Family: ***Pittosporaceae***

Taxon: ***Pittosporum viridiflorum***

Synonym: *Pittosporum feddeanum Pax [≡ Pittosporum* ***Common Name:*** Cape cheesewood
white Cape Beech
Cape pittosporum

Questionaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** H(HPWRA)
Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score** 7

101	**Is the species highly domesticated?**	**y=-3, n=0**	**n**
102	**Has the species become naturalized where grown?**	**y=1, n=-1**	
103	**Does the species have weedy races?**	**y=1, n=-1**	
201	**Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"**	**(0-low; 1-intermediate; 2-high) (See Appendix 2)**	**High**
202	**Quality of climate match data**	**(0-low; 1-intermediate; 2-high) (See Appendix 2)**	**High**
203	**Broad climate suitability (environmental versatility)**	**y=1, n=0**	**y**
204	**Native or naturalized in regions with tropical or subtropical climates**	**y=1, n=0**	**y**
205	**Does the species have a history of repeated introductions outside its natural range?**	**y=-2, ?=-1, n=0**	**y**
301	**Naturalized beyond native range**	**y = 1*multiplier (see Appendix 2), n= question 205**	**y**
302	**Garden/amenity/disturbance weed**	**n=0, y = 1*multiplier (see Appendix 2)**	
303	**Agricultural/forestry/horticultural weed**	**n=0, y = 2*multiplier (see Appendix 2)**	**n**
304	**Environmental weed**	**n=0, y = 2*multiplier (see Appendix 2)**	
305	**Congeneric weed**	**n=0, y = 1*multiplier (see Appendix 2)**	**y**
401	**Produces spines, thorns or burrs**	**y=1, n=0**	**n**
402	**Allelopathic**	**y=1, n=0**	**n**
403	**Parasitic**	**y=1, n=0**	**n**
404	**Unpalatable to grazing animals**	**y=1, n=-1**	**n**
405	**Toxic to animals**	**y=1, n=0**	**n**
406	**Host for recognized pests and pathogens**	**y=1, n=0**	**n**
407	**Causes allergies or is otherwise toxic to humans**	**y=1, n=0**	**n**
408	**Creates a fire hazard in natural ecosystems**	**y=1, n=0**	**n**
409	**Is a shade tolerant plant at some stage of its life cycle**	**y=1, n=0**	**y**
410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y=1, n=0**	**y**

411	**Climbing or smothering growth habit**	**y=1, n=0**	**n**
412	**Forms dense thickets**	**y=1, n=0**	**n**
501	**Aquatic**	**y=5, n=0**	**n**
502	**Grass**	**y=1, n=0**	**n**
503	**Nitrogen fixing woody plant**	**y=1, n=0**	**n**
504	**Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)**	**y=1, n=0**	**n**
601	**Evidence of substantial reproductive failure in native habitat**	**y=1, n=0**	**n**
602	**Produces viable seed**	**y=1, n=-1**	**y**
603	**Hybridizes naturally**	**y=1, n=-1**	
604	**Self-compatible or apomictic**	**y=1, n=-1**	
605	**Requires specialist pollinators**	**y=-1, n=0**	**n**
606	**Reproduction by vegetative fragmentation**	**y=1, n=-1**	**n**
607	**Minimum generative time (years)**	**1 year = 1, 2 or 3 years = 0, 4+ years = -1**	**>3**
701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**y=1, n=-1**	
702	**Propagules dispersed intentionally by people**	**y=1, n=-1**	**y**
703	**Propagules likely to disperse as a produce contaminant**	**y=1, n=-1**	**n**
704	**Propagules adapted to wind dispersal**	**y=1, n=-1**	**n**
705	**Propagules water dispersed**	**y=1, n=-1**	**y**
706	**Propagules bird dispersed**	**y=1, n=-1**	**y**
707	**Propagules dispersed by other animals (externally)**	**y=1, n=-1**	**y**
708	**Propagules survive passage through the gut**	**y=1, n=-1**	**y**
801	**Prolific seed production (>1000/m2)**	**y=1, n=-1**	
802	**Evidence that a persistent propagule bank is formed (>1 yr)**	**y=1, n=-1**	**n**
803	**Well controlled by herbicides**	**y=-1, n=1**	**y**
804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	**y=1, n=-1**	
805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	**y=-1, n=1**	

