Italian buckthorn is a fast growing shrub that originates from the Mediterranean area and has been widely planted in gardens and hedges in Australia. It is very hardy and can grow in full sun, or partial or almost full shade.

Management Plan for Italian Buckthorn

Outcomes

- Displacement of native shrub species from native vegetation by Italian buckthorn prevented.

Objectives

- Prevent the spread of Italian buckthorn to uninfested areas due to planting.
- Control high priority infestations according to regional management plans.
- Locate small, isolated infestations threatening high priority sites for control action.
- Contain larger and low-priority infestations of Italian buckthorn.

Implementation

- Biosecurity SA to publicise the new status of Italian buckthorn as a declared plant.
- Natural Resources Management (NRM) authorities to respond to any reports of sales or dumping that involve Italian buckthorn.
- NRM authorities to map the extent of infestations adjacent to significant native vegetation sites and prioritise them for action.
- High priority infestations that threaten native vegetation assets to be controlled as detailed in regional management plans.

Regional Implementation

Refer to regional management plans for further details.

<table>
<thead>
<tr>
<th>NRM Region</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide and Mount Lofty Ranges</td>
<td>Protect sites</td>
</tr>
<tr>
<td>Alinytjara Wilurara</td>
<td>Limited action</td>
</tr>
<tr>
<td>Eyre Peninsula</td>
<td>Protect sites</td>
</tr>
<tr>
<td>Kangaroo Island</td>
<td>Eradicate</td>
</tr>
<tr>
<td>Northern and Yorke</td>
<td>Limited action</td>
</tr>
<tr>
<td>South Australian Arid Lands</td>
<td>Limited action</td>
</tr>
<tr>
<td>South Australian Murray-Darling Basin</td>
<td>Eradicate</td>
</tr>
<tr>
<td>South East</td>
<td>Protect sites</td>
</tr>
</tbody>
</table>
Italian Buckthorn policy

Declaration

To implement this policy, Italian buckthorn is declared under the Natural Resources Management Act 2004 throughout the whole of the State of South Australia. The movement or transport of the plant on a public road by itself or as a contaminant, or sale by itself or as a contaminant, is prohibited. NRM authorities in the Eyre Peninsula, Kangaroo Island, South Australian Murray-Darling Basin, South East and Adelaide Mount Lofty Ranges NRM regions may require land owners to control Italian buckthorn plants growing on their land. NRM authorities in these regions are required to control plants on road reserves, and in the South East region only may recover costs from the adjoining land owners.

Italian buckthorn is declared in category 3 under the Act for the purpose of setting maximum penalties and for other purposes. Any permit to allow its movement or sale can only be issued by the regional NRM Board pursuant to section 188.

The following sections of the Act apply to Italian buckthorn throughout each of the NRM regions noted below:

<table>
<thead>
<tr>
<th>Sections of Act</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>175(1) Prohibiting entry to area</td>
<td></td>
</tr>
<tr>
<td>175(2) Prohibiting movement on public roads</td>
<td></td>
</tr>
<tr>
<td>177(1) Prohibiting sale of the plant</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>177(2) Prohibiting sale of contaminated goods</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>180 Requiring notification of infestations</td>
<td></td>
</tr>
<tr>
<td>182(1) Landowners to destroy the plant on their properties</td>
<td>X X</td>
</tr>
<tr>
<td>182(2) Landowners to control the plant on their properties</td>
<td>X X</td>
</tr>
<tr>
<td>185 Recovery of control costs on adjoining road reserves</td>
<td>X</td>
</tr>
</tbody>
</table>

Review

This policy is to be reviewed by 2020, or in the event of a change in one or more regional management plans for Italian buckthorn.

Weed Risk

Invasiveness

The plant is a copious seed producer, with seeds produced in small berries on female plants. Each fruit has between two and five seeds. Seed production has been reported as very variable; however fruit production per plant has been estimated at approximately 11,000 berries per plant.

The fruits have been reported to be eaten by starlings and blackbirds in New Zealand and are possibly also spread by foxes and possums. In Europe ants have been observed dispersing seed. The starling has been reported to have a seed dispersal range of 40 km.

While Italian buckthorn is reported to prefer disturbed soil, it has been shown to be capable of establishing within vegetation and is invasive in heath land.
Italian Buckthorn policy

Impacts

Italian buckthorn has been used as a hedge and could therefore pose a major physical barrier to people and animals where it establishes. The plants ability to sucker could also impose on access to land and is reportedly difficult to control requiring significant works with follow up treatments.

Italian buckthorn’s vigorous growth shades out ground flora altering the floral composition. It can prevent regeneration of shrubs and trees and lead to species poor stands.

Potential distribution

It is generally found in areas receiving greater than 500mm of rain. However the plant is described as drought tolerant. Taking into consideration its current distribution, it potentially could invade the majority of the arable areas of South Australia. It has been recorded as far north as Orroroo and Melrose and as far south as Mount Gambier.

The plant is extremely hardy and can grow in full sun, or partial or almost full shade; it is frost tolerant to -15ºC. It tolerates drought, salt spray and can survive intense fire as it has lignotuber, from which it can regrow.

Feasibility of Containment

Control costs

Seedlings are best hand pulled. However, if the stem is removed above the ground it will re-shoot from the taproot. Removal of larger plants is possible with the right equipment i.e. tree pullers.

Mature plants can be controlled by either the cut and swab or drill and fill techniques using a non-selective herbicide. This is best done in spring and follow-up treatments are required, as plants will re-shoot.

Persistence

Given the ability of the plant to re-shoot, and the labour intensive control techniques needed to kill mature plant, Italian buckthorn can be viewed as a persistent weed.

Italian buckthorn is reported to be very long lived and is therefore presumed to have a reproductive period greater than 10 years.

The longevity of the seed bank is unknown.

Current distribution

It has been recorded as far north as Orroroo and Melrose, on Kangaroo Island and in the South East, southern Eyre Peninsula, the Adelaide Hills and Fleurieu Peninsula.
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:

<table>
<thead>
<tr>
<th>Land use</th>
<th>Weed Risk</th>
<th>Feasibility of control</th>
<th>Response at State Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native vegetation</td>
<td>low 38</td>
<td>medium 36</td>
<td>limited action</td>
</tr>
</tbody>
</table>

Considerations

Risk assessment indicates a management action at State level of limited action in native vegetation. However, the local weed risk of Italian buckthorn in coastal vegetation is much higher, up to 135 in the Adelaide and Mount Lofty Ranges, Eyre Peninsula and South East NRM regions where a site protection strategy is justified. Regional management plans vary according to regional habitats and presence of the weed. In the Kangaroo Island and South Australian Murray-Darling Basin NRM regions, eradication is being attempted as the most effective way to protect vulnerable sites as Italian buckthorn is very localised. The Alinytjara Wilurara, South Australian Arid Lands, and Northern and Yorke NRM regions require limited action as they have little or no vulnerable habitat.

Prevention of further sale of Italian buckthorn in South Australia is necessary to limit the problem of new infestations.

Synonymy

*Rhamnus alaternus* L., Sp. Pl. 1: 193 (1753)

Taxonomic synonyms:
- *Alaternus angustifolia* Mill., Gard. Dict., ed. 8. n. 3. (1768)
- *Alaternus glabra* Mill., Gard. Dict., ed. 8. n. 2. (1768)
- *Alaternus latifolia* Mill., Gard. Dict., ed. 8. n. 4. (1768)
- *Rhamnus myrtifolia* Willk., Linnaea 25: 18 (1852)

Other common names include buckthorn and blowfly bush.