



CENTRE FOR
INVASIVE SPECIES SOLUTIONS

BEST PRACTICE MANAGEMENT FOR THE CONTROL OF bellyache bush (*Jatropha gossypifolia*)

ADDENDUM TO THE WEEDS OF NATIONAL SIGNIFICANCE BELLYACHE BUSH MANAGEMENT MANUAL



weeds.org.au

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ALWAYS READ THE LABEL: Users of agricultural chemical products must always read the label and any permit, before using a product, and must strictly comply with the directions on the label and the conditions of any permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or not made in this publication.

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Cover images

Front — Aerial photograph of bellyache bush. Image by Kay Bailey, Department of Primary Industries and Regional Development (Western Australia).

Back — Bellyache bush. Image by Kay Bailey, Department of Primary Industries and Regional Development (Western Australia).

How to use this addendum



The bellyache bush management manual (PDF, 6.1 MB) was published in 2009 and provides information on the weed and best practice management options. The manual has since been reviewed to ensure currency of best practice management advice and information. Any updates to the information contained within the manual are included in this addendum and should be taken as the most current source of information.

Note: the addendum is not a standalone document and should be read in conjunction with the 2009 manual.

The addendum focuses on updates to control options, including mechanical, chemical and biological control methods. It also includes updates on available herbicides and where to go to find additional information on bellyache bush and its management.

When new or additional information is provided in the addendum, page numbers reference the related text in the original manual.

Section 3: Managing bellyache bush

Weed management

Prevention

Page 24 – Spread prevention is equally as important as management.

Tips for reducing the risk of spread

- Avoid driving off-road in areas known to contain bellyache bush or other weeds, or areas that present a risk of vehicle or machinery contamination.
- Ensure footwear is free of soil that may contain seeds and other weed material before stepping into vehicles.
- Avoid driving or working in contaminated areas in wet or dewy conditions.
- Clean vehicles and machinery suspected of carrying soil or weed material before moving to another site.
- Begin work in clean areas or in areas with the least amount of infestation, and work towards infested or high-density areas.
- Keep roads, tracks and buffer zones free of weeds.

Adapted from Sheehan and Potter (2017:78).

Early detection

Page 24 – It is important to identify and treat a new infestation prior to its spread.

Regularly check areas:

- disturbed by fire, flood, heavy grazing or earthworks
- previously infested with bellyache bush
- near existing infestations (seed sources)
- downstream from current infestations.

Managing soil seed bank

Central to the management of bellyache bush is consideration of the soil seed bank. The persistence of bellyache bush soil seed banks can vary and depend on factors such as seed biotype, rainfall conditions and burial depth. **Research has shown that in dry conditions, seed may persist for up to 10 years.** When developing a management plan, consider these factors when deciding how long you may need to continue actively managing the infestation.

Research into methods of soil fumigation to reduce or eliminate the viability of bellyache bush soil seed banks may add to the effectiveness of management programs.

Managing bellyache bush

Developing a weed-control plan

Page 25 – The link on page 25 of the bellyache bush best practice manual for the 'OnePlan' pest-management planning module is out of date. Instead visit www.daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/pest-management-planning.

Online assistance for mapping

A map from an internet mapping tool is an effective way to record infestations of athel pine. There are many mapping tools freely available online. For example, the Atlas of Living Australia (www.ala.org.au) provides a free platform for interactive map making.

Another example is the free NT WeedMate App for iPhone and android. Available at: <https://depws.nt.gov.au/rangelands/publications2/weed-management-publications/contribute-weed-data/weed-data-collection/nt-weedmate-app>

This app helps you:

- collect information about weed species, density and location
- add extra information such as treatments, chemicals and growth stages
- organise your data in the standard format of the NT Weed Management Branch, ready for mapping.

Section 4: Control methods

Herbicide control

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Herbicide labels and legislation

The Australian Pesticides and Veterinary Medicines Authority (APVMA) regulates the availability of all pesticides, which includes herbicides. Herbicides are registered with the APVMA for specific applications, as stated on the label. State governments regulate the use of pesticides after sale. A herbicide label is a legal document that defines where, when and how a herbicide can be used on which weed species and at what rate.

Note: not all registered herbicides are commercially available. Often, companies improve herbicide formulations and only market the new formulation. For example, many herbicides are being marketed in higher concentrations. This reduces transport, storage and container-disposal costs.

