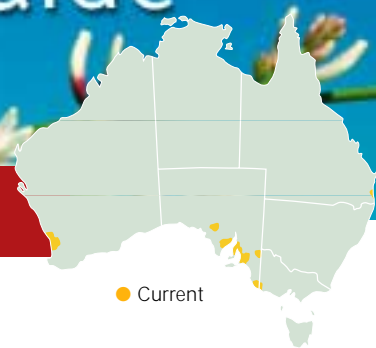


Weed Management Guide

White weeping broom –
Retama raetam



White weeping broom (*Retama raetam*)

The problem

White weeping broom is on the *Alert List for Environmental Weeds*, a list of 28 non-native plants that threaten biodiversity and cause other environmental damage. Although only in the early stages of establishment, these weeds have the potential to seriously degrade Australia's ecosystems.

White weeping broom was brought to Australia as an ornamental shrub. It was first recorded in South Australia in 1841. Like many of the broom plants, it invades nutrient-poor to fertile, well-drained soils where it can fix nitrogen and form a scrub layer that can outcompete and shade out native plants. This species is possibly the most drought tolerant of the exotic brooms in Australia, making it a particular threat in dry regions and during drought years. It may infest grazing land and prevent access to stock. It is also probably the least palatable to stock of the exotic brooms.

The weed

White weeping broom is a Mediterranean shrub that grows to about 3 m tall and may reach 6 m across. Plants are grey-green with slender, drooping branches. Young plants are wispy with a single stem and strong taproot. The leaves, which are very small (about 5 mm long) and narrow (only 1 mm wide), are quickly dropped and the plant remains leafless for most of the year.



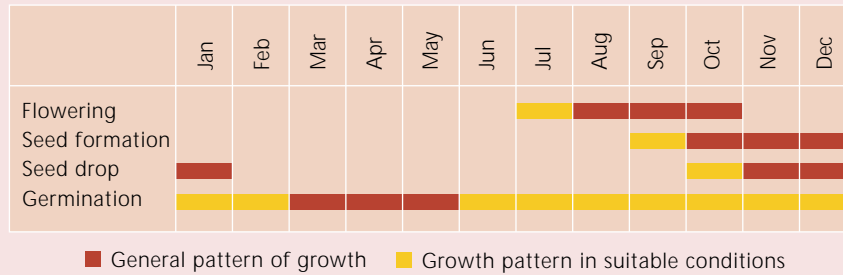
White weeping broom is an aggressive invader which thrives on nutrient-poor soil.
Photo: Ken Rudd, Northern Yorke Peninsula Animal & Plant Control Board

Flowers are 8–10 mm long, white and pea-like, appearing close to the stems in clusters of 3–15. Each flower tube contains ten stamens, the pollen bearing stalks that are the male reproductive parts of the flower. The hairless grape-shaped seed pod (10–15 mm diameter) contains one or two kidney-shaped seeds, which are about 6.5 mm long and may be yellow, green, brown or black in colour. Stems of young plants are covered with long soft hairs but become hairless with age. An extremely similar looking and closely related species, *Retama monosperma*, is a popular garden plant in Australia and also a potential weed (see p. 5).

Key points

- Prevention and early intervention are the most cost-effective forms of weed control. It is important to identify existing sources of white weeping broom, such as garden specimens, and remove them before they invade natural ecosystems.
- White weeping broom is an aggressive invader which spreads by seed, each plant producing a large number of seeds.
- It is a very drought-tolerant species, making it a particular threat in dry regions and during drought years.
- Contact your state or territory weed management agency or local council if you find white weeping broom.

Growth calendar



White weeping broom flowers from late winter to mid spring and sheds its seed pods in late spring to early summer. Growth occurs whenever there is moisture, but mainly from autumn to spring. Seeds mainly germinate in autumn, but can germinate year round under suitable conditions.



The white, pea-like flowers occur in clusters of 3–15.

Photo: Ron Mittler, University of Nevada, USA.

