

Declared Plant Policy

under the Natural Resources Management Act 2004



alligator weed (*Alternanthera philoxeroides*)

Alligator weed is a perennial herb growing in water and on wet ground. It has been cultivated as a vegetable in suburban Adelaide since at least the 1990s and may still persist in some backyards despite control and information programs.

Management Plan for Alligator Weed

Outcomes

- To maintain waterways free of blockages and keep streams and wetlands free of major weed threats.

Objectives

- Prevent introduction of alligator weed to waterways and wetlands.
- Destroy any alligator weed infestations as they occur

Implementation

- NRM authorities to inspect key waterways for presence of the plant.
- Any infestation of alligator weed discovered to be treated as an incursion.
- NRM authorities to ensure any plants found are destroyed, and monitor sites of previous infestations.
- NRM authorities to inspect premises such as pet shops, aquarium suppliers, garden centres or nurseries for alligator weed.

Regional Implementation

Refer to regional management plans for further details.

NRM Region	Actions
Adelaide and Mount Lofty Ranges	eradicate; destroy all infestations
Alinytjara Wilurara	prevent entry or sale; destroy if detected
Eyre Peninsula	prevent entry or sale; destroy if detected
Kangaroo Island	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
South Australian Murray Darling Basin	prevent entry or sale; destroy if detected
South East	prevent entry or sale; destroy if detected

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Declaration

To implement this policy, alligator weed is declared under the *Natural Resources Management Act, 2004* throughout the whole of the State of South Australia. The movement or transport of the plant on a public road by itself or as a contaminant, its entry to South Australia, or the sale by itself or as a contaminant are prohibited. Land owners are required to destroy any alligator weed plants growing on their land. NRM authorities are required to destroy plants on road reserves, and may recover costs from the adjoining land owners.

Alligator weed is declared in category 1 under the Act for the purpose of setting maximum penalties and for other purposes. Any permit to allow its movement or sale can only be issued by the Chief Officer pursuant to section 188.

The following sections of the Act apply to alligator weed throughout each of the NRM regions noted below:

Sections of Act	Region							
	AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE
175(1) Prohibiting entry to area	X	X	X	X	X	X	X	X
175(2) Prohibiting movement on public roads	X	X	X	X	X	X	X	X
177(1) Prohibiting sale of the plant	X	X	X	X	X	X	X	X
177(2) Prohibiting sale of contaminated goods	X	X	X	X	X	X	X	X
180 Requiring notification of infestations	X	X	X	X	X	X	X	X
182(1) Landowners to destroy the plant on their properties	X	X	X	X	X	X	X	X
182(2) Landowners to control the plant on their properties								
185 Recovery of control costs on adjoining road reserves	X	X	X	X	X	X	X	X

Review

Success of the program will be measured by its effectiveness in preventing any new incursions of alligator weed in SA. This policy is to be reviewed by 2020 or in the event of alligator weed being found naturalised in South Australia, or any change in its status as a Weed of National Significance.

Weed Risk

Invasiveness

Alligator weed grows readily from fragments that form roots in water and float as the hollow stems contain air cavities. Fragments can be transported by commercial and recreational vessels or move downstream, especially in floods. It can be moved between regions by trade, dumping of unwanted plants or deliberate planting, for example when it has been used as a leaf vegetable in mistake for *Alternanthera sessilis*.

Impacts

Alligator weed forms dense mats of vegetation, to 1 metre thick, that extend over the surface of shallow freshwater systems including rivers, permanent freshwater streams, ponds and dams. They degrade the habitat for native plants and aquatic fauna by reducing light levels,

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temperature and oxygen, block small boat access or irrigation intakes, and reduce water quality as they decay and deplete oxygen.

It can also establish on land that remains wet for much of the year, such as irrigated pastures where it competes with pasture species.

Potential distribution

Alligator weed tolerates a wide range of conditions on land and water, and makes optimum growth in nutrient-rich static or slow-moving fresh water. It also grows in brackish water and moderately saline waterways, such as rivers, lakes, reservoirs, rice fields, swamps, irrigation systems, and shallow drainage ditches. Once established on land, it can survive dry periods and regenerate from rhizomes in soil.

It is a potential threat to the River Murray and smaller streams in the Mount Lofty Ranges, Kangaroo Island and the South-East, as well as lands adjoining these streams.

Feasibility of Containment

Control costs

Control of infestations in water bodies is expensive, often requiring access by boat. Herbicide use would also be complicated by the close proximity of infestations to water resources used for irrigation, human and livestock consumption and to plants susceptible to off-target damage.

Persistence

Alligator weed is vulnerable to herbicides but has rhizomes in soil or below water with sufficient reserves for repeated regrowth. Live fragments remaining after herbicide treatment may also take root and regenerate. Repeated treatments are therefore necessary to eradicate an infestation.

Current distribution

Alligator weed is naturalised in Queensland, New South Wales and Victoria, but is present in all states, with infestations occurring in cool, warm temperate and subtropical climates. It is not known to be present in the wild in South Australia, but a few plants may persist in gardens.

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
Irrigated pastures	medium 90	very high 2	contain spread alert
Vegetables	low 17	very high 1	monitor
Aquatic	medium 82	very high 2	contain spread alert

Considerations

Alligator weed is native to the Parana River floodplains of northern Argentina and adjacent countries in South America. It was first recorded in the 1940s in Newcastle in New South Wales where it was growing on ballast dumped by wartime shipping. It is one of the Weeds of National Significance, which are subject to a uniform prohibition on sale in all jurisdictions as agreed by the Natural Resource Management Ministerial Council. In line with the national strategy on alligator weed, sale of the plant is prohibited in South Australia as in other jurisdictions.

For several years alligator weed was in cultivation as a backyard vegetable in a few suburban homes. It had been mistaken for *Alternanthera sessilis* (known as mukunuwenna in Sinhalese), which is used as food plant in southern Asia. Most or all of these occurrences have now been destroyed. Due to its medium weed risk, presence in this State only as a rare cultivated plant, and very high feasibility of control, alligator weed is regarded as a State Alert Weed and a high priority surveillance target to increase the likelihood of early detection.

Synonymy

Alternanthera philoxeroides (Mart.)Griseb., Abh. Königl. Ges. Wiss. Göttingen 24: 36. (1879).

Basionym:

Bucholzia philoxeroides Mart., 1825. Nov. Actorum Acad. Caes. Leop.-Carol. Nat. Cur.13: 107. (1825).

Nomenclatural synonyms:

Telanthera philoxeroides (Mart.)Moq., Prodr. 13: 362. (1849).

Achyranthes philoxeroides (Mart.)Standl., J. Wash. Acad. Sci. 5: 74. (1915).

Taxonomic synonyms:

Alternanthera philoxerina Suess., Repert. Spec. Nov. Regni Veg. 38: 303 (1934)

Celosia amphibia Salzm. ex Moq., Prodr. (DC.) 13(2): 363 (1849)

Other common names include pigweed.

References

Agriculture & Resource Management Council of Australia & New Zealand Australia & New Zealand Environment & Conservation Council and Forestry Ministers (2001) 'Weeds of National Significance Alligator Weed (*Alternanthera philoxeroides*) Strategic Plan.' (National Weeds Strategy Executive Committee: Launceston)

Julien, M.H. (1995) *Alternanthera philoxeroides* (Mart.)Griseb. In Groves, R.H. et al., eds. *The Biology of Australian Weeds* 1: 1-12.

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Date: 28 July 2014