



Data Sheet

Why Exotic Trees Have No Place In Our Watercourses

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Formerly DENR Water Resources Group

Exotic trees for bank stabilisation?

In the past exotic trees, especially willows, have been seen as valuable in protecting stream banks from erosion.

However, because they are not suitable for the Australian environment, they are actually causing significant damage.

Willows cast such a dense shade, little else will grow underneath. As a consequence, soil around them is susceptible to erosion.

Excessive siltation is another problem associated with exotic trees.

In particular, the weeping willow (*Salix babylonica*) will send out a fibrous root mat into a watercourse, encouraging silt deposition and later interfering with river flow.

In addition, when flooding occurs, willows are often uprooted and deposited further downstream, causing blockages and exacerbated flooding.

The environmental impact of exotic trees

In many areas, native plants and animals have been adversely affected by the invasion of exotic trees, with the main culprits being willows (*Salix sp*) but also ash (*Fraxinus sp*) and poplar (*Populus sp*).

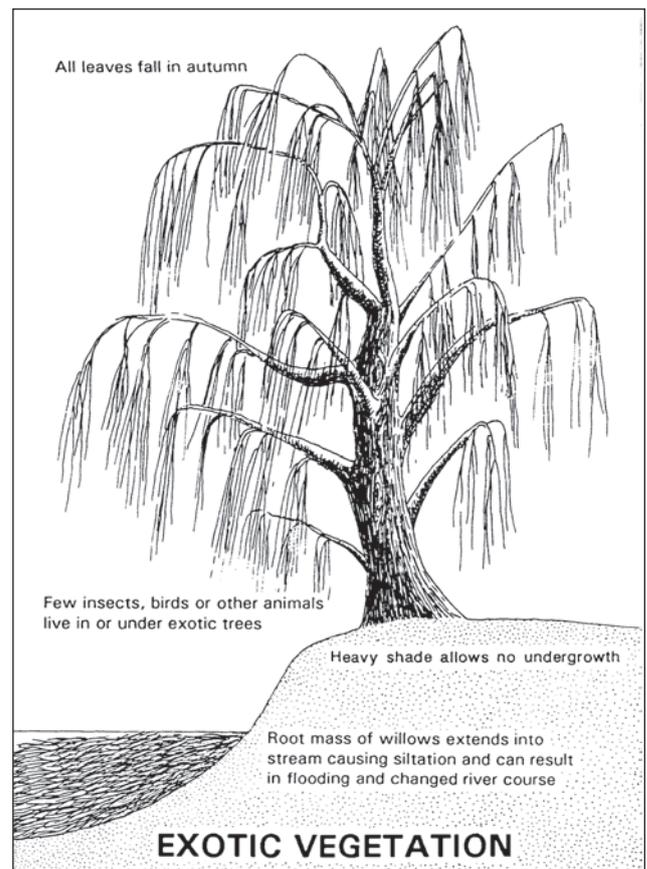
For example, biological monitoring in South Australia has shown a major reduction in the numbers and diversity of invertebrates (small animals such as beetles, dragonflies and daphnia) and fish under introduced willow trees compared with native vegetation.

The reason for this is that willows provide a totally different, and very much poorer, living environment.

Because willows are deciduous, they drop all their leaves in a few weeks in late autumn. This sudden influx of organic material into the water is effectively an organic pollutant. The leaf material breaks down rapidly in the water, releasing large quantities of nutrients in a short time.

In contrast, native species shed their leaves steadily over the course of a year, thereby providing a consistent input of organic material into the ecosystem.

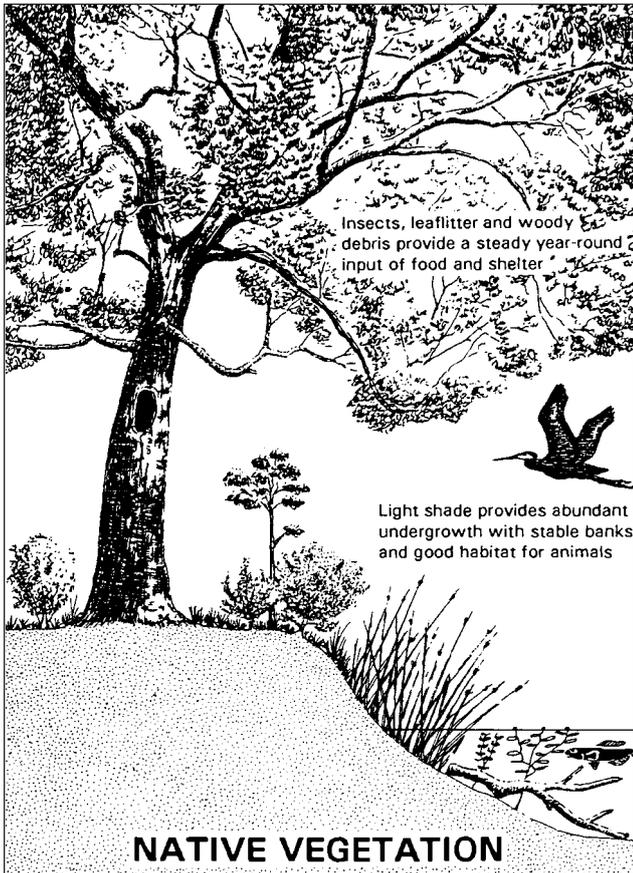
In addition to reducing the numbers and diversity of species in the water, willows also reduce the numbers and diversity of species on the banks.