Designation: H(HPWRA) **WRA Score** 7

Supporting Data:

101	1987. Friis, I.. A Reconsideration of Pittosporum in Africa and Arabia. Kew Bulletin. 42(2): 319-335.	[Is the species highly domesticated? No] "P. viridiflorum Sims, an extremely widespread and polymorphic species with a number of informally named 'entities', some perhaps comparable to populations; this species is mostly restricted to altitudes below 2500 m and occurs in a wide range of forest and evergreen bushland, including riverine forest and humid and dry montane forest."
102	2011. WRA Specialist. Personal Communication.	NA
103	2011. WRA Specialist. Personal Communication.	NA
201	2002. Schmidt, E./Lötter, M./McCleland, W.. Trees and shrubs of Mpumalanga and Kruger National Park. Jacana Media, Johannesburg, South Africa	[Species suited to tropical or subtropical climate(s)? 2-high] "Distribution: from the southern Cape, up through the eastern and central half of South Africa, northwards into central Africa."
202	2002. Schmidt, E./Lötter, M./McCleland, W.. Trees and shrubs of Mpumalanga and Kruger National Park. Jacana Media, Johannesburg, South Africa	[Quality of climate match data? 2-high] "Distribution: from the southern Cape, up through the eastern and central half of South Africa, northwards into central Africa."
203	1987. Friis, I.. A Reconsideration of Pittosporum in Africa and Arabia. Kew Bulletin. 42(2): 319-335.	[Broad climate suitability (environmental versatility)? Yes] "In tropical Africa from 900-2500m. In South Africa from near sea level to c. 2000 m." [elevation range >1000 m, demonstrating environmental versatility]
203	2002. Johnson, D./Johnson, S.. Down to Earth: Gardening with Indigenous Trees. Struik Publishers, Cape Town, South Africa	[Broad climate suitability (environmental versatility)? Yes] "It occurs in almost every habitat, especially in small forest clumps and on rocky outcrops. It is equally at home at sea level and high in the mountains…Pittosporum is a very useful species in the garden, as it tolerates a wide range of different environments, but it grows best where rainfall is moderate to good."
204	1987. Friis, I.. A Reconsideration of Pittosporum in Africa and Arabia. Kew Bulletin. 42(2): 319-335.	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Very polymorphic. Known from several hundred collections. Distributed in South African Republic (Cape Province, Natal, Transvaal), Zimbabwe, Mozambique, Zambia, Angola, ?Zaire, Tanzania, Kenya, Uganda, Ethiopia, and Somalia. Recorded from drier types of upland forest and evergreen bushland. In tropical Africa from 900-2500 m. In South Africa (Cape Province, Natal) from near sea level to c. 2000 m."
204	2002. Schmidt, E./Lötter, M./McCleland, W.. Trees and shrubs of Mpumalanga and Kruger National Park. Jacana Media, Johannesburg, South Africa	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Distribution: from the southern Cape, up through the eastern and central half of South Africa, northwards into central Africa."
205	1981. McMinn, H./Maino, E.. An illustrated manual of Pacific Coast trees. University of California Press, Berkeley, CA	[Does the species have a history of repeated introductions outside its natural range? Yes] Grown in Californian and other Pacific coastal regions.
205	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Does the species have a history of repeated introductions outside its natural range? Yes] "...in Hawaii cultivated and sparingly naturalized at ca. 1,000 m on Pu`uwa`awa`a and perhaps at Waimea, Hawaii, and apparently at Kapano Gulch, Lanai."
205	2005. Global Invasive Species Database. Pittosporum viridiflorum. National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG), http://www.issg.org/database/species/ecology.asp?si=346&fr=1&sts=sss&lang=EN	[Does the species have a history of repeated introductions outside its natural range? Yes] "Alien Range: Saint Helena; United States (USA)"
301	1999. Starr, F./Martz, K./Loope, L.L.. New plant records from East Maui for 1998. Bishop Museum Occasional Papers. 59: 11-15.	[Naturalized beyond native range? Yes] "Pittosporum viridiflorum, a native of South Africa, is previously known from Hawai' i and Läna'i (Wagner et al., 1990: 1048). This collection represents a new island record of this species from Maui. It is known only from one abandoned pasture in Kula where it is persisting and spreading along with Pennisetum clandestinum, Passiflora mollissima and Myrica faya. Material examined. MAUI: Makawao District, East Maui, Kula, Kekaulike Ave., 3250 ft [990 m], 1 May 1998, Starr & Martz 980506-135."
301	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Naturalized beyond native range? Yes] "...in Hawaii cultivated and sparingly naturalized at ca. 1,000 m on Pu`uwa`awa`a and perhaps at Waimea, Hawaii, and apparently at Kapano Gulch, Lanai. First collection (cultivated material) made in 1954 on Hawaii (Clay s.n., BISH)."

