

Tackling gorse takes effort, but doing nothing means it just gets worse

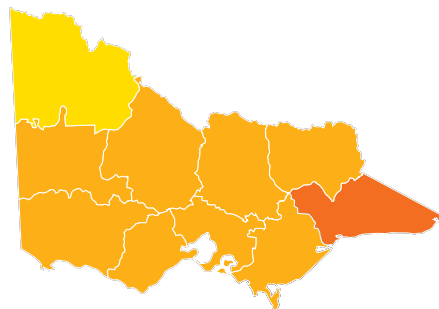
Gorse *(Ulex europaeus)*

Best Practice Guide

Gorse is an introduced plant from Europe that has become one of Australia's worst weeds. Gorse is listed as a Weed of National Significance (WoNS) due to its invasiveness, impacts, potential for spread and negative effects on economic, environmental and social values.

Under the *Catchment and Land Protection Act 1994*, in catchments where gorse is classified as a **regionally controlled weed**, both public and private landowners are responsible for *preventing the growth and spread* of gorse on their land. In catchments where gorse is classified as a **regionally prohibited weed**, public and private landowners must take all reasonable steps to *eradicate gorse* on their land.

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| <p>Regionally controlled</p> <ul style="list-style-type: none"> • Corangamite • Glenelg Hopkins • Goulburn Broken • North Central • North East • Port Philip & Westernport • West Gippsland • Wimmera | <p>Regionally restricted</p> <ul style="list-style-type: none"> • Mallee <p>Regionally prohibited</p> <ul style="list-style-type: none"> • East Gippsland |
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Gorse classification by catchment



Under the *Catchment and Land Protection Act 1994*, all landowners and managers are legally required to prevent the growth and spread of gorse on their property where it is classified as a Regionally controlled weed.

Gorse infests valuable pastoral land and significantly reduces land values. It is a haven for rabbits, foxes and feral cats; it degrades waterways and damages natural environments.

Gorse reproduces by seed and a mature infestation can produce up to 6 million seeds per hectare each year, which can remain viable in the soil for at least 25 years.



Identifying Gorse

Gorse is a dense, prickly, perennial, evergreen legume which, if left undisturbed, can grow up to 4m high and 3m diameter.

Seeds	Stems	Leaves	Seedlings	Flowers
<ul style="list-style-type: none"> • Seed pods are fine, densely haired oblong pods 10-20mm long by 6mm deep. • Pods are green when young, turning dark brown when mature. • Each pod contains two to six seeds measuring 3-4mm across with a very hard green or brown seed coat and yellow appendage. 	<ul style="list-style-type: none"> • Green when young, turning brown and woody when mature. • Stems are longitudinally ridged, hairy, and covered with spines and short branches. • All stems and branches terminate in a green spine up to 50mm long, with deep grooves running along its length. 	<ul style="list-style-type: none"> • Dark green, stalkless, narrow and stiff, resembling spines. Occurring in clusters along the branch. • 6-30mm long by 1.5mm wide with a sharp spine at the tip. Spines and leaves have a waxy coating. 	<ul style="list-style-type: none"> • Seedlings have soft hairy grey-green 'trifoliate' (three-leaflet) leaves. These leaves are lost as the plant matures and spines develop from three months of age. 	<ul style="list-style-type: none"> • Bright yellow pea-like flower 15-25mm long with a distinct coconut-like fragrance.



Gorse seeds mainly fall around the plant, but pods can explosively eject seed up to 5m during hot dry weather.

Impacts of Gorse

Ecosystems and waterways

Gorse competes with young trees and shrubs and hinders the growth of native understory species, in some cases displacing threatened species. A long-term effect of gorse's presence is that the soil becomes more acidic and loses nutrients.

Gorse can be found in parks, reserves, riparian areas, bushland fringe, roadsides, townships and agricultural environments.

Agricultural and economic

Gorse is a major weed of agriculture, invading all pasture types and significantly reducing grazing capacity.

Gorse has the ability to exclude all other plants and greatly hinders access to stock and waterways.

Presence of gorse significantly reduces land value.

The plant is unpalatable to cattle, while sheep and horses will eat new growth and goats eat mature plants.

Gorse is a significant haven for rabbits, foxes, feral cats and mice.

Social value and health

Gorse is highly flammable and a significant fire hazard.

Roadside gorse is a particular threat as it reduces driver visibility, as well as displaces threatened species in patches of remnant vegetation.

Preferred habitat

Gorse favours temperate regions with rainfall in the range of 650 to 900mm annually. It is very adaptable and grows in a wide range of soils, but prefers low fertility, acidic soils. It tolerates a high degree of shade and competition. Infestations are located along roadsides, creek banks, neglected areas and marginal forests.