In addition to herbicides being registered and described 'on-label' for specific weeds and situations, herbicides can sometimes be used through permits or 'off-label' use. These situations are described below.

Minor use and emergency use permits

APVMA may issue minor use and emergency use permits for herbicide applications that are not otherwise registered for that particular use. Minor use permits are sometimes referred to as 'off-label' permits. Minor use and emergency permits are valid ('in force') for a limited time. See the [APVMA website](#) to find current permits.

Some states also have permits for the control of 'declared' weeds and may not specifically list the weed species to be controlled. These permits will often list a range of herbicides that can be used for the control of declared or environmental weeds. To find these permits for your state:

- go to the [APVMA permits database](#) search
- enter 'declared weeds' or 'environmental weeds' in the SEARCH box
- click the search term 'Pest/purpose'
- click 'Search'.

It is also recommended that if you are unsure which herbicides can legally be used on a particular weed in your state, contact the relevant biosecurity section of your state department of agriculture. When using herbicides in aquatic situations, only use those that are registered or permitted for use in and around aquatic areas.

Any minor use permits relevant to bellyache bush at time of publication are listed in Table 6.

Off-label use

Off-label use is the use of a registered chemical to address a specific issue that is not covered by the APVMA-approved label. Off-label use is to:

- control a different weed (or pest)
- apply at a different rate (only lower)
- apply in a different manner (not allowed in ACT, NSW and Tasmania).

Off-label use is permitted in all states and territories; however, conditions vary in each jurisdiction (Table 1).

Table 1. Where to find specific rules relating to herbicide use, including off-label use, in each state and territory

STATE/ TERRITORY	WEBSITE AND FURTHER INFORMATION
ACT	Agvet chemical use https://www.accesscanberra.act.gov.au/s/article/pest-and-weed-control-tab-Agvet-chemical-use
NSW	Pesticides https://www.epa.nsw.gov.au/your-environment/pesticides/pesticides-nsw-overview Weed control and identification https://www.dpi.nsw.gov.au/biosecurity/weeds/weed-control
NT	Chemical use https://nt.gov.au/industry/agriculture/farm-management/using-chemicals-responsibly
Qld	Chemical use https://www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/aquaculture/chemicals/registered
SA	Rural chemicals https://pir.sa.gov.au/biosecurity/rural_chemicals Weed control handbook https://www.pir.sa.gov.au/_data/assets/pdf_file/0020/232382/WEB_8867_PIRSA_Weed_Control_Handbook_2018.pdf (PDF, 4.2 MB)
Tas	Agricultural and veterinary chemicals https://nre.tas.gov.au/agriculture/agvet-chemicals Weeds https://nre.tas.gov.au/invasive-species/weeds
Vic	Off-label chemical use https://agriculture.vic.gov.au/farm-management/chemicals/offlabel-chemical-use
WA	Using pesticides safely https://ww2.health.wa.gov.au/Articles/U_Z/Using-pesticides-safely

Safety and training

Page 32 – Personal protective equipment (such as protective clothing, eye or face shields, and respiratory protection) must be used in accordance with the recommendations stated on the herbicide label or permit. Chemical-use training is required for people using herbicides as part of their job or business. Training is recommended for community groups and may be required if working on public land. Training courses are run by ChemCert, AusChem and TAFE in each state. Other training courses may be available through state agencies (e.g. AgTrain in Victoria, SMARTtrain in NSW), local councils or non-government organisations.

By law, you must read the label (or have it read to you) before using any herbicide product. Always follow the label or permit.

Chemical user certification

Commercial weed-control operators need to be licenced in most states (Table 2). It should also be noted that there is now shared responsibility between landholders and their contractors for any breaches of laws and regulations (such as herbicide drift).

Table 2. Chemical-user certification by state and territory

STATE/ TERRITORY	WEBSITE
ACT	www.accesscanberra.act.gov.au/s/article/pest-and-weed-control-tab-Agvet-chemical-use
NSW	www.epa.nsw.gov.au/your-environment/pesticides/licences-and-advice-for-occupational-pesticide-users
NT	nt.gov.au/industry/agriculture/farm-management/using-chemicals-responsibly/spray-applicator-licences
Qld	www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/land-management/chemical-controls/commercial-operators
SA	www.sa.gov.au/topics/business-and-trade/licensing/building-and-trades/pest-control-licence
Tas	nre.tas.gov.au/agriculture/agvet-chemicals/licences-and-certificates/ground-spraying-and-pest-management-licences
Vic	agriculture.vic.gov.au/farm-management/chemicals/licences-and-permits/commercial-operator-licence-for-contractors
WA	https://www.health.wa.gov.au/articles/n_r/pest-industry-licensing-and-registration

Effective use of herbicides

Successful herbicide control is dependent on the right herbicide for the target species, growth stage of the target species, weather conditions during and after spraying, how thoroughly the herbicide is applied, and the herbicide mix and application rate.

