

Taxon: Tibouchina longifolia	Family: Melastomataceae
Common Name(s): long leaf glory tree white flower tibouchina	Synonym(s): Rhexia longifolia Vahl (basionym)

Assessor: Chuck Chimera	Status: In Progress	End Date: 27 Feb 2017
WRA Score: 8.0	Designation: H(HPWRA)	Rating: High Risk

Keywords: Naturalized, Weedy Subshrub, Unarmed, Ornamental, Wind-Dispersed

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	n
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	y
302	Garden/amenity/disturbance weed		
303	Agricultural/forestry/horticultural weed		
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	n
402	Allelopathic		
403	Parasitic	y=1, n=0	n
404	Unpalatable to grazing animals		
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)		
411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets		
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		
604	Self-compatible or apomictic		
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation		
607	Minimum generative time (years)		
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant		
704	Propagules adapted to wind dispersal	y=1, n=-1	y
705	Propagules water dispersed	y=1, n=-1	y
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut		
801	Prolific seed production (>1000/m ²)		
802	Evidence that a persistent propagule bank is formed (>1 yr)		
803	Well controlled by herbicides	y=-1, n=1	y
804	Tolerates, or benefits from, mutilation, cultivation, or fire		
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
	WRA Specialist. 2017. Personal Communication	No evidence of domestication that reduces invasive traits.

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. 2017. 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, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 27 Feb 2017]	"Native: Northern America Southern Mexico: Mexico - Guerrero, - Oaxaca, - Veracruz Southern America Caribbean: Cuba; Dominican Republic; Hispaniola; St. Kitts and Nevis - St. Kitts; St. Vincent and Grenadines - St. Vincent; Trinidad and Tobago - Trinidad Central America: Belize; Costa Rica; El Salvador; Guatemala; Honduras; Nicaragua; Panama Northern South America: Venezuela Western South America: Bolivia; Colombia; Ecuador; Peru - Junin, - Loreto, - Madre de Dios, - Pasco, - Piura"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 27 Feb 2017]	

Qsn #	Question	Answer
203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Daly, D. C., Costa, D. P., & Melo, A. W. F. (2006). The salao vegetation of Southwestern Amazonia. <i>Biodiversity and Conservation</i> , 15(9), 2905-2923	"From Mexico to Bolivia to 2100 m elevation; floodplain (varzea) and terra firme forests." [Elevation range exceeds 1000 m, demonstrating environmental versatility]

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 27 Feb 2017]	"Native: Northern America Southern Mexico: Mexico - Guerrero, - Oaxaca, - Veracruz Southern America Caribbean: Cuba; Dominican Republic; Hispaniola; St. Kitts and Nevis - St. Kitts; St. Vincent and Grenadines - St. Vincent; Trinidad and Tobago - Trinidad Central America: Belize; Costa Rica; El Salvador; Guatemala; Honduras; Nicaragua; Panama Northern South America: Venezuela Western South America: Bolivia; Colombia; Ecuador; Peru - Junin, - Loreto, - Madre de Dios, - Pasco, - Piura"

205	Does the species have a history of repeated introductions outside its natural range?	n
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	No evidence of widespread cultivation

301	Naturalized beyond native range	y
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Native to the Neotropics, where it is weedy and widespread from Mexico and the West Indies to Bolivia and Brazil; in Hawai'i known from a single collection (K. Nagata 2636, BISH, CAS) made in 1983 in tall <i>Metrosideros</i> forest along Stainback Highway, Puna District, Hawai'i."
	Wagner, W.L., Herbst, D.R.& Lorence, D.H. 2017. Flora of the Hawaiian Islands. Smithsonian Institution, Washington, D.C. http://botany.si.edu/ . [Accessed 27 Feb 2017]	" <i>Tibouchina longifolia</i> (Vahl) Baill. ex Cogn. Status: Naturalized"

302	Garden/amenity/disturbance weed	
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Regarded as weedy in native range] "Native to the Neotropics, where it is weedy and widespread from Mexico and the West Indies to Bolivia and Brazil"

Qsn #	Question	Answer
303	Agricultural/forestry/horticultural weed	
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	[Cited as a weed of agriculture in Venezuela. Impacts unspecified] "Tibouchina longifolia (Vahl) Baill. ex Cogn. Melastomataceae Total N ° of Refs: 5 Habit: Tree Preferred Climate/s: Subtropical, Tropical Major Pathway/s: Herbal, Ornamental Dispersed by: Humans References: United States of America-N- 101, United States of America-N-301, United States of America-N-839, United States of America-N-1292, Venezuela-A- 87."

