Family:	Combretaceae			
Taxon:	Combretum constrictum			
Synonym:	Poivrea constricta Benth. (basionyn	,	nailand Powderpuff Combretum ombretum	
Questionai		Assessor: Chu	ck Chimera Designation:	L
Status:	Assessor Approved	Data Entry Person: Ass	essor WRA Score	4
01 Is the s	pecies highly domesticated?		y=-3, n=0	n
02 Has the	e species become naturalized where	grown?	y=1, n=-1	
03 Does th	ne species have weedy races?		y=1, n=-1	
	s suited to tropical or subtropical clin ute ''wet tropical'' for ''tropical or su		t habitat, then (0-low; 1-intermediate; 2 high) (See Appendix 2)	- High
02 Quality	y of climate match data		(0-low; 1-intermediate; 2 high) (See Appendix 2)	- High
03 Broad	climate suitability (environmental ve	ersatility)	y=1, n=0	У
04 Native	or naturalized in regions with tropic	cal or subtropical climates	y=1, n=0	У
05 Does th	ne species have a history of repeated	introductions outside its natural	range? y=-2, ?=-1, n=0	У
01 Natura	lized beyond native range		y = 1*multiplier (see Appendix 2), n= questior 205	n
02 Garder	n/amenity/disturbance weed		n=0, y = 1*multiplier (see Appendix 2)	e n
03 Agricu	ltural/forestry/horticultural weed		n=0, y = 2*multiplier (see Appendix 2)	e n
04 Enviro	nmental weed		n=0, y = 2*multiplier (see Appendix 2)	e n
05 Congei	neric weed		n=0, y = 1*multiplier (see Appendix 2)	e y
01 Produc	es spines, thorns or burrs		y=1, n=0	n
02 Allelop	athic		y=1, n=0	
03 Parasit	ic		y=1, n=0	n
04 Unpala	table to grazing animals		y=1, n=-1	
05 Toxic t	o animals		y=1, n=0	n
06 Host fo	or recognized pests and pathogens		y=1, n=0	
07 Causes	allergies or is otherwise toxic to hu	mans	y=1, n=0	n
08 Create	s a fire hazard in natural ecosystems	3	y=1, n=0	
09 Is a sha	ade tolerant plant at some stage of its	s life cycle	y=1, n=0	n
10 Tolera	tes a wide range of soil conditions (or	r limestone conditions if not a vol	canic island) y=1, n=0	у
11 Climbi	ng or smothering growth habit		y=1, n=0	У

Combretum constrictum (Combretaceae)

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	У
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	У
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	n
704	Propagules adapted to wind dispersal	y=1, n=-1	У
705	Propagules water dispersed	y=1, n=-1	У
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	
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	
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	
	Designation: L	WRA Score 4	

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] 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] "Distributional range: Native: AFRICA, Northeast Tropical Africa: Somalia; East Tropical Africa: Kenya; Tanzania; West Tropical Africa: Nigeria; South Tropical Africa: Mozambique"
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] "Distributional range: Native: AFRICA, Northeast Tropical Africa: Somalia; East Tropical Africa: Kenya; Tanzania; West Tropical Africa: Nigeria; South Tropical Africa: Mozambique"
203	2012. Conservatoire et Jardin botaniques & South African National Biodiversity Institute. African Plant Database - Combretum constrictum (Benth.) M.A.Lawson. http://www.ville- ge.ch/musinfo/bd/cjb/africa/details.php?langue=a n&id=1127	[Broad climate suitability (environmental versatility)? Yes] "Ecology : Tidal and seasonal swamps, riverine forest; riverine woodland, seasonally flooded bushland; edges of mangrove; 0-1200 m alt. – Disjunct area. " [Elevation range exceeds 1000 m, demonstrating environmental versatility]
203	2012. Dave's Gardern. PlantFiles: Combretum - Combretum constrictum. http://davesgarden.com/guides/pf/go/150643/	[Broad climate suitability (environmental versatility)? Possibly No] "Hardiness: 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] "Distributional range: Native: AFRICA, Northeast Tropical Africa: Somalia; East Tropical Africa: Kenya; Tanzania; West Tropical Africa: Nigeria; South Tropical Africa: Mozambique"
205	2004. Gurib-Fakim, A./Brendler, T Medicinal and aromatic plants of Indian Ocean islands: Madagascar, Comoros, Seychelles and Mascarenes. medpharm Scientific Publishers, Stuttgart, Germany	[Does the species have a history of repeated introductions outside its natural range? Yes] "Originating in tropical Africa, this plant is occasionally cultivated as an ornamental plant in the Seychelles and in the Mascarenes."
