

Australia/New Zealand Weed Risk Assessment adapted for Florida.

Data used for analysis published in: Gordon, D.R., D.A. Onderdonk, A.M. Fox, R.K. Stocker, and C. Gantz. 2008. Predicting Invasive Plants in Florida using the Australian Weed Risk Assessment. Invasive Plant Science and Management 1: 178-195.

<i>Phoenix roebelenii</i> (pygmy date palm)			
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 Florida's USDA climate 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)	n	0
2.04	Native or naturalized in habitats with periodic inundation	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	0
4.01	Produces spines, thorns or burrs	y	1
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	?	
4.1	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils)	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	n	0
5.04	Geophyte		
6.01	Evidence of substantial reproductive failure in native habitat		
6.02	Produces viable seed	y	1
6.03	Hybridizes naturally	y	1
6.04	Self-compatible or apomictic	n	-1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative fragmentation	y	1
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	n	-1
7.06	Propagules bird dispersed	y	1
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)	y	1
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 Florida, or east of the continental divide		
Total Score			5

Outcome	Evaluate*
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*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	8	yes
B	10	yes
C	15	yes
total	33	yes

Data collected 2006-2007

Question number	Reference	Source data
1.01		cultivated, but no evidence of selection for reduced weediness
1.02		
1.03		
2.01	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	hardiness zones 10-11
2.02		
2.03	Barrow (1994) In search of <i>Phoenix roebelenii</i> : the Xishuangbanna palm. Principes 38: 177-181.	"...leaving no doubt that <i>P. roebelenii</i> is a well-defined species of limited distribution in the northern regions of Laos and Vietnam, and areas of Yunnan in S.W. China"
2.04	Barrow (1994) In search of <i>Phoenix roebelenii</i> : the Xishuangbanna palm. Principes 38: 177-181.	"It was not found further than 25 m from the river bank and consequently was submerged by high water every year, presumably in the rainy season... <i>P. roebelenii</i> is found closely associated with riverside or cliff habitats, its elegant, clustering habit enabling it to survive potentially damaging floods."
2.05	Barrow (1998) A monograph of <i>Phoenix</i> L. (Palmae: Coryphoideae). Kew Bulletin 53: 513-575.	"Since its introduction to Europe, <i>P. roebelenii</i> has become a popular and widely cultivated ornamental palm and is now found in private and botanical gardens around the world."
3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05	FLEPPC 2005 List of Invasive Species (http://www.fleppc.org/list/05List.htm).	<i>P. reclinata</i> is a category II invader in Florida.
4.01	1. Dehgan, B. (1998) Landscape Plants for	1. leaves "modified near the trunk

	Subtropical Climates. University Press of Florida. 2. Uhl and Dransfield (1987) <i>Genera Palmarum</i> . Allen Press, Lawrence, Kansas.	to form long, straight, sharp spines" 2. The proximal few leaflets are modified as spines in the genus <i>Phoenix</i> .
4.02		no evidence
4.03	Barrow (1998) A monograph of <i>Phoenix</i> L. (Palmae: Coryphoideae). Kew Bulletin 53: 513-575.	no description of this
4.04		
4.05		no evidence
4.06	1. Gilman and Watson (2006) <i>Phoenix roebelenii</i> : pygmy date palm. University of Florida, IFAS Extension, ENH-600 (http://edis.ifas.ufl.edu/pdffiles/ST/ST44100.pdf). 2. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	1. "Palm leaf skeletonizer and a large number of scales can infest this palm. Leaf spot and bud rot are two diseases which can infect this palm." BUT "resistant to pests/diseases" 2. "Problems: chewing insects, leaf spot, and bud rot."
4.07		no evidence
4.08		no evidence
4.09	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Gilman and Watson (2006) <i>Phoenix roebelenii</i> : pygmy date palm. University of Florida, IFAS Extension, ENH-600 (http://edis.ifas.ufl.edu/pdffiles/ST/ST44100.pdf). 3. Horticipia 4.0.	1. requires full to partial sun 2. full sun, partial sun or partial shade BUT 3. full shade to full sun
4.1	1. Gilman and Watson (2006) <i>Phoenix roebelenii</i> : pygmy date palm. University of Florida, IFAS Extension, ENH-600 (http://edis.ifas.ufl.edu/pdffiles/ST/ST44100.pdf). 2. http://www.pygmydatepalm.com 3. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	1. soil tolerances: clay, sand, loam 2. "The Phoenix can adapt to the worst soil conditions from very heavy clay to a sandy soil low in nutrients." BUT 3. requires fertile, well-drained soil
4.11	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	single-trunked palm, up to 8 feet tall
4.12		no evidence
5.01		terrestrial
5.02	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 (http://plants.usda.gov). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	Areaceae
5.03	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 (http://plants.usda.gov). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	Areaceae
5.04		
6.01		
6.02	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	propagate by seed
6.03	Uhl and Dransfield (1987) <i>Genera Palmarum</i> . Allen	"Species [of <i>Phoenix</i>] are known to

