Key Words: Evaluate, Naturalized, Sprawling Shrub, Ornamental Curiosity, Resprouts

Family: ***Polygonaceae***

Taxon: ***Muehlenbeckia platyclada***

Synonym: *Homalocladium platycladum (F. Muell.) L. H*
Polygonum platycladum F. Muell. (basionym)

Common Name: Centipede plant
Ribbonbush
Tapewormplant

Questionaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** EVALUATE
Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score 6**

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**	**y**
301	**Naturalized beyond native range**	**y = 1*multiplier (see Appendix 2), n= question 205**	**y**
302	**Garden/amenity/disturbance weed**	**n=0, y = 1*multiplier (see Appendix 2)**	
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**	**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**
410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y=1, n=0**	

411	**Climbing or smothering growth habit**	**y=1, n=0**	
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**	**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**	
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**	**n**
705	**Propagules water dispersed**	**y=1, n=-1**	
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/m2)**	**y=1, n=-1**	
802	**Evidence that a persistent propagule bank is formed (>1 yr)**	**y=1, n=-1**	**n**
803	**Well controlled by herbicides**	**y=-1, n=1**	
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)**	**y=-1, n=1**	

Designation: EVALUATE **WRA Score** **6**

Supporting Data:

101	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Is the species highly domesticated? No evidence]
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Species suited to tropical or subtropical climate(s) 2-High] "Native: ASIA-TROPICAL - Malesia: Papua New Guinea; PACIFIC Southwestern Pacific: Solomon Islands"
202	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Quality of climate match data 2-High]
203	2012. Dave's Gardern. PlantFiles: Ribbon Bush, Centipede Plant, Tapeworm Plant - Homalocladium platycladum. http://davesgarden.com/guides/pf/go/54262/	[Broad climate suitability (environmental versatility)? No] "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)"
204	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Native or naturalized in regions with tropical or subtropical climates? Yes] "Native: ASIA-TROPICAL - Malesia: Papua New Guinea; PACIFIC Southwestern Pacific: Solomon Islands"
205	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[Does the species have a history of repeated introductions outside its natural range? Yes] "Introduced and naturalized in Puerto Rico"
205	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Does the species have a history of repeated introductions outside its natural range? Yes] "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."
205	2001. Hanelt, P. (ed.). Mansfeld's Encyclopedia of Agricultural and Horticultural Crops (except Ornamentals), Volume 1. Springer-Verlag, Berlin, Heidelberg, New York	[Does the species have a history of repeated introductions outside its natural range? Yes] "Worldwide distributed as an ornamental plant. In Java cultivated as a hedge plant."
205	2012. Acevedo-Rodríguez, P./Strong, M.T.. Catalogue of Seed Plants of the West Indies. Smithsonian Contributions to Botany. 98: 1192 pp.	[Does the species have a history of repeated introductions outside its natural range? Yes] "Distribution: Exotic in Cuba, Hispaniola, and Puerto Rico; native to tropical Asia, Malesia, and Pacific region."
301	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[Naturalized beyond native range? Yes] "Introduced and naturalized in Puerto Rico"
301	2008. Foxcroft, L.C./Richardson, D.M./Wilson, J.R.U.. Ornamental Plants as Invasive Aliens: Problems and Solutions in Kruger National Park, South Africa. Environmental Management. 41: 32–51.	[Naturalized beyond native range? 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"
301	2012. Madagascar Catalogue. Catalogue of the Vascular Plants of Madagascar. Missouri Botanical Garden & Madagascar Research & Conservation Program, St. Louis & Antananarivo http://www.efloras.org/madagascar	[Naturalized beyond native range? Yes] "Distribution: Naturalized in Madagascar"
302	2007. Randall, R.P.. Global Compendium of Weeds - Muehlenbeckia platyclada. http://www.hear.org/gcw/species/muehlenbeckia_platyclada/	[Garden/amenity/disturbance weed? Possible weed of Vietnam]
302	2012. Acevedo-Rodríguez, P./Strong, M.T.. Catalogue of Seed Plants of the West Indies. Smithsonian Contributions to Botany. 98: 1192 pp.	[Garden/amenity/disturbance weed? Possibly] "Note: Considered an invasive species by CeNBIO." [CeNBIO = Centro Nacional de Biodiversidad de Cuba. Impacts Unspecified]

