

Taxon: <i>Rosa laevigata</i> Michx.	Family: Rosaceae
Common Name(s): Cherokee rose jin ying zi	Synonym(s): <i>Rosa cherokeensis</i> Donn ex Small

Assessor: Chuck Chimera	Status: Assessor Approved	End Date: 4 Oct 2019
WRA Score: 18.0	Designation: H(HPWRA)	Rating: High Risk

Keywords: Prickly Climber, Naturalized, Dense Thickets, Bird-Dispersed, Seed Bank

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y=-3, n=0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
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)	y
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	y
304	Environmental weed		
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	y
401	Produces spines, thorns or burrs	y=1, n=0	y
402	Allelopathic		
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		
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		

Qsn #	Question	Answer Option	Answer
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	y
412	Forms dense thickets	y=1, n=0	y
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	y
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	n
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	3
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	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		
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/m ²)		
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	y
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)		

Supporting Data:

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	[No evidence of domestication] "Thickets, scrub, open montane areas, open fields, farmland; 200 1600 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, S Shaanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Vietnam; cultivated elsewhere]. Two forms may be recognized: f. <i>laevigata</i> , which has flowers single, 57 cm in diam., and f. <i>sempierna</i> T. T. Yu & T. C. Ku (Bull. Bot. Res., Harbin 1(4): 17. 1981), which has flowers semidouble, 510 cm in diam. The root bark contains tannin, and is used for tanning. Sugar is extracted from the fruit, which is also used to ferment wine. The roots, leaves, and fruit are all used medicinally."

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	NA

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2019). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 30 Sep 2019]	"Native Asia-Temperate CHINA: China [Anhui Sheng, Zhejiang Sheng, Fujian Sheng, Hunan Sheng, Hubei Sheng, Jiangxi Sheng, Jiangsu Sheng, Guangdong Sheng, Guizhou Sheng, Shaanxi Sheng, Sichuan Sheng, Yunnan Sheng, Guangxi Zhuangzu Zizhiqu] EASTERN ASIA: Taiwan Asia-Tropical INDO-CHINA: Vietnam (n.)"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2019). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 30 Sep 2019]	

Qsn #	Question	Answer
203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Iremonger, S. (2002). A Guide to Plants in the Blue Mountains of Jamaica. University of the West Indies Press, Kingston, Jamaica	"Roadside banks and thickets along pasture margins, 300 to 1,440 m (1,000 to 4,700 ft)." [Elevation range exceeds 1000 m; demonstrates environmental versatility]
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Thickets, scrub, open montane areas, open fields, farmland; 200-1600 m." [Elevation range exceeds 1000 m; demonstrates environmental versatility]
	Missouri Botanical Garden. (2019). <i>Rosa laevigata</i> . http://www.missouribotanicalgarden.org . [Accessed 30 Sep 2019]	"Winter hardy to USDA Zones 7-9 where it is best grown in organically rich, medium moisture, well drained loams in full sun. Tolerates light shade, but best flowering and disease resistance generally occur in full sun."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. Bishop Museum Occasional Papers 113: 55–63	"Cherokee rose is a rampant climber with canes many yards in length, bearing stout, hooked prickles and leaves with 3 leaflets and sharp-serrate margins (Staples & Herbst 2005). Previously recorded as naturalized on Lānaʻi (Nagata 1995: 12), this population was one of several naturalizing in the Glenwood/Volcano area, climbing over uluhe and ʻōhiʻa trees. Material examined. HAWAII: Puna distr. fern forest subdivision, 2154739N, 275399E. Thick vine, armed with recurved spines, bearing fragrant white flowers with bristly hypanthium. Spreading ca 20 m off of Captain's Dr over uluhe and ʻōhiʻa trees, 10 Dec 2008, J. Parker & R. Parsons BIED58"
	USDA, Agricultural Research Service, National Plant Germplasm System. (2019). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 30 Sep 2019]	"Native Asia-Temperate CHINA: China [Anhui Sheng, Zhejiang Sheng, Fujian Sheng, Hunan Sheng, Hubei Sheng, Jiangxi Sheng, Jiangsu Sheng, Guangdong Sheng, Guizhou Sheng, Shaanxi Sheng, Sichuan Sheng, Yunnan Sheng, Guangxi Zhuangzu Zizhiqu] EASTERN ASIA: Taiwan Asia-Tropical INDO-CHINA: Vietnam (n.)"

