

Assessment date 16 August 2016

<b><i>Monstera deliciosa</i> Central, South Zone</b>		<b>Answer</b>	<b>Score</b>
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?	y	
3.01	Naturalized beyond native range	y	2
3.02	Garden/amenity/disturbance weed	y	2
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	y	1
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	y	1
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	n	0
6.02	Produces viable seed	y	1

6.03	Hybridizes naturally	unk	-1
6.04	Self-compatible or apomictic	n	-1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	y	1
6.07	Minimum generative time (years)	unk	-1
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y	1
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	n	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed	y	1
7.06	Propagules bird dispersed	n	-1
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	?	
8.01	Prolific seed production	n	-1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	y	1
8.03	Well controlled by herbicides	unk	1
8.04	Tolerates, or benefits from, mutilation or cultivation	unk	-1
8.05		?	
<b>Total Score</b>		<b>9</b>	
<b>Implemented Pacific Second Screening</b>		<b>No</b>	
<b>Risk Assessment Results</b>		<b>HIGH</b>	

section	# questions answered	satisfy minimum?
A		11 yes
B		10 yes
C		18 yes
total		39 yes

Assessment date 16 August 2016

<b><i>Monstera deliciosa</i> North Zone</b>		<b>Answer</b>	<b>Score</b>
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	1	
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?	y	
3.01	Naturalized beyond native range	y	1
3.02	Garden/amenity/disturbance weed	y	1
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	y	1
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	y	1
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	n	0
6.02	Produces viable seed	y	1

6.03	Hybridizes naturally	unk	-1
6.04	Self-compatible or apomictic	n	-1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	y	1
6.07	Minimum generative time (years)	unk	-1
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y	1
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	n	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed	y	1
7.06	Propagules bird dispersed	n	-1
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	?	
8.01	Prolific seed production	n	-1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	y	1
8.03	Well controlled by herbicides	unk	1
8.04	Tolerates, or benefits from, mutilation or cultivation	unk	-1
8.05		?	
<b>Total Score</b>		<b>9</b>	
<b>Implemented Pacific Second Screening</b>		<b>No</b>	
<b>Risk Assessment Results</b>		<b>HIGH</b>	

