Taxon: Didymochlaena truncatula **Family:** Hypodematiaceae

Common Name(s): mahogany fern
moon fern
tree maidenhair fern

Synonym(s): Aspidium truncatulum Sw.
Didymochlaena lunulata Desv.

Assessor: Chuck Chimera **Status:** Assessor Approved **End Date:** 23 Dec 2014

WRA Score: 4.0 **Designation:** EVALUATE **Rating:** Evaluate

Keywords: Tropical, Fern, Ornamental, Shade-tolerant, Wind-dispersed

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
202	Quality of climate match data	(0-low; 1-intermediate; 2-high) (See Appendix 2)	High
203	Broad climate suitability (environmental versatility)	y=1, n=0	y
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	y
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	y
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	n
401	Produces spines, thorns or burrs	y=1, n=0	n
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals		
405	Toxic to animals		
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans		
408	Creates a fire hazard in natural ecosystems	y=1, n=0	n
409	Is a shade tolerant plant at some stage of its life cycle	y=1, n=0	y

Qsn #	Question	Answer Option	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	n
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally		
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)		
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant		
704	Propagules adapted to wind dispersal	y=1, n=-1	y
705	Propagules water dispersed	y=1, n=-1	y
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m2)	y=1, n=-1	y
802	Evidence that a persistent propagule bank is formed (>1 yr)		
803	Well controlled by herbicides		
804	Tolerates, or benefits from, mutilation, cultivation, or fire		
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)		

Supporting Data:

Qsn #	Question	Answer
101	**Is the species highly domesticated?**	**n**
	Source(s)	**Notes**
	Jones, D. L. 1987. Encyclopedia of Ferns. Timber Press, Portland, OR	[No evidence of domestication] "A widely distributed fern which is a firm favourite among fern growers."

102	**Has the species become naturalized where grown?**	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	NA

103	**Does the species have weedy races?**	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	NA

201	**Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"**	**High**
	Source(s)	**Notes**
	Lansdown, R.V. 2011. Didymochlaena truncatula. The IUCN Red List of Threatened Species. Version 2014.3. www.iucnredlist.org	"The species occurs throughout much of the tropics, including much of Africa south of the Sahara, parts of Central America and Uruguay in South America, as well as from India south and east through Indochina, the Malay Peninsula and Indonesia to Fiji and Vanuatu."

202	**Quality of climate match data**	**High**
	Source(s)	**Notes**
	Lansdown, R.V. 2011. Didymochlaena truncatula. The IUCN Red List of Threatened Species. Version 2014.3. www.iucnredlist.org	"Native: Angola (Angola, Angola); Burundi; Cameroon; Comoros; Congo; Congo, The Democratic Republic of the; Cuba; Dominican Republic; Equatorial Guinea (Bioko, Equatorial Guinea (mainland)); Ethiopia; Fiji; French Guiana; Guyana; Haiti; India; Indonesia; Kenya; Madagascar; Malawi; Malaysia (Peninsular Malaysia); Mexico; Mozambique; Myanmar (Myanmar (mainland)); Nigeria; Papua New Guinea (Papua New Guinea (main island group)); Rwanda; Sao Tomé and Principe (Sâo Tomé); South Africa; Suriname; Tanzania, United Republic of; Thailand; Trinidad and Tobago; Uganda; Uruguay; Vanuatu; Viet Nam; Zimbabwe"

203	**Broad climate suitability (environmental versatility)**	**y**
	Source(s)	**Notes**
	Dave's Garden. 2014. PlantFiles: Mahogany Fern, Tree Maidenhair Fern, Moon Fern - Didymochlaena truncatula. http://davesgarden.com/guides/pf/go/60266/. [Accessed 22 Dec 2014]	"Hardiness: USDA Zone 9b: to -3.8 °C (25 °F) USDA Zone 10a: to -1.1 °C (30 °F) USDA Zone 10b: to 1.7 °C (35 °F) USDA Zone 11: above 4.5 °C (40 °F)"

