# **TAXON**: Davallia solida (G. Forst.) Sw.

**SCORE**: *4.0* 

**RATING:**Low Risk

Taxon: Davallia solida (G. Forst.) Sw.

Family: Davalliaceae

Common Name(s):

giant hare's foot fern

Synonym(s):

**Assessor:** Chuck Chimera

**Status:** Assessor Approved

**End Date:** 14 Nov 2016

WRA Score: 4.0

Designation: L

Rating: Low Risk

Keywords: Ornamental Fern, Epiphytic, Ground-Dwelling, Shade-Tolerant, Rhizomatous

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	У
204	Native or naturalized in regions with tropical or subtropical climates	y=1, n=0	У
205	Does the species have a history of repeated introductions outside its natural range?	y=-2, ?=-1, n=0	У
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	y=1, n=0	n
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y=1, n=0	n
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	У
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y=1, n=0	У

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Qsn #	Question	Answer Option	Answer
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets		
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	У
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	У
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	У
703	Propagules likely to disperse as a produce contaminant		
704	Propagules adapted to wind dispersal	y=1, n=-1	У
705	Propagules water dispersed		
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m2)	y=1, n=-1	У
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
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	[No evidence of domestication] "Epiphytic, epilithic on different kinds of rocks, or terrestrial on different kinds of soils, in exposed places or in deep shade, from open rocky places and savannas to primary rain forests; sea level to 1500 m. Guangdong, Guangxi, Taiwan, Yunnan [Cambodia, India, Indonesia, Malaysia, Myanmar, Papua New Guinea, Philippines, Sri Lanka, Thailand, Vietnam (Tonkin); Pacific islands]."
102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	NA
		-
103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2016. 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
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Guangdong, Guangxi, Taiwan, Yunnan [Cambodia, India, Indonesi Malaysia, Myanmar, Papua New Guinea, Philippines, Sri Lanka, Thailand, Vietnam (Tonkin); Pacific islands]."
	Lindsay, S. & Middleton, D.J. (2012 onwards). Ferns of Thailand, Laos and Cambodia. http://rbg-web2.rbge.org.uk/thaiferns/. [Accessed 7 Nov 2016]	"Wider Distribution - Widely known in Malesia and Polynesia, nort to Indochina and S China."
202	Quality of climate match data	High
	Source(s)	Notes
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	

Qsn #	Question	Answer
203	Broad climate suitability (environmental versatility)	у
	Source(s)	Notes
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	[1500 m elevation range, demonstrating environmental versatility] "sea level to 1500 m. Guangdong, Guangxi, Taiwan, Yunnan [Cambodia, India, Indonesia, Malaysia, Myanmar, Papua New Guinea, Philippines, Sri Lanka, Thailand, Vietnam (Tonkin); Pacific islands]."

204	Native or naturalized in regions with tropical or subtropical climates	у
	Source(s)	Notes
	Lindsay, S. & Middleton, D.J. (2012 onwards). Ferns of Thailand, Laos and Cambodia. http://rbg-web2.rbge.org.uk/thaiferns/. [Accessed 7 Nov 2016]	"Distribution in Thailand - SOUTH-WESTERN: Phetchaburi; SOUTH- EASTERN: Chanthaburi, Trat; PENINSULAR: Ranong, Surat Thani, Phuket, Nakhon Si Thammarat, Trang, Songkhla, Yala. Distribution in Cambodia - Kampot, Koh Kong, Kompong Speu Wider Distribution - Widely known in Malesia and Polynesia, north to Indochina and S China"
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Guangdong, Guangxi, Taiwan, Yunnan [Cambodia, India, Indonesia, Malaysia, Myanmar, Papua New Guinea, Philippines, Sri Lanka, Thailand, Vietnam (Tonkin); Pacific islands]."

