

Family: Asteraceae

Taxon: *Tarlmounia elliptica*

Synonym: *Vernonia elliptica* DC (basionym)

Common Name: Kheua sa lot

Questionnaire :	current 20090513	Assessor:	Patti Clifford	Designation: EVALUATE
Status:	Assessor Approved	Data Entry Person:	Patti Clifford	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	
204	Native or naturalized in regions with tropical or subtropical climates		y=1, n=0	y
205	Does the species have a history of repeated introductions outside its natural range?		y=-2, ?=-1, n=0	n
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205	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)	n
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	
403	Parasitic		y=1, n=0	n
404	Unpalatable to grazing animals		y=1, n=-1	
405	Toxic to animals		y=1, n=0	
406	Host for recognized pests and pathogens		y=1, n=0	
407	Causes allergies or is otherwise toxic to humans		y=1, n=0	n
408	Creates a fire hazard in natural ecosystems		y=1, n=0	
409	Is a shade tolerant plant at some stage of its life cycle		y=1, n=0	
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	y

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	
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	
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	n
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)	y=1, n=-1	
708	Propagules survive passage through the gut	y=1, n=-1	
801	Prolific seed production (>1000/m2)	y=1, n=-1	y
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: EVALUATE

WRA Score 6

Supporting Data:

101	2010. WRA Specialist. Personal Communication.	No evidence of domestication.
201	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.	Native to India, Myanmar, and Thailand
201	2009. Flora of Taiwan. <i>Veronia elliptica</i> . www.efloras.org, http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Native to India, southeast Asia.
202	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.	Native to India, Myanmar, and Thailand
202	2009. Flora of Taiwan. <i>Veronia elliptica</i> . www.efloras.org, http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Native to India, southeast Asia.
203	2010. WRA Specialist. Personal Communication.	Unknown.
204	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.	Native to India Myanmar, and Thailand
204	2009. Flora of Taiwan. <i>Veronia elliptica</i> . www.efloras.org, http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Cultivated in Taiwan, sometimes escaped and naturalized in the south. Native to India, southeast Asia.
205	1998. Peng, C-I./Chung, K-F./L, W-P.. Notes on three newly naturalized plants (Asteraceae) in Taiwan. <i>Taiwania</i> . 43: 320-329.	Cultivated as an ornamental in Taiwan.
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.	[Literature indicates that it has been introduced to several places but not repeated introductions.] It was suggested in the 1970's that <i>Vernonia elliptica</i> should be widely planted in Oahu. It is unclear how much of the climber was planted as a result.
301	1998. Peng, C-I./Chung, K-F./L, W-P.. Notes on three newly naturalized plants (Asteraceae) in Taiwan. <i>Taiwania</i> . 43: 320-329.	Naturalized in the southern part of the island (Taiwan), forming large local populations.
301	2009. Flora of Taiwan. <i>Veronia elliptica</i> . www.efloras.org, http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Cultivated in Taiwan, sometimes escaped and naturalized in the south.
302	2010. WRA Specialist. Personal Communication.	No evidence of being a garden/disturbance/amenity weed.
303	2010. WRA Specialist. Personal Communication.	No evidence of being an agriculture/forestry/horticultural weed.
304	2010. WRA Specialist. Personal Communication.	No evidence of being an environmental weed.
305	2008. Robinson, H./Keeley, S.C./Skvarla, J.J./Chan, R.. Studies on the <i>Gymnantheminae</i> (Vernonieae: Asteracdeae III: restoration of the genus <i>Strobocalyx</i> and the new genus <i>Tarlmounia</i> . 121: 19-33.	Monotypic genus.

