

# *Pittosporum viridiflorum*

Cape pittosporum

Pittosporaceae

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May, 2003

## OVERVIEW

*Pittosporum viridiflorum* (Cape pittosporum), native to South Africa, is cultivated in Hawai'i as an ornamental plant (Wagner et al. 1999). In Hawai'i, *P. viridiflorum* was first collected in 1954. It has spread from plantings via bird dispersed seeds and is now naturalized on the islands of Hawai'i, Lana'i, and Maui (Starr et al. 1999, Wagner et al. 1999). Due to its relative small distribution and potential threat, *P. viridiflorum* is targeted for control by the Big Island Invasive Committee (BIISC) on Hawai'i and is a potential future target for control by the Maui Invasive Species Committee (MISC) on Maui. The Lana'i population could also be evaluated for control.

## TAXONOMY

**Family:** Pittosporaceae (Pittosporum family) (Wagner et al. 1999).

**Latin name:** *Pittosporum viridiflorum* Sims (Wagner et al. 1999).

**Synonyms:** None known.

**Common names:** Cape pittosporum, cheesewood (Wagner et al. 1999, Matshinyalo and Reynolds 2002).

**Taxonomic notes:** Pittosporaceae is a family made up of 9 genera and about 200 species from tropical and warm temperate areas of the Old World, being best developed in Australia (Wagner et al. 1999). The genus *Pittosporum* is made up of about 150 species of tropical and subtropical Africa, Asia, Australia, New Zealand, and some Pacific Islands (Wagner et al. 1999).

**Nomenclature:** The genus name, *Pittosporum*, is derived from the Greek word, *pittos*, meaning pitch, and *sporos*, meaning seeds, in reference to the black seeds covered with viscid resin (Wagner et al. 1999).

**Related species in Hawai'i:** In Hawai'i, *Pittosporum* is represented by 10 endemic species and 3 naturalized species which include *P. pentandrum*, *P. undulatum*, and *P. viridiflorum* (Herbarium Pacificum staff 1999, Starr et al. 1999, Wagner et al. 1999). In addition, *P. tobira* is cultivated in Hawai'i.

## DESCRIPTION

"Small trees 3-6 m tall, young parts and inflorescences sparsely puberulent; branches glabrous. Leaves leathery, 6-15 cm long, 2.2-4 cm wide, glabrous, margins minutely revolute, apex bluntly acuminate to rounded, base attenuate, petioles 0.6-1.5 cm long. Flowers perfect, numerous in terminal, branched, corymbose inflorescences, peduncles 0-8 mm long, pedicels slender, 5-7 mm long; sepals elliptic, ca. 1.5 mm long, margins scarios; petals yellowish green, 5-6 mm long, margins slightly revolute and erose; ovary

2-carpellate. Capsules depressed-subglobose, slightly compressed, 4-5 mm long, the valves with thin exocarp, the surface minutely rugulose. Seeds 4-6, reddish black, subreniform, somewhat compressed, ca. 3.5-4 mm long." (Wagner et al. 1999).

## **BIOLOGY & ECOLOGY**

**Cultivation:** *P. viridiflorum* is cultivated in various regions of the world as an ornamental tree with fragrant flowers. In addition, the stem and bark have been used medicinally (Matshinyalo and Reynolds 2002). Apparently, *P. viridiflorum* is cultivated in Europe and in St. Helena where it had been introduced by the Dutch in the 17th century (Matshinyalo and Reynolds 2002). In Hawai'i, *P. viridiflorum* was first collected from cultivated material on the island of Hawai'i in 1954 (Wagner et al. 1999).

**Invasiveness:** *P. viridiflorum* spreads via bird dispersed fruits and is locally established in a few areas of Hawai'i, Lana'i, and Maui in disturbed mesic areas up to 1,000 m (3,281 ft) elevation (Wagner et al. 1999).

**Pollination:** Other similar *Pittosporum* species with fragrant flowers, such as *P. undulatum*, are insect pollinated (Binggeli 1998).

