



Government
of South Australia

Declared Plant Policy

This policy relates to natural resources management under section 9(1)(d) of the Landscape South Australia Act 2019 (the Act), enabling co-ordinated implementation and promotion of sound management programs and practices for the use, development or protection of natural resources of the State. Specifically, this policy provides guidance on the use and management of natural resources relating to the prevention or control of impacts caused by pest species of plants that may have an adverse effect on the environment, primary production or the community, as per object s7(1)(f) of the Act.

horehound (*Marrubium vulgare*)

Horehound is an unpalatable perennial herb that increases by seed produced in tiny burrs. It is widespread across South Australia.

Management Plan for Horehound

Outcomes

- Perennial pastures and native vegetation in medium to high rainfall areas protected from invasion by horehound.

Objectives

- Minimise further spread of horehound into any areas suitable for its establishment where it is not yet present.

Best Practice Implementation

- Regional landscape boards to ensure horehound is controlled around saleyards used by livestock not already contaminated with horehound.
- Regional landscape boards to ensure prioritised infestations with a potential to contaminate livestock in areas generally free of horehound are controlled.
- Other actions according to the potential impact of horehound in each region.

Regional Implementation

Refer to regional management plans for further details.

horehound policy

Region	Actions
Alinytjara Wilurara	Manage weed Destroy/prevent new infestations
Eyre Peninsula	Monitor
Green Adelaide	Limited action
Hills and Fleurieu	Limited action
Kangaroo Island	Manage sites Control new infestations
Limestone Coast	Protect sites Buffer zones, control isolated infestations
Murraylands and Riverland	Manage sites Enforce control of key infestations
Northern and Yorke	Manage weed
South Australian Arid Lands	Limited action

Declaration

To implement this policy, horehound is declared under the *Landscape South Australia Act 2019* throughout the whole of the State of South Australia. Its movement or transport on a public road, by itself or as a contaminant, or sale by itself or as a contaminant are prohibited. The Alinytjara Wilurara, Eyre Peninsula, Kangaroo Island, Limestone Coast, Murraylands and Riverland, and Northern and Yorke Landscape Boards may require land owners to control horehound plants growing on their land. These six landscape boards are required to control plants on road reserves in their regions and may recover costs from the adjoining land owners.

Horehound is declared in category 3 under the Act, for the purpose of setting maximum penalties and for other purposes. Any permit to allow its road transport or sale can only be issued by the regional landscape board or Green Adelaide pursuant to section 197.

Under the *Landscape South Australia (General) Regulations 2020*, Regulation 27 specifies the conditions under which a person is exempt from the operation of section 186 and may transport wool, grain or other produce or goods carrying horehound on public roads. Regulation 28 specifies conditions under which a person is exempt from the operation of section 188(2) and may sell wool, grain or other produce or goods carrying horehound. Note that certain produce or goods may be excluded from these general movement and sale exemptions by Gazettal Notice of the Chief Executive of the Department for Environment and Water.

The following sections of the Act apply to horehound throughout each of the regions noted below:

Sections of Act	Region									
	AW	EP	GA	HF	KI	LC	MR	NY	SAAL	
186(1) Prohibiting entry to area										
186(2) Prohibiting movement on public roads	X	X	X	X	X	X	X	X	X	
188(1) Prohibiting sale of the plant	X	X	X	X	X	X	X	X	X	
188(2) Prohibiting sale of contaminated goods	X	X	X	X	X	X	X	X	X	
190 Requiring notification of presence										
192(1) Land owners to destroy the plant on their properties										
192(2) Land owners to control the plant on their properties	X	X			X	X	X	X		
194 Recovery of control costs on adjoining road reserves	X	X			X	X	X	X		

Review

This policy is to be reviewed by 2025, or in the event of a change in one or more regional management plans for horehound.

Weed Risk

Invasiveness

In Australia, horehound grows into larger plants with higher seed production than in its native range, producing up to 10,000 seeds annually per square metre.

Its small burrs are well adapted to attach to wool, fur, clothing and similar materials. Sheep, rabbits, kangaroos and emus can easily spread the burrs, which also adhere to vehicles. Water is also an effective dispersing agent, as may be seen along water supply channels in many areas. Horses are known to eat and pass the seeds in a viable condition in faeces.

Horehound is an opportunistic germinator, with most seeds germinating in response to autumn rainfall, but some delayed germination occurs throughout winter and spring whenever sufficient water is available.

Horehound will grow on very poor soils and is often a pioneer species colonising eroded areas. Infestations may begin on road verges, channel banks, sheep camps and rabbit warrens, from which they encroach into pastures, disturbed native vegetation and occasionally crops.

