

Assessment date 4 November 2015

<i>Philodendron hederaceum</i> var <i>hederaceum</i> (syn. <i>Philodendron scandens</i>)		Answer	Score
All Zones			
1.01	Is the species highly domesticated?	n	0
1.02	Has the species become naturalised where grown?		
1.03	Does the species have weedy races?		
2.01	Species suited to Florida's USDA climate zones (0-low; 1-intermediate; 2-high) North Zone: suited to Zones 8, 9 Central Zone: suited to Zones 9, 10 South Zone: suited to Zone 10	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	y	1
2.04	Native or naturalized in habitats with periodic inundation North Zone: mean annual precipitation 50-70 inches Central Zone: mean annual precipitation 40-60 inches South Zone: mean annual precipitation 40-60 inches	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	unk	
3.01	Naturalized beyond native range	y	2
3.02	Garden/amenity/disturbance weed	n	0
3.03	Weed of agriculture	n	0
3.04	Environmental weed	n	0
3.05	Congeneric weed	n	0
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	n	0
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals		
4.05	Toxic to animals	y	1
4.06	Host for recognised pests and pathogens	unk	0
4.07	Causes allergies or is otherwise toxic to humans	y	1
4.08	Creates a fire hazard in natural ecosystems	n	0
4.09	Is a shade tolerant plant at some stage of its life cycle	n	0
4.10	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils). North & Central Zones: infertile soils; South Zone: shallow limerock or Histisols.	unk	0
4.11	Climbing or smothering growth habit	y	1
4.12	Forms dense thickets	n	0
5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	n	0
6.01	Evidence of substantial reproductive failure in native habitat	unk	0
6.02	Produces viable seed	?	

6.03	Hybridizes naturally	n	-1
6.04	Self-compatible or apomictic	unk	-1
6.05	Requires specialist pollinators	y	-1
6.06	Reproduction by vegetative propagation		
6.07	Minimum generative time (years)		
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	unk	-1
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	unk	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed		
7.06	Propagules bird dispersed	?	
7.07	Propagules dispersed by other animals (externally)		
7.08	Propagules dispersed by other animals (internally)	y	1
8.01	Prolific seed production	n	-1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)		
8.03	Well controlled by herbicides	y	-1
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05		?	
Total Score			1
Implemented Pacific Second Screening			Yes
Risk Assessment Results			Low

section	# questions answered	satisfy minimum?
A		10 yes
B		9 yes
C		11 yes
total		30 yes

