

Taxon: Muehlenbeckia platyclada	Family: Polygonaceae
Common Name(s): centipede plant ribbon bush tape plant tapeworm plant	Synonym(s): Homalocladium platycladum (F. Muell.) L. H. Bailey Polygonum platycladum F. Muell. (basionym)

Assessor: Chuck Chimera	Status: Approved	End Date: 26 Sep 2023
WRA Score: 7.0	Designation: H(HPWRA)	Rating: High Risk

Keywords: Tropical Shrub/Vine, Naturalized, Weedy Genus, Shade-Tolerant, Bird-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	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	y
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n = question 205	y
302	Garden/amenity/disturbance weed		
303	Agricultural/forestry/horticultural weed	y = 2*multiplier (see Appendix 2), n = 0	n
304	Environmental weed	y = 2*multiplier (see Appendix 2), n = 0	n
305	Congeneric weed	y = 1*multiplier (see Appendix 2), n = 0	y
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	y = 1, n = 0	n
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	y

Qsn #	Question	Answer Option	Answer
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		
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		
607	Minimum generative time (years)		
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	n
705	Propagules water dispersed		
706	Propagules bird dispersed	y = 1, n = -1	y
707	Propagules dispersed by other animals (externally)	y = 1, n = -1	n
708	Propagules survive passage through the gut	y = 1, n = -1	y
801	Prolific seed production (>1000/m ²)	y = 1, n = -1	n
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	y = 1, n = -1	y
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
	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	No evidence
102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	
103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	
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
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 21 Sep 2023]	"Native Asia-Tropical PAPUASIA: Papua New Guinea, Solomon Islands"
202	Quality of climate match data	High
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 21 Sep 2023]	"Native Asia-Tropical PAPUASIA: Papua New Guinea, Solomon Islands"
203	Broad climate suitability (environmental versatility)	n
	Source(s)	Notes
	Dave's Garden. (2023). <i>Muehlenbeckia platyclados</i> . https://davesgarden.com/guides/pf/go/54262/ . [Accessed 21 Sep 2023]	"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)"
	Missouri Botanical Garden. (2023). <i>Muehlenbeckia platyclada</i> . http://www.missouribotanicalgarden.org/ . [Accessed 21 Sep 2023]	"Zone: 9 to 12"
204	Native or naturalized in regions with tropical or subtropical climates	y

Qsn #	Question	Answer
	Source(s)	Notes
	Gallaher, T.J., Brock, K., Kennedy, B.H., Imada, C.T., Imada, K., & Walvoord, N. (2023). Plants of Hawai'i. http://www.plantsofhawaii.org.. [Accessed 21 Sep 2023]	"Island Status O'ahu Naturalized Hawai'i Potentially Naturalizing"
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 21 Sep 2023]	"Native Asia-Tropical PAPUASIA: Papua New Guinea, Solomon Islands Cultivated (also cult.) Naturalized Southern America CENTRAL AMERICA: Costa Rica, Guatemala, Nicaragua WESTERN SOUTH AMERICA: Peru [Lima]"

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	Acevedo-Rodríguez, P. & Strong, M.T. (2012). Catalogue of Seed Plants of the West Indies. Smithsonian Contributions to Botany 98. Smithsonian Institution Scholarly Press, Washington, D.C.	"Distribution: Exotic in Cuba, Hispaniola, and Puerto Rico; native to tropical Asia, Malesia, and Pacific region."
	Liogier, A.H. & Martorell, L.F. (2000). Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	"Introduced and naturalized in Puerto Rico"
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	"With an appearance only its mother could love, it is widely if not commonly cultivated as a novelty, by itself or as part of a hedge or shrub border, because of its ribbon-like stems."
	Hanelt, P. (ed.). 2001. Mansfeld's Encyclopedia of Agricultural and Horticultural Crops (except Ornamentals), Volume 1. Springer-Verlag, Berlin, Heidelberg, New York	"Worldwide distributed as an ornamental plant. In Java cultivated as a hedge plant."