Qsn #	Question	Answer
	Tropicos.org. 2014. Tropicos [Online Database]. Missouri Botanical Garden. http://www.tropicos.org/. [Accessed 22 Dec 2014]	[Broad elevation and latitudinal ranges] Collected from: 40 m elevation, 09°46'48"N latitude to 3500 m elevation, 06°35'00"N latitude Collected from: 27°27'24"S to 20°30'00"N latitudes
	Hyde, M.A., Wursten, B.T., Ballings, P. & Coates Palgrave, M. 2014. Flora of Zimbabwe: Species information: Didymochlaena truncatula. http://www.zimbabweflora.co.zw/speciesdata/species.php?species_id=101950. [Accessed 22 Dec 2014]	[Elevation range exceeds 1000 m, demonstrating environmental versatility in tropical climates] "Altitude range: (metres): 300 - 1800 m"

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	**Notes**
	Lansdown, R.V. 2011. Didymochlaena truncatula. The IUCN Red List of Threatened Species. Version 2014.3. www.iucnredlist.org	"The species occurs throughout much of the tropics, including much of Africa south of the Sahara, parts of Central America and Uruguay in South America, as well as from India south and east through Indochina, the Malay Peninsula and Indonesia to Fiji and Vanuatu."

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	**Notes**
	Lansdown, R.V. 2011. Didymochlaena truncatula. The IUCN Red List of Threatened Species. Version 2014.3. www.iucnredlist.org	"Widely found in trade, presumably from cultivated as well as wild sources. "

301	Naturalized beyond native range	n
	Source(s)	**Notes**
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence
	Wagner, W.L., Herbst, D.R.& Lorence, D.H. 2014. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/pacificislandbiodiversity/hawaiianflora/index.htm. [Accessed 22 Dec 2014]	No evidence

302	Garden/amenity/disturbance weed	n
	Source(s)	**Notes**
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

Qsn #	Question	Answer
303	**Agricultural/forestry/horticultural weed**	**n**
	Source(s)	**Notes**
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

Qsn #	Question	Answer
304	**Environmental weed**	**n**
	Source(s)	**Notes**
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

Qsn #	Question	Answer
305	**Congeneric weed**	**n**
	Source(s)	**Notes**
	Randall, R.P. 2012. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	No evidence

Qsn #	Question	Answer
401	**Produces spines, thorns or burrs**	**n**
	Source(s)	**Notes**
	Hyde, M.A., Wursten, B.T., Ballings, P. & Coates Palgrave, M. 2014. Flora of Zimbabwe: Species information: Didymochlaena truncatula. http://www.zimbabweflora.co.zw/speciesdata/species.php?species_id=101950. [Accessed 22 Dec 2014]	"Rhizome erect, forming a short caudex up to 25 cm in diameter; rhizome scales up to 20 mm long, pale to dark brown, subentire. Fronds tufted, erect to arching, firmly herbaceous to coriaceous, up to 2.5 m long. Stipe up to 60 cm long, straw-coloured, set with reddish-brown, twisted scales up to 1 cm long. Lamina up to 2 × 0.5 m, bipinnate, oblong-elliptic in outline, with a pinnate apical segment. Pinnae alternate, spaced apart, shortly petiolate, up to 25 × 4 cm, narrowly oblong, pinnate into 26 pairs of pinnules. Pinnules dimidiate, almost rectangular in outline, shortly petiolate, articulated, apex rounded to truncate, lower margin entire, upper margin irregular to toothed, hairless, deep glossy green above, paler below. Rhachis and secondary rhachis straw-coloured with pale brown scales. Sori 1-6 per pinnule, broadly elliptic, sometimes deeply sunk into the lamina, set close to the upper margin; indusia peltate, brown with pale rims and with a narrowly elongated stalk, entire."

Qsn #	Question	Answer
	Roux, J.P. 2003. Swaziland ferns and fern allies. Southern African Botanical Diversity Network Report No. 19. SABONET, Pretoria	[No evidence] "Plants terrestrial. Rhizome erect, to 200 mm high, to 26 mm in diameter, closely set with roots, crowded stipe bases and scales, scales chartaceous, castaneous, adnate, lanceolate to narrowly ovate, with long filiform outgrowths along the margin, to 20 mm long, to 3 mm wide. Fronds crowded, caespitose, erect, to 2 m long; stipe firm, castaneous, sulcate adaxially, to 645 mm long, to 13 mm in diameter, densely scaled, scales similar to those on the rhizome; lamina anadromous or isodromous, 2-pinnate, oblong-ovate, to 1.4 m long, to 460 mm wide, with up to 32 pinna pairs; rachis stramineous, adaxially sulcate, sulcus not confluent with that of the pinna-rachis, densely scaled, scales chartaceous to thinly chartaceous, castaneous, ferrugineous or stramineous, sessile, filiform, simple or with numerous filiform outgrowths along the margin, apex terminates in an oblong thin-walled cell;"