For spraying, wind speeds should be low (< 15 km/h) with no rain expected in the following six hours.

Do not apply herbicide to plants that are under any sort of stress, as herbicide will not be absorbed and translocated effectively, resulting in a reduced level of control. Plants may be stressed due to:

- dry soil
- low humidity
- air temperatures above 30 °C
- frost.

Effectiveness of herbicides can be maximised further by:

- mixing dye with the herbicide to help minimise missed areas and prevent overspraying (double spraying)
- using an adjuvant – an additive that improves herbicide uptake (always read the adjuvant's product labels to ensure that they are compatible with the particular herbicide and there are no restrictions on their use; e.g. most adjuvants should not be used near waterways)
- ensuring spray equipment is correctly calibrated and maintained, including being thoroughly cleaned between uses.

Page 32 – Successful management of bellyache bush is a long-term commitment. An effective management program based on herbicide use will require at least two treatments annually. The initial treatment of existing plants should occur following the onset of wet-season rains, when there is active growth. A follow-up treatment after approximately six to eight weeks will be necessary to treat plants which have been missed, or newly germinated seedlings. In ideal growth conditions with an extended wet season, it may be necessary for a third treatment to prevent the growth of new seedlings.

Stem injection with encapsulated herbicide

Stem injection of herbicide capsules can be used to control bellyache bush infestations.

Di-Bak AM is a herbicide produced in capsule form, containing a combination of aminopyralid and metsulfuron-methyl.

Capsules can be inserted into the tree using a specially designed handheld applicator. The applicator, used in conjunction with a hand held drill, first drills a hole into the tree stem and then inserts the capsule. The capsule is sealed in place with a plug.

Alternatively, drill a 25-mm-deep hole in the tree stem using an 8 mm-diameter drill bit, approximately 10–30 cm above ground level. Insert one capsule and seal with a plug immediately.

Over time, the capsule dissolves, releasing the herbicide into the plant. This process can be performed at any time of year and is a cost-effective method suitable for low-to-high-density populations.

Further information on using this technique can be found at <https://www.bioherbicides.com.au/about/videos-resources/>

Spraying in sensitive areas

Herbicide users have a legal obligation to avoid spray drift damage and to ensure that the chemicals applied stay within the target area. Target-weed infestations are often located in areas of native vegetation, so great care should be taken to avoid spraying surrounding foliage and soil. Do not use high pump/sprayer pressures that create small droplets which float in the air. Adjust the nozzle settings to produce coarser droplet sizes.

Using herbicides near water

Never spray herbicides over bodies of water or plants standing in water. Some herbicides are formulated to be a lower risk when used near water (e.g. Roundup® Biactive). NEVER add unregistered adjuvants to herbicides that will be used near water. Some states have publications explaining the safe use of herbicides near water (Table 3).

Table 3. Safe use of herbicides near water by state and territory

STATE/ TERRITORY	WEBSITE
South-eastern Australia	archive.dpi.nsw.gov.au/__data/assets/pdf_file/0011/319448/riparian-habitat-management-guide.pdf (PDF, 1.1 MB)
Qld	https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/sustainable/chemical/ground-distribution-herbicide/laws
SA	https://www.epa.sa.gov.au/files/477387_pesticide_water.pdf (PDF, 1.7 MB)
Tas	https://nre.tas.gov.au/Documents/herbicide_guidelinesFINAL2012.pdf (PDF, 689 kB)
WA	https://www.water.wa.gov.au/__data/assets/pdf_file/0016/3355/12149.pdf (PDF, 113 kB)

Regulations and permits for works in riparian zones

Areas on or near the bank of a river or other body of water (riparian zones) are sensitive habitats, and in some states a licence is required to conduct weed-control works (Table 4).

