

Key Words: High Risk, Naturalized, Tropical Shrub, Ornamental, Spreads Vegetatively

Family: *Acanthaceae*

Taxon: *Megaskepasma erythrochlamys*

Synonym: *Common Name:* Brazilian red cloak
red cloak
Brazilian bower plant

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation:	H(HPWRA)
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		y
204	Native or naturalized in regions with tropical or subtropical climates		y=1, n=0		y
205	Does the species have a history of repeated introductions outside its natural range?		y=-2, ?=-1, n=0		y
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205		y
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)		
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		y=1, n=0		n
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		y
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		y

411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	
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	n
604	Self-compatible or apomictic	y=1, n=-1	
605	Requires specialist pollinators	y=-1, n=0	
606	Reproduction by vegetative fragmentation	y=1, n=-1	y
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	2
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	
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	
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	n
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	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: H(HPWRA)

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	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. Annals of the Missouri Botanical Garden. 65(1): 155-283.	[Species suited to tropical or subtropical climate(s) 2-High] "This plant is native to Venezuela and is found cultivated throughout much of the neotropics. Capsules and seeds were described from a Costa Rican specimen,"
202	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. Annals of the Missouri Botanical Garden. 65(1): 155-283.	[Quality of climate match data 2-High]
203	1998. Riffle, R.L.. The Tropical Look - An Encyclopedia of Dramatic Landscape Plants. Timber Press, Portland, OR	[Broad climate suitability (environmental versatility)? No, but elevation range exceeds 1000 m] "Zone 10b and 11 as a permanent perennial; zone 9b as a returning perennial."
203	2012. Tropicos.org. Tropicos [Online Database]. Missouri Botanical Garden, http://www.tropicos.org/	[Broad climate suitability (environmental versatility)? Yes. Elevation range exceeds 1000 m] Collected from 5 m elevation in Florida (25°41'00"N 80°16'00"W) to 1350 m in Nicaragua (13°14'00"N 86°03'00"W)
204	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. Annals of the Missouri Botanical Garden. 65(1): 155-283.	[Native or naturalized in regions with tropical or subtropical climates? Yes] "This plant is native to Venezuela and is found cultivated throughout much of the neotropics. Capsules and seeds were described from a Costa Rican specimen,"
205	2004. Meyer, J-Y./Lavergne, C.. Beautés fatales : Acanthaceae species as invasive alien plants on tropical Indo-Pacific Islands. Diversity and Distributions. 10: 333-347.	[Does the species have a history of repeated introductions outside its natural range? La Réunion & Mauritius] "Appendix S2 Island distribution, locations, infestation level/size and invaded habitats of the eight potential invasive Acanthaceae species in the surveyed tropical islands"
205	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.	[Does the species have a history of repeated introductions outside its natural range? South Africa] "Cultivated ? Yes. Evidence of naturalization? No"
205	2010. Frohlich, D./Lau, A.. New plant records from O'ahu for 2008. Bishop Museum Occasional Papers. 107: 3-18.	Does the species have a history of repeated introductions outside its natural range? Oahu]
205	2012. Dave's Gardern. PlantFiles: Brazilian Red Cloak - <i>Megaskepasma erythrochlamys</i> . http://davesgarden.com/guides/pf/go/54077/ [Accessed 05 Nov 2012]	[Does the species have a history of repeated introductions outside its natural range? Yes] "This plant has been said to grow in the following regions: Sacramento, California Bartow, Florida Boca Raton, Florida Brooksville, Florida Clearwater, Florida Delray Beach, Florida Hollywood, Florida Homestead, Florida Miami, Florida (2 reports) Naples, Florida Port Charlotte, Florida Sanford, Florida Venice, Florida West Palm Beach, Florida Lafayette, Louisiana Humble, Texas Los Fresnos, Texas Spring, Texas Weimar, Texas "
205	2012. Parker, J.L./Parsons, B.. New plant records from the Big Island for 2009. Bishop Museum Occasional Papers. 113: 55-63.	Does the species have a history of repeated introductions outside its natural range? Hawaii Islands]
301	2004. Meyer, J-Y./Lavergne, C.. Beautés fatales : Acanthaceae species as invasive alien plants on tropical Indo-Pacific Islands. Diversity and Distributions. 10: 333-347.	[Naturalized beyond native range? Yes] " <i>Megaskepasma erythrochlamys</i> is a tall erect shrub with handsome pink flowers, locally planted in gardens in La Réunion and in Mauritius (Bossier & Heine, 2000). We found this species in fruit and subspontaneous in some private gardens of La Réunion, thus we considered this species as a potential threat." ... "In the Mascarene Islands (La Réunion, Mauritius and Rodrigues), the 'Flore des Mascareignes' lists 16 species as more or less widely naturalized, and 29 as cultivated species in gardens (Bossier & Heine, 2000)." ... "Moreover, we observed the cultivated species <i>Crossandra infundibuliformis</i> , <i>Megaskepasma erythrochlamys</i> , and <i>Thunbergia mysorensis</i> as subspontaneous in secondary vegetation."
301	2008. Gargiullo, M.B./Magnuson, B.L./Kimball, L.D.. A Field Guide to Plants of Costa Rica. Oxford University Press US, New York, NY	[Naturalized beyond native range? Yes] "Cultivated, sometimes used as a hedge. Altitude: At least 400-1100 m, probably wider."