Qsn #	Question	Answer
205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"cultivated elsewhere"
	Flora of North America. (2019). <i>Rosa laevigata</i> . http://www.efloras.org . [Accessed 30 Sep 2019]	"introduced; Ala., Fla., Ga., La., Miss., N.C., S.C., Tex.; Asia; introduced also in West Indies, s Africa, Atlantic Islands (Madeira), Pacific Islands (Hawaii)."

301	Naturalized beyond native range	y
	Source(s)	Notes
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"It is a beautiful but aggressive plant that has become naturalized on the Big Island."
	Nagata, Kenneth M. 1995. New Hawaiian plant records IV. Bishop Museum Occasional Papers. 42: 10-13	"LANAI: In Hawaii, the Cherokee rose is known to occur on 3 islands. On Hawaii island, cultivated plants were known to occur in residential areas in Hawaii Volcanoes National Park as early as 1943, Fagerlund & Mitchell 284, 27 Jan 1943 (BISH). More recently, it has been collected along the roadside in Kokee State Park on Kauai, Lorence 5255, 21 May 1987 (BISH). These plants were considered remnants of an early planting and not naturalized. The earliest collection was made in 1938 on Lanai near the summit cabin at Lanaihale, doubtless from cultivated plants, St. John & Hosaka 18854, 15 Apr 1938 (BISH). This species is now locally common on Lanaihale especially on the west end at about 2800 ft elevation, Nagata 2630, 20 Mar 1983 (BISH, HLA). The spread of this species in the summit area of Lanai should be closely monitored."
	Queensland Government. (2019). Weeds of Australia. <i>Rosa laevigata</i> . http://keyserver.lucidcentral.org . [Accessed 30 Sep 2019]	"Occasionally naturalised in eastern Australia (i.e. in south-eastern Queensland and the coastal districts of northern New South Wales) and in the coastal districts of south-western Western Australia. Also naturalised overseas in south-eastern USA (i.e. Texas, Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina and Virginia) and Hawaii."
	Iremonger, S. (2002). A Guide to Plants in the Blue Mountains of Jamaica. University of the West Indies Press, Kingston, Jamaica	"Roadside banks and thickets along pasture margins, 300 to 1,440 m (1,000 to 4,700 ft). Introduced from China and Japan, naturalized."
	Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. Bishop Museum Occasional Papers 113: 55-63	" <i>Rosa laevigata</i> Michx. New island record Cherokee rose is a rampant climber with canes many yards in length, bearing stout, hooked prickles and leaves with 3 leaflets and sharp-serrate margins (Staples & Herbst 2005). Previously recorded as naturalized on Lānaʻi (Nagata 1995: 12), this population was one of several naturalizing in the Glenwood/Volcano area, climbing over uluhe and ʻōhiʻa trees. Material examined. HAWAII: Puna distr. fern forest subdivision, 2154739N, 275399E. Thick vine, armed with recurved spines, bearing fragrant white flowers with bristly hypanthium. Spreading ca 20 m off of Captain's Dr over uluhe and ʻōhiʻa trees, 10 Dec 2008, J. Parker & R. Parsons BIED58."

Qsn #	Question	Answer
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Weed of: Pastures References: United States of America-AE- 654, United States of America-N-101, United States of America-W-179, United States of America-W-218, Australia-C-401, Australia-N-945, Australia-N-310, Australia-EN-7, United States of America- N-301, United States of America-N-839, Australia-W-853, India-N-976, Australia- N-354, Portugal-N-1006, Australia-N- 1049, Global-N-1059, Europe-N-819, United States of America-Q-1197, United States of America-E-1244, United States of America-N-1292, Georgia-A-1313, India- UN-1345, Global-W-1349, Global-W- 1376, Global-I-1404, Australia-E-1456, United States of America-A-87, Global- CD-1611, United States of America-E- 1736, Sao Tome and Principe-N-1805, Australia-N-1902, United States of America-N-2092, Australia-W-1977, India- W-1977."

