

**Family:** *Cyatheaceae*

**Taxon:** *Cyathea medullaris*

**Synonym:** *Polypodium medullare* G. Forst. (basionym) **Common Name:** black tree fern  
*Sphaeropteris medullaris* (G. Forst.) Bernh.

<b>Questionnaire :</b>	current 20090513	<b>Assessor:</b>	Patti Clifford	<b>Designation:</b> H(HPWRA)
<b>Status:</b>	Assessor Approved	<b>Data Entry Person:</b>	Patti Clifford	<b>WRA Score</b> 7
101	Is the species highly domesticated?		y=-3, n=0	n
102	Has the species become naturalized where grown?		y=1, n=-1	
103	Does the species have weedy races?		y=1, n=-1	
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	n
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	n
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)	y
401	Produces spines, thorns or burrs		y=1, n=0	n
402	Allelopathic		y=1, n=0	
403	Parasitic		y=1, n=0	n
404	Unpalatable to grazing animals		y=1, n=-1	
405	Toxic to animals		y=1, n=0	
406	Host for recognized pests and pathogens		y=1, n=0	
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	
409	Is a shade tolerant plant at some stage of its life cycle		y=1, n=0	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		y=1, n=0	y
411	Climbing or smothering growth habit		y=1, n=0	n

412	Forms dense thickets	y=1, n=0	y
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	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	n
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
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	
707	Propagules dispersed by other animals (externally)	y=1, n=-1	
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m <sup>2</sup> )	y=1, n=-1	y
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: H(HPWRA)

WRA Score 7

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**Supporting Data:**

101	2011. WRA Specialist. Personal Communication.	[Is the species highly domesticated? No]
102	2011. WRA Specialist. Personal Communication.	[Has the species become naturalized where grown?] NA
103	2011. WRA Specialist. Personal Communication.	[Does the species have weedy races?] NA
201	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"? High] Native distribution: New Zealand; Fiji.
202	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Quality of climate match data? High] Native range: New Zealand; Fiji.
203	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Broad climate suitability (environmental versatility)? No ] Elevation range from sea level to 100m. Frost sensitive. Tropical and subtropical rain forests and coastal forest. <i>C. medullaris</i> is known to survive outdoors in the Channel Islands off the southern coast of England.
203	2011. Dave's Garden. Plant Files: <i>Cyathea medullaris</i> . Dave's Garden, <a href="http://davesgarden.com/guides/pf/go/58018/">http://davesgarden.com/guides/pf/go/58018/</a>	[Broad climate suitability (environmental versatility)? No ] Hardiness: USDA Zone 9a: to -6.6 °C (20 °F) 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)
203	2011. Plants for a Future Database. <i>Cyathea medullaris</i> . Plants for a Future Database, <a href="http://www.pfaf.org/user/Plant.aspx?LatinName=Cyathea+medullaris">http://www.pfaf.org/user/Plant.aspx?LatinName=Cyathea+medullaris</a>	[Broad climate suitability (environmental versatility)? No ] Hardy to USDA zone 9.
204	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Native or naturalized in regions with tropical or subtropical climates? Yes] Native range: New Zealand; Fiji.
205	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Does the species have a history of repeated introductions outside its native range? ] Tree ferns have long interested gardeners. In the early to mid-19th century, <i>Cyathea medullaris</i> was brought to Britain and other European countries to the collections of the wealthy.
205	2011. WRA Specialist. Personal Communication.	[Does the species have a history of repeated introductions outside its native range? No] No evidence of repeated introductions. [some limited introductions are documented]
301	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	[Naturalized beyond native range? No] No evidence.
302	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	[Garden/amenity/disturbance weed? No] No evidence.
303	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	[Agricultural/forestry/horticultural weed? No] No evidence.
304	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	[Environmental weed? No] No evidence.
305	1992. Medeiros, A.C./Loope, L.L./Flynn, T./Anderson, S.J./Cuddihy, L.W./Wilson, K.A.. Notes on the status of an invasive Australian tree fern ( <i>Cyathea cooperi</i> ) in Hawaiian rain forests. American Fern Journal. 82: 27-33.	[Congeneric weed? Yes] <i>Cyathea cooperi</i> is invasive on the island of Maui.

