

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>Passiflora biflora</i> (twin-flowered passion vine)			
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	n	0
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	n	-2
3.02	Garden/amenity/disturbance weed	y	0
3.03	Weed of agriculture	n	0
3.04	Environmental weed	n	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	y	1
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		
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)		
8.03	Well controlled by herbicides		
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>5</b>

**Outcome Accept\***

\*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	12	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	Ulmer and MacDougal (2004) <i>Passiflora: Passionflowers of the World</i> . Timber Press, Portland, Cambridge.	Min. temp.: 5°C
2.02		
2.03		
2.04	Vanderplank (2000) <i>Passion Flowers</i> . MIT Press, Cambridge.	passion flowers require soil with good drainage
2.05	Ulmer and MacDougal (2004) <i>Passiflora: Passionflowers of the World</i> . Timber Press, Portland, Cambridge.	cultivated for many decades
3.01	1. Kairo, Ali, Cheesman, Haysom, and Murphy (2003) <i>Invasive Species Threats in the Caribbean Region</i> . Report to the Nature Conservancy. 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland ( <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?26949">http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?26949</a> ). 3. Siemonsma and Piluek, eds. (1994) <i>Plant Resources of South-East Asia</i> . No. 8. Vegetables. PROSEA, Bogor, Indonesia.	Considered naturalized and invasive in the Bahamas (1), but is native there (2). (3) "Native to South America, but cultivated and occasionally escaped pantropically." [but no evidence of naturalization]
3.02	1. Kairo, Ali, Cheesman, Haysom, and Murphy (2003) <i>Invasive Species Threats in the Caribbean Region</i> . Report to the Nature Conservancy. 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland ( <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?26949">http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?26949</a> ).	Considered naturalized and invasive in the Bahamas (1), where it is native (2). Assuming, therefore, that it is a disturbance weed there, since Kairo et al. (2003) say "Indigenous species, as well as alien species, may become invasive, usually in response to environmental change (typically human-mediated habitat disturbances)".
3.03		no evidence
3.04	1. Kairo, Ali, Cheesman, Haysom, and Murphy (2003) <i>Invasive Species Threats in the</i>	considered invasive in the Bahamas (1) but is native there (2)

	Caribbean Region. Report to the Nature Conservancy. 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland ( <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?26949">http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?26949</a> ).	
3.05	Holm, Doll, Holm, Pancho, and Herberger (1997) <i>World Weeds: Natural Histories and Distribution</i> . John Wiley and Sons, Inc., New York.	<i>Passiflora foetida</i> is considered a major weed of crops throughout the tropics and subtropics.
4.01	Ulmer and MacDougal (2004) <i>Passiflora: Passionflowers of the World</i> . Timber Press, Portland, Cambridge.	no description of these traits
4.02		no evidence
4.03	Ulmer and MacDougal (2004) <i>Passiflora: Passionflowers of the World</i> . Timber Press, Portland, Cambridge.	no description of this
4.04		
4.05		no mention of toxicity in horticultural or toxicity references
4.06	Vanderplank (2000) <i>Passion Flowers</i> . MIT Press, Cambridge.	see chapter 7: Pests and Diseases
4.07	Siemonsma and Piluek, eds. (1994) <i>Plant Resources of South-East Asia</i> . No. 8. Vegetables. PROSEA, Bogor, Indonesia.	"Shoots and young leaves are eaten cooked or raw. Flower buds and young flowers are consumed as well." [and no mention of toxicity in horticultural or toxicity references]
4.08		no evidence
4.09	Ward (2002) <i>Tritrophic responses to shading of <i>Passiflora biflora</i>, a neotropical vine</i> . Dissertation, University of Georgia.	"In one experiment, groups of plants were placed in sunny and shaded areas at a field site in Costa Rica, whereas in a second experiment, light availability was manipulated using three kinds of shade huts (0%, 50%, and 90% shade)...In both studies, the direct negative effects of shading and herbivores were clearly seen..."
4.1	Vanderplank (2000) <i>Passion Flowers</i> . MIT Press, Cambridge.	"With only one or two exceptions, passion flowers are found growing wild on sandy, very well drained, often very poor soils."
4.11	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 ( <a href="http://plants.usda.gov">http://plants.usda.gov</a> ). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	vine
4.12		no evidence
5.01		terrestrial
5.02	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 ( <a href="http://plants.usda.gov">http://plants.usda.gov</a> ). Data compiled from various sources by Mark W.	Passifloraceae

	Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	
5.03	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 ( <a href="http://plants.usda.gov">http://plants.usda.gov</a> ). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	Passifloraceae
5.04		
6.01		
6.02	Vanderplank (2000) Passion Flowers. MIT Press, Cambridge.	propagation by seed or cutting
6.03		
6.04		
6.05	Ulmer and MacDougal (2004) Passiflora: Passionflowers of the World. Timber Press, Portland, Cambridge.	"the vast majority of decalobas [the subgenus that includes <i>P. biflora</i> ] are pollinated by bees and wasps"
6.06		
6.07		
7.01		
7.02	Ulmer and MacDougal (2004) Passiflora: Passionflowers of the World. Timber Press, Portland, Cambridge.	cultivated for many decades
7.03		no evidence
7.04	Vanderplank (2000) Passion Flowers. MIT Press, Cambridge.	fruit is globose berry
7.05		no evidence
7.06	1. Ulmer and MacDougal (2004) Passiflora: Passionflowers of the World. Timber Press, Portland, Cambridge. 2. Smithsonian Tropical Research Institute ( <a href="http://striweb.si.edu/esp/tesp/details.php?id=1045">http://striweb.si.edu/esp/tesp/details.php?id=1045</a> ).	1. "Fruits of most species [of subgenus <i>Decaloba</i> , which includes <i>P. biflora</i> ] are small purple-black berries, eaten by birds" 2. dispersal modes: bird, mammal
7.07	Vanderplank (2000) Passion Flowers. MIT Press, Cambridge.	fruit is globose berry - no description of any means of attachment
7.08	Smithsonian Tropical Research Institute ( <a href="http://striweb.si.edu/esp/tesp/details.php?id=1045">http://striweb.si.edu/esp/tesp/details.php?id=1045</a> ).	dispersal modes: bird, mammal
8.01		
8.02		
8.03		
8.04		
8.05		