GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Leucaena leucocephala***

Leucaena leucocephala 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Fabales	Fabaceae

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), graines 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), tuhngantuhngan (English, Kosrae), koa-haole (English, Hawai'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, Hawai'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

Summary

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.

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 thoughout 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 unusuable 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 \r*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). \r\n
Biological: A bruchid beetle seed predator, *Acanthoscelides macrophthalmus* 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 agricultrual 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\r\n

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

[1] CAPE VERDE
[1] CENTRAL AFRICAN REPUBLIC
[1] CHAD
[1] CONGO
[1] COOK ISLANDS
[1] COTE D'IVOIRE
[1] CURACAO
[1] DOMINICA
[5] ECUADOR
[1] EL SALVADOR
[1] ERITREA
[1] FIJI
[1] FRENCH POLYNESIA
[1] GAMBIA
[1] GRENADA
[1] GUAM
[1] GUINEA
[1] GUYANA
[1] HONDURAS
[1] INDIA
[1] JAMAICA
[1] KIRIBATI
[1] LIBERIA
[1] MALAWI
[1] MALI
[1] MAURITIUS
[1] MONTSERRAT
[1] MOZAMBIQUE
[1] NEPAL
[1] NIGER
[1] NORTHERN MARIANA ISLANDS
[1] PANAMA
[1] PARAGUAY
[1] PHILIPPINES
[1] PUERTO RICO
[1] RWANDA
[1] SAINT KITTS AND NEVIS
[1] SAINT VINCENT AND THE GRENADINES
[1] SENEGAL
[1] SIERRA LEONE
[1] SOLOMON ISLANDS
[1] SOUTH AFRICA
[1] SUDAN
[1] SWAZILAND
[1] THAILAND
[1] TOGO
[1] TRINIDAD AND TOBAGO
[1] TURKS AND CAICOS ISLANDS
[4] UNITED STATES
[1] VANUATU
[1] VIET NAM
[1] VIRGIN ISLANDS, U.S.
[1] ZIMBABWE
[3] CAYMAN ISLANDS
[1] CENTRAL AMERICA
[1] COLOMBIA
[1] CONGO, THE DEMOCRATIC REPUBLIC OF THE
[1] COSTA RICA
[1] CUBA
[1] DJIBOUTI
[1] DOMINICAN REPUBLIC
[1] EGYPT
[1] EQUATORIAL GUINEA
[1] ETHIOPIA
[1] FRENCH GUIANA
[1] GABON
[1] GHANA
[1] GUADELOUPE
[1] GUATEMALA
[1] GUINEA-BISSAU
[1] HAITI
[1] HONG KONG
[5] INDONESIA
[1] KENYA
[1] LAO PEOPLE'S DEMOCRATIC REPUBLIC
[1] MADAGASCAR
[1] MALAYSIA
[1] MARTINIQUE
[1] MICRONESIA, FEDERATED STATES OF
[1] MOROCCO
[1] MYANMAR
[1] NEW CALEDONIA
[1] NIGERIA
[1] PAKISTAN
[1] PAPUA NEW GUINEA
[1] PERU
[1] PITCAIRN
[1] REUNION
[3] SAINT HELENA
[1] SAINT LUCIA
[1] SAMOA
[1] SEYCHELLES
[1] SINGAPORE
[1] SOMALIA
[1] SRI LANKA
[1] SURINAME
[1] TANZANIA, UNITED REPUBLIC OF
[1] TIMOR-LESTE
[1] TONGA
[1] TUNISIA
[1] UGANDA
[1] URUGUAY
[1] VENEZUELA
[1] VIRGIN ISLANDS, BRITISH
[1] ZAMBIA

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. 'durisylvatica' **EN**
Ixora margaretae **VU**
Justicia pinensis **EN**
Oryza neocaledonica **EN**
Phyllanthus deplanchei **VU**
Pichonia balansana **LC**
Pisonia artensis **VU**
Pittosporum gatopense **VU**
Polyscias crenata **VU**
Pseuderanthemum incisum **VU**
Ptilinopus roseicapilla **EN**
Solanum hugonis **EN**
Syzygium pendulinum **EN**
Syzygium veillonii **EN**
Turbina inopinata **CR**

Acropogon calcicola **EN**
Ancistrachne numaeensis **EN**
Austromyrtus lotoides **VU**
Celtis balansae **VU**
Cupaniopsis globosa **VU**
Diospyros impolita **VU**
Diospyros pustulata **VU**
Eugenia ericoides **NT**
Eugenia sp. nov. 'dagostini' **EN**
Eugenia sp. nov. 'metzdorfii' **EN**
Homalium leratiorum **VU**
Jasminum noumeense **VU**
Oldenlandia adscensionis **EX**
Oxera balansae **EN**
Phyllanthus unifoliatus **EN**
Piliocalyx eugenioides **EN**
Pittosporum brevispinum **EN**
Podonephelium subaequilaterum **VU**
Polyscias nothisii **EN**
Psychotria deverdiana **VU**
Randia pancheriana **VU**
Solanum pancheri **NT**
Syzygium poyanum **VU**
Terminalia cherrieri **EN**
Xylosma grossecrenatum **EN**

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Managment information

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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.

