



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.

horsetails (*Equisetum* spp.)

Equisetum species are herbaceous, perennial ferns that produce spores in cones at the top of almost leafless stems. They grow in wet habitats as dense clones that extend indefinitely from deep rhizomes. Several species are present in cultivation in Australia but none are currently known to be naturalised in South Australia.

Management Plan for Horsetails

Outcomes

- Maintain waterways free of blockages and keep wetlands free of major weeds.
- Protect grazing livestock from poisoning.
- Minimise the impacts of deep-rooted perennial weeds on the productive potential of crops and pastures.

Objectives

- Prevent introduction and establishment of horsetails in South Australia.
- Destroy any infestations as they are located, including cultivated plants.

Best Practice Implementation

- Any infestation of horsetail discovered to be treated as an incursion and destroyed.
- Sale and movement to be prohibited.
- Regional landscape boards and Green Adelaide to inspect waterways and wetlands for the presence of aquatic weeds

Regional implementation

Refer to regional management plans for further details.

horsetails policy

Region	Actions
Alinytjara Wilurara	Prevent entry or sale; destroy if detected
Eyre Peninsula	Prevent entry or sale; destroy if detected
Green Adelaide	Prevent entry or sale; destroy if detected
Hills and Fleurieu	Prevent entry or sale; destroy if detected
Kangaroo Island	Prevent entry or sale; destroy if detected
Limestone Coast	Prevent entry or sale; destroy if detected
Murraylands and Riverland	Prevent entry or sale; destroy if detected
Northern and Yorke	Prevent entry or sale; destroy if detected
South Australian Arid Lands	Prevent entry or sale; destroy if detected

Declaration

To implement this policy, horsetails are declared under the *Landscape South Australia Act 2019* throughout the whole of the State of South Australia. Its entry to South Australia, movement or transport on a public road by itself or as a contaminant, or sale by itself or as a contaminant are prohibited. Notification of infestations is necessary to ensure these are destroyed. Land owners are required to destroy any horsetail plants growing on their land. Landscape boards and Green Adelaide are required to destroy plants on road reserves in their regions, and may recover costs from the adjoining land owners.

Horsetails are declared in category 1 under the Act for the purpose of setting maximum penalties and for other purposes. Any permit to allow their entry, road transport or sale can only be issued by the Chief Executive of the Department for Environment and Water or their delegate 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 horsetails on public roads, or bring them into the State. 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 horsetails. Note that certain produce or goods may be excluded from these general movement and sale exemptions by Gazettal Notice of the Chief Executive, DEW.

The following sections of the Act apply to horsetails 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	X	X	X	X	X	X	X	X	X	
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	X	X	X	X	X	X	X	X	X	
192(1) Land owners to destroy the plant on their properties	X	X	X	X	X	X	X	X	X	
192(2) Land owners to control the plant on their properties										
194 Recovery of control costs on adjoining road reserves	X	X	X	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 horsetail.

Weed Risk

Invasiveness

There are no records of horsetail growing in the wild from spores in Australia. Establishment as a weed would depend on deliberate planting (as an ornamental or herbal plant) or the dumping of live horsetail rhizomes.

Local spread could be caused by ploughing through an infestation or soil movements. Long-range spread would possibly result from dumping, transport of bulk soil or movement in floodwaters.

Impacts

Most *Equisetum* species contain poisonous glycosides in the rhizomes and aerial shoots. *Equisetum arvense* also contains alkaloids that make it toxic to horses, causing a syndrome (equisetosis) that is sometimes fatal. Part of its action may be due to the enzyme thiaminase that destroys thiamine (vitamin B₁) in the stomach of the animal. It has also caused losses in sheep and cattle and is reputed to taint milk when eaten in quantity. *Equisetum* species are also competitive and persistent weeds of crops and pastures in the Northern Hemisphere.

Potential distribution

Horsetail species could grow in moist habitats in the southern part of the State, especially the Limestone Coast and Mount Lofty Ranges.

Feasibility of Containment

Control costs

Horsetail can be suppressed in pasture by low-volume spraying with MCPA at rates low enough to allow translocation to the rhizomes before the shoots are killed. MCPA also provides selective suppression in cereals but does not reduce the numbers of *Equisetum* stems. Longer term control depends on improved drainage and repeated cutting or, for spot infestations, heavy mulching.

Infestations on river banks may invade the gaps left when other vegetation is killed with glyphosate or activated amitrole, but are effectively controlled by dichlobenil at 11kg/ha; picloram, glyphosate and activated amitrole were less effective. In gardens it is very difficult to kill by herbicides or cultivation but may be shaded out over a long period.

Persistence

A horsetail infestation would be expected to persist for several years as eradication treatments continued due to repeated regrowth from underground rhizomes.

Current distribution

No species of *Equisetum* is known to be naturalised in South Australia. *E. hyemale* and *E. arvense* have been found in cultivation in the Green Adelaide area.

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	low 25	very high 2	monitor
Irrigated pastures	medium 67	very high 2	contain spread, alert
Vegetables	low 29	very high 1	monitor
Aquatic	medium 98	very high 2	contain spread, alert
Urban	negligible 8	very high 1	monitor

Considerations

Due to their apparent absence from the State and very high feasibility of control, horsetails are regarded as a State Alert Weed and a high priority surveillance target to increase the likelihood of early detection.

Equisetum has long-established uses in herbal medicine. *E. arvense* is strongly astringent and is used as a styptic on wounds and skin eruptions. It is also taken internally against ulcers and haemorrhages and as a diuretic. *E. debile* is used for similar purposes in Chinese medicine. Other species are likely to have similar properties, although some such as *E. hyemale* are too hard and abrasive for this use.

Equisetum arvense accumulates selenium from the soil, and has attracted attention as a source of this trace element. It also contains the alkaloid equisetine, which is toxic in high doses. Dried foliage of *E. arvense* is imported and sold for medicinal and cosmetic use, but the plant is not cultivated in Australia for this purpose.

Synonymy

Equisetum L., Sp. Pl. 1061 (1753).

Species that may be encountered include

Equisetum arvense L., Sp. Pl. 1062 (1753)

Equisetum debile Roxb. ex Vaucher, Mém. Soc. Phys. Genève 1:387 (1822).

Equisetum hyemale L., Sp. Pl. 1062 (1753)

Equisetum ramosissimum Desf., Fl. Atlant. 2: 398 (1799)

Equisetum sylvaticum L., Sp. Pl. 1061 (1753)

Common names include bottle brush, coda de cavallo, corncob plant, dill grass, Dutch rush, foxtail rush, horsepipes, joint grass, mares tail, meadow pine, pewterwort, scouring rush, shave grass and snake grass.

Hon David Speirs MP
Minister for Environment and Water

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