205	Does the species have a history of repeated introductions outside its natural range?	у
	Source(s)	Notes
	Dried Botanical ID. (2016). Davallia solida. http://idtools.org/id/dried_botanical/factsheet.php? name=Davallia+solida. [Accessed 14 Nov 2016]	" It is widely cultivated, even as a houseplant where it is not hardy."
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	Cultivated in the Hawaiian Islands

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. 2016. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/. [Accessed 14 Nov 2016]	No evidence to date

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Qsn #	Question	Answer
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
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
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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
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	Davallia bilabiata, Davallia bullata, Davallia canariensis, Davallia griffithiana, Davallia mariesii listed as naturalized or cultivation escapes. [No evidence of adverse impacts from any of these species, or control efforts]
401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	[No evidence] "Rhizome 4–14 mm in diam., densely covered with scales, generally not white waxy. Scales red-brown, with pale border from base to apex, narrowed evenly toward apex or above much broader base evenly narrowed toward apex, not or seldom curling backward, peltate, $5-10\times1-1.2$ mm, with multiseptate hairs at least when young (hairs at least at apex of young scales, ca. 1 mm, woolly)."
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402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown
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403	Parasitic	n
	Source(s)	Notes

**Creation Date: 14 Nov 2016** 

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Qsn #	Question	Answer
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Plants moderate-sized, epiphytic or sometimes terrestrial." [Davalliaceae. No evidence]
404	Unpalatable to grazing animals	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown
405	Toxic to animals	n
	Source(s)	Notes
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence
406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Jones, D. L. 1987. Encyclopedia of Ferns. Timber Press, Portland, OR	"Attacked by Fern Scale and Hard Brown Scale may be a nuisance be rarely persist. Aphids may congregate on developing fronds, and slugs, snails and caterpillars may be occasional pests" [Unknown. Pests of related taxon are not important commercially or accelerated.

ecologically]

Qsn #	Question	Answer
407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Fernández, H., Kumar, A., & Revilla, A. (Eds.). (2011). Working with ferns: issues and applications. Springer Science & Business Media, New York	[Used medicinally] "Rhizomes of Drynaria fortunei (Kze.) J.Sm., Pseudodrynaria coronans (Wall. ex Mett.) Ching (both from Polypodiaceae), Davallia divaricata Bl., Davallia mariesii Moore ex Bak, Davallia solida (Forst.) Sw., and Humata griffithiana (Hk.) C.Chr. (from Davalliaceae) are used or called as "Gu-Sui-Bu" or "Shibu" in Taiwan. These have been claimed to cure body ache, inflammation, cancer, aging, blood stasis and bone injuries. In a publication by Pharmacopoeia Commission of People Republic of China, only D. fortunei has been reported as source of "Gu-Sui-Bu" (Anonymous 2005), however, no systematic investigation has been carried out so far, to evaluate comparative values of these different sources."
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	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
	Source(s)	Notes
	1	"Epiphytic, epilithic on different kinds of rocks, or terrestrial on different kinds of soils, in exposed places or in deep shade, from open rocky places and savannas to primary rain forests; sea level to 1500 m." [No evidence. Unlikely based on habitat]

409	Is a shade tolerant plant at some stage of its life cycle	У
	Source(s)	Notes
	Lindsay, S. & Middleton, D.J. (2012 onwards). Ferns of Thailand, Laos and Cambodia. http://rbg-web2.rbge.org.uk/thaiferns/. [Accessed 7 Nov 2016]	"Ecology - On tree trunks or on rocks in half-shaded places or in some dense evergreen forests at altitudes below 300 m."
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Epiphytic, epilithic on different kinds of rocks, or terrestrial on different kinds of soils, in exposed places or in deep shade, from open rocky places and savannas to primary rain forests; sea level to 1500 m."
	Dave's Garden. (2016). Giant Hare's Foot - Davallia solida. http://davesgarden.com/guides/pf/go/55126/. [Accessed 14 Nov 2016]	"Sun Exposure: Partial to Full Shade"

Qsn #	Question	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	у
	Source(s)	Notes
	China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae).	"Epiphytic, epilithic on different kinds of rocks, or terrestrial on different kinds of soils, in exposed places or in deep shade, from open rocky places and savannas to primary rain forests"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Rhizome 4–14 mm in diam., densely covered with scales, generally not white waxy. Scales red brown, with pale border from base to apex, narrowed evenly toward apex or above much broader base evenly narrowed toward apex, not or seldom curling backward, peltate, $5$ – $10 \times -1.2$ mm, with multiseptate hairs at least when young (hairs at least at apex of young scales, ca. 1 mm, woolly)." "Epiphytic, epilithic on different kinds of rocks, or terrestrial on different kinds of soils"