302	2004. USDA Forest Service. State and Private Forestry - Pacific Southwest Region: Forest Health Conditions in Hawaii – 2004. http://www.fs.fed.us/r5/spf/publications/foresthealth/hawaii_2004.pdf	[Garden/amenity/disturbance weed? Possibly] "Table 2. Top Invasive Plant Species Controlled by Island Invasive Species Committees in Hawaii in 2004" [Pittosporum viridiflorum targeted for eradication due to potential for becoming an environmental weed]
302	2008. Operation Wildflower. Pittosporum viridiflorum. http://www.operationwildflower.org.za/index.php?option=com_content&task=view&id=116	[Garden/amenity/disturbance weed? Possibly] "Common, may even be invasive in some habitats"
302	2011. DOFAW. Hawaii's Most Invasive Horticultural Plants - Cape pittosporum - Pittosporum viridiflorum. http://www.state.hi.us/dlnr/dofaw/hortweeds/species/pitvir.htm	[Garden/amenity/disturbance weed? Possibly] "Pittosporum viridiflorum …Several species of Pittosporum have proven invasive elsewhere and some are beginning to spread in Hawaii. Exotic species of this genus may potentially compete or interbreed with endemic Hawaiian species of the genus. All foreign species of Pittosporum should be avoided for horticulture in Hawaii."
303	2007. Randall, R.P.. Global Compendium of Weeds - Pittosporum viridiflorum [Online Database]. http://www.hear.org/gcw/species/pittosporum_viridiflorum/	[Agricultural/forestry/horticultural weed? No evidence]
304	2007. Randall, R.P.. Global Compendium of Weeds - Pittosporum viridiflorum [Online Database]. http://www.hear.org/gcw/species/pittosporum_viridiflorum/	[Environmental weed? Potentially] Listed as an environmental weed, but has yet to have direct negative impacts on native ecosystems. See 3.02.
304	2011. WRA Specialist. Personal Communication.	[Environmental weed? Potentially] Based on the shared attributes and invasiveness of the related Pittosporum undulatum [see 3.05], P. viridiflorum is targeted as an early detection/rapid response weed, despite there being no direct negative impacts on native ecosystems at present.
305	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Congeneric weed? Yes] "Pittosporum undulatum…The tree is a successful gap colonizer and eliminates native vegetation by the low and dense canopies, shading out almost all other species."
401	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Produces spines, thorns or burrs? No] "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."
402	1987. Friis, I.. A Reconsideration of Pittosporum in Africa and Arabia. Kew Bulletin. 42(2): 319-335.	[Allelopathic? No] No evidence.
403	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Parasitic? No] "Small trees 3-6 m tall…" [Pittosporaceae]
404	2002. Mbambezeli, G./Reynolds, Y.. Pittosporum viridiflorum Sims. Kirstenbosch National Botanical Garden, http://www.plantzafrica.com/plantnop/pittosporumvirid.htm	[Unpalatable to grazing animals? No] "Goats and game (Kudu, Nyala, and Bushbuck) browse the leaves."
404	2004. EcoPort (Contributor: Roger P. Ellis). Pittosporum viridiflorum Sims.. http://ecoport.org/ep?Plant=42370&entityType=PL****&entityDisplayCategory=full	[Unpalatable to grazing animals? No] "Although not generally considered a fodder tree, the leaves are palatable to stock and young seedlings on small stock farms only survive in sheltered localities (Palmer & Pitman 1972). Browsed by cattle, goats, kudu, nyala, bushbuck, klipspringer and grey duiker. Trees from the drier karoo regions tend to be more palatable than those from KwaZulu Natal and Limpopo provinces (Venter & Venter 1996)."
405	1997. Van Wyk, B./Van Wyk, P.. Field guide to trees of Southern Africa. Struik Publishers, Cape Town, South Africa	[Toxic to animals? No] No evidence.
405	2011. Sagebud. Cape Cheesewood (Pittosporum Viridiflorum). http://www.sagebud.com/cape-cheesewood-pittosporum-viridiflorum/	[Toxic to animals? No] "Toxicity: None"
406	1997. Van Wyk, B./Van Wyk, P.. Field guide to trees of Southern Africa. Struik Publishers, Cape Town, South Africa	[Host for recognized pests and pathogens? No] No evidence
406	2002. Johnson, D./Johnson, S.. Down to Earth: Gardening with Indigenous Trees. Struik Publishers, Cape Town, South Africa	[Host for recognized pests and pathogens? No] No evidence

