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

Rondeletia leucophylla			
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	?	
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		
4.08	Creates a fire hazard in natural ecosystems		
4.09	Is a shade tolerant plant at some stage of its life cycle	n	0
4.1	Grows on one or more of the following soil types: alfisols, entisols, or mollisols	y	1
4.11	Climbing or smothering growth habit		
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		
6.05	Requires specialist pollinators	n	0
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	?	
7.03	Propagules likely to disperse as a produce contaminant	n	-1
7.04	Propagules adapted to wind dispersal	y	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			-1

Outcome	**Accept**

section	**# questions answered**	**satisfy minimum?**
A	8	Yes
B	5	Yes
C	9	Yes
total	22	yes

Data collected 2008

Question number	Reference	Source data
1.01		used horticulturally, but no evidence of significant modification
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%20lgnd.tif). 2. Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge. 3. Lorence, DH (1999) A Nomenclator of Mexican and Central American Rubiaceae. Missouri Botanical Garden Press, St. Louis, Missouri. 4. Vázquez, JA et al. (1995) Flora de Manantlán: Plantas Vasculares de la Reserva de la Biosfera Sierra de Manantlán Jalisco-Colima, México. Botanical Research Institute of Texas, Ft. Worth.	1. Global plant hardiness zones (9?-)10-13. 2. "Mexico to Panama". 3. "Type: Mexico: Guerrero". 4. Autlan: Tecopatlan [Jalisco]; Cuautitlan: Las Marias [Federal District]; La Resolana [Jalisco] [all in Central Mexico].
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. Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge. 3. Lorence, DH (1999) A Nomenclator of Mexican and Central American Rubiaceae. Missouri Botanical Garden Press, St. Louis, Missouri. 4. Vázquez, JA et al. (1995) Flora de Manantlán: Plantas Vasculares de la Reserva de la Biosfera Sierra de Manantlán Jalisco-Colima, México. Botanical Research Institute of Texas, Ft. Worth.	1. Uncertain about exact distribution range; this could be in one to three climatic regions. 2. "Mexico to Panama". 3. "Type: Mexico: Guerrero". 4. Autlan: Tecopatlan [Jalisco]; Cuautitlan: Las Marias [Federal District]; La Resolana [Jalisco] [all in Central Mexico].
2.04	1. Microsoft Encarta World Precipitation and Average Rainfall (http://uk.encarta.msn.com/encnet/RefPages/RefMedia.aspx?refid=461530746&artrefid=761554737&pn=3&sec=-1). 2. Atlapedia Online (http://www.atlapedia.com/online/countries/guatemal.htm). 3. Atlapedia Online (http://www.atlapedia.com/online/countries/belize.htm). 4. Atlapedia Online (http://www.atlapedia.com/online/countries/honduras.htm). 5. Microsoft Encarta World Precipitation and Average Rainfall (http://uk.encarta.msn.com/encnet/RefPages/RefM	1. For Mexico: Ranges from under 10 inches to over 80 inches. 2. For Guatemala: "Average annual precipitation varies from 1,140 mm (70 inches) to 5,080 mm (200 inches) depending on the region." 3. 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. 4. For Honduras: Average annual precipitation varies from 1,770 mm (70 inches) to 2,540 mm (100 inches)

	edia.aspx?refid=461530746&artrefid=761554737&pn=3&sec=-1). 6. Atlapedia Online (http://www.atlapedia.com/online/countries/costa.htm). 7. Atlapedia Online (http://www.atlapedia.com/online/countries/panama.htm).	in the north, while along the Pacific coastal plains it varies from 1,520 mm (60 inches) to 2,030 mm (80 inches). 5. For Nicaragua, average annual precipitation ranges from 60 inches/year to 80+ inches/year. 6. For Costa Rica: average annual precipitation is 3,300 mm (130 inches) and rainfall patterns vary from region to region. 7. For Panama: average annual precipitation varies from 1,780 mm (70 inches) to 2,540 (100 inches) depending on the region.
2.05	B & T World Seeds (http://www.b-and-t-world-seeds.com/carth.asp?species=Rondeletia%20leucophylla&sref=69219).	Species is listed on website, but seeds are not available for sale.
3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05		no evidence
4.01	Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge.	no evidence
4.02		
4.03	Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge.	no evidence
4.04		
4.05	Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge.	no evidence
4.06		
4.07		
4.08		
4.09	Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge.	"Full to part sun".
4.1	1. USDA, National Resources Conservation Services (NRCS), Soil Survey Division, World Soil	1. Mexico: in the northern half of Mexico, the main soil order types are