Impacts

Horehound is unpalatable to stock and is regarded as fodder only in the pastoral zone. It forms dense populations under high grazing pressure in marginal pastures. The burrs contaminate wool, reducing the value of fleeces, and are a nuisance as they catch in clothing and socks. The meat of animals that are forced to eat horehound is tainted by its strong flavour.

Potential distribution

Horehound is adapted to a Mediterranean climate similar to conditions across the southern half of South Australia where annual rainfall exceeds 200 mm. It grows on neutral to alkaline soils, is resistant to levels of frost found in South Australia, and can survive summer droughts.

Feasibility of Containment

Control costs

Horehound is controlled by relatively cheap and widely used herbicides, but in the pastures where it dominates the application costs may be high compared to the benefits of control. Two biological control agents, the plume moth *Pterophorus spilodactylus* and the clearwing moth *Chamaesphecia mysiniiformis*, are established in South Australia.

Persistence

Horehound infestations form a bank of 5,000-15,000 viable seeds per square metre, with individual seeds surviving in the soil for 7-10 years. Although the plants are short-lived perennials that die off during dry years in areas with less than 350 mm annual rainfall, they regenerate densely from seed when wet conditions return. Seedling regeneration also occurs after herbicide treatment. Fire will kill all mature plants and reduce the seed bank by up to 80%. In unimproved permanent pasture, the seed bank may be reduced by autumn control burning in several successive years and reduction in grazing pressure.

Current distribution

Horehound has spread to its limits in South Australia, being widespread in all settled and pastoral areas with at least 200 mm annual rainfall.

State Level Risk Assessment

Assessment using the Biosecurity SA Weed Risk Management System gave the following comparative weed risk and feasibility of containment scores by land use:

Land use	Weed Risk	Feasibility of control	Response at State Level
Grazing - southern	high 147	medium 53	protect sites
Native vegetation	low 21	high 20	monitor
Crop/pasture rotation	low 17	high 24	monitor
Perennial horticulture	negligible 1	very high 15	monitor
Forestry	negligible 0	medium 55	limited action
Grazing - rangeland	low 35	low 73	limited action

Considerations

Horehound is native to the Mediterranean region, temperate Eurasia, and the Middle East. It was introduced as a medicinal plant by the first settlers and retains an established medicinal use in cough syrup and cough drops, as well as a much wider range of reputed medicinal properties. It was naturalised by 1848 and was carried with livestock to its limits in this State as each region was settled.

The losses directly due to horehound are low or zero in most farming systems, but the costs of enforced control and restrictions in movement and sale of contaminated livestock and fodder may be large. In situations where horehound is abundant and causing significant impacts, extension and research are more likely to increase production and reduce losses due to horehound than are enforced control programs.

Risk assessment indicates protecting sites only in southern permanent grazing areas; in practice this is implemented according to the level of infestation in each region.

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In the South Australian Arid Lands region there is limited action, landowners are encouraged to manage horehound with no enforced control. There is also limited action in the Green Adelaide and Hills and Fleurieu regions where horehound has little impact. Horehound is monitored in the Eyre Peninsula and control is at the discretion of landowners.

In the Kangaroo Island region sites are managed to control newly establishing infestations and manage existing horehound populations. An approach of site management is also used in the Murraylands and Riverland region by enforced control only on key roadsides and properties in close proximity to identified key sites and assets.

The Northern and Yorke region manages the weed to prevent further spread between properties. The Alinytjara Wilurara region also aims to manage horehound by destroying new infestations and preventing further establishment, as the weed is not widespread across the region.

The Limestone Coast region has only localised horehound populations and aims to protect sites by maintaining buffer zones around severe infestations, and controlling isolated infestations to prevent spread.

Synonymy

Marrubium vulgare L., Sp. Pl. 2: 583 (1753)

Taxonomic synonyms:

Marrubium apulum Ten., Prod. Fl. Nap. 34 (1811)

Marrubium ballotoides Boiss. & Balansa, Diagn. Pl. Orient. 2, 4: 53 (1859)

Marrubium germanicum Schrank ex Steud., Nomencl. Bot. 1: 510 (1821)

Marrubium hamatum Kunth, Nov. Gen. Sp. 2: 310 (1818)

Marrubium uncinatum Stokes, Bot. Mat. Med. 3: 353 (1812)

Other common names include common horehound, hoarhound, houndsbane, malrove, marrubio, ou xia zhi cao and white horehound.

Hon David Speirs MP
Minister for Environment and Water

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