Leucaena leucocephala

System: Terrestrial

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<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
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<td>Plantae</td>
<td>Magnoliophyta</td>
<td>Magnoliopsida</td>
<td>Fabales</td>
<td>Fabaceae</td>
</tr>
</tbody>
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Common name

faux mimosa (French), acacia palida (English, Puerto Rico), guaje (Spanish), zarcilla (English, Puerto Rico), huaxin (Spanish), leucaena (English), uaxim (Spanish), wild mimosa (English, Bermuda), tamarindo silvestre (Spanish), wild tamarind (English, Puerto Rico), grains de lin (French), lino criollo (English, Dominican Republic), jumbie bean (English), tangantangan (Chamorro, CNMI), tangan-tangan (Chamorro, Guam), ganitnityuwan tangantan (Yapese), guaslim (Campeche, Mexico), guaxin (Maya, Yucatan), liliak (Totonaco, Veracruz, Mexico), tuhgantuhngan (English, Kosrae), koa-haole (English, Hawaii’i), aroma blanca (English, Cuba), lamtoro (English, Indonesia), ipil-ipil (English, Philippines), kanthum thect (English, Cambodia), kan thin (English, Laos), kra thin (English, Thailand), bo chet (English, Vietnam), rohbohtin (English, Kosrae), subabul (English, India), kratin (English, Cambodia), schemu (English, Vietnam), false koa (English, Hawaii’i), telentund (Palauan), lopa samoa (English, American Samoa), fua pepe (Samoan), lusina (Samoan), pepe (Niuean), nito (English, Cook Islands), siale mohemohe (Tongan), vaivai (Fijian), vaivai ni vavalangi (Fijian), vaivai dina (Fijian), balori (Fijian), cassis (English, Vanuatu), te kaitetua (I Kiribati), leucaena (English), horse/wild tamarind (English), lead tree (English), faux-acacia (French)

Synonym

*Mimosa leucocephala*, Lamark 1783
*Acacia leucocephala*, (Lamark) Link 1822
*Leucaena glabrata*, Rose 1897
*Leucaena glauca*, (L.) Benth. 1842

Similar species

The fast-growing, nitrogen-fixing tree/shrub Leucaena leucocephala, is cultivated as a fodder plant, for green manure, as a windbreak, for reforestation, as a biofuel crop etc. Leucaena has been widely introduced due to its beneficial qualities; it has become an aggressive invader in disturbed areas in many tropical and sub-tropical locations and is listed as one of the ‘100 of the World’s Worst Invasive Alien Species’. This thornless tree can form dense monospecific thickets and is difficult to eradicate once established. It renders extensive areas unusable and inaccessible and threatens native plants.

Summary

view this species on IUCN Red List
Species Description
The genus *Leucaena* is distinguished from all other Mimosoid legumes by its hairy anthers which are easily visible with a hand lens. *Leucaena leucocephala* is distinguished from other species of *Leucaena* by its intermediate leaflets and large pods in clusters of 5-20 per flower head. It forms a small to medium-sized thornless tree 3-15 (-20)m tall and 5-50cm bole diameter. The leaves are bipinnate with an elliptic convex extrafloral nectary on the petiole, 4-9 pairs of pinnae and 13-21 pairs of leaflets per pinna. The leaflets are 9-16mm long and 2-4.5mm wide, nearly sessile and strongly asymmetric linear oblong and acute at the apex. The flowers occur in 12-21mm diameter heads, are cream-white, with ten free stamens per flower and hairy anthers. The pods occur in crowded clusters of 5-20 per flower head and are 11-19cm long and 15-21mm wide pendulous, flattened and papery, and passively dehiscent with 8-18 seeds per pod. Three subspecies are recognised, two of which - subsp. *leucocephala* and subsp. *glabrata* have been introduced pantropically. These two subspecies correspond to shrubby = subsp. *leucocephala* variants, sometimes referred to as the Common or Hawai’ian type, and to the more arborescent = subsp. *glabrata* variants, sometimes referred to as the Giant or Salvador type.

Lifecycle Stages
Trees are generally short-lived (20-40 years). The hard seed coat means that germination occurs over a prolonged period after seed dispersal and that seed can remain viable for long periods (at least 20 years) in the soil.

Habitat Description
*Leucaena leucocephala* is a weed of open (often coastal or riverine) habitats, semi-natural, disturbed, degraded habitats and other ruderal sites. It was assigned to the category of ‘a serious or widespread weed invading semi-natural or natural habitats which are of some conservation interest’ by Cronk and Fuller (1995) and as a Category II weed (a species which has a local distribution but either expanding populations, or known potential to invade and disrupt native vegetation elsewhere) in Florida by Gordon and Thomas (1997). It is not known to invade undisturbed closed forest habitats. It tolerates a wide range of rainfall from 500 - 3500mm and withstands strongly seasonal (6-8 month dry season) climates. However, it is not frost hardy and grows poorly, setting less seed in cooler tropical highland sites. The species also grows poorly on the acid soils with high Aluminium saturation that prevail in many humid tropical areas. In broad terms, it thus adapts well to a wide range of tropical and subtropical environments, especially seasonally dry tropical areas.

Reproduction
Self-fertile (promoting seed production even on isolated individuals), some outcrossing, pollinated by a wide range of generalist insects including large and small bees. Resprouts after cutting. Flowering and seeding continually throughout the year as long as moisture permits combined with self-fertility promotes abundant pod and seed set.