301	2008. OANRP Staff. 2008 Status Report for the Mākuā Implementation Plan. United States Army Garrison, Hawai'i Directorate of Public Works Environmental Division, Schofield Barracks, HI	[Naturalized beyond native range? Yes] "In April of 2008, NRS accompanied OED on a survey of Schofield Barracks. Focusing on the residential area northeast of Waianae Avenue, OED and NRS documented two adventive / naturalizing species, <i>Megaskepasma erythrochlamys</i> and <i>Dovyalis hebecarpa</i> ."
301	2009. Beachy, J.R.. O'ahu Army Natural Resources Program. Pers. Comm. 1 Apr 2009.	[Naturalized beyond native range? Yes] "Krista Winger and I stopped the <i>Megaskepasma</i> site today and looked around . . . from what we could see, the flowers never seem to develop into fruit. There were tons of flowers and buds, but no immature or mature fruit. Perhaps fruit develop rarely, if at all. I also looked around on the ground; there was a ton of <i>Justicia betonica</i> seedlings, but I couldn't identify anything as a <i>Medaskepasma</i> seedling. The youngest plants I found were definitely from vegetative material. There are some photos attached. The whole infestation is pretty large; <i>Megaskepasma</i> is the dominant species in this particular gulch on Schofield Barracks. It is doing well in both sun and shade, and very little is growing underneath it."
301	2009. Nishida, K./Nakamura, I./Morales, C.O.. Plants and butterflies of a small urban preserve in the Central Valley of Costa Rica. <i>Revista de Biologia Tropical</i> . 57 (Suppl. 1): 31-67.	[Naturalized beyond native range? Yes] "Most of the invasive plants found in the RELO consisted of introduced exotic ornamentals (e.g. <i>Erythrina poeppigiana</i> , <i>Impatiens walleriana</i> , <i>Megaskepasma erythrochlamys</i> , <i>Syzygium jambos</i>),"
301	2010. Frohlich, D./Lau, A.. New plant records from O'ahu for 2008. <i>Bishop Museum Occasional Papers</i> . 107: 3-18.	[Naturalized beyond native range? Yes] " <i>Megaskepasma erythrochlamys</i> , a 2.4–4.6 m tall, attractive shrub native to Costa Rica, Nicaragua, El Salvador, and Venezuela, is a popular ornamental in Hawai'i and other tropical locales. It is cultivated by cuttings and seed and is the only species in its genus. Distinguishing features are ovate leaf blades 30.5–40.6 cm long with deep green uppersides and prominent veins, short petiolate. Inflorescence is a terminal conical spike with ovate to ovate-lanceolate, burgundy red bracts 2.5–5.1 cm long, and veined from the base. Flowers have a five-parted calyx with unequal lobes. Corollas are up