

Taxon: Tibouchina lepidota (Bonpl.) Baill.

Family: Melastomataceae

Common Name(s): alstonville
Andean princess flower
glory bush
lasiandra

Synonym(s): Rhexia lepidota Bonpl. (basionym)

Assessor: Chuck Chimera

Status: Assessor Approved

End Date: 21 Apr 2021

WRA Score: 5.0

Designation: EVALUATE

Rating: Evaluate

Keywords: Tropical Tree, Shrub, Pioneer Species, Ornamental, Showy Flowers

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	?
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed	n=0, y = 1*multiplier (see Appendix 2)	n
303	Agricultural/forestry/horticultural weed	n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed	n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed	n=0, y = 1*multiplier (see Appendix 2)	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

Qsn #	Question	Answer Option	Answer
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	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		
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		
706	Propagules bird dispersed	y=1, n=-1	n
707	Propagules dispersed by other animals (externally)		
708	Propagules survive passage through the gut	y=1, n=-1	n
801	Prolific seed production (>1000/m2)		
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	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
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: Tibouchineae). Proceedings of the California Academy of Sciences., 47(6): 175-206	[No evidence] "With populations extending from the Andes of western Venezuela to central Peru, <i>T. lepidota</i> has the broadest distribution of any species in sect. <i>Lepidotae</i> : Its high chromosome number (n = ca. 62) indicates that it is derived, but the lack of chromosome information for other members of the section creates difficulty in assessing its affinities."
	WRA Specialist. (2021). Personal Communication	No evidence for wild type. Cultivars may have traits that reduce their ability to persist or spread outside cultivation

102	Has the species become naturalized where grown?	
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	Notes
	WRA Specialist. (2021). 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. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 20 Apr 2021]	"Native Southern America NORTHERN SOUTH AMERICA: Venezuela [Mérida, Táchira] WESTERN SOUTH AMERICA: Ecuador [Azuay, Carchi, Chimborazo, Imbabura, Loja, Morona Santiago, Napo, Pichincha, Tungurahua, Zamora Chinchipe], Peru [Amazonas, Huánuco, San Martín]"

202	Quality of climate match data	High
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 20 Apr 2021]	

Qsn #	Question	Answer
203	Broad climate suitability (environmental versatility)	y
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: <i>Tibouchineae</i>). Proceedings of the California Academy of Sciences., 47(6): 175-206	[Elevation range exceeds 1000 m in tropical latitudes, demonstrating environmental versatility] "From western Venezuela to central Peru (Fig. 10) in disturbed and undisturbed montane forest at 800-3,200 m."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 20 Apr 2021]	"Native: SOUTHERN AMERICA Northern South America: Venezuela - Merida, Tachira Western South America: Ecuador - Azuay, Carchi, Chimborazo, Imbabura, Loja, Morona-Santiago, Napo, Pichincha, Tungurahua, Zamora-Chinchipec; Peru - Amazonas, Huanuco, San Martin"
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence in the Hawaiian Islands

205	Does the species have a history of repeated introductions outside its natural range?	?
	Source(s)	Notes
	Dave's Garden. (2021). Glory Bush - <i>Pleroma lepidotum</i> (Synonym: <i>Tibouchina lepidota</i>). https://davesgarden.com/guides/pf/go/117874/ . [Accessed 20 Apr 2021]	"This plant has been said to grow in the following regions: Miami, Florida Earlsville, Virginia"
	iGarden. (2021). <i>Tibouchina lepidota</i> . http://www.igarden.com.au . [Accessed 21 Aug 2014]	['Alstonville' cultivated in Australia] " <i>Tibouchina lepidota</i> (previously called <i>Lasiandra</i>) begin show their big sumptuous purple flowers in April and these continue all through autumn and sometimes into early winter in Sydney. The most commonly seen cultivar is <i>Tibouchina lepidota</i> 'Alstonville', which throbs with opulent colour when back-lit by the autumnal sun. They open from attractive reddish buds and have curled stamens like claws. These plants became popular about fifteen or twenty years ago and so there are many mature specimens to be seen around nowadays, decorating streetscapes and gardens: Sydney seems to have the perfect climate for them, as it does for many South American plants."
	WRA Specialist. (2021). Personal Communication	Unclear. The cultivar 'Alstonville' was widely planted in Australia, but there is no evidence that the wild type has been commonly cultivated outside its native range.

