

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>Rumohra adiantiformis (leatherleaf fern)</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)	y	1
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	n	-2
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	n	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	y	1
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	y	1
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	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)		
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)		
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	y	-1
Total Score			3

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	11	yes
C	15	yes
total	33	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		
2.02		
2.03	de Winter and Amoroso, eds. (2003) Plant Resources of South-East Asia. No. 15(2). Cryptogams: Ferns and Fern Allies. Backhuys Publishers, Leiden.	"Originally, <i>R. adiantiformis</i> is a species of the southern hemisphere and is found in Papua New Guinea, Australia, New Zealand, Polynesia, South America, southern Africa, the Comoros and Mascarene Islands and Madagascar."
2.04		
2.05	de Winter and Amoroso, eds. (2003) Plant Resources of South-East Asia. No. 15(2). Cryptogams: Ferns and Fern Allies. Backhuys Publishers, Leiden.	"It is cultivated all over the world with the United States and Costa Rica as the main producers... <i>R. adiantiformis</i> is one of the most prominent sources of cut foliage...It is also sold as an ornamental for gardens and hanging baskets."
3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05	Duncan (1994) Ferns and Allied Plants of Victoria, Tasmania and South Australia. Melbourne University Press, Carlton, Victoria.	genus is monotypic
4.01	Dehgan, B. (1998) Landscape Plants for Subtropical Climates.	no description of these

	University Press of Florida.	traits
4.02		no evidence
4.03	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	no description of this
4.04		
4.05		no evidence
4.06	1. de Winter and Amoroso, eds. (2003) Plant Resources of South-East Asia. No. 15(2). Cryptogams: Ferns and Fern Allies. Backhuys Publishers, Leiden. 2. Colletotrichum Genomics Consortium (http://www.colletotrichum.org/).	1. "the most dangerous fungus in <i>R. adiantiformis</i> cultivation is <i>Colletotrichum</i> sp., which causes severe anthracnose...The pathogen apparently spreads easily and the disease is very difficult to control once it becomes established." 2. <i>Colletotrichum</i> spp. are "a group of destructive plant pathogenic fungi"
4.07	de Winter and Amoroso, eds. (2003) Plant Resources of South-East Asia. No. 15(2). Cryptogams: Ferns and Fern Allies. Backhuys Publishers, Leiden.	"Continuous contact with the leaves of <i>R. adiantiformis</i> might induce allergic contact dermatitis."
4.08		no evidence
4.09	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. de Winter and Amoroso, eds. (2003) Plant Resources of South-East Asia. No. 15(2). Cryptogams: Ferns and Fern Allies. Backhuys Publishers, Leiden.	1. "partial or full shade" 2. "it grows on shaded mountain forest floors..."
4.1	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. de Winter and Amoroso, eds. (2003) Plant Resources of South-East Asia. No. 15(2). Cryptogams: Ferns and Fern Allies. Backhuys Publishers, Leiden.	1. "a wide range of soils" 2. "Commercially <i>R. adiantiformis</i> is grown under shade, predominantly on well-drained sandy 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	Geldenhuys and van der Merwe (1988) Population structure and growth of the fern <i>Rumohra adiantiformis</i> in relation to frond harvesting in the southern Cape forests. South African Journal of Botany 54: 351-362.	"The understory is dominated by a dense <i>Rumohra</i> stand" [but is herbaceous]
5.01	Duncan (1994) Ferns and Allied Plants of Victoria, Tasmania and South Australia. Melbourne University Press, Carlton, Victoria.	terrestrial or epiphytic
5.02	1. 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	1. Dryopteridaceae 2. Davalliaceae

	Rouge, LA 70874-4490 USA. 2. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	
5.03	1. 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. 2. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	1. Dryopteridaceae 2. Davalliaceae [and is herbaceous]
5.04	Duncan (1994) Ferns and Allied Plants of Victoria, Tasmania and South Australia. Melbourne University Press, Carlton, Victoria.	fern roots are usually fine and fibrous
6.01		
6.02	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	propagate by spores
6.03		
6.04		
6.05		fern
6.06	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	"spreads by a stout creeping rhizome"
6.07		
7.01		
7.02	de Winter and Amoroso, eds. (2003) Plant Resources of South-East Asia. No. 15(2). Cryptogams: Ferns and Fern Allies. Backhuys Publishers, Leiden.	"It is cultivated all over the world with the United States and Costa Rica as the main producers... <i>R. adiantiformis</i> is one of the most prominent sources of cut foliage...It is also sold as an ornamental for gardens and hanging baskets."
7.03		no evidence
7.04	Duncan (1994) Ferns and Allied Plants of Victoria, Tasmania and South Australia. Melbourne University Press, Carlton, Victoria.	"The numerous tiny, one-celled spores are easily carried by the wind and afford a very efficient method of distribution." [ferns in general]
7.05		no evidence
7.06		unlikely for spores
7.07		
7.08		unlikely for spores
8.01		fern
8.02		
8.03		
8.04		
8.05	Stamps (1996) Cut foliage production in Florida. University of Florida, IFAS, Mid-Florida Research & Education Center (http://mrec.ifas.ufl.edu/cutfol/cutinfo.htm).	The Florida fern caterpillar has "the potential to damage this crop severely".