to 7.6 cm long and tubular, 2-lipped, white, pubescent, and sharply curved at the tip. There are 2 fertile stamens; fruit is ca 1.27 cm long and oblong, containing 4 seeds. This specimen was collected from a roadside gulch in Schofield Barracks, where it made up the majority of the understory. Material examined. O'AHU: Schofield Barracks, herb ca 2 m tall, spreading throughout gulch on side of road, making up almost all of understory, growing among <i>Justicia</i> , <i>Spathodea</i> , fruits immature, green, 29 Apr 2008, OED & J. Beachy 2008042901."
301	2012. Frohlich, D./Lau, A.. New plant records for the Hawaiian Islands 2010–2011. <i>Bishop Museum Occasional Papers</i> . 113:: 27-54.	[Naturalized beyond native range? Yes] "This species, which was previously found naturalizing on Oahu, can be distinguished by its 1–2" long showy burgundy bracts and white, tubular, 2-lipped corollas with 2 fertile stamens (Staples & Herbst 2005). Parker & Parsons (this volume) report this species as naturalized on Hawai'i Island. Material examined. KAUAI: Hä'ena, in neighborhood makai of highway, near Tunnels Beach, UTM 442390, 2457621. coastal residential setting; sparingly-branched shrub to 6 ft tall, growing out of a hedge. Inflorescence bracts magenta. Species is planted as an ornamental and sparingly naturalized in the area, 9 Mar 2010, OED 2010030904."
301	2012. Parker, J.L./Parsons, B.. New plant records from the Big Island for 2009. <i>Bishop Museum Occasional Papers</i> . 113: 55–63.	[Naturalized beyond native range? Yes] "First collected as naturalized on Oahu in 2008 (Frohlich & Lau 2010: 3), this popular ornamental has been seen successfully naturalizing at several locations throughout the dry side of the island. at this location, a large population dominated the understory on both sides of the highway with plants spreading over 100 m above the highway. This species is also reported naturalizing on Kauai (Frohlich & Lau this volume). Material examined. HAWAI'I: south Kona Distr.Hwy 11, mile marker 104, Captain Cook, 2150821n, 197526e. Inflorescence a red spike with white flowers, up to 10 ft tall. Spreading on both sides of highway under avocado and African tulip, 29 sep 2008, J. Parker & R. Parsons BIED40."
302	2012. Randall, R.P.. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	[Garden/amenity/disturbance weed? Potential Environmental Weed]
303	2012. Randall, R.P.. <i>A Global Compendium of Weeds</i> . 2nd Edition. Department of Agriculture and Food, Western Australia	[Agricultural/forestry/horticultural weed? Potential Environmental Weed]

