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.

Pistachia chinensis (Chinese pistache)			
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)		
2.04	Native or naturalized in habitats with periodic inundation		
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	y	0
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	n	0
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	n	0
4.07	Causes allergies or is otherwise toxic to humans	y	1
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		
6.04	Self-compatible or apomictic	n	-1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative fragmentation	n	-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)	?	
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			1

Outcome	**Evaluate***

*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	6	yes
B	10	yes
C	13	yes
total	29	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	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Missouri Botanical Garden, Kemper Center for Home Gardening (http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=B641).	1. hardiness zone 6b 2. zones 6 to 9
2.02		
2.03	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	native to China, Taiwan, and the Philippines
2.04		
2.05	1. Sosef, Hong, and Prawirohatmodjo, eds. (1998) Plant Resources of South-East Asia. No. 5(3). Timber Trees: Lesser-known Timbers. Backhuys Publishers, Leiden. 2. Dunn and Cole (1995) Propagation of *Pistacia chinensis* by mound layering. Journal of Environmental Horticulture 13: 109-112.	1. "*P. chinensis* is well known as a landscape and shade tree, especially in the United States, and is valued for its leaf colour in autumn." 2. "Chinese pistache (*Pistacia chinensis,* Bunge.) is a commonly recommended landscape shade tree in the nursery and landscape industry."
3.01	1. Csurhes and Edwards (1998) Potential Environmental Weeds in Australia. Queensland Department of Natural Resources. 2. McWilliams (2003) Controlling the slow motion explosion - management of invasive plants of horticultural origin. HortScience 38: 1293.	1. "It has naturalised in the Armidale and Tamworth areas (Hosking, pers. comm.) and in the Hawkesbury/Nepean catchment." [Australia] 2. *P. chinensis* has naturalized in several southern states.
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05		no evidence
4.01	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	no description of these traits
4.02		no evidence

4.03	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	no description of this
4.04		
4.05		no evidence
4.06	1. Missouri Botanical Garden, Kemper Center for Home Gardening (http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=B641). 2. Horticopia 4.0. 3. Sosef, Hong, and Prawirohatmodjo, eds. (1998) Plant Resources of South-East Asia. No. 5(3). Timber Trees: Lesser-known Timbers. Backhuys Publishers, Leiden.	1. "No serious insect or disease problems. Susceptible to verticillium wilt." 2. "pest tolerant"; "Verticillium wilts and oak root fungus occasionally affect Chinese Pistachio." 3. "In the United States, it shows a high resistance to various pests." [problems sound minor]
4.07	1. Horticopia 4.0. 2. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	1. male trees generate allergenic pollen 2. "In China, young shoots and leaves eaten cooked as vegetable."
4.08		no evidence
4.09	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Missouri Botanical Garden, Kemper Center for Home Gardening (http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=B641).	1. full sun to partial shade 2. "Tolerates light shade, but best in full sun."
4.1	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Horticopia 4.0. 3. Missouri Botanical Garden, Kemper Center for Home Gardening (http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=B641).	1. sandy, well-drained soils 2. "Grows in clay, loam, or sand in a wide range of soil pH." 3. "Tolerates…a wide range of soils."
4.11	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	large tree
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.	Anacardiaceae
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.	Anacardiaceae
5.04		
6.01		
6.02	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Sosef, Hong, and Prawirohatmodjo, eds. (1998) Plant Resources of South-East Asia. No. 5(3). Timber Trees: Lesser-known Timbers. Backhuys Publishers, Leiden. 3. Dunn and Cole (1995) Propagation of *Pistacia chinensis* by mound layering. Journal of Environmental Horticulture 13: 109-112.	propagated by seeds (1, 2, 3)

6.03		
6.04	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Sosef, Hong, and Prawirohatmodjo, eds. (1998) Plant Resources of South-East Asia. No. 5(3). Timber Trees: Lesser-known Timbers. Backhuys Publishers, Leiden.	dioecious (1, 2)
6.05	Copeland (1955) The reproductive structures of *Pistacia chinensis* (Anacardiaceae). Phytomorphology 5: 440-449.	"Pollination is by wind."
6.06	1. Dunn and Cole (1995) Propagation of *Pistacia chinensis* by mound layering. Journal of Environmental Horticulture 13: 109-112. 2. Browse (1988) Autumn glory: knowing and growing the versatile Chinese pistache. American Nurseryman 167(1): 115-120.	1. all means of vegetative propagation described are artificial 2. "vegetatively propagated ornamental cultivars of any of the other *Pistacia* species - Chinese pistache in particular - are virtually nonexistent" [so even artificial means of vegetative propagation are difficult]
6.07	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Horticopia 4.0. 3. Gilman and Watson (2006) *Pistacia chinensis*: Chinese pistache. University of Florida, IFAS Extension, ENH641 (http://edis.ifas.ufl.edu/pdffiles/ST/ST48200.pdf).	1. fast growth rate 2. slow growth rate 3. moderate growth rate [?]
7.01		
7.02	1. Sosef, Hong, and Prawirohatmodjo, eds. (1998) Plant Resources of South-East Asia. No. 5(3). Timber Trees: Lesser-known Timbers. Backhuys Publishers, Leiden. 2. Dunn and Cole (1995) Propagation of *Pistacia chinensis* by mound layering. Journal of Environmental Horticulture 13: 109-112.	1. "*P. chinensis* is well known as a landscape and shade tree, especially in the United States, and is valued for its leaf colour in autumn." 2. "Chinese pistache (*Pistacia chinensis,* Bunge.) is a commonly recommended landscape shade tree in the nursery and landscape industry."
7.03		no evidence
7.04	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Copeland (1955) The reproductive structures of *Pistacia chinensis* (Anacardiaceae). Phytomorphology 5: 440-449.	1. fruits are reddish-brown, globose drupes, to 1.5 inches long [no evidence of adaptations to wind dispersal] 2. "Through the agency of birds, squirrels, and wind, the fruits disappear, almost completely, before the leaves begin to fall." [but fruits are drupes - not clearly adapted for wind dispersal]
7.05		no evidence
7.06	1. Sosef, Hong, and Prawirohatmodjo, eds. (1998) Plant Resources of South-East Asia. No. 5(3). Timber Trees: Lesser-known Timbers. Backhuys Publishers, Leiden. 2. Copeland (1955) The reproductive structures of *Pistacia chinensis* (Anacardiaceae). Phytomorphology 5: 440-449.	1. "The small fruits are eaten by birds which thus disperse the seeds." 2. "Through the agency of birds, squirrels, and wind, the fruits disappear, almost completely, before the leaves begin to fall."

7.07	Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida.	fruits are reddish-brown, globose drupes, to 1.5 inches long [no evidence of any means of attachment]
7.08	1. Dehgan, B. (1998) Landscape Plants for Subtropical Climates. University Press of Florida. 2. Copeland (1955) The reproductive structures of *Pistacia chinensis* (Anacardiaceae). Phytomorphology 5: 440-449.	1. fruit is a drupe, but is dry 2. "Through the agency of birds, squirrels, and wind, the fruits disappear, almost completely, before the leaves begin to fall." [but squirrels likely are seed predators]
8.01		
8.02	Browse (1988) Autumn glory: knowing and growing the versatile Chinese pistache. American Nurseryman 167(1): 115-120.	"Chinese pistache seed retains its viability for several years if stored, after extraction and surface drying, under water-conserving conditions at moderate temperatures." [but in dry storage, not in soil]
8.03		
8.04		
8.05		