

**Family:** *Chenopodiaceae*

**Taxon:** *Enchylaena tomentosa*

**Synonym:**

**Common Name:** ruby saltbush  
barrier saltbush

**Questionnaire :** current 20090513  
**Status:** Assessor Approved

**Assessor:** Patti Clifford  
**Data Entry Person:** Patti Clifford

**Designation:** L(Hawai'i)

**WRA Score** 5

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	n
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	n
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	n
405	Toxic to animals	y=1, n=0	n
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	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	
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	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	3
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	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	y
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: L(Hawai'i)

WRA Score 5

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**Supporting Data:**

101	2010. WRA Specialist. Personal Communication.	No evidence.
201	2010. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	Native to: Australia [widespread]
202	2010. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	Native to: Australia [widespread].
203	2010. Plants for a Future. <i>Enchylaena tomentosa</i> . <a href="http://www.pfaf.org/">http://www.pfaf.org/</a>	Hardy to zone 9. "Loamy and slightly saline soils by the coast in semi-arid areas. Found in salt marshes and rocky headlands as well as in arid zones inland."
204	2010. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland <a href="http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl">http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl</a>	Native to: Australia [widespread]
205	2010. WRA Specialist. Personal Communication.	No evidence of repeated introductions.
301	2007. Randall, R.. Global Compendium of Weeds. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	No evidence of <i>Enchylaena tomentosa</i> naturalizing. [Information from GCW indicates that <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> has naturalized in Hawaii.]
302	2007. Randall, R.. Global Compendium of Weeds. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	No evidence.
303	2007. Randall, R.. Global Compendium of Weeds. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	No evidence.
304	2007. Randall, R.. Global Compendium of Weeds. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	No evidence.
305	2007. Randall, R.. Global Compendium of Weeds. <a href="http://www.hear.org/gcw/">http://www.hear.org/gcw/</a>	No evidence.
401	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	No spines, thorns, or burrs.
402	2010. WRA Specialist. Personal Communication.	Unknown.
403	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	No evidence.
404	1916. Knibbs, G.H.. Official yearbook of the commonwealth of Australia containing authoritative statistics for the period 1901-1915. McCarron Bird & Co., Melbourne <a href="http://books.google.com/books?id=gINQ8PSxkJAC&amp;pg=PA90&amp;lpg=PA90&amp;dq=enchylaena+tomentosa+%2B+%2">http://books.google.com/books?id=gINQ8PSxkJAC&amp;pg=PA90&amp;lpg=PA90&amp;dq=enchylaena+tomentosa+%2B+%2</a>	<i>Enchylaena tomentosa</i> is considered to be a source of fodder in adverse conditions.
404	1969. Barker, S./Lange, R.T.. Effects of moderate sheep stocking on plant populations of a black oak-bluebush association. Australian Journal of Botany. 17: 527-537.	<i>Enchylaena tomentosa</i> is considered to be palatable.
405	2010. National Center for Biotechnology Information. PubMed. U.S. National Library of Medicine, Bethesda, Maryland <a href="http://www.ncbi.nlm.nih.gov/sites/entrez">http://www.ncbi.nlm.nih.gov/sites/entrez</a>	No evidence.
405	2010. Specialized Information Services, U.S. National Library of Medicine. TOXNET Toxicology Data Network [Online Database]. National Institutes of Health, <a href="http://toxnet.nlm.nih.gov/">http://toxnet.nlm.nih.gov/</a>	No evidence of toxicity.

