

**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>Eugenia uniflora (Surinam cherry)</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 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	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	0
3.02	Garden/amenity/disturbance weed	y	0
3.03	Weed of agriculture	n	0
3.04	Environmental weed	y	0
3.05	Congeneric weed	y	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	y	1
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)	y	1
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets	y	1
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		
6.04	Self-compatible or apomictic	y	1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative fragmentation		
6.07	Minimum generative time (years)	2	0
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	n	-1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	n	-1
8.03	Well controlled by herbicides	y	-1
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05	Effective natural enemies present in Florida, or east of the continental divide		
<b>Total Score</b>			<b>12</b>

<b>Outcome</b>	<b>Reject*</b>
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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	7	yes
B	11	yes
C	17	yes
total	35	yes

Data collected 2006-2007

Question number	Reference	Source data
1.01		cultivated, but no evidence of selection for reduced weediness (likely selection for more fruit)
1.02		
1.03		
2.01		
2.02		
2.03		
2.04	Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	"can even stand waterlogging for a time"
2.05	Whistler (2000) Tropical Ornamentals: a Guide. Timber Press, Portland.	"widely cultivated for its sour but edible fruit and as an ornamental because of its dark, glossy green leaves"
3.01	Weber (2003) Invasive Plant Species of the World. CABI Publishing.	naturalized and invasive in southern Africa and the Caribbean
3.02	Henderson (2001) Alien Weeds and Invasive Plants: a Complete Guide to Declared Weeds and Invaders in South Africa. Plant Protection Research Institute Handbook No. 12.	Declared weed in parts of South Africa; invades urban open space.
3.03		no evidence
3.04	1. Henderson (2001) Alien Weeds and Invasive Plants: a Complete Guide to Declared Weeds and Invaders in South Africa. Plant Protection Research Institute Handbook No. 12. 2. Kairo, Ali, Cheesman, Haysom, and Murphy (2003) Invasive Species Threats in the Caribbean Region. Report to the Nature Conservancy.	1. Declared weed in parts of South Africa; invades coastal bush, forest edges and understorey, riverbanks. 2. Considered naturalized and invasive in the Bahamas and Bermuda.
3.05	Fleischmann (1997) Invasion of alien woody plants on the islands of Mahe and Silhouette, Seychelles. Journal of Vegetation Science 8: 5-12.	<i>Eugenia aromatica</i> and <i>E. jambos</i> are considered alien invaders in the Seychelles.
4.01	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	no description of these traits
4.02		no evidence
4.03	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of	no description of this

	Florida.	
4.04		
4.05	1. Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami. 2. Henderson (2001) Alien Weeds and Invasive Plants: a Complete Guide to Declared Weeds and Invaders in South Africa. Plant Protection Research Institute Handbook No. 12. 3. Crescent Bloom ( <a href="http://www.crescentbloom.com/Plants/Specimen/EU/Eugenia%20uniflora.htm">http://www.crescentbloom.com/Plants/Specimen/EU/Eugenia%20uniflora.htm</a> ).	1. "Diarrhea has occurred in dogs that have been fed the whole fruits by children." [seems minor] 2. Not indicated to be poisonous to people or animals. 3. Livestock poison: no
4.06	Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	"Surinam cherries are highly attractive to Caribbean and Mediterranean fruit flies"
4.07	1. Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami. 2. Henderson (2001) Alien Weeds and Invasive Plants: a Complete Guide to Declared Weeds and Invaders in South Africa. Plant Protection Research Institute Handbook No. 12. 3. Crescent Bloom ( <a href="http://www.crescentbloom.com/Plants/Specimen/EU/Eugenia%20uniflora.htm">http://www.crescentbloom.com/Plants/Specimen/EU/Eugenia%20uniflora.htm</a> ).	1. "The strong, spicy emanation from bushes being pruned irritates the respiratory passages of sensitive persons." [seems minor] 2. Not indicated to be poisonous to people or animals. 3. Internal poison: no; dermatologic poison: no
4.08		no evidence
4.09	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	1. grows in full sun 2. "The plant revels in full sun."
4.1	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami. 3. Margis, Felix, Caldas, Salgueiro, de Araujo, Breyne, van Montagu, de Oliveira, and Margis-Pinheiro (2002) Genetic differentiation among three neighboring Brazil-cherry ( <i>Eugenia uniflora</i> L.) populations within the Brazilian Atlantic rain forest. Biodiversity and Conservation 11: 149-163.	1. various soils 2. "The Surinam cherry grows in almost any type of soil - sand, sandy loam, stiff clay, soft limestone" 3. occurs in the sandy coastal-plain vegetation in Brazil
4.11	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	evergreen shrub or small tree
4.12	Weber (2003) Invasive Plant Species of the World. CABI Publishing.	"It forms dense thickets that displace native plants and prevents their regeneration."
5.01		terrestrial
5.02	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	Myrtaceae
5.03	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	Myrtaceae
5.04		
6.01		
6.02	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of	1. propagation from seed 2. "Seeds are the usual means of propagation."

