Tibouchina urvilleana (Princess flower, glory bush)		**Answer**	**Score**
1.01	Is the species highly domesticated?	n	0
1.02	Has the species become naturalised where grown?		
1.03	Does the species have weedy races?		
2.01	Species suited to FL climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high)	2	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	y	1
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	y	2
3.02	Garden/amenity/disturbance weed	y	2
3.03	Weed of agriculture	n	0
3.04	Environmental weed	y	4
3.05	Congeneric weed	y	2
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	n	0
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals	?	
4.05	Toxic to animals	n	0
4.06	Host for recognised pests and pathogens	y	1
4.07	Causes allergies or is otherwise toxic to humans	n	0
4.08	Creates a fire hazard in natural ecosystems	n	0
4.09	Is a shade tolerant plant at some stage of its life cycle	y	1
4.10	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils). North & Central Zones: infertile soils; South Zone: shallow limerock or Histisols.	n	0
4.11	Climbing or smothering growth habit	y	1
4.12	Forms dense thickets	y	1
5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	n	0
6.01	Evidence of substantial reproductive failure in native habitat	n	0
6.02	Produces viable seed	?	
6.03	Hybridizes naturally		
6.04	Self-compatible or apomictic	n	-1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	y	1
6.07	Minimum generative time (years)		
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y	1
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant		
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed		
7.06	Propagules bird dispersed	n	-1
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	n	-1

8.01	Prolific seed production	n	-1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)		
8.03	Well controlled by herbicides	y	-1
8.04	Tolerates, or benefits from, mutilation or cultivation	y	1
8.05	Effective natural enemies present in U.S.		
	Total Score	**13**	
	Implemented Pacific Second Screening	**NO**	
	Risk Assessment Results	**HIGH RISK**	

	Reference	Source data
1.01		Cultivated, but no evidence of selection for reduced weediness.
1.02		
1.03		
2.01	1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnd.tif). 2. USDA, Oregon State University 2012. USDA Plant Hardiness Zone Map: Florida (http://planthardiness.ars.usda.gov/PHZMWeb/, 4 April 2013). 3. 1. "Tibouchina urvilleana." horticopia.com. Horticopia, 2011. Web. 4 April 3013.	No computer analysis was performed. 1. World hardiness zones: 10-13. 2. US hardiness zones: 9B-11. 3. Native habitat: Brazil; Hardy range 9B to 11.
2.02	Refer to all references in 2.01.	No computer analysis was performed. Native range is well known; refer to 2.01 source data.
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. Refer to all references in question 2.01.	1. Distribution in the native range is very widespread and occurs in more than 3 climatic groups. Also refer to source data in question 2.01.
2.04	1. UN FAO. 2006. Country Pasture/Forage Resource Profiles: Brazil. http://www.fao.org/ag/AGP/AGPC/doc/Counprof/PDF%20files/Brazil-English.pdf, 4 April 2013.	1. Parts of Brazil have a mean precipitation lower than 500 mm/year.
2.05	1. . ISSG Database, http://www.issg.org/database/welcome/. Accessed: 4/4/2013. 2. US Forest Service, Pacific Island Ecosystems at Risk (PIER). Online resource at http://www.hear.org/pier/ accessed [4 April 2013]. 3. Howell, C and NZ Plant Conservation Network (2005) NZ adventive vascular plant list.	1. Introduced and considered invasive in Hawaii and La Réunion (France), and introduced in New Caledonia, New Zealand, and Samoa. 2. T. urvilleana "very invasive in Hawai'i. On list of plants to be excluded from French Polynesia." 3. "Fully naturalised" in New Zealand.
3.01	1. . ISSG Database, http://www.issg.org/database/welcome/. Accessed: 4/4/2013. 2. US Forest Service, Pacific Island Ecosystems at Risk (PIER). Online resource at http://www.hear.org/pier/ accessed [4 April 2013]. 3. Howell, C and NZ Plant Conservation Network (2005) NZ adventive vascular plant list.	1. Introduced and considered invasive in Hawaii and La Réunion (France) 2. T. urvilleana "very invasive in Hawai'i." 3. "Fully naturalised" in New Zealand.