205	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	[Does the species have a history of repeated introductions outside its natural range? Yes] "Possibly the most frequently grown species of Combretum in Hawaii"
205	2012. Dave's Gardern. PlantFiles: Combretum - Combretum constrictum. http://davesgarden.com/guides/pf/go/150643/	[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: Gulfport, Florida Homestead, Florida Mulberry, Florida Freeport, Texas"
301	2005. Wagner, W.L./Herbst, D.R./Lorence, D.H Flora of the Hawaiian Islands website. Smithsonian Inst., Washington, D.C. http://botany.si.edu/pacificislandbiodiversity/hawai ianflora/index.htm	[Naturalized beyond native range? No] No evidence from Hawaiian Islands
301	2007. Randall, R.P Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Naturalized beyond native range? No] No evidence
301	2007. Randall, R.P The introduced flora of Australia & its weed status. CRC for Australian Weed Management, Glen Osmond, Australia	[Naturalized beyond native range? No] No evidence from Australia
301	2009. Chong, K.Y./Tan, H.T.W./Corlett, R.T A Checklist of the Total Vascular Plant Flora of Singapore: Native, Naturalized and Cultivated Species. Raffles Museum of Biodiversity Research, National University of Singapore, Singapore	[Naturalized beyond native range? No evidence in Singapore] "Combretum constrictum (Benth.) M. A. Lawson; Combretaceae; cultivated only"
302	2007. Randall, R.P Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Garden/amenity/disturbance weed? No] No evidence

302	2007. Randall, R.P The introduced flora of Australia & its weed status. CRC for Australian Weed Management, Glen Osmond, Australia	[Garden/amenity/disturbance weed? No] No evidence from Australia
303	2007. Randall, R.P Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Agricultural/forestry/horticultural weed? No] No evidence
303	2007. Randall, R.P The introduced flora of Australia & its weed status. CRC for Australian Weed Management, Glen Osmond, Australia	[Agricultural/forestry/horticultural weed? No] No evidence from Australia
304	2007. Randall, R.P Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Environmental weed? No] No evidence
304	2007. Randall, R.P The introduced flora of Australia & its weed status. CRC for Australian Weed Management, Glen Osmond, Australia	[Environmental weed? No] No evidence from Australia
305	1979. Holm, L. G./Pancho, J.V./Herberger, J.P./Plucknett, D.L A Geographical Atlas of World Weeds. John Wiley and Sons, New York, NY	[Congeneric weed? Yes] Two congeners are principal weeds in Zimbabwe.
401	1973. Wickens, G.E Combretum constrictum (Benth.) Laws [family Combretaceae]. Entry from Flora of Tropical East Africa. http://plants.jstor.org/flora/ftea003293	[Produces spines, thorns or burrs? No] "Shrub or climber; branchlets glabrescent. Leaves subopposite; lamina chartaceous to subcoriaceous, oblong to oblong- elliptic, up to 12 cm. long and 6–5 cm. wide, apex rounded or acuminate, base rounded, sometimes tomentose, more usually glabrous or nearly so; lateral nerves 6–9 pairs; petiole 4–6 mm. long, eventually forming a blunt and slightly curved spine at the base. Inflorescence of subcapitate terminal or axillary spikes up to 6 cm. long; rhachis glabrous or tomentose."
402	2012. WRA Specialist. Personal Communication.	[Allelopathic? Unknown]
403	1973. Wickens, G.E Combretum constrictum (Benth.) Laws [family Combretaceae]. Entry from Flora of Tropical East Africa. http://plants.jstor.org/flora/ftea003293	[Parasitic? No] "Shrub or climber;" [Combretaceae. Not parasitic]
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	2012. Specialized Information Services, U.S. National Library of Medicine. TOXNET toxicology data network [online database]. National Institutes of Health, http://toxnet.nlm.nih.gov/	[Toxic to animals? No] No evidence
406	2012. WRA Specialist. Personal Communication.	[Host for recognized pests and pathogens? Unknown]
407	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	[Causes allergies or is otherwise toxic to humans? No evidence]
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	2009. Kokwaro, J.O Medicinal plants of East Africa. University of Nairobi Press, Nairobi, Kenya	[Causes allergies or is otherwise toxic to humans? No] "Chewed roots are put on snake bite wounds as a remedy. Fresh roots chewed or boiled with a little salt and a cupful drunk twice a day as an aphrodisiac."