Qsn #	Question	Answer
301	Naturalized beyond native range	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence
	Imada, C. (2019). Hawaiian Naturalized Vascular Plants Checklist (February 2019 update). Bishop Museum Technical Report 69. Bishop Museum, Honolulu, HI	No evidence in the Hawaiian Islands

302	Garden/amenity/disturbance weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

303	Agricultural/forestry/horticultural weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

304	Environmental weed	n
	Source(s)	Notes
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

305	Congeneric weed	y
	Source(s)	Notes
	Almasi, K. N. (2000). A non-native perennial invades a native forest. <i>Biological Invasions</i> , 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."

Qsn #	Question	Answer
	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.) Alien Plant Invasions in Native Ecosystems of Hawai'i. University of Hawaii CPSU, Honolulu, HI	"Glorybush or lasiandra (<i>Tibouchina urvilleana</i>), a native of Brazil, is a member of the melastome family. It was introduced to Hawai'i as an ornamental, probably for its large, brilliant purple flowers, which are borne either singly or in clusters on branch tips (Neal 1965). Glorybush is currently found in wet habitats on O`ahu, Kaua`i, and Hawai`i between 655 and 5,580 ft (200-1,700 m) elevation. This robust shrub is found in disjunct populations in the Park at approximately 3,940 ft (1,200 m) elevation. However, 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."
	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	"The State Department of Agriculture has listed all <i>Tibouchina</i> species as noxious weeds to prevent their further spread."
	Smith, C.W. (1985). Impact of Alien Plants on Hawaii's Native Biota. Pp. 180-250 in Stone & Scott (eds.). Hawaii's terrestrial ecosystems: preservation & management. CPSU, Honolulu, HI	" <i>Tibouchina urvilleana</i> " ... "This semi-deciduous shrub reaches heights of 4 m. It forms thickets in wet habitats." ... " <i>Tibouchina</i> is confined to wet habitats between 200-1,700 m on Kaua'i, O'ahu, and Hawai'i. There is a major infestation in Volcano, Hawai'i."

401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: <i>Tibouchineae</i>). Proceedings of the California Academy of Sciences., 47(6): 175-206	[No evidence] "Trees or shrubs 2.5-20 m tall; bark plate-like, sometimes fissured, peeling in loose flakes; distal branches terete with appressed, horizontally attached rectangular, platelike scales intermixed with or replaced by proximally attached elliptic scales 1-2 mm long with basal ears and irregularly erose margins; nodes with very narrow basally attached lanceolate scales mostly 2-3 mm long."

402	Allelopathic	n
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	Unknown. No evidence found

403	Parasitic	n
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: <i>Tibouchineae</i>). Proceedings of the California Academy of Sciences., 47(6): 175-206	"Trees or shrubs 2.5-20 m tall;" [Melastomataceae]

Qsn #	Question	Answer
404	Unpalatable to grazing animals	
	Source(s)	Notes
	Ocampo, D., Estrada-F, M. C., Muñoz, J. M., Londoño, L. V., David, S., Valencia, G., Morales, P. A., Garizabal, J. A. & Cuervo, A. M. 2012. Breeding biology of the Red-bellied Grackle (<i>Hypopyrrhus pyrohypogaster</i>): A cooperative breeder of the Colombian Andes. <i>The Wilson Journal of Ornithology</i> , 12 (3): 538-546	[Fruits & flower parts are palatable. Unknown whether plant is palatable to browsing animals] "The nestlings' diet consisted mainly of arthropods (72%, n = 353), fruits and flower parts of melastome (<i>Tibouchina lepidota</i> , 9.4%, n = 44), and small vertebrates (3 unidentified frogs, and 4 <i>Anolis mariarum</i> lizards)."

