By Sarah Holland Clift
National Willows Program

Seeding willows: it may not happen overnight, but it will happen

Seeding willows are like a ticking time bomb. Their spread can initially be slow, but when the right conditions occur, a catastrophic explosion in numbers may occur.

One of the worst seeding willows is grey sallow (*Salix cinerea* – also known as 'wild pussy willow'). *Salix cinerea* has proven to be extremely adaptable, invading just about any boggy and intermittently moist site, anywhere from sea level to above the alpine tree line. Sites most likely to be invaded are areas where bare, wet ground exists for a month following seed shed (around October/November).

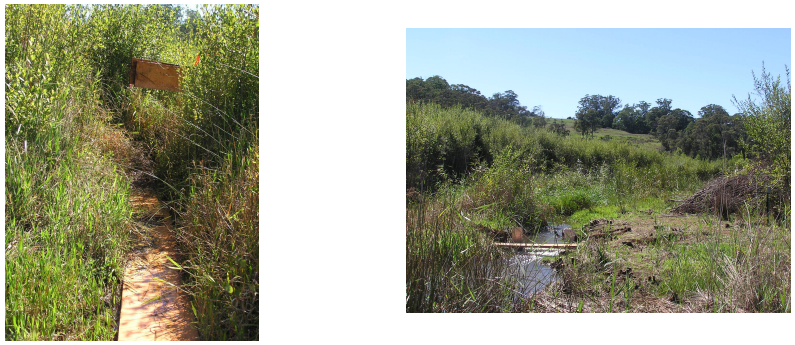
Male (left) and female (right) catkins of *S. cinerea* (Source: Matthew Baker)

Such conditions may not occur at a large scale for many years but, when they do, the results can be devastating.

The collapse of Wingecarribee Swamp, NSW

A mass germination event occurred at Wingecarribee Swamp in southern New South Wales in August 1998. Heavy rains caused a major collapse of large sections of the peat beds. This resulted in canyons of exposed bare, wet peat, which in itself was a major environmental disaster.

To add insult to injury, mature *S. cinerea* plants were present in the area and the exposed peat beds were invaded by over 100 000 *S. cinerea* seedlings in 1998 and a further million seedlings in 1999.



S. cinerea numbers exploded to over 1 million seedlings in just 2 seasons at Wingecarribee Swamp when peat beds were exposed following a severe flood. Access onto the swamp to control the willows is extremely difficult (Source: DPI Victoria)

In just two years, the population exploded from a few hundred mature willows along some sections of the swamp's margin into more than one million plants throughout the swamp.

By Sarah Holland Clift
National Willows Program

Wingecarribee Swamp is a unique ecosystem that contains the largest montane peatland in southern New South Wales. It is also part of an important catchment that supplies water to Sydney. This invasion threatens the unique ecology of Wingecarribee swamp and the quality of Sydney's drinking water.

Bush fires in Victoria's Alpine National Park

Another more recent example occurred in Victoria's Alpine National Park in early 2003, when major bush fires resulted in significant stands of native vegetation being burnt. The following spring, mature trees of *S. cinerea* (that were already present in the park in low numbers) produced vast quantities of fluffy, wind-dispersed seed. This seed readily germinated in the newly exposed, water laden, nutrient rich moss beds that cover much of the area. This threatens the unique ecology of the park and the quality of drinking water for many population centres in south east Victoria.

S. cinerea growing on the Baw Baw Plateau, part of Victoria's Alpine National Parks system (Source: Parks Victoria)

Avoiding the expense through early detection and response

Ongoing management of both Wingecarribee Swamp and the Alpine National Park is now required for years to come. This will be a huge cost that could have been avoided by controlling *S. cinerea* infestations while they were still small. Additional areas in Australia are under threat and proactive management is required if we are to prevent *S. cinerea* and other seeding willows from establishing in new areas.

Seeding willows were recently discovered in Tasmania. Understanding the problems caused by seeding willows on the mainland, the discovery was met with a sense of urgency and the control of seeding willows became the top priority for willow management in the State. A State wide program for the eradication of seeding willows was subsequently developed and is currently being implemented.

Control of known populations of *S. cinerea* in Tasmania (Source: Sam Smee)

"Seeing Tasmania's first significant naturalised population of seeding willows is like going back in time and standing looking at Australia's first introduced blackberries. We have a chance to do something to protect Tasmania from even greater willow invasion." Andrew Crane, Regional Weed Management Officer, Tasmania.