302	Garden/amenity/disturbance weed	y
	Source(s)	Notes
	Amrine, Jr., J. W. (2002). Multiflora rose. Pp. 265-292 in Van Driesche, R. et al. Biological Control of Invasive Plants in the Eastern United States. USDA Forest Service	"Rosa laevigata Michx. Cherokee rose. Nonindigenous rose from China; naturalized in southern United States, Zone 7; North Carolina south to Florida, west to Texas. State flower of Georgia. It has weedy propensities."
	Motooka, P., Castro, L., Nelson, D., Nagai, G. & Ching,L. 2003. Weeds of Hawaii's Pastures and Natural Areas: An Identification and Management Guide. CTAHR, UH Manoa, Honolulu, HI	[Potential environmental weed. Classified conservatively as a general weed until detrimental environmental impacts have been more thoroughly documented] "Environmental impact: Climbs over other vegetation. Thorny canes impede passage."

303	Agricultural/forestry/horticultural weed	y
	Source(s)	Notes
	Amrine, Jr., J. W. (2002). Multiflora rose. Pp. 265-292 in Van Driesche, R. et al. Biological Control of Invasive Plants in the Eastern United States. USDA Forest Service	"The Cherokee rose (<i>Rosa laevigata Michaux</i>), another introduced plant from China (however, the State Flower of Georgia), became a severe weed in the Black Belt region (several counties characterized by rich, dark soil) in central Alabama. Land covered by the weed in nine counties could have produced 1.5 million pounds of beef annually, if in productive pasture (Scott, 1965)."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Weed of: Pastures"

304	Environmental weed	
	Source(s)	Notes
	Queensland Government. (2019). Weeds of Australia. <i>Rosa laevigata</i> . http://keyserver.lucidcentral.org . [Accessed 30 Sep 2019]	"Cherokee rose (<i>Rosa laevigata</i>) is regarded as a minor environmental weed or "sleeper weed" in Australia. This species has occasionally escaped from cultivation as a garden ornamental. It is mainly found as a rampant scrambler along creeklines in the Nannup region in south-western Western Australia."
	Motooka, P., Castro, L., Nelson, D., Nagai, G. & Ching,L. 2003. Weeds of Hawaii's Pastures and Natural Areas: An Identification and Management Guide. CTAHR, UH Manoa, Honolulu, HI	"Distribution: Occurs along Koke'e Road in Koke'e State Park, Kaua'i. Environmental impact: Climbs over other vegetation. Thorny canes impede passage."

Qsn #	Question	Answer
	Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. Bishop Museum Occasional Papers 113: 55–63	[May impact native vegetation] "Previously recorded as naturalized on Lāna'i (Nagata 1995: 12), this population was one of several naturalizing in the Glenwood/Volcano area, climbing over uluhe and 'ōhi'a trees."

