Australia/New Zealand Weed Risk Assessment adapted for United States.

Data used for analysis published in: Gordon, D.R. and C.A. Gantz. 2008. Potential impacts on the horticultural industry of screening new plants for invasiveness. Conservation Letters 1: 227-235. Available at: http://www3.interscience.wiley.com/cgi-bin/fulltext/121448369/PDFSTART

Delonix decaryi			
Question number	**Question**	**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 U.S. climates (USDA hardiness zones; 0-low, 1-intermediate, 2-high)	1	
2.02	Quality of climate match data (0-low; 1-intermediate; 2-high)	2	
2.03	Broad climate suitability (environmental versatility)	n	0
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	n	-2
3.02	Garden/amenity/disturbance weed	n	0
3.03	Weed of agriculture	n	0
3.04	Environmental weed	n	0
3.05	Congeneric weed	y	1
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic		
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		
4.07	Causes allergies or is otherwise toxic to humans	n	0
4.08	Creates a fire hazard in natural ecosystems		
4.09	Is a shade tolerant plant at some stage of its life cycle	n	0
4.1	Grows on one or more of the following soil types: alfisols, entisols, or mollisols	y	1
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets	n	0

5.01	Aquatic	n	0
5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	y	1
5.04	Geophyte	n	0
6.01	Evidence of substantial reproductive failure in native habitat	n	0
6.02	Produces viable seed	y	1
6.03	Hybridizes naturally		
6.04	Self-compatible or apomictic		
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative fragmentation		
6.07	Minimum generative time (years)		
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
7.02	Propagules dispersed intentionally by people	y	1
7.03	Propagules likely to disperse as a produce contaminant	n	-1
7.04	Propagules adapted to wind dispersal	n	-1
7.05	Propagules water dispersed		
7.06	Propagules bird dispersed		
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)		
8.01	Prolific seed production		
8.02	Evidence that a persistent propagule bank is formed (>1 yr)		
8.03	Well controlled by herbicides		
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05	Effective natural enemies present in U.S.		
Total Score			1

Outcome	**Accept***

*Used secondary screen from: Daehler, C. C., J.L. Denslow, S. Ansari, and H. Kuo. 2004. A risk assessment system for screening out harmful invasive pest plants from Hawaii's and other Pacific islands. Conserv. Biol. 18: 360-368.

section	# questions answered	satisfy minimum?
A	11	Yes
B	8	Yes
C	11	Yes
total	30	yes

Data collected 2008

Question number	Reference	Source data
1.01		used horticulturally, but no evidence of significant modification
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).	1. Global hardiness zones 11-12. 2. "S & SW Madagascar, almost entirely confined to a narrow band towards the coast, from near the edge of the Mahafaly Plateau to the coastal dunes, from the Manombo R. and the Mikea forest N of Toliara (Tulear) to the Mandrare R."
2.02		
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	1. 1-2 climatic regions. 2. "S & SW Madagascar, almost entirely confined to a narrow band towards the coast, from near the edge of the Mahafaly Plateau to the coastal dunes, from the Manombo R. and the Mikea forest N of Toliara (Tulear) to the Mandrare R." [and no evidence of naturalization elsewhere]
2.04	Microsoft Encarta World Precipitation and Average Rainfall (http://uk.encarta.msn.com/encnet/RefPages/RefMedia.aspx?refid=461530746&artrefid=761554737&pn=3&sec=-1).	For Southern Madagascar: average annual precipitation is between 20 inches/year and 40 inches/year.
2.05	Jardin Naturel (http://www.seedsplants.com/Fiche.php?Lang=fr&Ref=274&Designation=Delonix%20decaryi).	Seeds being sold internationally.

3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05	Kairo, M, Ali, B, Cheesman, O, Haysom, K, Murphy, S (2003) Invasive Species Threats in the Caribbean Region. London: CAB International.	*Delonix regia* is naturalized and invasive in Puerto Rico.
4.01	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	no description of these traits
4.02		
4.03	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	no description of parasitism
4.04		
4.05	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	no evidence
4.06		
4.07	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	"the unripe seeds are reported to be edible" [no evidence of toxicity].
4.08		
4.09	1. Bihrmann's Caudiciforms (http://www.bihrmann.com/caudiciforms/subs/del-dec-sub.asp). 2. Desert-Tropicals.com (http://www.desert-tropicals.com/Plants/Fabaceae/Delonix_decaryi.html)	1. "Sun: Maximum" 2. "Sun exposure: Full sun"
4.1	1. USDA, National Resources Conservation Services (NRCS), Soil Survey Division, World Soil Resources (http://soils.usda.gov/use/worldsoils/mapindex/order.html). 2. Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	1. Entisols occur predominantly in this region. 2. "Mainly on sand but also on limestone".

4.11	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	Tree ca. 2-4 m or more tall.
4.12	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	"An umbrella shaped tree with a cigar-shaped trunk...the branches confined to the apex".
5.01		terrestrial
5.02	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?428214).	Fabaceae
5.03	USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?428214).	Fabaceae
5.04	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	Tree ca. 2-4 m or more tall.
6.01		no evidence
6.02	1. Bihrmann's Caudiciforms (http://www.bihrmann.com/caudiciforms/subs/del-dec-sub.asp). 2. Desert-Tropicals.com (http://www.desert-tropicals.com/Plants/Fabaceae/Delonix_decaryi.html)	1. "Reproduction: Seeds"; "it can only be reproduced by seeds". 2. "Propagation: Seeds".
6.03	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	"This species can occur in mixed populations with *D. floribunda*"
6.04		
6.05	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	"The majority of the species have large, white flowers, the upper petal with a large yellow patch and a tubular, nectar-containing claw, and maroon-red, long-exserted stamens; they are probably pollinated by moths. The flowers in

		these species open in the evening, remain open during the night, and fade the following morning (Du Puy, pers. obs. in *D. decaryi*)"
6.06		
6.07		
7.01		
7.02	Jardin Naturel (http://www.seedsplants.com/Fiche.php?Lang=fr&Ref=274&Designation=Delonix%20decaryi).	Seeds being sold internationally.
7.03		no evidence
7.04	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	"Pods usually long and slender, linear-oblong, compressed"; "Seeds ellipsoidal, c. 12-17 × 9-11 × 8-11 mm." [no evidence of adaptations to wind dispersal]
7.05		
7.06		
7.07	Du Puy DJ, Phillipson PB and Rabevohitra R (1995) The genus *Delonix (Leguminosae*: *Caesalpinioideae*: *Caesalpinieae*) in Madagascar. Kew Bulletin 50(3) : 445-475.	"Pods usually long and slender, linear-oblong, compressed"; "Seeds ellipsoidal, c. 12-17 × 9-11 × 8-11 mm." [no evidence of adaptations to external dispersal]
7.08		
8.01		
8.02		
8.03		
8.04		
8.05		