304	2004. Meyer, J-Y./Lavergne, C.. Beautés fatales : Acanthaceae species as invasive alien plants on tropical Indo-Pacific Islands. Diversity and Distributions. 10: 333-347.	[Environmental weed? Potentially] "Megaskepasma erythrochlamys is a tall erect shrub with handsome pink flowers, locally planted in gardens in La Réunion and in Mauritius (Bossier & Heine, 2000). We found this species in fruit and subsynchronous in some private gardens of La Réunion, thus we considered this species as a potential threat." ... "In the Mascarene Islands (La Réunion, Mauritius and Rodrigues), the 'Flore des Mascareignes' lists 16 species as more or less widely naturalized, and 29 as cultivated species in gardens (Bossier & Heine, 2000)." ... "Moreover, we observed the cultivated species Crossandra infundibuliformis, Megaskepasma erythrochlamys, and Thunbergia mysorensis as subsynchronous in secondary vegetation."
305	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Congeneric weed? No] "This is a monotypic genus and is endemic to the Neotropics. It is recognized by its large, showy bracts and its large leaves, which when dried, are shown to lack cystoliths."
401	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Produces spines, thorns or burrs? No] "Shrub to 4 m tall; stems subquadrangular. internodes between leaf-bearing nodes 2.5-4 cm long, 6-8 mm thick, puberulous. Leaves with petioles to 4 cm long, petioles puberulous; laminae elliptic, 13-28 cm long, 3.5-13 cm broad, apically acuminate with a rounded, apiculate tip, basally acute, margins entire to crenulate, sparingly strigose on the costa and lateral veins of both surfaces, cystoliths none."
402	1998. Riffle, R.L.. The Tropical Look - An Encyclopedia of Dramatic Landscape Plants. Timber Press, Portland, OR	[Allelopathic? No] "This shrub is breathtaking in the landscape as a tall background subject underplanted with almost anything that is not as tall; one of the most intriguing partners is the shrimp plant whose more subtle flower colors are extremely complementary with those of the red-cloak." [no evidence of allelopathic effects in literature, and able to be grown with other landscape plants without any apparent detrimental effects]
403	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Parasitic? No. Acanthaceae] "Megaskepasma erythrochlamys is recognized by its shrubby habit, its large leaves which lack cystoliths, and its flowers with large (3.5-4.7 cm long) reddish purple bracts, and its large (50-60 mm long) white, bilabiate corollas with two exerted stamens having two-celled anthers with equal cells."
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 evidence]
406	1998. Koptur, S./Truong, N.. Facultative Ant-Plant Interactions: Nectar Sugar Preferences of Introduced Pest Ant Species in South Florida. Biotropica. 30(2): 179-189.	[Host for recognized pests and pathogens? Used by crazy ants for nectar] "Table 1. Observations of nectar use by pest ant species in south Florida. EFN = extrajoral nectar" [Megaskepasma erythrochlamys nectar used by crazy ants]
406	2000. Stumpf, C.F./Lambdin, P.L.. Distribution and known host records for Planchonia stentae (Hemiptera: Coccoidea: Asterolecaniidae). Florida Entomologist. 83(3): 368-369.	[Host for recognized pests and pathogens? Host of South African pit scale, Planchonia stentae] "With the current emphasis on international travel, free trade agreements, and extensive importation of products such as lumber, ornamental plants, fruits, and vegetables, invasions by exotic species such as scale insects into new areas of the world can significantly impact the local flora. The South African pit scale, Planchonia stentae (Brain), has recently become a major pest in Florida on both introduced and native plant species (A. Hamon, personal communication). This species has now spread from its native range in South Africa into North and South America (Table 1)."
406	2012. Top Tropicals. Megaskepasma erythrochlamys. http://toptropicals.com/catalog/uid/megaskepasma_erythrochlamys.htm [Accessed 05 Nov 2012]	[Host for recognized pests and pathogens?] "The red cloak is occasionally attacked by mealy bugs and scales."
407	1998. Riffle, R.L.. The Tropical Look - An Encyclopedia of Dramatic Landscape Plants. Timber Press, Portland, OR	[Causes allergies or is otherwise toxic to humans? No evidence] Popular ornamental
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 evidence]
407	2012. Dave's Garden. PlantFiles: Brazilian Red Cloak - Megaskepasma erythrochlamys. http://davesgarden.com/guides/pf/go/54077/ [Accessed 05 Nov 2012]	[Causes allergies or is otherwise toxic to humans? No evidence] "Danger: N/A"