305	Congeneric weed	Y
	Source(s)	Notes
	Amrine, Jr., J. W. (2002). Multiflora rose. Pp. 265-292 in Van Driesche, R. et al. Biological Control of Invasive Plants in the Eastern United States. USDA Forest Service	"Multiflora rose has invaded a large number of habitats, from hillside pastures, fence rows, right-of-ways, and roadsides to forest edges and the margins of swamps and marshes (Scott, 1965). A single, vigorous, mature plant can produce up to half a million achenes (seeds) annually. Where plants have become well established, a huge seed bank develops that can continue to produce seedlings for at least twenty years after removal of mature plants. Severe multiflora rose infestations have lowered land values for agriculture, forestry, and recreation (Underwood et al., 1996). Since the 1960s, multiflora rose has become one of the most noxious weeds in the eastern United States."
	Weber, E. 2017. Invasive Plant Species of the World, 2nd Edition: A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	"Rosa canina ... Where invasive the shrub forms dense thickets within a short period of time, crowding out other plant species and impeding wildlife movement (Muyt, 2001). Briar rose is one of a few invasive plant species found in Australia's alpine and subalpine vegetation (State of Queensland 2014). In New Zealand the plant invades montane short-tussock grassland (Sage et al. 2009). The shrub is increasingly found in Patagonia and Argentina (Zimmermann et al., 2010). Here, fires promote the spread of the weed by providing competition-free spaces (Cavallero and Raffaele, 2010). " ... "Rosa rugosa ... Where invasive the shrub forms dense thickets within a short period of time, crowding out other plant species and impeding wildlife movement (Muyt, 2001). Briar rose is one of a few invasive plant species found in Australia's alpine and subalpine vegetation (State of Queensland 2014). In New Zealand the plant invades montane short-tussock grassland (Sage et al. 2009). The shrub is increasingly found in Patagonia and Argentina (Zimmermann et al., 2010). Here, fires promote the spread of the weed by providing competition-free spaces (Cavallero and Raffaele, 2010). "

401	Produces spines, thorns or burrs	Y
	Source(s)	Notes
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"A rampant climber with canes many yards in length, bearing stout, hooked prickles..."

Qsn #	Question	Answer
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Shrubs evergreen, climbing, to 5 m. Branchlets purple-brown, terete, robust; prickles scattered, curved, to 4 mm, flat, gradually tapering to a broad base; bristles glandular, dense on young stems, to 4 mm. Leaves including petiole 510 cm; stipules caducous, free or with base adnate to petiole, lanceolate, glandular serrate, apex acuminate; rachis and petiole shortly prickly and glandular bristly; leaflets 3, rarely 4, elliptic-ovate, obovate, or lanceolate-ovate, 26 × 1.23.5 cm, leathery, sometimes abaxially minutely prickly and glandular bristly along midvein when young, glabrescent, adaxially glabrous, base broadly cuneate, margin acutely serrate, apex acute or rounded-obtuse."

402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. (2019). Personal Communication	Unknown. No evidence found

403	Parasitic	n
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Shrubs evergreen, climbing, to 5 m." [Rosaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Grazing with goats can provide control."
	NC State Extension. (2019). <i>Rosa laevigata</i> . https://plants.ces.ncsu.edu/plants/rosa-laevigata/ . [Accessed 3 Oct 2019]	"This plant is resistant to damage by deer." [Prickles likely deter browsing]
	Soderstrom, N. (2009). Deer-Resistant Landscaping: Proven Advice and Strategies for Outwitting Deer and 20 Other Pesky Mammals. Rodale, New York	<i>Rosa laevigata</i> listed among deer-resistant landscaping plants

Qsn #	Question	Answer
405	Toxic to animals	n
	Source(s)	Notes
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Toxicity: Not recoded as toxic."
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	NIH U.S. National Library of Medicine. (2019). TOXNET Toxicology Data Network. https://toxnet.nlm.nih.gov/ . [Accessed 3 Oct 2019]	No evidence

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	NC State Extension. (2019). <i>Rosa laevigata</i> . https://plants.ces.ncsu.edu/plants/rosa-laevigata/ . [Accessed 3 Oct 2019]	"Insects, Diseases, and Other Plant Problems: This species rose is generally not susceptible to the disease and insect pests that attack many of the hybrid roses. Insect pests include aphids, beetles, borers, scale, spider mites, thrips, rose midges and leafhoppers. Potential disease problems include black spot, powdery mildew, and rust. To prevent foliar diseases avoid overhead watering and promote circulation promotes. Remove and destroy diseased leaves from plants, and from the ground around the plants both during the growing season and as part of a thorough cleanup during the dormant season. Will spread aggressively in certain parts of the southeastern U. S."
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Pests include Aphids, Helicoverpa, Spider Mite and Thrips. Diseases include Black Spot, Botrytis Blight, Dieback, Mosaic Virus and Powdery Mildew."
	Missouri Botanical Garden. (2019). <i>Rosa laevigata</i> . http://www.missouribotanicalgarden.org . [Accessed 3 Oct 2019]	"This species rose is generally not susceptible to the disease and insect pests that attack many of the hybrid roses. For roses in general, potential disease problems include black spot, powdery mildew and rust. Potential insect pests include aphids, beetles, borers, scale, thrips, rose midges and leafhoppers. Spider mites may appear."