303	2007. Randall, R.P.. Global Compendium of Weeds - Muehlenbeckia platyclada. http://www.hear.org/gcw/species/muehlenbeckia_platyclada/	[Agricultural/forestry/horticultural weed? No] No evidence
304	2007. Randall, R.P.. Global Compendium of Weeds - Muehlenbeckia platyclada. http://www.hear.org/gcw/species/muehlenbeckia_platyclada/	[Environmental weed? No] No evidence
305	2003. Rahman, A./Popay, I./James, T.. Invasive plants in agro-ecosystems in New Zealand: environmental impact and risk assessment. Food & Fertilizer Technology Center, www.ffftc.agnet.org/library/article/eb539.html	[Congeneric weed? Yes] "Another native plant which may become a weed is large-leaved muehlenbeckia (Muehlenbeckia australis), a vine which sometimes damages trees and shrubs."
305	2012. Baldwin, B.G./Goldman, D.H./Keil, D.J./Patterson, R./Rosatti, T.J. (eds.). The Jepson Manual. Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded. University of California Press, Berkeley and Los Angeles	[Congeneric weed? Yes] "M. hastulata" … "Cult as ornamental; invasive, difficult to eradicate."
401	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Produces spines, thorns or burrs? No] "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	2012. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Parasitic? No] "A herbaceous, mounding shrub that grows to about 8 feet in Hawaii, and to about 12 feet in the more humid tropics." [Polygonaceae]
404	2012. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals? Unknown]
405	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Toxic to animals? No] No evidence
405	2010. Cool Exotics. The Plants Database - Homalocladium platycladum. http://coolexotics.com/plant-515-homalocladium-platycladum.html	[Toxic to animals? No evidence] "Toxicity - No or unknown toxicity."
406	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Host for recognized pests and pathogens? No] "Relatively insect free in Hawaii."
407	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Causes allergies or is otherwise toxic to humans? No] No evidence
407	2010. Cool Exotics. The Plants Database - Homalocladium platycladum. http://coolexotics.com/plant-515-homalocladium-platycladum.html	[Causes allergies or is otherwise toxic to humans? No] "Toxicity - No or unknown toxicity."
407	2012. San Marcos Growers. Products - Homalocladium platycladum. http://www.smgrowers.com/products/plants/plantdisplay.asp?plant_id=2646	[Causes allergies or is otherwise toxic to humans? No evidence] "In the late fall through winter are borne the small greenish white flowers in the stem joints which can be followed by red fruits (reportedly edible but not tasty)."
408	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Creates a fire hazard in natural ecosystems? No evidence] "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." [Succulent plant of humid environments unlikely to burn]
409	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Is a shade tolerant plant at some stage of its life cycle? Yes] "The plant is happiest in hot, humid locations and grows well in dark, shaded areas where its brilliant, light green color brightens the gloom."
410	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Tolerates a wide range of soil conditions? Possibly] "Fertile, moist, but well-drained soils in sunny places are preferred."
410	2012. Backyard Gardener. Homalocladium platycladum. http://www.backyardgardener.com/plantname/pda_3225.html	[Tolerates a wide range of soil conditions? Possibly No] "pH Range: 5.5 to 6 ; Soil Range: Sandy Loam to Some Clay"