Table 4. Authorities who can advise about regulations and permits for works in riparian zones

STATE/ TERRITORY	DEPARTMENT	WEBSITE
NSW	NSW Department of Planning and Environment — Water	https://water.dpie.nsw.gov.au
SA	Landscape SA, including 8 regional boards	https://www.landscape.sa.gov.au
Vic	Catchment management authorities Department of Energy, Environment and Climate Action — Forests and Reserves	https://viccatchments.com.au/about-us/our-cma-regions Riparian management licences – www.forestsandreserves.vic.gov.au/__data/assets/pdf_file/0016/31426/Riparian-management-licences.pdf (PDF, 160 kB)

Herbicides for use on bellyache bush

Page 34 – Several herbicides are registered for the control of bellyache weed (Table 5). There are also minor use permits available (Table 6).

Control costs given in Tables 1a and 1b are out of date. To estimate control costs, seek advice from your local biosecurity officer.

Table 5. Herbicides permitted for use on bellyache bush under registration as at September 2023

SITUATION	APPLICATION METHOD	ACTIVE INGREDIENT	COMMERCIAL PRODUCT EXAMPLES ¹	RATE	STATE OR TERRITORY ²	COMMENTS
Native pastures, rights of way, commercial and industrial areas	High-volume handgun spot spraying	metsulfuron (600 g/L)	Associate®	10 g/100 L + organosilicone penetrant	Qld and NT only	Apply when bushes are actively growing. Avoid spraying when bushes are stressed. Spray to thoroughly wet all foliage, but not to cause run-off. Will damage legumes in pastures
Agricultural non-crop areas, commercial and industrial areas, forests, (including softwood plantations) pastures and rights of way	High-volume handgun spot spray Cut stump / basal bark	fluroxypyr ³ (333 g/L)	Starane® Advanced	300 mL/100 L water	All	Seedlings and young plants up to flowering
Forestry, roadsides, industrial areas and rights of way	Helicopter - softwood plantations only or ground-base application only			1 L/100 L diesel or Biosafe®	NT only 'off-label use'	Individual bushes
				0.6-1.8 L/ha	All	Can be mixed with rates of glyphosate up to 2.9 kg a.i./ha. Preplant spray operations in forestry or general broadleaf weed growth
Forestry (softwood plantations)	Boom application			0.6-1.8 L/ha	All	Postplant directional spraying to the inter-row zone only in forestry
Pasture and non-agricultural situations	High-volume handgun spot spray Cut stump	aminopyralid + metsulfuron (375 + 300 g/kg) picloram + aminopyralid (45 + 4.5 g/L)	Stinger® Vigilant® II gel	20 g/100 L + Pulse® Penetrant 3-5 mm thick layer over cut surface	Qld only All	Small plants or saplings
	Stem injection	aminopyralid + metsulfuron-methyl (93.7 g/kg + 7.5g/kg)	Di-Bak AM	1 capsule every 10 cm of circumference	All	Use the Injecta applicator to drill a hole and deliver Di-Bak AM capsule in the sapwood layer beneath the bark. Space capsule insertions at 10 cm, centres around tree circumference below any branching, otherwise remove or treat all branches below the capsule insertion. On multiple trunk trees, ensure each trunk is treated. ALL TREES: Apply the capsules to each tree at waist height or below.

Notes to this table can be found at the bottom of Table 6.

Table 6. Herbicides permitted for use on bellyache bush under minor use permits as at September 2023

