Nypa fruticans **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Asterales	Asteraceae

Common name nipa palm (English), mangrove palm (English), nipa (English), nypa palm (English), nipah palm (English), golpata (English, Bangaladesh, India)

Synonym

Similar species

Summary Nypa fruticans (nypa palm) inhabits estuarine habitats from Sri Lanka to the Ganges delta to the west Pacific. It grows up to 10 m tall and produces large buoyant propagules that are dispersed with ocean currents. It was intentionally introduced to Nigeria, and has since spread to Cameroon. In the Niger Delta it invades deforested and exposed mudflats and forms dense monospecific stands which outcompete native mangrove species. The lack of stilt roots, absence of leaf litter and dense structure reduce estuarine habitat and may negatively affect native biodiversity.

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Species Description
The genus *Nypa* is monotypic with *N. fruticans* being its only species. It is one of the most ancient angiosperms and probably the oldest species of palm (Päiväke 1996 in Teo *et al*. 2010). It can grow up to 10 m tall, and differs from most palms in that it lacks an upright stem. Instead it has a thick, prostrate, rhizomatous stem that branches dichotomously underground. New plants grow vegetatively from each branch, often creating dense monospecific stands. \r\n
The terminal shoot supports a cluster of erect, pinnate leaves, of which the alternating leaflets are lanceolate and numerous (30-40 per leaf). It is monoecious and the flowers are dimorphic. The female inflorescence is globular while the male inflorescence is catkin-like. Flowers develop into fibrous chestnut-brown fruit that form large drooping spherical infructescences (Teo *et al*. 2010).

Lifecycle Stages
Pollination is carried out by a variety of insects and wind, although drosophilid flies are probably particularly important. Fertilised flowers develop into fibrous, chestnut-brown fruit and form a large spherical infructescence upon maturation. The buoyant fruits are water dispersed (Teo *et al*., 2010).

Uses
In Bangladesh and India *Nypa fruticans* commonly known as 'golpata' is used mainly for roof thatching, food, fuel, fence-making, medicine, cigarette wrapping, molasses, wine, fishing etc. The kernels of immature fruits are used as food. The juice is used for making molasses, locally called Gur, and alcohol. Newly developed shoots are reported to be used as a vermicide. Ash from the palm is used as an analgesic against tooth pain and headache, and for treating herpes. Dry leaves, petiole, stem wood, fruit residues etc. are used as fuel. In rhizomes of the palm are extensively used in fishing, facilitating the fishing net to float over the water surface. Farmers also report that nypa in the river or sea attracts deep-water fish. The sap is also used for fattening livestock (Miah *et al*. 2003; Isebor *et al*. 2003; Teo *et al*. 2010). In Nigeria dye from the fruits is used to dye fishing nets which apparently make them less conspicuous and thus improve catch rates. In some villages in Nigeria the seeds are used for making jewellery and hair clips. Leaves are also used as roofing mats and for hat making (Udofia and Udo 2005).

Habitat Description
Nypa fruticans is adapted to muddy soils along rivers and estuaries. It forms extensive stands along brackish to tidal freshwater creeks and rivers. It can thrive in entirely freshwater environments as well as brackish conditions, demonstrating its wide ecological tolerance. It may also be found inland as far as the tide can deposit the floating seeds. It is the only palm species that is found in mangrove forest (Udofia and Udo 2005; Teo *et al*. 2010).

General Impacts
Nypa fruticans displaces native mangrove vegetation throughout the Niger Delta and in Cameroon (Saenger and Bellan 1995) and forms dense monospecific stands that outcompete native species. Particularly in areas where native red and white mangroves (*Rhizophora* sp.) are felled for fuel wood and sale, the resulting exposed mudflats are readily colonised by the opportunistic *N. fruticans*. In such areas where nypa palm is dominant there is often low incidence of encrusting tree fauna and little or no evidence of burrowing crabs due to the dense stand structure of the palm (Sunderland and Morakinyo 2002; Isebor *et al*. 2003). Its dense structure also chokes mangrove vegetation in which fish breed, and thus may contribute to the decline of fish populations in the area (Sunderland and Morakinyo 2002). \r\n
Areas that are invaded by nypa palm are more at risk of erosion, leading to destabilisation of foreshores and increased water turbidity. The lack of stilt roots (pneumtophores) in *N. fruticans* may also affect sedimentation processes. Shrimp larvae, molluscs and other estuarine species may be affected by these effects (Isebor *et al*. 2003).\r\n
Unlike native mangroves, nypa palm does not produce leaf litter. As leaf litter important as primary production in estuarine food webs, invasion by *N. fruticans* may affect microbes and fauna that utilise it (Isebor *et al*. 2003).\r\n
Floating masses of nypa palm can destroy nets and cages set by fisherman, thus potentially having economic impacts. The displacement of native mangrove species also deprives fisherman of fuelwood for smoke-drying fish and constructing huts. The economically important *Crassostrea gasar* is also less common in areas where nypa has established. This gastropod is an important source of protein and an economically renewable resource for coastal dwellers (Isebor *et al*. 2003).

Management Info
In 2000 the Nigerian Conservation Foundation (NCF) began project to assist local communities with the manufacture of jewellery from nypa palm. The idea was that utilization would curtail the growth of the palm in the area. However it had little effect as there was little mass market appeal for nypa jewellery in Nigeria. A more viable alternative would be to teach local people the many other uses of nypa palm, including how to produce alcohol, sugar and vinegar (Sunderland and Morakinyo 2002; World Bank, ISME, cenTER Aarhus 2003; Udofia and Udo 2005).\r\n
In June 2002 Elf Petroleum Nigeria Ltd. announced that it would investigate means by which the *N. fruticans* invasion could be controlled (Obari 2002 in Sunderland and Morakinyo 2002). A month later the Nigerian Federal Ministry of Environment announced that plans were underway to eradicate Nypa and rehabilitate the Niger Delta's mangrove habitat with native mangrove species (Oghifo 2002 in Sunderland and Morakinyo 2002; World Bank, ISME, cenTER Aarhus 2003).

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ALIEN RANGE

[1] CAMEROON
[1] NIGERIA
[1] TRINIDAD AND TOBAGO
[2] FRENCH POLYNESIA
[1] PANAMA

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