408	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. Annals of the Missouri Botanical Garden. 65(1): 155-283.	[Creates a fire hazard in natural ecosystems? No evidence] "This plant is native to Venezuela and is found cultivated throughout much of the neotropics."
408	2003. Jarrett, A.. Ornamental Tropical Shrubs. Pineapple Press Inc., Sarasota, FL	[Creates a fire hazard in natural ecosystems? No evidence] "partial shade to shade" [unlikely to increase fire risk, given growth in wetter, shadier tropical environments]
409	1998. Riffle, R.L.. The Tropical Look - An Encyclopedia of Dramatic Landscape Plants. Timber Press, Portland, OR	[Is a shade tolerant plant at some stage of its life cycle?] "Sun to partial shade"
409	2003. Jarrett, A.. Ornamental Tropical Shrubs. Pineapple Press Inc., Sarasota, FL	[Is a shade tolerant plant at some stage of its life cycle? Yes] "partial shade to shade "
409	2007. Tropical Flowers. Red Tropical Flowers. http://www.tropicalflower.org/red.php [Accessed 05 Nov 2012]	[Is a shade tolerant plant at some stage of its life cycle? Yes] "It prefers to grow in places where it will not be exposed to full sun."
409	2012. Ann's Tropicals. Megaskepasma erythrochlamys - Brazilian Red Cloak. http://annstropics.com/Descriptions/Megaskepasma_erythrochlamys-Brazilian_Red_Cloak.html [Accessed 05 Nov 2012]	[Is a shade tolerant plant at some stage of its life cycle? Yes] " It will grow just as well in shade as in full sun."
410	2012. Ann's Tropicals. Megaskepasma erythrochlamys - Brazilian Red Cloak. http://annstropics.com/Descriptions/Megaskepasma_erythrochlamys-Brazilian_Red_Cloak.html [Accessed 05 Nov 2012]	[Tolerates a wide range of soil conditions ? Yes] "It is partial to light, high organic soil, but will also thrive in very poor soil. It would rather have a moist condition, but again, will do just fine in dry settings."
411	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Climbing or smothering growth habit? No] "Megaskepasma erythrochlamys is recognized by its shrubby habit, its large leaves which lack cystoliths, and its flowers with large (3.5-4.7 cm long) reddish purple bracts, and its large (50-60 mm long) white, bilabiate corollas with two exerted stamens having two-celled anthers with equal cells."
412	1995. Oakman, H.. Harry Oakman's what flowers when: the complete guide to flowering times in tropical and subtropical gardens. Univ. of Queensland Press, St. Lucia, Australia	[Forms dense thickets?] "Forms into a rounded, dense, 2-3-meter evergreen bush with stout upright green stems." [forms dense growth in cultivation]
412	2010. Frohlich, D./Lau, A.. New plant records from O'ahu for 2008. Bishop Museum Occasional Papers. 107: 3-18.	[Forms dense thickets? Potentially Yes] "This specimen was collected from a roadside gulch in Schofield Barracks, where it made up the majority of the understory."
412	2012. Parker, J.L./Parsons, B.. New plant records from the Big Island for 2009. Bishop Museum Occasional Papers. 113: 55-63.	[Forms dense thickets? Potentially Yes] "a large population dominated the understory on both sides of the highway with plants spreading over 100 m above the highway."
501	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	[Aquatic? No] Terrestrial
502	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. Annals of the Missouri Botanical Garden. 65(1): 155-283.	[Grass? No] Acanthaceae
503	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. Annals of the Missouri Botanical Garden. 65(1): 155-283.	[Nitrogen fixing woody plant? No] Acanthaceae
504	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Megaskepasma erythrochlamys is recognized by its shrubby habit, its large leaves which lack cystoliths, and its flowers with large (3.5-4.7 cm long) reddish purple bracts, and its large (50-60 mm long) white, bilabiate corollas with two exerted stamens having two-celled anthers with equal cells. It most closely resembles the genus Justicia, but differs in its leaves, which lack cystoliths, and its much larger bracts. "
601	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Evidence of substantial reproductive failure in native habitat? No evidence] "seeds 4, sub orbiculate, flattened, ca. 7 mm in diameter, glabrous"

