

**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>Portulaca oleracea (common purslane)</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)	y	1
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	n	0
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic	y	1
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	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	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	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	y	1
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative fragmentation	y	1
6.07	Minimum generative time (years)	1	1
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	y	1
7.04	Propagules adapted to wind dispersal	y	1
7.05	Propagules water dispersed	y	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)	n	-1
8.01	Prolific seed production	y	1
8.02	Evidence that a persistent propagule bank is formed (>1 yr)	y	1
8.03	Well controlled by herbicides	y	-1
8.04	Tolerates, or benefits from, mutilation or cultivation	y	1
8.05	Effective natural enemies present in Florida, or east of the continental divide		
<b>Total Score</b>			<b>23</b>

<b>Outcome</b>	<b>Reject*</b>
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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	11	yes
C	21	yes
total	39	yes

Data collected 2006-2007

Question number	Reference	Source data
1.01	Mitich (1997) Common purslane ( <i>Portulaca oleracea</i> ). <i>Weed Technology</i> 11: 394-397.	"it has been cultivated since the middle of the 17th century" [but no evidence of selection for reduced weediness]
1.02		
1.03		
2.01		
2.02		
2.03	Holm, Plucknett, Pancho, and Herberger (1977) <i>The World's Worst Weeds: Distribution and Biology</i> . The University Press of Hawaii, Honolulu.	Has an extremely wide distribution.
2.04		
2.05	1. Holm, Plucknett, Pancho, and Herberger (1977) <i>The World's Worst Weeds: Distribution and Biology</i> . The University Press of Hawaii, Honolulu. 2. Mitich (1997) Common purslane ( <i>Portulaca oleracea</i> ). <i>Weed Technology</i> 11: 394-397.	1. "It was one of the early vegetables, and man carried its seed from place to place." 2. "It was undoubtedly introduced into many parts of the world as a food plant"
3.01	Holm, Plucknett, Pancho, and Herberger (1977) <i>The World's Worst Weeds: Distribution and Biology</i> . The University Press of Hawaii, Honolulu.	Considered a weed in 81 countries.
3.02	Miyaniishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. <i>Canadian Journal of Plant Science</i> 60: 953-963.	"It is a serious problem in home gardens"
3.03	Holm, Plucknett, Pancho, and Herberger (1977) <i>The World's Worst Weeds: Distribution and Biology</i> . The University Press of Hawaii, Honolulu.	"It is a weed of 45 crops in 81 countries."
3.04		no evidence
3.05		no evidence
4.01	Miyaniishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. <i>Canadian Journal of Plant Science</i> 60: 953-963.	no description of these traits
4.02	Pope, Thompson, and Cole (1985) Phytotoxicity of root exudates and leaf extracts of nine plant species. Pp. 219-234 in Thompson (ed.) <i>The Chemistry of Allelopathy</i> . American Chemical Society, Washington, D.C.	"Root exudates of common purslane...significantly slowed soybean height increase."
4.03	Miyaniishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L.	no description of this

	Canadian Journal of Plant Science 60: 953-963.	
4.04		
4.05	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	"The succulent leaves and stems accumulate toxic levels of oxalates and may cause sickness and death in livestock." BUT "It now is used widely as a food for pigs."
4.06	Miyaniishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. Canadian Journal of Plant Science 60: 953-963.	"Purslane is included in a list of common weed hosts for the sugar beet nematode...It is also an alternate host of tobacco mosaic virus and many other crop-damaging organisms."
4.07	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	"It was one of the early vegetables" [and no evidence of toxicity]
4.08		no evidence
4.09	1. Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu. 2. Missouri Botanical Garden, Kemper Center for Home Gardening ( <a href="http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=A603">http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=A603</a> ).	1. "The plant prefers an open habitat" 2. full sun (only)
4.1	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	"although it thrives in a rich moist soil, it does grow well on many soil types"
4.11	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	herb
4.12	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	"commonly forming mats" [but is an herb]
5.01		terrestrial
5.02	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 ( <a href="http://plants.usda.gov">http://plants.usda.gov</a> ). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	Portulacaceae
5.03	USDA, NRCS. 2005. The PLANTS Database, Version 3.5 ( <a href="http://plants.usda.gov">http://plants.usda.gov</a> ). Data compiled from various sources by Mark W. Skinner. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.	herbaceous Portulacaceae
5.04	Miyaniishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. Canadian Journal of Plant Science 60: 953-963.	"thick tap root with many fibrous secondary roots"
6.01		
6.02	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	"reproducing by seed"
6.03	1. Matthews, Ketron, and Zane (1993) The biology and taxonomy of the <i>Portulaca oleracea</i> L. (Portulacaceae) complex in North America.	1. A natural hybrid reported for which <i>P. oleracea</i> was one of the "putative parents". [not certain] BUT 2.

	Rhodora 95: 166-183. 2. Miyanishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. Canadian Journal of Plant Science 60: 953-963.	"There is no record of any interspecific hybridization."
6.04	Miyanishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. Canadian Journal of Plant Science 60: 953-963.	"Purslane is autogamous, since bagged flowers produce copious viable seeds"
6.05	Miyanishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. Canadian Journal of Plant Science 60: 953-963.	"Purslane flowers are generally self-pollinated"; "cross-pollination is believed to be primarily by wind since few insect visitors have been observed"
6.06	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	"reproducing by seed and stem fragments"
6.07	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	The complete life cycle takes from 2 to 4 months.
7.01	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	"The fleshy stems will root on contact with the soil, so that fragmentation with tools or machines may lead to movement and increase in plant numbers."
7.02	1. Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu. 2. Missouri Botanical Garden, Kemper Center for Home Gardening ( <a href="http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=A603">http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=A603</a> ).	1. "It was one of the early vegetables, and man carried its seed from place to place." 2. Certain large-flowered cultivars are used ornamentally.
7.03	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	"The seeds of <i>P. oleracea</i> are spread by wind, water, and with the seeds of crops"
7.04	Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu.	"The seeds of <i>P. oleracea</i> are spread by wind, water, and with the seeds of crops"
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7.06	1. Holm, Plucknett, Pancho, and Herberger (1977) The World's Worst Weeds: Distribution and Biology. The University Press of Hawaii, Honolulu. 2. Miyanishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. Canadian Journal of Plant Science 60: 953-963.	1. "it is known also that some birds feed on them" 2. Seeds from bird feces were found to be viable.
7.07	Miyanishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. Canadian Journal of Plant Science 60: 953-963.	no evidence of any means of attachment
7.08		wind dispersed
8.01	Matthews, Ketron, and Zane (1993) The biology and taxonomy of the <i>Portulaca oleracea</i> L.	Estimated that "over an entire season a purslane plant can produce

	(Portulacaceae) complex in North America. Rhodora 95: 166-183.	101,625 to 242,540 seeds".
8.02	Miyanishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. Canadian Journal of Plant Science 60: 953-963.	"Purslane seeds survived 40 yr of burial in soil"
8.03	Miyanishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. Canadian Journal of Plant Science 60: 953-963.	"Effective control has been obtained with a wide range of postemergent and residual herbicides."
8.04	Miyanishi and Cavers (1980) The biology of Canadian weeds. 40. <i>Portulaca oleracea</i> L. Canadian Journal of Plant Science 60: 953-963.	"branches and stems are easily broken off by trampling, hoeing, rototilling, etc. The stem fragments are capable of producing adventitious roots and becoming re-established."
8.05		