305	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Congeneric weed? Yes] <i>Cyathea cooperi</i> is recognized as a weed in some areas where it has been introduced.
401	1982. Allan, H.H.. Flora of New Zealand, Volume I: Indigenous Tracheophyta - Psilopsida, Lycopsidea, Filicopsida, Gymnospermae, Dicotyledons. First electronic edition. Landcare Research, Lincoln, New Zealand <a href="http://FloraSeries.LandcareResearch.co.nz">http://FloraSeries.LandcareResearch.co.nz</a>	[Produces spines, thorns or burrs? No] Caudex up to 15m. Or more tall, and 30 cm diam., except towards base much thickened by dense mass of rootlets, black marked by hexagonal scars of fallen stipies. Stipes stout, black, to 1m long, up to 8 cm diam. Near base; tuberculate; copiously clad in brownish hairs, later glabrate. Lamina up to 0.6x2 cm, 2-3 pinnate
402	2011. WRA Specialist. Personal Communication.	[Allelopathic?] Unknown.
403	1982. Allan, H.H.. Flora of New Zealand, Volume I: Indigenous Tracheophyta - Psilopsida, Lycopsidea, Filicopsida, Gymnospermae, Dicotyledons. First electronic edition. Landcare Research, Lincoln, New Zealand <a href="http://FloraSeries.LandcareResearch.co.nz">http://FloraSeries.LandcareResearch.co.nz</a>	[Parasitic? No] Cyatheaceae.
404	2011. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals?] Unknown
405	2011. WRA Specialist. Personal Communication.	[Toxic to animals?] Unknown
406	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Host for recognized pests and pathogens?] It is suggested that the passionvine hopper ( <i>Scolytopa australis</i> ), suspected of carrying a serious pathogen (a phytoplasm), causing dieback in a number of plants affects <i>Cyathea medullaris</i> .
407	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Causes allergies or is otherwise toxic to humans? No] <i>Cyathea medullaris</i> is used medicinally as a vermifuge, for diarrhea, or boils, sores, swollen feet and eye sores. Young fronds are boiled and used as a tea to assist the expulsion of the afterbirth (placenta). The small scales of the fronds are often an irritant and used by children as an itching powder.
407	2011. National Center for Biotechnology Information. PubMed. U.S. National Library of Medicine, Bethesda, Maryland <a href="http://www.ncbi.nlm.nih.gov/">http://www.ncbi.nlm.nih.gov/</a>	[Causes allergies or is otherwise toxic to humans? No]
408	2011. WRA Specialist. Personal Communication.	[Creates a fire hazard in natural ecosystems?] Unknown.
409	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Is a shade tolerant plant at some stage of its life cycle? Yes] <i>Cyathea medullaris</i> is an aggressive colonizer and increases its growth rate in higher- light conditions. However it benefits from being shaded during the hottest part of the day.
409	2011. Dave's Garden. Plant Files: <i>Cyathea medullaris</i> . Dave's Garden, <a href="http://davesgarden.com/guides/pf/go/58018/">http://davesgarden.com/guides/pf/go/58018/</a>	[Is a shade tolerant plant at some stage of its life cycle? Yes] Sun Exposure: Sun to Partial Shade Light Shade Partial to Full Shade
410	2011. Plants for a Future Database. <i>Cyathea medullaris</i> . Plants for a Future Database, <a href="http://www.pfaf.org/user/Plant.aspx?LatinName=Cyathea+medullaris">http://www.pfaf.org/user/Plant.aspx?LatinName=Cyathea+medullaris</a>	[Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)? Yes] The plant prefers light (sandy), medium (loamy) and heavy (clay) soils. The plant prefers acid, neutral and basic (alkaline) soils. It requires moist or wet soil.
411	1982. Allan, H.H.. Flora of New Zealand, Volume I: Indigenous Tracheophyta - Psilopsida, Lycopsidea, Filicopsida, Gymnospermae, Dicotyledons. First electronic edition. Landcare Research, Lincoln, New Zealand <a href="http://FloraSeries.LandcareResearch.co.nz">http://FloraSeries.LandcareResearch.co.nz</a>	[Climbing or smothering growth habit? No] Tree fern.
412	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Forms dense thickets? Yes] Sometimes forming single-species stands.
501	1982. Allan, H.H.. Flora of New Zealand, Volume I: Indigenous Tracheophyta - Psilopsida, Lycopsidea, Filicopsida, Gymnospermae, Dicotyledons. First electronic edition. Landcare Research, Lincoln, New Zealand <a href="http://FloraSeries.LandcareResearch.co.nz">http://FloraSeries.LandcareResearch.co.nz</a>	[Aquatic? No] Fern; terrestrial.