602	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Produces viable seed? Yes] "seeds 4, sub-orbiculate, flattened, ca. 7 mm in diameter, glabrous"
602	1995. Oakman, H.. Harry Oakman's what flowers when: the complete guide to flowering times in tropical and subtropical gardens. Univ. of Queensland Press, St. Lucia, Australia	[Produces viable seed? Yes] "easily raised from seed"
602	2003. Llamas, K.A.. Tropical Flowering Plants. Timber Press, Portland, OR	[Produces viable seed? Possibly No at time] "The species is not known to produce seed in cultivation and is usually propagated from root suckers."
602	2004. Meyer, J-Y./Lavergne, C.. Beautés fatales : Acanthaceae species as invasive alien plants on tropical Indo-Pacific Islands. Diversity and Distributions. 10: 333-347.	[Produces viable seed? Yes] "Many incipient invasive acanths (e.g. Brillantaisia owariensis, Megaskepasma erythrochlamys, Ruellia devosiana) are newly introduced ornamentals that produced seeds, thus constituting potentially greater threats."
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] "Cuttings are the easiest and fastest means of propagation, although seeds may be used if available."
603	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. Fieldiana: Botany. 18: 1-92.	[Hybridizes naturally? No] "This is a monotypic genus and is endemic to the Neotropics. It is recognized by its large, showy bracts and its large leaves, which when dried, are shown to lack cystoliths." [monotypic genus with no evidence of intergeneric hybridization reported in literature]
604	1992. Watson, L./Dallwitz, M.J.. The families of flowering plants: descriptions, illustrations, identification, and information retrieval. Version 14th December 2000. http://www.biologie.uni-hamburg.de/b-online/delta/angio/www/acanthac.htm [Accessed 05 No	[Self-compatible or apomictic? Unknown. Family description] "Pollination mechanism conspicuously specialized (commonly exhibiting a loose pollen mechanism, cf. Scophulariaceae etc. — e.g. the large bee-flowers of Acanthus), or unspecialized. "
604	2003. Llamas, K.A.. Tropical Flowering Plants. Timber Press, Portland, OR	[Self-compatible or apomictic? Unknown] "The species is not known to produce seed in cultivation and is usually propagated from root suckers."
604	2008. Gargiullo, M.B./Magnuson, B.L./Kimball, L.D.. A Field Guide to Plants of Costa Rica. Oxford University Press US, New York, NY	[Self-compatible or apomictic? Unknown] "Flowers white, 5-6 cm long, bilaterally symmetrical, tubular, petal lobes 2 lipped, upper lip 2-lobed, lower lip 3-lobed, stamens 2, extended beyond petal lobes; major bracts deep red purple, to 4.5 cm long, 2 cm wide, smaller bracts to 2 cm long; inflorescence a cluster of drooping spikes to 20 cm long."
605	1992. Watson, L./Dallwitz, M.J.. The families of flowering plants: descriptions, illustrations, identification, and information retrieval. Version 14th December 2000. http://www.biologie.uni-hamburg.de/b-online/delta/angio/www/acanthac.htm [Accessed 05 No	[Requires specialist pollinators? Possibly Yes] "Pollination mechanism conspicuously specialized (commonly exhibiting a loose pollen mechanism, cf. Scophulariaceae etc. — e.g. the large bee-flowers of Acanthus), or unspecialized." [Acanthaceae family description]
605	2003. Llamas, K.A.. Tropical Flowering Plants. Timber Press, Portland, OR	[Requires specialist pollinators? Possibly Yes] "The species is not known to produce seed in cultivation and is usually propagated from root suckers."
605	2008. Gargiullo, M.B./Magnuson, B.L./Kimball, L.D.. A Field Guide to Plants of Costa Rica. Oxford University Press US, New York, NY	[Requires specialist pollinators? Possibly Yes] "Flowers white, 5-6 cm long, bilaterally symmetrical, tubular, petal lobes 2 lipped, upper lip 2-lobed, lower lip 3-lobed, stamens 2, extended beyond petal lobes; major bracts deep red purple, to 4.5 cm long, 2 cm wide, smaller bracts to 2 cm long; inflorescence a cluster of drooping spikes to 20 cm long."
605	2012. WRA Specialist. Personal Communication.	[Requires specialist pollinators? Possibly Yes] limited seed production in cultivation and floral structure suggest that this plant has specialized pollinators, either birds or long tongued moths
606	2003. Llamas, K.A.. Tropical Flowering Plants. Timber Press, Portland, OR	[Reproduction by vegetative fragmentation? Yes] "The species is not known to produce seed in cultivation and is usually propagated from root suckers."
606	2009. Beachy, J.R.. O'ahu Army Natural Resources Program. Pers. Comm. 1 Apr 2009.	[Reproduction by vegetative fragmentation? Yes] "Krista Winger and I stopped the Megaskepasma site today and looked around . . . from what we could see, the flowers never seem to develop into fruit. There were tons of flowers and buds, but no immature or mature fruit. Perhaps fruit develop rarely, if at all. I also looked around on the ground; there was a ton of Justicia betonica seedlings, but I couldn't identify anything as a Medaskepasma seedling. The youngest plants I found were definitely from vegetative material. There are some photos attached. The whole infestation is pretty large; Megaskepasma is the dominant species in this particular gulch on Schofield Barracks. It is doing well in both sun and shade, and very little is growing underneath it."

