

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>Alternanthera paronichyoides</i> (smooth joyweed)			
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	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	n	0
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)	y	1
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	n	0
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		
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	n	-1
7.03	Propagules likely to disperse as a produce contaminant	n	-1
7.04	Propagules adapted to wind dispersal	?	
7.05	Propagules water dispersed	n	-1
7.06	Propagules bird dispersed		
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 Florida, or east of the continental divide		
Total Score			6

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	7	yes
B	9	yes
C	10	yes
total	26	yes

Data collected 2006-2007

Question number	Reference	Source data
1.01		no evidence of cultivation
1.02		
1.03		
2.01	Veldkamp (1971) <i>Alternanthera paronychioides</i> St. Hil. (Amaranthaceae) in Indo-Malesia. Blumea 19: 167-169.	"The species is native in the tropics and subtropics of the Americas"
2.02		
2.03		
2.04	Flora of Pakistan (http://www.efloras.org/florataxon.aspx?flora_id=5&taxon_id=242412161).	"not infrequently where subject to periodical inundation"
2.05	Flora of Pakistan (http://www.efloras.org/florataxon.aspx?flora_id=5&taxon_id=242412161).	"Distribution: A native of tropical America from Mexico and the West Indies south to Brazil, becoming widespread as an introduced weed in India, Java and other parts of the Old World tropics."
3.01	Flora of Pakistan (http://www.efloras.org/florataxon.aspx?flora_id=5&taxon_id=242412161).	"Distribution: A native of tropical America from Mexico and the West Indies south to Brazil, becoming widespread as an introduced weed in India, Java and other parts of the Old World tropics."
3.02	1. Flora of Pakistan (http://www.efloras.org/florataxon.aspx?flora_id=5&taxon_id=242412161). 2. Murphy et al. (1992) Weeds of Southern Turfgrasses: Golf Courses, Lawns, Roadsides, Recreational Areas, Commercial Sod. Florida Cooperative Extension Service, IFAS, University of Florida, Gainesville.	1. "becoming widespread as an introduced weed in India, Java and other parts of the Old World tropics" 2. in book "Weeds of Southern Turfgrasses"
3.03		no evidence
3.04		no evidence
3.05	Holm, Doll, Holm, Pancho, and Herberger (1997) World weeds: natural histories and distribution. John Wiley & Sons, New York.	<i>A. philoxeroides</i> is reported as a weed in 30 countries, and <i>A. sessilis</i> in more than 65 countries.
4.01	Liogier (1985) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 1. Editorial de la Universidad de	no description of these traits

	Puerto Rico.	
4.02		no evidence
4.03	Liogier (1985) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 1. Editorial de la Universidad de Puerto Rico.	no description of this
4.04		
4.05		no evidence
4.06		
4.07		no evidence
4.08		no evidence
4.09		
4.1	1. Murphy et al. (1992) Weeds of Southern Turfgrasses: Golf Courses, Lawns, Roadsides, Recreational Areas, Commercial Sod. Florida Cooperative Extension Service, IFAS, University of Florida, Gainesville. 2. Flora of North America, vol. 4 (http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242412161).	1. "Found in open, sandy, disturbed areas and sandy lawns." 2. "sandy places, limestone near salt water"
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: forb/herb
4.12	Liogier (1985) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 1. Editorial de la Universidad de Puerto Rico.	mat-forming [but is an herb]
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.	Amaranthaceae
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.	herbaceous Amaranthaceae
5.04	Flora of Pakistan (http://www.efloras.org/florataxon.aspx?flora_id=5&taxon_id=242412161).	"with a stout vertical rootstock"
6.01		
6.02	Murphy et al. (1992) Weeds of Southern Turfgrasses: Golf Courses, Lawns, Roadsides, Recreational Areas, Commercial Sod. Florida Cooperative Extension Service, IFAS, University of Florida, Gainesville.	reproduces by seed
6.03		
6.04		
6.05		
6.06	1. Murphy et al. (1992) Weeds of Southern Turfgrasses: Golf Courses, Lawns, Roadsides, Recreational Areas, Commercial Sod. Florida Cooperative Extension Service, IFAS, University of Florida, Gainesville. 2. Liogier (1985) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 1. Editorial de la Universidad de Puerto Rico.	1. reproduces by stem fragments 2. "the branches rooting at the nodes"
6.07		
7.01		
7.02		no evidence

7.03		no evidence
7.04	Liogier (1985) Descriptive Flora of Puerto Rico and Adjacent Islands. Vol. 1. Editorial de la Universidad de Puerto Rico.	fruit a tiny utricle
7.05		no evidence
7.06		
7.07		no evidence of any means of attachment
7.08		
8.01	Padua, Bunyaphatsara, and Lemmens, eds. (1999) Plant Resources of South-East Asia. No. 12. Medicinal and poisonous plants 1. Backhuys Publishers, Leiden.	fruit one-seeded
8.02		
8.03		
8.04		
8.05		