section	# questions answered	satisfy minimum?
A		11 yes
B		10 yes
C		18 yes
total		39 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 ( <a href="http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnnd.tif">http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnnd.tif</a> ). 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896">http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?409896</a> (4-13-2016).	No computer analysis was performed. 1. Global hardiness zone: 10, 11, 12, 13 ; equivalent to USDA Hardiness zones: 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. Native to Northern America Southern Mexico: Mexico - Chiapas, - Oaxaca, - Veracruz Southern America Mesoamerica: Costa Rica; Guatemala; Panama
2.02		
2.03	1. Köppen-Geiger climate map ( <a href="http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf">http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf</a> ). 2. GBIF <a href="http://www.gbif.org/species/101314212">http://www.gbif.org/species/101314212</a> (4-13-2016)	1. Distribution in the native/cultivated range occurs in Aw, Am, Af
2.04	1. Climate Charts. World Climate Maps. <a href="http://www.climate-charts.com/World-Climate-Maps.html#rain">http://www.climate-charts.com/World-Climate-Maps.html#rain</a> (8-19-2015)	1. Native to regions with rainfall from 39 to 97 inches annually.
2.05	1. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL. 2. Queensland Government <a href="http://wetlandinfo.ehp.qld.gov.au/wetlands/ecology/components/species/?monstera-deliciosa">http://wetlandinfo.ehp.qld.gov.au/wetlands/ecology/components/species/?monstera-deliciosa</a> (4-13-2016) 3. MICHAEL MADISON, Contributions from The Gray Herbarium of Harvard University No. 20. 1977 REVISION OF MONSTERA (ARACEAE)	It was introduced into cultivation in England in 1752; reached Singapore in 1877 and India in 1878. Specimens of the fruit were exhibited by the Massachusetts Horticultural Society in 1874 and 1881. It has become familiar as an ornamental in most of the warm countries of the world and is widely used in warm and temperate regions as a potted plant indoors,—especially in conservatories and greenhouses—though it does not bloom nor fruit in confinement. 2. Introduced to Australia 3. Introduced to Europe
3.01	1. Biosecurity Queensland Edition Fact Sheet <a href="http://keyserver.lucidcentral.org/weeds/data/media/Html/monstera_deliciosa.pdf">http://keyserver.lucidcentral.org/weeds/data/media/Html/monstera_deliciosa.pdf</a> (4-14-2016) 2. FGCU Food Forest Plant Database <a href="http://www.fgcu.edu/UndergraduateStudies/files/Monstera.pdf">http://www.fgcu.edu/UndergraduateStudies/files/Monstera.pdf</a> (4-16-2016)	1. Occasionally naturalised in the warmer temperate, sub-tropical and tropical regions of eastern Australia 2. <i>Monstera deliciosa</i> has naturalized and become mildly invasive in Hawaii and on a variety of Pacific islands
3.02	1. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL. 2. Martin, T.J. 2002. A Mexican migrant the naturalisation of <i>Monstera deliciosa</i> (fruit salad plant) in New Zealand. Auckland Botanical Society Journal, 57: 151-154 3. Biosecurity Queensland Edition Fact Sheet <a href="http://keyserver.lucidcentral.org/weeds/data/media/Html/monstera_deliciosa.pdf">http://keyserver.lucidcentral.org/weeds/data/media/Html/monstera_deliciosa.pdf</a> (4-14-2016)	1. In Guatemala, it is raised in pots in patios to prevent too rampant growth, as it is apt to become an aggressive nuisance. 2. Established patches in the forest interior are locally preventing seedling recruitment and in some places the plant is invading the epiphytic niche. 3. Fruit salad plant ( <i>Monstera deliciosa</i> ) is regarded as an environmental weed in New South Wales. This very common garden plant has become a weed of riparian areas and urban bushland, particularly in the warmer parts of eastern Australia. It is relatively common in coastal areas, usually growing where garden refuse has been dumped.
3.03		no evidence
3.04		Lack of evidence
3.05		no evidence
4.01	1. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL.	1. Not described with these features
4.02		no evidence
4.03		no evidence
4.04		Poisonous to mammals. See below

