

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>Paederia cruddasiana (sewer vine)</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		
2.05	Does the species have a history of repeated introductions outside its natural range?	n	
3.01	Naturalized beyond native range	n	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	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		
4.07	Causes allergies or is otherwise toxic to humans	n	0
4.08	Creates a fire hazard in natural ecosystems	y	1
4.09	Is a shade tolerant plant at some stage of its life cycle		
4.1	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils)		
4.11	Climbing or smothering growth habit	y	1
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	n	-1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative fragmentation	y	1
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	y	1
7.05	Propagules water dispersed	n	-1
7.06	Propagules bird dispersed	n	-1
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	n	-1
8.01	Prolific seed production		
8.02	Evidence that a persistent propagule bank is formed (>1 yr)		
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		
Total Score			2

Outcome Evaluate*

*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	8	yes
C	15	yes
total	29	yes

Data collected 2006-2007

Question number	Reference	Source data
1.01		no evidence of selection for reduced weediness
1.02		
1.03		
2.01		
2.02		
2.03		
2.04		
2.05	1. van Valkenburg and Bunyaphrathatsara, eds. (2001) Plant Resources of South-East Asia. No. 12(2). Medicinal and poisonous plants. Backhuys Publishers, Leiden. 2. Puff (1991) Revision of the genus <i>Paederia</i> L. (Rubiaceae-Paederieae) in Asia. In: Puff (ed.) The genus <i>Paederia</i> L. (Rubiaceae-Paederieae): a multidisciplinary study. Opera Botanica Belgica 3: 207-289.	1. " <i>P. cruddasiana</i> ...occurs from northern India, Bangladesh, Nepal, Bhutan to south-western China and Thailand" 2. has been cultivated in Tanzania [so only one documented introduction, other than Florida]
3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05	Weber (2003) Invasive Plant Species of the World. CABI Publishing.	<i>P. foetida</i> considered an environmental weed in the southeastern U.S. - invades forest and forest edges, woodland, and tropical hammocks.
4.01	Pemberton and Pratt (2002) Skunk vine. Chp. 27 in Van Driesche et al. (eds.) Biological Control of Invasive Plants in the Eastern United States. USDA Forest Service Publication FHTET-2002-04.	<i>Paederia</i> spp. lack thorns.
4.02		no evidence
4.03	Puff (1991) Revision of the genus <i>Paederia</i> L. (Rubiaceae-Paederieae) in Asia. In: Puff (ed.) The genus <i>Paederia</i> L. (Rubiaceae-Paederieae): a multidisciplinary study. Opera Botanica Belgica 3: 207-289.	no description of this

4.04		
4.05		no evidence
4.06		
4.07		no evidence
4.08	1. Gann and Gordon (1998) <i>Paederia foetida</i> (skunk vine) and <i>P. cruddasiana</i> (sewer vine): threats and management strategies. Natural Areas Journal 18: 169-174. 2. Native Florida (http://www.nsis.org/garden/garden-native-invasive.html).	No direct evidence, but it behaves very similarly to <i>P. foetida</i> , which can be a fire hazard (1, 2).
4.09		
4.1		
4.11	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.	growth habit: vine
4.12	Possley and Brazis (1998) Skunk vine: stinking up Florida. Wildland Weeds 2: 11-13.	sewer vine can form mats several feet thick
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	Langeland and Stocker (2001) Control of non-native plants in natural areas of Florida. University of Florida, IFAS Extension, SP 242 (http://edis.ifas.ufl.edu/pdffiles/WG/WG20900.pdf).	produces viable seeds
6.03		
6.04	Puff (1991) Selected aspects of the reproductive biology of <i>Paederia</i> L. (Rubiaceae - Paederieae). In: Puff (ed.) The genus <i>Paederia</i> L. (Rubiaceae-Paederieae): a multidisciplinary study. Opera Botanica Belgica 3: 167-178.	"Flowers of <i>Paederia</i> are allogamous; self-incompatibility prevents auto- and geitonogamy."
6.05	Puff (1991) Selected aspects of the reproductive biology of <i>Paederia</i> L. (Rubiaceae - Paederieae). In: Puff (ed.) The genus <i>Paederia</i> L. (Rubiaceae-Paederieae): a multidisciplinary study. Opera Botanica Belgica 3: 167-178.	<i>P. cruddasiana</i> likely butterfly and/or bee pollinated.
6.06	Puff (1991) Selected aspects of the reproductive biology of <i>Paederia</i> L. (Rubiaceae - Paederieae). In: Puff (ed.) The genus <i>Paederia</i> L. (Rubiaceae-Paederieae): a multidisciplinary study. Opera	"The capability to root at the nodes makes it easy to cultivate and propagate <i>Paederia</i> species."

	Botanica Belgica 3: 167-178.	
6.07		
7.01		
7.02	Puff (1991) Revision of the genus <i>Paederia</i> L. (Rubiaceae-Paederieae) in Asia. In: Puff (ed.) The genus <i>Paederia</i> L. (Rubiaceae-Paederieae): a multidisciplinary study. Opera Botanica Belgica 3: 207-289.	has been cultivated in Tanzania
7.03		no evidence
7.04	1. Pemberton and Pratt (2002) Skunk vine. Chp. 27 in Van Driesche et al. (eds.) Biological Control of Invasive Plants in the Eastern United States. USDA Forest Service Publication FHTET-2002-04. 2. Igersheim and Puff (1991) The fruits, diaspores and seeds of <i>Paederia</i> L. (Rubiaceae - Paederieae). In: Puff (ed.) The genus <i>Paederia</i> L. (Rubiaceae-Paederieae): a multidisciplinary study. Opera Botanica Belgica 3: 89-102.	1. "sewer vine has...seeds that are conspicuously winged" 2. "All taxa of <i>Paederia</i> subgen. <i>Alatopaederia</i> [which includes <i>P. cruddasiana</i>]...show a remarkable adaptation to wind dispersal of their diaspores."
7.05		no evidence
7.06		wind dispersed
7.07		no evidence of any means of attachment
7.08		wind dispersed
8.01		
8.02		
8.03	Possley and Brazis (1998) Skunk vine: stinking up Florida. Wildland Weeds 2: 11-13.	Garlon 4, in successive applications, has been effective against sewer vine.
8.04		
8.05		