405	Toxic to animals	n
	Source(s)	Notes
	Wiley, S. S. (2021). Is <i>Tibouchina</i> Toxic? http://homeguides.sfgate.com/tibouchina-toxic-81084.html . [Accessed 21 Apr 2021]	"The California Poison Control System includes <i>Tibouchina</i> 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). <i>CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology</i> . CRC Press, Boca Raton, FL	No evidence
	Wagstaff, D.J. (2008). <i>International poisonous plants checklist: an evidence-based reference</i> . CRC Press, Boca Raton, FL	No evidence of toxicity in genus

Qsn #	Question	Answer
406	Host for recognized pests and pathogens	
	Source(s)	Notes
	Wingfield, M. J., Rodas, C., Myburg, H., Venter, M., Wright, J., & Wingfield, B. D. 2001. Cryphonectria canker on <i>Tibouchina</i> in Colombia. <i>Forest Pathology</i> , 31(5): 297-306	[Possibly] "Cryphonectria canker, caused by <i>Cryphonectria cubensis</i> , has limited the development of new <i>Eucalyptus</i> plantations in tropical and subtropical regions. The pathogen is commonly found on <i>Eucalyptus</i> , but its occurrence on other hosts in the Myrtaceae has also been documented. In this study <i>C. cubensis</i> is reported as the causal agent of a serious canker disease on <i>Tibouchina</i> spp. (Melastomataceae) in Colombia. We used morphological studies, pathogenicity tests on <i>Eucalyptus</i> and <i>Tibouchina</i> , and a phylogenetic study using partial ribosomal DNA sequence data. This is the first record of <i>C. cubensis</i> on a host outside the Myrtaceae." ... "In 1995, a serious canker disease was first discovered in Colombia on <i>Tibouchina urvilleana</i> (DC). Logn. (Melastomataceae), which is native to Brazil. In a subsequent survey, the disease was also found on the Colombian native <i>Tibouchina lepidota</i> Baill." ... "Cryphonectria cubensis is a virulent pathogen of <i>Tibouchina</i> in Colombia and has a wide distribution in that country. Given the serious damage that it causes to trees, it is surprising that it has not been recognized previously. The disease is most commonly encountered on the exotic <i>T. urvilleana</i> although it occurs on native <i>T. lepidota</i> in parks and gardens. Despite some considerable effort, we have not found the disease in native stands of <i>T. lepidota</i> . In preliminary inoculation tests, we have been able to cause large cankers on <i>T. lepidota</i> and there was little evidence to show that this species is less susceptible to <i>C. cubensis</i> after inoculation (M. J. WINGFIELD and C. RODAS, unpublished data)."

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Bass, D. J., Delpech, V., Beard, J., Bass, P., & Walls, R. S. (2000). Ragweed in Australia. <i>Aerobiologia</i> , 16(1): 107-111	[Pollen is a minor allergen to a small percentage of people] "This study also demonstrates that <i>Tibouchina</i> sensitization occurs in 5.4% of the subjects and one <i>Tibouchina</i> sensitive subject, not sensitive to ragweed, had late summer seasonal allergic rhinitis almost certainly caused by airborne <i>Tibouchina</i> pollen. However it is not an important cause of allergic disease, since few people are affected despite its heavy local planting." ... "The study also shows that <i>Tibouchina</i> pollen is an aeroallergen and may be a potential cause of late summer hayfever."
	Quattrocchi, U. (2012). <i>CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology</i> . CRC Press, Boca Raton, FL	No evidence
	Wagstaff, D.J. (2008). <i>International poisonous plants checklist: an evidence-based reference</i> . CRC Press, Boca Raton, FL	No evidence of toxicity documented in genus

408	Creates a fire hazard in natural ecosystems	n
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Qsn #	Question	Answer
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: <i>Tibouchineae</i>). Proceedings of the California Academy of Sciences., 47(6): 175-206	[No evidence, and unlikely in cool montane habitats] "The most characteristic habitat is the cool montane forests where most of the species are found growing along road cuts or forest margins."