401	2009. Flora of Taiwan. <i>Veronia elliptica</i> . www.efloras.org, http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Shrubby climbers, grayish sericeous throughout; branches elongate, finely grooved. Leaves elliptic-oblong, 2-6.5 (-10) cm long, 1-4 (-6) cm wide, entire, slightly undulate when dry, apex acute, base cuneate to obtuse, venation reticulate, elevated on both surfaces, midrib densely sericeous otherwise glabrous to slightly sericeous on upper surfaces, densely sericeous on lower surfaces; petiole curved, ca. 2 mm long. Heads subsessile, many in narrow, terminal, short, loose panicles at end of rigid divaricate branches, peduncle puberulous; involucre tubular, 3-4 mm long, 1.5-2.5 mm across, bracts 4-seriate, manifestly imbricate, ovate- to obovate-oblong, obtuse, sericeous, tinged purple toward summit. Florets usually 5 per head, corollas 5-6 mm long, pinkish on upper half, sparingly glandular, lobes 5, ca. 2 mm long. Achenes brownish, clavate, 5-angled, 1.8-2.2 mm long, densely and minutely glandular. Pappus bristles whitish tawny, 4-5.5 mm long
402	2010. WRA Specialist. Personal Communication.	Unknown.
403	2009. Flora of Taiwan. <i>Veronia elliptica</i> . www.efloras.org, http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Shrubby climbers, grayish sericeous throughout; branches elongate, finely grooved. Leaves elliptic-oblong, 2-6.5 (-10) cm long, 1-4 (-6) cm wide, entire, slightly undulate when dry, apex acute, base cuneate to obtuse, venation reticulate, elevated on both surfaces, midrib densely sericeous otherwise glabrous to slightly sericeous on upper surfaces, densely sericeous on lower surfaces; petiole curved, ca. 2 mm long. Heads subsessile, many in narrow, terminal, short, loose panicles at end of rigid divaricate branches, peduncle puberulous; involucre tubular, 3-4 mm long, 1.5-2.5 mm across, bracts 4-seriate, manifestly imbricate, ovate- to obovate-oblong, obtuse, sericeous, tinged purple toward summit. Florets usually 5 per head, corollas 5-6 mm long, pinkish on upper half, sparingly glandular, lobes 5, ca. 2 mm long. Achenes brownish, clavate, 5-angled, 1.8-2.2 mm long, densely and minutely glandular. Pappus bristles whitish tawny, 4-5.5 mm long
404	2010. WRA Specialist. Personal Communication.	Unknown.
405	2010. WRA Specialist. Personal Communication.	Unknown.
406	2010. WRA Specialist. Personal Communication.	Unknown.
407	2006. Libman, A./Bouamanivong, S./Southavong, B./Sydara, K./Soejarto, D.D.. Medicinal plants: an important asset to health care in a region of Central Laos. <i>Journal of Ethnopharmacology</i> . 106: 303-311.	The leaf and twigs are used in Laos to treat menstrual irregularities.
408	2010. WRA Specialist. Personal Communication.	Unknown.
409	1992. Holttum, R.E./Enoch, I.. <i>Gardening in the tropics</i> . Timber Press, Portland, OR	"It is very useful for covering large retaining walls in full sun as the stems trail downwards over the stones and seem to be unaffected by the heat. When the plant has grown sufficiently dense, it reduces considerably the amount of heat and light reflected from stones or concrete." [tolerates full sun, but shade tolerance unknown]
410	2010. WRA Specialist. Personal Communication.	Unknown.
411	2009. Flora of Taiwan. <i>Veronia elliptica</i> . www.efloras.org, http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Shrubby climbers.
412	2009. Flora of Taiwan. <i>Veronia elliptica</i> . www.efloras.org, http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Shrubby climber. [See 4.11]
501	2009. Flora of Taiwan. <i>Veronia elliptica</i> . www.efloras.org, http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Shrubby climber; terrestrial
502	1998. Peng, C-I./Chung, K-F./L, W-P.. Notes on three newly naturalized plants (Asteraceae) in Taiwan. <i>Taiwania</i> . 43: 320-329.	Asteraceae.