301	Naturalized beyond native range	y
	Source(s)	Notes
	Liogier, A.H. & Martorell, L.F. (2000). Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	"Introduced and naturalized in Puerto Rico"
	Gallaher, T.J., Brock, K., Kennedy, B.H., Imada, C.T., Imada, K., & Walvoord, N. (2023). Plants of Hawai'i. http://www.plantsofhawaii.org.. [Accessed 21 Sep 2023]	"Island Status O'ahu Naturalized Hawai'i Potentially Naturalizing"
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 21 Sep 2023]	"Naturalized Southern America CENTRAL AMERICA: Costa Rica, Guatemala, Nicaragua WESTERN SOUTH AMERICA: Peru [Lima]"
	Foxcroft, L. C., Richardson, D. M., & Wilson, J. R. (2008). Ornamental plants as invasive aliens: problems and solutions in Kruger National Park, South Africa. Environmental Management, 4 (1): 32-51	[No evidence in Kruger N.P.] "Table 2 Ornamental alien plant species recorded per camp in the Kruger National Park, indicating the number of camps in which each species has been recorded, as well as mode of introduction"

Qsn #	Question	Answer
	Lau, A. & Frohlich, D. (2013). New plant records for the Hawaiian Islands 2011-2012. Bishop Museum Occasional Papers 114: 5-16	[Oahu] "Homalocladium platycladum (F. Muell.) I.H. Bailey New naturalized record Common names for this species include Ribbon bush or Centipede plant, in reference to the appearance of the segmented, flat stems of this plant. it is native to the Solomon islands, but is now grown in tropical areas worldwide as an accent plant. it has escaped cultivation and become naturalized in some tropical areas. it was introduced to Hawai'i by 1917 (Staples & Herbst 2005), where it is at least occasional in cultivation, but until now has not been recorded as naturalized here. This species is readily distinguished from other members of Polygonaceae in Hawai'i by its habit as a mound-forming shrub, and especially by its flattened, ribbon-like stems that appear jointed. its leaves appear on young shoots and are soon deciduous. The fruit is a smooth, triangular achene enclosed in a fleshy, deep red to purplish floral receptacle (Staples & Herbst 2005). it was collected here naturalized in mesic secondary forest adjacent to sites of home cultivation, most likely as a garden escape. Material examined. O'AHU: Pālehua, on road leading to Mike Myers' house and abandoned house area, growing with Eucalyptus sp. and introduced grasses in understory. Flat, somewhat succulent plant to 2.5 m tall, no flowers or fruit, 24 Jul 2012, OISC 2012072401."

302	Garden/amenity/disturbance weed	
	Source(s)	Notes
	Acevedo-Rodríguez, P. & Strong, M.T. (2012). Catalogue of Seed Plants of the West Indies. Smithsonian Contributions to Botany 98. Smithsonian Institution Scholarly Press, Washington, D.C.	[Listed as a weed of unspecified impacts] "Note: Considered an invasive species by CeNBIO." [CeNBIO = Centro Nacional de Biodiversidad de Cuba. Impacts Unspecified]
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	Listed as a weed of unverified and unspecified impacts in Vietnam

303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

305	Congeneric weed	y
	Source(s)	Notes
	Rahman, A., Popay, I., & James, T. (2003). Invasive plants in agro-ecosystems in New Zealand: environmental impact and risk assessment. Food & Fertilizer Technology Center.	"Another native plant which may become a weed is large-leaved muehlenbeckia (<i>Muehlenbeckia australis</i>), a vine which sometimes damages trees and shrubs."
	Baldwin, B.G., Goldman, D.H., Keil, D.J., Patterson, R., & Rosatti, T.J. (eds.). (2012). The Jepson Manual. Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded. University of California Press, Berkeley and Los Angeles	"M. hastulata" ... "Cult as ornamental; invasive, difficult to eradicate."