How it spreads

White weeping broom reproduces from seed. Each plant produces hundreds of seed pods and up to thousands of seeds on larger plants. The seeds drop when the seed pods split open, and can be further spread by water. A hard seed coat renders most seeds dormant initially, but as the seed coat wears away germination can take place. Seeds remain viable in the soil for several years.

Where it grows

White weeping broom is native to northern Africa and western Sahara,

Sicily and the Middle East. It has become naturalised in Australia, the United States and Great Britain. In its native range, white weeping broom grows in grasslands in the Mediterranean region and is a common feature of deserts and grasslands in the Sahara.

In Australia white weeping broom has become naturalised in South Australia, particularly around and to the east of Adelaide, on the Yorke Peninsula where it has taken over an area planted to native vegetation, and on the Eyre Peninsula where it is invading she-oak (*Casuarina*, *Allocasuarina*) woodlands. In Western Australia it is growing around and to the north of Perth.

Why we need to be 'alert' to white weeping broom

White weeping broom has several adaptations, including its lack of leaves, that reduce water loss and make it ideally suited to the warm dry conditions of its native range. It has the potential to become a significant threat to Australia's pastoral industry if it escapes containment.

In California the closely related species *Retama monosperma* displaces native plants, threatening the survival of several animal species that rely on the native vegetation. It can also increase the severity of bushfires if it dies off in large stands.

What to do about it

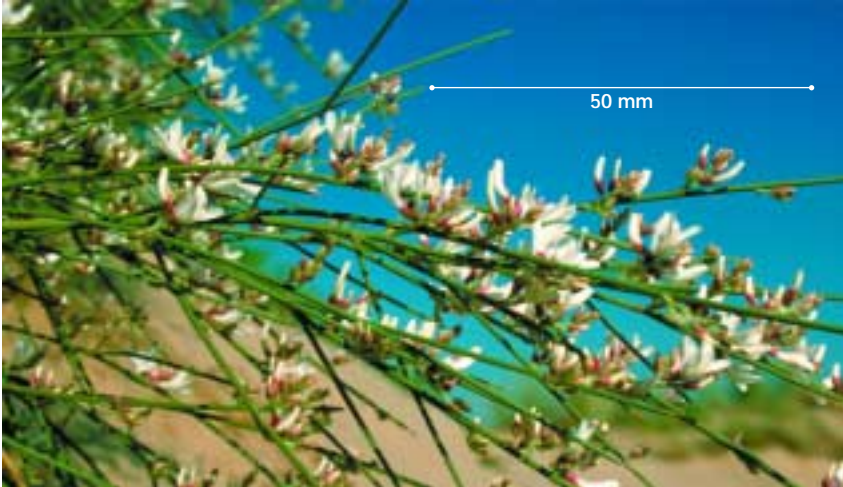
Prevention is better than the cure

As with all weed management, prevention is better and more cost-effective than control. The annual cost of weeds to agriculture in Australia, in terms of decreased productivity and management costs, is conservatively estimated at \$4 billion. Environmental impacts are also significant and lead to a loss of biodiversity. To limit escalation of these impacts, it is vital to prevent further introduction of new weed species, such as white weeping broom, into uninfested natural ecosystems.



In the Mediterranean region, white weeping broom is found in dry sandy conditions.

Photo: Botany Department, University of Catania, Italy



The plant is well adapted to saving water in dry conditions, with green stems and tiny leaves that are quickly dropped.

Photo: Botany Department, University of Catania, Italy

In the past various *Retama* species have been offered for sale in nurseries around Australia. If found for sale, notify the vendor of the risks posed by both *Retama raetam* and *Retama monosperma*. These are not recommended for ornamental situations and safer alternatives should be used instead. White weeping broom can be replaced with native species such as

Australian native broom, *Viminaria juncea*, which has perfumed yellow–orange flowers in spring.

Early detection and eradication of small infestations are important to prevent the spread of white weeping broom. An ongoing commitment to ensure that new infestations do not establish in surrounding areas should be a priority.