**Propagation:** *Pittosporum viridiflorum* can be easily propagated from seeds as soon as they are ripe and often yield germination rates of 80-90%. Semi-ripe cuttings or air layers are also effective propagation methods (Brickell and Zuk 1997). Seedling recruitment for other *Pittosporum* species, such as *P. undulatum*, increases with higher light levels and disturbance (Binggeli 1998).

**Dispersal:** *P. viridiflorum* are spread long distances by humans who use the plant in landscaping. In its native range, *P. viridiflorum* fruits are dispersed by birds, including red-eyed doves and starlings (Matshinyalo and Reynolds 2002).

**Pests and diseases:** According to Brickell and Zuk (1997), *Pittosporum* spp. are susceptible to aphids, spider mites, mealybugs, scale insects, leaf spots, dieback, root knot nematode, galls, and cankers.

## **DISTRIBUTION**

**Native range:** *P. viridiflorum* are native to South Africa (Wagner et al. 1999). It is widely distributed in the eastern half of South Africa, occurring from the Western Cape up into tropical Africa and beyond to Arabia and India (Matshinyalo and Reynolds 2002). It tolerates a wide range of elevations and grows in tall forests, in scrub on forest margins, and on stream banks (Matshinyalo and Reynolds 2002).

**Global distribution:** *P. viridiflorum* is cultivated in warm regions of the United States and naturalized in Hawai'i (Brickell and Zuk 1997, Wagner et al. 1999).

**State of Hawai'i distribution:** In Hawai'i, *P. viridiflorum* is naturalized on the islands of Maui, Lana'i, and Hawai'i (Starr et al. 1999, Wagner et al. 1999). On the island of Hawai'i, *P. viridiflorum* is known up to 1,000 m (3,281 ft) on Pu'uwa'awa'a and Waimea

(Wagner et al. 1999). It is currently being targeted for control by BIISC on Hawai'i. On Lana'i, it is apparently known from Kapano Gulch. We are currently unfamiliar with this population and further investigation is needed. On Maui, it is spreading in Kula and is being considered for control by MISC.

**Island of Maui distribution:** *P. viridiflorum* is locally spreading in the Kula vicinity, elevation ca. 3,200 ft (975 m), with a relatively cool and dry climate in disturbed residential, pasture, and agriculture land use. Plants can be observed spreading here and there in yards and waste areas. The infestation does not seem very dense or very large in these areas yet. More refined mapping is needed to pinpoint the exact extent of the infestation.

## CONTROL METHODS

**Physical control:** Seedlings can likely be hand pulled. Small trees can probably be dug up. Cutting without herbicide treatment may result in re-growth.

**Chemical control:** Cut stump, frill, and basal bark methods employing herbicides are likely effective means of control for *P. viridiflorum*.

**Biological control:** None known. With numerous endemic *Pittosporum* species in Hawai'i, any biological control should be done with extreme caution.

**Cultural control:** The public could be discouraged from planting *Pittosporum* species that are known to spread.

**Noxious weed acts:** None known. A related species, *P. undulatum* is a Hawai'i state noxious weed (HDOA 1992). *P. undulatum*, native to Australia, is listed as a Category 1 Invasive Plant in South Africa and can not be cultivated there.

## MANAGEMENT RECOMMENDATIONS

*Pittosporum viridiflorum* is cultivated and naturalized in Hawai'i. *P. viridiflorum* spreads via bird dispersed fruits and is known from Hawai'i, Lana'i, and Maui. All populations seem to be somewhat limited in distribution. *P. viridiflorum* has been targeted for control by BIISC on the island of Hawai'i and may become a future target for MISC on the island of Maui. The Lana'i population should be evaluated for control and other islands may want to search for the presence of *P. viridiflorum*. Areas that seem threatened on Maui by invasion of *P. viridiflorum* include mid-elevation mesic forests, pastures, abandoned fields, and natural areas nearby planting sources.

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