

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>Ardisia nigrescens</i>			
	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)	2	
2.03	Broad climate suitability (environmental versatility)	N	0
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	Y	2
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	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	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		
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)	N	-1

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	Y	1
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
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section	# questions answered	satisfy minimum?
A	10	Yes
B	7	Yes
C	11	Yes
total	28	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%20Igd.tif). 2. Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus Ardisia subgenus Graphardisia (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447. 3. Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge. 4. Standley, PC (1931) Flora of the Lancetilla Valley Honduras. Field Museum of Natural History, Publication 283.	1. Global hardiness zones (9?-)10-12(-13?). 2. "Oaxaca, Mexico to Nicaragua". 3. Belize. 4. Lancetilla Valley, Honduras.

	Botanical Series, Volume X. Field Museum of Natural History, Chicago.	
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. Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). <i>SIDA Contributions to Botany</i> 20(4): 1423-1447. 3. Llamas, KA (2003) <i>Tropical Flowering Plants: A guide to identification and cultivation</i> . Timber Press, Portland and Cambridge. 4. Standley, PC (1931) <i>Flora of the Lancetilla Valley Honduras</i> . Field Museum of Natural History, Publication 283. Botanical Series, Volume X. Field Museum of Natural History, Chicago.	1. Only two climatic regions. 2. "Oaxaca, Mexico to Nicaragua". 3. Belize. 4. Lancetilla Valley, Honduras.
2.04	1. Atlapedia Online (http://www.atlapedia.com/online/countries/honduras.htm). 2. Atlapedia Online (http://www.atlapedia.com/online/countries/belize.htm). 3. Microsoft Encarta World Precipitation and Average Rainfall (http://uk.encarta.msn.com/encnet/RefPages/RefMedia.aspx?refid=461530746&artrefid=761554737&pn=3&sec=-1). 4. Microsoft Encarta World Precipitation and Average Rainfall (http://uk.encarta.msn.com/encnet/RefPages/RefMedia.aspx?refid=461530746&artrefid=761554737&pn=3&sec=-1).	1. 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). 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 Mexico, average annual precipitation ranges from under 10 inches to over 80 inches.
2.05		no evidence
3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05	1. Weber, E (2003) <i>Invasive Plant Species of the World</i> . CAB International, Oxon, United Kingdom. 2. Henderson, L (2001) <i>Alien weeds and invasive plants</i> . Plant Protection Research Institute, Pretoria.	1. <i>Ardisia crenata</i> is invasive in South Africa, the Southeastern United States, the Mascarenes, and the Seychelles. <i>Ardisia elliptica</i> is invasive in the Southeastern United States, the Mascarenes, the Seychelles, and Hawaii. 2. <i>Ardisia crenata</i> is a declared weed in three provinces of South Africa.
4.01	Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). <i>SIDA Contributions to Botany</i> 20(4): 1423-1447.	no description of these traits
4.02		
4.03	Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). <i>SIDA Contributions to Botany</i> 20(4): 1423-1447.	no description of parasitism

4.04		
4.05	Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447.	no evidence
4.06		
4.07	Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447.	no evidence
4.08		
4.09	Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge.	"Full sun to part shade."
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. Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge.	1. Honduras (northern): mollisols and ultisols in the northern region (location of the Lancetilla Valley); Belize: ultisols and inceptisols; Nicaragua: inceptisols, ultisols, some alfisols; Mexico (Oaxaca): inceptisols, alfisols, ultisols. 2. "Average, well-drained soil".
4.11	1. Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447. 2. Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge. 3. Standley, PC (1931) Flora of the Lancetilla Valley Honduras. Field Museum of Natural History, Publication 283. Botanical Series, Volume X. Field Museum of Natural History, Chicago.	1. "Shrubs or small trees 1-12 m tall, to 7.5 cm in diam." 2. "Evergreen shrub to 5 ft". 3. "A slender shrub of small tree 2.5-6 meters high".
4.12	1. Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447. 2. Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge. 3. Standley, PC (1931) Flora of the Lancetilla Valley Honduras. Field Museum of Natural History, Publication 283. Botanical Series, Volume X. Field Museum of Natural History, Chicago.	1. "Shrubs or small trees 1-12 m tall, to 7.5 cm in diam." 2. "Evergreen shrub to 5 ft". 3. "A slender shrub of small tree 2.5-6 meters high".
5.01		Terrestrial
5.02	Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447.	Myrsinaceae
5.03	Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447.	Myrsinaceae
5.04	1. Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447. 2. Llamas, KA (2003) Tropical Flowering	1. "Shrubs or small trees 1-12 m tall, to 7.5 cm in diam." 2. "Evergreen shrub to 5 ft". 3. "A slender shrub of small tree 2.5-6

	Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge. 3. Standley, PC (1931) Flora of the Lancetilla Valley Honduras. Field Museum of Natural History, Publication 283. Botanical Series, Volume X. Field Museum of Natural History, Chicago.	meters high".
6.01		no evidence
6.02		
6.03		
6.04		
6.05		
6.06	Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447.	"Without stolons".
6.07		
7.01		
7.02		no evidence
7.03		no evidence
7.04	1. Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447. 2. Standley, PC (1931) Flora of the Lancetilla Valley Honduras. Field Museum of Natural History, Publication 283. Botanical Series, Volume X. Field Museum of Natural History, Chicago. 3. ZipcodeZoo (http://zipcodezoo.com/Plants/a/ardisia_nigrescens_donnellsmithii).	1. "Fruits 5.5-7.3 mm in diam." [species description]; "fruit globose or oblongoid, densely punctate and punctate-lineate, basally surrounded by persistent, clasping sepals" [genus description]. 2. "Fruit bright red, nearly 1 cm. in diameter when fully developed". 3. "Fruit drupaceous, 1-seeded, punctate, sometimes longitudinally ribbed, with somewhat fleshy exocarp and crusty or slightly bony endocarp. Seeds covered by membranous remnants of placenta" [genus description]. [no evidence of adaptations to wind dispersal]
7.05		
7.06	1. Standley, PC (1931) Flora of the Lancetilla Valley Honduras. Field Museum of Natural History, Publication 283. Botanical Series, Volume X. Field Museum of Natural History, Chicago. 2. Llamas, KA (2003) Tropical Flowering Plants: A guide to identification and cultivation. Timber Press, Portland and Cambridge.	1. "Fruit bright red, nearly 1 cm. in diameter when fully developed". 2. "Fruit a berry, red".
7.07	1. Ricketson, JM and Pipoly, JJ (2003) Further additions to the genus <i>Ardisia</i> subgenus <i>Graphardisia</i> (Myrsinaceae). SIDA Contributions to Botany 20(4): 1423-1447. 2. Standley, PC (1931) Flora of the Lancetilla Valley Honduras. Field Museum of Natural History, Publication 283. Botanical Series, Volume X. Field Museum of Natural History, Chicago. 3. ZipcodeZoo (http://zipcodezoo.com/Plants/a/ardisia_nigrescens_donnellsmithii).	1. "Fruits 5.5-7.3 mm in diam." [species description]; "fruit globose or oblongoid, densely punctate and punctate-lineate, basally surrounded by persistent, clasping sepals" [genus description]. 2. "Fruit bright red, nearly 1 cm. in diameter when fully developed". 3. "Fruit drupaceous, 1-seeded, punctate, sometimes longitudinally ribbed, with somewhat fleshy exocarp and crusty or slightly bony

		endocarp. Seeds covered by membranous remnants of placenta" [genus description]. [no evidence of adaptations to external dispersal]
7.08		
8.01		
8.02		
8.03		
8.04		
8.05		