General Impacts
*Leucaena leucocephala* is spreading naturally and has been reported as a weed in more then 20 countries across all continents except Europe and Antarctica. It is a weed of open, often coastal or riverine habitats, semi-natural, and other disturbed or ruderal sites and occasionally in agricultural land. It can form dense monospecific thickets which are reported to be replacing native forest in some areas and threatening endemic species of conservation concern in some areas. Dense thickets, even if not of immediate conservation concern can render extensive areas of disturbed ground unusable and inaccessible.
Management Info

Preventative measures: In Queensland, Australia, management practices aimed at minimising the risk of spread and invasion are being promoted under a code of good practice for livestock farmers who cultivate Leucaena. The policy endorsed in November 2004 "addresses the need for land use management recommendations over the location, design and management of plantings of the shrub legume leucaena to reduce the weed risk. The policy has been developed by Government agencies with responsibilities for natural resource management following consultation with industry, local governments and community groups" (NRM, 2005).

A Risk Assessment of Leucaena leucocephala for Hawai‘i 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."

A Risk assessment of Leucaena leucocephala for Australia was prepared by Pacific Island Ecosystems at Risk (PIER) using the Australian risk assessment system (Pheloung, 1995). The result is a score of 11 and a recommendation of: reject the plant for import (Australia) or species likely to be of high risk (Pacific).

Biological: A bruchid beetle seed predator, Acanthoscelides macropthalmus has been deliberately introduced and released in South Africa as a biocontrol agent and the same insect has been accidentally introduced to Australia. The accidental spread of the psyllid insect defoliator Heteropsylla cubana in the mid 1980s can cause cyclical defoliation, but does not kill trees and the psyllid appears to have been brought under control by a number of generalist local (and in some cases introduced) psyllid predators and parasites.

Integrated management: Once established, Leucaena is difficult to eradicate. It resprouts vigorously after cutting. Cut stumps need to be treated with diesel or other chemicals. Furthermore, the soil seed bank can remain viable for at least 10-20 years after seed dispersal.

Pathway

Widely promoted by national and international agricultural and forestry development agencies for agroforestry and agricultural use. Introduced by acclimatisation societies.

Principal source: Pacific Islands Ecosystems at Risk (PIER), 2011, Leucaena leucocephala (Lam.) De wit

Compiler: IUCN/SSC Invasive Species Specialist Group (ISSG)

Review: Dr. Colin Hughes, Department of Plant Sciences, University of Oxford, OXFORD, UK.

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ALIEN RANGE

[1] AMERICAN SAMOA
[1] ANGUILLA
[2] ARGENTINA
[3] AUSTRALIA
[1] BANGLADESH
[1] BENIN
[1] BES ISLANDS (BONAIRE, SINT EUSTATIUS AND SABA)
[1] BOTSWANA
[1] BRITISH INDIAN OCEAN TERRITORY
[1] BURKINA FASO
[1] CAMBODIA

[1] ANGOLA
[1] ANTIGUA AND BARBUDA
[1] ARUBA
[2] BAHAMAS
[1] BARBADOS
[1] BERMUDA
[1] BOLIVIA
[1] BRAZIL
[1] BRUNEI DARUSSALAM
[1] BURUNDI
[1] CAMEROON
FULL ACCOUNT FOR: *Leucaena leucocephala*

Red List assessed species 50: EX = 1; CR = 3; EN = 19; VU = 22; NT = 4; LC = 1;

Acropogon bullatus  NT
Albizia guillainii  VU
Atractocarpus platyxylon  VU
Canavalia veillonii  CR
Chamaesyce kuwaleana  EN
Diospyros cherrieri  VU
Diospyros minimifolia  NT
Emmenosperma pancherianum  VU
Eugenia sp. nov. 'calcarea'  VU
Eugenia sp. nov. 'lepredourii'  CR
Guettardella sp. nov. 'duri-sylvatica'  EN
Ixora margaretae  VU
Justicia pinensis  EN
Orzya neocaledonica  EN
Phyllanthus deplanchei  VU
Pichonia balansana  LC
Pisonia artensis  VU
Pittosporum gatopense  VU
Polyscias crenata  VU
Pseuderaethemum incisum  VU
Ptlinopous roseicapilla  EN
Solanum hugonis  EN
Syzygium pendulinum  EN
Syzygium veillonii  EN
Turina inopinata  CR
Acropogon calcicola  EN
Anicstrachne numaeensis  EN
Austromyrtus lotoideus  VU
Celtis balansae  VU
Cupaniopsis gilosa  VU
Diospyros impolita  VU
Diospyros pustulata  VU
Eugenia ericioides  NT
Eugenia sp. nov. 'dagostini'  EN
Eugenia sp. nov. 'metzdorfi'  EN
Homalium leratiorum  VU
Jasminum noumeense  VU
Oldenlandia adscensionsis  EX
Oxera balansae  EN
Phyllanthus unifoliatous  EN
Piliocalyx eugenioides  EN
Pittosporum brevispinum  VU
Podonephelium subaequilaterum  VU
Polyscias nothisii  EN
Psychotria deverdiana  VU
Randia pancheriana  VU
Solanum pantheri  NT
Syzygium poyanum  VU
Terminalia cherrieri  EN
Xylosma grossecrenatum  EN

BIBLIOGRAPHY
25 references found for Leucaena leucocephala

Management information


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.
Natural Resources and Mines (NRM) Environmental Protection Agency Department of Primary Industries Queensland Government, November 2004. Policy to Reduce the Weed Threat of Leucaena.
Pacific Island Ecosystems at Risk (PIER), 2011. Leucaena leucocephala (Lam.) de Wit. Fabaceae
Summary: Eradication case study in Turning the tide: the eradication of invasive species.