SITUATION	APPLICATION METHOD	ACTIVE INGREDIENT	COMMERCIAL PRODUCT EXAMPLES	RATE	STATE OR TERRITORY ²	COMMENTS
PER13707 – control of bellyache bush in native pastures, rights of way and commercial and industrial areas. Biosecurity Queensland. Expires 30 September 2027. Persons generally.						
Native pastures, rights of way, commercial and industrial areas	Low-volume splatter gun	metsulfuron (600 g/L)	Associate®	1 g/L water	Qld only	Apply 4 mL/m plant height as foliar application using a gas or splatter gun that enables calibrated dose delivery to the foliage of individual plants. Apply when plants are actively growing and not under stress. DO NOT apply more than one application per year.
PER13333 – Control of environmental weeds in various situations. Forest Products Commission. Expires 31 March 2025. Persons generally.						
Crop and non-crop areas as specified for WA on the approved label.	Spot spray	Metsulfuron-methyl (600 g/kg)	Associate®	10 g/100 L plus wetting agent or oil. Or 100 g/ha plus wetting agent or spray oil. Or label rate for specific weed	WA only	Seedlings and young plants up to flowering
		picloram + triclopyr (100 + 300 g/L)	Adama Fightback®	1 L/100 L water plus wetting agent or spray oil. Or label rate for specific weed.		Spot spraying where residual weed control is required.
	Cut stump/basal bark	picloram + triclopyr (120 + 300 g/L)	Access®	1 L/60 L diesel		Paint stump immediately after cutting. Or paint or spray basal bark.
PER92609 – Control of bellyache bush in the Northern Territory. XO Aviation Pty Ltd. Expires 30 November 2025. Aerial application pilots employed by or contracted by XO Aviation.						
Non-crop pasture and native vegetation areas within the Daly River catchment	Aerial spraying only	Metsulfuron-methyl (600 g/kg)	Associate®	120 g /ha + wetting agent*	NT only	Apply via aerial application (fixed-wing or helicopter) in accordance with label instructions. *Always add a non-ionic surfactant / wetting agent at the rate of 0.1% (active constituent) of final spray volume. The use of spraying oil is not recommended. Refer to permit critical use comments.

1 Commercial products listed here are examples only, and many other products containing these active ingredients are registered for use on bellyache bush. Search at <https://apvma.gov.au/node/10831>

2 Products may be registered for use on bellyache bush in all states and territories (shown as 'All') or only in the specific states and territories listed.

3 Products containing different concentrations of the active ingredients are registered for this use. For example, registered products containing the active fluroxypyr are available with 200, 333 and 400 g/L concentrations. Check the label for application rates.

* These herbicide treatments, previously permitted under PER13333, were incorporated into PER92609 in 2023.

Note: Not all currently registered herbicides are commercially available. Check the company website for a current label.

Note: herbicides are not to be used for any purpose or in any manner contrary to the label unless authorised under appropriate legislation. By law, you must read the label (or have it read to you) before using any herbicide product. The same applies for minor use permits. Always follow the label and permit directions.

Aerial spraying

Page 36 – Timing is critical to ensure that aerial spraying is most effective. Spray between December and April when bellyache bush is actively growing.

Aerial spray trial in the Daly River catchment

A five-year project, cofunded by the Australian Government Biodiversity Fund and the NT Government, commenced in 2012 focusing on the extensive bellyache bush infestation in the Daly River catchment. To progress the project, the Daly River Bellyache Bush Stakeholder Group was formed, comprising of pastoralists, First Nations land managers, national parks and recreational users.

The project evaluated the integration of fire, grazing management and chemical control (both aerial and on-ground application).

In the 2014–15 wet season a trial was conducted to compare a range of aerially applied herbicides, adjuvants and water rates. Previous results had shown that aerial herbicide application can be cost effective, but variable, confounded by climatic conditions, water quality and coverage.

The trial results showed that:

- Aerial herbicide application is useful for broadscale integrated management.
- Adjuvants can provide significant improvements to herbicide efficacy under non-ideal conditions.
- Water volumes will influence cost-effectiveness. Lower water volumes reduce the number of tank refills required thus increasing the number of hectares treated per operating hour.
- Aerial application 'breaks up' large thick infestations by killing many plants resulting in greatly increased feasibility for on-ground control, and more effective use of fire.
- On-ground follow-up is essential.
- Targeted allocation of integrated aerial herbicide application, on-ground application, fire and movement of stock to allow pasture regeneration can be an effective strategy to ensure bellyache bush does not re-establish.

Source: Sauer et al. (2015)

Cut stump

Page 36 – Once the bellyache bush stem has been cut as close to the ground as possible, apply Vigilant® II (or other registered herbicide) to both cut surfaces. This will prevent regrowth of both the stump and the cut section.

Splatter gun

Research has shown that the splatter-gun method is effective and useful for bellyache bush control.

The splatter-gun method is the use of a low-volume (minimal water), high-concentration chemical mix applied in a coarse squirt to foliage when the plant is actively growing. Only a small part of the plant needs direct contact with the herbicide. The splatter-gun method is approved under a minor use permit for the use of metsulfuron-methyl as the only active ingredient. Only 1 g of the product is required to 1 L of water. A penetrant such as Pulse® is added at 2 mL per litre mix. The chemical mix is applied at the rate of 4 mL per metre of plant height. Refer to PER13707 in Table 6 for more details.