402	Allelopathic	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown

403	Parasitic	n
	Source(s)	**Notes**
	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/. [Accessed 22 Dec 2014]	[No evidence] "Family: Hypodematiaceae. Also placed in: Aspidiaceae Dryopteridaceae"

404	Unpalatable to grazing animals	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown

405	Toxic to animals	
	Source(s)	**Notes**

Qsn #	Question	Answer
	Luongo, T., & Ma, L. Q. 2005. Characteristics of arsenic accumulation by Pteris and non-Pteris ferns. Plant and Soil, 27 (1-2): 117-126	[Unknown. An inefficient accumulator of arsenic. Toxicity to animals unspecified] "This research was conducted to understand the mechanisms of arsenic hyperaccumulation in Pteris vittata by comparing the characteristics of arsenic accumulation in Pteris and non-Pteris ferns. Seven Pteris (P.vittata, P. Cretica Rowerii, P. Cretica Parkerii, P. Cretica Albo-lineata, P. Quadriavrita, P. Ensiformis and P. Dentata) and six non-Pteris (Arachnoides simplicor, Didymochlaena truncatula, Dryopteris atrata, Dryopteris erythrosora, Cyrtomium falcatum, and Adiantum hispidulum) ferns were exposed to 0, 1 and 10 mgL)1 arsenic as sodium arsenate for 14-d in hydroponic systems. As a group, the Pteris ferns were more efficient in arsenic accumulation than the non-Pteris ferns, with P. vittata being the most efficient followed by P. cretica. When exposed to 10 mg L)1 As, arsenic concentrations in the fronds and roots of P. vittata were 1748 and 503 mg kg)1. Though not all Pteris ferns were efficient in accumulating arsenic, none of the non-Pteris ferns was an efficient As accumulator (the highest concentration being 452 mg kg)1)."

406	Host for recognized pests and pathogens	
	Source(s)	**Notes**
	Gardening Info Zone. 2014. Didymochlaena. http://www.gardeninginfozone.com/didymochlaena. [Accessed 23 Dec 2014]	"Pests, diseases: None known."

407	Causes allergies or is otherwise toxic to humans	
	Source(s)	**Notes**
	Luongo, T., & Ma, L. Q. 2005. Characteristics of arsenic accumulation by Pteris and non-Pteris ferns. Plant and Soil, 27 (1-2): 117-126	[Inefficient accumulator of arsenic. Unknown if toxic to humans] "Though not all Pteris ferns were efficient in accumulating arsenic, none of the non-Pteris ferns was an efficient As accumulator (the highest concentration being 452 mg kg)1). The fact that frond arsenic concentrations in the control were highly correlated with those exposed to As (r2 = 0.76–0.87) may suggest that they may be used as a preliminary tool to screen potential arsenic hyperaccumulators. Our research confirms that the ability of P. vittata to translocate arsenic from the roots to the fronds (73–77% As in the fronds), reduce arsenate to arsenite in the fronds (>50% AsIII in the fronds), and maintain high concentrations of phosphate in the roots (48–53% in the roots) all contributed to its arsenic tolerance and hyperaccumulation."
	Quattrocchi, U.. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	[Used medicinally] "Swellings in the neck, pound the leaves and poultice. Root paste given to women during menstrual period for permanent sterility."
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

408	Creates a fire hazard in natural ecosystems	n

Qsn #	Question	Answer
	Source(s)	**Notes**
	Lansdown, R.V. 2011. Didymochlaena truncatula. The IUCN Red List of Threatened Species. Version 2014.3. www.iucnredlist.org	[No evidence, and unlikely given form and habitat] "The species occurs in rocky stream valleys at moderate altitudes in the mountains and on wet slopes in forest at higher altitudes. "