Qsn #	Question	Answer
	Tunison, J.T. & Zimmer, N.G. (1992). Success in controlling local alien plants in Hawaii Volcanoes National Park. Pp 506-524 in Stone, C.P., Smith, C.W. & Tunison, J.T. (eds.): Alien Plant Invasions in Native Ecosystems of Hawaii: Management & Research. Coop. Nat. Park Res. Studies Unit, Univ. of Hawaii, Honolulu, HI	[Incipient populations of <i>Muehlenbeckia axillaris</i> controlled at HAVO. No impacts were described] "Approximately 405 nonnative plant species grow in the Park (Higashino et. al 1988). Many naturalized plant species are localized and are comprised of a few to a few hundred individuals distributed over a few to several hundred hectares, or as many as 100,000 individuals over a few hectares (e.g., wire vine (<i>Muehlenbeckia axillaris</i>) -- three individual vines in two locations; Formosan koa (<i>Acacia confusa</i>) - approximately 370 individuals scattered over 1,235 a (500 ha); and sisal (<i>Agave sisalana</i>) -- over 100,000 individuals concentrated in 12 a or 5 ha)."
	Flora of North America Editorial Committee. (2005). Flora of North America: north of Mexico. Magnoliophyta: Caryophyllidae. Caryophyllales. Volume 5, Part 2. Oxford University Press, Oxford, UK	[<i>Muehlenbeckia hastulata</i> var. <i>hastulata</i>] "Variety <i>hastulata</i> is cultivated as an ornamental. It escapes rarely in the flora area and can be invasive."

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	"Distinguishable by the shrubby, mostly leafless habit, stems that are flat, jointed, and striated, and clusters of tiny white flowers borne at the joints."

402	Allelopathic	n
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	Unknown. No evidence found

403	Parasitic	n
	Source(s)	Notes
	Clay, H.F., Hubbard, J.C. & Golt, R. (1987). The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	"A herbaceous, mounding shrub that grows to about 8 feet in Hawaii, and to about 12 feet in the more humid tropics." [Polygonaceae]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	Unknown

405	Toxic to animals	n
	Source(s)	Notes
	Dave's Garden. (2023). <i>Muehlenbeckia platyclados</i> . https://davesgarden.com/guides/pf/go/54262/ . [Accessed 25 Sep 2023]	"Danger: N/A"
	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

Qsn #	Question	Answer
406	Host for recognized pests and pathogens	n
	Source(s)	Notes
	Clay, H.F., Hubbard, J.C. & Golt, R. (1987). The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	"Relatively insect free in Hawaii."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Dave's Garden. (2023). Muehlenbeckia platyclados. https://davesgarden.com/guides/pf/go/54262/ . [Accessed 26 Sep 2023]	"Danger: N/A"
	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
	Clay, H.F., Hubbard, J.C. & Golt, R. (1987). The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	"A herbaceous, mounding shrub that grows to about 8 feet in Hawaii, and to about 12 feet in the more humid tropics. Succulent, arching branches form an open crown." [No evidence. Succulent plant of humid environments unlikely to burn]

409	Is a shade tolerant plant at some stage of its life cycle	y
	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	"On the one hand, in the Hawaiian Islands it is said to prefer a heavily shaded, humid, sheltered situation, where its bright green stems can be exhibited to their best advantage, but it also grows in lighter shade or almost full sun as long as adequate soil moisture is provided"
	Clay, H.F., Hubbard, J.C. & Golt, R. (1987). The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	"The plant is happiest in hot, humid locations and grows well in dark, shaded areas where its brilliant, light green color brightens the gloom."
	Missouri Botanical Garden. (2023). Muehlenbeckia platyclada . http://www.missouribotanicalgarden.org . [Accessed 26 Sep 2023]	"Tolerates close to full shade but probably performs best in part shade locations."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	"Fertile, moist, but well-drained soils in sunny places are preferred."
	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	"it prefers a good deal of water, more than is found in most gardens, and does not tolerate salt spray."
	Backyard Gardener. (2023). Homalocladium platycladum (Ribbon Bush). https://www.backyardgardener.com/plantname/homalocladium-platycladum-ribbon-bush/ . [Accessed 26 Sep 2023]	"pH Range: 5.5 to 6 Soil Range: Sandy Loam to Some Clay"

Qsn #	Question	Answer
	Kadiyam Nursery. (2023). Buy Muehlenbeckia Platyclada & Cocoloba Platyclada A Beautiful & Hardy Evergreen Plant. https://kadiyamnursery.com/products/muehlenbeckia-platyclada-coccoloba-platyclada . [Accessed 26 Sep 2023]	"This plant is drought-tolerant, and can grow in a variety of soil types, including poor, rocky soils. It is also tolerant of salt spray and wind. It is not fussy about light, it can grow in full sun to shade, but will spread more in shadier spots."