409	Is a shade tolerant plant at some stage of its life cycle	y
	Source(s)	Notes
	Oakman, H.1995. Harry Oakman's what flowers when: the complete guide to flowering times in tropical and subtropical gardens. Univ. of Queensland Press, St. Lucia, Australia	"Best in rich, well-drained soil in sun or semi-shade"
	South-Florida-Plant-Guide.com. (2021). Dwarf <i>Tibouchina</i> - <i>Tibouchina lepidota</i> . http://www.south-florida-plant-guide.com/dwarf_tibouchina.html . [Accessed 21 Aug 2014]	"Part sun to partial shade is an ideal location."
	Ohl, C., & Bussmann, R. (2004). Recolonisation of natural landslides in tropical mountain forests of Southern Ecuador. Feddes Repertorium, 115(3-4): 248-264	[Seedlings presumably able to establish in shade] "Seedlings of bushes like <i>Tibouchina lepidota</i> , <i>Graffenrieda harlingii</i> (both Melastomataceae) or <i>Bejaria aestuans</i> (Ericaceae) are frequently found under dense layers of <i>Sticherus</i> in the first herbal layer. Usually, these species are not found in primary forest but form the pioneer forests."

410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	n
	Source(s)	Notes
	Learn 2 Grow. (2014). <i>Tibouchina lepidota</i> . http://www.learn2grow.com/plants/tibouchina-lepidota/ . [Accessed 22 Aug 2014]	"Grow Colombian glorybush is full to partial sun in a fertile, moist but well-drained soil that is not alkaline. Organic matter added to sand and loamy soil is a good practice."
	Dave's Garden. (2021). Glory Bush - <i>Pleroma lepidotum</i> (Synonym: <i>Tibouchina lepidota</i>). https://davesgarden.com/guides/pf/go/117874/ . [Accessed 21 Apr 2021]	"Soil pH requirements: 6.1 to 6.5 (mildly acidic) 6.6 to 7.5 (neutral)"

411	Climbing or smothering growth habit	n
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: <i>Tibouchineae</i>). Proceedings of the California Academy of Sciences., 47(6): 175-206	"Trees or shrubs 2.5-20 m tall"

412	Forms dense thickets	
	Source(s)	Notes

Qsn #	Question	Answer
	Cavelier, J., Estevez, J., & Arjona, B. 1996. Fine-root biomass in three successional stages of an Andean cloud forest in Colombia. <i>Biotropica</i> , 28(4): 728-736	[Unknown. Dominates successional forest] "Stem density, basal area, the vertical distribution (0-25 cm) of roots (<2 mm and <5 mm) and its biomass were studied in a 10-year-old, a 20-year-old and a mature forest at La Planada cloud forest." ... "The 10-year-old successional forest is dominated by <i>Tibouchina lepidota</i> (Melastomataceae) and <i>Vismia cf. ferruginea</i> (Guttiferae)."

501	Aquatic	n
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: <i>Tibouchineae</i>). <i>Proceedings of the California Academy of Sciences.</i> , 47(6): 175-206	[Terrestrial] "From western Venezuela to central Peru (Fig. 10) in disturbed and undisturbed montane forest at 800-3,200 m."

502	Grass	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 21 Apr 2021]	Melastomataceae

503	Nitrogen fixing woody plant	n
	Source(s)	Notes
	USDA, Agricultural Research Service, National Plant Germplasm System. (2021). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/ . [Accessed 21 Apr 2021]	Melastomataceae

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: <i>Tibouchineae</i>). <i>Proceedings of the California Academy of Sciences.</i> , 47(6): 175-206	"Trees or shrubs 2.5-20 m tall"

Qsn #	Question	Answer
601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: Tibouchineae). Proceedings of the California Academy of Sciences., 47(6): 175-206	[No evidence] "With populations extending from the Andes of western Venezuela to central Peru, <i>T. lepidota</i> has the broadest distribution of any species in sect. <i>Lepidotae</i> "