Hughes, C. E. 1998. Leucaena. A Genetic Resources Handbook. Tropical Forestry Papers 37. Oxford Forestry Institute, Oxford. 274pp.

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IUCN/SSC Invasive Species Specialist Group (ISSG)., 2010. A Compilation of Information Sources for Conservation Managers.
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.

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Summary: Ecology, synonyms, common names, distributions (Pacific as well as global), management and impact information. Available from: http://www.hear.org/pier/species/leucaena_leucocephala.htm [Accessed 5 March 2011].

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Summary: Eradication case study in Turning the tide: the eradication of invasive species.

Renter�a, Jorge Luis; Rachel Atkinson, Ana Mireya Guerrero, Johanna Mader 2006. Manual de Identification y Manejo de Malezas en las Islas Gal�pagos. Segunda edici�n, Fundaci�n Charles Darwin, Santa Cruz, Gal�pagos, Ecuador.
Summary: An illustrated guide providing practical information for the effective control of the worst invasive plant species in Galapagos. Designed for farmers and other land managers, it describes manual and chemical control methods. It also includes 8 species that are potential problems for Galapagos. Language: Spanish
Una gu�a con ilustraciones que provee informaci�n para el control efectivo de las peores plantas invasoras en Gal�pagos. Esta dise�ada para los agricultores y personas involucradas en conservaci�n. De una forma clara y simple se describe los m�todos de control manuales y qu�micos; tambi�n incluye 8 especies que potencialmente podr�an ser un problema para Gal�pagos. Lenguaje: Espa�ol.
Renter�a, Jorge Luis; Rachel Atkinson & Chris Buddenhagen., 2007. Estrategias para la erradicaci�n de 21 especies de plantas. Fundaci�n Charles Darwin, Departamento de Bot�nica. Programa de Especies Invasoras en Gal�pagos potencialmente invasoras en Gal�pagos.
Summary: This document comprises costed eradication plans for 21 invasive species in Galapagos. The plans were developed as part of a GEF funded project ECU/00/G31 �Control of Invasive species in the Galapagos Archipelago�. The management plans report projects at different stages of development and for species that have invaded to different extents. Three of the projects have already been finished successfully, 5 have yet to be started, and for the rest the projects have been running for between 1 and 6 years. The cost and time needed for eradication varies considerably by species and demonstrates the importance of species eradication as soon as possible after detection
Resumen
El presente documento proporciona planes de manejo y el costo para la erradicaci�n de 21 especies que se encuentran presentes en Gal�pagos. Los planes fueron desarrollados como parte del proyecto ECU/00/G31 Control de las especies invasoras en el Archipi�lago de las Gal�pagos , suscrito por el Gobierno Ecuatoriano, representado por el Ministerio del Ambiente, con el Fondo para el Medio Ambiente Mundial (GEF). El Proyecto es implementado por el Programa de las Naciones Unidas para el Desarrollo (UNDP), tiene como instituciones ejecutoras al Servicio Parque Nacional Gal�pagos (SPNG), Instituto Nacional Gal�pagos (INGALA), Servicio Ecuatoriano de Sanidad Agropecuaria-Gal�pagos (SESA-Gal�pagos), y Fundaci�n Charles Darwin (FCD). Los planes de manejo representan proyectos en diferentes estados de desarrollo y dimensi�n. Tres de estos proyectos ya han sido desarrollados completamente, trece est�n en proceso y cinco a�n no se han iniciado. El costo y tiempo para la erradicaci�n varia considerablemente seg�n la especie y se muestra la importancia econ�mica que implica desarrollar proyectos de erradicaci�n tan pronto las especies son detectadas.
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Summary: Eradication case study in Turning the tide: the eradication of invasive species.
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Summary: A database of Swaziland s alien plant species.
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Summary: Compilor of original GISD profile of *Chromoleana odorata*.

General information

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ITIS (Integrated Taxonomic Information System), 2005. Online Database *Leucaena leucocephala*
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.cbif.gc.ca/pls/itisca/taxastep?king=every&p_action=containing&taxa=Leucaena+leucocephala&p_format=&p_ifx=plglt&p_lang=
[Accessed March 2005]