	Press, Lawrence, Kansas.	hybridize freely."
6.04	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Barrow (1998) A monograph of <i>Phoenix</i> L. (Palmae: Coryphoideae). Kew Bulletin 53: 513-575.	1. dioecious 2. "All species of <i>Phoenix</i> are dioecious."
6.05	Henderson (1986) A review of pollination studies in the Palmae. The Botanical Review 52: 221-259.	<i>Phoenix</i> spp. are likely either wind or insect pollinated.
6.06	1. Barrow (1998) A monograph of <i>Phoenix</i> L. (Palmae: Coryphoideae). Kew Bulletin 53: 513-575. 2. Barrow (1994) In search of <i>Phoenix roebelenii</i> : the Xishuangbanna palm. Principes 38: 177-181.	1. "All but four species [of <i>Phoenix</i>] (<i>P. canariensis</i> , <i>P. rupicola</i> , <i>P. sylvestris</i> , and <i>P. andamanensis</i>) produce basal suckers which may or may not develop into full-sized stems." In <i>P. roebelenii</i> , "suckers develop vertically giving rise to clumps of equal-sized stems". "Clustering palms (often solitary in cultivation), forming clumps with stemless plants suckering at base of taller stems." 2. "The solitary form of <i>P. roebelenii</i> (otherwise known as the Pygmy Date Palm) is well-known in cultivation and familiar to all palm growers, but the clustering, tall-stemmed form is never seen out of Indo-China." [so produces basal suckers in the wild, but this behavior is not known in cultivation]
6.07	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Gilman and Watson (2006) <i>Phoenix roebelenii</i> : pygmy date palm. University of Florida, IFAS Extension, ENH-600 (http://edis.ifas.ufl.edu/pdf/files/ST/ST44100.pdf).	slow growth rate (1, 2) [but time to vegetative reproduction unknown]
7.01		
7.02	Barrow (1998) A monograph of <i>Phoenix</i> L. (Palmae: Coryphoideae). Kew Bulletin 53: 513-575.	"Since its introduction to Europe, <i>P. roebelenii</i> has become a popular and widely cultivated ornamental palm and is now found in private and botanical gardens around the world."
7.03		no evidence
7.04	Barrow (1998) A monograph of <i>Phoenix</i> L. (Palmae: Coryphoideae). Kew Bulletin 53: 513-575.	fruit an obovoid berry, to 18 mm long [no evidence of adaptations to wind dispersal]
7.05		no evidence
7.06	Corlett (2005) Interactions between birds, fruit bats	Two species of birds utilize fruits of

	and exotic plants in urban Hong Kong, South China. Urban Ecosystems 8: 275-283.	<i>P. roebelenii</i> in Hong Kong. [and is a fleshy fruit]
7.07	Barrow (1998) A monograph of <i>Phoenix</i> L. (Palmae: Coryphoideae). Kew Bulletin 53: 513-575.	fruit an obovoid berry, to 18 mm long [no evidence of any means of attachment]
7.08	Roebelen in Barrow (1994) In search of <i>Phoenix roebelenii</i> : the Xishuangbanna palm. Principes 38: 177-181.	"was told by the natives that monkeys and wild cats are very fond of the small berries, and carry them to their hiding-places where I really could find thousands of seedlings"
8.01	Barrow (1998) A monograph of <i>Phoenix</i> L. (Palmae: Coryphoideae). Kew Bulletin 53: 513-575.	one seed per fruit
8.02		
8.03	Donselman and Broschat (1987) The effects of several pre- and postemergent herbicides on ornamental palms. Principes 31: 138-141.	"Palms [including <i>P. roebelenii</i>] appear to be quite resistant to the herbicide Roundup when applied under the conditions of this experiment. Although distortion occurred in most palm species, the plants recovered and resumed normal growth." [but unclear whether it is sensitive to other herbicides]
8.04		
8.05		