406	2009. Rauch, F.D./Weissich, P.R.. Small Trees for the Tropical Landscape. University of Hawaii Press, Honolulu, HI	[Host for recognized pests and pathogens? No] No evidence
407	2002. Schmidt, E./Lötter, M./McCleland, W.. Trees and shrubs of Mpumalanga and Kruger National Park. Jacana Media, Johannesburg, South Africa	[Causes allergies or is otherwise toxic to humans? No] "Bark used in traditional medicine to treat fevers, pain and stomach complaints. Also used as an aphrodisiac." [Medicinal uses, but no evidence of toxicity]
407	2004. EcoPort (Contributor: Roger P. Ellis). Pittosporum viridiflorum Sims.. http://ecoport.org/ep?Plant=42370&entityType=PL****&entityDisplayCategory=full	[Causes allergies or is otherwise toxic to humans? No] "Cultural Uses: In parts of Africa infusions of the bark are used to ward off evil spirits. Root infusions are taken to help with divining and to protect against witchcraft (Thomas & Grant 2002). Medicinal Uses: The resinous bark has a sweetish smell, similar to liquorice, and a bitter taste and is a popular traditional medicine. It is widely used to treat pain, stomach complaints, fever and malaria in humans and black gall sickness and red water in cattle (Coates Palgrave 1977). The bark is also used as an aphrodisiac when mixed with beer (Schmidt et. al. 2002). Root infusions are used to treat chest complaints and dizziness (van Wyk et al 2000)."
407	2011. Sagebud. Cape Cheesewood (Pittosporum Viridiflorum). http://www.sagebud.com/cape-cheesewood-pittosporum-viridiflorum/	[Causes allergies or is otherwise toxic to humans? No] "Toxicity: None"
408	1987. Friis, I.. A Reconsideration of Pittosporum in Africa and Arabia. Kew Bulletin. 42(2): 319-335.	[Creates a fire hazard in natural ecosystems? No] No evidence
408	1998. Friis, I,./Vollesen, K./Danske, K.. Flora of the Sudan-Uganda Border Area East of the Nile: catalogue of vascular plants. Kgl. Danske Videnskabernes Selskab, Copenhagen, Denmark	[Creates a fire hazard in natural ecosystems? No] No evidence
408	2002. Schmidt, E./Lötter, M./McCleland, W.. Trees and shrubs of Mpumalanga and Kruger National Park. Jacana Media, Johannesburg, South Africa	[Creates a fire hazard in natural ecosystems? No] No evidence
409	2002. Mbambezeli, G./Reynolds, Y.. Pittosporum viridiflorum Sims. Kirstenbosch National Botanical Garden, http://www.plantzafrica.com/plantnop/pittosporumvirid.htm	[Is a shade tolerant plant at some stage of its life cycle? Yes] "This plant makes a good garden plant, growing in either in full sun or semi-shade."
409	2011. Sagebud. Cape Cheesewood (Pittosporum Viridiflorum). http://www.sagebud.com/cape-cheesewood-pittosporum-viridiflorum/	[Is a shade tolerant plant at some stage of its life cycle? Yes] "It's active growth period is spring summer fall, blooms during late spring and is somewhat tolerant of shade."
409	2011. www.drumblade.co.za. Indigenous Trees for the Drumblade area. http://www.drumblade.co.za/trees.html	[Is a shade tolerant plant at some stage of its life cycle? Yes] "Cheesewood (Pittosporum viridiflorum) - needs shade"
410	2008. Operation Wildflower. Pittosporum viridiflorum. http://www.operationwildflower.org.za/index.php?option=com_content&task=view&id=116	[Tolerates a wide range of soil conditions? Yes] "Grows readily from seed or cuttings in well-drained soil; water regularly"
410	2009. Rauch, F.D./Weissich, P.R.. Small Trees for the Tropical Landscape. University of Hawaii Press, Honolulu, HI	[Tolerates a wide range of soil conditions? Yes] "A slow grower, it will thrive in any well-drained soil with moderate watering."
411	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Climbing or smothering growth habit? No] "Small trees 3-6 m tall…"
412	2002. Schmidt, E./Lötter, M./McCleland, W.. Trees and shrubs of Mpumalanga and Kruger National Park. Jacana Media, Johannesburg, South Africa	[Forms dense thickets? No] "…in open bushveld, rocky outcrops, thickets, forest margins and forests." [occurs naturally in thickets of mixed vegetation, but no evidence to date that P. viridiflorum forms monotypic thickets]
501	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Aquatic? No] "Small trees 3-6 m tall…" [terrestrial]
502	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Grass? No] Pittosporaceae