411	Climbing or smothering growth habit	
	Source(s)	Notes
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Possibly] "Shrub to 4 m high (13 ft) with flat, finely striated stems having joints every 1-2.5 cm (3/8- 1 in)."
	Backyard Gardener. (2023). Homalocladium platycladum (Ribbon Bush). https://www.backyardgardener.com/plantname/homalocladium-platycladum-ribbon-bush/ . [Accessed 26 Sep 2023]	[Possibly] "This shrub has both spreading and climbing tendencies. "

412	Forms dense thickets	n
	Source(s)	Notes
	Liogier, A.H. & Martorell, L.F. (2000). Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[No evidence] "Introduced and naturalized in Puerto Rico"
	Burger, W. (ed.). (1983). Flora Costaricensis - New Series, No. 13: 1-255	[No evidence] "Unusual plants native to the southwestern Pacific and adjacent areas. These plants are often grown in gardens and in pots for their dense branching and unique stems. They escape and grow in the wild on occasion, but do not appear to persist in our area." [Escapes in Costa Rica, but no evidence of thicket or monoculture formation]
	Standley, P.C. & Steyermark, J.A. (1946). Flora of Guatemala. Part IV. Fieldiana 24: 1-493	[Part of thicket vegetation] "Cultivated commonly for ornament or as a curiosity in gardens at low and middle elevations; more or less naturalized about Coban in thickets and hedges, and probably also in other parts of the country. Native of the Solomon Islands."

501	Aquatic	n
	Source(s)	Notes
	Standley, P.C. & Steyermark, J.A. (1946). Flora of Guatemala. Part IV. Fieldiana 24: 1-493	[Terrestrial] "Cultivated commonly for ornament or as a curiosity in gardens at low and middle elevations; more or less naturalized about Coban in thickets and hedges, and probably also in other parts of the country."
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	Terrestrial

502	Grass	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 26 Sep 2023]	"Genus: Muehlenbeckia Family: Polygonaceae Subfamily: Polygonoideae Tribe: Polygoneae"

503	Nitrogen fixing woody plant	n
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Qsn #	Question	Answer
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2023). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 26 Sep 2023]	"Genus: Muehlenbeckia Family: Polygonaceae Subfamily: Polygonoideae Tribe: Polygoneae"
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	"Distinguishable by the shrubby, mostly leafless habit, stems that are flat, jointed, and striated, and clusters of tiny white flowers borne at the joints." [No evidence that this plant possesses such structures]
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Hanelt, P. (ed.). 2001. Mansfeld's Encyclopedia of Agricultural and Horticultural Crops (except Ornamentals), Volume 1. Springer-Verlag, Berlin, Heidelberg, New York	No evidence
602	Produces viable seed	y
	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	"Plants are easily propagated from cuttings or by seed."
	Clay, H.F., Hubbard, J.C. & Golt, R. (1987). The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	"The plant is grown easily from cuttings but may also be propagated by seeds."
603	Hybridizes naturally	
	Source(s)	Notes
	Cockayne, L., & Allan, H. H. (1934). An Annotated List of Groups of Wild Hybrids in the New Zealand Flora. Annals of Botany, 48(189), 1-55	[Unknown. Hybrids documented in genus] "149. Muehlenbeckia australis x complexa. The group has been briefly discussed by Allan (5). 'In field studies the epharmony of both species must be taken into account. 150. M. axillaris x complex a. M. axillaris is a mat-shrub. M. complexa epharmonically either a Hane or a bolster-like shrub with densely inter-tangled branches. The hybrids, so far as we have observed, have the bolster form, but show distinctly a blending of other characters. 151. M. axillaris x eppedroides. M. muricatula Col. belongs to this group. M. epltedroides has the leaves reduced to scales in the adult, and the hybrids might easily be mistaken for permanent juvenile forms . 152. M. complexa x eppedroides. So far only one or two hybrids of this group have been noted. Usually the two species get little chance of crossing."
604	Self-compatible or apomictic	

