

Family: *Passifloraceae*

Taxon: *Passiflora vitifolia*

Synonym: *Passiflora punicea* Ruiz & Pav. ex DC.
Passiflora sanguinea Sm.
Passiflora serrulata var. *pubescens* Griseb.

Common Name: Crimson Passion Flower
Grape-Leaved Passion Fruit
Passion Vine

Questionnaire :	current 20090513	Assessor:	Patti Clifford	Designation:	H(HPWRA)
Status:	Assessor Approved	Data Entry Person:	Patti Clifford	WRA Score	11
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	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)	y
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	
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	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)			y=1, n=0	n

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	n
605	Requires specialist pollinators	y=-1, n=0	y
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	y
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	y
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: H(HPWRA)

WRA Score **11**

Supporting Data:

101	2011. WRA Specialist. Personal Communication.	[Is the species highly domesticated? No] No evidence of domestication to reduce weedy characteristics.
102	2011. WRA Specialist. Personal Communication.	[Has the species become naturalized where grown?] NA
103	2011. WRA Specialist. Personal Communication.	[Does the species have weedy races?] NA
201	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"? High] Native range: Costa Rica, Nicaragua, Panama, Venezuela, Colombia, Ecuador, Peru.
202	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Quality of climate data? High] Native range: Costa Rica, Nicaragua, Panama, Venezuela, Colombia, Ecuador, Peru.
203	2011. Dave's Garden. PlantFiles: crimson passion flower, grape-leaved passion fruit, passion vine, passionvine <i>Passiflora vitifolia</i> . Dave's Garden, http://davesgarden.com/guides/pf/go/1195/	[Broad climate suitability (environmental versatility)? No] Hardiness: USDA Zone 7a: to -17.7 °C (0 °F) USDA Zone 7b: to -14.9 °C (5 °F) USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15 °F) USDA Zone 9a: to -6.6 °C (20 °F) 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)
203	2011. The Backyard Gardener. <i>Passiflora vitifolia</i> . WWW.backyardgardener.com, http://www.backyardgardener.com/plantname/pda_f273.html	[Broad climate suitability (environmental versatility)? No] USDA hardiness zones: 10-11.
204	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Native or naturalized in regions with tropical or subtropical climates? Yes] In Hawaii, sparingly naturalized below Lyon Arboretum, Manoa Falls Trail, Oahu.
204	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Native or naturalized in regions with tropical or subtropical climates? Yes] Native range: Costa Rica, Nicaragua, Panama, Venezuela, Colombia, Ecuador, Peru.
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?] Widely cultivated as an ornamental for its colorful flowers.
301	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Naturalized beyond native range? Yes] Naturalized on Oahu, Hawaii.
302	2011. Archbold Biological Station. Nuisance plants (non-native). Archbold Biological Station, http://www.archbold-station.org/station/html/linkpgs/nuisanceplants.html	[Garden/amenity/disturbance weed? Yes] "Native to Central America, this plant is a vigorous spreader. It produces showy, fragrant red flowers all year except during colder periods from about November to February. The vines of this plant have been observed completely overtaking native vegetation and growing > 50 feet into the canopy in a vacant woodlot in Highlands County. The invasive potential of this plant is high in mesic and hydric sites. It is sold as a landscape plant under different names in Highlands County and is often planted as a landscape plant. It propagates easily from cuttings or seeds, and it's spread into natural areas may be facilitated by dumping cut debris into these areas."
303	2007. Randall, R.. Global Compendium of Weeds - <i>Passiflora vitifolia</i> . http://www.hear.org/gcw/scientificnames/sciname.p.htm	[Agricultural/forestry/horticultural weed? No]