412	Forms dense thickets	
	Source(s)	Notes
	Whistler, W.A. 1994. Botanical Inventory of the Proposed Tutuila and Ofu Units of the National Park of American Samoa. Technical Report 87. Cooperative National Park Resources Studies Unit UH Manoa, Honolulu, HI	[May form dense patches] "Higher up the slopes the fern Davallia solida forms dense patches, probably in cracks and on ledges." "Epiphytic fern with a stout, creeping rhizome, tripinnate to tripinnatifid, deltoid fronds, sori on terminal subdivisions of lobes, and tubular indusia. Common in lowland to cloud forest, reported from near sea level to 1400 m elevation." "In disturbed places, the dominant tree was Hibiscus liliaceus, which often forms dense thickets. These thickets are similar to those on Alava Ridge east of the TV transmitter on Tutuila. Also common is another secondary forest tree, Trichospermum richii. The ground cover is dense here, and is dominated by Christella harveyi, Lomagramma cordipinna, and Davallia solida, all of them ferns."

501	Aquatic	n
	Source(s)	Notes
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Plants moderate-sized, epiphytic or sometimes terrestrial." [Generic description]

Qsn #	Question	Answer
502	Grass	n
	Source(s)	Notes
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	Davalliaceae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	Davalliaceae

504	Geophyte (herbaceous with underground storage organs bulbs, corms, or tubers)	n
	Source(s)	Notes
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Rhizome 4–14 mm in diam., densely covered with scales, generally not white waxy. Scales red-brown, with pale border from base to apex, narrowed evenly toward apex or above much broader base evenly narrowed toward apex, not or seldom curling backward, peltate, $5-10 \times 1-1.2$ mm, with multiseptate hairs at least when young (hairs at least at apex of young scales, ca. 1 mm, woolly)."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Lindsay, S. & Middleton, D.J. (2012 onwards). Ferns of Thailand, Laos and Cambodia. http://rbg-web2.rbge.org.uk/thaiferns/. [Accessed 7 Nov 2016]	"Proposed IUCN Conservation Assessment - Least Concern (LC). This species is widespread and not under any known threat."
	Safford, W.E. 1905. The Useful Plants of the Island of Guam. U.S. Government Printing Office, Washington, D.C.	"This species is widely spread throughout Polynesia, the Philippines, and the Malay Peninsula. It has also been collected in Java."

Qsn #	Question	Answer
602	Produces viable seed	У
	Source(s)	Notes
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"Davallias may also be propagated by spores."
	Gardening Australia. (2001). Ferns Factsheet. http://www.abc.net.au/cgi-bin/common/printfriendly.pl?/gardening/stories/s302402. htm. [Accessed 8 Nov 2016]	"Ferns with running stems, like Rabbit's Foot Fern (Davallia solida), are very easy to propagate. Simply place cuttings on moist potting mix and use wire pegs to hold them in position. It's a lot faster than propagating from spores."
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Sori separate, borne several on a segment, at forking point of veins; indusium also attached along sides, pouch-shaped, oblong, longer than wide, $1.2-2 \times 0.5-1$ mm, upper margin not elongated, truncate or slightly rounded, separated from or even with lamina margin; lamina not extending into teeth beyond a sorus."
603	Hubridizas naturallu	<u> </u>
603	Hybridizes naturally	Notes
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown
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604	Self-compatible or apomictic	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown
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605	Requires specialist pollinators	n
	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	"Also assume 'no' for fern, grass, and sedge taxa even if direct evidence is lacking."
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606	Reproduction by vegetative fragmentation	У
	Source(s)	Notes
	Dave's Garden. (2016). Giant Hare's Foot - Davallia solida. http://davesgarden.com/guides/pf/go/55126/. [Accessed 14 Nov 2016]	"Propagation Methods: By dividing the rootball"
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"They are most commonly propagated by rhizome division. The rhizomes - especially the growing tips - should not be buried and are best anchored onto the growing medium and allowed to root."
607	Minimum generative time (years)	
	Source(s)	Notes

