GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Mimosa pigra***

Mimosa pigra 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Fabales	Fabaceae

Common name trinh nu nhon (English, North Vietnam), xao ho (English, South Vietnam), putri malu (Indonesian Bahasa), maiyarap ton (Thai), chi yop (Thai), semalu gajah (Malay), mimose (German), giant trembling plant (English), catclaw (English, Puerto Rico), mimosa (English), giant sensitive plant (English), giant sensitive tree (English), bashful plant (English), catclaw mimosa (English), columbi-da-lagoa (Portuguese), juquiri (Portuguese), juquiri grand (Portuguese), malicia-de-boi (Portuguese), eomrmidera (Spanish), espino (Spanish), sensitiva (Spanish), una de gato (Spanish), mai yah raap yak (Thai), kembang gajah (Malay)

Synonym *Mimosa pellita*

Similar species

Summary Mimosa pigra is invasive, especially in parts of South East Asia and Australia. It reproduces via buoyant seed pods that can be spread long distances in flood waters. Mimosa pigra has the potential to spread through natural grassland floodplain ecosystems and pastures, converting them into unproductive scrubland which are only able to sustain lower levels of biodiversity. In Thailand Mimosa pigra blocks irrigation systems that supply rice fields, reducing crop yield and harming farming livelihoods. In Vietnam it has invaded unique ecosystems in protected areas, threatening the biodiversity of seasonally inundated grasslands.

view this species on IUCN Red List

Species Description

When mature, *Mimosa pigra* is an erect, much branched prickly shrub reaching a height of 3m to 6m. Stems are greenish at first but become woody, are up to 3m long, and have randomly scattered, slightly recurved prickles 0.5cm tocm long. Leaves are bright green, 20cm to 25cm long and bipinnate, consisting of about 15 pairs of opposite primary segments 5cm long with sessile, narrowly lanceolate leaflets that fold together when touched or injured and at night. The flowers are pink or mauve, small, regular and grouped into globular heads 1cm to 2cm in diameter. The heads are borne on stalks 2cm to 3cm long, with two in each leaf axil, while the corolla has four lobes with eight pink stamens. The fruit is a thick hairy, 20-25 seeded, flattened pod borne in groups in the leaf axils, each 6.5cm to 7.5cm long and 0.7cm to 1cm wide. The fruit turns brown when mature, breaking into one-seeded segments. The seeds are brown or olive green, oblong, flattened, 4mm to 6mm long, and 2mm wide (Walden *et al*. 1999).

Lifecycle Stages
Plants mature quickly and can set seed in their first year of growth (Walden *et al*. 1999). Flowering may begin 6 to 8 months following germination. Flowers are bee-pollinated and possibly wind-pollinated. Plants are thought to be self-compatible. Flowers develop in about 7 to 9 days, and seed pods in about 25 days. *M. pigra* fruits and flowers all year round in the Mekong Delta, but its main fruiting season occurs during the dry season (December to May) (Triet *et al* Undated).\r\n
Seeds are extremely hardy and can remain dormant for more than 15 years depending on the environment. For example, half of a seed population was no longer viable after 99 weeks at a depth of 10cm in a light clay soil, while a similar loss in viability was observed after only 9 weeks in heavier cracking clay (Lonsdale *et al*. 1988, in Walden *et al*. 1999). In sandy soils the lifespan of seeds may be much longer. Dormancy of seeds in the soil is broken by expansion and contraction of the hard seed-coat by temperature changes ranging from about 25–70°C. Seeds buried deeper than 10cm generally do not successfully germinate unless brought to the surface (Walden *et al*. 1999).

Habitat Description
Mimosa favours a wet-dry tropical climate and grows in open, moist sites such as floodplains, coastal plains and river banks. For example, in the Mekong Delta, Vietnam, where it is a serious weed annual rainfall levels may reach up to 2200cm. It may not be a major problem in regions with an annual rainfall of less than 75mm or greater than 2250mm. In both Australia and Vietnam it prefers to invade seasonally inundated grassland (Walden *et al*. 1999; Triet *et al* Undated). \r\n
It is more likely to colonise and eventually cause problems in disturbed areas. This is due to the ability of Mimosa seeds to establish rapidly on bare soils, which lack competitive pressures imposed by other seedlings (Lonsdale and Braithwaite 1988, in Walden *et al*. 1999). It is common along the edges of reservoirs, canals, river banks and roadside ditches, and in agricultural lands and overgrazed floodplains (Walden *et al*. 1999). In Vietnam it is typically found along the edge of both natural and manmade water bodies and along roadsides (Triet *et al* Undated). In Australia it is known to spread very rapidly within overgrazed rangelands, and within Costa Rica (part of its native range) it is common in overgrazed areas (Walden *et al*. 1999; Boucher *et al*. 1983, in Walden *et al*. 1999). \r\n
Mimosa does not appear to grow preferentially in any soil type, but is found most commonly in soils ranging from black cracking clays to sandy clays to coarse siliceous river sand. Seed production and plant life expectancy are greater on black cracking clays than on the lighter clays and silty loams (Lonsdale 1992).

