Sesbania punicea **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Fabales	Fabaceae

Common name sesbania (English), ruttle bush (English), scarlett wisteria (English), Brazilian rattlebox (English), rooi sesbania (English), rattlepod (English), red sesbania (English), Chinese wisteria (English), Brazilian glory-pea (English), rattelbox (English), rattlebox (English), coffee weed (English)

Synonym *Daubentonia punicea* , (Cav.) DC
Sesbania tripetii , (Poit.) hort. ex Hubb.
Daubentonia tripetii , Poit.
Piscidia punicea , Cav.
Sesbania tripetii

Similar species

Summary Commonly known as Brazilian rattlebox, *Sesbania punicea* is a deciduous, leguminous shrub that has been widely distributed from its native South American range as an attractive ornamental species. Escapes from cultivation have led to naturalisation in some areas where *S. punicea* rapidly forms dense impenetrable stands in riparian areas, preventing river access, excluding native species and altering habitats. Hydrology of the rivers in these riparian areas can be affected especially during flood events, raising water levels and increasing the rate of erosion. Biological control of *S. punicea* has been achieved in South Africa using three different weevil species and trials from the United States and South Africa have shown its vulnerability to a range of herbicides.

view this species on IUCN Red List

Species Description
Sesbania punicea is a deciduous, leguminous shrub that grows up to 4m tall, it may live for up to 15 years (Hoffmann & Moran, 1998). It has compound leaves 10 - 20cm long comprised of 10 - 40 small, oblong, dark green leaflets in opposite pairs each ending in a tiny pointed tip (Rice, 1998). In spring or early summer, it produces a profusion of attractive red, coral or orange flowers in dense sprays which may be up to 25cm long that droop or project outwards (Csurhes & Edwards, 1998; Rice, 1998). These flowers are typically 2 - 3cm long and are shaped like pea flowers (Rice, 1998). The seed pods of *S. punicea* are characteristic and are oblong, 6 -8cm long and 1cm wide; they are longitudinally four-winged and borne on short 1.5 cm stalks (Rice, 1998). These seed pods are pointed at the ends and contain 4 - 10 large (>5 mm) seeds separated by partitions (Rice, 1998; Hunter & Platenkamp, 2003). The mesocarp or inner tissues of these seed pods are spongy and allow floatation for up to ten days even if split open (Hunter, unpub. data; in Hunter & Platenkamp, 1998).

Lifecycle Stages
Following germination, *Sesbania punicea* seeds give rise to large seedlings 5 - 10cm long. These elongate and produce leaves, growing as a single unbranched shoot for 1 - 2 years followed by production of widely diverging lateral shoots and the development of a broad crown that may reach up to 4 -5m in height (Hunter & Platenkamp, 2003).

Uses
Sesbania punicea was introduced into the United States, South Africa and Australia as an ornamental garden species (Csurhes & Edwards, 1998).

Habitat Description
Sesbania punicea is adapted for coastal, wetland and riparian zones, possessing buoyant seed pods capable of being dispersed long distances on water currents (Hunter & Platenkamp, 2003) and requiring sufficient level of moisture for the survival of seedlings (Hoffmann & Moran, 1991a).

Reproduction
In typical conditions, *Sesbania punicea* begins producing seed in its second year producing between 100 and 1000 seed pods containing 5 - 10 large (> 5mm) seeds per pod (Hunter & Platenkamp, 2003). The mesocarp of these seed pods are spongy, allowing them to float for up to 10 days even if cracked (Hunter & Platenkamp, 2003). The large seeds are able to establish in a wider range of habitats than some native species. They germinate through abrasion and are capable of remaining in the seed bank for up to three years if no such abrasion occurs (Hunter & Platenkamp, 2003). At the Lower American River in California, Hunter & Platenkamp (2003) found seeds from previous years in the top 3 cm of soil with an average of about 1000 seeds per m^2 and with 16 % of these capable of germination following abrasion. In dense thickets, *S. punicea* can produce over 500 seeds per m^2 every year (Hunter & Platenkamp, 2003).

General Impacts
Sesbania punicea is capable of forming dense impenetrable thickets which can prevent river access, exclude native species and alter habitats (Hoffmann & Moran, 1988; in Hoffmann & Moran, 1991a; Hunter & Platenkamp, 2003). *S. punicea* can increase hydraulic roughness, thus raising the stage during flood events (Hunter & Platenkamp, 2003) and potentially causing water bodies to burst their banks as well as increase the rates of lateral erosion (Hoffmann & Moran, 1988; in Hoffmann & Moran, 1991a).
S. punicea is also known to contain saponine which is toxic to humans and other vertebrate species (Natali & Jeanmonod, 1996; in Brunel *et al.*, 2010).

Management Info
Preventative measures: A Risk Assessment of *Sesbania punicea* for Hawaii and other Pacific islands was prepared by Dr. Curtis Daehler (UH Botany) with funding from the Kaulunani Urban Forestry Program and US Forest Service. The alien plant screening system is derived from Pheloung *et al*. (1999) with minor modifications for use in Pacific islands (Daehler *et al*. 2004). The result is a high score of 9.5 and a recommendation of: \"Likely to cause significant ecological or economic harm in Hawaii and on other Pacific Islands as determined by a high WRA score, which is based on published sources describing species biology and behaviour in Hawai'i and/or other parts of the world.\"
S. punicea is listed as a 'P1 potential weed' and prohibited from sale in Queensland Australia (Csurhes & Edwards, 1998). *S. punicea* is listed in the Auckland Regional Pest Strategy (2007-2012) in the Research Programme section; as a species requiring further research to determine any possible negative effects on biodiversity in the future (ARPS 2007-2012).
Physical : Smaller plants can easily be hand-pulled and larger ones weed wrenched where there are individual plants or sparse infestations (Hunter & Platenkamp, 2003; Sacramento Area Flood Control Agency [SAFCA], 2007).
Chemical: Herbicide use is recommended for heavier infestations with more developed seed banks (SAFCA, 2007). While many different herbicides can be used by spraying or cut and paint techniques (Erasmus *et al.*, 1996; Working for Water, 2002) the tendency of *S. punicea* to grow in riparian areas or close to waterways should require the use of herbicides approved for use near aquatic environments.
Follow Up Treatments: Follow up treatments are necessary as seedlings sprouting during seed bank flushes are almost certain to appear following physical and/or chemical control (SAFCA, 2007; Buck *et al.*, undated). The use of herbicides have been found to be effective along with a technique called \"flaming\" or \"blanching\" in effectively controlling these seedlings (SAFCA, 2007; Buck *et al.*, undated).
Biological : The biological control of *S. punicea* in South Africa is considered to be a success. Three different weevil species have been used as biocontrol agents: the flower and leaf eating apionid *Trichapion lativentre*, the seed eating curculionid *Rhyssomatus marginatus* and the stem and trunk boring curculionid *Neodiplogrammus quadrivittatus* (Moran *et al.*, 2003).
Please follow this link for detailed information on the management of *Sesbania punicea*

Pathway
Sesbania punicea is an attractive plant especially when in flower, and as such has been translocated from its native range as an ornamental species (Hoffmann & Moran, 1991a).

Principal source:

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ALIEN RANGE

[1] AUSTRALIA
[2] ITALY
[1] SOUTH AFRICA
[1] FRANCE
[1] MAURITIUS
[1] UNITED STATES

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