408	2012. WRA Specialist. Personal Communication.	[Creates a fire hazard in natural ecosystems? Unknown] A climber, so could potentially act as a fuel ladder into trees.
409	2012. Dave's Gardern. PlantFiles: Combretum - Combretum constrictum. http://davesgarden.com/guides/pf/go/150643/	[Is a shade tolerant plant at some stage of its life cycle? No] "Sun Exposure: Full Sun"
410	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 a wide range of soil conditions (or limestone conditions if not a volcanic island)? Yes] "any fertile garden soil is adequate."

411	2012. Conservatoire et Jardin botaniques & South African National Biodiversity Institute. African Plant Database - Combretum constrictum (Benth.) M.A.Lawson. http://www.ville- ge.ch/musinfo/bd/cjb/africa/details.php?langue=a n&id=1127	[Climbing or smothering growth habit? Yes] "Biology : Scandent shrub or woody climber, with many stems, 1,5-5 m high."
412	2012. WRA Specialist. Personal Communication.	[Forms dense thickets? Unknown]
501	1973. Wickens, G.E Combretum constrictum (Benth.) Laws [family Combretaceae]. Entry from Flora of Tropical East Africa. http://plants.jstor.org/flora/ftea003293	[Aquatic? No] "Shrub or climber" [Terrestrial]
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] Combretaceae
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] Combretaceae
504	1973. Wickens, G.E Combretum constrictum (Benth.) Laws [family Combretaceae]. Entry from Flora of Tropical East Africa. http://plants.jstor.org/flora/ftea003293	[Geophyte (herbaceous with underground storage organs bulbs, corms, or tubers)? No] "Shrub or climber; branchlets glabrescent."
601	2012. Kew Databases. Flora Zambesiaca - Taxon Detail: Combretum constrictum. http://apps.kew.org/efloras/namedetail.do?flora=fz &taxon=3392&nameid=8233#NOTES	[Evidence of substantial reproductive failure in native habitat? No] No evidence
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] "Propagation is usually from 3-6" woody tip cuttings or air layers, since seed (except by C. constrictum) is rarely produced in Hawaii."
603	2012. WRA Specialist. Personal Communication.	[Hybridizes naturally? Unknown]
604	2007. Kubitzki, K./Bayer, C./ Stevens, P.F The families and genera of vascular plants: Volume IX. Flowering Plants. Eudicots. Springer-Verlag, Berlin, Heidelberg, New York	[Self-compatible or apomictic? Unknown" "Combretum fruticosum" "This species has been shown to be self-incompatible (Bernardello et al. 1994)." [Relates species self-incompatible, but unknown for C. constrictum]
605	2012. Dave's Gardern. PlantFiles: Combretum - Combretum constrictum. http://davesgarden.com/guides/pf/go/150643/	[Requires specialist pollinators? No] "This plant is attractive to bees, butterflies and/or birds"
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? No] "Combretum constrictum is readily propagated by cuttings and air layers." [No evidence that the plant spreads vegetatively, however]
607	2012. WRA Specialist. Personal Communication.	[Minimum generative time (years)? Unknown]
701	1973. Wickens, G.E Combretum constrictum (Benth.) Laws [family Combretaceae]. Entry from Flora of Tropical East Africa. http://plants.jstor.org/flora/ftea003293	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] "Fruit (not seen from our area) 5-angled, sessile, c. 2·5 x 1·2–1·5 cm., ellipsoid, glabrous, apical peg absent. Note: most organs described as glabrous or tomentose are glabrous in our area in the few specimens seen." [No evidence or means of external attachment]
702	2012. Top Tropicals. Combretum constrictum. Top Tropicals Botanical Garden, http://toptropicals.com/catalog/uid/combretum_co nstrictum.htm	[Propagules dispersed intentionally by people? Yes] "Powderpuff Combretum - very showy beautiful vining shrub with red flowers. Can be trained into a small tree standard. Easy to grow and undemanding, it only requires regular water to establish, then can be drought tolerant. Blooms almost year round in warm climates. Responds well to pruning." [Ornamental]
