

Groundsel bush

Baccharis halimifolia



Groundsel bush rapidly colonises disturbed areas, especially overgrazed pastures. It competes with pasture species for water and nutrients. It spreads rapidly from windborne seed, making clearing groundsel bush from paddocks a very time-consuming and expensive task.

In native *Melaleuca* wetlands, groundsel bush can form a dense understorey, suppressing growth of native sedges and interfering with the natural ecosystem.

Groundsel bush can become abundant in the vegetation along watercourses and in coastal woodlands and forest areas if not controlled.

The wind-dispersed seed can be a nuisance in urban areas where it sticks to insect screens and germinates in home gardens. Urban problems include potential allergies caused by airborne pollen and seed 'fluff'.

Declaration details

Groundsel bush is a declared Class 2 plant under the *Land Protection (Pest and Stock Route Management) Act 2002*. A Class 2 pest is one that has already spread over substantial areas of Queensland, but its impact is so serious that we need to try and control it and avoid further spread onto properties that are still free of the pest. By law, all landholders must try to keep their land free of Class 2 pests and it is an offence to keep or sell these pests without a permit. A local government may serve a notice upon a landholder requiring control of declared pests.



Description and general information

Groundsel bush is a densely branched shrub usually no more than 3 m high. Stems are green, maturing to brown and woody. Bark of mature plants is deeply fissured. Leaves are dull green, alternate, wedge shaped, 2.5–5 cm long and 1–2.5 cm wide, with a few lobes in the upper part. It has a deep branching taproot with numerous fibrous laterals in the upper soil.

Male and female flowers are borne on separate plants. Male flowers are pale yellow and open around mid to late March, slightly earlier than the female flowers. Female flowers are white and inconspicuous at the end of branches until seeds are fully developed. Then the plant has a fluffy appearance, with tufts of white hair (around late March to early April) that begin to blow the fluffy seeds in the breeze from mid to late April.



Habitat and distribution

Groundsel bush is a native of Florida (United States) and coastal areas adjacent to the eastern side of the Gulf of Mexico.

It was introduced into the Brisbane region as an ornamental plant in 1900 and has spread along the coastal areas of south-east Queensland (north to Miriam Vale Shire) and down the New South Wales coast. Scattered plants have occurred as far west as the Chinchilla region.

Groundsel bush is a rapid coloniser of cleared, unused land and is particularly suited to moist gullies, salt marsh areas and wetlands. It also does well on high, cleared slopes.

Most germination occurs in the autumn/winter period. Plants normally do not flower in the first year of growth. Plants that are 2m tall can produce from 500 000 to a million seeds.

Seeds from mature plants drift in the breeze like thistle seeds, most falling within a few metres of the parent bush. Wind updrafts can carry seeds many kilometres.

Seeds germinate readily with rainfall; however, if they become buried they can remain dormant for several years.

Seeds are readily transported by wind, running water, vehicles and machinery. Soil disturbance in infested areas usually leads to substantial germination. Further infestation occurs unless the ground is sown to pasture or other competitive ground cover.

Prevention

The spread of groundsel bush threatens the sustainability of agriculture and other land uses. Groundsel bush can replace plants and destroy habitat for native wildlife.

The best form of weed control is prevention. Always treat weed infestations when small—do not allow weeds to establish. Weed control is not cheap, but it is cheaper to do it now rather than next year, or the year after. Proper management planning ensures you get value for each dollar spent.

Control

Look at your weed problem carefully. Can you realistically eradicate it? Or should you contain the weed to stop new infestations developing while you reduce existing ones? What are you required to do by legislation? How does weed control fit into your property management plan? What can you do to restore areas and prevent re-establishment?

The best approach is usually to combine different methods. Control may include chemical, mechanical, fire and biological methods combined with land management changes. The control methods you choose should suit your particular situation.

Management strategies

In grazing situations, good pasture management will greatly reduce groundsel bush invasions. Slashing, timely use of fertiliser and management of stocking rates can assist in control by maintaining a healthy pasture. Good pastures provide competition to limit re-invasion of groundsel bushes. Consult Department of Employment, Economic Development and Innovation (DEEDI) pasture agronomists on the best options for your property.

For tall, dense infestations, burning can reduce the amount of above-ground material (and even kill the odd plant) making it a lot easier to spray regrowth. Annual burning does not reduce existing plant numbers, but allows grasses to establish more quickly and out-compete groundsel bush seedlings.

Regular slashing over a period of several years will result in a decreased level of infestation. In non-grazing situations, reforestation will eventually assist in control of groundsel bush. However, it is important to ensure that seed production is prevented while trees are establishing.



Biological control

Since the biological control program began for groundsel bush in 1967, over 35 different insects have been tested but only six have become permanently established in the field:

1. Stem borer (*Megacyllene mellyi*)—This beetle is restricted to areas adjacent to salt marshes where the sap flow in the host plant is lower. Newly hatched larvae are drowned by the heavier sap flow in plants growing in non-saline soils. Dense populations of this insect can reduce groundsel bush infestations in suitable habitats.
2. Plume moth (*Oidaematophorus balanotes*)—This insect is present in all areas. Damage is caused by larvae tunnelling in the stems and varies from severe dieback to death of individual branches. Populations of the moth appear to be restricted by ant predation on the eggs and young larvae. This in turn restricts plant damage.
3. Gall-fly (*Rhopalomyia californica*)—The larvae of this mosquito-like fly feed within development shoots and buds. Initially this insect caused heavy damage when it was released. However, soon after its release it was attacked by a small native wasp that drastically reduced gall numbers. Galls can always be found in low numbers, but occasionally higher numbers are found in patches. Overall damage to the plant is minimal.