503	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Nitrogen fixing woody plant? No] Pittosporaceae
504	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] ""Small trees 3-6 m tall…" [Pittosporaceae]
601	1987. Friis, I.. A Reconsideration of Pittosporum in Africa and Arabia. Kew Bulletin. 42(2): 319-335.	[Evidence of substantial reproductive failure in native habitat? No] "Capsule valves 6-8(-10) mm diam., up to 2 mm thick, with 4-8 seeds." [no evidence]
602	1987. Friis, I.. A Reconsideration of Pittosporum in Africa and Arabia. Kew Bulletin. 42(2): 319-335.	[Produces viable seed? Yes] "Capsule valves 6-8(-10) mm diam., up to 2 mm thick, with 4-8 seeds."
602	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Produces viable seed? Yes] "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"
603	1987. Friis, I.. A Reconsideration of Pittosporum in Africa and Arabia. Kew Bulletin. 42(2): 319-335.	[Hybridizes naturally? Unknown] "Partial isolation and subsequent mixing by hybridization may play an important part in the evolution of these varied taxa, but nothing certain can be stated at the moment."
604	2004. EcoPort (Contributor: Roger P. Ellis). Pittosporum viridiflorum Sims.. http://ecoport.org/ep?Plant=42370&entityType=PL****&entityDisplayCategory=full	[Self-compatible or apomictic? Unknown] "Flowers: The yellow-green flowers are conspicuous and are produced in dense clusters in the leaf rosettes (Thomas & Grant 2002). These are terminal, branched heads or panicles. Flowering occurs from September to December (Venter & Venter 1996). The attractive trumpet flowers are small, greenish-white to cream and sweetly honey-scented like lemon blossom. They are bisexual with all floral parts in fives. The petals are longer than the sepals, 5-9mm long. The 5 stamens are free. The ovary is usually 2-chambered."
605	2005. Wigrup, I.. The Role of Indigenous Knowledge in Forest Management. Graduate Thesis in Forest Management. Department of Silviculture Swedish University of Agricultural Sciences, Umea, Sweden	[Requires specialist pollinators? No] "Table 2. Factors Influencing Reproduction Success … Pollinated by bees"
606	2002. Johnson, D./Johnson, S.. Down to Earth: Gardening with Indigenous Trees. Struik Publishers, Cape Town, South Africa	[Reproduction by vegetative fragmentation? No] "Propagation: Seed" [No evidence]
606	2002. Mbambezeli, G./Reynolds, Y.. Pittosporum viridiflorum Sims. Kirstenbosch National Botanical Garden, http://www.plantzafrica.com/plantnop/pittosporumvirid.htm	[Reproduction by vegetative fragmentation? No] "Cheesewood propagates easily from seed. Unparasitised seed has a germination percentage of 80-90%. Sow seeds in trays in a mixture of river sand and compost; cover lightly with fine compost and keep moist. Seeds should germinate in 8-12 weeks and the fast growing seedlings should be bagged up when they have two leaves. Plants may also be propagated by means of softwood or semi hardwood cuttings. This plant transplants easily."
606	2011. Sagebud. Cape Cheesewood (Pittosporum Viridiflorum). http://www.sagebud.com/cape-cheesewood-pittosporum-viridiflorum/	[Reproduction by vegetative fragmentation? No] "Vegetative Spread Rate: None"
607	2002. Johnson, D./Johnson, S.. Down to Earth: Gardening with Indigenous Trees. Struik Publishers, Cape Town, South Africa	[Minimum generative time (years)? 4+] "Speed of growth is moderate, about 40 cm per year. First fruiting occurs at about four years."
701	1997. Van Wyk, B./Van Wyk, P.. Field guide to trees of Southern Africa. Struik Publishers, Cape Town, South Africa	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Possibly] "seeds covered by a sticky, bright orange-red covering." [Possible that sticky seeds could adhere to machinery, clothing or other unintentional vectors, but no direct evidence to date]
702	2002. Schmidt, E./Lötter, M./McCleland, W.. Trees and shrubs of Mpumalanga and Kruger National Park. Jacana Media, Johannesburg, South Africa	[Propagules dispersed intentionally by people? Yes] "Attractive horticultural tree easily grown from seed."
703	2011. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence that tree is grown with or has ever become a produce contaminant.
704	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Propagules adapted to wind dispersal? No] "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" [no adaptations for wind dispersal]