Qsn #	Question	Answer
407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Toxicity: Not recoded as toxic."
	Quattrocchi, U. 2012. CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	[No evidence. Used medicinally] "The roots, leaves, flowers, and fruit all used medicinally; the fruit for diarrhea, dysentery, cold and cough, night sweats, enuresis, seminal emissions, constipation, leucorrhea."
	NIH U.S. National Library of Medicine. (2019). TOXNET Toxicology Data Network. https://toxnet.nlm.nih.gov/ . [Accessed 3 Oct 2019]	No evidence

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. Bishop Museum Occasional Papers 113: 55–63	[Unknown, but generally occurs in wetter areas in the Hawaiian Islands] " <i>Rosa laevigata</i> Michx. New island record Cherokee rose is a rampant climber with canes many yards in length, bearing stout, hooked prickles and leaves with 3 leaflets and sharp-serrate margins (Staples & Herbst 2005). Previously recorded as naturalized on Lānaʻi (Nagata 1995: 12), this population was one of several naturalizing in the Glenwood/Volcano area, climbing over uluhe and 'ōhi'a trees. Material examined. HAWAII: Puna distr. fern forest subdivision, 2154739N, 275399E. Thick vine, armed with recurved spines, bearing fragrant white flowers with bristly hypanthium. Spreading ca 20 m off of Captain's Dr over uluhe and 'ōhi'a trees, 10 Dec 2008, J. Parker & R. Parsons BIED58."

409	Is a shade tolerant plant at some stage of its life cycle	
	Source(s)	Notes
	NC State Extension. (2019). <i>Rosa laevigata</i> . https://plants.ces.ncsu.edu/plants/rosa-laevigata/ . [Accessed 3 Oct 2019]	"Site: Tolerates partial shade and poor soil but best flowering and disease resistance in full sun"
	Missouri Botanical Garden. (2019). <i>Rosa laevigata</i> . http://www.missouribotanicalgarden.org . [Accessed 3 Oct 2019]	"Tolerates light shade, but best flowering and disease resistance generally occur in full sun."

Qsn #	Question	Answer
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y
	Source(s)	Notes
	Gartin, P.J. 2007. Some Like It Hot: Flowers That Thrive in Hot Humid Weather. Gibbs Smith, Layton, Utah	"Cherokee Roses are not finicky about soil conditions."
	NC State Extension. (2019). <i>Rosa laevigata</i> . https://plants.ces.ncsu.edu/plants/rosa-laevigata/ . [Accessed 3 Oct 2019]	"Exposure: Sun to partial shade; range of soil types"
	Plants for a Future. (2019). <i>Rosa laevigata</i> . https://pfaf.org/user/Plant.aspx?LatinName=Rosa+laevigata . [Accessed 3 Oct 2019]	"Succeeds in most soils[11], preferring a circumneutral soil and a sunny position[200]. Grows well in heavy clay soils. Dislikes water-logged soils[200]."

411	Climbing or smothering growth habit	y
	Source(s)	Notes
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"A rampant climber with canes many yards in length, bearing stout, hooked prickles..."
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Shrubs evergreen, climbing, to 5 m."