703	2012. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence

704	1984. Knight, R.S Patterns of Seed Dispersal in Southern African Trees. Journal of Biogeography. 11(6): 501-513.	[Propagules adapted to wind dispersal? Likely] "Most nut-bearing species in southern Africa are dispersed by wind. Usual modifications include a reduction in physical size, and increase in seed production and the development of 'wings' or 'tufts' (Snow, 1971), and therefore an opportunistic dispersal in pioneer vegetation." "dispersal. There is a smaller peak of nut- bearing species in the tropical but arid S.W.A./ Namibia, apparently a contribution from the genus Combretum. Dry winged-fruits may be pre-adapted to arid conditions, since there is no reliance placed on a population of biotic dispersal agents, and seeds may have a good dormancy potential"
704	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 adapted to wind dispersal? Likely] "Frt 4 or 5-winged, -ridged, or - angled, usu indehiscent, usu thin and papery." [Genus Description]
705	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 water dispersed? Likely] "The natural habitat for the species is tidal swamps, seasonally flooded areas, and forests along riverbanks,"
705	2012. Kew Databases. Flora Zambesiaca - Taxon Detail: Combretum constrictum. http://apps.kew.org/efloras/namedetail.do?flora=fz &taxon=3392&nameid=8233#NOTES	[Propagules water dispersed? Likely] "Notes: The fruits are probably distributed by water."
706	2012. Kew Databases. Flora Zambesiaca - Taxon Detail: Combretum constrictum. http://apps.kew.org/efloras/namedetail.do?flora=fz &taxon=3392&nameid=8233#NOTES	[Propagules bird dispersed? No] "Fruit (not seen from our area) 5-angled, sessile, c. 2·5 x 1·2–1·5 cm., ellipsoid, glabrous, apical peg absent. Note: most organs described as glabrous or tomentose are glabrous in our area in the few specimens seen." "Notes: The fruits are probably distributed by water."
707	2012. Kew Databases. Flora Zambesiaca - Taxon Detail: Combretum constrictum. http://apps.kew.org/efloras/namedetail.do?flora=fz &taxon=3392&nameid=8233#NOTES	[Propagules dispersed by other animals (externally)? No] "Fruit (not seen from our area) 5 angled, sessile, c. 2·5 x 1·2–1·5 cm., ellipsoid, glabrous, apical peg absent. Note: most organs described as glabrous or tomentose are glabrous in our area in the few specimens seen." "Notes: The fruits are probably distributed by water." [No evidence or means of external attachment]
708	2012. Kew Databases. Flora Zambesiaca - Taxon Detail: Combretum constrictum. http://apps.kew.org/efloras/namedetail.do?flora=fz &taxon=3392&nameid=8233#NOTES	[Propagules survive passage through the gut? Unknown] "Fruit (not seen from our area) 5 angled, sessile, c. 2.5 x 1.2–1.5 cm., ellipsoid, glabrous, apical peg absent. Note: most organs described as glabrous or tomentose are glabrous in our area in the few specimens seen." "Notes: The fruits are probably distributed by water." [Unknown, but apparently not adapted for ingestion and internal dispersal]
801	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	[Prolific seed production (>1000/m2)? Unknown] "Propagation is usually from 3- 6" woody tip cuttings or air layers, since seed (except by C. constrictum) is rarely produced in Hawaii."
802	2008. Royal Botanic Gardens Kew. Seed Information Database (SID). Version 7.1. http://data.kew.org/sid/	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] No information on seed storage available
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? Potentially] "All require support on which to climb, though C. constrictum can be pruned into an erect, free-standing shrub."
804	2012. Top Tropicals. Combretum constrictum. Top Tropicals Botanical Garden, http://toptropicals.com/catalog/uid/combretum_co nstrictum.htm	[Tolerates, or benefits from, mutilation, cultivation, or fire? Potentially] "Responds well to pruning."
805	2012. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]