Quarantine to prevent further introductions

The importation of white weeping broom into Australia is not permitted because of the risk of further spread, and the potential introduction of new genetic diversity that could make future control more difficult.

Do not plant white weeping broom in gardens – use local native species instead

Do not buy seeds via the internet or from mail order catalogues unless you check with quarantine first and can be sure that they are free of weeds like white weeping broom. Call 1800 803 006 or see the Australian Quarantine and Inspection Service (AQIS) import conditions database <www.aqis.gov.au/icon>. Also, take care when travelling overseas that you do not choose souvenirs made from or containing seeds, or bring back seeds attached to hiking or camping equipment. Report any breaches of quarantine you see to AQIS.

The Alert List for Environmental Weeds

The Federal Government's *Alert List for Environmental Weeds* was declared in 2001. It consists of 28 weed species that currently have limited distributions but potentially could cause significant damage. The following weed species are therefore targeted for eradication:

Scientific name	Common name	Scientific name	Common name
<i>Acacia catechu</i> var. <i>sundra</i>	cutch tree	<i>Koelreuteria elegans</i>	Chinese rain tree
<i>Acacia karroo</i>	Karoo thorn	<i>Lachenalia reflexa</i>	yellow soldier
<i>Asystasia gangetica</i> ssp. <i>micrantha</i>	Chinese violet	<i>Lagarosiphon major</i>	lagarosiphon
<i>Barleria prionitis</i>	barleria	<i>Nassella charruana</i>	lobed needle grass
<i>Bassia scoparia</i>	kochia	<i>Nassella hyalina</i>	cane needle grass
<i>Calluna vulgaris</i>	heather	<i>Pelargonium alchemilloides</i>	garden geranium
<i>Chromolaena odorata</i>	Siam weed	<i>Pereskia aculeata</i>	leaf cactus
<i>Cynoglossum creticum</i>	blue hound's tongue	<i>Piptochaetium montevidense</i>	Uruguayan rice grass
<i>Cyperus teneristolon</i>	cyperus	<i>Praxelis clematidea</i>	praxelis
<i>Cytisus multiflorus</i>	white Spanish broom	<i>Retama raetam</i>	white weeping broom
<i>Dittrichia viscosa</i>	false yellowhead	<i>Senecio glastifolius</i>	holly leaved senecio
<i>Equisetum</i> spp.	horsetail species	<i>Thunbergia laurifolia</i>	laurel clock vine
<i>Gymnocoronis spilanthoides</i>	Senegal tea plant	<i>Tipuana tipu</i>	rosewood
<i>Hieracium aurantiacum</i>	orange hawkweed	<i>Trianoptiles solitaria</i>	subterranean cape sedge

Weed control contacts

State / Territory	Department	Phone	Email	Website
ACT	Environment ACT	(02) 6207 9777	EnvironmentACT@act.gov.au	www.environment.act.gov.au
NSW	NSW Agriculture	1800 680 244	weeds@agric.nsw.gov.au	www.agric.nsw.gov.au
NT	Dept of Infrastructure, Planning and Environment	(08) 8999 5511	weedinfo.ipe@nt.gov.au	www.nt.gov.au
Qld	Dept of Natural Resources and Mines	(07) 3896 3111	enquiries@nrm.qld.gov.au	www.nrm.qld.gov.au
SA	Dept of Water, Land and Biodiversity Conservation	(08) 8303 9500	apc@saugov.sa.gov.au	www.dwlbc.sa.gov.au
Tas	Dept of Primary Industries, Water and Environment	1300 368 550	Weeds.Enquiries@dpiwe.tas.gov.au	www.dpiwe.tas.gov.au
Vic	Dept of Primary Industries/Dept of Sustainability and Environment	136 186	customer.service@dpi.vic.gov.au	www.dpi.vic.gov.au www.dse.vic.gov.au
WA	Dept of Agriculture	(08) 9368 3333	enquiries@agric.wa.gov.au	www.agric.wa.gov.au

The above contacts can offer advice on weed control in your state or territory. If using herbicides always read the label and follow instructions carefully. Particular care should be taken when using herbicides near waterways because rainfall running off the land into waterways can carry herbicides with it. Permits from state or territory Environment Protection Authorities may be required if herbicides are to be sprayed on riverbanks.

