

## Summary of State and Territory Recommendations

# Summary of State and Territory Recommendations for on-ground willow management

### Background

The following recommendations are a summary of the on-ground management recommendations for states and territories as discussed in: Steel, J. Holland Clift, S. & Snell, K. (2008). *Developing willow management priorities from the local to the national level*. Department of Primary Industries, Victoria. Further context and explanation can be found in this resource, which takes into account some of the complexities of willow management.

The recommendations included in this summary are not a prescription for action, but a tool to assist regional land managers to prioritise willow management. The Willows National Management Guide is now available, and is the most up to date resource for willow management methods and developing willow management plans.

Willow management should not be considered in isolation as the aim of willow management is to protect and restore natural resources.

### States with outlier willow populations

#### *All States: prevent incursion*

Some regions in Australia currently have no records of willows occurring and this should be kept this way. Regions include:

- **New South Wales:** Western
- **Northern Territory:** Northern Territory
- **Queensland:** Burdekin, Cape York, Cape York - Northern Gulf, Desert Channels, Mackay, Whitsunday, Maranoa Balonne, Northern Gulf, South West, Southern Gulf, Torres Strait, Wet Tropics
- **South Australia:** Alinytjara Wilurara, Eyre Peninsula, Kangaroo Island, SA Arid Lands
- **Western Australia:** Avon, Northern Agricultural Region, Rangelands

Teach land managers responsible for identifying new incursions to identify willow taxa in the first, second and third priority lists (see Regional Prioritisation Matrices, in developing willow management priorities resource).



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### Northern Territory

#### Very High Priority

Although there are currently no records of willows in the Northern Territory, there is the potential for the very high priority taxa, *S. babylonica*, *S. exigua* and *S. nigra* to establish. Monitor and prevent incursion of these willows.

### Queensland

#### Very High Priority – Queensland

It is of national importance to ensure *S. exigua* does not establish in this state:

- These taxa should be monitored for and eradicated if found as a very high priority.
- Some of these taxa are relatively unknown therefore it is a recommendation that information be developed to help land managers identify these willows.

#### High Priority – Queensland

##### Eradication

- Identify male catkins on any willow species, and remove male willows to prevent nearby female willows spreading via seed.
- Eradicate single specimens or single infestations of *S. x rubens* in South East NRM; *S. alba* in Condamine NRM; and *S. x pendulina* and *S. fragilis* in Border Rivers NRM.

##### Prevent establishment

- Monitor for incursions of *S. cinerea* and *S. nigra*, and eradicate immediately if found.
- *S. x sepulcralis* and *S. purpurea* are not known to be present in Queensland, so monitoring for incursions in susceptible NRMs should be a high priority.

### South Australia

#### Very High Priority – South Australia

##### Prevent establishment

It is of national importance to ensure *S. exigua*, *S. daphnoides* *S. triandra* do not establish in this state.

- These taxa should be monitored for and eradicated if found as a very high priority.
- Some of these taxa are relatively unknown therefore it is a recommendation that information be developed to help land managers identify these willows.



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### High Priority – South Australia

#### Eradication

The following willow taxa should be considered for eradication in South Australia:

- *S. x rubens*, *S. nigra*, *S. cinerea*, *S. alba*, *S. babylonica*, *S. x sepulcralis* and *S. fragilis*.

#### Prevent establishment

- Monitor *S. purpurea*, *S. viminalis*, and *S. x pendulina* for establishment (provide land managers with information to help them identify these willows).

### Western Australia

#### Very High Priority – Western Australia

#### Prevent establishment

It is of national importance to ensure *S. exigua*, *S. triandra* and *S. daphnoides* do not establish in this state.

- These taxa should be monitored for and eradicated if found as a very high priority.
- Some of these taxa are relatively unknown therefore it is a recommendation that information be developed to help land managers identify these willows.

#### High Priority – Western Australia

#### Eradication

Eradicate grey sallow (*S. cinerea*) from its two known locations around Perth (Bayswater and Armadale). Monitor for further incursions of grey sallow or its close relative, *S. x reichardtii*.

Eradicate or prevent spread of *S. babylonica* and *S. x sepulcralis*

#### Managing gender

There are very few male plants known to occur in Western Australia, therefore male willows should be made a high priority for management.

#### Protect assets

Monitor and protect Ramsar sites from invasion of nearby seeding willows found in townships of and streams around Forrestdale and Thomsons Lakes, Peel-Yalgorup System, Muir-Byenup System, and Becher Point Wetlands.