602	Produces viable seed	y
	Source(s)	Notes
	Dave's Garden. (2021). Glory Bush - <i>Pleroma lepidotum</i> (Synonym: <i>Tibouchina lepidota</i>). https://davesgarden.com/guides/pf/go/117874/ . [Accessed 21 Apr 2021]	[Recommends cuttings for propagation, but also discusses seed collection] "Propagation Methods: From softwood cuttings Seed Collecting: Allow seedheads to dry on plants; remove and collect seeds"
	Plant World Seeds. (2021). <i>Tibouchina lepidota</i> . https://www.plant-world-seeds.com/store/view_seed_item/7097 . [Accessed 21 Apr 2021]	[Seeds sold online] "These seeds have been cold-stored and should be sown on receipt. Sow very thinly onto the surface of a pot containing a mixture of peat, sterilised fine soil or loam, and grit, and very gently water the seeds in. DO NOT cover them with compost. The seed tray is then best left in a warm well-lit spot and kept moist. Germination usually takes only 4-8 weeks at most, but may take much longer. Plant out in well-drained moist soil. "
	Cardozo, A. C., & Ríos, O. V. (2004). El banco de semillas germinable de especies leñosas en dos bosques subandinos y su importancia para la restauración ecológica (reserva biológica Cachalú-Santander. Colombia). Colombia Forestal, 8(17): 60-74	[Wild plants produce seeds] "La densidad para el bosque maduro y el secundario fue de 1.025 semillas/m ² y 1.248 semillas/m ² respectivamente. Las especies con densidades mayores en el bosque maduro fueron, <i>Cestrum tomentosum</i> (223 semillas/m ²), <i>Cecropia telealba</i> (171 semillas/m ²) y <i>Cecropia angustifolia</i> (102 semillas/m ²) (Fig. 4); para el secundario las especies fueron <i>Clethra fagifolia</i> (200 semillas/m ²), <i>Tibouchina lepidota</i> (177 semillas/m ²) y <i>Cecropia telealba</i> (127 semillas/m ²) (Fig. 5)." [Translation: The density for the mature and secondary forest was 1,025 seeds / m ² and 1,248 seeds / m ² respectively. The species with higher densities in the mature forest were, <i>Cestrum tomentosum</i> (223 seeds / m ²), <i>Cecropia telealba</i> (171 seeds / m ²) and <i>Cecropia angustifolia</i> (102 seeds / m ²) (Fig 4.) for secondary species were <i>Clethra fagifolia</i> (200 seeds / m ²), <i>Tibouchina lepidota</i> (177 seeds / m ²) and <i>Cecropia telealba</i> (127 seeds / m ²) (Fig. 5).]
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: Tibouchineae). Proceedings of the California Academy of Sciences., 47(6): 175-206	[Wild populations produce seeds] "Seeds ca. 0.5 mm long, light brown."

603	Hybridizes naturally	
	Source(s)	Notes

Qsn #	Question	Answer
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: Tibouchineae). <i>Proceedings of the California Academy of Sciences.</i> , 47(6): 175-206	[No evidence in this publication] "Because <i>T. lepidota</i> and <i>T. paleacea</i> occur in Dept. Valle and have broadly overlapping elevational distributions, it is tempting to suggest that this variant originated from past hybridization between the two species. We have no evidence, however, to substantiate this speculation."
	Hawkins, S. M., Ruter, J. M., & Robacker, C. D. (2016). Interspecific and Intergeneric hybridization in <i>Dissotis</i> and <i>Tibouchina</i> . <i>HortScience</i> , 51(4), 325-329	[Possibly. Artificial hybrids possible] "Four species of <i>Dissotis</i> and three species of <i>Tibouchina</i> , two genera of the Melastomataceae family, were crossed in an attempt to create interspecific and intergeneric hybrids. Intergeneric crosses set seed at a rate of 18.1% and interspecific crosses had a 32.3% rate of seed set. Germination was extremely poor, with only four crosses having germinated seed. Crosses produced 31 seedlings. Three of the seedlings were from intergeneric crosses between <i>Dissotis canescens</i> and <i>Tibouchina lepidota</i> . Interspecific crosses produced 25 seedlings from crosses between <i>Dissotis princeps</i> and <i>Dissotis rotundifolia</i> and three seedlings from crosses between <i>D. canescens</i> and <i>D. princeps</i> . The prognosis for conventional breeding for species in <i>Dissotis</i> and <i>Tibouchina</i> is poor due to low seed set, poor germination, and slow growth of progeny."