304	Environmental weed	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Targeted for control on various Hawaiian Islands due to the potential for becoming an environmental weed.

305	Congeneric weed	y
	Source(s)	Notes
	Almasi, K. N. 2000. A non-native perennial invades a native forest. Biological Invasions, 2(3): 219-230	"Disturbance is frequently a requirement for non-indigenous plant invasions, but plants that invade in the absence of significant disturbance pose special problems for conservationists and land stewards, as the invasion rates and effects are difficult to predict. Knowledge of the invader's population ecology is essential for the preservation of native plant communities. A sub-shrub native to South America, <i>Tibouchina herbacea</i> (Melastomataceae) is invading intact, wet forests and open, disturbed sites on the islands of Hawaii and Maui. Experimental tests of the importance of disturbance for reproductive rates showed that absence of canopy cover produced the highest rates of germination, survival and seed dispersal distance. Ground cover was less important, but had a positive effect on germination and a negative effect on survival. Results of these experiments suggest that <i>T. herbacea</i> will probably spread more quickly in open, disturbed areas, but is very capable of establishment in natural forests. If spread is arrested in the early stages, manual control may be effective, otherwise landscape-level control efforts, such as biological control, will be needed. Prevention of dispersal and control of <i>T. herbacea</i> in forested areas should be a priority for land managers in Hawaii."
	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	[Congeneric weed? Yes] " <i>Tibouchina urvilleana</i> forms dense thickets in disturbed forest areas in Hawaii. There are herbicides available for control."

Qsn #	Question	Answer
401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Laxly branched subshrubs 0.5-2 m tall; young branches subquadrate, densely covered with appressed to antrorsely spreading, smooth hairs."

402	Allelopathic	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown

403	Parasitic	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Laxly branched subshrubs 0.5-2 m tall" [Melastomataceae. No evidence]

404	Unpalatable to grazing animals	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown

405	Toxic to animals	n
	Source(s)	Notes
	Wiley, S. S. 2014. Is Tibouchina Toxic? http://homeguides.sfgate.com/tibouchina-toxic-81084.html . [Accessed 27 Feb 2017]	"The California Poison Control System includes Tibouchina spp. in its list of nontoxic plants and does not mark the plant as being toxic to humans, dogs and cats. However, as the CPCS notes, even nontoxic plants can be a choking hazard for small children, and vomiting is still a possibility."
	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 of toxicity in genus
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence of toxicity in genus

406	Host for recognized pests and pathogens	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes

Qsn #	Question	Answer
	Wiley, S. S. 2014. Is Tibouchina Toxic? http://homeguides.sfgate.com/tibouchina-toxic-81084.html . [Accessed 27 Feb 2017]	"The California Poison Control System includes Tibouchina spp. in its list of nontoxic plants and does not mark the plant as being toxic to humans, dogs and cats. However, as the CPCS notes, even nontoxic plants can be a choking hazard for small children, and vomiting is still a possibility."
	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
	Wagstaff, D.J. 2008. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Daly, D. C., Costa, D. P., & Melo, A. W. F. (2006). The salao vegetation of Southwestern Amazonia. Biodiversity and Conservation, 15(9), 2905-2923	[No evidence. Unlikely given floodplain habitat] "From Mexico to Bolivia to 2100 m elevation; floodplain (varzea) and terra firme forests."

