

Australia/New Zealand Weed Risk Assessment adapted for United States.

Data used for analysis published in: Gordon, D.R. and C.A. Gantz. 2008. Potential impacts on the horticultural industry of screening new plants for invasiveness. Conservation Letters 1: 227-235. Available at: <http://www3.interscience.wiley.com/cgi-bin/fulltext/121448369/PDFSTART>

<i>Chrysophyllum venezuelanense</i>			
Question number	Question	Answer	Score
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 U.S. climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high)	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	1	
2.03	Broad climate suitability (environmental versatility)	?	
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	?	
3.01	Naturalized beyond native range	n	-1
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		
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals		
4.05	Toxic to animals	n	0
4.06	Host for recognised pests and pathogens		
4.07	Causes allergies or is otherwise toxic to humans	n	0
4.08	Creates a fire hazard in natural ecosystems		
4.09	Is a shade tolerant plant at some stage of its life cycle		
4.1	Grows on one or more of the following soil types: alfisols, entisols, or mollisols	?	
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets		
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	?	
6.03	Hybridizes naturally		
6.04	Self-compatible or apomictic	n	-1
6.05	Requires specialist pollinators		
6.06	Reproduction by vegetative fragmentation		
6.07	Minimum generative time (years)		
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
7.02	Propagules dispersed intentionally by people	n	-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		
7.06	Propagules bird dispersed	?	
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	?	
8.01	Prolific seed production		
8.02	Evidence that a persistent propagule bank is formed (>1 yr)		
8.03	Well controlled by herbicides		
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05	Effective natural enemies present in U.S.		
Total Score			-5

Outcome	Accept
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section	# questions answered	satisfy minimum?
A	9	Yes
B	5	Yes
C	10	Yes
total	25	yes

Data collected 2008

Question number	Reference	Source data
1.01		no evidence of cultivation
1.02		
1.03		
2.01	<p>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. Zamora, N (2006) Flora Digital de la Selva. Sapotaceae. (http://sura.ots.ac.cr/local/florula3/families/SAPOTACEAE.pdf).</p>	<p>1. Global hardiness zones 7-13. 2. Distribution: Mexico to Brazil.</p>
2.02		
2.03	<p>1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. Zamora, N (2006) Flora Digital de la Selva. Sapotaceae. (http://sura.ots.ac.cr/local/florula3/families/SAPOTACEAE.pdf).</p>	<p>1. Distribution range is not specific enough to determine; possibly three climatic regions. 2. Distribution: Mexico to Brazil.</p>
2.04	<p>1. Mexico: Microsoft Encarta World Precipitation and Average Rainfall (http://uk.encyclopedia.msn.com/encnet/RefPages/RefMedia.aspx?refid=461530746&artrefid=761554737&pn=3&sec=-1). 2. Belize: Belize: Atlapedia Online (http://www.atlapedia.com/online/countries/belize.htm). 3. Nicaragua: Microsoft Encarta World Precipitation and Average Rainfall (http://uk.encyclopedia.msn.com/encnet/RefPages/RefMedia.aspx?refid=461530746&artrefid=761554737&pn=3&sec=-1). 4. Guatemala: Atlapedia Online (http://www.atlapedia.com/online/countries/guatemala.htm). 5. Honduras: Atlapedia Online (http://www.atlapedia.com/online/countries/honduras.htm). 6. Costa Rica: Atlapedia Online (http://www.atlapedia.com/online/countries/costa.htm). 7. Colombia: World Trade Press (http://www.worldtradeexpress.com/Precipitation_Map_Colombia.html). 8. Brazil: Atlapedia Online (http://www.atlapedia.com/online/countries/brazil.htm). 9. Panama: Atlapedia Online (http://www.atlapedia.com/online/countries/panama.htm). 10. Venezuela: Venezuela: Atlapedia Online (http://www.atlapedia.com/online/countries/venezuela.htm). 11. El Salvador: Encyclopedia Britannica</p>	<p>1. For Mexico: average annual precipitation ranges from under 10 inches to over 80 inches. 2. For Belize: average annual precipitation varies from 1,270 mm (50 inches) in the north to more than 3,810 mm (100 inches) in the south. 3. For Nicaragua, average annual precipitation ranges from 60 inches/year to 80+ inches/year. 4. For Guatemala: "Average annual precipitation varies from 1,140 mm (70 inches) to 5,080 mm (200 inches) depending on the region." 5. For Honduras: Average annual precipitation varies from 1,770 mm (70 inches) to 2,540 mm (100 inches) in the north, while along the Pacific coastal plains it varies from 1,520 mm (60 inches) to 2,030 mm (80 inches). 6. For Costa Rica: average annual precipitation is 3,300 mm (130 inches) and rainfall patterns vary from region to region. 7. Most of Colombia receives</p>