	Resources (http://soils.usda.gov/use/worldsoils/mapindex/order.html). 2. Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge.	aridisols, entisols, and mollisols, with some alfisols and ultisols and a small amount of inceptisols (also with a small amount of andisols). In the southern half of Mexico, there are mostly inceptisols with some alfisols and ultisols, and a very small amount of entisols and mollisols (and a very small amount of andisols); Belize: inceptisols, mollisols, and ultisols; Guatemala: mostly alfisols, mollisols, and ultisols, with a small amount of inceptisols (and a small region of andisols on the Pacific Coast); El Salvador: mostly ultisols with small amounts of inceptisols and entisols (and andisols on the Pacific Coast); Honduras: mostly alfisols, inceptisols, and ultisols, with very small amounts of entisols and mollisols; Nicaragua: mostly ultisols, with some alfisols and inceptisols (also with some andisols on the Pacific Coast); Costa Rica: mostly ultisols with a small amount of inceptisols (also with a small amount andisols); Panama: almost all ultisols with a very small amount of inceptisols (and also a very small amount of andisols). 2. "Fairly fertile, well-drained soil".
4.11		
4.12	Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge.	"Evergreen shrub, 3-5 ft."
5.01	Dwyer, JD (1980) Flora of Panama. Rondeletia. Rubiaceae. Annals of the Missouri Botanical Garden 67: 463-474.	terrestrial; "Shrubs or trees" [genus description].
5.02	Dwyer, JD (1980) Flora of Panama. Rondeletia. Rubiaceae. Annals of the Missouri Botanical Garden 67: 463-474.	Rubiaceae
5.03	Dwyer, JD (1980) Flora of Panama. Rondeletia. Rubiaceae. Annals of the Missouri Botanical Garden 67: 463-474.	Rubiaceae
5.04	1. Llamas, KA (2003) Tropical Flowering Plants: A	1. "Evergreen shrub, 3-5 ft." 2.

	guide to identification and cultivation. Timber Press, Portland and Cambridge. 2. Kirkbride, JH (1969) A revision of the Panamanian species of Rondeletia (Rubiaceae). Annals of the Missouri Botanical Garden 55: 372-391.	"Shrubs or trees" [genus description].
6.01		no evidence
6.02		
6.03		
6.04		
6.05	Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge.	"Attractive to nectar-feeding birds and butterflies".
6.06		
6.07		
7.01		
7.02	B & T World Seeds (http://www.b-and-t-world-seeds.com/carth.asp?species=Rondeletia%20leucophylla&sref=69219).	Species is listed on website, but seeds are not available for sale.
7.03		no evidence
7.04	1. Kirkbride, JH (1969) A revision of the Panamanian species of Rondeletia (Rubiaceae). Annals of the Missouri Botanical Garden 55: 372-391. 2. Dwyer, JD (1980) Flora of Panama. Rondeletia. Rubiaceae. Annals of the Missouri Botanical Garden 67: 463-474. 3. Maguire, B (1967) The Botany of the Guayana Highland - Part VII. Memoirs of the New York Botanical Garden 17: 241.	1. "Seeds fusiform, winged"; "fruit a capsule, globose or rotund or rarely transverse elliptic or ovoid…the seeds many, minute, sometimes winged at one end or at both ends" [genus description]. 2. "Fruits capsular, globose or rotund…seeds numerous, exaltate or winged at one or both poles" [genus description]. 3. "Seeds fusiform, winged, caudate at one or both ends" [genus description].
7.05		
7.06		
7.07	1. Kirkbride, JH (1969) A revision of the Panamanian species of Rondeletia (Rubiaceae). Annals of the Missouri Botanical Garden 55: 372-391. 2. Dwyer, JD (1980) Flora of Panama. Rondeletia. Rubiaceae. Annals of the Missouri Botanical Garden 67: 463-474. 3. Maguire, B (1967) The Botany of the Guayana Highland - Part VII. Memoirs of the New York Botanical Garden 17: 241.	1. "Seeds fusiform, winged"; "fruit a capsule, globose or rotund or rarely transverse elliptic or ovoid…the seeds many, minute, sometimes winged at one end or at both ends" [genus description]. 2. "Fruits capsular, globose or rotund…seeds numerous, exaltate or winged at one or both poles" [genus description]. 3. "Seeds fusiform, winged, caudate at one or both ends" [genus description]. [no evidence of adaptations to external

		dispersal].
7.08		
8.01		
8.02		
8.03		
8.04		
8.05		