4. Groundsel bush leaf beetle (*Trirhabda baccharidis*)—This beetle is restricted to similar habitats to the stem borer, where the larvae can form suitable cocoons and pupate in the soil. Plants will be totally defoliated in autumn, but can recover and are in full leaf next spring. In some years larvae severely damage the buds and flowers.
5. Leaf skeletoniser (*Aristotelia ivea*)—The larvae of this moth eat the soft leaf tissue leaving the skeletal woody veins. Though widespread, populations do not become large enough to cause significant damage. It is most commonly found in the spring on new leaves.
6. Leaf miner (*Buccatrix iveila*)—The larvae of this small moth mine in the leaf blades and later skeletonise the leaves in a manner similar to *Aristotelia*. This insect is widespread within the range of groundsel bush and causes minor damage.

Recent research has seen a move away from insect biocontrol to plant disease biological control agents. Two diseases have been studied in Florida. Experimental field releases of the rust fungus *Puccinia evadens* from Florida commenced in 1998 and this pathogen is now established at several sites.

Groundsel bush rust (*Puccinia evadens*) acts as both a leaf and stem parasite, causing defoliation during summer and winter and stem dieback over summer. The infection process requires a moisture film on the leaf or stem surface. The dry spores are spread by wind.

The presence of these biocontrol agents does not relieve landholders from their responsibility under Queensland legislation to control declared plants.

Mechanical control

Hand-pull small plants. Dig larger plants out or cut them off more than 10 cm below ground level.

As groundsel bush is a perennial woody plant with underground growing buds, slashing or burning will rarely kill plants and such action will generally result in regrowth occurring. Therefore the regrowth will need to be promptly controlled.

Herbicide control

Before using any herbicide, always read the label carefully. All herbicides must be applied strictly in accordance with the directions on the label.

Table 1 details the herbicides registered for groundsel bush control.

Further information

Further information is available from your local government office, or by contacting Biosecurity Queensland (call 13 25 23 or visit our website at www.biosecurity.qld.gov.au).

Table 1 Herbicides registered for the control of groundsel bush

Situation	Herbicide	Rate	Comments ^{1, 2, 3}
Pastures; non-agricultural, commercial, industrial land; rights of way	2,4-D amine 500 g/L	3.6–5.5 L/ha 0.4 L/100 L 300 mL/15 L 1.2 L/15 L	Air—higher rate for bushes High volume foliar spray Cut stump Misting
Pastures; non-agricultural land	2,4-D acid	10 L/ha 33 mL/1 L kero or turps 100 mL/10 L 1 L/10 L 0.37 L/ha 1 L/40 L diesel	Helicopter spraying Basal bark or cut stump Knapsack foliar spray Sprinkler spray—1 L/100 m ² Basal bark or cut stump
Commercial, industrial land; pastures; rights of way	2,4-D sodium (e.g. Tornado DF)	0.275 kg/100 L	Spot spray
Irrigation channels/banks; non-agricultural, commercial, industrial land; home gardens; pastures; rights of way; forests	Glyphosate ⁴ —IPA 360 g/L	0.7–1 L/100 L 100–150 mL/15 L 1:9 (2 x 2 mL dose per 0.5 m bush height)	Handgun—high rate in winter Knapsack foliar spray Splatter gun foliage
Commercial, industrial land; pastures; rights of way	Picloram + 2,4-D 75 g + 300 g (e.g. Tordon 75-D [®])	0.65 L/100 L	Spot spray foliage
Commercial, industrial land; pastures; rights of way; forests	Picloram + triclopyr (premix) (e.g. Grazon DS ^{® 5}) Access	0.25–0.35 L/100 L 2.5 L/100 L 30 mL/15 L 1 L/60 L diesel	Handgun foliage Misting foliage Knapsack foliage Basal bark or cut stump
Recreational, commercial, industrial land; pastures; rights of way; forests	Triclopyr 600 g/L (e.g. Garlon 600 [®]) Home garden packs (e.g. Defender Chemspray, Garden King)	0.16–0.32 L/100 L water 1 L/120 L diesel 25–50 mL/15 L 50 g/L 120 g/L 0.1–0.2 L/5 L water 0.1 L/0.5 L kerosene	Overall spray foliage Basal bark or cut stump Knapsack foliage Overall spray foliage Basal bark or cut stump Knapsack foliage Basal bark or cut stump
Grass pasture	Dicamba + MCPA (premix) (e.g. Banuel M [®])	2.8–4 L/ha 0.19–0.27 L/100 L 60 mL/15 L	Knapsack foliage
Pastures; forests; rights-of-way	Clopyralid (e.g. Lontrel [®])	0.33–0.5 L/100 L	Handgun foliage
Pastures	Tebuthiuron 200 g/kg (e.g. Graslan [®])	1 gm/m ²	Hand application (restrictions on use apply)

Read the label carefully before use. Always use the herbicide in accordance with the directions on the label.

Notes:

- ¹ Pasture legumes are susceptible to these herbicides.
- ² Cut stump treatments—cut as close to ground as possible and apply mixture immediately (within 15 seconds).
- ³ Basal bark treatments—paint/spray 25 cm band around base of each stem.
- ⁴ Glyphosate will kill pasture species.
- ⁵ Cannot be used in hazardous areas without a DEEDI permit.

Fact sheets are available from Department of Employment, Economic Development and Innovation (DEEDI) service centres and our Business Information Centre (telephone 13 25 23). Check our website at www.biosecurity.qld.gov.au to ensure you have the latest version of this fact sheet. The control methods referred to in this fact sheet should be used in accordance with the restrictions (federal and state legislation, and local government laws) directly or indirectly related to each control method. These restrictions may prevent the use of one or more of the methods referred to, depending on individual circumstances. While every care is taken to ensure the accuracy of this information, DEEDI does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.