



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.

other tree and shrub willows (*Salix* spp.)

Willows are deciduous trees and shrubs from the northern hemisphere. They are dioecious, meaning that male and female flowers are on separate plants. There are about 400 species of willow; many of these are cultivated in Australia and some have low weed risk. Willows as a group are one of the thirty-two Weeds of National Significance, which are subject to a prohibition on sale in all States and Territories. In line with the national strategy, sale of willows is prohibited in South Australia as in other jurisdictions.

The genus *Salix* has three subgenera:

Salix - the tree willows including the weeping willows.

Caprisalix - the shrubby willows including the goat willows.

Chamaetia - ground-cover willows such as *Salix apoda* and *Salix serpyllifolia* from the arctic, subarctic and alpine regions. They have not been found to hybridise with the tree willows and have never become naturalised. They are not declared in South Australia.

Black willow, crack willows, goat willows and hybrid willows are regarded as high risk, and are the subject of a separate policy. However, the three species of weeping willow are not included in the declaration.

<i>Salix</i> section <i>Caprisalix</i>	All species are declared. <u>This policy covers the whole section <i>Caprisalix</i> except:</u> <i>Salix</i> × <i>calodendron</i> <i>Salix caprea</i> <i>Salix cinerea</i> <i>Salix</i> × <i>reichardtii</i> (which are included in the separate policy for black, crack, goat and hybrid willows).
<i>Salix</i> section <i>Chamaetia</i>	<u>None are declared.</u>
<i>Salix</i> section <i>Salix</i>	<u>All species are declared except:</u> <i>Salix babylonica</i> <i>Salix</i> × <i>pendulina</i> <i>Salix</i> × <i>sepulcralis</i> <u>This policy covers the rest of the section <i>Salix</i>, except:</u> <i>Salix fragilis</i> <i>Salix nigra</i> <i>Salix</i> × <i>rubens</i> (which are included in the separate policy for black, crack, goat and hybrid willows).

Management Plan for Willows

Outcomes

- Waterways and riparian native vegetation protected from degradation by willows.

Objectives

- Prevent the establishment of new infestations.
- Discourage the planting of more willows.

Best Practice Implementation

- Regional landscape boards and Green Adelaide to prevent the sale of willows in all regions.

Regional Implementation

Refer to regional management plans for further details.

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

Declaration

To implement this policy, willows in the subgenera *Salix* and *Caprisalix* are declared under the *Landscape South Australia Act 2019* throughout the whole of the State of South Australia. Sale of the plants is prohibited throughout the State.

These species of willows are declared in category 3 under the Act, for the purpose of setting maximum penalties and for other purposes. Any permit to allow their sale can only be issued by the regional landscape board or Green Adelaide pursuant to section 197.

The following sections of the Act apply to willows throughout each of the regions noted below:

other tree and shrub willows policy

Sections of Act	Region									
	AW	EP	GA	HF	KI	LC	MR	NY	SAAL	
186(1) Prohibiting entry to area										
186(2) Prohibiting movement on public roads										
188(1) Prohibiting sale of the plant	X	X	X	X	X	X	X	X	X	X
188(2) Prohibiting sale of contaminated goods										
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 a change in one or more regional management plans for willows.

Weed Risk

Invasiveness

So far there has been little spread of willows by seed in this State because most species are represented by clones that were either male or female and there have been few opportunities for cross pollination. Pollination of willows is mainly by insects, and hybridisation can only occur when the two species are flowering simultaneously and bees or other pollinating insects are present.

Seeds of willows are tiny, wind-dispersed and produced in large numbers. They only live for a month or two, but if they find suitable conditions can germinate in large numbers and establish rapidly. Most species need bare ground with the water table at the surface from November to midsummer. Black willow (see the separate policy on high risk willows) is an exception in being able to establish on dry ground.

Their ability to grow very easily from cuttings of any size made willows popular as quick-establishing farm trees; it also enables them to spread from branches swept downstream by floods. Branches can also take root while still attached to the parent tree, so thickets can readily establish into the stream.

Impacts

Willows are long-lived trees that exclude native regeneration on river banks; their root system is both deep and wide, enabling them to tap both underground and surface water sources. Consequently, some species are weeds of waterways where they can displace native vegetation, hinder access, create erosion or slow the movement of floodwater. However, the species covered by this policy are not established in the wild.

Potential distribution

Willows tend to be restricted to the cooler regions of the State and generally to sites along streams or beside bodies of water. Apart from the River Murray willows grow within the 400 annual isohyet. Their competitiveness depends on their ability to exploit these habitats.