409	Is a shade tolerant plant at some stage of its life cycle	n
	Source(s)	Notes
	Van Rooden, J., Akkermans, L. M. A., & Van Der Veen, R. (1970). A study on photoblastism in seeds of some tropical weeds. Plant Biology, 19(2), 257-264	"The influence of light on germination of seeds of a number of tropical weeds was studied. Thesame types of light sensitivity known from seeds of plants of the temperate zone were found." ... "Table 1. Strongly light-sensitive seeds." [Tibouchina longifolia - 92% of seeds germinated in white light, 0% germinated in darkness]

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	n
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	In Belize Tibouchina longifolia grows in shale and acidic soil.

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Laxly branched subshrubs 0.5-2 m tall; young branches subquadrate, densely covered with appressed to antroersely spreading, smooth hairs."

412	Forms dense thickets	n
	Source(s)	Notes
	Standley, P.C. & Williams, L.O. 1963. Flora of Guatemala. Fieldiana: Botany. Volume 24 - Part VII - Number 4. Chicago Natural History Museum	"Wet to dry thickets or open forest, often in pine-oak forest, sometimes in open or old fields, often in second growth, sometimes on brushy, rocky hillsides, 150-2,000 meters"

Qsn #	Question	Answer
	Matuda, E. (1950). A Contribution to Our Knowledge of the Wild and Cultivated Flora of Chiapas. I. Districts Soconusco and Mariscal. The American Midland Naturalist, 44(3), 513-616	[Occurs in thickets] "Tibouchina longifolia (Vahl.) Baill.-In forest, Mt. Ovando, Nos. 936, 970, 3928; in open forest, north slope, Vol. Tacana, No. 2998; in riverside thickets, Barranca Honda, Siltepec, No. 4109."
501	Aquatic	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	Terrestrial; subshrub.
502	Grass	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 27 Feb 2017]	Genus: Tibouchina Family: Melastomataceae
503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, ARS, Germplasm Resources Information Network. 2017. National Plant Germplasm System [Online Database]. http://www.ars-grin.gov/npgs/index.html . [Accessed 27 Feb 2017]	Genus: Tibouchina Family: Melastomataceae
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Laxly branched subshrubs 0.5-2 m tall; young branches subquadrate, densely covered with appressed to antrorsely spreading, smooth hairs."
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Gleason, H. A. (1958). Flora of Panama. Part VII. Fascicle III. Melastomataceae. Annals of the Missouri Botanical Garden, 45(3), 203-304	[No evidence] "Southern Mexico to Panama and southward to Brazil and Bolivia; Cuba, Hispaniola, and occasional, possibly introduced in other parts of the West Indies; the most abundant and most widely distributed species of the genus."
602	Produces viable seed	y
	Source(s)	Notes

Qsn #	Question	Answer
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Fruiting hypanthium 4-4.5 mm long, 3-4 mm wide. Seeds 0.25-0.5 mm long."
	Beachy, J.R. 2017. O'ahu Army Natural Resources Program Pers. Comm. 02 February	"We recently had <i>Tibouchina longifolia</i> germinate out of the media in our greenhouse ... We grew a couple plants out till they flowered, and the Bishop folks identified it. While we were waiting for it to flower, Cliff Morden did genetics - and also got TibLon. "

603	Hybridizes naturally	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown

604	Self-compatible or apomictic	
	Source(s)	Notes
	Pereira, A. C., da Silva, J. B., Goldenberg, R., Melo, G. A., & Varassin, I. G. 2011. Flower color change accelerated by bee pollination in <i>Tibouchina</i> (Melastomataceae). <i>Flora</i> 206(5): 491-497	[Possibly. Self-compatibility documented in genus] "The high reproductive success in the manual self-pollination treatment in both species, as well as lack of SI reactions in the style of <i>T. sellowiana</i> , indicates self-compatibility (Gibbs, 1990). From the 18 species belonging to Melastomeae that were of which the reproductive systems have been studied by Goldenberg and Shepherd (1998), 22.2% are apomictic and 72.2% are self-compatible (see, in addition also investigations with <i>Tibouchina fraterna</i> by Hokche and Ramirez, 2008, and about intrafloral differentiation of stamens in <i>Melastoma</i> by Luo et al., 2009)."