705	1998. Friis, I,./Vollesen, K./Danske, K.. Flora of the Sudan-Uganda Border Area East of the Nile: catalogue of vascular plants. Kgl. Danske Videnskabernes Selskab, Copenhagen, Denmark	[Propagules water dispersed? Yes] "General habitat range: in montane forest, often along rivers or in swamps." [distribution along rivers or in swamps suggests fruits or seeds may be occasionally dispersed by water]
705	2005. Wigrup, I.. The Role of Indigenous Knowledge in Forest Management. Graduate Thesis in Forest Management. Department of Silviculture Swedish University of Agricultural Sciences, Umea, Sweden	[Propagules water dispersed? Yes] "Dispersal by floods"
706	2002. Johnson, D./Johnson, S.. Down to Earth: Gardening with Indigenous Trees. Struik Publishers, Cape Town, South Africa	[Propagules bird dispersed? Yes] "The fruits are a dull pale brown initially, but when mature they split to reveal bright orange seeds, which are coated with a glistening jelly. Birds are very partial to them."
706	2002. Mbambezeli, G./Reynolds, Y.. Pittosporum viridiflorum Sims. Kirstenbosch National Botanical Garden, http://www.plantzafrica.com/plantnop/pittosporumvirid.htm	[Propagules bird dispersed? Yes] "Many birds, including the red-eyed dove and several starlings eat the seeds."
706	2002. Schmidt, E./Lötter, M./McCleland, W.. Trees and shrubs of Mpumalanga and Kruger National Park. Jacana Media, Johannesburg, South Africa	[Propagules bird dispersed? Yes] "Seeds eaten by birds."
706	2004. EcoPort (Contributor: Roger P. Ellis). Pittosporum viridiflorum Sims.. http://ecoport.org/ep?Plant=42370&entityType=PL****&entityDisplayCategory=full	[Propagules bird dispersed? Yes] "The seeds are eaten by red-eyed doves, turtle doves, rameron pigeons, grey louries, pied barbets, crested barbets, black-collared barbets, bulbuls, redwinged starlings and glossy starlings (Venter & Venter 1996) and many other bird species. Dropped seeds are eaten by crested francolins and helmeted guineafowl."
707	1997. Van Wyk, B./Van Wyk, P.. Field guide to trees of Southern Africa. Struik Publishers, Cape Town, South Africa	[Propagules dispersed by other animals (externally)? Yes] "seeds covered by a sticky, bright orange-red covering." [presumably able to adhere to animals]
708	2002. Schmidt, E./Lötter, M./McCleland, W.. Trees and shrubs of Mpumalanga and Kruger National Park. Jacana Media, Johannesburg, South Africa	[Propagules survive passage through the gut? Yes] "Seeds eaten by birds." [presumably dispersed internally by birds]
801	1987. Friis, I.. A Reconsideration of Pittosporum in Africa and Arabia. Kew Bulletin. 42(2): 319-335.	[Prolific seed production (>1000/m2)? Unknown] "Shrubs or trees up to 20 m tall...Capsule valves 6-8(-10) mm diam., up to 2 mm thick, with 4-8 seeds." [higher seed densities may be possible for larger trees]
802	1997. Teketay, D./Granstrom, A.. Germination Ecology of Forest Species from the Highlands of Ethiopia. Journal of Tropical Ecology. 13(6): 805-831.	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "Species with seeds possessing no dormancy, and which germinated in both light and dark conditions: Bersama, Ekebergia, Myrsine and Pittosporum. Only one of these species (Pittosporum) was tested under leaf shade and in this case germination was as high as in daylight." [No dormancy]
803	1995. Cronk, Q.C.B./Fuller, J.L.. Plant invaders: the threat to natural ecosystems. Chapman and Hall, London, UK	[Well controlled by herbicides? Yes] "Pittosporum undulatum...Application of 2,4,5, T and diesel mixture to stumps cut just above ground level prevents coppicing…" [herbicide is apparently effective against related invasive Pittosporum undulatum]