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	**Notes**
	Hyde, M.A., Wursten, B.T., Ballings, P. & Coates Palgrave, M. 2014. Flora of Zimbabwe: Species information: Didymochlaena truncatula. http://www.zimbabweflora.co.zw/speciesdata/species.php?species_id=101950. [Accessed 22 Dec 2014]	"Habitat: Deeply shaded moist situations in wet evergreen forest, along margins of streams."
	Jones, D. L. 1987. Encyclopedia of Ferns. Timber Press, Portland, OR	"In the ground it likes a shady situation and appreciates regular watering, mulching and dressings of organic fertilizers and manures."
	Burrows, J.E. & Willis, C.K. (eds). 2005. Plants of the Nyika Plateau: an account of the vegetation of the Nyika National Parks of Malawi and Zambia. Southern African Botanical Diversity Network Report No. 31. SABONET, Pretoria	"in very deeply shaded areas in wet forest, along streams or on seepage zones; 1,100–2,000 m."
	Vermeulen, N. 1998. Encyclopedia of House Plants. 2nd Print. Rebo Productions, Lisse, Netherlands	"It can tolerate shade but not direct sunlight."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	
	Source(s)	**Notes**
	Plant This. 2014. Didymochlaena truncatula. http://plantthis.com.au/plant-search.asp?searchStr=Didymochlaena. [Accessed 22 Dec 2014]	"Soil Moisture: constantly moist Soil: enriched soil, mildly acidic to mildly alkaline"
	Home Design Directory. 2014. Didymochlaena truncatula (Tree Maidenhair). http://www.homedesigndirectory.com.au/gardening/plant finder/plant-descriptions/didymochlaena-truncatula/?plant-id=1402. [Accessed 23 Dec 2014]	"Soil types & conditions Loam: moist. Clay: moist. Sand: moist."

411	Climbing or smothering growth habit	n
	Source(s)	**Notes**
	Burrows, J.E. & Willis, C.K. (eds). 2005. Plants of the Nyika Plateau: an account of the vegetation of the Nyika National Parks of Malawi and Zambia. Southern African Botanical Diversity Network Report No. 31. SABONET, Pretoria	"Large terrestrial fern, rhizome large, up to 250 mm diameter; fronds tufted, up to 2 m x 0.5 m, 2-pinnate, pinnae more or less rectangular; sori 4–6 per pinnule, oval, indusiate"

412	Forms dense thickets	n
	Source(s)	**Notes**

Qsn #	Question	Answer
	Roux, J.P. 2003. Swaziland ferns and fern allies. Southern African Botanical Diversity Network Report No. 19. SABONET, Pretoria	[No evidence in Swaziland] "Rare in Swaziland and the species appears to be restricted to the north-western corner of the country, occurring at altitudes ranging between 1 300 and 1 520 m."
	Burrows, J.E. & Willis, C.K. (eds). 2005. Plants of the Nyika Plateau: an account of the vegetation of the Nyika National Parks of Malawi and Zambia. Southern African Botanical Diversity Network Report No. 31. SABONET, Pretoria	[No evidence] "in very deeply shaded areas in wet forest, along streams or on seepage zones; 1,100–2,000 m. Throughout the African tropics; also in Asia and tropical America. Often growing with Diplazium zanzibaricum and Thelypteris madagascariensis."

501	Aquatic	n
	Source(s)	**Notes**
	Lansdown, R.V. 2011. Didymochlaena truncatula. The IUCN Red List of Threatened Species. Version 2014.3. www.iucnredlist.org	"The species occurs in rocky stream valleys at moderate altitudes in the mountains and on wet slopes in forest at higher altitudes."

502	Grass	n
	Source(s)	**Notes**
	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/. [Accessed 22 Dec 2014]	"Family: Hypodematiaceae. Also placed in: Aspidiaceae Dryopteridaceae"

503	Nitrogen fixing woody plant	n
	Source(s)	**Notes**
	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/. [Accessed 22 Dec 2014]	"Family: Hypodematiaceae. Also placed in: Aspidiaceae Dryopteridaceae"