412	Forms dense thickets	y
	Source(s)	Notes
	Flora of North America. (2019). <i>Rosa laevigata</i> . http://www.efloras.org . [Accessed 30 Sep 2019]	"Shrubs form dense, rhizomatous thickets with stems capable of climbing to 100 dm."
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Thickets, scrub, open montane areas, open fields, farmland; 200-1600 m."
	Motooka, P., Castro, L., Nelson, D., Nagai, G. & Ching, L. 2003. Weeds of Hawaii's Pastures and Natural Areas: An Identification and Management Guide. CTAHR, UH Manoa, Honolulu, HI	"Thorny canes impede passage."

501	Aquatic	n
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	[Terrestrial] "Shrubs evergreen, climbing, to 5 m" ... "Thickets, scrub, open montane areas, open fields, farmland; 200-1600 m."

502	Grass	n
	Source(s)	Notes

Qsn #	Question	Answer
	USDA, Agricultural Research Service, National Plant Germplasm System. (2019). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 30 Sep 2019]	Family: Rosaceae Subfamily: Rosoideae Tribe: Roseae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	de Bruijn, F. J. (ed.). (2015). Biological Nitrogen Fixation. John Wiley & Sons, Hoboken, NJ	[Rosa not a N-fixing genus in the Rosaceae] "The ability to fix nitrogen is far from universally present in these families. For instance, of 122 genera in the Rosaceae, only 4 genera are capable of fixing nitrogen." ... "On the basis of 16S rRNA sequencing, four clusters of Frankia strains have been recognized: ... those present in nodules of members of the Rosaceae (Cercocarpus, Chamaebatia, Dryas, Purshia),"
	USDA, Agricultural Research Service, National Plant Germplasm System. (2019). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 30 Sep 2019]	Family: Rosaceae Subfamily: Rosoideae Tribe: Roseae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Shrubs evergreen, climbing, to 5 m. Branchlets purple-brown, terete, robust; prickles scattered, curved, to 4 mm, flat, gradually tapering to a broad base; bristles glandular, dense on young stems, to 4 mm."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	[No evidence] "Thickets, scrub, open montane areas, open fields, farmland; 200-1600 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, S Shaanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Vietnam; cultivated elsewhere]."

Qsn #	Question	Answer
602	Produces viable seed	y
	Source(s)	Notes
	Flora of North America. (2019). <i>Rosa laevigata</i> . http://www.efloras.org . [Accessed 30 Sep 2019]	"Achenes 20–30, light tan, 6–8 × 3–4 mm."
	Plants for a Future. (2019). <i>Rosa laevigata</i> . https://pfaf.org/user/Plant.aspx?LatinName=Rosa+laevigata . [Accessed 30 Sep 2019]	"Propagation - Seed. Rose seed often takes two years to germinate."
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Reproduction: By seed."

Qsn #	Question	Answer
603	Hybridizes naturally	y
	Source(s)	Notes
	Plants for a Future. (2019). <i>Rosa laevigata</i> . https://pfaf.org/user/Plant.aspx?LatinName=Rosa+laevigata . [Accessed 3 Oct 2019]	"Hybridizes freely with other members of this genus"
	Ma, Y., Crane, C. F., & Byrne, D. H. (1996). Meiotic behavior of hybrids involving <i>Rosa laevigata</i> . <i>Cytologia</i> , 61 (4), 457-463	"This report documents meiotic behavior of diploid and induced tetraploid <i>Rosa laevigata</i> and two amphidiploids derived from hybrids of diploid <i>R. laevigata</i> with <i>R. roxburghii</i> and <i>R. banksiae</i> ."

Qsn #	Question	Answer
604	Self-compatible or apomictic	
	Source(s)	Notes
	Folta, K. M., & Gardiner, S. E. (Eds.). (2009). <i>Genetics and genomics of Rosaceae</i> . Springer, New York	"Many Rosaceae species exhibit gametophytic self-incompatibility (GSI) that has been naturally selected to promote out-breeding."
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. <i>Flora of China</i> . Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	[Unknown] "Flower solitary, axillary, 5.10 cm in diam.; pedicel 1.82.5(3) cm, densely glandular bristly; bracts absent. Hypanthium ovoid, densely glandular bristly. Sepals 5, persistent, slightly shorter than petals, ovate-lanceolate, leaflike, abaxially glabrous, adaxially densely pubescent, margin entire, often glandular bristly. Petals 5, semidouble, or double, white, broadly obovate, base broadly cuneate, apex emarginate. Styles free, much shorter than stamens, pubescent."