604	Self-compatible or apomictic	
	Source(s)	Notes
	Hawkins, S. M. (2014). Interspecific and intergeneric hybridization in the Melastomaceae and Fabaceae. MSc Thesis. University of Georgia, Athens, GA	[Documented in genus] "Spontaneous self-pollination has also been observed in <i>Tibouchina papyrus</i> (Pohl) Toledo and <i>Tibouchina stenocarpa</i> (DC.) Cogn., and rarely in <i>Tibouchina heteromalla</i> Cogn. (CAMPOS et al.; DOS SANTOS et al., 2012; GOLDENBERG and SHEPHERD, 1998)."
	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	
	Source(s)	Notes
	Silva, C., & Freitas, B. (2018). Rearing carpenter bees (<i>Xylocopa</i> spp.) for crop pollination: a case study with Passion fruit (<i>Passiflora edulis</i>). <i>The Pollination of Cultivated Plants: A Compendium for Practitioners</i> , 2. FAO, Rome	"Plant species with poricidal anthers are among the most used by carpenter bees as pollen sources, and are thus recommended. In Brazil, these include <i>Senna</i> and <i>Chamaecrista</i> (Caesalpinioideae), <i>Solanum</i> (Solanaceae), <i>Ouratea</i> (Ochnaceae), <i>Cochlospermum</i> (Bixaceae or Cochlospermaceae), <i>Tibouchina</i> and <i>Miconia</i> (Melastomataceae), along with plants with bowl-shaped flowers such as <i>Kielmeyera</i> (Clusiaceae) and <i>Eriotheca</i> (Malvaceae), among others [52]."

Qsn #	Question	Answer
	Otero, J. T., Ulloa-Chacón, P., Silverstone-Sopkin, P., & Giray, T. (2008). Group nesting and individual variation in behavior and physiology in the orchid bee <i>Euglossa nigropilosa</i> Moure (Hymenoptera, Apidae). <i>Insectes Sociaux</i> , 55(3): 320-328	[Euglossine bees may be pollinators for <i>T. lepidota</i>] 'The plants used by <i>Eg. nigropilosa</i> at LPNR were located in pastures, open areas and secondary forests. Their main pollen sources at LPNR were flowers with poricidally-dehiscent anthers from two plant families: Melastomataceae and Solanaceae including <i>Solanum quitoense</i> Lam., <i>Solanum</i> sp. (J. T. Otero 398, deposited at CUVC herbarium), and <i>Tibouchina lepidota</i> (Bonpl.) Baill. Pollen was extracted by buzzing."
	Johnels, A., & Cuadros, T. (1986). Species composition and abundance of bird fauna in a disturbed forest in the Central Andes of Colombia. <i>Hornero</i> , 12(4): 235-241	[Possibly hummingbird pollinated] "The hummingbirds favor numerous species of plants which flower frequently throughout the year (e.g. <i>Clusia</i> sp., <i>Befaria glauca</i> , <i>Tibouchina lepidota</i>). Flowers were especially numerous during the wettest period at the end of the year, when many hummingbirds defended territories around stands of flowering plants."
	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	[Unknown. Based on observations with other species, <i>T. lepidota</i> may require large bees as pollinators as well] "Both species of <i>Tibouchina</i> need pollinators for successful reproduction. Among the bee species that do buzz pollination, only the large species can be considered effective pollinators. The fact that single visits of two species of <i>Bombus</i> resulted in a high reproductive success (82–100% success rate) in <i>T. sellowiana</i> supports the idea that large bees are efficient pollinators of <i>Tibouchina</i> ."