Feasibility of Containment

Control costs

Removal of established willow trees is expensive, requiring felling and removal of timber, herbicide treatment of the stump to prevent regrowth, and immediate revegetation. Where the willows were the dominant vegetation on a stream bank, additional work may be necessary to stabilise the bank from erosion.

Persistence

Willows maintain themselves indefinitely, with dense growth that excludes competing plants. Individual trunks may live for less than a century, but a clone persists by vegetative propagation.

Current distribution

Willow trees are frequent in amenity areas and larger gardens throughout southern South Australia. The species covered by this policy are not established in the wild.

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
Native riparian vegetation	Low 25	high 15	Monitor

Considerations

Willows are Weeds of National Significance with the exception of *Salix babylonica*, *S. × calodendron* and *S. × reichardtii*.

The original weeping willow is a female clone of *Salix babylonica* that grows into a large tree to 30 m tall. It was planted in great numbers along rivers in New South Wales, Victoria and South Australia, where it spreads from broken branches and even twigs stuck into riverbanks as rod-rests by fishermen. So far there has been no spread by seed, apparently because there are no male willows on the River Murray that flower at the right time to pollinate weeping willow.

Another plant called weeping willow is *Salix × pendulina*, a garden hybrid of *Salix babylonica* with *Salix fragilis*. This is naturalised in the Southern Lofty region.

A third plant called weeping willow is *Salix × sepulcralis* var. *sepulcralis*, the hybrid of *Salix babylonica* and *Salix alba*. It is naturalised in the Mount Lofty Ranges and along the River Murray, mostly as female plants. The golden weeping willow (*Salix × sepulcralis* var. *chrysocoma*) is a variety that has naturalised in NSW, Victoria and Tasmania where planted for erosion control. It is grown in South Australian parks and gardens.

other tree and shrub willows policy

The various weeping willows are a familiar part of the rural landscape along the banks of the main channel of the Murray River, where they provide recreational amenity. These willows protect the banks from turbulence created by speedboats, houseboats and various other water craft using the waterway, thereby minimising bank and channel erosion. Willows that fall into the River Murray and become submerged snags can provide important habitat for fish and macro-invertebrates. This is a natural process in which the willows serve a similar function as native trees such as river red gums.

Therefore, the weeping willows - *Salix babylonica* and its hybrids *Salix pendulina* and *Salix sepulcralis* - are excluded from declaration.

The forms of *Salix matsudana* grown in Australia are also all females and are sometimes called matsudana willows. The cultivar 'Tortuosa', tortured willow, is a clone grown in gardens, and has been recorded in the Limestone Coast region. They have been pollinated by *Salix alba* and produced wild seedlings in Victoria and New South Wales.

Salix humboldtiana 'Pyramidalis' is a male clone known as pencil willow or Chilean willow. It is a semi-evergreen tree. It is widely grown as an ornamental, often under the name of *Salix chilensis* 'Fastigiata', but has only become naturalised in warm summer-rainfall areas of NSW.

Cricket bat willow (*Salix alba* var. *caerulea*) is the only source of wood for cricket bats, and has not become naturalised anywhere in Australia. There was a local industry until 1956 when it was bought and closed down by a competitor in the UK. Cricket bat willow has been suggested as a potential growth industry in Australia as the overseas production declines. Several South Australian landholders are believed to have trial plantations of this variety.

Other willows posing a high risk are covered by a separate policy for black willow, crack willows, goat willows and hybrid willows.

The remainder of the subgenera *Salix* and *Caprisalix* are prohibited from sale. Growers of willow cuttings for cricket bat plantations can apply to their regional landscape board or Green Adelaide for the permits necessary to sell their stock.

Synonymy

Salix L. Subgenus *Salix* - all species except the weeping willows and species listed in the policy for black willow, crack willows, goat willows and hybrid willows. This includes:

Salix matsudana Koidzumi, Bot. Mag. (Tokyo) 29: 312 (1915), including the cultivar 'Tortuosa'.

Salix humboldtiana Willd., Sp. Pl. 4(2): 657 (1806), present as the cultivar 'Pyramidalis'.

Salix L. Subgenus *Caprisalix* - all species except those listed by name in the policy for black willow, crack willows, goat willows and hybrid willows.

Reference

Baker, M. (2009) The willows (*Salix* – Salicaceae) in Tasmania. *Muelleria* 27: 127-148.

Hon David Speirs MP
Minister for Environment and Water

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