

Family: *Asclepiadaceae*

Taxon: *Hoya australis*

Synonym: *Hoya dalrympleana* F. Muell.

Common Name: Samoan wax flower

Questionnaire :	current 20090513	Assessor:	Patti Clifford	Designation: H(HPWRA)
Status:	Assessor Approved	Data Entry Person:	Patti Clifford	WRA Score 8
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	n
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)	n
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)	n
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)	n
401	Produces spines, thorns or burrs		y=1, n=0	n
402	Allelopathic		y=1, n=0	
403	Parasitic		y=1, n=0	n
404	Unpalatable to grazing animals		y=1, n=-1	y
405	Toxic to animals		y=1, n=0	y
406	Host for recognized pests and pathogens		y=1, n=0	
407	Causes allergies or is otherwise toxic to humans		y=1, n=0	y
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	
411	Climbing or smothering growth habit		y=1, n=0	y

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	y
705	Propagules water dispersed	y=1, n=-1	y
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	
708	Propagules survive passage through the gut	y=1, n=-1	
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	
803	Well controlled by herbicides	y=-1, n=1	
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 **8**

Supporting Data:

101	2010. WRA Specialist. Personal Communication.	No evidence of domestication that reduces invasive characteristics.
201	2010. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database].. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?317906	Native distribution: Australia - New South Wales, Queensland; Fiji; American Samoa; Samoa; Tonga
202	2010. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database].. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?317906	Native range: Australia - New South Wales, Queensland; American Samoa; Fiji; Samoa; Tonga
203	2010. Dave's Garden. Plant files: Hoya, Australian waxflower, wax plant, procelain flower, Hoya australis. Dave's Garden, http://davesgarden.com/guides/pf/go/54435/	USDA Hardiness zones: 10b-11.
204	2010. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database].. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?317906	Native: Australia -New South Wales, Queensland; Samoa; Fiji; Tonga; American Samoa.
205	2008. Australian Native Plant Society. Hoya australis. Australian Native Plant Society, http://anpsa.org.au/h-aus.html	Hoya australis is the most widespread and commonly grown Hoya species. It is grown widely in the tropics and subtropics.
301	1999. Lorence, D./Flynn, T.. New naturalized plant records for the state of Hawaii. BISHOP MUSEUM OCCASIONAL PAPERS. 59: 3. http://hbs.bishopmuseum.org/pdf/op59.pdf	Hoya australis is naturalized in Maui.
302	2010. Randall, R.. Global compendium of weeds Hoya australis (Asclepiadaceae). Hawaiian Ecosystems at Risk (HEAR), http://www.hear.org/gcw/species/hoya_australis/	No evidence of control or impacts.
303	2010. Randall, R.. Global compendium of weeds Hoya australis (Asclepiadaceae). Hawaiian Ecosystems at Risk (HEAR), http://www.hear.org/gcw/species/hoya_australis/	No evidence.
304	2010. Randall, R.. Global compendium of weeds Hoya australis (Asclepiadaceae). Hawaiian Ecosystems at Risk (HEAR), http://www.hear.org/gcw/species/hoya_australis/	No evidence of control or impact.
305	2007. Randall, R.. Global Compendium of Weeds. http://www.hear.org/gcw/	No evidence of control or impacts from Hoya spp. Although several species are listed as a weed on the Global Compendium of Weeds.
401	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	No spines, thorns, burrs.
402	2010. WRA Specialist. Personal Communication.	Unknown.
403	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Not parasitic.
404	2008. Simmonds, H.. Australian weeds and livestock: weeds and plants and how they can affect animals including cats, dogs, horses, humans, pigs, poultry, and ruminants. http://www.weeds.mangrovemountain.net/	Not known to be eaten.