3.02	1. . ISSG Database, http://www.issg.org/database/welcome/. Accessed: 4/4/2013. 2. US Forest Service, Pacific Island Ecosystems at Risk (PIER). Online resource at http://www.hear.org/pier/ accessed [4 April 2013].	1. Invasive in Hawai'I and La Reunion, occuring in agricultural areas, natural forests, planted forests, ruderal/disturbed, scrub/shrublands, urban areas. 2. T. urvilleana "very invasive in Hawai'i."
3.03		no evidence
3.04	1. . ISSG Database, http://www.issg.org/database/welcome/. Accessed: 4/4/2013. 2. US Forest Service, Pacific Island Ecosystems at Risk (PIER). Online resource at http://www.hear.org/pier/ accessed [4 April 2013].	1. Invasive in Hawai'I and La Reunion, occuring in agricultural areas, natural forests, planted forests, ruderal/disturbed, scrub/shrublands, urban areas. 2. T. urvilleana "very invasive in Hawai'i."
3.05	1. Holm, L. et al. A Geographical Atlas of World Weeds. John Wiley and Sons, New York. 1979.	1. T. longifolia is present as a weed in Venezuela. 2. T. semidecandra is a principal weed in Hawaii.
4.01		no evidence
4.02		no evidence
4.03		no evidence
4.04	1. Monrovia: Horticultural Craftsmen. "Tibouchina urvilleana 'Athens blue'". <http://www.monrovia.com/plant-catalog/plants/2180/athens-blue-princess-flower.php>. Accessed 15 April 2013.	1. Tibouchina urvilleana is "deer resistant".
4.05		no evidence

4.06	1. "Tibouchina urvilleana." horticopia.com. Horticopia, 2011. Web. 14 April 2013. 2. Myburg, H. Gryzenhout, M. Heath, R. Roux, J. Wingfield, B. D. Wingfield, M. J. (2002) Cryphonectria canker on Tibouchina in South Africa. Mycological Research, 2002, Vol. 106, No. 11, pp. 1299-1306. 3. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. Gainesville, FL.	1. T. urvilleana is "pest tolerant". 2. Cryphonectria cubensis is an important canker pathogen of T. urvilleana in Colombia. 3. Scale, nematodes, and root rot are problems of T. urvilleana.
4.07		no evidence
4.08		no evidence
4.09	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. Gainesville, FL. 2. "Tibouchina urvilleana." horticopia.com. Horticopia, 2011. Web. 14 April 2013. 3. http://www.desert-tropicals.com/Plants/Melastomataceae/Tibouchina_maudhiana.html 4. http://www.gardendesigns.com/cgi-bin/gt/index.cgi?read=152 5. http://www.volcanogallery.com/princess_flower.htm 7. http://www.mgonline.com/tibouchina.html	1. T. urvilleana gows in "full sun". 2. Exposure of T. urvilleana is full sun. 3. Full sun to light shade 4. full sun to part shade 5. it grows in shade - Full sun to light shade 7. We see some planted in shade which they can tolerate
4.10	1. "Tibouchina urvilleana." horticopia.com. Horticopia, 2011. Web. 14 April 2013. 2. Huxley, A. (1992) The New Royal Horticultural Society: Dictionary of Gardening. Vol. 4, R-Z.	1. This plant will grow in very dry soil. Suitable soil is well-drained/loamy, sandy or clay. The pH preference is an acidic to slightly alkaline (less than 6.8 to 7.7) soil. 2. Tibouchina grow in freely draining, neutral or (preferably) acid, moisture-retentive, fertile soils
4.11	1. Wagner, Herbst, and Sohmer (1999) Manual of the flowering plants of Hawai'i. University of Hawai'i Press/Bishop Museum Press, Honolulu. 2. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. Gainesville, FL. 3. ISSG Database, http://www.issg.org/database/welcome/. Accessed: 4/4/2013.	1. "Shrubs or small trees 1-4m tall. 2. Form: monoecious, evergreen shrub or small tree; irregular, somewhat vine-like, often sparsely foliated. 3. In Hawaii and La Reunion it is invasive and forms dense stands, smothering native species.