Qsn #	Question	Answer
605	Requires specialist pollinators	n
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Flower solitary, axillary, 5.1 cm in diam.; pedicel 1.82.5(3) cm, densely glandular bristly; bracts absent. Hypanthium ovoid, densely glandular bristly. Sepals 5, persistent, slightly shorter than petals, ovate-lanceolate, leaflike, abaxially glabrous, adaxially densely pubescent, margin entire, often glandular bristly. Petals 5, semidouble, or double, white, broadly obovate, base broadly cuneate, apex emarginate. Styles free, much shorter than stamens, pubescent."
	Plants for a Future. (2019). <i>Rosa laevigata</i> . https://pfaf.org/user/Plant.aspx?LatinName=Rosa+laevigata . [Accessed 3 Oct 2019]	"The species is hermaphrodite (has both male and female organs) and is pollinated by Bees."
606	Reproduction by vegetative fragmentation	y
	Source(s)	Notes
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Stems will regrow from the base when cut (coppice) and form roots where they touch the ground (layer). Root will form suckers naturally and when damaged."
607	Minimum generative time (years)	3
	Source(s)	Notes
	Western Australian Herbarium (1998–2019). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 3 Oct 2019]	"Time to first flowering. 3 years."
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	n
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Hip purple-brown, pyriform or obovoid, rarely subglobose, 0.81.5 cm in diam., densely glandular bristly, with persistent, erect sepals." [No means of external attachment]
702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Flora of North America. (2019). <i>Rosa laevigata</i> . http://www.efloras.org . [Accessed 3 Oct 2019]	"introduced; Ala., Fla., Ga., La., Miss., N.C., S.C., Tex.; Asia; introduced also in West Indies, s Africa, Atlantic Islands (Madeira), Pacific Islands (Hawaii)."
	Staples, G.W. & Herbst, D.R. 2005. A Tropical Garden Flora - Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press, Honolulu, HI	"It is a beautiful but aggressive plant that has become naturalized on the Big Island."
703	Propagules likely to disperse as a produce contaminant	n

Qsn #	Question	Answer
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	"Dispersed by: Humans, Escapee"
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Seed is spread by birds and mammals."

704	Propagules adapted to wind dispersal	n
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Hip purple-brown, pyriform or obovoid, rarely subglobose, 0.81.5 cm in diam., densely glandular bristly, with persistent, erect sepals."
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Seed is spread by birds and mammals."

705	Propagules water dispersed	
	Source(s)	Notes
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Seed is spread by birds and mammals."
	Western Australian Herbarium (1998–2019). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 3 Oct 2019]	"Seed. Dispersal. Birds, mammals." ... "Spreading along creeklines around the Nannup region." [Distribution along creeklines suggests water may result in secondary dispersal]

706	Propagules bird dispersed	y
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Hip purple-brown, pyriform or obovoid, rarely subglobose, 0.81.5 cm in diam., densely glandular bristly, with persistent, erect sepals."
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Seed is spread by birds and mammals."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Seed is spread by birds and mammals." [Dispersed internally]

708	Propagules survive passage through the gut	y
-----	--	---

Qsn #	Question	Answer
	Source(s)	Notes
	Western Australian Herbarium (1998–2019). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 3 Oct 2019]	"Rosa laevigata ... Seed. Dispersal. Birds, mammals."
	HerbiGuide. (2019). Cherokee Rose - Rosa laevigata. http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Seed is spread by birds and mammals." [Presumably Yes]

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. 2003. Flora of China. Vol. 9 (Pittosporaceae through Connaraceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Hip purple-brown, pyriform or obovoid, rarely subglobose, 0.81.5 cm in diam., densely glandular bristly, with persistent, erect sepals."
	Western Australian Herbarium (1998–2019). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 3 Oct 2019]	"Reproduction. Seed." ... "Notes. Deciduous, can form dense, thorny thickets." [Seed densities unknown]