606	2009. Castillo-Cruz, S./Rodriguez-Arrieta, Y .J.A.. Potencial invasor de <i>Megaskepasma erythrochlamys</i> (Acanthaceae) en un fragmento boscoso de la Universidad de Costa Rica. <i>Métodos en Ecología y Sistemática</i> . 4(1): 1-9.	[Reproduction by vegetative fragmentation? Yes] " <i>Megaskepasma erythrochlamys</i> (Acanthaceae) originated from Venezuela. It has a high capacity for regeneration and asexual reproduction mechanisms, important biological characteristics to consider it as an eventual invasive species in tropical environments."
607	2012. Ann's Tropicals. <i>Megaskepasma erythrochlamys</i> - Brazilian Red Cloak. http://annstropicals.com/Descriptions/Megaskepasma_erythrochlamys-Brazilian_Red_Cloak.html [Accessed 05 Nov 2012]	[Minimum generative time (years)? 2+] "Mature plants (2 years and older) will bloom almost all year."
607	2012. Dave's Gardern. PlantFiles: Brazilian Red Cloak - <i>Megaskepasma erythrochlamys</i> . http://davesgarden.com/guides/pf/go/54077/ [Accessed 05 Nov 2012]	[Minimum generative time (years)? 2+] "Have had this plant for two years. First year it did not bloom. This year (second year) it started blooming in June and is still blooming"
701	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. <i>Annals of the Missouri Botanical Garden</i> . 65(1): 155-283.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Seeds lack means of external attachment] "capsules clavate, to 30 mm long, 8 mm wide, apically attenuate and mucronate, glabrous; seeds 4, suborbiculate, flattened, ca. 6 mm in diameter, glabrous."
701	2012. Parker, J.L./Parsons, B.. New plant records from the Big Island for 2009. <i>Bishop Museum Occasional Papers</i> . 113: 55-63.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Possibly being moved along roadway] "Spreading on both sides of highway under avocado and African tulip, 29 sep 2008, J. Parker & R. Parsons BIED40."
702	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. <i>Annals of the Missouri Botanical Garden</i> . 65(1): 155-283.	[Propagules dispersed intentionally by people? Yes] "This plant is native to Venezuela and is found cultivated throughout much of the neotropics."
702	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	[Propagules dispersed intentionally by people? Yes] "Long misidentified as <i>Ashatoda cydoniifolia</i> , a different species probably not in cultivation, Brazilian-cloak is a popular informal untrimmed hedge or background screening plant in Hawaii and other tropical places. "
703	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. <i>Annals of the Missouri Botanical Garden</i> . 65(1): 155-283.	[Propagules likely to disperse as a produce contaminant? No evidence] "capsules clavate, to 30 mm long, 8 mm wide, apically attenuate and mucronate, glabrous; seeds 4, suborbiculate, flattened, ca. 6 mm in diameter, glabrous." [unlikely; not grown with produce and no evidence of use in floral arrangements]
704	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. <i>Fieldiana: Botany</i> . 18: 1-92.	[Propagules adapted to wind dispersal? Yes] "The only genera lacking cystoliths and having the more typical capsular fruit with hooklike funicles are the genera <i>Aphelandra</i> and <i>Megaskepasma</i> . Seeds are frequently ejected forcefully by the hook-shaped funicles when the mature capsules are moistened by rainfall. In opened or dehisced capsules, the funicles can be seen as hook-shaped projections." [probably short distance dispersal by wind]
705	1986. Burger, W. (ed.). Flora Costaricensis - Family #200, Acanthaceae by L.H. Durkee, Family #201, Plantaginaceae by William Burger. <i>Fieldiana: Botany</i> . 18: 1-92.	[Propagules water dispersed? Unknown] "The only genera lacking cystoliths and having the more typical capsular fruit with hooklike funicles are the genera <i>Aphelandra</i> and <i>Megaskepasma</i> . Seeds are frequently ejected forcefully by the hook-shaped funicles when the mature capsules are moistened by rainfall. In opened or dehisced capsules, the funicles can be seen as hook-shaped projections." [unknown if seeds will float]
706	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. <i>Annals of the Missouri Botanical Garden</i> . 65(1): 155-283.	[Propagules bird dispersed? No] "capsules clavate, to 30 inn1 long, 8 mm wide, apically attenuate and mucronate, glabrous; seeds 4, suborbiculate, flattened, ca. 6 mm in diameter, glabrous."
707	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. <i>Annals of the Missouri Botanical Garden</i> . 65(1): 155-283.	[Propagules dispersed by other animals (externally)? No evidence]
708	1978. Woodson, Jr.; R.E./Schery, R.W./Durkee, L.H.. Flora of Panama. Part IX. Family 177. Acanthaceae. <i>Annals of the Missouri Botanical Garden</i> . 65(1): 155-283.	[Propagules survive passage through the gut? No evidence] "capsules clavate, to 30 mm long, 8 mm wide, apically attenuate and mucronate, glabrous; seeds 4, suborbiculate, flattened, ca. 6 mm in diameter, glabrous." [unlikely, capsules and seeds not adapted for ingestion and internal dispersal]
801	2003. Llamas, K.A.. <i>Tropical Flowering Plants</i> . Timber Press, Portland, OR	[Prolific seed production (>1000/m2)? No evidence] "The species is not known to produce seed in cultivation and is usually propagated from root suckers."