4.12	1. US Forest Service, Pacific Island Ecosystems at Risk (PIER). Online resource at http://www.hear.org/pier/ accessed [14 April 2013].	1. Forms dense thickets in disturbed areas in forests.
5.01		Family: Melastomataceae
5.02		Family: Melastomataceae
5.03		Family: Melastomataceae
5.04		Family: Melastomataceae
6.01		no evidence
6.02	1. Whistler (2000) Tropical Ornamentals: a Guide. Timber Press, Portland. 2. Motooka, P. et al. (2003) Weeds of Hawai'I's Pastures and Natural Areas; An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawai'i, Manoa. 3. Wagner, W. et al. (1990) Manual of the Flowering Plants of Hawai'i. Vol. 1. University of Hawaii Press.	1. Propogate by seeds, cuttings, or air layering. 2. "seeds many, very small, apparently not viable". 3. Mature seeds not seen. Cultivated material of T. urvilleana appears to be self-incompatible and no plump seeds have been observed on any of the collections gathered from adventive populations.
6.03		
6.04	1. Wagner, W. et al. (1990) Manual of the Flowering Plants of Hawai'i. Vol. 1. University of Hawaii Press.	1. Cultivated material of T. urvilleana appears to be self-incompatible and no plump seeds have been observed on any of the collections gathered from adventive populations.
6.05	1. Motooka, P. et al. (2003) Weeds of Hawai'I's Pastures and Natural Areas; An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawai'i, Manoa 2. Wagner, W. et al. (1990) Manual of the Flowering Plants of Hawai'i. Vol. 1. University of Hawaii Press.	1. Readily roots from stem fragments. 2. Cut or broken sections of branches readily root.

6.06	1. Whistler (2000) Tropical Ornamentals: a Guide. Timber Press, Portland. 2. Motooka, P. et al. (2003) Weeds of Hawai'I's Pastures and Natural Areas; An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawai'i, Manoa 3. Wagner, W. et al. (1990) Manual of the Flowering Plants of Hawai'i. Vol. 1. University of Hawaii Press.	1. Propogate by seeds, cuttings, or air layering. 2. Readily roots from stem fragments. 3. Cut or broken sections of branches readily root.
6.07		
7.01	1. ISSG Database, http://www.issg.org/database/welcome/. Accessed: 4/4/2013. 2. Starr, F. et al. (2003) "Tibouchina urvilleana". USGS - Biological Resources Division. Maui, HI. Hear.org [Accessed 14 April 2013]. 3. Motooka, P. et al. (2003) Weeds of Hawai'I's Pastures and Natural Areas; An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawai'i, Manoa	1. Occurs in disturbed areas. 2. Plants can also be spread in dumping of garden debris. 3. Forms dense thickets in disturbed areas in forests.
7.02	1. Wagner, W. et al. (1990) Manual of the Flowering Plants of Hawai'i. Vol. 2. Whistler (2000) Tropical Ornamentals: a Guide. Timber Press, Portland. 3. Starr, F. et al. (2003) "Tibouchina urvilleana". USGS - Biological Resources Division. Maui, HI. Hear.org [Accessed 14 April 2013].	1. in Hawai'I commonly cultivated and naturalized on Kaua'I, O'ahu, Maui, and Hawai'i. 2. widely cultivated for its large purple flowers. 3. Tibouchina plants are spread long distances by humans who cultivate the plant. Plants spread vegetatively when branches touch the ground. Plants can also be spread in dumping of garden debris.