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	**Notes**
	Hyde, M.A., Wursten, B.T., Ballings, P. & Coates Palgrave, M. 2014. Flora of Zimbabwe: Species information: Didymochlaena truncatula. http://www.zimbabweflora.co.zw/speciesdata/species.php?species_id=101950. [Accessed 22 Dec 2014]	"Rhizome erect, forming a short caudex up to 25 cm in diameter; rhizome scales up to 20 mm long, pale to dark brown, subentire. Fronds tufted, erect to arching, firmly herbaceous to coriaceous, up to 2.5 m long. Stipe up to 60 cm long, straw-coloured, set with reddish-brown, twisted scales up to 1 cm long."
	Gordon, D. R., Mitterdorfer, B., Pheloung, P. C., Ansari, S., Buddenhagen, C., Chimera, C., ... & Williams, P. A. 2010). Guidance for addressing the Australian Weed Risk Assessment questions. Plant Protection Quarterly, 25(2): 56-74	"This question addresses taxa that have specialized organs and should not include plants with just rhizomes/ stolons"

Qsn #	Question	Answer
601	**Evidence of substantial reproductive failure in native habitat**	**n**
	Source(s)	**Notes**
	Lansdown, R.V. 2011. Didymochlaena truncatula. The IUCN Red List of Threatened Species. Version 2014.3. www.iucnredlist.org	"The species has a very broad range, occurs in a habitat which, although affected by logging and forest clearance, is very widely distributed and is locally common. It is unlikely to become extinct in the short term and is therefore classed as Least Concern. "

602	**Produces viable seed**	**y**
	Source(s)	**Notes**
	Gardening Info Zone. 2014. Didymochlaena. http://www.gardeninginfozone.com/didymochlaena. [Accessed 23 Dec 2014]	"Propagation: From spores or division."
	Mendoza, A., Pérez-García, B., & Riba, R. 1999. Morfología y anatomía del gametofito de Didymochlaena truncatula (Dryopteridaceae). Revista de Biología Tropical, 47(1-2): 93-99	"Sexual phase development was studied in Didymochlaena truncatula, on the basis of spores collected in Península Moreno and Tebanca, Catemaco, Veracruz, México. The spores are monolete, ellipsoid, with perine, and non-clorophyllic. The germination pattern is of the Vittaria type and the prothallial development is of the Adiantum-type, the adult gametophytes are cordiform to reniform and without trichomes; the gametangia are typical of the leptosporangiate ferns. The first leaf of the sporophyte appears 100 days after the sowing of the spores, the lamina is spatulate-shaped, with dichotomous venation and short capitate, unicellular marginal hairs."

603	**Hybridizes naturally**	
	Source(s)	**Notes**
	Roux, J.P. 2003. Swaziland ferns and fern allies. Southern African Botanical Diversity Network Report No. 19. SABONET, Pretoria	[No hybrids reported] "A monotypic genus with pantropical distribution."
	Kramer, K.U. & Green, P.S. 1990. The Families and genera of vascular plants. Volume 1. Pteridophytes and gymnosperms. Springer-Verlag, Berlin, Heidelberg, New York	[Unknown. No hybrids reported] "A single, pantropical species, D. trunculata (Swartz) J. Smith, or possibly a second species in Madagascar"

604	**Self-compatible or apomictic**	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown

605	**Requires specialist pollinators**	**n**
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	No pollinators required in pteridophytes. Water may be required for fertilization & production of the sporophyte

606	**Reproduction by vegetative fragmentation**	**n**

Qsn #	Question	Answer
	Source(s)	**Notes**
	Roux, J.P. 2003. Swaziland ferns and fern allies. Southern African Botanical Diversity Network Report No. 19. SABONET, Pretoria	"Vegetative reproduction evidently non-existent."

607	Minimum generative time (years)	
	Source(s)	**Notes**
	Florida Yards & Neighborhoods. 2006. A Guide to Florida-Friendly Landscaping. University of Florida, Institute of Food and Agricultural Sciences, Gainesville, FL	[Time to reproductive maturity unknown] "Growth: Slow"

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown. Prolific spore production, and cultivation could possibly result in accidental dispersal through attachment to clothing, or equipment.

