

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>Synadenium grantii (African milkbush)</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	n	0
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	y	1
4.06	Host for recognised pests and pathogens		
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	n	0
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		
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)	y	1
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		
7.07	Propagules dispersed by other animals (externally)	n	-1
7.08	Propagules dispersed by other animals (internally)		
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		
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			3

Outcome	Accept*
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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	7	yes
B	10	yes
C	12	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	BackyardGardener.com (http://www.backyardgardener.com/plantname/pda_521b.html).	hardiness zones 10 to 11
2.02		
2.03		
2.04	Mohana Rao, G and K Lakshmi (1996) African milkbush. Bee World 77: 12-14.	"It does not tolerate water logging."
2.05	1. Mohana Rao, G and K Lakshmi (1996) African milkbush. Bee World 77: 12-14. 2. Bruneton (1999) Toxic Plants: Dangerous to Humans and Animals. Lavoisier Publishing, Paris.	1. "Native to tropical Africa. Introduced into India in the early 20th century". 2. "a species from Tanzania introduced in Europe in the nineteenth century, then in North America"
3.01	1. Groves, RH and JR Hosking (1997) Recent Incursions of Weeds to Australia 1971-1995. CRC for Weed Management Systems, Technical Series No. 3. 2. Mohana Rao, G and K Lakshmi (1996) African milkbush. Bee World 77: 12-14. 3. Da Silva Viera, RM (2002) The flora of Madeira - Vascular plants naturalised to the Madeira Archipelago. Boletim do Museu Municipal do Funchal (suppl. 8): 5-239, 241-281.	1. "Native from Uganda to Zimbabwe. First recorded as naturalised in Qld in 1991 (Forster 1992)...Commonly cultivated in gardens in Qld and established and persisting at several localities in SE Qld". 2. "Native to tropical Africa. Introduced into India in the early 20th century; now found wild as an escape in drier parts of Karnataka and Maharashtra states." 3. considered a casual or garden-escape on Madeira Island [last 2 cases show it to be a casual escape, but the first shows it to be naturalized]
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05		no evidence
4.01	Carter, S and AR Smith (1987) Flora of Tropical East Africa. Euphorbiaceae, part 2. A.A. Balkema,	no description of these traits

	Rotterdam.	
4.02		no evidence
4.03	Carter, S and AR Smith (1987) Flora of Tropical East Africa. Euphorbiaceae, part 2. A.A. Balkema, Rotterdam.	no description of this
4.04		
4.05	Mohana Rao, G and K Lakshmi (1996) African milkbush. Bee World 77: 12-14.	"The plant is poisonous to cattle."
4.06		
4.07	1. Bruneton (1999) Toxic Plants: Dangerous to Humans and Animals. Lavoisier Publishing, Paris. 2. Queensland Poisons Information Centre (http://www.health.qld.gov.au/poisonsinformationcentre/plants_fungi/africanmilkbush.asp).	1. "causes intense local [skin] reactions: erythema of the face progressing toward the formation of blisters, edema of the mouth and lips with dysphagia in 24-48 hours" 2. "The sap is extremely irritating to the skin, eyes and mouth. Skin contact can cause blisters...If swallowed, symptoms can include irritation of the mouth and throat, general discomfort and sometimes convulsions."
4.08		succulent [and no evidence of its being a fire hazard]
4.09	1. BackyardGardener.com (http://www.backyardgardener.com/plantname/pda_521b.html). 2. Desert-Tropicals.com (http://www.desert-tropicals.com/Plants/Euphorbiaceae/Synadenium_grantii.html).	1. full sun 2. full sun to light shade
4.1	1. Mohana Rao, G and K Lakshmi (1996) African milkbush. Bee World 77: 12-14. 2. BackyardGardener.com (http://www.backyardgardener.com/plantname/pda_521b.html).	1. " <i>S. grantii</i> can grow on poor soils". 2. grows in mostly sand
4.11	Carter, S and AR Smith (1987) Flora of Tropical East Africa. Euphorbiaceae, part 2. A.A. Balkema, Rotterdam.	"Bush or shrubby tree to 10 m. high."
4.12		no evidence
5.01		terrestrial
5.02	Carter, S and AR Smith (1987) Flora of Tropical East Africa. Euphorbiaceae, part 2. A.A. Balkema, Rotterdam.	Euphorbiaceae
5.03	Carter, S and AR Smith (1987) Flora of Tropical East Africa. Euphorbiaceae, part 2. A.A. Balkema, Rotterdam.	Euphorbiaceae
5.04		
6.01		
6.02	Arboles Ornamentales (http://www.arbolesornamentales.com/Synadeniumgrantii.htm).	"It normally is propagated by cuttings, but sometimes also by seeds."
6.03		
6.04		
6.05	Mohana Rao, G and K Lakshmi (1996) African milkbush. Bee World 77: 12-14.	"Visited by <i>Apis mellifera</i> for nectar from the flowers. <i>A. cerana</i> , black ants and wasps also

		forage for floral nectar."
6.06		
6.07		
7.01	Groves, RH and JR Hosking (1997) Recent Incursions of Weeds to Australia 1971-1995. CRC for Weed Management Systems, Technical Series No. 3.	"Commonly cultivated in gardens in Qld and established and persisting at several localities in SE Qld where garden rubbish has been dumped (Forster 1992)."
7.02	Mohana Rao, G and K Lakshmi (1996) African milkbush. Bee World 77: 12-14.	used as a hedge plant around fields and as an ornamental succulent
7.03		no evidence
7.04	Carter, S and AR Smith (1987) Flora of Tropical East Africa. Euphorbiaceae, part 2. A.A. Balkema, Rotterdam.	fruit a dehiscent 3-lobed capsule, $\pm 7 \times 8$ mm; ovoid seeds [no evidence of adaptations for wind dispersal]
7.05		no evidence
7.06		
7.07	Carter, S and AR Smith (1987) Flora of Tropical East Africa. Euphorbiaceae, part 2. A.A. Balkema, Rotterdam.	fruit a dehiscent 3-lobed capsule, $\pm 7 \times 8$ mm; ovoid seeds [no evidence of any means of attachment]
7.08		
8.01	Queensland Poisons Information Centre (http://www.health.qld.gov.au/poisonsinformationcentre/plants_fungi/africanmilkbush.asp).	"The fruit are absent in cultivation."
8.02		
8.03		
8.04		
8.05		