

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>Rumex pulcher (fiddle dock)</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?	y	
3.01	Naturalized beyond native range	y	0
3.02	Garden/amenity/disturbance weed	y	0
3.03	Weed of agriculture	y	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	n	-1
4.05	Toxic to animals	?	
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	y	1
6.04	Self-compatible or apomictic		
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative fragmentation	y	1
6.07	Minimum generative time (years)	1	1
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	y	1
7.04	Propagules adapted to wind dispersal		
7.05	Propagules water dispersed	n	-1
7.06	Propagules bird dispersed	n	-1
7.07	Propagules dispersed by other animals (externally)	y	1
7.08	Propagules dispersed by other animals (internally)	n	-1
8.01	Prolific seed production	y	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		
Total Score			11

Outcome	Reject*
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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	18	yes
total	33	yes

Data collected 2006-2007

Question number	Reference	Source data
1.01		no evidence of cultivation
1.02		
1.03		
2.01	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	warm-temperate regions
2.02		
2.03		
2.04		
2.05	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	"Fiddle dock is a native of the Mediterranean region and has been introduced to North America,...South America, South Africa, New Zealand and Australia."
3.01	1. Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing. 2. New Zealand Plant Conservation Network (2005) New Zealand Adventive Vascular Plant List.	Weedy in Australia (1); fully naturalized in New Zealand (2).
3.02	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	"a weed of...roadsides and disturbed areas"
3.03	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	"a weed of pastures, arable lands..."; In some districts of Western Australia, "it is the dominant weed species on 80% of the properties surveyed, seriously reducing productivity".
3.04		no evidence
3.05	Weber (2003) Invasive Plant Species of the World. CABI Publishing.	<i>R. crispus</i> considered an agricultural and environmental weed in Australia.
4.01	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	no description of these traits
4.02		no evidence
4.03	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	no description of this
4.04	Allen (1975) Docks in Western Australia. Journal of Agriculture Western Australia 16: 67-71.	"Nearly half the farmers interviewed mentioned grazing management as a means of controlling dock [including <i>R. pulcher</i> , the dominant

		weed in the area]."
4.05	1. Bruneton (1999) Toxic Plants: Dangerous to Humans and Animals. Lavoisier Publishing, Paris. 2. Burrows and Tyrl (2001) Toxic Plants of North America. Iowa State University Press, Ames.	1. Sheep and cattle can be poisoned from eating large quantities of <i>Rumex</i> . BUT 2. "It appears that only rarely are conditions appropriate for intoxication due to <i>Rumex</i> to occur."
4.06		
4.07	Burrows and Tyrl (2001) Toxic Plants of North America. Iowa State University Press, Ames.	"Species of <i>Rumex</i> are eaten commonly by humans throughout the world as potherbs and in rare instances may cause intoxications" [toxicity rare]
4.08		no evidence
4.09		
4.1	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	"a wide range of moist soils"
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		no evidence, and 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.	Polygonaceae
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 Polygonaceae
5.04	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	root "a thick taproot, branching below"
6.01		
6.02	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	"reproducing by seed"
6.03	1. Holyoak (2000) Hybridisation between <i>Rumex rupestris</i> Le Gall (Polygonaceae) and other docks. <i>Watsonia</i> 23: 83-92. 2. Harden, ed. (1990) Flora of New South Wales. New South Wales University Press.	1. Hybrids between <i>R. rupestris</i> and <i>R. pulcher</i> found in West Cornwall. 2. "species [of <i>Rumex</i>] hybridize freely"
6.04		
6.05	Harden, ed. (1990) Flora of New South Wales. New South Wales University Press.	species in the genus <i>Rumex</i> do not have nectaries [and <i>R. crispus</i> is wind-pollinated]
6.06	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	"reproducing...from the perennial crown"; "New shoots form on the

		crowns in late autumn."
6.07	Allen (1975) Docks in Western Australia. Journal of Agriculture Western Australia 16: 67-71.	"When grown in good conditions in a glasshouse it takes only five weeks from the time of planting seed for docks [including <i>R. pulcher</i>] to produce a rootstock capable of regeneration."
7.01		
7.02		no evidence
7.03	Allen (1975) Docks in Western Australia. Journal of Agriculture Western Australia 16: 67-71.	"Farmers generally observed that docks [including <i>R. pulcher</i> , the dominant weed in the area] are spread by feeding out infested hay in dock-free paddocks"
7.04		
7.05		no evidence
7.06		externally dispersed
7.07	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	Drawing of fiddle dock fruit depicts several bristles, which for broadleaf dock are said to aid in attachment to wool, fur, and clothing.
7.08		externally dispersed
8.01	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	"All species of dock are prolific seeders"
8.02	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	"Fiddle dock seeds exhibit little dormancy"
8.03	Parsons and Cuthbertson (2001) Noxious Weeds of Australia. CSIRO Publishing.	Chemical control includes "dicamba in cereal crops, and dicamba or triclopyr in perennial pastures".
8.04		
8.05		