

Australia/New Zealand Weed Risk Assessment adapted for United States.

Data used for analysis published in: Gordon, D.R. and C.A. Gantz. 2008. Potential impacts on the horticultural industry of screening new plants for invasiveness. Conservation Letters 1: 227-235. Available at: <http://www3.interscience.wiley.com/cgi-bin/fulltext/121448369/PDFSTART>

<i>Papaver oreophilum</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 U.S. climates (USDA hardiness 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)	n	0
2.04	Native or naturalized in regions with an average of 11-60 inches of annual precipitation	y	1
2.05	Does the species have a history of repeated introductions outside its natural range?	y	
3.01	Naturalized beyond native range	n	-2
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	y	2
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic		
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		
4.09	Is a shade tolerant plant at some stage of its life cycle	n	0
4.1	Grows on one or more of the following soil types: alfisols, entisols, or mollisols	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	n	0
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)		
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	?	
7.05	Propagules water dispersed		
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	?	
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 U.S.		
Total Score			2

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	11	Yes
B	8	Yes
C	10	Yes
total	29	yes

Data collected 2008

Question number	Reference	Source data
1.01		used horticulturally, but no evidence of significant modification
1.02		
1.03		
2.01	<p>1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20gnd.tif). 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?26692). 3. Slabý, P. (2007) Rock Garden Plant Database (http://www.kadel.cz/flora/g/kvCard.asp-Id=14290.htm). 4. Czerepanov, SK (1995) Vascular Plants of Russia and Adjacent States (the former USSR). Cambridge University Press, Cambridge and New York. 5. Shishkin, BK (1937) Flora of the U.S.S.R. Volume VII. Ranales and Rhoadales. Pp. 456-458, 474-476. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970).</p>	<p>1. Global plant hardiness zones 4-8. 2. Caucasus: Russian Federation - Kabardino-Balkaria, North Ossetia. 3. Caucasus: N. Caucasus, Transcaucasus. 4. Caucasus. 5. "Caucasus: Greater Caucasus (below entire Main Range: Balkaria, Digoria, Ossetia, Svanetia)".</p>
2.02		
2.03	<p>1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf). 2. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?26692). 3. Slabý, P. (2007)</p>	<p>1. Only two climatic regions. 2. Caucasus: Russian Federation - Kabardino-Balkaria, North Ossetia. 3. Caucasus: N. Caucasus, Transcaucasus. 4. Caucasus. 5. "Caucasus: Greater Caucasus (below entire Main Range: Balkaria, Digoria,</p>

	<p>Rock Garden Plant Database (http://www.kadel.cz/flora/g/kvCard.asp-Id=14290.htm). 4. Czerepanov, SK (1995) Vascular Plants of Russia and Adjacent States (the former USSR). Cambridge University Press, Cambridge and New York. 5. Shishkin, BK (1937) Flora of the U.S.S.R. Volume VII. Ranales and Rhoeadales. Pp. 456-458, 474-476. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970).</p>	Ossetia, Svanetia)".
2.04	<p>Atlappedia Online (http://www.atlappedia.com/online/countries/russia.htm).</p>	For the Russian Federation: rainfall is highest in the westerly mountain regions which has an average annual precipitation of up to 2,000 mm (79 inches) while on the East European Plain it averages between 600 and 700 mm (24 to 27.5 inches) and up to 1,000 (39 inches) in the southern areas of the Far East.
2.05	<p>1. Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon. 2. Slabý, P. (2007) Rock Garden Plant Database (http://www.kadel.cz/flora/g/kvCard.asp-Id=14290.htm).</p>	<p>1. "This interesting species is occasionally cultivated in gardens, although it is not generally available in the trade." 2. Information provided on a Czech rock garden database: "Cultivation...alpine house".</p>
3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05	<p>1. Holm, L, JV Pancho, JP Herberger, and DL Plucknett (1979) A Geographical Atlas of World Weeds. John Wiley and Sons, New York. 2. Parsons, WT and Cuthbertson, EG (2001) Noxious weeds of Australia. 2nd Edition. CSIRO Publishing, Collingwood, Victoria, Australia.</p>	<p>1. One congener is a serious weed in 5 countries; 2 congeners are principal weeds in Australia; 3 congeners are common weeds in 6 countries. 2. <i>Papaver somniferum</i> is a noxious weed in Australia. There are 4 other weeds of Australia listed in this reference.</p>
4.01	<p>Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon.</p>	no description of these traits