503	2010. www.nationmaster.com. Encyclopedia Nitrogen fixation. Nationmaster.com, http://www.nationmaster.com/encyclopedia/Nitrogen-fixation	Asteraceae
504	2009. Flora of Taiwan. Veronia elliptica. www.efloras.org , http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Shrubby climbers.
601	2010. WRA Specialist. Personal Communication.	No evidence.
602	1998. Peng, C.-I./Chung, K.-F./L, W.-P.. Notes on three newly naturalized plants (Asteraceae) in Taiwan. <i>Taiwania</i> . 43: 320-329.	Achenes brownish, clavate
603	2010. WRA Specialist. Personal Communication.	Unknown.
604	2010. WRA Specialist. Personal Communication.	Unknown.
605	2010. WRA Specialist. Personal Communication.	Unknown.
606	1992. Holttum, R.E./Enoch, I.. Gardening in the tropics. Timber Press, Portland, OR	Roots from pieces of stem that touch the ground.
607	2010. WRA Specialist. Personal Communication.	Unknown.
701	2009. Flora of Taiwan. Veronia elliptica. www.efloras.org , http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	[Unknown] Achenes brownish, clavate, 5-angled, 1.8-2.2 mm long, densely and minutely glandular. Pappus bristles whitish tawny, 4-5.5 mm long
702	1998. Peng, C.-I./Chung, K.-F./L, W.-P.. Notes on three newly naturalized plants (Asteraceae) in Taiwan. <i>Taiwania</i> . 43: 320-329.	Cultivated as an ornamental in Taiwan.
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.	It was suggested in the 1970's that <i>Vernonia elliptica</i> should be widely planted in Oahu. It is unclear how much of the climber was planted as a result.
702	2009. Flora of Taiwan. Veronia elliptica. www.efloras.org , http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Achenes brownish, clavate, 5-angled, 1.8-2.2 mm long, densely and minutely glandular. Pappus bristles whitish tawny, 4-5.5 mm long
703	1998. Peng, C.-I./Chung, K.-F./L, W.-P.. Notes on three newly naturalized plants (Asteraceae) in Taiwan. <i>Taiwania</i> . 43: 320-329.	[Not likely, is grown as an ornamental, not with produce] Achenes brownish, clavate, 5-angled, 1.8-2.2 mm long, densely and minutely glandular. Pappus bristles whitish tawny, 4-5.5 mm long
704	2009. Flora of Taiwan. Veronia elliptica. www.efloras.org , http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Achenes brownish, clavate, 5-angled, 1.8-2.2 mm long, densely and minutely glandular. Pappus bristles whitish tawny, 4-5.5 mm long
705	2009. Flora of Taiwan. Veronia elliptica. www.efloras.org , http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	[No adaptation for water dispersal] Achenes brownish, clavate, 5-angled, 1.8-2.2 mm long, densely and minutely glandular. Pappus bristles whitish tawny, 4-5.5 mm long
706	2009. Flora of Taiwan. Veronia elliptica. www.efloras.org , http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Achenes brownish, clavate, 5-angled, 1.8-2.2 mm long, densely and minutely glandular. Pappus bristles whitish tawny, 4-5.5 mm long
707	2008. Rosas, C.A./Engle, D.M./Shaaw, J.H./Palmer, M.W.. Seed dispersal by Bison bison in a tallgrass prairie. <i>Journal of Vegetation Science</i> . 19: 769-778.	Many abundant species in bison hair (e.g. <i>Andropogon gerardii</i> , <i>Sorghastrum nutans</i> , <i>Vernonia baldwinii</i> , <i>Solidago</i> spp., <i>Aster</i> spp.) are suspected to be largely wind-dispersed, and other frequent species to not have clear attachment mechanisms [species with similar pappus morphology dispersed in animal hair]
707	2009. Flora of Taiwan. Veronia elliptica. www.efloras.org , http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242414583	Achenes brownish, clavate, 5-angled, 1.8-2.2 mm long, densely and minutely glandular. Pappus bristles whitish tawny, 4-5.5 mm long
708	2010. WRA Specialist. Personal Communication.	Unknown.

801	2009. Starr, F./Starr, K.. Plants of Hawaii Vernonia elliptica (climbing vernonia). HEAR.org, http://www.hear.org/starr/plants/images/image/?q=090709-2537	Photo shows multiple inflorescences. Indicates large seed production.
802	2010. WRA Specialist. Personal Communication.	Unknown.
803	2010. WRA Specialist. Personal Communication.	Unknown.
804	2010. WRA Specialist. Personal Communication.	Unknown.
805	2010. WRA Specialist. Personal Communication.	Unknown.