4.05	1. Invasive Species Compendium <a href="http://www.cabi.org/isc/datasheet/34886">http://www.cabi.org/isc/datasheet/34886</a> (4-12-2016) 2. ASPCA Database ( <a href="http://www.aspcare.org/pet-care/animal-poison-control">http://www.aspcare.org/pet-care/animal-poison-control</a> accessed 8/16/2016)	1. Poisonous to mammals 2. Toxic to dogs and cats
4.06		
4.07	1. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL. 2. Royal Horticultural Society <a href="https://www.rhs.org.uk/Plants/11192/i-Monstera-deliciosa-i-(F)/Details?returnurl=%2Fplants%2Fclimbers%3Faliaspath%3D%252fplants%252fclimbers">https://www.rhs.org.uk/Plants/11192/i-Monstera-deliciosa-i-(F)/Details?returnurl=%2Fplants%2Fclimbers%3Faliaspath%3D%252fplants%252fclimbers</a> (2-12-2016)p 3. Dave's Garden <a href="http://davesgarden.com/guides/pf/go/1204/#b">http://davesgarden.com/guides/pf/go/1204/#b</a> (4-12-2016) 4. NCSU Extension Plants database ( <a href="https://plants.ces.ncsu.edu/plants/all/monstera-deliciosa/">https://plants.ces.ncsu.edu/plants/all/monstera-deliciosa/</a> accessed 8/16/2016)	1. The oxalic acid, and possibly other unidentified principles, in the unripe fruit, the floral remnants of the ripe fruit, and all parts of the plant, cause oral and skin irritation. Some sensitive individuals claim that even the ripe fruit irritates the throat. It would be well to avoid eating the ceriman in quantity until it is determined that there are no undesirable reactions. Some individuals have experienced urticaria and anaphylaxis after eating ceriman. Some children and adults have reported diarrhea and intestinal gas after consuming the flesh or products made from it. 2. Ingestion may cause severe discomfort 3. All parts of plant are poisonous if ingested Handling plant may cause skin irritation or allergic reaction 4. TOXIC ONLY IF LARGE QUANTITIES EATEN. CAUSES SEVERE PAIN IN THE MOUTH IF EATEN! SKIN IRRITATION MINOR OR LASTING ONLY FOR A FEW MINUTES.
4.08		no evidence
4.09	1. Environmental Journalism at University of the Georgia <a href="http://envtjour.uga.edu/underdog-of-the-rainforest-2/">http://envtjour.uga.edu/underdog-of-the-rainforest-2/</a> (4-12-2016) 2. National Tropical Botanical Garden <a href="http://ntbg.org/plants/plant_details.php?plantid=7693">http://ntbg.org/plants/plant_details.php?plantid=7693</a> (4-13-16) 3. IFAS 1999 <a href="http://hort.ifas.ufl.edu/database/documents/pdf/shrub_fact_sheets/mondela.pdf">http://hort.ifas.ufl.edu/database/documents/pdf/shrub_fact_sheets/mondela.pdf</a> (4-14-2016)	1. When Monstera was just a seedling, it unearthed the most interesting adaptation yet. While most plants were busy growing towards the sunlight, Monstera was growing towards the darkness. Naturalists refer to this as negative phototropism. This adaptation allows the young plant to counter intuitively grow into the shade of a tree that will one day support it. Murray says that these plants are ten times more sensitive to touch than humans, so as soon as one reaches a tree, it knows. 2. the seedlings, upon germination, will grow in the direction of the darkest area (not just merely away from light) until they encounter the base of a tree to grow on. 3. Split-Leaf Philodendron should only be grown in frost-free areas on rich, moist soil in partial to deep shade. Full sun locations can burn the foliage.
4.10		Lack of evidence
4.11	1. Missouri Botanical Garden <a href="http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=b605">http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=b605</a> (4-12-2016) 2. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL. 3. National Tropical Botanical Garden <a href="http://ntbg.org/plants/plant_details.php?plantid=7693">http://ntbg.org/plants/plant_details.php?plantid=7693</a> (4-13-16)	split-leaf philodendron is a climbing, evergreen perennial vine 2. climbing trees to a height of 30 ft (9 m) or more. 2. Fruit salad plant is a large stout stemmed vine climbing or sprawling to c. 20 m 3. Monstera is an evergreen liana that climbs high into the rain forest canopy, attaching itself to trunks and branches and supporting itself above the ground with long tentacle-like aerial roots.
4.12		no evidence
5.01		Family: Araceae
5.02		Family: Araceae
5.03	1. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL.	1. herbaceous vine
5.04	1. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL.	1. Not described with these features
6.01		no evidence
6.02	1. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL. 2. Dave's Garden <a href="http://davesgarden.com/guides/pf/go/1204/#b">http://davesgarden.com/guides/pf/go/1204/#b</a> (4-12-2016) 3. New Zealand Plant Conservation Network <a href="http://www.nzpcn.org.nz/flora_details.aspx?ID=4216">http://www.nzpcn.org.nz/flora_details.aspx?ID=4216</a> (4-13-2016)	1. In some European nurseries, the ceriman is raised from imported seed. 2. Propagated by seed 3. Seed is long-lived seed and is dispersed usually through the careless discarding of garden waste. Often found as a long persistent garden relic.
6.03		no evidence
6.04	1. Martin, T.J. 2002. A Mexican migrant the naturalisation of <i>Monstera deliciosa</i> (fruit salad plant) in New Zealand. <i>Auckland Botanical Society Journal</i> , 57: 151-154	1. engages in obligate outcrossing