Raising community awareness

Some 65% of weeds, including white weeping broom, which have recently established in Australia have escaped from plantings in gardens and parks. The detrimental impacts of these weeds far outweigh any potential horticultural benefits. The public should be made more aware of these impacts, and of other issues such as how to identify white weeping broom and what to do if they find it.

White weeping broom can be distinguished by its weeping or drooping habit. Its stems are green and normally free of leaves, which are linear and narrow when present. It has smooth,

grey-green bark and abundant white flowers during the flowering season (July–October).

New infestations of white weeping broom

Because there are relatively few white weeping broom infestations, and it can potentially be eradicated before it becomes established, any new outbreaks should be reported immediately to your state or territory weed management agency or local council. Do not try to control white weeping broom without their expert assistance. Control effort that is poorly performed or not followed up can actually help spread the weed and worsen the problem.



A roadside infestation of white weeping broom near Kadina, SA.
Photo: Ken Rudd, Northern Yorke Peninsula Animal & Plant Control Board

Methods to control white weeping broom

White weeping broom is known in Australia only from several small populations and a preferred method of control has not yet been developed. However, experience in controlling broom (*Cytisus scoparius*), which is a major weed in southern Australia, can be applied to this species. Any control of white weeping broom should be undertaken cooperatively with your state or territory weed management agency or local council.

Using herbicides

No herbicides are registered for control of white weeping broom. In the case of *Cytisus scoparius*, chemical control is effective in the short term but is expensive and needs to be followed up for many years until the seedbank has been depleted. There is also a risk of damage to non-target species.

Physical control

Physical removal is an option for isolated plants, especially if they have not seeded, although seedlings are hard to hand pull. Monitor the area in summer and remove any young plants that may have germinated.



Retama monosperma – another weedy species to look out for

Retama monosperma is popular as an ornamental shrub and has been sold throughout Australia since the early 1900s, occasionally under the name of the virtually identical *Retama raetam*. However, *Retama monosperma* is no longer considered suitable as an ornamental plant in Australian gardens due to the weedy behaviour of its very close relative *Retama raetam* and because it has become a serious weed in California. It should no longer be planted in gardens, and infestations which threaten bushland should be prioritised for control.



The seed pod and flowers of *Retama monosperma*.
Photo: Gavin Lodge



Retama monosperma (above) is extremely similar to white weeping broom, and is a weed overseas.
Photo: Jason Emms

Mechanical control

Bulldozing infestations into heaps and burning the resulting weed mounds has been a common method used to control broom but it only provides a temporary solution. Bulldozing causes massive soil disturbance and physical movement of plants, not only burying seeds but also spreading them beyond the original infestation. In at least one place this practice and a lack of follow-up treatments has exacerbated the *Cytisus scoparius* problem.

Cutting stems off near the ground with saws will stress the plant but cut plants resprout vigorously, so cutting alone will not kill them.

Because white weeping broom has a more continuous growth than some of the other broom species, it can be treated

throughout the year whenever it is growing actively. It should be killed before it sets seed. Permits to mechanically clear vegetation may be required if native species are likely to be affected.

Fire

Fire effectively kills plants and can help to break seed dormancy. Experience using fire to control other species of broom indicates that it kills a large proportion of seeds but lightly scorched plants may resprout. Follow-up chemical treatment after fire will probably be needed for many years until the seedbank is depleted. Usually though, fire is not recommended to control broom in Australia due to the risk of out-of-control fires and because it leaves the land initially unusable, with many burnt stems remaining in the ground. Permits may be required to light fires – check with your local council or state or territory weed management agency.

Follow-up

Once an area of white weeping broom has been treated, it will be necessary to monitor the treated area for many years and destroy new plants.