In Victoria, gorse has been recorded growing throughout the state, except for the Mallee and parts of Gippsland.

The heaviest infestations are in the Central Highlands around Ballarat.

Growth Calendar

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Germination	■	■	■	■	■			■	■	■	■	
Flowering	■	■	■	■	■		■	■	■	■	■	■
Seeding	■	■	■	■								■
Treatment	■	■	■	■	■	■	■	■	■	■	■	■



Once gorse is established, it is very difficult to eradicate. Controlling gorse takes planning and effort.

Growth and spread

Gorse reproduces by seed and a mature infestation can produce up to 6 million seeds per hectare each year, which can remain viable in the soil for at least 25 years.

■ Germination occurs in autumn and spring and young plants flower at approximately 18 months of age.

■ Flowers can be produced at most times of the year but usually appear in two distinct periods – spring and autumn. Flowers may be present on some bushes at other times under the right conditions.

■ Seeds mainly fall around the plant, but during hot dry weather the pods can split open and eject seed up to 5m away. Seeds are spread long-distance by movement in water, soil, machinery, footwear, livestock, birds and ants.

Seeds are hard and need some damage or scarification to the coat before they will germinate. This damage can be caused by fire, soil disturbance, insects, changes in soil moisture, being scraped by floodwaters or passing through an animal's stomach. Seed will not establish below 8cm of burial.

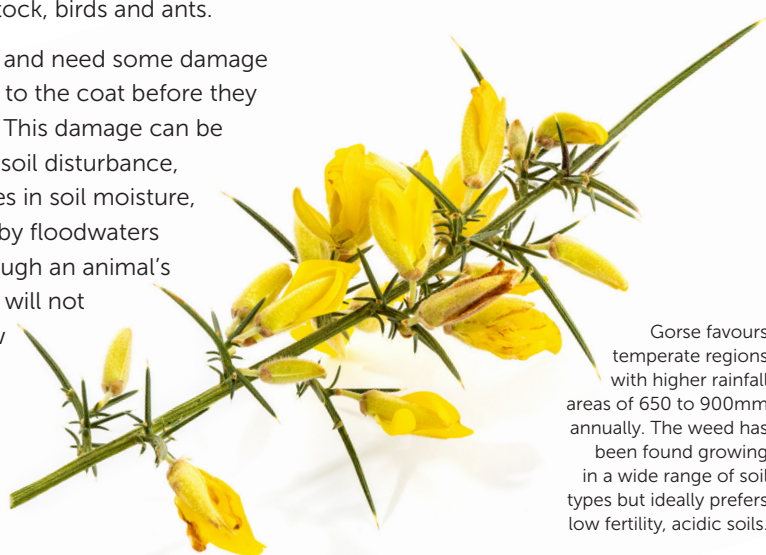
Prevention

Prevention of infestations is the best option for weed control. To minimise risks you can:

- Ensure imported fodder, grain, gravel, sand and soil is free of seed contamination before purchase, sale or movement.
- Ensure all vehicles and equipment are thoroughly cleaned to remove any soil, seed or parts of the plant before leaving infested areas and entering areas that are free of the weed.
- Maintain weed-free buffer zones between infested and non-infested land.

⚠ Be aware that:

It is an offence to sell, transport or deposit onto land any material contaminated with noxious weeds.



Gorse favours temperate regions with higher rainfall areas of 650 to 900mm annually. The weed has been found growing in a wide range of soil types but ideally prefers low fertility, acidic soils.

Gorse control methods

The main components to a successful gorse control program are:

- A long-term commitment from the land manager.
- Treating all plants before they set seed.
- The use of a combination of control methods.
- To be persistent and regularly follow up with inspections of previous season's work.
- Revegetation and a change in the land use practices that allowed gorse to spread and grow.



Mulching

This method suppresses regrowth and reduces the height of the bushes for follow up spraying.

- It reduces the size of bushes with little soil disturbance. The fire risk of gorse will be significantly reduced.
- It improves access for a range of follow up treatments and enables more effective chemical treatment.
- It stops seed production if done prior to or during flowering.
- This technique alone will not kill gorse.

Grubbing and Mechanical removal

Physical removal of plants by hand or with machinery such as excavators, dozers, bobcats and tractors.

- Erosion may occur on exposed areas if not revegetated.
- Gorse can re-shoot from roots and stumps left in the ground.
- Gorse can re-grow from plant material if sufficiently moist. Plants are more easily removed if soil is moist.

Cultivation (Ploughing or Rotary hoeing)

Cultivation is ideal for removing large infestations of seedlings or small to medium sized bushes from open areas.