	Online (http://www.britannica.com/eb/article-40899/EI-Salvador). 12. Vasquez, R and Coimbra, G (2002) Frutas Silvestres Comestibles de Santa Cruz. Editorial FAN, Santa Cruz de la Sierra, Bolivia.	between 49.2 and 98.4 inches of rainfall per year, depending upon the region. 8. For Brazil: "the nationwide average annual precipitation varies between 1,010 mm (40 inches) and 2,030 mm (80 inches)." 9. For Panama: average annual precipitation varies from 1,780 mm (70 inches) to 2,540 (100 inches) depending on the region. 10. For Venezuela: the wet season is from May to November with an average annual precipitation varying from 1,400 mm (55 inches) in the Andes to 280 mm (11 inches) on the coast. 11. Annual precipitation on the Pacific lowlands averages about 68 inches (1,700 millimetres); on the southern and northern mountain ranges, at heights between 2,000 and 3,500 feet, the average is between 70 and 97 inches (1,800 and 2,500 millimetres); the higher mountains receive a little more. Annual precipitation recorded in the deeper valleys and surrounding plateaulike areas is between 45 and 60 inches (1,100 and 1,500 millimetres). 12. Requires "precipitation higher than 1500 mm per year". [59.1 inches]
2.05		no evidence
3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05		no evidence
4.01	Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) Flora of Ecuador, no. 80. Royal Botanic Gardens Kew, London.	no description of these traits
4.02		

4.03	Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) <i>Flora of Ecuador</i> , no. 80. Royal Botanic Gardens Kew, London.	no description of this
4.04		
4.05		no evidence
4.06		
4.07	1. Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) <i>Flora of Ecuador</i> , no. 80. Royal Botanic Gardens Kew, London. 2. Zamora, N (2006) <i>Flora Digital de la Selva</i> . Sapotaceae. (http://sura.ots.ac.cr/local/florula3/families/SAPOTAC EAE.pdf).	1. "When completely mature the fruit is edible, though rather insipid." 2. edible fruit [and no evidence of toxicity]
4.08		
4.09		
4.1	1. USDA, National Resources Conservation Services (NRCS), Soil Survey Division, World Soil Resources (http://soils.usda.gov/use/worldsoils/mapindex/order.html). 2. Vasquez, R and Coimbra, G (2002) <i>Frutas Silvestres Comestibles de Santa Cruz</i> . Editorial FAN, Santa Cruz de la Sierra, Bolivia.	1. Distribution range is not specific enough to determine; alfisols, entisols, and mollisols occur within the range. 2. "This species requires clay-sandy, well drained soils rich in nutrients."
4.11	Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) <i>Flora of Ecuador</i> , no. 80. Royal Botanic Gardens Kew, London.	"A tree to 40 m high and 60 cm diam."
4.12		
5.01		terrestrial
5.02	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?438295).	Sapotaceae
5.03	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?438295).	Sapotaceae
5.04	Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) <i>Flora of Ecuador</i> , no. 80. Royal Botanic Gardens Kew, London.	"A tree to 40 m high and 60 cm diam."

6.01		no evidence
6.02		
6.03		
6.04	Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) <i>Flora of Ecuador</i> , no. 80. Royal Botanic Gardens Kew, London.	Plant dioecious.
6.05		
6.06		
6.07	Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) <i>Flora of Ecuador</i> , no. 80. Royal Botanic Gardens Kew, London.	"often flowering as a small treelet of 3-4 m"
7.01		
7.02		no evidence
7.03		no evidence
7.04	1. Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) <i>Flora of Ecuador</i> , no. 80. Royal Botanic Gardens Kew, London. 2. Zamora, N (2006) <i>Flora Digital de la Selva</i> . Sapotaceae. (http://sura.ots.ac.cr/local/florula3/familias/SAPOTAC EAE.pdf).	1. "Fruit 5-6 cm long, globose...fruit yellow, hard-skinned...seeds several, 2.5-3 cm long" 2. fruit an ovoid to globose yellow berry, 4.5-5.5 cm in diameter [no evidence of adaptations to wind dispersal]
7.05		
7.06	1. Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) <i>Flora of Ecuador</i> , no. 80. Royal Botanic Gardens Kew, London. 2. Zamora, N (2006) <i>Flora Digital de la Selva</i> . Sapotaceae. (http://sura.ots.ac.cr/local/florula3/familias/SAPOTAC EAE.pdf).	1. "Fruit 5-6 cm long, globose...fruit yellow, hard-skinned...seeds several, 2.5-3 cm long" 2. fruit an ovoid to globose yellow berry, 4.5-5.5 cm in diameter [berry, but a little large for most birds]
7.07	1. Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) <i>Flora of Ecuador</i> , no. 80. Royal Botanic Gardens Kew, London. 2. Zamora, N (2006) <i>Flora Digital de la Selva</i> . Sapotaceae. (http://sura.ots.ac.cr/local/florula3/familias/SAPOTAC EAE.pdf).	1. "Fruit 5-6 cm long, globose...fruit yellow, hard-skinned...seeds several, 2.5-3 cm long" 2. fruit an ovoid to globose yellow berry, 4.5-5.5 cm in diameter [no evidence of any means of attachment]
7.08	1. Pennington, TD (2007) <i>Chrysophyllum venezuelanense</i> . Sapotaceae. In: Harling, G and Persson, C (Editors) <i>Flora of Ecuador</i> , no. 80. Royal Botanic Gardens Kew, London. 2. Zamora, N (2006)	1. "Fruit 5-6 cm long, globose...fruit yellow, hard-skinned...seeds several, 2.5-3 cm long" 2. fruit an ovoid to globose yellow berry, 4.5-

	Flora Digital de la Selva. Sapotaceae. (http://sura.ots.ac.cr/local/florula3/families/SAPOTACEAE.pdf).	5.5 cm in diameter
8.01		
8.02		
8.03		
8.04		
8.05		