6.05	1. Useful Tropical <a href="http://tropical.theferns.info/viewtropical.php?id=Monstera+deliciosa">http://tropical.theferns.info/viewtropical.php?id=Monstera+deliciosa</a> (4-14-2016)	1. Pollinators: Bees, Insects
6.06	1. Martin, T.J. 2002. A Mexican migrant the naturalisation of <i>Monstera deliciosa</i> (fruit salad plant) in New Zealand. Auckland Botanical Society Journal, 57: 151-154 2. Biosecurity Queensland Edition Fact Sheet <a href="http://keyserver.lucidcentral.org/weeds/data/media/Html/monstera_deliciosa.pdf">http://keyserver.lucidcentral.org/weeds/data/media/Html/monstera_deliciosa.pdf</a> (4-14-2016) 3. T.E.R.R.A.I.N - Taranaki Educational Resource: Research, Analysis and Information Network <a href="http://www.terrain.net.nz/friends-of-te-henui-group/weeds/fruit-salad-plant-monstera-deliciosa.html">http://www.terrain.net.nz/friends-of-te-henui-group/weeds/fruit-salad-plant-monstera-deliciosa.html</a> (4-16-2016)	1. reproduces vegetatively 2. Propagation is by cuttings or air-layering, and seldom by seeds. 3. Its reproduction is usually by vegetative spread.
6.07		no evidence
7.01	1. New Zealand Plant Conservation Network <a href="http://www.nzpcn.org.nz/flora_details.aspx?ID=4216">http://www.nzpcn.org.nz/flora_details.aspx?ID=4216</a> (4-13-2016) 2. Martin, T.J. 2002. A Mexican migrant the naturalisation of <i>Monstera deliciosa</i> (fruit salad plant) in New Zealand. Auckland Botanical Society Journal, 57: 151-154 3. Biosecurity Queensland Edition Fact Sheet <a href="http://keyserver.lucidcentral.org/weeds/data/media/Html/monstera_deliciosa.pdf">http://keyserver.lucidcentral.org/weeds/data/media/Html/monstera_deliciosa.pdf</a> (4-14-2016)	1. Seed is long-lived seed and is dispersed usually through the careless discarding of garden waste. Often found as a long persistent garden relic. 2. At the Kaitoke swamp Great Barrier Island stems had been dumped into a tributary of the main swamp and then further dispersed downstream in floodwaters. This resulted in several plants becoming established along the course of the stream 3. This very common garden plant has become a weed of riparian areas and urban bushland, particularly in the warmer parts of eastern Australia. It is relatively common in coastal areas, usually growing where garden refuse has been dumped.
7.02	1. New Zealand Plant Conservation Network <a href="http://www.nzpcn.org.nz/flora_details.aspx?ID=4216">http://www.nzpcn.org.nz/flora_details.aspx?ID=4216</a> (4-13-2016)	Seed is long-lived seed and is dispersed usually through the careless discarding of garden waste. Often found as a long persistent garden relic.
7.03		no evidence
7.04	1. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL.	1. develops into a green compound fruit 8 to 12 in (20-30 cm) or more in length and 2 to 3 1/2 in (5-8.75 cm) thick, suggesting an ear of corn.
7.05	1. Martin, T.J. 2002. A Mexican migrant the naturalisation of <i>Monstera deliciosa</i> (fruit salad plant) in New Zealand. Auckland Botanical Society Journal, 57: 151-154	1. At the Kaitoke swamp Great Barrier Island stems had been dumped into a tributary of the main swamp and then further dispersed downstream in floodwaters. This resulted in several plants becoming established along the course of the stream
7.06		no evidence
7.07	1. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL.	1. develops into a green compound fruit 8 to 12 in (20-30 cm) or more in length and 2 to 3 1/2 in (5-8.75 cm) thick, suggesting an ear of corn. [no mechanism for attachment]
7.08	1. Martin, T.J. 2002. A Mexican migrant the naturalisation of <i>Monstera deliciosa</i> (fruit salad plant) in New Zealand. Auckland Botanical Society Journal, 57: 151-154	1. Monkeys are possibly the dispersal vectors for the seeds
8.01	1. Morton, J. 1987. Ceriman. p. 15–17. In: Fruits of warm climates. Julia F. Morton, Miami, FL.	1. Generally there are no seeds, but sometimes, pale-green, hard seeds the size of large peas, may occur in a dozen or so of the segments.
8.02	1. New Zealand Plant Conservation Network <a href="http://www.nzpcn.org.nz/flora_details.aspx?ID=4216">http://www.nzpcn.org.nz/flora_details.aspx?ID=4216</a> (4-13-2016)	1. Seed is long-lived seed and is dispersed usually through the careless discarding of garden waste. Often found as a long persistent garden relic.
8.03		no evidence
8.04		no evidence
8.05		no evidence