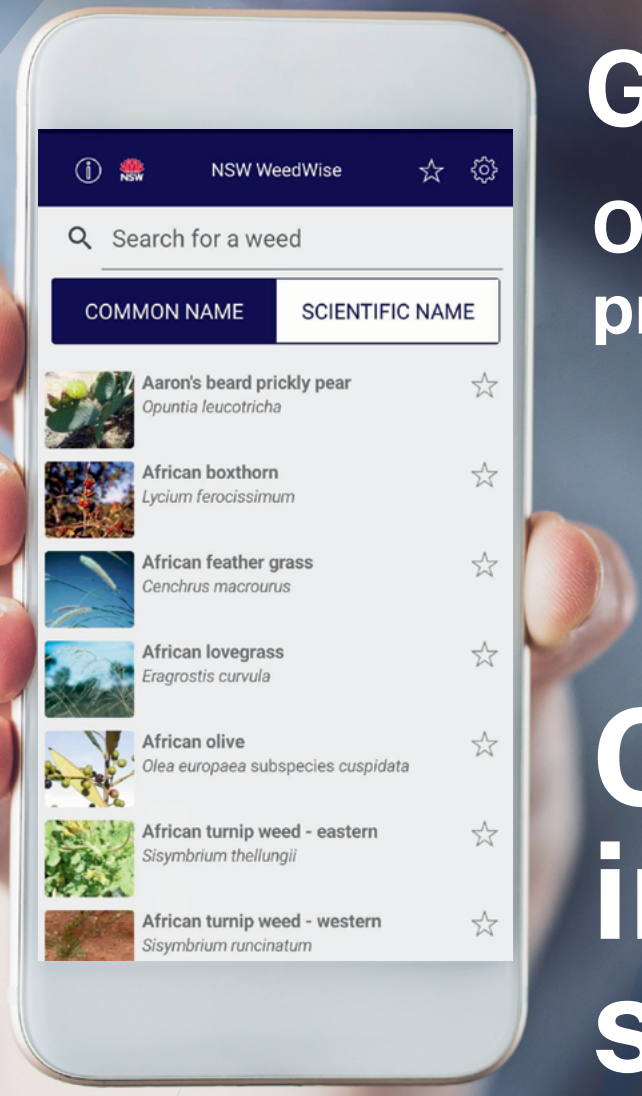

weeds.dpi.nsw.gov.au

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