



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.

distichlis (*Distichlis spicata*)

Distichlis spicata is a salt-tolerant perennial grass, similar to the native *Distichlis distichophylla*, but introduced from North America. It has been promoted as a pasture grass for saline lands.

Management Plan for Distichlis

Outcomes

- Invasion by distichlis of pasture and native vegetation in coastal areas of South Australia prevented.

Objectives

- Prevent any importation of seed-producing strains of distichlis into South Australia.

Best Practice Implementation

- Compliance action in the event of seed-producing strains of distichlis being imported or offered for sale in South Australia.

Regional Implementation

Refer to regional management plans for further details.

Region	Actions
Alinytjara Wilurara	Prevent entry, sale and movement
Eyre Peninsula	Prevent entry, sale and movement
Green Adelaide	Prevent entry, sale and movement
Hills and Fleurieu	Prevent entry, sale and movement
Kangaroo Island	Prevent entry, sale and movement
Northern and Yorke	Prevent entry, sale and movement
Limestone Coast	Prevent entry, sale and movement
Murraylands and Riverland	Prevent entry, sale and movement
South Australian Arid Lands	Prevent entry, sale and movement

Declaration

To implement this policy, distichlis is declared under the *Landscape South Australia Act 2019* throughout the whole of the State of South Australia so that sale and movement of the plant can be prevented. 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.

Distichlis is declared in category 2 under the Act for the purpose of setting maximum penalties and for other purposes. Any permit to allow its entry, road transport or sale can only be issued by the Chief Executive of the Department for Environment and Water (DEW) 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 distichlis 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 distichlis. 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 declaration covers the cultivar of *Distichlis spicata* that was formerly marketed as NyPa Reclamation™, and any other cultivars of *Distichlis spicata* consisting of lines that include seedbearing individuals. It does not include the cultivar *Distichlis spicata* 'Yensen 4A' or any other cultivars that do not produce seed (for example, those consisting of male clones only).

The following sections of the Act apply to these strains of distichlis 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										
192(1) Land owners to destroy the plant on their properties										
192(2) Land owners to control the plant on their properties										
194 Recovery of control costs on adjoining road reserves										

Review

This policy is to be reviewed by 2025, or in the event of the incursion of a seed-producing strain of distichlis into South Australia.

Weed Risk

Invasiveness

The PBR cultivar *Distichlis spicata* 'Yensen 4A' is marketed as NyPa Forage™ It consists of male plants only and does not produce seed. Establishment is difficult and time consuming as vegetative propagation relies on transplanting established, growing rhizomes.

Overseas experience suggests that seed-producing strains of *Distichlis spicata* can spread out of saltmarshes into adjoining dryland paddocks and in some circumstances can break through the asphalt of road.

Impacts

Distichlis is a summer-growing C4 grass with a high waterlogging tolerance, some tolerance to inundation and moderate to high salinity tolerance.

There is concern about the impact of *Distichlis spicata* on saline wetlands and especially the Coorong Ramsar wetlands. The capacity for rapid vegetative spread, which is advantageous in a pasture plant, is also a characteristic feature of invasive plant species.

In Hawaii, *D. spicata* is recognised as a habitat modifier of saline wetlands, where it becomes dominant and replaces such species as *Cynodon dactylon* and *Sporobolus virginicus*. It has become a weed in its native range, has spread to the irrigated lands, and become a pest in ditches, cotton fields, and other crops in the United States.

If this grass is of limited feed value and also difficult to manage, doubts must arise about its value as an alternative to the salt-tolerant pasture grasses already in use.

Potential distribution

Distichlis is native to temperate coastal areas of North and South America, where it grows in brackish to saline marshes, on beaches and salt flats. The roots contain aerenchyma, enabling gas exchange with the atmosphere under waterlogged conditions. Optimum growth for distichlis is 7-28 dS/m, but it will survive at 80 dS/m.

It has adapted to a range of soil conditions ranging from intertidal river mouth deltas and hyper saline salt flats to moderately saline alkaline soils. The grass can, once established, survive extreme annual droughts and is extremely competitive in very wet soils but is normally associated with inundated soils.

Feasibility of Containment

Control costs

Reports from overseas suggest that distichlis cannot be controlled by the commonly used grass herbicides.

Persistence

Distichlis is tolerant of heavy grazing as it can regenerate from its extensive rhizome system.

Current distribution

Distichlis spicata 'Yensen 4A' has been planted on a few properties in coastal areas of South Australia. No other strains of the species are known to be present. It is not known to be naturalised anywhere in Australia.

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	low 18	very high 0	monitor
Irrigated pastures	medium 95	very high 0	contain spread alert
Aquatic	high 126	very high 0	destroy infestations alert

Distichlis scores higher in the risk assessment than the commonly used grass puccinellia, but much lower than perennial veldtgrass, averaged over southern South Australia. They pose a risk to native vegetation comparable to that posed by tall wheatgrass; this introduced grass was formerly used for soil stabilisation but is now becoming recognised as a weed in some habitats.

Considerations

Beginning in the late 1990s, a company promoted the planting of *Distichlis spicata* 'Yensen 4A' as a pasture grass in Australia. The current declaration of the species allows the sale and transport of this, and any other cultivar that does not produce seed.

The land uses at risk are aquatic systems, where distichlis could displace native species, and irrigated pastures where it could reduce production. Its impacts in southern perennial pastures would be low as it would be confined to saline areas where it might be seen as a useful pasture plant.

Risk assessment indicates containment as a management action; since *Distichlis spicata* is absent from South Australia, containment is best implemented by preventing entry of seed-producing strains to the State or their marketing here.

Synonymy

Distichlis spicata (L.) Greene, Bull. Calif. Acad. Sci. 2: 415 (1887).

Basionym

Uniola spicata L., Sp. Pl. 71 (1753).

Taxonomic synonyms:

Distichlis dentata Rydb., Bull. Torrey Bot. Club 36: 536 (1909).

Distichlis deserticola Phil., Anales Univ. Chile 36: 209 (1870).

Distichlis hirsuta Phil., Anales Univ. Chile 36: 209 (1870).

Distichlis mendocina Phil., Sert. Mend. Alt. 51 (1870).

Distichlis stricta (Torr.) Rydb., Bull. Torrey Bot. Club 32: 602 (1905).

Other common names include seashore saltgrass, marsh spikegrass, inland saltgrass and desert saltgrass.

References

Leake, J., Barrett-Lennard, E., Sargeant, M., Yensen, N. & Prefumo, J. (2002) NyPa Distichlis Cultivars: Rehabilitation of Highly Saline Areas for Forage Turf and Grain. Rural Industries Research and Development Corporation Publication No 02/154.

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