Acacia saligna

System: Terrestrial

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Common name
Port Jackson wattle (English), Port Jackson willow (English), orange wattle (English), golden-wreath wattle (English), blue-leaf wattle (English), Port Jackson (English, South Africa), weeping wattle (English)

Synonym
Acacia cyanophylla, Lindl.
Mimosa saligna, Labill.
Racosperma salignum, Labill.

Similar species
Acacia mearnsii, Acacia melanoxylon, Acacia cyclops, Acacia longifolia, Acacia pycnantha

Summary
Due to its many uses Acacia saligna, or the Port Jackson willow, has been globally distributed with up to 300 000 ha planted worldwide and was identified as one of three priority multipurpose species for arid and semi-arid zones by FAO's Silvae Mediterranea Network in 1996. Native to Western Australia and suited to a wide range of environmental conditions, it is a fast growing tree utilised for soil stabilisation, animal fodder, tannin production, windbreaks, ornamental use and as a source of fuel wood. In areas where it has become invasive A. saligna can have a wide range of negative effects on native biodiversity and ecosystems and is difficult to control due to its coppicing ability and the creation of large soil seed-banks.

Species Description
Acacia saligna is a bushy shrub dividing near the base into several stems, resulting in a dense bush that may be wider than high. The shrub form is usually 2 - 5 m tall but it can form a small tree 5 - 9 m high, with a short but well-defined main stem (Midgely & Turnbull, 2003). Its natural occurrence on the coastal plain of south-western Western Australia is mainly from sea-level up to 300 m and it occurs on many soil types, especially on poor and calcareous sands (Midgely & Turnbull, 2003). A. saligna coppices well and fodder biomass production is optimised by regular, annual harvesting, benefitting from fertilisation on infertile soils (Midgely & Turnbull, 2003). In common with many other acacias, A. saligna forms associations with VA mycorrhizal fungi (Midgely & Turnbull, 2003). It has an average lifespan of 30 - 40 years (Milton & Hall, 1981; in Wood & Morris, 2007).
Uses
Plantations of *Acacia saligna* in warm-temperate and semi-arid areas provide stock fodder, soil stabilisation, fuelwood and charcoal (Midgley & Turnbull, 2003). In Australia, *A. saligna* has been used as an ornamental plant, for low windbreaks and shade, and is increasingly planted in agroforestry systems for fodder production and soil conservation (Crompton, 1992; in Midgely & Turnbull, 2003). Its fast growing, coppicing ability and capacity to thrive on sands and soils of high pH in subhumid, semi-arid and arid temperature areas has led to it being planted widely around the world with an estimated 300 000 ha planted globally, being identified as one of three priority multipurpose species for arid and semi-arid zones by FAO’s Silvae Mediterranea Network (Midgely & Turnbull, 2003). In Tunisia, it has been successfully processed into particle board, while in the Mediterranean, it is used for vine stakes and small agricultural implements (Michaelides, 1997; in Midgely & Turnbull, 2003). It is also used extensively for sand dune fixation and gully erosion control; planted in Australia to rehabilitate areas mined for coal and minerals (Langkamp, 1987; in Midgely & Turnbull, 2003).

Habitat Description
*Acacia saligna* is capable of thriving on many soil types, including high pH sands and soils in subhumid, semi-arid and arid temperate areas (Midgely & Turnbull, 2003).

Reproduction
Annual seed production of *Acacia saligna* is about 10 000 seeds per 1 square metre of canopy cover (Milton & Hall, 1981; in Henderson et al 1998). While most of these fall straight onto the ground; seeds are dispersed by birds (Henderson et al 1998). A large portion of these seeds remain dormant due to a water-impermeable testa (Rolston, 1978; in Henderson et al 1998), resulting in a large seed bank build up of about 46 000 seeds per square metre of canopy cover (Holmes et al 1987). Dormancy is broken following a fire, allowing for mass regeneration of *A. saligna*; resulting in dense thickets in some parts of its introduced range such as South Africa (Henderson et al 1998).

General Impacts
In areas where it has become invasive, *Acacia saligna* is known to form dense monospecific stands, excluding native species and preventing their regeneration (Holmes & Cowling, 1997; Hadjikyriakou & Hadjisterkotis, 2002). It also alters vital ecosystem processes; changing the soil processes like decomposition and nutrient cycling through increased nitrogen levels (Witkowski, 1991a; Jovonovic et al 2009); altering the fire-regime with large soil seed-banks and more abundant biomass (Holmes, 2002); and impacting on streamflow reduction through incremental water use (Le Maitre et al 2000; in Jovonovic et al 2009). *A. saligna* is also known as an agricultural pest in some cultivated areas, taking up valuable agricultural space (Hadjikyriakou & Hadjisterkotis, 2002).
Management Info

Physical/Chemical: Physical and chemical control methods are possible but is very labour and cost intensive due to persistent seed banks and the coppicing capability of *A. saligna* (MacDonald & Wissel, 1992). These include cutting at ground level, mattocking, ringbarking and Glyphosate or Triclopyr based herbicides foliarly applied or painted onto cut stems (MacDonald & Wissel, 1992). The reduction of the seed-bank is an important component of controlling *A. saligna* (Holmes, 1990; in Cohen *et al.*, 2008). This is most often achieved with burning, with a slow intense fire more effective than a rapid one (Richardson & Kluge, 2008). Soil solarisation has also been shown to be effective in reducing *A. saligna* seed viability in moist soils and increasing germination rates in dry soils (Cohen *et al.* 2008).

Biological: Biological control has been effective in South Africa, with the gall-forming rust fungus *Uromycladium tepperianum* being effective in reducing population density, tree longevity and reproductive output wherever *A. saligna* is found (Morris, 1997; Wood & Morris, 2007). An additional biological control agent, *Melanterius compactus*, was released in 2001 to target the large seed-banks created before the release of *U. tepperianum* with preliminary monitoring showing success (Impson *et al.*, 2009).

Please follow this link for more detailed information on the management of *Acacia saligna*.

Pathway

*Acacis saligna* has been distributed on a global level due to its many uses and ability to thrive in harsh environments (Midgely & Turnbull, 2003).

Principal source:

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BIBLIOGRAPHY

71 references found for *Acacia saligna*

Management information

Delivering Alien Invasive Species Inventories for Europe (DAISIE), 2012. *Species Factsheet: Acacia saligna*


Summary: This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISSG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc.


LE MAITRE, DAVID C.; GAERTNER, MIIRIAM; MARCHANTE, ELIZABETE; ENs, EMILIE-JANE; HOLMES, PATRICIA M; PAUCHARD, ANIBAL; O FARREll, PATRICK J.; ROGERS, ANDREW M.; BLANCHARD, RYAN; BLIGNAUT, JAMES; Richardson, David M., 2011. Impacts of invasive Australian acacias: implications for management and restoration. Diversity & Distributions. 17(S, Sp. Iss. 5). SEP 2011. 1015-1029.


General information


[Accessed 23 April 2010]


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