Careful disposal

Hand-pulled plants can be placed into large plastic bags and left in the sun. Seeds present on pulled plants should be cut from plants, collected in bags and placed in the household rubbish. Take care not to spread seeds beyond the current infestation.

If removed weed material cannot be accommodated on the site, (eg mulched or dried in the sun), it should be bagged and removed to tip facilities. Seeds should not be included in vegetation to be used for the production of garden compost.

If the plant is being removed from gardens, dispose of waste by carefully bagging all material and putting it in the household rubbish. As seeds are difficult to destroy, it is advisable to dispose of plants when they are carrying seeds. Never give plants to other people or dump plants on vacant land, over back fences or in bushland areas. Contact your local council for specific advice before attempting to dispose of white weeping broom.

Legislation

There is currently no legislation to control white weeping broom but, as part of the *Alert List of Environmental Weeds*, it is marked for eradication and should not be imported into Australia or further spread.

Acknowledgments

Andy Sheppard (CSIRO/Weeds CRC), John Virtue (SA DWLBC/Weeds CRC), Jason Emms (University of Adelaide/Weeds CRC), Sandy Lloyd (Agriculture WA/Weeds CRC) and John Thorp (National Weeds Management Facilitator).

Map: Base data used in the compilation of distribution map provided by Australian herbaria via Australia's Virtual Herbarium.

If you find a plant that may be white weeping broom

Quick reference guide

Identification

You will first need to confirm its identity. Contact your state or territory weed management agency for help in identifying the plant. You will need to take note of the characteristics of the plant in order to accurately describe it. Some important features of white weeping broom include:

- plants are grey-green, almost entirely leafless, and grow to 3 m tall with slender branches that droop like a weeping willow

- seedlings are most visible in late summer and early autumn
- flowers are small, white and pea-like, in clusters close to the stems
- seed pods are grape-shaped, 10–15 mm in diameter and contain one or two small, kidney-shaped seeds.

Reporting occurrences

Once identified, new occurrences of white weeping broom should be reported to the relevant state or territory weed management agency or local council,

who will offer advice and assistance on its control. Because it poses such a serious threat, its control should be undertaken with the appropriate expertise and adequate resources.

Follow-up work will be required

Once the initial infestation is controlled, follow-up monitoring and control will be required to ensure that reinfestation does not occur.

Collecting specimens

State or territory herbaria can also identify plants from good specimens. These organisations can provide advice on how to collect and preserve specimens.

State/Territory	Postal Address	Phone	Web
Australian National Herbarium	GPO Box 1600 Canberra, ACT, 2601	(02) 6246 5108	www.anbg.gov.au/cpbr/herbarium/index.html
National Herbarium of New South Wales	Mrs Macquaries Rd Sydney, NSW, 2000	(02) 9231 8111	www.rbg Syd.nsw.gov.au
National Herbarium of Victoria	Private Bag 2000 Birdwood Avenue South Yarra, Vic, 3141	(03) 9252 2300	www.rbg.vic.gov.au/biodiversity/herbarium.html
Northern Territory Herbarium	PO Box 496 Palmerston, NT, 0831	(08) 8999 4516	http://www.nt.gov.au/ipe/pwcnt/
Queensland Herbarium	c/- Brisbane Botanic Gardens Mt Coot-tha Rd Toowong, Qld, 4066	(07) 3896 9326	www.env.qld.gov.au/environment/science/herbarium
South Australian Plant Biodiversity Centre	PO Box 2732 Kent Town, SA, 5071	(08) 8222 9311	www.flora.sa.gov.au/index.html
Tasmanian Herbarium	Private Bag 4 Hobart, Tas, 7000	(03) 6226 2635	www.tmag.tas.gov.au/Herbarium/Herbarium2.htm
Western Australian Herbarium	Locked Bag 104 Bentley DC, WA, 6983	(08) 9334 0500	http://science.calm.wa.gov.au/herbarium/

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