Ardisia elliptica

System: Terrestrial

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
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</thead>
<tbody>
<tr>
<td>Plantae</td>
<td>Magnoliophyta</td>
<td>Magnoliopsida</td>
<td>Primulales</td>
<td>Myrsinaceae</td>
</tr>
</tbody>
</table>

Common name: shoebutton ardisia (English), ati popa'a (English, French Polynesia)

Synonym: Ardisia humilis, Vahl.
           Ardisia squamulosa, Pr.

Similar species: 

Summary: Ardisia elliptica is a shade tolerant evergreen tree whose fast growth and attractive fruit made it a popular ornamental plant in the past. It has escaped from private and public gardens to invade natural areas. Due to high reproductive output and high shade-tolerance, carpets of seedlings can form underneath adult trees. High seed viability (99%) and seed consumption by both avian and mammalian frugivores can lead to rapid spread across a landscape.

Species Description:

*Ardisia elliptica* is a tropical understorey shrub that can reach heights of up to 5 metres. Undamaged plants in forest habitats are characterised by a single stem, producing short, perpendicular branches. Leaves are elliptic to elliptic-ovate, entire, leathery and alternate. Most plants in South Florida have pink to red coloured petioles, although some populations have light green petioles. Umbellate inflorescences develop in leaf axils of branch leaves. Petals are light pink. Fruits are drupes that first turn red as they mature and then deep purple/black. Pulp from the fruits will stain fingers a deep purple. Seeds are approximately spherical with a diameter of about 5mm.

Notes:

*Ardisia elliptica* readily invades moist disturbed forests, however, it has also been able to invade relatively undisturbed sites. Its fast growth and attractive fruit made it a popular ornamental plant in the past. From private and public gardens it has invaded natural areas. Close resemblance between it and *A. escallonioides* in Florida led to its introduction to the Everglades National Park in 1947. Because its fruit is readily consumed by both avian and mammalian frugivores, rapid spread across a landscape is possible. High seed viability (99%) greatly increases success of rare long-distance dispersal events.
Lifecycle Stages
Seeds do not have any long-term dormancy (i.e., greater than 6 months), however, seedlings and juveniles can survive under very shady conditions for many years. Given enough light, juveniles rapidly develop into reproductive adults. In Florida (USA) habitats, there is very little adult mortality. Fruits are readily eaten by frugivores.

Habitat Description
_Ardisia elliptica_ readily invades moist disturbed forests, however, it has also been able to invade relatively undisturbed sites. Its fast growth and attractive fruit made it a popular ornamental plant in the past. From private and public gardens it has invaded natural areas. Close resemblance between it and _A. escallonioides_ in Florida led to its introduction to the Everglades National Park in 1947. Because its fruit is readily consumed by both avian and mammalian frugivores, rapid spread across a landscape is possible. High seed viability (99%) greatly increases the success of rare long-distance dispersal events.

Reproduction
_Ardisia elliptica_ is highly autogamous. Given ideal conditions, individuals can reach reproductive maturity in 2-4 years in the field and 1-2 years in a shade house. Large adults in bright forested sites have been measured producing up to 400 fruits. However, adults can also successfully set fruit under shady conditions.

Nutrition
A shade-adapted species that can survive under extreme low light levels. In Florida it grows in alkaline soils and limestone substrates. Prefers moist forests. Seedlings can tolerate submergence for short periods.

General Impacts
_Ardisia elliptica_ readily forms dense monotypic stands that exclude native species. Due to high reproductive output and high shade-tolerance, carpets of seedlings (>400 plants per square metre) can form underneath adult plants under ideal conditions (moist soil and shallow litter). Seedling carpets and increased shade levels inhibit recruitment by native species.

Management Info

Physical: Hand pull seedlings.

Chemical: "In areas with a dense groundcover of seedlings, a broadcast spray of a glyphosate herbicide is effective, but be careful to avoid damaging desirable plants. Mature specimens should be treated with a basal application of a triclopyhr herbicide mixed with an oil diluent." (Hammer, 1996).

Pathway
Although this method has not been documented, it is a likely invasion path. Sold as an ornamental.
Principal source: Pacific Islands Ecosystems at Risk, (PIER, 2002)

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Review: Anthony L. Koop, University of Miami, Department of Biology, Coral Gables, Florida, USA.

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ALIEN RANGE
[1] AUSTRALIA
[3] FRENCH POLYNESIA
[1] SAINT LUCIA
[1] COOK ISLANDS
[1] REUNION
[2] UNITED STATES

BIBLIOGRAPHY
18 references found for Ardisia elliptica

Management information

Summary: A study on the use of a screening system to assess proposed plant introductions to Hawaii or other Pacific Islands and to identify high-risk species used in horticulture and forestry which would greatly reduce future pest-plant problems and allow entry of most nonpests.

European and Mediterranean Plant Protection Organization (EPPO), 2006. Guidelines for the management of invasive alien plants or potentially invasive alien plants which are intended for import or have been intentionally imported. EPPO Bulletin 36 (3), 417-418.


Summary: An account (by several authors) that outlines the breadth and complexity of the possum problem in New Zealand. The book explores current and potential future management techniques, and measuring the benefits of controlling possums.

Motooka, P. 2000. Summaries of herbicide trials for pasture, range, and non-cropland weed control-1999. College of Tropical Agriculture and Human Resources of the University of Hawaii at Manoa.

Summary: Data published to assist applicators experimenting with herbicides for weed control.


Summary: Collection of papers about the history of Spartina invasions in Australia and New Zealand and subsequent control attempts.


Summary: Gel pruning is being investigated as an environmentally friendly and effective chemical application system for selectively killing invasive vines.

General information

Summary: A comprehensive book on all 46 species of land-breeding mammals (mostly alien) that occur in New Zealand. Chapters are by local experts on each species. Chapter on brushtail possums is by P.E. Cowan.


Summary: A complete reference to the ship rat in New Zealand.

Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals. Available from: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=183615 [Accessed December 31 2004]