606	Reproduction by vegetative fragmentation	
	Source(s)	Notes
	Oakman, H. (1995). <i>Harry Oakman's what flowers when: the complete guide to flowering times in tropical and subtropical gardens</i> . Univ. of Queensland Press, St. Lucia, Australia	[Ability to spread vegetatively unknown. Propagation techniques and characteristics of related species suggest vegetative spread might be possible under certain conditions] "propagated from tip cuttings"
	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 for <i>T. lepidota</i> , 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."
	Almasi, K. N. (2000). A non-native perennial invades a native forest. <i>Biological Invasions</i> , 2(3): 219-230	[Unknown for <i>T. lepidota</i> , 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
	Monrovia. (2021). <i>Glory Bush - Tibouchina lepidota</i> . https://www.monrovia.com/glory-bush.html . [Accessed 21 Apr 2021]	[Unknown] "Average Size at Maturity: Moderate growing; reaches 10 to 12 ft. tall, 8 to 10 ft. wide."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	

Qsn #	Question	Answer
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: <i>Tibouchineae</i>). <i>Proceedings of the California Academy of Sciences.</i> , 47(6): 175-206	[If seeds are produced, small size and habitat along roads & forest margins may allow for some unintentional spread] "The most characteristic habitat is the cool montane forests where most of the species are found growing along road cuts or forest margins," ... "Seeds ca. 0.5 mm long, light brown."

702	Propagules dispersed intentionally by people	y
	Source(s)	Notes
	Oakman, H. (1995). <i>Harry Oakman's what flowers when: the complete guide to flowering times in tropical and subtropical gardens.</i> Univ. of Queensland Press, St. Lucia, Australia	[Ornamental & landscaping plant] " <i>Tibouchina lepidota</i> " ... "One of 350 species of evergreen shrubs and trees."
	Plant World Seeds. (2021). <i>Tibouchina lepidota</i> . https://www.plant-world-seeds.com/store/view_seed_item/7097 . [Accessed 21 Apr 2021]	Seeds sold online

703	Propagules likely to disperse as a produce contaminant	
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of <i>Tibouchina</i> section <i>Lepidotae</i> (Melastomataceae: <i>Tibouchineae</i>). <i>Proceedings of the California Academy of Sciences.</i> , 47(6): 175-206	[Unknown. If seeds are produced, the small size may allow for contamination of soil, potting material, or other plant materials growing in the vicinity] "Seeds ca. 0.5 mm long"

704	Propagules adapted to wind dispersal	y
	Source(s)	Notes
	Cardozo, A. C., & Ríos, O. V. (2004). El banco de semillas germinable de especies leñosas en dos bosques subandinos y su importancia para la restauración ecológica (reserva biológica Cachalú-Santander. Colombia). <i>Colombia Forestal</i> , 8(17): 60-74	[Small seeds are wind-dispersed] "Lo contrario ocurre en el bosque secundario donde las especies dispersadas por el viento son las mas dominantes como es el caso de <i>Clethra fagifolia</i> y <i>Tibouchina lepidota</i> , debido a que las condiciones del lugar y la estructura de la vegetación favorecen este tipo de dispersión." [Translation: The opposite occurs in the secondary forest where species dispersed by wind are the most dominant as in the case of <i>Clethra fagifolia</i> and <i>Tibouchina lepidota</i> , due to site conditions and vegetation structure which favor this type of dispersion.]