Qsn #	Question	Answer
	Source(s)	Notes
	Mallinson, D. et al. (1998). Ecology and conservation status of <i>Muehlenbeckia tuggeranong</i> (Polygonaceae) near Canberra. <i>Cunninghamia</i> 5(3): 773-778	[Unknown for <i>Muehlenbeckia platyclada</i>] "The breeding system of the plant is unknown, although post-disturbance (often post-fire) explosive recruitment in some other species of <i>Muehlenbeckia</i> (Hunter et al., 1998; R. Makinson pers. comm.) does suggest that features of the genus include a tolerance to cyclic in-breeding and/or a long dormancy of propagules in the soil seed-bank. Dioecy is the general rule in the genus, although occasional monoecy has been observed (Wilson, 1990: 284)."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Whistler, W.A. (2000). <i>Tropical Ornamentals: A Guide</i> . Timber Press, Portland, OR	"Flowers anytime during the year; flowers several, borne in sessile axillary clusters. Corolla absent, the calyx of five tiny free sepals about 2 mm long (about 1/16 in), white to greenish or pink." [Flowers small and unspecialized]
	Zomlefer, W.B. (1994). <i>Guide to Flowering Plant Families</i> . The University of North Carolina Press, Chapel Hill & London	"The flowers of the Polygonaceae generally are entomophilous (bees and flies)."
	Johannsmeier, M.F. (2016). <i>Beeplants of South Africa</i> . Sources of nectar, pollen, honeydew and propolis for honeybees. <i>Strelitzia</i> 37. South African National Biodiversity Institute, Pretoria	[Used by bees] " <i>Homalocladium platycladum</i> ... Beeplant Value = N3 P0-1?" [N3 = medium to good source of nectar; P0-1 = poor or minor pollen source]

606	Reproduction by vegetative fragmentation	
	Source(s)	Notes
	Staples, G.W. & Herbst, D.R. (2005). <i>A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places</i> . Bishop Museum Press, Honolulu, HI	[Possibly] "Plants are easily propagated from cuttings or by seed."
	Roberts, J., & Marston, F. (2011). <i>Water regime for wetland and floodplain plants: a source book for the Murray-Darling Basin</i> . Canberra: National Water Commission, Canberra	[Unknown] " <i>Muehlenbeckia florulenta</i> " ... "...stem fragments may be dispersed and give rise to new individuals. This has been observed both in the field and experimentally (unpublished data Capon and Murray 2009)." [Related species capable of vegetative spread. Unknown for <i>M. platyclada</i>]

607	Minimum generative time (years)	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	Unknown

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Whistler, W.A. (2000). <i>Tropical Ornamentals: A Guide</i> . Timber Press, Portland, OR	"Fruit berry-like, ovoid, red to purple, 3-4.5 mm long (about 1/8-1/4 in)." [Small fruits/seeds could be dispersed unintentionally, but lack means of external attachment]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes

Qsn #	Question	Answer
	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	"Centipede plant is an unusual accent plant for the garden or lanai or can be used as an informal hedge."
	Burger, W. (ed.). (1983). Flora Costaricensis - New Series, No. 13: 1-255	"Unusual plants native to the southwestern Pacific and adjacent areas. These plants are often grown in gardens and in pots for their dense branching and unique stems. They escape and grow in the wild on occasion, but do not appear to persist in our area."
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	"With an appearance only its mother could love, it is widely if not commonly cultivated as a novelty, by itself or as part of a hedge or shrub border, because of its ribbon-like stems."

703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Llamas, K.A. (2003). Tropical Flowering Plants. Timber Press, Portland, OR	"Grown primarily as a curiosity." [No evidence, and unlikely to become a produce contaminant]
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Major Pathway/s: Crop, Ornamental Dispersed by: Humans"

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	"Fruit berry-like, ovoid, red to purple, 3-4.5 mm long (about 1/8-1/4 in)." [No evidence of adaptations for wind dispersal]

705	Propagules water dispersed	
	Source(s)	Notes
	Roberts, J., & Marston, F. (2011). Water regime for wetland and floodplain plants: a source book for the Murray-Darling Basin. Canberra: National Water Commission, Canberra	[Unknown. Related species are capable of being water dispersed] "Muehlenbeckia florulenta" ... "Fruits mature in autumn in the southern parts of the Murray-Darling Basin (Chong and Walker 2005). The seed is shiny brown. Seeds fall close to the parent plant and may be secondarily dispersed by floodwater."

