



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.

### 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.

##### Best Practice Implementation

- Landscape boards in the regions where carrion flower is declared under section 192(2) of the Act to delimit infestations and seek control at priority sites.
- Regional landscape boards and Green Adelaide to enforce the prohibition on the sale and movement of carrion flower.

##### Regional Implementation

Refer to regional management plans for further details.

Region	Actions
Alinytjara Wilurara	Destroy infestations
Eyre Peninsula	Contain
Green Adelaide	Limited action
Hills and Fleurieu	Limited action
Kangaroo Island	Limited action
Limestone Coast	Limited action
Murraylands and Riverland	Limited action
Northern and Yorke	Limited action
South Australian Arid Lands	Monitor

## Declaration

To implement this policy, carrion flower is declared under the *Landscape South Australia Act 2019* throughout the whole of the State of South Australia. Its entry to the State, movement on a public road by itself or as a contaminant, or sale by itself or as a contaminant are prohibited.

The Alinytjara Wilurara and Eyre Peninsula Landscape Boards may require land owners to control carrion flower plants growing on their land. These two landscape boards are required to control plants on road reserves in their regions.

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 entry to the State, road transport or sale can only be issued by the regional landscape boards or Green Adelaide 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 carrion flower 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 carrion flower. 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 carrion flower 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	X	X								
194 Recovery of control costs on adjoining road reserves										

## Review

This policy is to be reviewed by 2025, 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. Outlying infestations occur on Reevesby Island and 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:

Land use	Weed Risk	Feasibility of control	Response at regional level
Grazing - rangeland	28	3	Monitor
Native vegetation	38	13	Monitor

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 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**

Dunbar, K.R. & Facelli, J.M. (1999) The impact of a novel invasive species, *Orbea variegata* (African carrion flower), on the chenopod shrublands of South Australia. *Journal of Arid Environments* 41: 37-48.

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**Minister for Environment and Water**

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