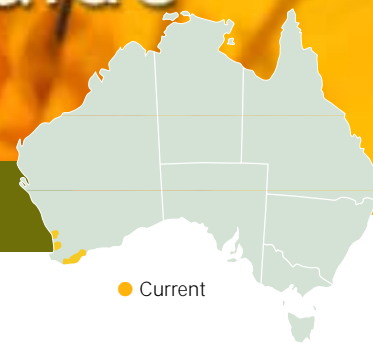


Weed Management Guide

False yellowhead –
Dittrichia viscosa



False yellowhead (*Dittrichia viscosa*)

The problem

False yellowhead is on the *Alert List for Environmental Weeds*. This is 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.

Originally from the Mediterranean region, it is not clear how false yellowhead was introduced to Australia but it may have escaped from a garden. It was first recorded in Albany in 1955, and has since spread throughout southern Western Australia. It is occasionally found in swamps but mainly occurs in highly disturbed areas such as roadsides, railway lines, fire breaks and walking trails.

False yellowhead is a prolific seed producer and a threat in the higher rainfall regions of southern Australia. It is known to release substances that inhibit the germination of nearby plants, and to be toxic to stock. It can also cause contact dermatitis in people.

The weed

False yellowhead is an erect, perennial, soft-wooded shrub, 1–1.5 m tall and 1 m wide. Its leaves are greyish-green and elliptical (ie oval-shaped with the ends pinched together), 25–100 mm long



False yellowhead is most common in disturbed areas such as roadsides and walking trails.
Photo: John Moore

and 8–30 mm wide, and serrated on the edge. There is no stalk and the leaf base is half-wrapped around the stem (partially stem clasping). The yellow flowers are daisy-like and 10–20 mm across, with radiating petal-like florets. The flowers are surrounded by narrow, triangular, sticky bracts (modified leaves) 3–9 mm long. The seeds are approximately 2 mm long, with about 15–25 bristles at the base. The roots can be quite substantial, even in small plants.

The young stems and leaves are covered with glandular hairs which exude a sticky foul-smelling oil. The oil can cause allergic reactions.

Key points

- False yellowhead produces large numbers of seeds and is spreading rapidly along roadsides and walking trails in southwestern Western Australia.
- It favours disturbed habitat, particularly after fires.
- Preventing the further spread of false yellowhead is cheaper and easier than all other control options.
- Control of established infestations can be achieved by physical and chemical means, and should be conducted before flowering occurs in summer.
- If you see this weed, contact your state or territory weed management agency or local council. Do not attempt control without their assistance.

Growth calendar

In Australia flowering takes place between December and April; in its native range in France it flowers between September and October. Germination generally takes place following rainfall and can be quite prolific when fire or mechanical disturbance create bare ground. Under laboratory conditions, false yellowhead seeds have been shown to undergo a deep dormancy, which is broken by a lack of light. Seeds of the closely related stinkwort *Dittrichia graveolens* are viable for about three years.

How it spreads

False yellowhead spreads by seed. Seed dispersal is aided by the 'pappus', an arrangement of bristles at the end of the seed, which catches the wind or can assist flotation. Seed can also be spread during soil movement (eg in road making or road grading) or when attached to machinery.

False yellowhead is well established on the south coast of Western Australia, having spread from Albany to Mount Barker and Denmark, some 40 km to the west and north respectively. There are established remote populations at Walpole-Peaceful Bay, 60–80 km west of Albany, and at Mount Manypeaks, 60 km east of Albany. An isolated population has also been recorded on a train track at Yarloop some 350 km northwest of Albany and 125 km south of Perth. This infestation was probably spread by seed attached to a train.

Where it grows

False yellowhead usually prefers, but is not restricted to, high rainfall areas. It can be found on both clay and sandy soils. In southwestern Western Australia it is found in areas of medium to high rainfall (ie where rainfall exceeds 400 mm per year). It is more reliant on moisture than the closely related stinkwort *D. graveolens*, which is a weed of grazing land and roadsides of much of southern Australia.

