# GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Terminalia catappa***

***Terminalia catappa*** **System:** Terrestrial

| Kingdom | Phylum | Class | Order | Family |
|---|---|---|---|---|
| Plantae | Magnoliophyta | Magnoliopsida | Myrtales | Combretaceae |

**Common name**

almendro de la india (Spanish), kamani-haole (English, Hawaii), Indischer Mandelbaum (German), false kamani (English), Katappenbaum (German), telie (English, Tonga/Tokelau/Tuvalu), amendoeira (English, Brazil), amandier des tropiques (English, Gabon), talise (English, Papua New Guinea), bastard almond (English), barbados almond (English), demarara almond (English), fijian almond (English), country almond (English), bengal almond (English), amandier de Cayenne (English, French Guiana), almendrillo (English, Spanish), alconorque (English, Costa Rica), malay almond (English), tavola nut (English), singapore almond (English), story tree (English), amandier des indies (English, Haiti), beach almond (English), amandelboom (English, Surinam), almendro (English, Spanish), almendro del pais (English, El Salvador), almendron (English, Spanish), badam (English, Indian), alumpit (English, Philippines), tavola (English, Fiji), tipapop (English, Ponape, Caroline Islands), taraire (English, Cook Islands), kamani ?ula (English, Hawaii), alite (English, Solomon Islands), kauariki (English, Cook Islands), zanmande (English, Haiti), koua'i'i (English, Marquesas), ma'i'i (English, Marquesas), white bombway (English, Andaman Islands), tivi (English, Fiji), tipop (English, Ponape, Caroline Islands), kaukauariki (English, Cook Islands), wilde amandel (English, Netherlands Antilles), guarda-sol (English, Brazil), badamier (English, Southeast Asia and West Africa), castania (English, Peru), castafiola (English, Brazil), parasol (English, Brazil), talie (English, Samoa), ketapang (English, Malaysia), castanhola (Portuguese), sea-almond (English), talisai (English, Philippines), west indian almond (English), kotamba (English, Columbia), natapoa (English, Vanuatu), badamier (French), chapeu-de-sol (Portuguese, Brazil), amendoeira (Portuguese, Brazil), saori (English, Solomon Islands), badam (English, India), tropical almond (English), malabar-almond (English), almendra (English), india almond (English), amendoeira-da-india (Portuguese), koa'i'i (English, Marquesas), ta'ie (English, Marquesas)

**Synonym**

*Badamia comersoni Gaertn.*
*Buceras catappa Hitchc.*
*Juglans catappa Lour.*
*Phytolacca javanica Osbeck*
*Terminalia badamia Tul.*
*Terminalia dichotoma Miq.*
*Terminalia latifolia Blanco*
*Terminalia mauritana Blanco*
*Terminalia moluccana Lam.*
*Terminalia ovatifolia Nor.*

**Similar species**

**Summary**

*Terminalia catappa* is a native plant of Asia that has escaped from cultivation. Due to its ability to cope with sandy, well draining soil, and salt spray it is often found on coastal regions. It is considered invasive in Florida, United States, and several Carribean Islands, including Montserrat, Puerto Rico and the Cayman Islands. Its seeds are highly bouyant which allows it disperse vast distances however they are highly edible so are eaten by bats, crabs and humans. However despite its potential as being an invasive species it is being considered for multiple applications. Due to its extensive and deep-rooting structure it is considered a possible species to use as a dune retention species against proposed climate change and sea-level rise, and in Brazil it is also being considered a potential cultivar to use in bio-fuel creation.