802	Evidence that a persistent propagule bank is formed (>1 yr)	y
	Source(s)	Notes
	Western Australian Herbarium (1998–2019). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 3 Oct 2019]	" Seedbank persistence. Soil, medium, 1-5 years. "

803	Well controlled by herbicides	y
	Source(s)	Notes

Qsn #	Question	Answer
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Control with herbicides is usually the most cost effective. Metsulfuron and triclopyr plus picloram have provided the best results. Glyphosate can be used in home gardens or other sensitive areas. Dead canes may be burnt or slashed in the following season to allow access and rehabilitation of the site." ... "Triclopyr (Garlon®) or triclopyr + picloram (Grazon®) generally provides good control any time the plant is actively growing with good leaf area. Basal bark spraying the lower 50 cm of the stems with triclopyr or Access® in diesel at flowering to early fruiting provides good control. In Pine plantations hexazinone can be used. Hexazinone as a spot treatment on the soil is also effective. Imazapyr as an overall spray when the plant is in full leaf to fruiting provides good control also and has a soil residual to help control suckers. Follow up treatments are essential for high levels of control and to control suckering at the periphery of the bush in the season following spraying. Low volume spraying is usually effective providing the amount of active ingredient applied per bush is kept constant. For high volume spraying use 1 litre of mix for each 2.5 cubic metres of Rose bush (or 2.5 square metres of low lying bush). This is equivalent to about 4000 L/ha of spray mix being applied."
	Western Australian Herbarium (1998–2019). FloraBase—the Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/ . [Accessed 3 Oct 2019]	"Suggested method of management and control. Hand pull seedlings. Basal bark using triclopyr."

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	Notes
	NC State Extension. (2019). <i>Rosa laevigata</i> . https://plants.ces.ncsu.edu/plants/rosa-laevigata/ . [Accessed 3 Oct 2019]	"Prune as needed in the late winter can be pruned into a 6 foot shrub. "
	HerbiGuide. (2019). Cherokee Rose - <i>Rosa laevigata</i> . http://www.herbiguide.com.au/Descriptions/hg_Cherokee_Rose.htm . [Accessed 3 Oct 2019]	"Vegetative Propagules: Stems will regrow from the base when cut (coppice) and form roots where they touch the ground (layer). Root will form suckers naturally and when damaged."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	Parker, J.L. & Parsons, B. (2012). New plant records from the Big Island for 2009. <i>Bishop Museum Occasional Papers</i> 113: 55–63	[Unknown. Naturalized on at least two Hawaiian islands] "Previously recorded as naturalized on Lānaʻi (Nagata 1995: 12), this population was one of several naturalizing in the Glenwood/Volcano area, climbing over uluhe and ʻōhiʻa trees."

Summary of Risk Traits:

High Risk / Undesirable Traits

- Elevation range exceeds 1000 m, demonstrating environmental versatility
- Grows in tropical climates
- Naturalized on Lanai and Hawaii, and controlled (but not documented as naturalized) on Kauai (Hawaiian Islands); naturalized in several other locations worldwide
- A pasture weed on the mainland U.S. and a potential environmental weed in Hawaii and elsewhere
- Other *Rosa* species are invasive weeds
- Canes covered in stout, curved prickles
- Tolerates many soil types
- Climbing, and can overtop other desirable
- Forms dense thickets that impede movement
- Reproduces by seeds and vegetatively by rooting canes and suckers
- Reaches maturity in 3 years
- Seeds dispersed by birds, mammals and intentionally by people
- Seeds may form a persistent seed bank (viable for 1-5 years)
- Able to resprout after cutting

Low Risk Traits

- Palatable to goats, despite presence of prickles
- Valued as an ornamental and landscaping plant by some
- Thrives in full sun (dense shade may slow spread)
- Herbicides can provide effective control