In southwestern Western Australia nearly all records of false yellowhead are from highly disturbed sites: road verges (20 records), firebreaks (one record) and walking trails (two records). Of the three records from bushland, all are from disturbed sites in swamps (Lake Seppings, Mount Manypeaks, and a creekline and swamp at Emu Point).

False yellowhead is native to southern Europe (including France, Spain, Greece,



During summer and autumn, each bush can have hundreds of yellow flowers.
Photo: José Darnaude

Italy and Bulgaria) through to Turkey and the Middle East (Israel, Jordan and Syria). It is also found in northern Africa (Algeria, Egypt and Libya).

Why we need to be 'alert' to false yellowhead

False yellowhead, like *D. graveolens*, can cause health problems in humans and animals. The oil on the leaves and stems causes contact dermatitis, resulting in itching and blistering skin. Stock that eat the flower heads of *D. graveolens* can develop enteritis (inflammation of the small intestine) because the pappus irritates and punctures the lining of the small intestine, eventually leading to pulpy kidney disease and sudden death if untreated. It is thought that *D. viscosa* would have similar impacts on grazing animals.

False yellowhead has the potential to be a serious environmental weed, particularly in southwestern Western Australia and areas of similar climate in southern and eastern Australia, if it is allowed to spread. Infestations of false yellowhead would detract from the aesthetic and natural values of bushland and could reduce its tourism appeal. The costs of management (eg clearing from railway lines or walking trails) would also be significant.



Stinkwort *Dittrichia graveolens* is a closely related agricultural weed of southern Australia.
Photo: John Moore

What to do about it

Prevention is better than the cure

As with all weed control, 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 prevent these impacts escalating, it is vital to prevent further introduction of new weed species such as false yellowhead.

The annual cost of weeds to Australian agriculture exceeds \$4 billion

Early detection and eradication are also important to prevent the spread of false yellowhead. Small infestations can be eradicated if they are detected early but an ongoing commitment is needed to ensure new infestations do not establish.

Quarantine to prevent further introductions

No importation of false yellowhead into Australia is permitted because of the risk of further spread, and the potential introduction of new genetic diversity that could make future control more difficult.

Help keep Australia free of this potentially serious weed by notifying authorities of any infestations

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 false yellowhead. 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 leaves are elliptical, partially stem claspings and serrated on the edges.
Photo: Raymond Sluiter, Utrecht University (Netherlands)

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.



The daisy-like flowers occur in groups of 4–12.
Photo: José Darnaude



Hairs that cover the young stems and leaves exude a sticky foul-smelling oil.
Photo: José Darnaude

Raising community awareness

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

False yellowhead is an attractive rounded globular bush, up to 1.5 m tall and 1 m wide. During the flowering season (December–April), it has large yellow flowers with yellow centres and petals. Several stamens (pollen-bearing stalks) extend out from the centre of the flower. The leaf shape and texture will help with identification when it is not in flower.

Most recently introduced weeds have spread from gardens

New infestations of false yellowhead

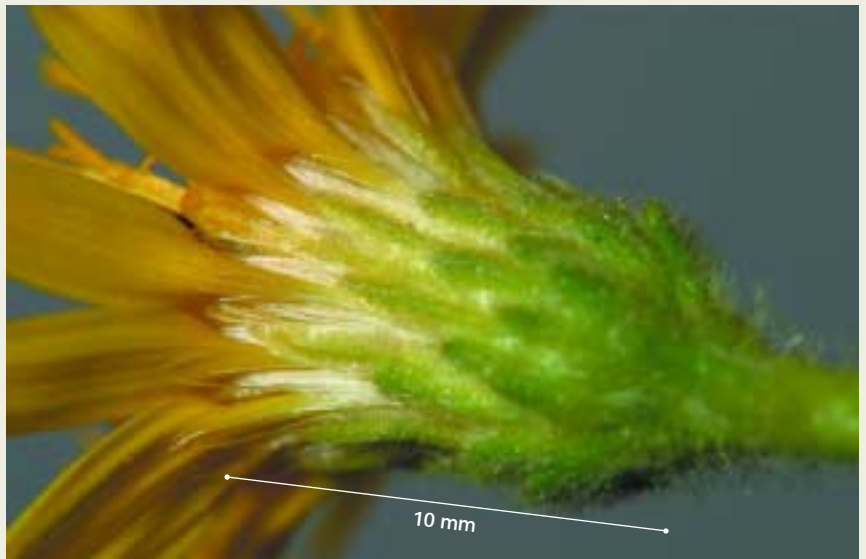
Because there are relatively few false yellowhead infestations, and it can potentially be eradicated before it becomes established, any new outbreaks should be reported immediately to your state or territory weed management agency or local council. Do not try to control false yellowhead without their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