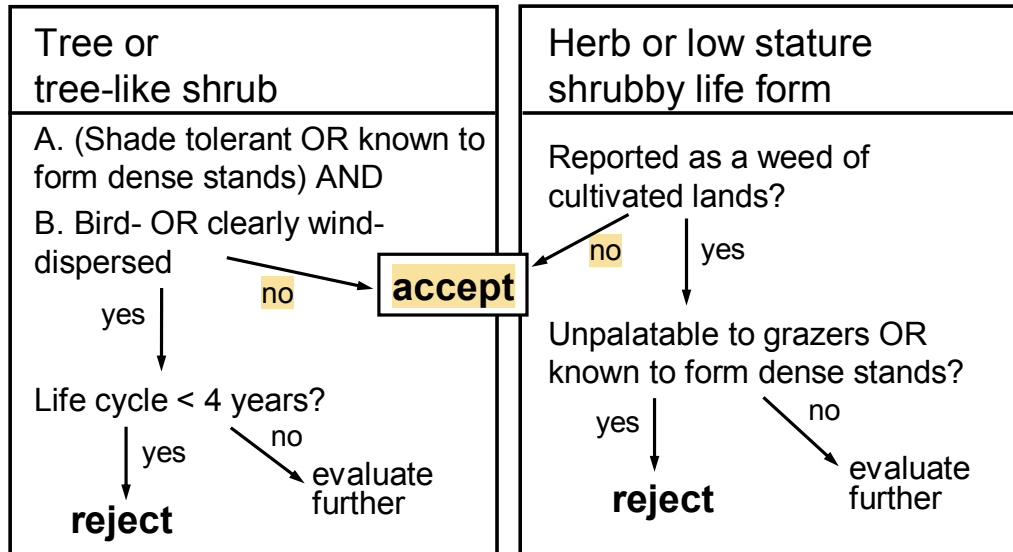
	Reference	Source data
1.01		cultivated, but no evidence of selection for reduced weediness
1.02		
1.03		
2.01	1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgn.d.tif). 2. USDA, ARS, National Genetic 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?409896 (11/2/2015).	No computer analysis was performed. 1. Global hardiness zone: 9, 10, 11 ; equivalent to USDA Hardiness zones: USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11a: to USDA Zone (40 °F) USDA Zone 11b: to (45 °F) . USDA Zone 12a: to (50 °F) USDA Zone 12b: to (55 °F). 2. NORTHERN AMERICA Mexico SOUTHERN AMERICA Caribbean: Cuba; Dominican Republic; Jamaica; Puerto Rico Mesoamerica: Belize; Costa Rica; El Salvador; Guatemala; Honduras; Nicaragua; Panama Northern South America: Suriname; Venezuela Brazil: Brazil Western South America: Bolivia; Colombia; Ecuador; Peru
2.02		
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. GBIF (http://www.gbif.org/species/7228286)	1. Distribution in the native/cultivated range occurs in Bsk, Bsh, Aw, Am, Af, Cfa
2.04	1. Climate Charts. World Climate Maps. http://www.climate-charts.com/World-Climate-Maps.html#rain (8-19-2015) 2. GBIF (http://www.gbif.org/species/7228286)	Native to areas with rainfall between 38 and 97 inches.
2.05	1. Evenhuis, N. L., & Eldredge, L. G. (2006). New records of naturalized and naturalizing plants around Lyon Arboretum, Mānoa Valley, O 'ahu. BISHOP MUSEUM, 87, 3-18. 2. Proctor, G. R.. (1996). Additions and Corrections to "Flora of the Cayman Islands". Kew Bulletin, 51(3), 483–507. http://doi.org/10.2307/4117025	Insufficient evidence to justify a "yes" answer, however, 1. Present in Hawaii. 2. Cayman Islands
3.01	1. Evenhuis, N. L., & Eldredge, L. G. (2006). New records of naturalized and naturalizing plants around Lyon Arboretum, Mānoa Valley, O 'ahu. BISHOP MUSEUM, 87, 3-18. 2. Flora of the Hawaiian Islands (http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/result2.cfm?family=araceae&sort1=family&sort2=genus accessed 11/3/2015)	Naturalized in Hawaii
3.02		No Evidence
3.03		No Evidence
3.04		No Evidence
3.05		No Evidence
4.01	1. Dr. Thomas B. Croat 1999 http://www.aroid.org/genera/philodendron/Philodendron/Solenostigma/hederaceum.php (10-09-2015)	1. These features are not consistent with the species description.
4.02		No Evidence
4.03		No Evidence
4.04		No Evidence
4.05	1. ASPCA https://www.asPCA.org/pet-care/animal-poison-control/toxic-and-non-toxic-plants/heartleaf-philodendron (10-14-2015)	1. Toxic to dogs and cats 2. Philodendron (Philodendron cordatum) is an indoor ornamental. Philodendrons can cause poisoning in humans and pets because of the oxalates.
4.06		No Evidence

4.07	1. Quattrocchi U (2012) CRC World Dictionary of Medical and Poisonous Plants CRC Press Boca Raton FL 2. Dorsey (1958) Philodendron dermatitis. California medicine, 88(4), 329. 3. http://www.cbif.gc.ca/pls/pp/ppack.info?p_psn=220&p_type=all&p_sci=comm&p_x=px	1. Plant listed as toxic 2. Plants from Philodendron genus associated with contact dermatitis 3. Heart-leaved philodendron (Philodendron scandens) is an ornamental. Chewing the leaves of philodendrons results in painful burning and swelling of the mouth parts because of the oxalates. Contact dermatitis also occurs (Lampe and McCann 1985). A recent survey showed that even though 67% of 188 cases involved philodendrons, only one case developed minor symptoms (Mrvos et al. 1990). McIntire et al. (1990) describe the death of an infant after it had ingested a philodendron. The child had ulceration of lips and tongue as well as esophageal erosion. Death was caused by cardiac arrest secondary to vagotonia resulting from esophageal erosions.
4.08		no evidence
4.09	Missouri Botanical Garden, Plant Finder (http://www.missouribotanicalgarden.org/plantfinder accessed 11/3/2015)	Place in bright indirect light. Avoid full sun. Tolerant of shade, but if conditions are too dark, stems become spindly.
4.10		Insufficient evidence
4.11	http://www.aroid.org/genera/Philodendron/Philodendron/Solenost erigma/hederaceum.htm	"Hemiepiphytic vine; growing to often high in trees, stem appressed-climbing, eventually scandent, often pendent"
4.12		No Evidence
5.01		Family: Araceae
5.02		Family: Araceae
5.03		No Evidence
5.04	1. Dr. Thomas B. Croat 1999 http://www.aroid.org/genera/philodendron/Philodendron/Solenost erigma/hederaceumh.php (10-09-2015)	1. These features are not consistent with the species description.
6.01		No Evidence
6.02	1. Dennis B. McConnell, Jianjun Chen, Richard J. Henny, and Kelly C. Everitt https://edis.ifas.ufl.edu/ep150 (10-6-2015)	1. Viability is very limited unless the seed is properly processed and vacuum-packed. Successful seed germination and early seedling growth require specially equipped facilities, and most plant finishers buy seedlings from propagation specialists
6.03	1. Croat (1997) A Revision of Philodendron Subgenus Philodendron (Araceae) of Central America. Pollination Biology. (http://www.aroid.org/genera/philodendron/poll ibiol.htm)	1. Though more studies must be made on pollination biology of Philodendron and even though the beetle pollination system is somewhat sloppy and imprecise, a combination of a moderately strong beetle-plant specificity, coupled with severe phenological constraints and narrow windows of pollination opportunities (perhaps as little as a few hours per year) work to reduce interspecific hybridization. Although hybrids can be readily produced under greenhouse conditions, evidence for hybridization is not apparent among wild populations.
6.04		No Evidence
6.05	http://www.aroid.org/genera/Philodendron/pollibiol.htm	"Pollinators are members of subfamily Dynastinae in the family Scarabaeidae (Fig. 32). All beetles determined to date from either Central American or South American Philodendron are members of the genera Cyclcephala or Erioscelis."
6.06	1. Evenhuis, N. L., & Eldredge, L. G. (2006). New records of naturalized and naturalizing plants around Lyon Arboretum, Mānoa Valley, O 'ahu. BISHOP MUSEUM, 87, 3-18.	"Spread is probably exclusively vegetative."
6.07		No Evidence
7.01		No Evidence
7.02		Ornamental readily available at nurseries and on the internet
7.03		No Evidence
7.04	1. Croat (1997) A Revision of Philodendron Subgenus Philodendron (Araceae) of Central America. Berries. (http://www.aroid.org/genera/philodendron/ber ries.htm)	Fruits are berries
7.05		No Evidence