705	Propagules water dispersed	
	Source(s)	Notes

Qsn #	Question	Answer
	Cardozo, A. C., & Ríos, O. V. (2004). El banco de semillas germinable de especies leñosas en dos bosques subandinos y su importancia para la restauración ecológica (reserva biológica Cachalú-Santander. Colombia). Colombia Forestal, 8(17): 60-74	[Small seeds may be dispersed by forest runoff] "Asimismo las semillas que entran al bosque maduro a través de los claros y no germinan, pueden ser redispersadas dentro del bosque por gravedad y escorrentía, debido principalmente a la topografía con Fuertes pendientes en los alrededores del sitio de muestreo, que harían posible la concentración de un gran número de semillas en este lugar. Este puede ser el caso de especies como Clethra fagifolia, Tibouchina lepidota, Tibouchina Miconiaminutiflora, Myrsine coriacea, Baccharis lehemannii, Eupatorium sp y Baccharis trinervis, que son dispersadas por el viento y se encontraron en el BSG del bosque maduro..." [Translate: Also, seeds entering the mature forest clearings that did not germinate, may be redispersed by gravity and forest runoff, mainly due to topography with steep slopes around the sampling site, which would enable the concentration of a large number of seeds here. This may be the case for species such as Clethra fagifolia, Tibouchina lepidota...]

706	Propagules bird dispersed	n
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of Tibouchina section Lepidotae (Melastomataceae: Tibouchineae). Proceedings of the California Academy of Sciences., 47(6): 175-206	[Not fleshy-fruited] "Capsules dry, semiwoody, loculicidal."

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Todzia, C. A., & Almeda Jr, F. (1991). A revision of Tibouchina section Lepidotae (Melastomataceae: Tibouchineae). Proceedings of the California Academy of Sciences., 47(6): 175-206	[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] "Seeds ca. 0.5 mm long"

708	Propagules survive passage through the gut	n
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	Unlikely. Fruit are dry & woody & seeds, if produced, would probably not be consumed

801	Prolific seed production (>1000/m2)	n
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	Unknown. Some species produce prolific numbers of tiny, wind-dispersed seeds. Anecdotal observations from growers suggest that some cultivars of T. lepidota do not produce seed, or that any seed produced may not be viable.

802	Evidence that a persistent propagule bank is formed (>1 yr)	n

Qsn #	Question	Answer
	Source(s)	Notes
	Baskin, C.C. & Baskin, J.M. (2001). Seeds ecology, biogeography, and evolution of dormancy and germination. Academic Press, San Francisco, CA	[Unknown. Seeds with physiological dormancy & non-dormancy are reported for other species in the genus <i>Tibouchina</i>]

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.) Alien Plant Invasions in Native Ecosystems of Hawai'i. University of Hawaii CPSU, Honolulu, HI	[Although no herbicide applications have been evaluated for <i>T. lepidota</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.."
	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. lepidota</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	y
	Source(s)	Notes
	iGarden. (2021). <i>Tibouchina lepidota</i> . http://www.igarden.com.au . [Accessed 21 Apr 2021]	[Tolerates regular pruning, & being heavily cut back] "They can be shaped as small trees by training to a single trunk, which is what I have now done with my new one, due to pure laziness, after years of cutting back very heavily in late winter so that the shrub would stay around 3m in height."

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2021). Personal Communication	Unknown

Summary of Risk Traits:

High Risk / Undesirable Traits

- Elevation range exceeds 1000 m, demonstrating environmental versatility
- Thrives in tropical climates
- Other *Tibouchina* species have become invasive, and all are listed as Hawaii State Noxious Weeds
- Host of *Cryphonectria* canker, a pathogen also found on *Eucalyptus* species
- Pollen may be allergenic to some people
- Tolerates shade at early stages of growth
- Tiny seeds (0.5 mm long), if produced, can be dispersed by winds & possibly accidentally
- Tolerates repeated pruning & cutting (& therefore may be difficult to control without use of herbicides)
- Limited ecological information makes accurate risk prediction difficult

Low Risk Traits

- No reports of invasiveness or naturalization, but no evidence of widespread introduction outside native range
- Unarmed (no spines, thorns or burrs)
- Ornamental

Second Screening Results for Tree/tree-like shrubs

(A) Shade tolerant or known to form dense stands?> Tolerates some shade. Unknown if able to form dense stands

(B) Bird- OR clearly wind-dispersed? Yes. Seeds small & if produced, likely dispersed by wind

(C) Life cycle <4 years? Unknown

Outcome = Evaluate