304	2007. Randall, R.. Global Compendium of Weeds - <i>Passiflora vitifolia</i> . http://www.hear.org/gcw/scientificnames/sciname.p.htm	[Environmental weed? No] No evidence.
305	1992. Loope, L.L./Nagata, R.J./Medeiros, A.C.. Alien plants in Haleakala National Park in: Alien plant invasions in native ecosystems of Hawaii. Cooperative National Park Resources Studies Unit, University of Hawaii, Honolulu http://www.hear.org/books/api	[Congeneric weed? Yes] <i>Passiflora mollissima</i> , locally known as banana poka, was introduced to the Hawai`ian Islands as an ornamental in the early 1900s. It is uncommon in its native habitat in the Andes, where it is controlled by numerous species of co-evolved insects and where humans are destroying its habitat. Lacking natural herbivores in Hawai`i, it has become established in more than 190 mi ² (500 km ²) of native forest on the islands of Hawai`i and Kauai. In some areas, it has become so dense that the vines drape from tree to tree, smothering large tracts of native forest. It occupies elevations of 2,000-5,000 ft (610-1,525 m) and thrives where mean annual precipitation is between 20 and 200 in. (500-5000 mm). Feral pigs are its primary dispersal agent, but alien birds spread it as well."
401	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai`i Press and Bishop Museum Press, Honolulu, HI.	[Produces spines, thorns or burrs? No] No spines, thorns, or burrs.
402	2011. WRA Specialist. Personal Communication.	[Allelopathic?] Unknown.
403	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai`i Press and Bishop Museum Press, Honolulu, HI.	[Parasitic? No] Passifloraceae.
404	2011. WRA Specialist. Personal Communication.	[Unpalatable to grazing animals?] Unknown.
405	2011. National Center for Biotechnology Information. PubMed. U.S. National Library of Medicine, Bethesda, Maryland http://www.ncbi.nlm.nih.gov/	[Toxic to animals? No] No evidence of toxicity.
405	2011. 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 of toxicity.
406	2011. WRA Specialist. Personal Communication.	[Host for recognized pests and pathogens?] Unknown.
407	2011. National Center for Biotechnology Information. PubMed. U.S. National Library of Medicine, Bethesda, Maryland http://www.ncbi.nlm.nih.gov/	[Causes allergies or is otherwise toxic to humans? No] No evidence.
407	2011. Specialized Information Services, U.S. National Library of Medicine. TOXNET toxicology data network [online database]. National Institutes of Health, http://toxnet.nlm.nih.gov/	[Causes allergies or is otherwise toxic to humans? No] No evidence.
408	2011. WRA Specialist. Personal Communication.	[Creates a fire hazard in natural ecosystems?] Unknown. [other <i>Passiflora</i> species produce abundant leaf litter]
409	1983. Smiley, J.T.. <i>Passiflora vitifolia</i> In: Costa Rican Natural History. University of Chicago Press, Chicago	[Is a shade tolerant plant at some stage of its life cycle? Yes] "After germination, <i>P. vitifolia</i> seeds grow into a compact plant with internodal distances of 1 cm or less. Under low light conditions in the forest understory this type of growth persists for many months or perhaps years."
409	2005. Plowes, R.M.. Tropical forest landscape dynamics: population consequences for Neotropical lianas, genus <i>Passiflora</i> . University of Texas at Austin, Austin	[Is a shade tolerant plant at some stage of its life cycle? Yes] In this study on tropical forest landscape dynamics, Plowes demonstrated that <i>Passiflora vitifolia</i> required 3 hours of sunlight to germinate. However, the study did not differentiate between light and temperature for germination requirement. Tree gaps closed after 6 years and <i>P. vitifolia</i> plants were able to become dormant and spread through stolons.
409	2011. Dave's Garden. PlantFiles: crimson passion flower, grape-leaved passion fruit, passion vine, passionvine <i>Passiflora vitifolia</i> . Dave's Garden, http://davesgarden.com/guides/pf/go/1195/	[Is a shade tolerant plant at some stage of its life cycle?] Full sun.

410	2011. Dave's Garden. PlantFiles: crimson passion flower, grape-leaved passion fruit, passion vine, passionvine <i>Passiflora vitifolia</i> . Dave's Garden, http://davesgarden.com/guides/pf/go/1195/	[Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)? No] Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)
410	2011. The Backyard Gardener. <i>Passiflora vitifolia</i> . WWW.backyardgardener.com , http://www.backyardgardener.com/plantname/pda_f273.html	[Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)? No] Soil range: Some sand to clay loam. pH: 5.5-7.5
411	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Climbing or smothering growth habit? Yes] Liana.
412	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Forms dense thickets? No] Liana.
501	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Aquatic? No] Liana; terrestrial.
502	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Grass? No] Passifloraceae.
503	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Nitrogen fixing woody plant? No] Passifloraceae.
504	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] Liana.
601	1982. Snow, A.A.. Pollination intensity and potential seed set in <i>Passiflora vitifolia</i> . <i>Oecologia</i> . 55: 231-237.	[Evidence of substantial reproductive failure in native habitat? No] <i>Passiflora vitifolia</i> is a common vine in light gaps and secondary forests of Central America.
601	2011. WRA Specialist. Personal Communication.	[Evidence of substantial reproductive failure in native habitat? No] No evidence.
602	2005. Plowes, R.M.. Tropical forest landscape dynamics: population consequences for Neotropical lianas, genus <i>Passiflora</i> . University of Texas at Austin, Austin	[Produces viable seed? Yes] "Colonization by seed dispersal (80%) was constrained by patch quality and isolation, while clonal growth from dormant plants (20%) was limited to an infrequent appearance of adjacent patches."
602	2011. Dave's Garden. PlantFiles: crimson passion flower, grape-leaved passion fruit, passion vine, passionvine <i>Passiflora vitifolia</i> . Dave's Garden, http://davesgarden.com/guides/pf/go/1195/	[Produces viable seed? Yes] Propagate from seed.
603	2011. WRA Specialist. Personal Communication.	[Hybridizes naturally?] Unknown.
604	1982. Snow, A.A.. Pollination intensity and potential seed set in <i>Passiflora vitifolia</i> . <i>Oecologia</i> . 55: 231-237.	[Self-compatible or apomictic? No] Self-incompatible.
605	1982. Snow, A.A.. Pollination intensity and potential seed set in <i>Passiflora vitifolia</i> . <i>Oecologia</i> . 55: 231-237.	[Requires specialist pollinators? Yes] "The large one-day flowers are pollinated primarily by longtailed hermit hummingbirds, <i>Phaethornis superciliosus</i> . Although erect filaments at the entrance of the corolla bar direct access to insects, stingless bees (<i>Trigona fulviventris</i> and <i>T. silvestriana</i>) and ants (<i>Crematogaster</i> spp.) often chew holes through the base of the corolla to steal nectar. The bees also collect pollen, and occasionally cross the stigmatic branches while moving between anthers."
605	1983. Smiley, J.T.. <i>Passiflora vitifolia</i> In: Costa Rican Natural History. University of Chicago Press, Chicago	[Requires specialist pollinators? Yes] "Primarily pollinated by hummingbirds."

