Livistona chinensis

Chinese fan palm
Arecaceae

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OVERVIEW

Livistona chinensis is a single stemmed fan palm native to Japan and China that is cultivated worldwide in tropical and temperate climates. *L. chinensis* has escaped from cultivation and is sparingly naturalized in at least Florida and Hawai'i (Butts 1959, FLEPPC 1999, Wagner et al. 1999). On Maui, *L. chinensis* is commonly cultivated in residential areas and is naturalized near Iao, West Maui and from Ha'iku to Hana, East Maui. *L. chinensis* spreads from initial plantings to nearby areas and is especially prolific in moist windward areas where numerous seedlings are often observed in ditches, water ways, stream beds, gulches, and shady understory of disturbed secondary forests. Control of this ornamental palm on Maui is probably not feasible due to the widespread distribution. Perhaps it could be discouraged from being further planted in moist areas and controlled if it were detected in natural areas.

TAXONOMY

Family: Arecaceae (Palm family) (Wagner et al. 1999).
Latin name: *Livistona chinensis* (Jacq.) R. Br. ex Mart (Wagner et al. 1999).
Synonyms: *Latania chinensis* Jacq., *Latania borbonica*, *Livistona oliviformis* (Hassk.) Mart., *Saribus oliviformis* Hassk. (Jones, 1995, Wagner et al. 1999).
Common names: Chinese fan palm, fountain palm (Jones 1995, Wagner et al. 1999).
Taxonomic notes: *Livistona* is a genus in the palm family made up of about 30 species native to Australia, Malaya, New Guinea, and the Asian mainland (Wagner et al. 1999). The genus *Wissmannia* is now included in *Livistona*. The group *Livistonia* is made up of medium-sized to tall, solitary, armed palms. *Livistona*, along with 12 other genus, such as *Licuala*, *Pritchardia*, and *Brahea*, make up the subtribe *Livistoninae* (Jones 1995).
Nomenclature: Named in honor of Patrick Murray, Baron of Livingston, located near Edinburgh, Scotland who's garden there became the foundation of the Edinburgh Botanic Garden, established in 1670 (Wagner et al. 1999).
Related species in Hawai'i: Other species commonly used in cultivation include *L. australis* or Australian fan palm, *L. decipiens*, and *L. rotundifolia* (Neal 1965).

DESCRIPTION

"Trunk up to 15 m or more tall. Leaves numerous, pale green, up to 1.5 m long, with a prominent undivided central area and numerous deeply bifid segments, their tips pendulous, petioles armed with stout prickles. Flowers pale yellow, in clusters of up to 6, inflorescences up to 1 m or more long, of several branches along a single main rachis, each 2-3 times divided into rachillae, bracts brown tomentose. Fruit bluish green to

bright green, darker with age, ellipsoid to sublobose or pyriform, 1.5-2.6 cm long, 0.9-1.8 cm in diameter." (Wagner et al. 1999).

BIOLOGY & ECOLOGY

Cultivation: This attractive fan palm, with drooping, fanned leaves, and curious bluish fruits that hang in dense clusters is a popular palm in the landscape, used either as an avenue tree, single specimen, or planted in groves. It is a hardy species surviving in tropical and temperate climates, though growth may be slower in temperate areas. It also tolerates shady spots and it is a good indoor container plant, especially when young (Dehgan 1998). In Hawai'i, probably introduced to O'ahu, Hawai'i in the 1800's (Wagner et al. 1999).

Invasiveness: In Florida, *L. chinensis* has been listed as a category II plant in the 1999 Florida Exotic Pest Plant Council's (FLEPPC 1999) list of most invasive species. Category II species are those that have shown a potential to disrupt native plant communities. These species may become ranked as category I but have not yet demonstrated disruption of natural Florida communities. In Hawai'i, this species of palm is cultivated and known to spread beyond the confines of the garden, and is naturalized on at least O'ahu (Wagner et al. 1999) and Maui (pers obs.)

Pollination: In general, palms are pollinated by wind and a variety of insects and animals such as beetles, bees, flies, ants, and bats (Dehgan 1998).

Propagation: Seeds germinate readily within one to four months of sowing (Jones 1995). There is a single seed inside each fruit.

Dispersal: There are several modes of dispersal available to palm species. The three main methods include gravity, humans, and animals. In Hawai'i, *L chinensis* is primarily spread over long distances by humans using the plants in landscaping. From there, plants have been observed spreading primarily by gravity. It may be possible that plants are also spread in water, as seedlings are often observed on Maui germinating along ditches.

Pests and Diseases: *L. chinensis* may be susceptible to lethal yellowing of palms (Dehgan 1998).

DISTRIBUTION

Native range: Native to Southern Japan and central China, Ryukyu Islands, and Taiwan (Dehgan 1998, Wagner et al. 1999).

Global distribution: *L. chinensis* is one of the hardiest, as well as one of the most widely planted, species within the genus. It is cultivated in the United States, the Pacific Islands, including Hawai'i, and in tropical areas worldwide. The Missouri Botanical Garden (2002) specimen database lists the following locations for *L. chinensis* collections. USA: California, San Diego, 20-110 m (66-361 ft), 32.40N 117.10W, coll. date 1992; and Florida, Dade, 25.37.00N 080.32.00W, coll. date 1992. Mesoamerica:

Panama, 0-50 m (0-164 ft), 8.59-9.11N 79.15-79.32W, coll. dates 1983, 1984. Asia: Vietnam, Kon Tum, coll. date 1995.

State of Hawai'i distribution: Cultivated and naturalized on at least O'ahu and Maui. Distribution on O'ahu is described as sparingly naturalized in areas where previously cultivated, at least in Moanalua Valley, but perhaps elsewhere (Wagner et al. 1999). Other islands in the state with cultivated *L. chinensis* should be on the look out for naturalized plants.

Island of Maui distribution: On Maui, this popular palm is widely cultivated as an ornamental tree. Plants can be observed spreading from cultivated plants in any moist area, especially on the north shore of East Maui from Ha'iku to Hana. Seedlings and juveniles can be seen spreading from cultivated plants and germinating along water courses, gulches, and otherwise moist spots. Young plants can thrive in both sun and dense shady forested areas. We have not seen this plant naturalized at higher elevations or greater than a mile from initial plantings.

CONTROL METHODS

Physical control: Cutting down the tree at the base should kill it. Small plants can be pulled up by hand.

Chemical control: None known.

Biological control: None known.

Cultural control: The public could be discouraged from planting *L. chinensis*, especially in moist habitats near natural areas.

Noxious weed acts: None known.

MANAGEMENT RECOMMENDATIONS

L. chinensis is known to spread in Hawai'i in moist lowland areas near original plantings, though it probably can and will spread further given time. Monitoring should continue to further understand the island wide distribution of both cultivated and naturalized plants. *L. chinensis* is a popular ornamental palm that is widely planted on Maui. Control at this time does not seem feasible due to the widespread plantings and naturalized plants. Perhaps it could be discouraged from plantings in moist places near natural areas. Other islands with cultivated *L. chinensis* may want to monitor nearby areas for naturalized plants.

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