605	Requires specialist pollinators	n
	Source(s)	Notes
	Obregon, D., & Nates-Parra, G. (2014). Floral Preference of <i>Melipona eburnea</i> Friese (Hymenoptera: Apidae) in a Colombian Andean Region. <i>Neotropical Entomology</i> , 43 (1), 53-60	"In conclusion, <i>Melipona eburnea</i> is foraging on more than 90 plant species, most of them native, but most of the foraging is concentrated on a few species, such as <i>Myrcia</i> spp., <i>E. globulus</i> , <i>F. uhdei</i> , <i>P. guajava</i> , <i>T. longifolia</i> , <i>Miconia</i> spp., <i>Miconia aeruginosa</i> , <i>Muntingia calabura</i> and <i>Steiractinia aspera</i> ."
	Obregón Corredor, D. (2011) Origen botánico de la miel y el polen provenientes de nidos de <i>Melipona eburnea</i> Friese, 1900 y <i>Tetragonisca angustula</i> (Latreille, 1811), (Apidae: Meliponini) para estimar su potencial polinizador. PhD Dissertation, Universidad Nacional de Colombia, Bogota	Bee pollinated.

606	Reproduction by vegetative fragmentation	
	Source(s)	Notes
	Santos, G.L., Kageler, D., Gardner, D.E., Cuddihy, L.W. & Stone, C.P. 1992. Herbicidal Control of Selected Alien Plant Species in Hawai'i Volcanoes National Park. Pp. 341-375 in Stone, C.P. et al. (eds.) <i>Alien Plant Invasions in Native Ecosystems of Hawai'i</i> . University of Hawaii CPSU, Honolulu, HI	[Unknown, but other members of genus able to spread vegetatively] "...just outside the Park's eastern boundary, glorybush has invaded native rain forests and formed large, dense monotypic stands to 16 ft (5 m) in height by vigorous vegetative reproduction."

Qsn #	Question	Answer
	Almasi, K. N. 2000. A non-native perennial invades a native forest. <i>Biological Invasions</i> , 2(3): 219-230	[Unknown, but other species of <i>Tibouchina</i> are able to spread vegetatively] "T. herbacea is self-compatible (Almasi 1998), produces viable seeds, and reproduces vegetatively by growing roots along its leaf nodes, or by producing newshoots from rhizomes (personal observation)."

607	Minimum generative time (years)	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Fruiting hypanthium 4-4.5 mm long, 3-4 mm wide. Seeds 0.25-0.5 mm long." [Unknown. Seeds lack means of external attachment, but are small enough that they might be dispersed in mud stuck to vehicles, footwear or tools]

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Randall, R.P. (2017). <i>A Global Compendium of Weeds</i> . 3rd Edition. Perth, Western Australia. R.P. Randall	"Major Pathway/s: Herbal, Ornamental Dispersed by: Humans"

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	[Unknown. Other Melastomes have become seed contaminants on soil and tree fern trunks shipped from Hawaii Island] "Native to the Neotropics, where it is weedy and widespread from Mexico and the West Indies to Bolivia and Brazil; in Hawai'i known from a single collection (K. Nagata 2636, BISH, CAS) made in 1983 in tall <i>Metrosideros</i> forest along Stainback Highway, Puna District, Hawai'i."

704	Propagules adapted to wind dispersal	y
	Source(s)	Notes
	Nadkarni, N.M. & Wheelwright, N.T. 2000. <i>Monteverde: Ecology and Conservation of a Tropical Cloud Forest</i> . Oxford University Press, New York	"Appendix 1 Vascular Plants of Monteverde" [<i>Tibouchina longifolia</i> - Seed dispersal (Seed) - GR = gravity, unspecialized; WD = wind]
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Fruiting hypanthium 4-4.5 mm long 3-4 mm wide. Seeds 0.25-0.5 mm long."

