

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>Blechnum brasiliense</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	y	1
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		
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)		
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		
Total Score			0

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	8	yes
C	14	yes
total	29	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	Olsen, S (2007) <i>Encyclopedia of Garden Ferns</i> . Timber Press, Portland, Oregon (http://books.google.com/books?id=UNe-JB5ftKEC&pg=PA143&lpg=PA143&dq=blechnum+brasiliense&source=web&ots=Q6q-_LncUJ&sig=KD0Nt7OBhAxAEIXC4po_4bdXMk#PPA142,M1).	zones 9 and 10
2.02		

2.03		
2.04	1. Costa, CSB, BE Irgang, AR Peixoto, and JC Marangoni (2003) Floristic composition of the vegetation types of a fen on the southern Brazil coastal plain in Rio Grande do Sul, Brazil. Acta Botanica Brasilica 17: 203-212. 2. de la Sota, ER (1972) Notes on the South American species of the fern genus <i>Blechnum</i> . III. Boletín de la Sociedad Argentina de Botánica 14: 177-184.	1. <i>Blechnum brasiliense</i> was one of 7 dominant species of vegetation in a fen, a shallow water body permanently or periodically flooded by groundwater, in Brazil. 2. "Generally it lives in very damp places, even swampy places."
2.05	1. Huxley (1992) The New Royal Horticultural Society Dictionary of Gardening. The MacMillan Press, London. 2. Perl, P (1977) Ferns. Time-Life Books, Alexandria, Virginia.	used horticulturally (1, 2)
3.01	de la Sota, ER (1972) Notes on the South American species of the fern genus <i>Blechnum</i> . III. Boletín de la Sociedad Argentina de Botánica 14: 177-184.	"This is the first time that this species has been cited for the province of Buenos Aires. Perhaps it is not native to the local flora, but rather a species that has escaped cultivation." [very speculative, and what they give as natural distribution is very close to the province of Buenos Aires]
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05		no evidence
4.01	Olsen, S (2007) Encyclopedia of Garden Ferns. Timber Press, Portland, Oregon (http://books.google.com/books?id=UNe-JB5ftKEC&pg=PA143&lpg=PA143&dq=blechnum+brasiliense&source=web&ots=Q6q-_LncUJ&sig=KD0Nt7OBhAxAEIXC4po_4b-dXMk#PPA142,M1).	no description of these traits
4.02		no evidence
4.03	Olsen, S (2007) Encyclopedia of Garden Ferns. Timber Press, Portland, Oregon (http://books.google.com/books?id=UNe-JB5ftKEC&pg=PA143&lpg=PA143&dq=blechnum+brasiliense&source=web&ots=Q6q-_LncUJ&sig=KD0Nt7OBhAxAEIXC4po_4b-dXMk#PPA142,M1).	no description of this
4.04		
4.05		no evidence
4.06		
4.07	Bruneton (1999) Toxic Plants: Dangerous to Humans and Animals. Lavoisier Publishing, Paris.	"Ferns are rarely harmful to humans"; "Allergies to ferns are very rare"
4.08		no evidence
4.09	Perl, P (1977) Ferns. Time-Life Books, Alexandria, Virginia.	grows best in light to open shade
4.1		

4.11	Perl, P (1977) Ferns. Time-Life Books, Alexandria, Virginia.	" <i>B. brasiliense</i> is a dwarf tree fern having fronds 3 to 4 feet long and a foot wide on short stalks."
4.12		no evidence
5.01		terrestrial
5.02	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?312588).	Blechnaceae
5.03	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?312588).	Blechnaceae
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	1. Olsen, S (2007) Encyclopedia of Garden Ferns. Timber Press, Portland, Oregon (http://books.google.com/books?id=UNE-JB5ftKEC&pg=PA143&lpg=PA143&dq=blechnum+brasiliens e&source=web&ots=Q6q-_LncUJ&sig=KD0Nt7OBhAxAEIXC4po_4b-dXMk#PPA142,M1). 2. Perl, P (1977) Ferns. Time-Life Books, Alexandria, Virginia.	propagate by spores (1, 2)
6.03		
6.04		
6.05		fern
6.06	1. Olsen, S (2007) Encyclopedia of Garden Ferns. Timber Press, Portland, Oregon (http://books.google.com/books?id=UNE-JB5ftKEC&pg=PA143&lpg=PA143&dq=blechnum+brasiliens e&source=web&ots=Q6q-_LncUJ&sig=KD0Nt7OBhAxAEIXC4po_4b-dXMk#PPA142,M1). 2. Huxley (1992) The New Royal Horticultural Society Dictionary of Gardening. The MacMillan Press, London.	1. erect rhizome 2. "Increase by dividing the rhizome"
6.07		
7.01		
7.02	1. Huxley (1992) The New Royal Horticultural Society Dictionary of Gardening. The MacMillan Press, London. 2. Perl, P (1977) Ferns. Time-Life Books, Alexandria, Virginia.	used horticulturally (1, 2)
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 fern spores
7.07		
7.08		unlikely for fern spores
8.01		fern
8.02		
8.03		
8.04		
8.05		