405	2008. Simmonds, H.. Australian weeds and livestock: weeds and plants and how they can affect animals including cats, dogs, horses, humans, pigs, poultry, and ruminants. http://www.weeds.mangrovemountain.net/	Toxic to cattle and maybe sheep.
406	2007. Burton, C.M.. The Hoya page. www.succulent-plant.com , http://www.succulent-plant.com/families/asclepiadaceae/hoya.html	Hoyas are liked by three common garden pests, aphids, mealy bugs, red spider mites and scales
406	2010. WRA Specialist. Personal Communication.	Unknown.
407	2010. Dave's Garden. Plant files: Hoya, Australian waxflower, wax plant, procelain flower, Hoya australis. Dave's Garden, http://davesgarden.com/guides/pf/go/54435/	Parts of plant are poisonous if ingested.
408	2010. WRA Specialist. Personal Communication.	Succulent vine.
409	2010. Chenoweth, A./King, A./Irish, A.. Subtropical landscape plants for South East Queensland - exuberant and sustainable?. http://www.subtropicalcities2006.qut.edu.au/documents/Papers%20Page/Papers/Chenoweth%20-%20Subtropical%20Landscape%20Plants%20for%	Shade tolerant.
409	2010. Dave's Garden. Plant files: Hoya, Australian waxflower, wax plant, procelain flower, Hoya australis. Dave's Garden, http://davesgarden.com/guides/pf/go/54435/	Sun to partial shade.
410	2010. Dave's Garden. Plant files: Hoya, Australian waxflower, wax plant, procelain flower, Hoya australis. Dave's Garden, http://davesgarden.com/guides/pf/go/54435/	Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral).
411	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Succulent vine.
412	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Succulent vine.
501	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Terrestrial.
502	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Asclepiadaceae.
503	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Succulent vine.
504	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	Not a geophyte.
601	2008. Australian Native Plant Society. Hoya australis. Australian Native Plant Society, http://anpsa.org.au/h-aus.html	Not to be considered at risk in the wild.
602	2010. Dave's Garden. Plant files: Hoya, Australian waxflower, wax plant, procelain flower, Hoya australis. Dave's Garden, http://davesgarden.com/guides/pf/go/54435/	Propagate by seed.
603	2010. WRA Specialist. Personal Communication.	Unknown.

604	2010. WRA Specialist. Personal Communication.	Unknown.
605	1992. Forster, P.I.. Pollination of <i>Hoya australis</i> Asclepiadaceae by <i>Ocybadistes walkeri sothis</i> Lepidoptera Hesperiiidae. Australian Entomological Magazine. 19: 39-43.	"Plants of <i>Hoya australis</i> R. Br. ex Traill (Asclepiadaceae) cultivated at Indooroopilly, Brisbane were pollinated by <i>Ocybadistes walkeri sothis</i> Waterhouse (Lepidoptera: Hesperiiidae) over several months. A pollination efficiency (pollinaria inserted to pollinaria removed) of 70% was recorded."
606	2010. Dave's Garden. Plant files: <i>Hoya</i> , Australian waxflower, wax plant, procelain flower, <i>Hoya australis</i> . Dave's Garden, http://davesgarden.com/guides/pf/go/54435/	Propagate by seed or cuttings.
607	2010. Sharpe, K.. <i>Hoya</i> plant care. Garden Guides.com, http://www.gardenguides.com/115963-hoya-plant-care.html	<i>Hoya</i> species take 4 years to flower. [genus description]
701	2000. Staples, G.W./Herbst, D.R/Imada, C.T.. Survey of invasive or potentially invasive cultivated plants in Hawai'i. Bishop Museum Occasional Papers. 65: 1-35.	Possibly spread vegetatively through garden waste.
702	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	<i>Hoya australis</i> is grown in Hawaiian gardens.
702	2008. Australian Native Plant Society. <i>Hoya australis</i> . Australian Native Plant Society, http://anpsa.org.au/h-aus.html	<i>Hoya australis</i> is a popular ornamental in tropic and subtropic areas of the world.
703	2000. Staples, G.W./Herbst, D.R/Imada, C.T.. Survey of invasive or potentially invasive cultivated plants in Hawai'i. Bishop Museum Occasional Papers. 65: 1-35.	No evidence.
704	2000. Staples, G.W./Herbst, D.R/Imada, C.T.. Survey of invasive or potentially invasive cultivated plants in Hawai'i. Bishop Museum Occasional Papers. 65: 1-35.	Wind dispersed.
705	2005. Staples, G. W./Herbst, D. R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI.	In Fiji, <i>Hoya australis</i> grows in beach thickets and mangrove swamps. [documented distribution along waterways]
706	2000. Staples, G.W./Herbst, D.R/Imada, C.T.. Survey of invasive or potentially invasive cultivated plants in Hawai'i. Bishop Museum Occasional Papers. 65: 1-35.	Wind-dispersed.
707	2009. Lengyel, S./Gove, A.D./Latimer, A.M./Majer, J.D./Dunn, R.R.. Ants sow the seeds of global diversification in flowering plants. PLoS ONE. 4: e5480. http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0005480	Some <i>Hoya</i> spp. seeds are dispersed by ants.
708	2010. WRA Specialist. Personal Communication.	Unknown.
801	2010. WRA Specialist. Personal Communication.	Inflorescence up to 50 flowered; Fruit spindle-shaped 3.5-5" long; seeds ca 0.25"long.
802	2010. Dave's Garden. Plant files: <i>Hoya</i> , Australian waxflower, wax plant, procelain flower, <i>Hoya australis</i> . Dave's Garden, http://davesgarden.com/guides/pf/go/54435/	Seed does not store well. Sow as soon as possible.
803	2010. WRA Specialist. Personal Communication.	Unknown.
804	2010. WRA Specialist. Personal Communication.	Unknown.
805	2010. WRA Specialist. Personal Communication.	Unknown.

