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.

Tectaria incisa (incised halberd fern)			
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	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	y	1
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	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)		
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y	1
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			2

Outcome **Accept***

*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	16	yes
total	31	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		
2.04		
2.05	Weber (2003) Invasive Plant Species of the World. CABI Publishing.	used as an ornamental
3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05		no evidence
4.01	Weber (2003) Invasive Plant Species of the World. CABI Publishing.	no description of these traits
4.02		no evidence
4.03	Weber (2003) Invasive Plant Species of the World. CABI Publishing.	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	Weber (2003) Invasive Plant Species of the World. CABI Publishing.	invades "rocky shady places"; "becomes dominant in the understorey of tropical hammocks"
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: forb/herb
4.12	Weber (2003) Invasive Plant Species of the World. CABI Publishing.	"It forms dense patches" [but blades reach only 90 cm in

		length]
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.	Dryopteridaceae
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 Dryopteridaceae
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	de Winter and Amoroso, eds. (2003) Plant Resources of South-East Asia. No. 15(2). Cryptogams: Ferns and Fern Allies. Backhuys Publishers, Leiden.	"*Tectaria* can be propagated by spores"
6.03	Wagner, Wagner, and Gomez (1978) The singular origin of a Central American fern, *Pleuroderris michleriana*. Biotropica 10: 254-264.	"Geographical, ecological, morphological, and cytological observations indicate that the peculiar Central American fern, *Pleuroderris michleriana* (D.C. Eaton) Maxon arises by hybridization between *Tectaria incisa* Cav. and *Dictyoxiphium panamense* Hooker where they occur together or near each other."
6.04		
6.05		fern
6.06	Weber (2003) Invasive Plant Species of the World. CABI Publishing.	"rhizomatous fern"
6.07	de Winter and Amoroso, eds. (2003) Plant Resources of South-East Asia. No. 15(2). Cryptogams: Ferns and Fern Allies. Backhuys Publishers, Leiden.	"*T. singaporeana* needs at least two years to develop from spores to maturity, bearing the first mature pinnae" [for congener]
7.01	Langeland and Burks, eds. (1998) Identification and Biology of Nonnative Plants in Florida's Natural Areas. University of Florida.	Spread of *T. incisa* "aided by dumping of yard refuse".
7.02	Langeland and Burks, eds. (1998) Identification and Biology of Nonnative Plants in Florida's Natural Areas. University of Florida.	used as a landscape plant
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		