7.06	1. Croat (1997) A Revision of Philodendron Subgenus Philodendron (Araceae) of Central America. Berries. (http://www.aroid.org/genera/philodendron/berries.htm) 2. http://www.allergenica.com/Details.asp?PLANTID=163	Though little is known about fruit dispersal, the mesocarp surrounding the seeds contained within each locule is juicy or gelatinous and is usually sweet and sticky, making it logically animal dispersed. Infructescences are frequently seen which appear to have been pecked apart by birds (Fig. 36). Certainly the sticky seeds, often many per berry, would logically be easily dispersed on birds beaks. Alternatively the infructescence is large, and even faintly scented when fully mature, making it an appealing meal even for mammals such as monkeys.
7.07		No Evidence
7.08	1. Croat (1997) A Revision of Philodendron Subgenus Philodendron (Araceae) of Central America. Berries. (http://www.aroid.org/genera/philodendron/berries.htm) 2. http://www.allergenica.com/Details.asp?PLANTID=163	Though little is known about fruit dispersal, the mesocarp surrounding the seeds contained within each locule is juicy or gelatinous and is usually sweet and sticky, making it logically animal dispersed. Infructescences are frequently seen which appear to have been pecked apart by birds (Fig. 36). Certainly the sticky seeds, often many per berry, would logically be easily dispersed on birds beaks. Alternatively the infructescence is large, and even faintly scented when fully mature, making it an appealing meal even for mammals such as monkeys.
8.01	2. http://www.allergenica.com/Details.asp?PLANTID=163	Rarely produces fruits
8.02		No Evidence
8.03	1. Stamps, R. H. , Bodnaruk, W. H., Jr.1982. Herbicide application to heartleaf philodendron stock beds.Proceedings of the Florida State Horticultural Society, Vol. 94, pp. 117-119	1. Oxadiazon at 2.2 kg/ha, napropamide at 4.5 kg/ha, simazine at 2.2 kg/ha, oxadiazon + alachlor at 1.7 + 1.7 kg/ha or simazine + napropamide at 1.1 + 4.5 kg/ha was applied twice at 3-month intervals in 1980 and 1981 to ground stock beds of Philodendron scandens oxycardium. Alachlor at 2.2 kg/ha was applied at 6-week intervals. Weed control was very good with the treatments containing oxadiazon and poor to fair with the others. No herbicide treatment caused significant visual symptoms of phytotoxicity. The treatments did not affect internode length or cutting weight compared with controls and had no effect on rooting of cuttings taken from treated beds, or on subsequent growth of the cuttings. Node position had little effect on rooting of cuttings.
8.04		No Evidence
8.05		No Evidence

Pacific second screening: decision rules for species with WRA scores between 1 and 6

(from Daehler *et al.* 2004)



Vines must pass both tests