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### States with established willow populations

#### Australian Capital Territory

##### High Priority – Australian Capital Territory

###### Eradication

The mapping data for the Australian Capital Territory indicates that all of the very high priority taxa appear to be either not naturalised: *S. triandra*, *S. daphnoides* and *S. viminalis*; or infesting less than 100 hectares and likely to be eradicable: *S. nigra*, *S. cinerea*, *S. alba*, *S. babylonica*, *S. purpurea*, *S. x sepulcralis*, *S. fragilis* and *S. x pendulina*.

###### Protect assets

Where eradication is not feasible, management should focus on Asset protection and preventing the spread of Seeding Willows.

Coordinating efforts with other regions and states (New South Wales and Victoria) should be a high priority to minimise impacts from willows that cannot be eradicated.

#### New South Wales

##### Very High Priority – New South Wales

###### Prevent establishment

It is of national importance to ensure *S. exigua*, *S. daphnoides* and *S. triandra* do not establish in this state:

These taxa should be monitored for and eradicated if found as a very high priority.

Some of these taxa are relatively unknown therefore it is a recommendation that information be developed to help land managers identify these willows.

##### High Priority – New South Wales

###### Eradication

The following willow taxa should be targeted for eradication in New South Wales:

- *S. cinerea* in Hunter-Central Rivers, Northern Rivers and Southern Rivers CMAs;
- *S. babylonica* in Lower Murray Darling CMA; and
- *S. nigra* in Murray CMA.

Other willows that pose a high risk and may be eradicable from the state include:

- *S. viminalis*, which is only recorded in Southern Rivers and Murrumbidgee CMAs;
- *S. purpurea*, in Southern Rivers, Murrumbidgee and Murray CMAs; and



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- Several taxa that may be under-recorded in the mapping database, but appear to be eradicable, including *S. x sepulcralis*, *S. alba*, and *S. x pendulina*.

### Protect assets

Manage *S. fragilis* and *S. x rubens* to prevent spread and protect high value assets.

Manage gender to prevent their spread by seed (eg: remove female willows within a 1km radius of *S. fragilis* and male *S. x rubens*)

Coordinate efforts with other regions and states (Australian Capital Territory and Victoria) to minimise impacts from willows that cannot be eradicated.

## Tasmania

### Very High Priority – Tasmania

#### Prevent establishment

It is of national importance to ensure *S. glauca*, *S. exigua*, *S. daphnoides* and *S. triandra* do not establish in this state.

- These taxa should be monitored for and eradicated if found as a very high priority.
- Some of these taxa are relatively unknown therefore it is a recommendation that information be developed to help land managers identify these willows.

#### Mapping of *S. babylonica*

Map *S. babylonica* more accurately to determine its management priority and options (currently appears eradicable as database shows only two records).

### High Priority – Tasmania

#### Eradication

The following willow taxa should be targeted for eradication in Tasmania:

- *S. cinerea*, *S. alba*, *S. purpurea*; and the rarely eradicable and difficult to distinguish *S. fragilis* and *S. x rubens*.
- Two weeping willows: *S. x pendulina* and *S. x sepulcralis* also appear to be eradicable, but again, this may be an underestimation of their distribution, due to the common perception that weeping willows are not a weed.

#### Prevent establishment

*S. nigra* and *S. viminalis* appear to be absent from the naturalised records in Tasmania. Large parts of the state are suitable for their establishment, so all efforts should be made to ensure they do not spread.



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### Victoria

#### Very High Priority – Victoria

It is of national importance to ensure *S. exigua*, *S. daphnoides* and *S. triandra* do not establish in this state.

- These taxa should be monitored for and eradicated if found as a very high priority.
- Some of these taxa are relatively unknown therefore it is a recommendation that information be developed to help land managers identify these willows.

#### High Priority – Victoria

##### Prevent establishment

Monitor and prevent establishment of *S. viminalis*

##### Eradication

The following willow taxa should be targeted for eradication in Victoria:

- *S. purpurea* in the North East and East Gippsland CMAs;
- *S. x pendulina* in the Corangamite, North East and Port Phillip CMAs; and
- *S. nigra* from Goulburn Broken, North East and West Gippsland CMAs.

Other high priority taxa that may be eradicable from particular CMAs in Victoria are:

- *S. x sepulcralis* and *S. fragilis* (in some CMAs)\*
- *S. cinerea*, from Glenelg Hopkins and North Central CMAs
- *S. babylonica*, from Wimmera and Glenelg Hopkins CMAs.

\*These two taxa appear eradicable from specific CMAs, although they are almost certainly under-reported in the mapping database. Further mapping of these taxa may be required.

##### Protect assets

Manage high priority willows that cannot be eradicated (such as *S. x rubens* and *S. alba*) to prevent spread and protect high value assets.

Coordinate efforts with other regions and states (New South Wales and Australian Capital Territory).

