

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>Sansevieria hyacinthoides (bowstring hemp)</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	n	0
3.03	Weed of agriculture	y	0
3.04	Environmental weed	y	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	y	1
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	n	0
5.01	Aquatic	n	0

5.02	Grass	n	0
5.03	Nitrogen fixing woody plant	n	0
5.04	Geophyte	n	0
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	y	1
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	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	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			14

Outcome	Reject*
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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	6	yes
B	9	yes
C	16	yes
total	31	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		
2.02		
2.03		
2.04		
2.05	1. Joyner, Gangstad, and Seale (1951) The vegetative propagation of <i>Sansevieria</i> . <i>Agronomy Journal</i> 43: 128-130. 2. van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. <i>Aloe</i> 31: 11-15.	Used as a fiber crop (1) and as an ornamental (2).
3.01	1. Kairo, Ali, Cheesman, Haysom, and Murphy (2003) <i>Invasive Species Threats in the Caribbean Region</i> . Report to the Nature Conservancy. 2. Villaseñor and Espinosa-Garcia (2004) The alien flowering plants of Mexico. <i>Diversity and Distributions</i> 10: 113-123.	1. Naturalized in Barbados and the Bahamas. 2. present in 2 Mexican states (considered naturalized)
3.02		no evidence
3.03	Holm (1979) <i>A Geographical Atlas of World Weeds</i> . John Wiley and Sons.	Considered a common weed of agriculture in Puerto Rico, and present as a weed in the Dominican Republic.
3.04	Kairo, Ali, Cheesman, Haysom, and Murphy (2003) <i>Invasive Species Threats in the Caribbean Region</i> . Report to the Nature Conservancy.	Considered naturalized and invasive in Barbados and the Bahamas.
3.05	1. Kairo, Ali, Cheesman, Haysom, and Murphy (2003) <i>Invasive Species Threats in the Caribbean Region</i> . Report to the Nature Conservancy. 2. Batiannoff and Franks (1998) Environmental weed invasions on south-east Queensland foredunes. <i>Proceedings of the Royal Society of Queensland</i> 107: 15-34.	1. <i>S. trifasciata</i> considered naturalized and invasive in Bermuda. 2. <i>S. trifasciata</i> considered one of the 22 most troublesome weeds in the dunes of south-east Queensland.
4.01	Eggli (2001) <i>Illustrated Handbook of Succulent Plants</i> . Monocotyledons. Springer-Verlag, Berlin.	no description of these traits
4.02		no evidence

4.03	Eggl (2001) Illustrated Handbook of Succulent Plants. Monocotyledons. Springer-Verlag, Berlin.	no description of this
4.04		
4.05		no evidence
4.06		
4.07	van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. Aloe 31: 11-15.	"The rhizome is edible and a source of food and moisture." [and no other evidence of toxicity]
4.08		no evidence
4.09	van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. Aloe 31: 11-15.	"usually in shade of trees or shrubs...They are ideal plants for a shady garden...Plants should be kept in light shade."
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	van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. Aloe 31: 11-15.	"Stolons forming dense horizontal growth...They are very common...in the Eastern Cape where they occur in dense stands" [but a low herb]
5.01		terrestrial
5.02	1. 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. 2. Atlas of Florida Vascular Plants (http://www.plantatlas.usf.edu/main.asp?plantID=148) 3. van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. Aloe 31: 11-15.	1. Agavaceae 2. Ruscaceae 3. Dracaenaceae [none Poaceae]
5.03	1. 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. 2. Atlas of Florida Vascular Plants (http://www.plantatlas.usf.edu/main.asp?plantID=148) 3. van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. Aloe 31: 11-15.	1. Agavaceae 2. Ruscaceae 3. Dracaenaceae
5.04	Joyner, Gangstad, and Seale (1951) The vegetative propagation of <i>Sansevieria</i> . Agronomy Journal 43: 128-130.	Only rhizomes and feeder roots described and pictured.
6.01		
6.02	1. Joyner, Gangstad, and Seale (1951) The vegetative propagation of <i>Sansevieria</i> . Agronomy Journal 43: 128-130. 2. International Sansevieria Society, Cultivation (http://www.sansevieria-international.org/cultivation.htm).	1. "no viable seeds have been obtained from <i>S. guineensis</i> [synonym]" 2. "Plants can also be produced from seed although this is a slow process." [referring to genus]
6.03		

6.04		
6.05	van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. Aloe 31: 11-15.	<i>Sansevieria</i> flowers "are thought to be pollinated by moths during the night".
6.06	1. Egli (2001) Illustrated Handbook of Succulent Plants. Monocotyledons. Springer-Verlag, Berlin. 2. van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. Aloe 31: 11-15.	1. rhizomatous 2. "Sansevierias are stoloniferous and may form large colonies consisting of a single clone."
6.07		
7.01	New Langeland book	Can spread from discarded garden waste.
7.02	1. Joyner, Gangstad, and Seale (1951) The vegetative propagation of <i>Sansevieria</i> . Agronomy Journal 43: 128-130. 2. van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. Aloe 31: 11-15.	Used as a fiber crop (1) and as an ornamental (2).
7.03		no evidence
7.04	1. Egli (2001) Illustrated Handbook of Succulent Plants. Monocotyledons. Springer-Verlag, Berlin. 2. van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. Aloe 31: 11-15.	1. fruits are berries 2. hard, globose seeds
7.05		no evidence
7.06		fleshy fruited
7.07	Egli (2001) Illustrated Handbook of Succulent Plants. Monocotyledons. Springer-Verlag, Berlin.	fruits are berries - no evidence of any means of attachment
7.08		fleshy fruited
8.01	van Jaarsveld (1994) The <i>Sansevieria</i> species of South Africa and Namibia. Aloe 31: 11-15.	fruits contain 1-3 seeds
8.02		
8.03	Langeland and Stocker (2001) Control of non-native plants in natural areas of Florida. University of Florida, IFAS Extension, SP 242 (http://edis.ifas.ufl.edu/pdf/files/WG/WG20900.pdf).	"Treatment: Foliar apply 5%-10% Garlon 4 in oil or water. Addition of 3% stalker may increase consistency where non-target vegetation will not be endangered. In sandy soils where a greater potential exists for non-target damage plants can be cut and 15%-25% Roundup applied to the cut surfaces...All methods listed have been found effective under certain circumstances."
8.04		
8.05		