702	Propagules dispersed intentionally by people	y
	Source(s)	**Notes**
	Roux, J.P. 2003. Swaziland ferns and fern allies. Southern African Botanical Diversity Network Report No. 19. SABONET, Pretoria	"This highly ornamental fern has recently become available in the horticultural trade for use in landscaping and as an indoor plant. The species requires high humidity and permanently moist conditions."
	Lansdown, R.V. 2011. Didymochlaena truncatula. The IUCN Red List of Threatened Species. Version 2014.3. www.iucnredlist.org	"Widely found in trade, presumably from cultivated as well as wild sources. "

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown. Spores could potentially contaminate soil or potting media of any plants growing in the vicinity of reproductive age individuals

704	Propagules adapted to wind dispersal	y
	Source(s)	**Notes**
	Roux, J.P. 2003. Swaziland ferns and fern allies. Southern African Botanical Diversity Network Report No. 19. SABONET, Pretoria	"Sori elliptic, at the apex of an abbreviated anadromous vein branch, to 3 mm long, to 8 per pinnule; sporangium long-stalked, simple, 3-seriate below the capsule, capsule globose in lateral view, with (13–)15(–16) indurated annulus cells, epistomium (2–)3-celled, hypostomium (2–)4-celled; indusium firmly herbaceous, brown, elliptic, entire, centrally attached along an elongated receptacle, to 3 mm long, to 1 mm wide; receptacle nude. Spores 64 per sporangium, brown, ellipsoidal, monolete, perispore with large inflated tubercules, echinulate."

Qsn #	Question	Answer
	Gordon, D. R., Mitterdorfer, B., Pheloung, P. C., Ansari, S., Buddenhagen, C., Chimera, C., ... & Williams, P. A. 2010). Guidance for addressing the Australian Weed Risk Assessment questions. Plant Protection Quarterly, 25(2): 56-74	"This group includes tumbling plants and fern spores."

705	Propagules water dispersed	y
	Source(s)	**Notes**
	Hyde, M.A., Wursten, B.T., Ballings, P. & Coates Palgrave, M. 2014. Flora of Zimbabwe: Species information: Didymochlaena truncatula. http://www.zimbabweflora.co.zw/speciesdata/species.php?species_id=101950. [Accessed 22 Dec 2014]	[Distribution along streams suggests spores likely dispersed by water, as well as wind] "Habitat: Deeply shaded moist situations in wet evergreen forest, along margins of streams."
	Roux, J.P. 2003. Swaziland ferns and fern allies. Southern African Botanical Diversity Network Report No. 19. SABONET, Pretoria	[Distribution along streams suggests spores would be dispersed by water] "Terrestrial, in deep shade, always along perennial streams in moist evergreen forests."

706	Propagules bird dispersed	n
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Although spores may adhere to birds, the likely vectors of dispersal for spores are wind, and possibly water.

707	Propagules dispersed by other animals (externally)	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown. Possible that spores may adhere to fur or mud on animals.

708	Propagules survive passage through the gut	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown. Unlikely to be consumed and not adapted for internal dispersal.

801	Prolific seed production (>1000/m2)	y
	Source(s)	**Notes**
	Gordon, D. R., Mitterdorfer, B., Pheloung, P. C., Ansari, S., Buddenhagen, C., Chimera, C., ... & Williams, P. A. 2010). Guidance for addressing the Australian Weed Risk Assessment questions. Plant Protection Quarterly, 25(2): 56-74	"Assume 'yes' for fern taxa unless contradictory evidence exists."

Qsn #	Question	Answer
802	**Evidence that a persistent propagule bank is formed (>1 yr)**	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown

803	**Well controlled by herbicides**	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species. No evidence that herbicides have been used on this fern

804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown

805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	
	Source(s)	**Notes**
	WRA Specialist. 2014. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits
• Elevation range exceeds 1000 m, demonstrating environmental versatility
• Thrives in tropical climates
• Shade tolerant
• Spores dispersed by wind & probably water
• Prolific spore production
• Limited ecological information makes accurate risk prediction difficult

Low Risk Traits
• No reports of invasiveness or naturalization
• Unarmed (no spines, thorns or burrs)
• Ornamental
• Not reported to spread vegetatively

Second Screening Results for Tree/tree-like shrubs

(A) Shade tolerant or known to form dense stands?> Yes. Tolerates shade
(B) Bird OR clearly wind dispersed?> Yes. Spores are wind dispersed
(C) Life cycle < 4 years? Unknown
Outcome = Evaluate