Willows produce such a dense mass of leaves that almost all other aquatic and riparian vegetation is shaded-out.

As a consequence, far fewer animals are able to live in this degraded environment. Also, deciduous trees offer no protection to animals from late autumn to spring.

**Contact the Landscape SA Board Office
or the Upper River Torrens Landcare
Group for advice and support in weed
control.**



Control methods

As with other woody weed control programs on watercourses, remember that streams are dynamic parts of the ecosystem and anything you do needs to be completed with great sensitivity.

Do not attempt to remove all trees in heavily infested sections of streams in any one year.

It is also imperative that a program of replacement vegetation with suitable native species is carried out in conjunction with your control program.

Willows

The timing of a control program is very important. Because willows will freely take root from broken branches, it is most sensible to poison them before they are cut down. When live trees are cut down they 'shatter', creating hundreds of potential regenerants from the broken branches.

Poisoning can be carried out at any time during the growing season (usually October-April). The trees can then be cut down and removed after they are dead.

Injection of herbicide into the trunk and main limbs of the tree is the preferred method of control.

Overspraying the leafmass of trees is not recommended so as to minimise the use of herbicide near watercourses.

Use undiluted glyphosate herbicide (e.g. Roundup®) and apply close to the base of each limb. Make a cut or drill a hole at 5-10cm intervals around the circumference to the correct depth into the sapwood. Inject 2ml of herbicide into each cut.

After the trees are dead, they can be cut down and safely burnt away from the bed of the watercourse or, preferably, dragged aside and left to rot down as 'habitat'.

Ash

Because ash trees propagate by seed, they do not have to be poisoned before they are cut down.

However, stumps must be immediately painted (these trees have the ability to seal cuts within seconds!) with undiluted Grazon DS® and any regrowth spot sprayed with Roundup® diluted at a rate of 1:100 with water.

Poplars

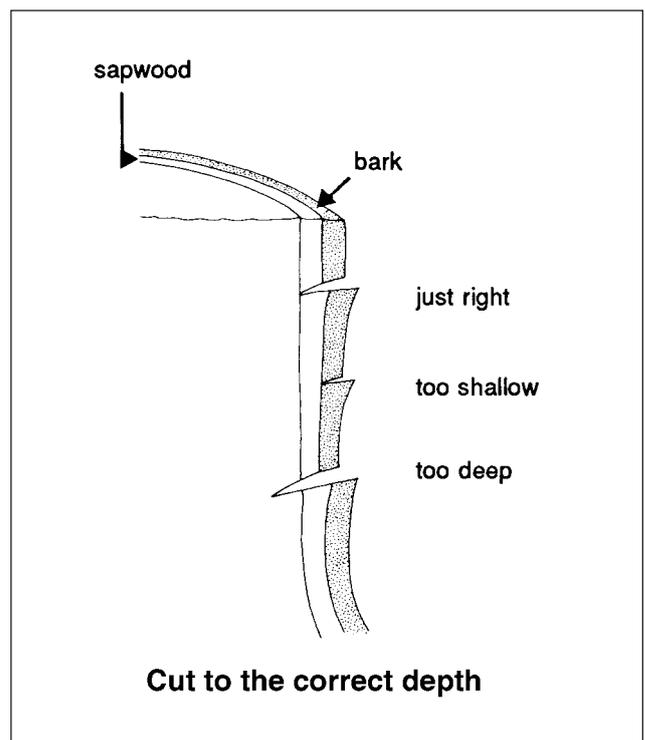
Trials have shown that if poplars are cut down before poisoning, there can be prolific 'sucker' growth from the root system. Controlling subsequent regrowth can then be time consuming.

It is therefore recommended that poplars are poisoned before they are cut down. Poplars can be poisoned at any time during the growing season. Holes should be drilled at intervals of 10cm at waist height around the circumference of the tree. 2ml of undiluted Garlon® should then be injected into each hole.

The holes should then be immediately plugged with corks.

Leafy branches below the holes should be cut off and swabbed with a diesel/Grazon® mix.

When the tree is dead it can be cut down.



Resources

Landscape SA H&F: <https://landscape.sa.gov.au/hf/plants-and-animals/pest-plants-and-animals/pest-plants>

HerbiGuide: <http://www.herbiguide.com.au/>

PIRSA: https://pir.sa.gov.au/biosecurity/weeds_and_pest_animals/weeds_in_sa/weed_id

https://pir.sa.gov.au/biosecurity/weeds_and_pest_animals/weeds_in_sa/weed_control_app