Equipment suitable for use include gas or manual splatter guns such as drench guns, vaccination guns and tree-injection guns.

Spraying can be done at a brisk walk through scattered or medium-size bellyache bush infestations. Effects can be visible after one to two weeks. Large-scale brownout of leaves typically occurs within two months, and death within 12 months.

Follow-up treatment is required using other chemicals (if within one year) or metsulfuron-methyl (after one year).

Advantages of the splatter-gun method are:

- It is extremely effective at killing bellyache bush.
- Grasses are not affected by the treatment, which provides competition for weed seedlings.
- A small backpack of chemical mix can cover a large area.
- Application can be fast – medium-density infestations can be treated at a brisk walk.
- Hard-to-access plants can often be reached on foot.
- The mix is low odour.
- Both adult plants and seedlings beneath them can potentially be controlled in one pass.
- Less active chemical is used per hectare.
- There is no withholding period for stock.

Adapted from McKenzie and McKenzie (2013).

Mechanical control

Page 37 – Mechanical control prior to flowering/seeding will reduce spread, whereas implementation during the dry season, when plants are moisture stressed, will result in a higher kill rate of mature plants.

Biological control

One agent, the seed-feeding jewel bug (*Agonosoma trilineatum*), was released in Australia in 2003/04. It has not established, possibly due to low genetic integrity from one importation, and a range of other biological or environmental factors inhibiting its establishment.

Current research

Current research is centred on two biological control agents:

- a leaf-mining moth (*Stomphastis thaurastica*), approved for release in Australia and available as a biocontrol tool
- a rust pathogen (*Phakopsora arthuriana*), currently undergoing review for release approval.

Contact your local biosecurity officer for more information.

Further information on host specificity testing of biological-control agents, risk analyses and agent releases can be found at:

<https://www.agriculture.gov.au/biosecurity-trade/policy/risk-analysis/biological-control-agents>

Biocontrol Hub

Information sharing is vital to the success of biological control of weeds. Recording what weed species you are controlling, and the locations of agent-release sites can assist others obtaining access to the right agents for their infestation.

The Atlas of Living Australia (ALA) is a national online biodiversity database that helps information sharing. The Australian Biocontrol Hub is a portal within the ALA that acts as a one-stop shop for data and information sharing on biological control of weeds.

The Biocontrol Hub can:

- facilitate recording of biological-control-agent release and establishment data
- capture observations of biological-control-agent spread
- ensure biological-control-agent-distribution data is readily accessible and
- provide access to biological-control extension material.

For further information on how to contribute to or use information on the Australian Biocontrol Hub, visit the website: <https://biocollect.ala.org.au/biocontrolhub>

Contacts

STATE/ TERRITORY	DEPARTMENT	PHONE	EMAIL	WEBSITE
National	Australian Pesticides and Veterinary Medicines Authority	02 6770 2300	enquiries@apvma.gov.au	www.apvma.gov.au
ACT	Parks and Conservation	13 22 81	ACTBiosecurity@act.gov.au	www.environment.act.gov.au/parks-conservation/plants-and-animals/Biosecurity/invasive-plants
NSW	Department of Primary Industries	1800 680 244	weeds@dpi.nsw.gov.au	www.dpi.nsw.gov.au/biosecurity/weeds
NT	Department of Environment, Parks and Water Security	08 8999 4567	weedinfo@nt.gov.au	www.nt.gov.au/environment/weeds
Qld	Department of Agriculture and Fisheries	13 25 23	info@daf.qld.gov.au	www.daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/plants-weeds
SA	Department of Primary Industries and Regions	1300 374 731	invasivespecies@sa.gov.au	www.pir.sa.gov.au/biosecurity/weeds
Tas	Department of Natural Resources and Environment	1300 368 550	biosecurity.tasmania@nre.tas.gov.au	www.nre.tas.gov.au/invasive-species/weeds
Vic	Agriculture Victoria	13 61 86	Refer to www.agriculture.vic.gov.au/about/contact-us for contact options	www.agriculture.vic.gov.au/biosecurity/weeds
WA	Department of Primary Industries and Regional Development	08 9368 3333	enquiries@agric.wa.gov.au	www.agric.wa.gov.au/pests-weeds-diseases/weeds

Further information

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