Reproduction
Seeds are produced in individual segments of seed-pods that ‘burst’ apart when mature (Walden *et al*. 1999). Under optimal conditions annual seed production may reach up to 220,000 per plant.
A study carried out within the Mekong Delta found that the average number of seeds in the topsoil was 100 seeds per metre squared (Triet *et al* Undated). In contrast, an average of 12,000 seeds per metre squared was reported for a mimosa-infested area in northern Australia (Lonsdale 1992, in Triet *et al* Undated).

General Impacts
River floodplains and swamp forests in northern Australia are threatened by dense thickets of *Mimosa pigra*. The weed supports fewer numbers of birds and lizards, less herbaceous plants and fewer tree seedlings. It prevents traditional food gathering by Aborigines on otherwise resource rich wetlands.\r\n
M. pigra has the potential to harm a wide number and variety of different types of primary production. If large infestations occur over farmland, mimosa may threaten the health of pastoral industries by reducing the area of grazing land and the carrying capacity of the land. Furthermore, if livestock are reliant on natural water sources for drinking, their access to water may be blocked. As a result, meat production and income may be reduced (Praneetvatakul 2001). \r\n
M. pigra may reduce water flow and increase silt levels, as it commonly colonises water course edges. This may threaten the sustainability of reservoirs and canals and any livelihoods reliant on them. For example, the weed negatively impacts rice cultivation in Thailand by blocking irrigation inlets (as well as encouraging increases in the numbers of rats and crabs, which damage crops) (Praneetvatakul 2001). \r\n
M. pigra may interference with the cultivation of other economically-important plants. For example, *M. pigra* is able to compete with the young palm trees in immature oil palm plantations. This may cause a decrease in the production of palm oil (Praneetvatakul 2001).\r\n
Common along roadsides, mimosa may also increase the costs of maintaining power poles and cables used for electricity transmission. It may also decrease driver visibility, increasing the potential for traffic accidents (Praneetvatakul 2001).

Management Info
Preventative measures: Preventative weed control is the most cost efficient form of weed management. Comprehensive surveys should ensure isolated infestations are identified and targeted before they expand to uncontrollable levels. Educating the community is also an important tool. Restricting the movement of vehicles, stock, stock feed, soil and sand from infested areas is important to prevent the spread of mimosa seeds (Walden *et al*. 1999).
A Risk Assessment of *Mimosa pigra* 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 25 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 *Mimosa pigra* 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 23 and a recommendation of: reject the plant for import (Australia) or species likely to be a pest (Pacific).
\r\nClick here for Information about biological, physical and chemical control of *Mimosa pigra*.

Pathway
Mimosa was probably introduced to the Northern Territory (Australia) via the Darwin Botanic Gardens. This may have been due to accidental contamination of seed samples. Alternatively it may have been introduced intentionally due to its unusual sensitive leaves (Miller and Lonsdale 1987, in Walden *et al*. 1999).Mimosa has been introduced and planted to reduce erosion (Walden *et al*. 1999).Mimosa has been introduced to new regions as an ornamental (Walden *et al*. 1999). .The seeds may adhere to vehicles or other machinery (Lonsdale *et al*. 1985, in Walden *et al*. 1999).

Principal source: Pacific Islands Ecosystems at Risk, (PIER, 2002)

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ALIEN RANGE

[3] AUSTRALIA
[1] DOMINICAN REPUBLIC
[1] GUINEA
[1] KENYA
[1] PAPUA NEW GUINEA
[1] SOUTH AFRICA
[1] SRI LANKA
[1] TANZANIA, UNITED REPUBLIC OF
[1] UGANDA
[4] VIET NAM
[1] CAMBODIA
[1] GHANA
[2] INDONESIA
[1] MALAYSIA
[1] SAINT LUCIA
[1] SOUTH EAST ASIA
[1] SWAZILAND
[1] THAILAND
[1] UNITED STATES

Red List assessed species 2: CR = 1; LC = 1;

Mesophoyx intermedia **LC**

Ornithoptera alexandrae **CR**

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