801	2009. Beachy, J.R.. O'ahu Army Natural Resources Program. Pers. Comm. 1 Apr 2009.	[Prolific seed production (>1000/m ²)? No evidence] "Krista Winger and I stopped the <i>Megaskepasma</i> site today and looked around . . . from what we could see, the flowers never seem to develop into fruit. There were tons of flowers and buds, but no immature or mature fruit. Perhaps fruit develop rarely, if at all. I also looked around on the ground; there was a ton of <i>Justicia betonica</i> seedlings, but I couldn't identify anything as a <i>Megaskepasma</i> seedling. The youngest plants I found were definitely from vegetative material. There are some photos attached. The whole infestation is pretty large; <i>Megaskepasma</i> is the dominant species in this particular gulch on Schofield Barracks. It is doing well in both sun and shade, and very little is growing underneath it. "
801	2012. WRA Specialist. Personal Communication.	[Prolific seed production (>1000/m ²)? No evidence] Apparently does not make abundant seeds, at least for now, in cultivation outside of native range
802	2012. WRA Specialist. Personal Communication.	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] Apparently does not make abundant seeds, at least for now, in cultivation outside of native range
803	2012. WRA Specialist. Personal Communication.	[Well controlled by herbicides? Unknown] No information on herbicide efficacy or chemical control of this species
804	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	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "A hard pruning in January or February after the main flowering period (July to September) stimulates vigorous new growth..."
804	2012. Ann's Tropicals. <i>Megaskepasma erythrochlamys</i> - Brazilian Red Cloak. http://annstropics.com/Descriptions/Megaskepasma_erythrochlamys-Brazilian_Red_Cloak.html [Accessed 05 Nov 2012]	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Ideal growing conditions will yield a plant that is up to 15 feet tall, and just as wide. Not to worry if your space is not that large as this plant takes well to hand pruning. "
805	2012. Parker, J.L./Parsons, B.. New plant records from the Big Island for 2009. Bishop Museum Occasional Papers. 113: 55–63.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown, but ability to spread suggests no] "First collected as naturalized on Oahu in 2008 (Frohlich & Lau 2010: 3), this popular ornamental has been seen successfully naturalizing at several locations throughout the dry side of the island. at this location, a large population dominated the understory on both sides of the highway with plants spreading over 100 m above the highway. This species is also reported naturalizing on Kauai (Frohlich & Lau this volume). Material examined. HAWAII: south Kona Distr.Hwy 11, mile marker 104, Captain Cook, 2150821n, 197526e. Inflorescence a red spike with white flowers, up to 10 ft tall. Spreading on both sides of highway under avocado and African tulip, 29 sep 2008, J. Parker & R. Parsons BIED40."

Summary of Risk Traits – This is a revision of the assessment completed on 2 July 2009. It was originally rated Low Risk (WRA Score = -2)

High Risk / Undesirable Traits

- Naturalized on Oahu, Kauai, Hawaii Island, and the Mascarene Islands
- Thrives in tropical climates
- Exhibits environmental versatility (elevation range exceeds 1000 m)
- Host of ornamental pests
- Shade tolerant
- Tolerates many soil conditions (and potentially able to exploit many different habitat types)
- Reproduces vegetatively and by seed
- Seeds. When produced, dehisced and dispersed short distances by wind, gravity and possibly water
- Tolerates heavy pruning

Low Risk / Desirable Traits

- Unarmed (no spines, thorns or burrs)
- Non-toxic
- Landscaping and ornamental value
- May require specialized pollinators (hummingbirds, long-tongued moths) to set seed
- Seed set may be limited in cultivation