406	2010. WRA Specialist. Personal Communication.	Unknown.
407	2010. Plants for a Future. <i>Enchylaena tomentosa</i> . <a href="http://www.pfaf.org/">http://www.pfaf.org/</a>	The leaves and fruits can be eaten. Leaves should be eaten in moderation as they contain oxalic acid.
408	2009. Marriott, N.. Australian native plants for fire protection. Australian Plants Society, Victoria <a href="http://www.apsvic.org.au/plant_fire_resistant.html">http://www.apsvic.org.au/plant_fire_resistant.html</a>	Considered to be a fire-resistant plant.
409	2001. Jefferson, L.V.. The biology and ecology of species of <i>Maireana</i> and <i>Enchylaena</i> : intra and inter-specific competition in plant communities in the eastern goldfields of Western Australia. <a href="http://espace.library.curtin.edu.au/R?func=dbin-jump-full&amp;local">http://espace.library.curtin.edu.au/R?func=dbin-jump-full&amp;local</a>	In this experimental study, potted individuals of <i>Enchylaena tomentosa</i> were exposed to three levels of light (full sun, 70% shade, 90%) to determine the species response to low light intensity. The shoot dry weight of <i>E. tomentosa</i> differed significantly between treatments. The total plant biomass showed a positive response to shade treatments.
410	2010. Plants for a Future. <i>Enchylaena tomentosa</i> . <a href="http://www.pfaf.org/">http://www.pfaf.org/</a>	"The plant prefers light (sandy) and medium (loamy) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils, and can grow in saline soils."
411	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	Perennial shrub to c. 1 m high.
501	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	Terrestrial shrub.
502	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	Chenopodiaceae.
503	2010. WRA Specialist. Personal Communication.	Unknown.
504	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	Perennial shrub.
601	2010. WRA Specialist. Personal Communication.	No evidence.
602	2010. Plants for a Future. <i>Enchylaena tomentosa</i> . <a href="http://www.pfaf.org/">http://www.pfaf.org/</a>	Propagate by seed or cuttings.
603	2010. WRA Specialist. Personal Communication.	Unknown.
604	2010. WRA Specialist. Personal Communication.	Unknown.
605	1981. Blackwell, W.H./Powell, M.J.. A preliminary note on pollination in the Chenopodiaceae. <i>Annals of the Missouri Botanical Garden</i> . 68: 524-526.	According to a review of pollination syndromes of the Chenopodiaceae by Blackwell and Powell (1981), the mode of pollination of chenopods is open to question. However, it is generally assumed that the chenopods are uniformly anemophilous (wind pollinated), which is associated with their weediness. Other researchers have indicated that the family is also entomophilous (insect pollinated) or self-pollinated. [family-based pollination syndrome]
606	2010. Plants for a Future. <i>Enchylaena tomentosa</i> . <a href="http://www.pfaf.org/">http://www.pfaf.org/</a>	Propagate by seed or cuttings.
607	2010. Gardener, M./Marrinan, M.. Tropical savannahs fire response database: Fire responses of <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> . North Australian Land Manager,	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i> first seeds in 2 to 3 years. [subspecies description]
701	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	Fruit dispersed by animals. Fruit 5-8 mm diam., green, yellow, red or puce and drying black. [unlikely, doesn't grow in heavily trafficked areas]
702	2010. Australian Seed. <i>Enchylaena tomentosa</i> ruby salt bush (bush food). Australian Seed, <a href="http://www.australianseed.com/product_info.php?Name=enchylaena-tomentosa-ruby-salt-bush-bush-food">http://www.australianseed.com/product_info.php?Name=enchylaena-tomentosa-ruby-salt-bush-bush-food</a>	Although not widely planted, <i>Enchylaena tomentosa</i> is sold by Australian Seed.
703	2010. WRA Specialist. Personal Communication.	No evidence of being a produce contaminant.

704	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	Fruit dispersed by animals. Fruit 5-8 mm diam., green, yellow, red or puce and drying black. [no adaptation for wind dispersal]
705	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	Fruit dispersed by animals. Fruit 5-8 mm diam., green, yellow, red or puce and drying black. [no adaptation for water dispersal]
705	2010. Plants for a Future. <i>Enchylaena tomentosa</i> . <a href="http://www.pfaf.org/">http://www.pfaf.org/</a>	"Loamy and slightly saline soils by the coast in semi-arid areas. Found in salt marshes and rocky headlands as well as in arid zones inland." [possibly based on its occurrence in salt marshes and coastal areas]
706	1987. Tester, M./Paton, D.C./Reid, N./Lange, R.T.. Seed dispersal by birds and densities of shrubs under trees in arid South Australia. <i>Trans. R. Soc. S. Aust.</i> 111: 1-5.	Fruit dispersed by birds and shrubs germinated underneath trees and in open areas.
706	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	Fruit dispersed by animals. Fruit 5-8 mm diam., green, yellow, red or puce and drying black.
707	1990. Hardin, G.J. (ed.). Flora of New South Wales volume 1. New South Wales University Press, Kensington	Fruit falling when succulent, spread by animals.
708	1987. Tester, M./Paton, D.C./Reid, N./Lange, R.T.. Seed dispersal by birds and densities of shrubs under trees in arid South Australia. <i>Trans. R. Soc. S. Aust.</i> 111: 1-5.	Fruit dispersed by birds and shrubs germinated underneath trees and in open areas.
801	2010. WRA Specialist. Personal Communication.	Unknown.
802	1998. Leishman, M.R./Westoby, M.. Seed size and shape are not related to persistence in soil in Australia in the same way as in Britain. <i>Functional Ecology</i> . 12: 480-485.	Persistent seed bank.
803	2010. WRA Specialist. Personal Communication.	Unknown.
804	2010. Gardener, M./Marrinan, M.. Tropical savannahs fire response database: Fire responses of <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> . North Australian Land Manager,	"Adult fire response: Facultative resprouter (response variable, depending on conditions e.g. moisture and fire intensity). Resprouting type: Basal (lignotuber)."
805	2010. WRA Specialist. Personal Communication.	Unknown.