502	1982. Allan, H.H.. Flora of New Zealand, Volume I: Indigenous Tracheophyta - Psilopsida, Lycopsidea, Filicopsida, Gymnospermae, Dicotyledons. First electronic edition. Landcare Research, Lincoln, New Zealand <a href="http://FloraSeries.LandcareResearch.co.nz">http://FloraSeries.LandcareResearch.co.nz</a>	[Grass? No] Cyatheaceae.
503	1982. Allan, H.H.. Flora of New Zealand, Volume I: Indigenous Tracheophyta - Psilopsida, Lycopsidea, Filicopsida, Gymnospermae, Dicotyledons. First electronic edition. Landcare Research, Lincoln, New Zealand <a href="http://FloraSeries.LandcareResearch.co.nz">http://FloraSeries.LandcareResearch.co.nz</a>	[Nitrogen fixing woody plant? No] Cyatheaceae.
504	1982. Allan, H.H.. Flora of New Zealand, Volume I: Indigenous Tracheophyta - Psilopsida, Lycopsidea, Filicopsida, Gymnospermae, Dicotyledons. First electronic edition. Landcare Research, Lincoln, New Zealand <a href="http://FloraSeries.LandcareResearch.co.nz">http://FloraSeries.LandcareResearch.co.nz</a>	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] No underground storage areas.
601	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Evidence of substantial reproductive failure in native habitat? No] No evidence.
602	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Produces viable seed? Yes] Produces viable spores.
602	2011. Dave's Garden. Plant Files: Cyathea medullaris. Dave's Garden, <a href="http://davesgarden.com/guides/pf/go/58018/">http://davesgarden.com/guides/pf/go/58018/</a>	[Produces viable seed? Yes] Reproduction by spores.
603	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Hybridizes naturally?] Unknown. [some species in the Cyathea genus hybridize producing viable spores.
604	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Self-compatible or apomictic? Unknown.
605	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Requires specialist pollinators? No] Fern.
606	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Reproduction by vegetative fragmentation? No] Reproduction by spores.
607	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Minimum generative time (years)?] Fast growing, especially when young. New plants take 3-9 months to appear from spores and several years to mature. [Family-level description.]
701	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] Unlikely. Not growing in heavily trafficked areas [although spores can adhere to wet soil].
702	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Propagules dispersed intentionally by people? Yes] Cultivated.
702	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	[Propagules dispersed intentionally by people? Yes] Cultivated.
703	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Propagules likely to disperse as a produce contaminant? No]
704	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Propagules adapted to wind dispersal? Yes] Spore.
705	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Propagules water dispersed? Yes] Cyathea is found along streams and gullies in its native range.
706	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Propagules bird dispersed?] Unknown.
707	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Propagules dispersed by other animals (externally)?] Unknown.
708	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Propagules survive passage through the gut? No] Spore.
801	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Prolific seed production (>1000/m2)? Yes] Fern.

802	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Evidence that a persistent propagule bank is formed (>1 yr)] Unknown.
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides?] Unknown.
804	2004. Large, M.F./Braggins, J.E.. Tree ferns. Timber Press, Portland	[Tolerates, or benefits from, mutilation, cultivation, or fire?] Unknown.
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)?] Unknown