

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>Malvastrum coromandelianum (three-lobed false mallow)</i>			
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	y	0
3.03	Weed of agriculture	y	0
3.04	Environmental weed	n	0
3.05	Congeneric weed	y	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		
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)		
4.11	Climbing or smothering growth habit	n	0
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		
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	y	1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative fragmentation		
6.07	Minimum generative time (years)	1	1
7.01	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
7.02	Propagules dispersed intentionally by people	n	-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	n	-1
7.07	Propagules dispersed by other animals (externally)	y?	1
7.08	Propagules dispersed by other animals (internally)	n	-1
8.01	Prolific seed production		
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		
8.05	Effective natural enemies present in Florida, or east of the continental divide		
Total Score			8

Outcome	Reject*
----------------	----------------

*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	8	yes
C	15	yes
total	29	yes

Data collected 2006-2007

Question number	Reference	Source data
1.01		no evidence of cultivation
1.02		
1.03		
2.01	Fryxell (1988) Malvaceae of Mexico. Systematic Botany Monographs vol. 25.	" <i>Malvastrum coromandelianum</i> is pantropical but extends into the temperate zones."
2.02		
2.03		
2.04		
2.05	Whistler (1995) Wayside Plants of the Islands. Isle Botanica, Honolulu.	" <i>Malvastrum coromandelianum</i> (L.) Garcke is native to tropical America, but is now widespread in the tropics."
3.01	1. Wagner, Herbst, and Sohmer (1999) Manual of the flowering plants of Hawai'i. University of Hawai'i Press/Bishop Museum Press, Honolulu. 2. Smith (1981) Flora Vitiensis Nova: A New Flora of Fiji. Vol. 2. Pacific Tropical Botanical Garden.	1. "Pantropical...; in Hawaii naturalized in disturbed sites" 2. "Tropical and subtropical America, but now a widespread weed, established in most Pacific archipelagoes."
3.02	Smith (1981) Flora Vitiensis Nova: A New Flora of Fiji. Vol. 2. Pacific Tropical Botanical Garden.	"a naturalized weed in waste places, gardens, canefields, and open fields and along roadsides...Tropical and subtropical America, but now a widespread weed, established in most Pacific archipelagoes."
3.03	1. Holm (1979) A Geographical Atlas of World Weeds. John Wiley and Sons. 2. Sidhu and Bir (1987) Weed flora of orchards in Patiala district, Punjab. Indian Journal of Weed Science 19: 9-19.	1. Considered a principal weed of agriculture in the Philippines. 2. <i>M. coromandelianum</i> considered a dominant weed in Indian orchards over a 10 year period.
3.04		no evidence
3.05	Holm (1979) A Geographical Atlas of World Weeds. John Wiley and Sons.	<i>M. peruvianum</i> considered a principal weed of agriculture in Colombia.
4.01	Fryxell (1988) Malvaceae of Mexico. Systematic Botany Monographs vol. 25.	no description of these traits
4.02		no evidence

4.03	Fryxell (1988) Malvaceae of Mexico. Systematic Botany Monographs vol. 25.	no description of this
4.04		
4.05		no evidence
4.06		
4.07		no evidence
4.08		no evidence
4.09		
4.1		
4.11	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.	growth habit: subshrub; forb/herb
4.12	Lorenzi (2000) Plantas Daninhas do Brasil. Instituto Plantarum.	"it forms dense infestations which completely dominate annual crops"
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.	Malvaceae
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.	Malvaceae
5.04		
6.01		
6.02	Lorenzi (2000) Plantas Daninhas do Brasil. Instituto Plantarum.	"Propagates by seeds."
6.03		
6.04	Morato and Campos (2000) Floral resource partitioning on <i>Sida</i> Linnaeus and <i>Malvastrum coromandelianum</i> (Linnaeus) Garcke (Malvaceae) between <i>Cephalurgus anomalus</i> Moure & Oliveira (Hymenoptera, Andrenidae, Panurginae) and <i>Melissoptila cnecomala</i> (Moure) (Hymenoptera, Apidae, Eucerini). Revista Brasileira de Zoologia 17: 705-727.	<i>M. coromandelianum</i> is autogamous.
6.05	Morato and Campos (2000) Floral resource partitioning on <i>Sida</i> Linnaeus and <i>Malvastrum coromandelianum</i> (Linnaeus) Garcke (Malvaceae) between <i>Cephalurgus anomalus</i> Moure & Oliveira (Hymenoptera, Andrenidae, Panurginae) and <i>Melissoptila cnecomala</i> (Moure) (Hymenoptera, Apidae, Eucerini). Revista Brasileira de Zoologia 17: 705-727.	pollinated by bees
6.06		
6.07	1. Wagner, Herbst, and Sohmer (1999) Manual of the flowering plants of Hawai'i. University of Hawai'i Press/Bishop Museum Press, Honolulu. 2. USDA,	annual or perennial (1, 2)

	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.	
7.01		
7.02		no evidence
7.03		no evidence
7.04	Fryxell (1988) Malvaceae of Mexico. Systematic Botany Monographs vol. 25.	fruit a schizocarp [no evidence of adaptations for wind dispersal]
7.05		no evidence
7.06		dispersed externally
7.07	Wagner, Herbst, and Sohmer (1999) Manual of the flowering plants of Hawai'i. University of Hawai'i Press/Bishop Museum Press, Honolulu.	Mericarps "with a ventro-apical spine 0.2-2 mm long and 2 dorso-apical cusps, 0.1-1.2 mm long, hispid apically".
7.08		dispersed externally
8.01	Fryxell (1988) Malvaceae of Mexico. Systematic Botany Monographs vol. 25.	10-12 one-seeded mericarps per fruit
8.02		
8.03	Lorenzi (2000) Manual de Identificacao e Controle de Plantas Daninhas. Instituto Plantarum.	Several herbicides provide effective control of <i>M. coromandelianum</i> .
8.04		
8.05		