

Australia/New Zealand Weed Risk Assessment adapted for Florida.

Data used for analysis published in: Gordon, D.R., D.A. Onderdonk, A.M. Fox, R.K. Stocker, and C. Gantz. 2008. Predicting Invasive Plants in Florida using the Australian Weed Risk Assessment. *Invasive Plant Science and Management* 1: 178-195.

<i>Vangueria madagascariensis</i> (Spanish tamarind)			
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 Florida's USDA climate 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)		
2.04	Native or naturalized in habitats with periodic inundation		
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	y	0
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	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	n	0
4.09	Is a shade tolerant plant at some stage of its life cycle	n?	0
4.1	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils)		
4.11	Climbing or smothering growth habit	n	0
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		
6.01	Evidence of substantial reproductive failure in native habitat		
6.02	Produces viable seed	y	1
6.03	Hybridizes naturally	y?	1
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	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	n	-1
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)	y	1
8.01	Prolific seed production		
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	n	-1
8.03	Well controlled by herbicides		
8.04	Tolerates, or benefits from, mutilation or cultivation	y	1
8.05	Effective natural enemies present in Florida, or east of the continental divide		
Total Score			3

Outcome	Accept*
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*Used secondary screen from: Daehler, C. C., J.L. Denslow, S. Ansari, and H. Kuo. 2004. A risk assessment system for screening out harmful invasive pest plants from Hawaii's and other Pacific islands. *Conserv. Biol.* 18: 360-368.

section	# questions answered	satisfy minimum?
A	6	yes
B	9	yes
C	15	yes
total	30	yes

Data collected 2006-2007

Question number	Reference	Source data
1.01		cultivated, but no evidence of selection for reduced weediness
1.02		
1.03		
2.01		
2.02		
2.03		
2.04		
2.05	1. Liogier, HA (1997) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 5. Editorial de la Universidad de Puerto Rico. 2. Kairo, Ali, Cheesman, Haysom, and Murphy (2003) Invasive Species Threats in the Caribbean Region. Report to the Nature Conservancy. 3. Verdcourt, B and D Bridson (1991) Flora of Tropical East Africa. Rubiaceae, part 3. A.A. Balkema, Rotterdam.	1. "native of tropical Africa and Madagascar, cultivated in the tropics" 2. exotic in Trinidad/Tobago 3. cultivated in India, Singapore, N. Australia, and Trinidad
3.01	Liogier, HA (1997) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 5. Editorial de la Universidad de Puerto Rico.	"Cultivated and naturalized at lower and middle elevations, P.R. [Puerto Rico]; native of tropical Africa and Madagascar".
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05		no evidence
4.01	Verdcourt, B and D Bridson (1991) Flora of Tropical East Africa. Rubiaceae, part 3. A.A. Balkema, Rotterdam.	no description of these traits
4.02		no evidence
4.03	Verdcourt, B and D Bridson (1991) Flora of Tropical East Africa. Rubiaceae, part 3. A.A. Balkema, Rotterdam.	no description of this
4.04		
4.05		no evidence
4.06		
4.07	Liogier, HA (1997) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 5. Editorial de la Universidad de Puerto Rico.	"berries edible" [and no evidence of toxicity or allergenicity]
4.08		no evidence

4.09	FAO (1983) Food and fruit-bearing forest species 1: Examples from Eastern Africa. FAO Forestry Paper 44/1.	"it is a light demander"
4.1		
4.11	Verdcourt, B and D Bridson (1991) Flora of Tropical East Africa. Rubiaceae, part 3. A.A. Balkema, Rotterdam.	"Shrub or small tree, 1.5-15 m. tall"
4.12		no evidence
5.01		terrestrial
5.02	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 (http://plants.usda.gov). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	Rubiaceae
5.03	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 (http://plants.usda.gov). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	Rubiaceae
5.04		
6.01		
6.02	FAO (1983) Food and fruit-bearing forest species 1: Examples from Eastern Africa. FAO Forestry Paper 44/1.	" <i>V. madagascariensis</i> regenerates naturally by seed and coppice."
6.03	Verdcourt, B and D Bridson (1991) Flora of Tropical East Africa. Rubiaceae, part 3. A.A. Balkema, Rotterdam.	"A few specimens are intermediate with [<i>V. apiculata</i> and] <i>V. madagascariensis</i> Gmelin or possibly are genuine hybrids between the two". A certain specimen "is almost certainly a hybrid".
6.04		
6.05	Verdcourt, B and D Bridson (1991) Flora of Tropical East Africa. Rubiaceae, part 3. A.A. Balkema, Rotterdam.	"The inflorescences are very attractive to many kinds of insects." [for genus <i>Vangueria</i>]
6.06		
6.07		
7.01		
7.02	Liogier, HA (1997) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 5. Editorial de la Universidad de Puerto Rico.	"cultivated in the tropics"
7.03		no evidence
7.04	Liogier, HA (1997) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 5. Editorial de la Universidad de Puerto Rico.	fruit a globose-depressed berry, 2.5-5 cm in diameter [no evidence of adaptations to wind dispersal]
7.05		no evidence
7.06		reasonably sized, fleshy fruit
7.07	Liogier, HA (1997) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 5. Editorial de la Universidad de Puerto Rico.	fruit a globose-depressed berry, 2.5-5 cm in diameter [no evidence of any means of attachment]

7.08		fleshy fruit
8.01	Liogier, HA (1997) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 5. Editorial de la Universidad de Puerto Rico.	4-5 seeds per fruit
8.02	Maara, NT, M Karachi, and JO Ahenda (2006) Effects of pre-germination treatments, desiccation and storage temperature on germination of <i>Carissa edulis</i> , <i>Vangueria madagascariensis</i> and <i>Ximenia americana</i> seeds. Journal of Tropical Forest Science 18: 124-129.	"Germination started on day 3 and was completed by day 8 in control treatments of <i>C. edulis</i> and <i>V. madagascariensis</i> . The satisfactory (>90%) and quick germination indicates lack of seed dormancy."
8.03		
8.04	FAO (1983) Food and fruit-bearing forest species 1: Examples from Eastern Africa. FAO Forestry Paper 44/1.	"Coppices are produced on felling of young or old trees." BUT "the species appears to be fire tender"
8.05		