7.03		
7.04	1.(http://www.botany.hawaii.edu/faculty/carr/tib_urv.htm [accessed 4/18/2013]) 2. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. Gainesville, FL. 3. Starr, F. et al. (2003) "Tibouchina urvilleana". USGS - Biological Resources Division. Maui, HI. Hear.org [Accessed 14 April 2013].	1. Seeds are mechanically dispersed. 2.propagate by cuttings. 3. Tibouchina plants are spread long distances by humans who cultivate the plant. Plants spread vegetatively when branches touch the ground. Plants can also be spread in dumping of garden debris.
7.05	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. Gainesville, FL. 2. Starr, F. et al. (2003) "Tibouchina urvilleana". USGS - Biological Resources Division. Maui, HI. Hear.org [Accessed 14 April 2013].	1. propagate by cuttings. 2. Tibouchina plants are spread long distances by humans who cultivate the plant. Plants spread vegetatively when branches touch the ground. Plants can also be spread in dumping of garden debris.
7.06		No Evidence
7.07		No Evidence
7.08		No Evidence
8.01	1. Whistler (2000) Tropical Ornamentals: a Guide. Timber Press, Portland. 2. Motooka, P. et al. (2003) Weeds of Hawai'I's Pastures and Natural Areas; An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawai'i, Manoa 3. Wagner, W. et al. (1990) Manual of the Flowering Plants of Hawai'i. Vol. 1. University of Hawaii Press.	1. Propogate by seeds, cuttings, or air layering. 2. "seeds many, very small, apparently not viable". 3. Mature seeds not seen. Cultivated material of T. urvilleana appears to be self-incompatible and no plump seeds have been observed on any of the collections gathered from adventive populations.
8.02	1. Whistler (2000) Tropical Ornamentals: a Guide. Timber Press, Portland. 2. Motooka, P. et al. (2003) Weeds of Hawai'I's Pastures and Natural Areas; An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawai'i, Manoa 3. Wagner, W. et al. (1990) Manual of the Flowering Plants of Hawai'i. Vol. 1. University of Hawaii Press.	1. Propogate by seeds, cuttings, or air layering. 2. "seeds many, very small, apparently not viable". 3. Mature seeds not seen. Cultivated material of T. urvilleana appears to be self-incompatible and no plump seeds have been observed on any of the collections gathered from adventive populations.

8.03	1. Motooka, P. et al. (2003) Weeds of Hawai'I's Pastures and Natural Areas; An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawai'i, Manoa	1. Metsulfuron in foliar sprays 80% effective, glyphosate reportedly not effective. Bryon Stevens (DOFAW) reported good control with drizzle application of triclopyr ester at 5% of product in water applied on sunny days. HAVO staff reported control with triclopyr ester at 2% in water applied as foliar sprays (Chris Zimmer, HAVO). Katie Cassel (Koke'e Museum) reported triclopyr ester at 20% product in oil applied to cut surfaces effective and on plants with stems 1 inch diameter, basal bark applications effective. Matted stems, however, presented a coverage problem. Cut-stump treatments with triclopyr ester at 20% in diesel oil were effective.
8.04	1. ISSG Database, http://www.issg.org/database/welcome/. Accessed: 4/4/2013. 2. Starr, F. et al. (2003) "Tibouchina urvilleana". USGS - Biological Resources Division. Maui, HI. Hear.org [Accessed 14 April 2013]. 3. Motooka, P. et al. (2003) Weeds of Hawai'I's Pastures and Natural Areas; An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawai'i, Manoa. 4. Motooka, P. et al. (2003) Weeds of Hawai'I's Pastures and Natural Areas; An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawai'i, Manoa	1. Occurs in disturbed areas. 2. Plants can also be spread in dumping of garden debris. 3. Forms dense thickets in disturbed areas in forests. 4. Readily roots from stem fragments.
8.05		