606	2005. Plowes, R.M.. Tropical forest landscape dynamics: population consequences for Neotropical lianas, genus <i>Passiflora</i> . University of Texas at Austin, Austin	[Reproduction by vegetative fragmentation? Yes] <i>Passiflora vitifolia</i> is able to spread by stolons.
607	2011. WRA Specialist. Personal Communication.	[Minimum generative time (years)?] Unknown.
701	2011. Archbold Biological Station. Nuisance plants (non-native). Archbold Biological Station, http://www.archbold-station.org/station/html/linkpgs/nuisanceplants.html	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? Yes] "The invasive potential of this plant is high in mesic and hydric sites. It is sold as a landscape plant under different names in Highlands County and is often planted as a landscape plant. It propagates easily from cuttings or seeds, and it's spread into natural areas may be facilitated by dumping cut debris into these areas."
702	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Propagules dispersed intentionally by people? Yes] Frequently cultivated for its red flowers.
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] Widely cultivated for its flowers.
703	2011. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence of produce contamination.
704	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Propagules adapted to wind dispersal? No] Fruit a berry, 4-7 cm long, 3-4 cm in diameter.
705	2011. WRA Specialist. Personal Communication.	[Propagules water dispersed?] Unknown.
706	2005. Plowes, R.M.. Tropical forest landscape dynamics: population consequences for Neotropical lianas, genus <i>Passiflora</i> . University of Texas at Austin, Austin	[Propagules bird dispersed? Yes] " <i>P. vitifolia</i> fruits are usually within 1.5m of ground level and most likely dispersed by terrestrial mammals such as coati-mundi (<i>Nasua nasua</i> Procyonidae) or birds (currasow <i>Crax rubra</i> , guan <i>Penelope purpurascens</i>) that forage in light gaps."
707	1999. Wagner, W.L./Herbst, D.R./Sohmer, S.H.. Manual of the flowering plants of Hawaii. Revised edition.. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Propagules dispersed by other animals (externally)? No] Fruit a berry. [no means of external attachment]
708	1982. Snow, A.A.. Pollination intensity and potential seed set in <i>Passiflora vitifolia</i> . <i>Oecologia</i> . 55: 231-237.	[Propagules survive passage through the gut? Yes] The seeds of ripe fruits are encased in sweet, juicy arils, and are probably dispersed by terrestrial or arboreal mammals.
708	1983. Smiley, J.T.. <i>Passiflora vitifolia</i> In: Costa Rican Natural History. University of Chicago Press, Chicago	[Propagules survive passage through the gut? Yes] "It is not uncommon to find fruits that have been chewed open, apparently by mammals. This, plus the understory habitat and fruit toughness, indicates that seed dispersal may be accomplished primarily by arboreal or terrestrial animals."
801	1982. Snow, A.A.. Pollination intensity and potential seed set in <i>Passiflora vitifolia</i> . <i>Oecologia</i> . 55: 231-237.	[Prolific seed production (>1000/m ²)? Yes] Mature plants have a woody trunk, 2-3 cm in diameter, bearing numerous vegetative and reproductive branches. The mature fruit is green with white spots, 5-10 cm long, egg-shaped, and contains 35-300 seeds enclosed in a tough, leathery pericarp. Some branches consistently produced fruits, often as many as 5-10 per branch, while others did not.
802	2005. Plowes, R.M.. Tropical forest landscape dynamics: population consequences for Neotropical lianas, genus <i>Passiflora</i> . University of Texas at Austin, Austin	[Evidence that a persistent propagule bank is formed (>1 yr)? No] "Seedbank survivorship of <i>P. vitifolia</i> appears to be extremely low, since none of the 90 seeds buried in leaf litter were recovered or germinated after 6 months. Similarly, no <i>Passiflora</i> seeds were found in topsoil and leaf litter collected in 20 paired sites inside and outside treefall gaps."
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides?] Unknown.
804	2011. Florida Gardener. Plant of the month: <i>Passiflora vitifolia</i> . www.floridagardener.com , http://www.floridagardener.com/pom/passifloravitifolia.htm	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] Vigorous vine, may require heavy pruning to keep under control.

804	2011. The Backyard Gardener. <i>Passiflora vitifolia</i> . WWW.backyardgardener.com , http://www.backyardgardener.com/plantname/pda_f273.html	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] Prune inner growth to keep plant healthy and open.
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents?)] Unknown.
