GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Acacia mearnsii***

Acacia mearnsii 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Fabales	Fabaceae

Common name Australische akazie (German), uwatela (Zulu), Australian acacia (English), swartwattel (Afrikaans), black wattle (English), acácia-negra (Portuguese)

Synonym *Acacia mollissima*
A. decurrens , var. *mollis*

Similar species *Acacia dealbata*

Summary Acacia mearnsii is a fast growing leguminous (nitrogen fixing) tree. Native to Australia, it is often used as a commercial source of tannin or a source of fire wood for local communities. It threatens native habitats by competing with indigenous vegetation, replacing grass communities, reducing native biodiversity and increasing water loss from riparian zones.

view this species on IUCN Red List

Species Description
Unarmed, evergreen tree, 6 - 20m high. Branchlets shallowly ridged; all parts finely hairy; growth tips golden-hairy. Leaves are dark olive-green, finely hairy, bipinnate; leaflets short (1.5 - 4mm) and crowded; raised glands occur at and between the junctions of pinnae pairs. Flowers are pale yellow or cream, globular flower heads in large, fragrant sprays. Fruits are dark brown pods, finely hairy, usually markedly constricted (Henderson, 1995; PIER, 2010; de Wit, Crookes and van Wilgen, 2001).

Lifecycle Stages
Seeds may remain viable for up to 50 years (Wessa, 2002).

Uses
The list of the uses for *Acacia mearnsii* is long and varied, hence it is grown commercially in many areas of the world, including Africa, South America and Europe. The tannin compounds extracted from the bark of *Acacia mearnsii* are commonly used in the production of soft leather. A range of other products, such as resins, thinners and adhesives, can also be made from bark extracts. The timber is used for building materials, the charcoal is used for fuel and the pulp and wood chips are used to produce paper. *Acacia mearnsii* has some known medical applications, such as its use as a styptic or astringent. The planting of wattles has also been used as a soil stabiliser to decrease erosion (preferably far from river courses to minimise the water loss caused by the tree's high rate of transpiration). The agroforestry industry promotes the use of *Acacia mearnsii* (among other similar species) as a potential \"soil improver\". (Duke, 1983; Franco, 1971; Paiva, 1999; Tutin *et al*., 1992; de Wit, Crookes and van Wilgen, 2001; Young, 2002).

Habitat Description
Grows in disturbed, mesic habitats (at an altitude of between 600 - 1700m). Grows in a range of climates, including warm temperate dry climates and moist tropical climates. *Acacia mearnsii* is reported to tolerate an annual precipitation of between 6.6 – 22.8 dm (mean of 6 cases = 12.6), an annual mean temperature of 14.7 – 27.8°C (mean of 6 cases = 2.6°C), and a pH of 5.0 – 7.2 (mean of 5 cases = 0.5) (Duke, 1983). *Acacia mearnsii* does not grow well on very dry or poor soils (Franco, 1943).

Reproduction
Acacia mearnsii produces copious numbers of small seeds that are not dispersed actively. The species may resprout from basal shoots following a fire (PIER, 2010). It also generates numerous suckers that result in monotypic thickets (Wagner *et al*., 1999, in PIER, 2010).

General Impacts
The invasiveness of this species is partly due to its ability to produce large amounts of long-lived seeds (which may be triggered to germinate *en masse* following bush fires) and the development of a large crown (which shades other vegetation). Its leaves and branches may have allelopathic properties. *Acacia mearnsii* competes with, and replaces, indigenous vegetation. It may replace grass communities, reducing the carrying capacity of the land. By causing an increase in the height and biomass of vegetation *Acacia mearnsii* infestations increase rainfall interception and transpiration, which causes a decrease in streamflow. Soil under *Acacia mearnsii* becomes dessicated more quickly (than it does under grass). *Acacia mearnsii* stands also destabilise stream banks and support a lower diversity of species (Adair, 2002; Sankaran, 2002; Le Maitre *et al.* 1999; Samways *et al* 1996).
Commercial plantations and invasive stands of *A .mearnsii* in South Africa reduce surface runoff and decrease water ability, causing an estimated annual economic loss of $US 2.8 million. According to KwaZulu-Natal Wildlife (the governmental agency responsible for managing protected areas in KwaZulu-Natal Province, South Africa) the advance of \nalien plants (particularly *Chromolaena odorata*, *Lantana camara*, *Acacia dealbata*, and *Acacia mearnsii*) is the most significant past and future threat to conservation in these areas (De Wit, Crookes and Van Wilgen, 2001; Goodman, 2003)

Management Info
Preventative measures: A Risk Assessment of *Acacia mearnsii* 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 score of 15 and a recommendation of: \"Likely to cause significant ecological or economic harm in Hawai'i 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.\"
Integrated management: The Working for Water programme implemented by the South African Government is a collaborative program that aims to ameliorate the problems caused by *Acacia* species and other invasive plants. The program consists of more than 30 sub-projects in eight provinces in the country and consists of the clearing of weeds from water courses (by mechanical and chemical methods). Between 1995 and 2000 over $100 million of poverty-relief funds on the program which was labour intensive and provided job opportunities for local communities. After seven years of implementation of the project it became clear that rehabilitation of sites (following the removal of alien plant species) would sometimes be needed in order to prevent or reduce the soil erosion stimulated by the clearing of plants (Van Wilgen *et al*., 2002, Milton, Dean and Richardson, 2003). Richardson & Kluge (2008) observe that preventing the accumulation of seed banks by reducing seed production is critical to all successful management programmes and that biological control is the most effective and practical option.
Please follow this link for more details on Chemical and Biological control options that have been found promising and effective.

Pathway
A. mearnsii is a popular source of timber and tannins and is planted globally by the forestry industry. One example of a commercial company that funds research on and establishment of wattle plantations is the South African Wattle Growers Union (DuUsed as an ornamental (Paiva, 1999)

Principal source: Pacific Island Ecosystems At Risk (PIER), 2010. *Acacia mearnsii*

Compiler: IUCN SSC Invasive Species Specialist Group
Updates with support from the Overseas Territories Environmental Programme (OTEP) project XOT603, a joint project with the Cayman Islands Government - Department of Environment

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Pubblication date: 2010-10-04

ALIEN RANGE

[1] ALGERIA
[1] COOK ISLANDS
[2] INDIA
[1] ITALY
[1] MADAGASCAR
[12] PORTUGAL
[1] SAINT HELENA
[10] SOUTH AFRICA
[1] SWAZILAND
[1] TANZANIA, UNITED REPUBLIC OF
[1] UNITED STATES
[1] CHINA
[1] FRANCE
[1] ISRAEL
[1] JAPAN
[2] NEW ZEALAND
[1] REUNION
[1] SEYCHELLES
[1] SPAIN
[1] TAIWAN
[1] UGANDA
[1] ZIMBABWE

Red List assessed species 6: EN = 2; VU = 2; NT = 1; LC = 1;

Anthoxanthum borii **NT**
Chlorolestes apricans **EN**
Elattoneura frenulata **LC**
Heteromirafra ruddi **VU**
Metacnemis angusta **VU**
Metacnemis valida **EN**

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