Declared Plant Policy

Carrion Flower (Orbea variegata)

Carrion flower is a small succulent native to South Africa. It is widely cultivated as an ornamental and is locally naturalised in South Australia.

Management Plan for Carrion Flower

Outcomes

• Impacts of carrion flower on native vegetation in the semi-arid zone minimised.

Objectives

• Minimise further spread of carrion flower into the southern rangelands.

• Prevent further planting of carrion flower.

Implementation

• Natural Resources Management (NRM) authorities to delimit carrion flower infestations in the Whyalla to Port Augusta area.

• Eyre Peninsula NRM Board to implement an awareness campaign on the impacts of carrion flower to encourage voluntary compliance with control requirements.

• NRM authorities and the Chief Officer to enforce the prohibition on the sale and movement of carrion flower.

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>Limited action</td>
</tr>
<tr>
<td>Alinytjara Wilurara</td>
<td>Destroy infestations</td>
</tr>
<tr>
<td>Eyre Peninsula</td>
<td>Contain</td>
</tr>
<tr>
<td>Kangaroo Island</td>
<td>Limited action</td>
</tr>
<tr>
<td>Northern and Yorke</td>
<td>Limited action</td>
</tr>
<tr>
<td>South Australian Arid Lands</td>
<td>Monitor</td>
</tr>
<tr>
<td>South Australian Murray-Darling Basin</td>
<td>Limited action</td>
</tr>
<tr>
<td>South East</td>
<td>Limited action</td>
</tr>
</tbody>
</table>

Declaration

To implement this policy, carrion flower 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.
Carrion Flower policy

NRM authorities in the Alinytjara Wilurara and Eyre Peninsula NRM regions may require land owners to control carrion flower plants growing on their land. NRM authorities in these regions are required to control plants on road reserves.

Carrion flower is declared in category 3 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 regional NRM Board pursuant to section 188.

The following sections of the Act apply to carrion flower 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>
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<td>X</td>
<td>X</td>
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<td>175(2) Prohibiting movement on public roads</td>
<td></td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<td>177(1) Prohibiting sale of the plant</td>
<td></td>
<td>X</td>
<td>X</td>
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<td>X</td>
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</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>
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<td>180 Requiring notification of infestations</td>
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<td>182(1) Landowners to destroy the plant on their properties</td>
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<tr>
<td>182(2) Landowners to control the plant on their properties</td>
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<tr>
<td>185 Recovery of control costs on adjoining road reserves</td>
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**Review**

This policy is to be reviewed by 2020, or in the event of a change in one or more regional management plans for carrion flower.

**Weed Risk**

**Invasiveness**

Carrion flower produces large capsules containing numerous seeds. These bear long silky hairs that enable dispersal by wind dispersal and also tend to guide the seeds to sheltered germination sites by tangling in shrubs. However, there is evidence that seed viability is low in the introduced populations.

It has spread gradually from plantings in towns and settlements, and significant populations were first noted on the rocky hills within Whyalla. Spread into shrublands is more likely to occur in years with above-average summer rainfall that allows germination and establishment to occur.

**Impacts**

Carrion flower is most likely to affect saltbush and bluebush shrublands in the semi-arid zone where it can build up large populations in the shelter of the shrubs.

It appears to limit water availability by direct competition and possibly decreasing rainfall penetration through the soil, causing decreased growth and reduced health of the saltbush. The presence of carrion flower also reduced both the biomass and germinable soil seed bank of annual plants in this habitat.
Potential distribution

Carrion flower is native to a warm semi-arid climate with fairly reliable summer rainfall and winter drought, and has a dormant period during winter. Growth and flowering occur during spring to summer while water is available. It requires partial shade from permanent vegetation or rock outcrops during summer, and good drainage. It is also sensitive to grazing.

In South Australia, its potential range as a weed is limited to the semi-arid pastoral areas of South Australia. It has found a niche in the Whyalla region where significant summer rainfall occurs. The timing of rainfall may play an important role in determining its spread into other rangeland areas. It is speculated that carrion flower has the potential to spread further into the chenopod shrub lands during years of particularly high summer rainfall.

Feasibility of Containment

Control costs

Carrion flower has a low ratio of surface area to volume, and a tough cuticle, both reducing herbicide penetration. Trials of nonselective herbicides with added surfactants have had some success but tend to cause off-target damage. The use of a weed wand brush or stem injection may allow better uptake of herbicide but is labour intensive; for the same reason hand and mechanical removal are rarely practicable except for small urban infestations.

Long-term control of carrion flower in the infested area may depend on research to develop best-practice management of grazing to minimise this and other weeds that invade chenopod shrublands.

Persistence

Due to the lack of an effective control method, persistence of naturalised populations appears to be high.

The plant is commonly grown in pots and rockeries throughout the southern rangelands and other dry rural areas as a hardy low-care perennial. It is not available in the nursery trade but is usually obtained by gift or informal sale.

Current distribution

The main infestations of carrion flower are on Eyre Peninsula around Whyalla and Iron Baron, extending to Port Augusta. An outlying infestation was found on the cliffs at Marino in suburban Adelaide.

It has also become naturalised in southern Queensland, at Kalgoorlie in Western Australia and in north-eastern New South Wales.

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:
Risk assessment indicates a management action at State level of monitoring in native vegetation and rangelands. However, the local weed risk of carrion flower on the southern edge of the rangelands is higher, up to 76 in northern Eyre Peninsula where a strategy of containment is justified. The Alinytjara Wilurara NRM region has adopted a strategy of destroying any incursions if they are detected, and the South Australian Arid Lands region will monitor the weed. Limited action is required in other regions where there is little or no vulnerable habitat.

**Synonymy**

*Orbea variegata* (L.) Haw., Syn. Pl. Succ. 40 (1812)

Basionym:

*Stapelia variegata* L., Sp. Pl. 1: 217 (1753)

Nomenclatural synonym:

*Stisseria variegata* (L.) Kuntze, Revis. Gen. Pl. 2: 422 (1891)

**References**