705	Propagules water dispersed	y
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Qsn #	Question	Answer
	Source(s)	Notes
	Matuda, E. (1950). A Contribution to Our Knowledge of the Wild and Cultivated Flora of Chiapas. I. Districts Soconusco and Mariscal. The American Midland Naturalist, 44(3), 513-616	[Distribution suggests yes] "Tibouchina longifolia (Vahl.) Baill.-In forest, Mt. Ovando, Nos. 936, 970, 3928; in open forest, north slope, Vol. Tacana, No. 2998; in riverside thickets, Barranca Honda, Siltepec, No. 4109."
	Daly, D. C., Costa, D. P., & Melo, A. W. F. (2006). The salao vegetation of Southwestern Amazonia. Biodiversity and Conservation, 15(9), 2905-2923	[Occurs in floodplains] "From Mexico to Bolivia to 2100 m elevation; floodplain (varzea) and terra firme forests."

706	Propagules bird dispersed	n
	Source(s)	Notes
	Nadkarni, N.M. & Wheelwright, N.T. 2000. Monteverde: Ecology and Conservation of a Tropical Cloud Forest. Oxford University Press, New York	"Appendix 1 Vascular Plants of Monteverde" [Tibouchina longifolia - Seed dispersal (Seed) - GR = gravity, unspecialized; WD = wind]
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Fruiting hypanthium 4-4.5 mm long, 3-4 mm wide. Seeds 0.25-0.5 mm long." [No evidence]

707	Propagules dispersed by other animals (externally)	
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Fruiting hypanthium 4-4.5 mm long 3-4 mm wide. Seeds 0.25-0.5 mm long." [Unknown. Seeds, if produced in cultivation, are small enough that they could adhere to mud stuck on animals, but otherwise lack means of external attachment]

708	Propagules survive passage through the gut	
	Source(s)	Notes
	WRA Specialist. 2017. Personal Communication	Unknown, but fruit are dry & seeds, if produced, would probably not be consumed

801	Prolific seed production (>1000/m2)	
	Source(s)	Notes
	Wagner, W.L., Herbst, D.R.& Sohmer, S.H. 1999. Manual of the flowering plants of Hawaii. Revised edition. University of Hawai'i Press and Bishop Museum Press, Honolulu, HI.	"Fruiting hypanthium 4-4.5 mm long, 3-4 mm wide. Seeds 0.25-0.5 mm long." [Densities unknown]

Qsn #	Question	Answer
	Hernández Gil, R., Malkind, S. I., & Mora, A. (2009). Seed bank study of a low mountain forest of Mérida, Venezuela. <i>Pittieria</i> , 3 (33), 51-62	[Present in seed bank] "Abstract : The spatial variation of the seed bank and soil depth was assessed in three sites with contrasting vegetation: a secondary forest, an old coffee plot and a pine forest. This study was carried out in an Andean low montane forest of Merida, Venezuela (08°38'N y 71°09'W) between 1700 and 1800 m a.s.l. Soil samples were evaluated by the method of direct germination in a greenhouse. Soil seed bank composition was as follows: 55% herbaceous vegetation, 15% bush vegetation, 13% climbers, 12% hardwoods, and 4% ferns. The botanical families more conspicuous were: Compositae, Rubiaceae, Solanaceae, Gyperaceae, Gramineae and Malvaceae. The secondary forest was more heterogeneous than the pine forest and the last was the coffee plot. The following species were the most abundant and most frequent in the secondary forest: <i>Tibouchina longifolia</i> and <i>Stachytarpha mutabilis</i> , while in the coffee plot were <i>Impatiens sultanii</i> and <i>Piper aduncum</i> , but in the pine forest were <i>Borreria laevis</i> and <i>Sida rhombifolia</i> . The specie more frequent and abundant in the three forest studied was <i>Heliocarpus americanus</i> . The secondary forest showed a surface soil density of 6689 seeds m ⁻² , the coffee plot had 3067 seeds m ⁻² , and the pine forest 2311 seeds m ⁻² . Plant abundance and diversity decline with soil depth. The species of the Cyperaceae were abundant in the secondary forest, and they were represented by: <i>Isolepis inundata</i> and <i>Cyperus miliifolius</i> , while in the coffee plot were abundant <i>Sida spinosa</i> and <i>Sisyrinchium micranthum</i> , but in the pine forest the most representative specie was <i>Sida rhombifolia</i> . It was found that 98 to 100% of total species were in the soil horizon above 20 cm as well as 94 to 100% of total plants."