view this species on IUCN Red List

**Species Description**
*Terminalia catappa* is tolerant of strong winds, salt spray, and moderately high salinity in the root zone and grows principally in freely drained, well aerated, sandy soils. It is also easily propagated from seed, fast growing and flourishes with minimal maintenance in suitable environments. Its fruits that are produced from about three years of age, feature an ellipsoidal format and a coloration that ranges between yellow and purple when ripe, and contain a very hard kernel with an edible almond. The tree can reach 15 or 25 metres in height, with a trunk 1-1.5m in diameter, which is often buttressed at the base. Whorls of nearly horizontal, slightly ascending braches are spaced 1-2m apart in tiers up the trunk. Short-petioled, alternate leaves, spirally clustered at the branch tips, are obovate, 15-36cm long, 8-24cm wide, dark-green above, paler beneath, leathery and glossy. They turn bright scarlet, dark-red, dark purplish-red, or yellow in mid-winter in Florida and, in a few days, especially after a sudden rain, are shed all at once and are quickly replaced with silky, purplish new foliage. Flowers are greenish-white, very small, with no petals but 10-12 conspicuous stamens, and are arranged in several slender spikes 15-25cm long in the leaf axils. Generally the flowers are male and borne towards the apex, while a few hermaphrodite flowers appear below. Some spikes have only male flowers. The fruit is 4-7cm long, 2.5-3.8cm wide, ellipsoid, more pointed at the apex than at the base, slightly flattened, with a prominent keel around both sides and the tip, contributing to its ability to float long distances in the sea. The skin is smooth, waxy, and thin; ideally, it turns from green to yellow with a rich red blush, though some remain completely green or show very little reddish tint. Beneath is a layer of juicy, whitish to pink or reddish, slightly sweet, subacid or distinctly acis flesh, 3-6mm thick and adherent to a fibrous, corky, buoyant “nut”, the surface of which is cream coloured to bright pink. Within the thick husk is the hard-shelled stone containing the spindle shaped seed, 3-4cm long and 3-5mm thick, with its very thin, brown testa covering the white “kernel”. The “kernel” is more tender than an almond and of very pleasant, somewhat filbert-like flavor (Morton, 1985). There is a vast amount of genetic variability between cultivars of the different Pacific Islands it inhabits, due to traditional methods of trait selection. See Comprehensive species description for a thoroughly detailed, comprehensive description on *T. catappa*

**Uses**
*Terminalia catappa* has been considered as a sand-dune stabilizer on the island of Puerto Rico due to its deep-rooting in reaction to potential climate change (Cambers, 2009). It is also widely planted for shade, ornamental purposes, and edible nuts. Studies in Brazil have also shown its possible use in the production of biodiesels (dos Santos *et al*, 2008). It has also been used as a foodsource for silkworms, and as a medicine in folklore (USDA ARS, 2010.)

**Habitat Description**
*Terminalia catappa* is present in Puerto Rico on the sandy coastal plains and foothills. It requires 1300-2000 mm of rainfall p/a (Francis & Logier, 1991). Thomson & Evans (2006) mention that the species is associated with coastal vegetation, especially strandline communities and beach forests, including rocky shores and mangrove swamps. It is also adapted to a wide range of lighter textured soil types and is found in subtropical and tropical maritime climates with annual rainfalls of generally 1000-3500mm and elevations below 300-400m.

**General Impacts**
*Terminalia catappa* naturalizes readily in suitable littoral habitats, and may be regarded as a potential weed threat to native plant communities (FLEPPC, 2009).

**Management Info**
Preventative measures: A Risk Assessment of *Terminalia catappa* 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 4 and a recommendation of: \"the plant requires further evaluation.\"
In Florida *T. catappa* is listed by the Florida Exotic Pest Plants Council as a 'Category II environmental weed'
Biological: Bio-control agents could potentially be used in management of *Terminalia catappa*. Beetles, grasshoppers, leaf rollers and leaf miners have been observed to defoliate seedlings in India and Malaya. In Puerto Rico, a species of thrips defoliates the tree in winter. The tree is also a minor host of the Caribbean fruit fly (*Anastrepha suspense*) in Florida and a major host of the Mediterranean fruit fly (*Ceratitis capitata*) in Costa Rica. Further investigation would be needed to establish the effectiveness of such vectors, as well as their possibility of becoming invasive species themselves (Morton, 1985).

**Principal source:**

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

**Review:**

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**ALIEN RANGE**

**[1]** ANGUILLA
**[1]** BERMUDA
**[1]** BRITISH INDIAN OCEAN TERRITORY
**[1]** DOMINICAN REPUBLIC
**[1]** JAMAICA
**[1]** PITCAIRN
**[1]** SAINT HELENA
**[1]** VIRGIN ISLANDS, U.S.
**[1]** ANTIGUA AND BARBUDA
**[1]** BRAZIL
**[2]** CAYMAN ISLANDS
**[1]** INDONESIA
**[1]** MONTSERRAT
**[1]** PUERTO RICO
**[2]** UNITED STATES

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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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