803	1997. Goodland, T./Healey, J.R.. The control of the Australian tree Pittosporum undulatum in the Blue Mountains of Jamaica. School of Agricultural and Forest Sciences, University of Wales, Bangor, UK http://pages.bangor.ac.uk/~afs101/iwpt/control.htm	[Well controlled by herbicides? Yes] "Pittosporum undulatum...2.3 Choice of herbicide Clearly Tordon can kill P. undulatum. Since starting the project we have found out that Tordon was used to kill P. undulatum in Hawaii (Tunison 1992) and, more interestingly, that two other herbicides have been effective. A mixture of 2,4,5-T and diesel applied to stumps cut just above ground level was very effective at Jonkershoek in South Africa (Richardson & Brink 1985). Concentrated Roundup (glyphosate 360 g l 1) has been effective when applied to cut stumps in Australia (I.K. Stephenson, quoted in Narayan (1993)). In the Dandenong Ranges in Victoria, Australia, P. undulatum is killed by drilling stems and filling with undiluted glyphosate using a Velpar gun. The holes should be 8 15 mm diameter, about 50 mm deep, 4-6 cms apart and 20-50 cm above ground level and below the lowest living branch. It is essential that holes are placed vertically below any main branches, otherwise they may not be killed (Gillespie 1991). Given that holes drilled 4-6 cm apart in Australia were presumably wholly effective, and that holes in Jamaica 10 cm apart were over 90% effective, the optimum spacing is about 6-8 cm. Also in Australia, to preserve the sclerophyll forest, "bush regenerators" are controlling P. undulatum by cutting trees and painting the stumps with glyphosate, either undiluted or 1:3, or injecting glyphosate into sapwood at the same concentrations (R. Buchanan, pers. comm, 1994). Glyphosate is probably the best herbicide to use because of its effectiveness, and low environmental and human health impact. One problem with glyphosate is that a few rain free hours are needed after application, estimates of 2-6 hours being given by the manufacturers and experienced users in the U.K. Given the frequency of rain in the Blue Mountains this is obviously a big limitation. A possible solution is to cut and strip the bark off small trees (no herbicide) during wet periods (if not at all times) and drill holes in large trees and plug after herbicide application. Another option would be to use a fast-acting contact herbicide, such as paraquat, but there are serious worker and environmental safety worries over the use of this herbicide. Woody plants are commonly treated by cutting then spraying the regrowth a few months later, thereby getting larger quantities of translocatable herbicides such as glyphosate into the plant, as with Rhododendron ponticum in the UK (Forestry Commission 1990). This method has limited applicability in the Blue Mountains as many of the cut stumps would be widely scattered throughout remote forest and therefore would be very hard to find again, although in very heavily invaded forest regrowth spraying could be a useful technique."
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Yes] Although no published information on herbicide efficacy for Pittosporum viridiflorum is available, methods to chemically control the related invasive tree Pittosporum undulatum would presumably show similar effectiveness.
804	2011. Plant this. Pittosporum viridiflorum. http://www.plantthis.com.au/plant-information.asp?gardener=20654&tabview=maintenance&plantSpot=0	[Tolerates, or benefits from, mutilation, cultivation, or fire? Unknown] "Retain only one main trunk for a tree or tip prune regularly from a young age for a shrub." [tolerates pruning, but unknown to what degree]
805	2003. Starr, F./Starr, K./Loope, L.L.. Pittosporum viridiflorum - Cape pittosporum - Pittosporaceae. USGS - Biological Resources Haleakala Field Station Maui, http://www.hear.org/starr/hiplants/reports/pdf/pittosporum_viridiflorum.pdf	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown] "Biological control: None known. With numerous endemic Pittosporum species in Hawai'i, any biological control should be done with extreme caution."