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Qsn #	Question	Answer
	Plant This. (2016). Davallia solida var. pyxidata. http://www.plantthis.com.au/plant-information.asp? gardener=12602&tabview=design&plantSpot=. [Accessed 14 Nov 2016]	"Growth rate: average" [Unknown. May be able to reproduce vegetatively prior to sexual maturity]
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701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown. Possible that spores could be carried on equipment, shoes, etc. but unlikely
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702	Propagules dispersed intentionally by people	У
	Source(s)	Notes
	Imada, C.T., Staples, G.W. & Herbst, D.R. 2005. Annotated Checklist of Cultivated Plants of Hawai'i. http://www2.bishopmuseum.org/HBS/botany/cultivatedp lants/. [Accessed 14 Nov 2016]	"Locations: Harold L. Lyon Arboretum Hoʻomaluhia Botanical Garden Waimea Arboretum & Botanical Garden"
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	Cultivated as an ornamental in the Hawaiian Islands
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703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown. Spores could potentially contaminate soil or potting media of any plants growing in the vicinity of reproductive age individuals
	<u> </u>	Υ
704	Propagules adapted to wind dispersal	У
	Source(s)	Notes
	Wu, Z.Y., Raven, P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Sori separate, borne several on a segment, at forking point of veins indusium also attached along sides, pouch-shaped, oblong, longer than wide, $1.2-2 \times 0.5-1$ mm, upper margin not elongated, truncate or slightly rounded, separated from or even with lamina margin; lamina not extending into teeth beyond a sorus."
	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):	"This group includes tumbling plants and fern spores."

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Qsn #	Question	Answer
705	Propagules water dispersed	
	Source(s)	Notes
	IGuidance for addressing the Australian Weed Risk	Fern, Davalliaceae, wind-dispersed spores [Unknown if spores can be transported by water]

706	Propagules bird dispersed	n
	Source(s)	Notes
	Wu, Z.Y., Raven,P.H. & Hong, D.Y. (eds.). 2013. Flora of China. Vol. 2-3 (Lycopodiaceae through Polypodiaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	Fern, Davalliaceae, wind-dispersed spores

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
		Possibly, but unlikely. Although spores may potentially adhere to animal fur or feet, the primary vector of dispersal is wind & maybe water.

708	Propagules survive passage through the gut	n
	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	"Answer 'no' where the taxon is unlikely to be eaten by animals or if seeds are not viable following passage through the gut."

801	Prolific seed production (>1000/m2)	у
	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."

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Qsn #	Question	Answer
802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Gupta, S., Hore, M., & Biswas, S. (2014). An overview of the study of soil spore bank of ferns: need for suitable exploitation in India. Proceedings of the National Academy of Sciences, India Section B: Biological Sciences, 84(3), 779-798	Unknown

803	Well controlled by herbicides	
	Source(s)	Notes
	IWKA Specialist, 2016, Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species.

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	Hunter, J. T. (2011). Vegetation and Floristics of Butterleaf National Park, Butterleaf State Conservation Area and the Bezzants Lease. A Report to the New South Wales National Parks and Wildlife Service & the Nature Conservation Trust of NSW	"Table 2: Known fire responses and traits of taxa found in Butterleaf & Bezzants Lease. NPFR refers to National Fire Register." [Davallia solida - Notes = Probably killed]
	Kubiak, P. J. 2009. Fire responses of bushland plants after the January 1994 wildfires in northern Sydney. Cunninghamia, 11(1): 131-165	[Possibly has some limited fire tolerance] "Appendix 1. Observations on fire responses (after 100% leaf scorch) of vascular plants in the Lane Cove River (LCR) (observations mainly Jan 1994 – Oct 1999) and Narrabeen Lagoon (NL) (Mar – Oct 1994) catchments, following the fires of January 1994." [Davallia solida var. pyxidata - K = majority of adult plants killed by the fires; r = a small proportion of adult plants of this species resprouted after the fires;]

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. 2016. Personal Communication	Unknown

## <u>Sw.</u>

## **Summary of Risk Traits:**

### High Risk / Undesirable Traits

- Elevation range exceeds 1500 m, demonstrating environmental versatility
- Grows in tropical climates
- Possibly naturalizing on Oahu, Hawaiian Islands (confirmation needed)
- Shade-tolerant
- Tolerates many soil types
- · Reproduces by spores & vegetatively by rhizomes
- Spores dispersed by wind & possibly water
- Intentionally propagated
- Presumably prolific spore production

#### Low Risk Traits

- · No reports of invasiveness or naturalization to date
- Cultivated, but not reported as naturalized, in Hawaiian Islands
- Unarmed (no spines, thorns or burrs)
- Non-toxic
- Ornamental

Second Screening Results for Herbs or Low Stature Shrubby Life Forms

(A) Reported as a weed of cultivated lands? No Outcome = Accept (Low Risk)