	Florida. 2. Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	
6.03		
6.04	Crescent Bloom ( <a href="http://www.crescentbloom.com/Plants/Specimen/EU/Eugenia%20uniflora.htm">http://www.crescentbloom.com/Plants/Specimen/EU/Eugenia%20uniflora.htm</a> ).	" <i>Eugenia uniflora</i> is self-fertile."
6.05	Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	probably not - "The flowers are a rich source of pollen for honeybees"
6.06		
6.07	Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	"some begin to fruit when 2 years old; some may delay fruiting for 5 or 6 years, or even 10 if in unfavorable situations"
7.01		
7.02	Whistler (2000) Tropical Ornamentals: a Guide. Timber Press, Portland.	"widely cultivated for its sour but edible fruit and as an ornamental because of its dark, glossy green leaves"
7.03		no evidence
7.04	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	fruit is a red, globose berry, to 1" in diameter
7.05		no evidence
7.06	1. Stresau (1986) Florida, My Eden. Frederick B. Stresau, Port Salerno, Florida. 2. Margis, Felix, Caldas, Salgueiro, de Araujo, Breyne, van Montagu, de Oliveira, and Margis-Pinheiro (2002) Genetic differentiation among three neighboring Brazil-cherry ( <i>Eugenia uniflora</i> L.) populations within the Brazilian Atlantic rain forest. Biodiversity and Conservation 11: 149-163.	1. "Birds are daily visitors during summer fruiting season." 2. " <i>Eugenia uniflora</i> is of ecological importance...as food supplier for a wide variety of insects, birds and mammals."
7.07		no evidence of any means of attachment
7.08	Margis, Felix, Caldas, Salgueiro, de Araujo, Breyne, van Montagu, de Oliveira, and Margis-Pinheiro (2002) Genetic differentiation among three neighboring Brazil-cherry ( <i>Eugenia uniflora</i> L.) populations within the Brazilian Atlantic rain forest. Biodiversity and Conservation 11: 149-163.	" <i>Eugenia uniflora</i> is of ecological importance...as food supplier for a wide variety of insects, birds and mammals."
8.01	Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	Usually 1, sometimes 2, seeds per fruit. Highest yield in Israel was 2,700 fruits from one untrimmed plant; average in India is ~700-900 fruits per plant. [probably not]
8.02	Morton (1987) Fruits of Warm Climates. Julia F. Morton, Miami.	Seeds "remain viable for not much longer than a month and germinate in 3 to 4 weeks". [though does not indicate whether this is in soil or not]
8.03	Langeland and Stocker (2001) Control of non-native plants in natural areas of Florida. University of Florida, IFAS Extension, SP 242 ( <a href="http://edis.ifas.ufl.edu/pdf/FILES/WG/WG20900.pdf">http://edis.ifas.ufl.edu/pdf/FILES/WG/WG20900.pdf</a> ).	"For seedlings and small plants up to 1/2 inch diameter, use a basal bark treatment with 10% Garlon 4. This species takes a long time to die, and may require a subsequent herbicide application. For larger stems, use a cut-stump treatment

		with either 50% Garlon 3A or 10% Garlon 4."
8.04		
8.05		