Declared Plant Policy

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.

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.

<table>
<thead>
<tr>
<th>NRM Region</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide and Mount Lofty Ranges</td>
<td>prevent entry, sale and movement</td>
</tr>
<tr>
<td>Alinytjara Wilurara</td>
<td>prevent entry, sale and movement</td>
</tr>
<tr>
<td>Eyre Peninsula</td>
<td>prevent entry, sale and movement</td>
</tr>
<tr>
<td>Kangaroo Island</td>
<td>prevent entry, sale and movement</td>
</tr>
<tr>
<td>Northern and Yorke</td>
<td>prevent entry, sale and movement</td>
</tr>
<tr>
<td>South Australian Arid Lands</td>
<td>prevent entry, sale and movement</td>
</tr>
<tr>
<td>South Australian Murray-Darling Basin</td>
<td>prevent entry, sale and movement</td>
</tr>
<tr>
<td>South East</td>
<td>prevent entry, sale and movement</td>
</tr>
</tbody>
</table>

Declaration

To implement this policy, distichlis is declared under the Natural Resources Management Act 2004 throughout the whole of the State of South Australia so that sale and movement of the plant can be prevented. The movement or transport of the plant on a public road by itself or as a contaminant, its entry to South Australia, 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 movement or sale can only be issued by the Chief Officer pursuant to section 188. Under the Natural Resources Management (General) Regulations 2005, the transport or movement of grain for milling or wool for cleaning is exempt from the operation of sections 175 and the sale of wool or grain is exempt from section 177(2)
if at the time of the sale the person believes on reasonable grounds that the purchaser will remove the plant from the wool or grain before any re-sale.

The declaration covers the cultivar NyPa Reclamation™, and any other cultivars of Distichlis spicata consisting of lines that include seedbearing individuals. It does not include the cultivar NyPa Forage™ 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 NRM regions noted below:

<table>
<thead>
<tr>
<th>Sections of Act</th>
<th>Region</th>
<th>AMLR</th>
<th>AW</th>
<th>EP</th>
<th>KI</th>
<th>NY</th>
<th>SAAL</th>
<th>SAMDB</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>175(1) Prohibiting entry to area</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>175(2) Prohibiting movement on public roads</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>177(1) Prohibiting sale of the plant</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>177(2) Prohibiting sale of contaminated goods</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>180 Requiring notification of infestations</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>182(1) Landowners to destroy the plant on their properties</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>182(2) Landowners to control the plant on their properties</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>182(3) Landowners to comply with regulations or instructions</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>185 Recovery of control costs on adjoining road reserves</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Review

This policy is to be reviewed by 2020, or in the event of the incursion of a seed-producing strain of distichlis into South Australia.

Weed Risk

Invasiveness

The cultivar marketed as NyPa Forage™ 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 D. 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**

The NyPa Forage™ cultivar of *Distichlis spicata* 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:

<table>
<thead>
<tr>
<th>Land use</th>
<th>Weed Risk</th>
<th>Feasibility of control</th>
<th>Response at State Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grazing - southern</td>
<td>low 18</td>
<td>very high 0</td>
<td>monitor</td>
</tr>
<tr>
<td>Irrigated pastures</td>
<td>medium 95</td>
<td>very high 0</td>
<td>contain spread alert</td>
</tr>
<tr>
<td>Aquatic</td>
<td>high 126</td>
<td>very high 0</td>
<td>destroy infestations alert</td>
</tr>
</tbody>
</table>

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
Distichlis policy

was formerly used for soil stabilisation but is now becoming recognised as a weed in some habitats.

Considerations

Since the late 1990s, a company has promoted the planting of the NyPa Forage™ cultivar of *Distichlis spicata* 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


Basionym

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

Taxonomic synonyms:

*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).

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

References