The distribution of grey sallow willow (*Salix cinerea*) and pussy willow (*Salix reichardtii*) in the Mount Lofty Ranges of South Australia

Robin B. Coles¹ and Phil Cramond²

¹ PIRSA, Rural Solutions SA, Animal and Plant Control, Lenswood Research Centre, Swamp Road, Lenswood, South Australia 5240, Australia.
² Adelaide and Mount Lofty Ranges, Natural Resources Management Board, 1 Adelaide Lobethal Road, Lobethal, South Australia 5241, Australia
Email: coles.robin@sa.gov.au

Summary  *Salix cinerea* L. is a declared plant under South Australian (SA) Natural Resources Management Act 2004, and is also declared as a Weed of National Significance. Both *S. cinerea* and *Salix reichardtii* A.Kern. have been recently recognised as invasive along watercourses within the Mount Lofty Ranges of SA. They are both shrub willows, with multi-stemmed habits. Like other willow species, they are dioecious, with each plant bearing either male or female flowers. Propagation can be sexual, with numerous small seeds being produced in late spring which are wind and water dispersed, or asexual. Flowering occurs during September and October and the production of ‘parachute’ like seeds with a limited life span can disperse in the prevailing winds or float downstream for many kilometres. *Salix cinerea* in particular can colonise moist environments by developing from branch and root fragments.

We used a handheld GPS to map the distribution of these two species in the Adelaide Hills and Fleurieu Peninsula to update knowledge of their distribution. Individuals were initially mapped along major roads, creeks and rivers in both regions. Sites were then revisited at flowering time to record the sex of plants by observing the presence or absence of male and female catkins. This provided a database of potential seed sources for *S. cinerea*.

*Salix cinerea* was more widespread than previously recorded from the initial survey undertaken by P. Cramond in 2006 (Coles 2007). Its range extended from 28 km northeast of Adelaide at Kersbrook near the upper reaches of the Torrens River and south 49 km from Adelaide to the Myponga and Hindmarsh Rivers. Most records were on private properties, in streams and boggy soils.

Male and female *S. cinerea* were found in the Adelaide hills, but only males were recorded from Fleurieu Peninsula (Table 1). *Salix reichardtii* was only recorded from the Fleurieu Peninsula, and they were all males (Table 1).

<table>
<thead>
<tr>
<th>Location</th>
<th><em>S. cinerea</em> No. ♂s</th>
<th><em>S. cinerea</em> No. ♀s</th>
<th><em>S. reichardtii</em> No. ♂s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide Hills</td>
<td>672</td>
<td>152</td>
<td>256</td>
</tr>
<tr>
<td>Fleurieu Peninsula</td>
<td>542</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>1214</td>
<td>152</td>
<td>256</td>
</tr>
</tbody>
</table>

Extensive populations of *S. cinerea* plants (both sexes) were recorded in the Scott Creek area of the Adelaide Hills (300 males and 100 females). They are probably the result of introductions in the 1840s and include some of the largest plants recorded in the state. This area also has the highest ratio of males to females (3:1), and the potential to hybridise with *S. reichardtii*. A large *S. cinerea* population (526 males) was also recorded along the Hindmarsh River in the Myponga region of the Fleurieu Peninsula.

Future control strategies would include the targeted removal of female *S. cinerea* plants to prevent any further seed spread.

Keywords  Grey sallow, *Salix cinerea*, pussy willow, *S. reichardtii*, South Australia.

ACKNOWLEDGMENTS
The authors wish to thank David Cooke (Department of Water, Land Biodiversity and Conservation) for assistance in identifying various willow specimens.

REFERENCES