802	Evidence that a persistent propagule bank is formed (>1 yr)	
	Source(s)	Notes
	Baskin, C.C. & Baskin, J.M. 2014. <i>Seeds Ecology, Biogeography, and Evolution of Dormancy and Germination</i> . Second Edition. Academic Press, San Francisco, CA	"TABLE 9.17 ... <i>Tibouchina longifolia</i> ... ND*] Possibly no. Non-dormant

803	Well controlled by herbicides	y
	Source(s)	Notes
	Santos, G.L., Kageler, D., Gardner, D.E., Cuddihy, L.W. & Stone, C.P. 1992. Herbicidal Control of Selected Alien Plant Species in Hawai'i Volcanoes National Park. Pp. 341-375 in Stone, C.P. et al. (eds.) <i>Alien Plant Invasions in Native Ecosystems of Hawai'i</i> . University of Hawaii CPSU, Honolulu, HI	[Although no herbicide applications have been evaluated for <i>T. longifolia</i> , techniques used on the highly invasive <i>T. urvilleana</i> would presumably work on <i>T. lepidota</i> as well] "Treatments for glorybush (<i>Tibouchina urvilleana</i>) (20% GARLON 4 in diesel oil on cut stumps) and yellow Himalayan raspberry (<i>Rubus ellipticus</i>) (40% GARLON 4 in a foliar drizzle spray and 20% TORDON 22K in water on cut stumps) appeared effective; however, further testing is necessary to refine treatments, verify results, and further assess potential harm to native plant species.."

Qsn #	Question	Answer
	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	[Herbicides effective on the highly invasive <i>T. herbacea</i> would presumably work on <i>T. longifolia</i> if applied in a similar rate & manner] "Management: Patty Welton (Haleakala National Park) reported application of undiluted triclopyr ester to the stem base provided 100% kill. Pat Bily (TNC) reported triclopyr amine effective in foliar sprays with a surfactant and in cut-stump treatments. Based on work with other melastomes, probably sensitive to 2,4-D, dicamba, triclopyr, and metsulfuron. HAVO staff reported control with foliar application of glyphosate at 2% product in water (Chris Zimmer, HAVO)."

804	Tolerates, or benefits from, mutilation, cultivation, or fire	
	Source(s)	Notes
	CABI, 2017. Invasive Species Compendium. Wallingford, UK: CAB International. www.cabi.org/isc	"Santos et al. (1988) also report that undiluted triclopyr ester used for cut-stump treatments caused very good resprout inhibition and cambium mortality." [Unknown. Other <i>Tibouchina</i> species resprout unless treated with herbicide]

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	Winston, R.L., Schwarzländer, M., Hinz, H.L., Day, M.D., Cock, M.J.W., Julien, M.H. (eds.). 2014. Biological Control of Weeds: A World Catalogue of Agents and Their Target Weeds, 5th edition. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia	[Unknown. Related <i>Tibouchina urvilleana</i> attacked by an introduced agent] "Agent - <i>Rhynchopalpus brunellus</i> Hampson ... (Lepidoptera: Nolidae) ... In heavily infested localities foliar skeletonizing is moderate and fruits attacked, but control only partial. ... Also attacks the exotic (occasionally cultivated) <i>Melastoma sanguineum</i> Sims and found established on the exotic <i>Tibouchina urvilleana</i> (DC.) Cogn"
	WRA Specialist. 2017. Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Native distribution tropical and subtropical regions
- Elevation range exceeds 1000 m, demonstrating environmental versatility
- Thrives in tropical climates
- Naturalized on Hawaii Island
- Regarded as weedy in native range
- Other *Tibouchina* species are invasive
- Reproduces by seeds (ability to spread vegetatively unknown)
- Seeds dispersed by wind, gravity, water & intentionally by people

Low Risk Traits

- No reports of invasiveness or naturalization elsewhere, but limited evidence of widespread introduction outside native range
- Unarmed (no spines, thorns or burrs)
- Seeds require light to germinate
- Ornamental
- Seeds non-dormant
- Herbicides provide effective control for other invasive *Tibouchina* species