410	2012. Plant This. Homalocladium platycladum. http://www.planthis.com.au/plant-information.asp?gardener=16357&tabview=bio&plantSpot=1	[Tolerates a wide range of soil conditions? Possibly No] "Soil: ordinary soil, enriched soil, mildly acidic to mildly alkaline"
411	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Climbing or smothering growth habit? Possibly] "Shrub to 4 m high (13 ft) with flat, finely striated stems having joints every 1-2.5 cm (3/8- 1 in)."
411	2012. Backyard Gardener. Homalocladium platycladum. http://www.backyardgardener.com/plantname/pda_3225.html	[Climbing or smothering growth habit? Possibly] "This shrub has both spreading and climbing tendencies. "
412	1946. Standley, P.C./Steyermark, J.A.. Flora of Guatemala Vol. 24 - Part IV. Fieldiana. 24: 1-493.	[Forms dense thickets? 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."
412	1983. Burger, W. (ed.). Flora Costaricensis - New Series, No. 13. Fieldiana, Botany new series. 13: 1-255.	[Forms dense thickets? 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]
412	2000. Liogier, A.H./ Martorell, L.F.. Flora of Puerto Rico and adjacent islands: a systematic synopsis. Second Edition Revised. La Editorial, UPR, San Juan, Puerto Rico	[Forms dense thickets? No evidence] "Introduced and naturalized in Puerto Rico"
501	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Aquatic? No]
502	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Grass? No] Polygonaceae
503	2012. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Nitrogen fixing woody plant? No] Polygonaceae
504	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Geophyte (herbaceous with underground storage organs? No] "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	2001. Hanelt, P. (ed.). Mansfeld's Encyclopedia of Agricultural and Horticultural Crops (except Ornamentals), Volume 1. Springer-Verlag, Berlin, Heidelberg, New York	[Evidence of substantial reproductive failure in native habitat? No] No evidence
602	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Produces viable seed? Yes] "The plant is grown easily from cuttings but may also be propagated by seeds."
602	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Produces viable seed? Yes] "Plants are easily propagated from cuttings or by seed."
603	2012. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	2012. WRA Specialist. Personal Communication.	[Self-compatible or apomictic? Unknown]
605	1994. Zomlefer, W.B.. Guide to Flowering Plant Families. The University of North Carolina Press, Chapel Hill & London	[Requires specialist pollinators? No] "The flowers of the Polygonaceae generally are entomophilous (bees and flies)."
605	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Requires specialist pollinators? No] "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]
606	2005. Staples, G.W./Herbst, D.R.. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	[Reproduction by vegetative fragmentation? Possibly] "Plants are easily propagated from cuttings or by seed."

606	2011. Roberts, J./Marston, F.. Water regime for wetland and floodplain plants: a source book for the Murray–Darling Basin. National Water Commission, Canberra	[Reproduction by vegetative fragmentation? Unknown] "Muehlenbeckia florulenta" … "...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 M. platyclada]
607	2012. WRA Specialist. Personal Communication.	[Minimum generative time (years)? Unknown]
701	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Propagules likely to be dispersed unintentionally ? No] "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	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Propagules dispersed intentionally by people? Yes] "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	2003. Llamas, K.A.. Tropical Flowering Plants. Timber Press, Portland, OR	[Propagules likely to disperse as a produce contaminant? No] 'Grown primarily as a curiosity." [No evidence, and unlikely to become a produce contaminant]
704	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Propagules adapted to wind dispersal? No] "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	2011. Roberts, J./Marston, F.. Water regime for wetland and floodplain plants: a source book for the Murray–Darling Basin. National Water Commission, Canberra	[Propagules water dispersed? 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	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Propagules bird dispersed? Presumably Yes] "Fruit berry-like, ovoid, red to purple, 3-4.5 mm long (about 1/8-1/4 in)."
707	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Propagules dispersed by other animals (externally)? No] "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	2000. Whistler, W.A.. Tropical Ornamentals: A Guide. Timber Press, Portland, OR	[Propagules survive passage through the gut? Presumably Yes] "Fruit berry-like, ovoid, red to purple, 3-4.5 mm long (about 1/8-1/4 in)."
801	2012. WRA Specialist. Personal Communication.	[Prolific seed production (>1000/m2)? Unknown]
802	2000. Lemke, C.. Cal's plant of the month - Homalocladium platycladum - Tapeworm Plant. University of Oklahoma Department of Botany & Microbiology, http://www.plantoftheweek.org/week102.shtml	[Evidence that a persistent propagule bank is formed (>1 yr)? Probably No] "Seed should be sown fresh, germinating in 14 21 days at 70°."
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	1987. Clay, H.F./Hubbard, J.C.. The Hawaii Garden: Tropical Shrubs. University of Hawaii Press, Honolulu, HI	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "May be pruned severely to control size and shape; rejuvenates rapidly after pruning."
804	2012. San Marcos Growers. Products - Homalocladium platycladum. http://www.smgrowers.com/products/plants/plantdisplay.asp?plant_id=2646	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "It is hardy and evergreen to about 25° F but can resprout from the base if it is damaged at lower temperatures. "
805	2012. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]

Summary of Risk Traits

High Risk / Undesirable Traits

- Naturalized in Puerto Rico & Madagascar
- Thrives in tropical climates
- Other *Muehlenbeckia* species can become weedy or invasive
- Shade tolerant
- Fleshy fruits & seeds presumably capable of dispersal by birds
- Rejuvenates rapidly after pruning

Low Risk / Desirable Traits

- Despite ability to spread, no negative impacts have been documented
- Not spiny
- Non-toxic
- Landscaping and ornamental value
- Ornamental curiosity