

# Declared Plant Policy

## under the Natural Resources Management Act 2004



Government  
of South Australia

### bulbil watsonia (*Watsonia meriana* var. *bulbillifera*)

Bulbil watsonia is a large, winter-growing geophyte that reproduces asexually by cormils, and is established locally on road verges, degraded native vegetation and unmanaged ground in the higher rainfall regions of SA.

## Management Plan for Bulbil Watsonia

### Outcomes

- Maintain the integrity of native vegetation by minimising invasion and impacts of bulbil watsonia.

### Objectives

- Contain existing infestations to prevent spread into uninvaded areas.
- Remove priority infestations in accordance with NRM board regional management plans.

### Implementation

- NRM authorities to control infestations at high priority sites.
- Prohibition of the sale of bulbil watsonia or of material contaminated with its propagules, or of its transport on public roads.

### Regional Implementation

- Boards in the active control areas to ensure small infestations on private and public land are controlled.
- These Boards to control infestations on road reserves.

Refer to regional management plans for further details.

NRM Region	Actions
Adelaide and Mount Lofty Ranges	Manage weed Targeted control to protect priority sites
Alinytjara Wilurara	Limited action
Eyre Peninsula	Limited action
Kangaroo Island	Protect sites
Northern and Yorke	Protect sites
South Australian Arid Lands	Limited action
South Australian Murray Darling Basin	Limited action
South East	Monitor, opportunistic control

## Declaration

To implement this policy, bulbil watsonia 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, or the sale by itself or as a contaminant is prohibited. NRM authorities in the Adelaide and Mount Lofty Ranges and Kangaroo Island regions may require land owners to control bulbil watsonia plants growing on their land. NRM authorities in these regions are required to control plants on road reserves, and may recover costs from the adjoining land owners.

Bulbil watsonia 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. 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 following sections of the Act apply to bulbil watsonia 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								
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								
182(1) Landowners to destroy the plant on their properties								
182(2) Landowners to control the plant on their properties	X			X				
185 Recovery of control costs on adjoining road reserves	X			X				

## Review

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

## Weed Risk

### Invasiveness

Bulbil watsonia is normally a sterile triploid, reproducing by slow multiplication of the underground corms, and cormils that are produced in clusters along the flowering stem. Its distribution is closely correlated with streams, as the cormils fall close to the parent plant but may be transported by flowing water.

Earth-moving machinery and vehicles also disperse the cormils, but spread has been slow and sporadic. Dispersal may also occur in fodder, but in SA any vegetation that includes bulbil watsonia is unlikely to be harvested for this purpose.

Although seed-producing diploids are known in some South Australian populations, seedling reproduction depends on favourable seasonal conditions and has made little contribution to the spread of bulbil watsonia. Reproduction by seed is likely to be of little value to the plant in its niche as a weed, as the other naturalised *Watsonia* species that depend on seed instead of cormils are localised garden escapes rather than significant weeds

### Impacts

Bulbil watsonia does not invade arable land or improved pasture, and is essentially a weed of roadsides, unmanaged land and unimproved pasture in high rainfall areas, usually in wet sites subject to winter flooding.

In native sclerophyll forest, woodland and riparian habitats, bulbil watsonia can form continuous, clonal stands. On heavy, winter-waterlogged sites these eventually exclude other ground-layer species, thus making restoration of degraded native vegetation difficult. It is regarded as visual pollution on roadsides because of its size and non-native appearance.

It encroaches into pasture only when a paddock in the southern perennial grazing land use remains neglected over a long period. There are no records of toxicity.

### Potential distribution

Bulbil watsonia originated around Cape Town in a climate closely matching Adelaide. It grows well on light or heavy, mildly acid to mildly alkaline soils, and tolerates moderate waterlogging in winter. It is still less widespread in SA than in Victoria or WA because there are fewer streams here, and has not reached its ecological limits.

## **Feasibility of Containment**

### Control costs

Dense stands in pasture are most effectively controlled by cultivation and pasture renovation. Slashing, or spraying with foliar-absorbed herbicides are effective control methods if done in early spring when the previous year's corms are exhausted and new corms have not yet formed. This stage is recognisable above ground when the flower stem begins to develop but has not yet formed cormils or flowers. Some soil-active herbicides also give satisfactory control in pasture and may be sprayed earlier in the season.

Small infestations in native vegetation are controlled by spot spraying or wiping foliage with herbicide, which is labour-intensive. When controlling large stands, herbicide damage to natives may be minimised by following up a fuel-reduction burn or an accidental burn with a selective herbicide treatment of bulbil watsonia regrowth in the following growing season.

### Persistence

Individual clumps are long-lived, surviving on heavy soils for decades as a climax society that resists colonisation by other plants. On lighter well-drained soils it is vulnerable to competition from native regrowth or taller woody weeds.

Its rarity in managed pasture is due to the grazing of young leaves by stock; roadside infestations spread slowly by the fall of cormils beside the parent but do not cross the fence line.

### Current distribution

Bulbil watsonia is frequent on roadsides and in native vegetation in the Southern Lofty Ranges, especially the Adelaide Hills where grazing stock are absent, and occasional in the Clare area, Kangaroo Island and the lower South-East.

### **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:

<b>Land use</b>	<b>Weed Risk</b>	<b>Feasibility of control</b>	<b>Response at State Level</b>
Grazing - southern	medium 59	very high 2	contain spread
Native vegetation	low 17	very high 2	monitor

### **Considerations**

Bulbil watsonia is an example of a weed that has evolved by natural selection in new habitats created by human disturbance of vegetation, appearing within the last few centuries in disturbed periurban habitats in South Africa.

It was introduced to South Australia around 1840 and its primary dispersal was due to cultivation in cottage gardens where it probably multiplied unnoticed at the expense of seed-producing *Watsonia meriana* since it reproduced more efficiently by cormils. However, it is now regarded as having no value in horticulture; it has not contributed to the breeding of any of the ornamental *Watsonia* cultivars, and is not cross-fertile with them.

Risk assessment indicates management actions at State level of containment to prevent bulbil watsonia from establishing in pasture, and monitoring infestations in native vegetation. Regional management plans vary according to regional habitats and presence of the weed. The weed is managed with targeted control to protect priority sites in the Adelaide and Mount Lofty Ranges. Kangaroo Island NRM Board protects sites of high ecological and community value. The SA Murray Darling Basin NRM Board contains spread. The South East NRM Board monitors the weed and carries out opportunistic control as necessary.

### **Synonymy**

*Watsonia meriana* (L.) Miller var. *bulbillifera* (J. Mathews & L. Bolus) D.A. Cooke, *J. Adelaide Bot. Gard.* 18: (1998).

Basionym: *Watsonia bulbillifera* J. Mathews & L. Bolus, *Ann. Bolus Herb.* 3: 140-141 (1922).

Other common names include bugle lily and wild watsonia.

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