706	Propagules bird dispersed	y
	Source(s)	Notes
	Williams, P. A., & Karl, B. J. (2002). Birds and small mammals in kanuka (<i>Kunzea ericoides</i>) and gorse (<i>Ulex europaeus</i>) scrub and the resulting seed rain and seedling dynamics. <i>New Zealand Journal of Ecology</i> , 26(1): 31-41	[Other species in genus are bird dispersed] "The most common bird-dispersed seeds in gorse were <i>Coprosma</i> spp. (mostly <i>C. robusta</i>), <i>Leycesteria formosa</i> and <i>Melicytus ramiflorus</i> , with a few seeds of <i>Coriaria arborea</i> , <i>Cyathodes</i> spp., <i>Muehlenbeckia australis</i> and <i>Rubus fruticosus</i> ."
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Presumably Yes] "Fruit berry-like, ovoid, red to purple, 3-4.5 mm long (about 1/8-1/4 in)."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	"Fruit berry-like, ovoid, red to purple, 3-4.5 mm long (about 1/8-1/4 in)." [Small fruits/seeds could be dispersed unintentionally, but lack means of external attachment]

708	Propagules survive passage through the gut	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Whistler, W.A. (2000). Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Presumably Yes] "Fruit berry-like, ovoid, red to purple, 3-4.5 mm long (about 1/8-1/4 in)."
801	Prolific seed production (>1000/m2)	n
	Source(s)	Notes
	Burger, W. (ed.). (1983). Flora Costaricensis - New Series, No. 13: 1-255	"Fruit included within the sweet red succulent perianth, ca. 5 mm long; achene ca. 3 mm long." [Fruit a one-seeded achene. No evidence of prolific seed production documented in published literature]
802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Lemke, C. (2000). Cal's plant of the month - Homalocladium platycladum - Tapeworm Plant. http://www.plantoftheweek.org/week102.shtml . [Accessed 4 Jun 2012]	[Possibly No. This website was cited in 2012, but is no longer active] "Seed should be sown fresh, germinating in 14 -21 days at 70°."
803	Well controlled by herbicides	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	Unknown. No information on herbicide efficacy or chemical control of this species
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	San Marcos Growers. (2023). Homalocladium platycladum - Ribbon Bush, Tapeworm Plant. https://www.smgrowers.com . [Accessed 26 Sep 2023]	"It is hardy and evergreen to about 25° F but can resprout from the base if it is damaged at lower temperatures. "
	Clay, H.F., Hubbard, J.C. & Golt, R. (1987). The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	"May be pruned severely to control size and shape; rejuvenates rapidly after pruning."
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2023). Personal Communication	Unknown

Summary of Risk Traits:

Muehlenbeckia platyclada (centipede plant, tapeworm plant or ribbonbush), is a mound-forming shrub with both spreading and climbing tendencies native to New Guinea and the Solomon Islands. It is distinguished by and cultivated for its flattened, ribbon-like stems that give it a jointed appearance and its common names. It is reported to be naturalized on Oahu and Hawaii island as well as other tropical regions where cultivated and is believed to be spread by birds and other animals. Despite its ability to escape cultivation, no negative impacts have been documented to date, and it continues to be it is valued as an ornamental curiosity in the Hawaiian Islands and elsewhere.

High Risk / Undesirable Traits

- Thrives and capable of spreading in regions with tropical climates
- Naturalized on Oahu, and potentially naturalizing on Hawaii Island, and naturalized in other locations where cultivated
- Other *Muehlenbeckia* species can become weedy or invasive
- Shade tolerant
- Tolerates many soil types
- Sometimes climbing, and potentially smothering growth habit (although usually described as a shrub in the Hawaiian Islands)
- Reproduces by seeds and cuttings.
- Fleshy fruits and seeds presumably capable of dispersal by birds
- Spread through intentional cultivation
- Rejuvenates rapidly after pruning

Low Risk / Desirable Traits

- Despite ability to spread, this plant is valued as a landscaping plant, and as an ornamental curiosity, and no negative impacts have been documented in the Hawaiian Islands or elsewhere
- Unarmed (no spines, thorns or burrs)
- Non-toxic