- Cultivation can stimulate germination of seeds.
- You will need to rake the area to remove excess plant material.
- You will need to establish competitive pastures or revegetate with native trees, shrubs or grasses.

Chemical Control

Chemical control is extremely effective in controlling gorse. It can be used on its own or in conjunction with several methods above.

⚠ Be aware that:

Under Victorian legislation there are controls on the use of agricultural chemicals and it is the responsibility of the user to be familiar with this legislation. Some chemicals require the user to hold an Agricultural Chemical Users Permit (ACUP). A guide to using agricultural chemicals in Victoria can be obtained from Agriculture Victoria, as well as a list of sensitive areas.

Note: choose only products registered for use in your situation and always read the label and follow the instructions carefully.



- More than one application will be needed to kill all the bushes in large infestations.
- Chemical control methods will not destroy the seed bank.
- Before you spray you will need to consider the weather conditions and your proximity to vineyards, organic growers crops (amongst others) and other sensitive areas.
- Spraying can be effective on both large and small infestations.

Cutting and Painting with Herbicide

Stems may be cut with a brush cutter, hand saw or loppers.

- This method is suitable for small infestations only as it is labour intensive.
- It reduces the amount of chemical required. Stems require painting immediately after cutting.
- It will need to be done prior to flowering and seeding.

Gorse control methods (continued)

Burning

Burning is not an effective or reliable method of control on its own, but can be useful in reducing the above ground plant material and seed bank as a follow up to other treatment methods.

The hotter the burn the better the result as an intense fire will destroy much of the seedbank and bushes, whereas a cool burn will reduce the bulk and germinate much of the seed on the ground.

Note: burning after chemical application is not recommended for at least 12 months.

⚠ Be aware that:

- Fire restrictions may be in place (if unsure, visit emergency.vic.gov.au).
- The fire may be difficult to control.
- You need to notify your neighbours before burning.
- Follow up treatment with another control method is needed as burning alone will not destroy the gorse.
- Fire may cause additional problems such as increased erosion potential and further invasion by weeds.
- Fire can travel underground in the roots of gorse and burn unnoticed.

Biological Control

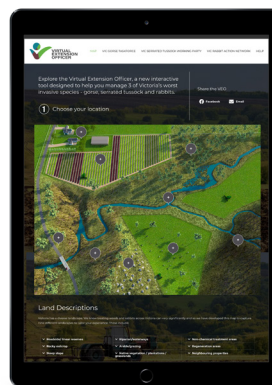
Natural enemies of gorse include the seed weevil, the gorse spider mite, the gorse thrip and the soft shoot moth.

Their combined impact may reduce the abundance, growth rate and seeding capacity of gorse, however they will not eradicate gorse.

Biological control is best suited for use in areas where the application of conventional control methods is inappropriate due to practical or environmental constraints.

Maximise your efforts

- **Work with your neighbours.**
- **Aim to treat every plant.**
- **Make a long term management plan and stick to it.**
- **Don't let plants set seed.**
- **Review and amend your plan as appropriate.**
- **Remain vigilant.**
- **Seek professional advice.**
- **Always follow up the previous season's work.**



Explore the **Virtual Extension Officer**, a new interactive tool designed to help you manage 3 of Victoria's worst invasive species - gorse, serrated tussock and rabbits.

Controlling gorse is a long-term commitment. By following a step-by-step process you can prepare, plan and control gorse.

1 Identify and learn	2 Assess your property	3 Research and review	4 Network and discuss	5 Plan for success	6 Implement your plan	7 Monitor and follow-up	8 Keep going. Don't stop!
Understanding gorse's life-cycle is important and will maximise your success to control the problem.	Where is the gorse problem on your property? Make a map of the size, density and location of the infestation.	Use the VGT website and the Virtual Extension Officer to investigate and choose best methods of control.	Speak with neighbours, local Landcare groups or weeds contractor for information and support. Discuss your chosen control method.	Create a realistic management plan that outlines what are you hoping to achieve in the short, medium and long term.	Carry out your control according to your plan.	Monitor your gorse control efforts and continue with methods that prove successful.	Control works best if you are treating plants before they go to flower to prevent further seeding.

Further Information



Visit the Victorian Gorse Taskforce website and read the notes and guides.

vicgorsetaskforce.com.au



Contact your local Landcare group for further assistance and support.

landcarevic.org.au



Explore the Virtual Extension Officer, an interactive tool designed to help you manage gorse.

virtualextensionofficer.com.au

Disclaimer:

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References:

- *Gorse Best Practice Manual 2006*. National Gorse Taskforce, Tasmania.
- *Regionally Prohibited Weed Information Sheet – Gorse, 2010*. Department of Primary Industries