The invasion of false yellowhead into the urban parks of Albany

False yellowhead was first recorded in Albany, a coastal city of 30,000 people located 400 km southeast of Perth in Western Australia, in 1955. It probably escaped from a garden and has now spread throughout the region. It is becoming increasingly common along roadsides and walking trails, and occasionally in relatively undisturbed bushland.

The City of Albany is responsible for managing the city's parks and reserves and provides specialist weed management and revegetation assistance to community groups. This includes equipment such as weeding tools and a trailer, as well as free access to either of the city's waste disposal sites to dispose of weeds. The city's Environmental Weed Strategy lists eleven priority sites, the highest ranked being the Mt Adelaide and Mt Clarence Reserve, which is situated near the coast and the city centre. The City of Albany and the 'Friends of Mt Adelaide and Mt Clarence' community group have undertaken an ongoing weed management program in the reserve, which includes another *Alert List for Environmental Weeds* species, holly leaved senecio, *Senecio glastifolius*.

Consequently, when outbreaks of false yellowhead were noticed in the reserve, a joint project between the City of Albany and the 'Friends' was initiated to attempt to rid the reserve of false yellowhead, even though it is not one of the top 15 priority weeds in the region. The outbreak was apparently related to an earlier bushfire as this species readily invades areas after disturbance.



The involucre bracts are narrow modified leaves, linear to narrowly triangular and 3–9 mm long, around the base of the flower.

Photo: José Darnaude

Spraying roadside infestations of false yellowhead has been undertaken over the past two years, using a vehicle-mounted sprayer and hose, reel and electric pump. Results have been encouraging, with good kill rates helped by the clumping of plants, although it has been important to spray before seed set.

The 'Friends' have worked in conjunction with City staff, and have undertaken follow-up manual weeding of any false yellowhead plants they have encountered. It is a particularly difficult species to hand pull, even in moist soil. Instead, they use a fork to remove plants, minimising disturbance to the soil and reducing the likelihood of germination of weed seeds. All plant material is bagged and dumped at the local tip because seeds can still form on flowering plants left on the ground after removal.

Occasionally, the cut-stump method has been used to treat larger plants. This involves cutting the plant at the base and quickly applying herbicide to the stump.

In other roadside areas some control has been achieved by regular mowing of false yellowhead before flowering and seeding. However, protective clothing must be worn because mowing can release the irritating oils that are stored in the leaves.

Results of the project so far have been encouraging, although an ongoing commitment will be required to minimise potential impacts in the future from this environmental weed. All those involved in the project are concerned about how rapidly false yellowhead is spreading along roads and tracks and throughout disturbed bushland in the region.

Legislation

False yellowhead is not declared as a noxious weed in any Australian state or territory 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

Information and guide revision: Greg Keighery (WA CALM), John Moore (WA Agriculture/Weeds CRC), Ryan Munroe (City of Albany), Karin Baker (Friends of Mt Adelaide and Mt Clarence) 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 false yellowhead

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 false yellowhead are:

- large brilliant yellow daisy-like flowers
- sticky leaves with serrated edges
- it is most commonly found on roadsides and along walking trails.

Note: false yellowhead can cause skin irritation so protective clothing may be required when dealing with it.

Reporting occurrences

Once identified, new occurrences of false yellowhead 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 false yellowhead 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.



False yellowhead has spread hundreds of kilometres in 50 years.
Photo: John Moore

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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