4.02		
4.03	Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon.	no description of parasitism
4.04		
4.05	Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon.	no evidence
4.06		
4.07	Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon.	no evidence
4.08		
4.09	Slabý, P. (2007) Rock Garden Plant Database (http://www.kadel.cz/flora/g/kvCard.asp-Id=14290.htm).	"Sunny site...sun"
4.1	1. USDA, National Resources Conservation Services (NRCS), Soil Survey Division, World Soil Resources (http://soils.usda.gov/use/worldsoils/mapindex/order.html). 2. Slabý, P. (2007) Rock Garden Plant Database (http://www.kadel.cz/flora/g/kvCard.asp-Id=14290.htm).	1. Russian Federation - Kabardino-Balkaria, North Ossetia has entisols. 2. "Mesic, slightly humous...moist, rich, drained soil"
4.11	1. Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon. 2. Slabý, P. (2007) Rock Garden Plant Database (http://www.kadel.cz/flora/g/kvCard.asp-Id=14290.htm). 3. Davis, PH (Editor) (1965) Flora of Turkey and the East Aegean Islands. Volume 1. P. 226. Edinburgh University Press, Edinburgh. 4. Shishkin, BK (1937) Flora of the U.S.S.R. Volume VII. Ranales and Rhoadales. Pp. 456-458, 474-476. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970).	1. "Generally only 10-20 cm (4-8 in) tall...the leaves are mostly basal". 2. "Type: rosette". 3. "Stems 45-60 cm...leaves in the lower part of the stems only" [description of <i>Papaver lateritium</i> , but <i>P. oreophilum</i> is listed as closely related and "may not be specifically distinct"]. 4. "Stem 10-20 cm high, with few branches, spreading or recurved, hispid, angular".
4.12	1. Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon. 2. Slabý, P. (2007) Rock Garden Plant Database (http://www.kadel.cz/flora/g/kvCard.asp-Id=14290.htm). 3. Davis, PH (Editor) (1965) Flora of Turkey and the East Aegean Islands. Volume 1. P. 226. Edinburgh University Press, Edinburgh. 4.	1. "Generally only 10-20 cm (4-8 in) tall...the leaves are mostly basal". 2. "Type: rosette". 3. "Stems 45-60 cm...leaves in the lower part of the stems only" [description of <i>Papaver lateritium</i> , but <i>P. oreophilum</i> is listed as closely related and "may not be specifically distinct"]. 4. "Stem 10-20

	Shishkin, BK (1937) Flora of the U.S.S.R. Volume VII. Ranales and Rhoeadales. Pp. 456-458, 474-476. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970).	cm high, with few branches, spreading or recurved, hispid, angular".
5.01		terrestrial
5.02	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?26692). 2. Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon.	1. Papaveraceae 2. perennial herbs
5.03	1. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland (http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?26692). 2. Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon.	1. Papaveraceae 2. perennial herbs
5.04	ZipcodeZoo.com (http://zipcodezoo.com/Plants/P/Papaver_oreophilum.asp).	"Herbs...from taproots" [genus description].
6.01		no evidence
6.02	1. Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon. 2. Slabý, P. (2007) Rock Garden Plant Database (http://www.kadel.cz/flora/g/kvCard.asp-Id=14290.htm).	1. "The perennial species can also be grown from seed" [subfamily description] 2. "Propagation: seed in spring"
6.03		
6.04		
6.05	Mihalik, E (1998) Sect. II: Biology of Poppy. 1: Taxonomy. <i>In</i> Poppy: the genus <i>Papaver</i> . Bernath, J, Editor. Harwood Academic Publishers, Australia.	"The <i>Papaveraceae</i> species are mostly insect-pollinated...The insect pollinators are mainly <i>Hymenoptera</i> and <i>Diptera</i> . As the flowers lack nectaries, they offer only pollen to pollinating insects which are mostly attracted by visual stimuli, e.g., the

		colour of the petals and sometimes their basal marks."
6.06		
6.07		
7.01		
7.02	1. Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon. 2. Slabý, P. (2007) Rock Garden Plant Database (http://www.kadel.cz/flora/g/kvCard.asp-Id=14290.htm).	1. "This interesting species is occasionally cultivated in gardens, although it is not generally available in the trade." 2. Information provided on a Czech rock garden database: "Cultivation...alpine house".
7.03		no evidence
7.04	1. Davis, PH (Editor) (1965) Flora of Turkey and the East Aegean Islands. Volume 1. P. 226. Edinburgh University Press, Edinburgh. 2. ZipcodeZoo.com (http://zipcodezoo.com/Plants/P/Papaver_oreophilum.asp). 3. Gunn, CR (1980) Seeds and fruits of Papaveraceae and Fumariaceae. Seed Science and Technology 8: 3-58. 4. Shishkin, BK (1937) Flora of the U.S.S.R. Volume VII. Ranales and Rhoeadales. Pp. 456-458, 474-476. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970). 5. Grey-Wilson, C (2000) Poppies: A Guide to the Poppy Family in the Wild and in Cultivation. Timber Press, Portland, Oregon.	1. "Capsule glabrous, obovate-clavate, somewhat ribbed, with a bluish-black bloom" [description of <i>Papaver lateritium</i> , but <i>P. oreophilum</i> is listed as closely related and "may not be specifically distinct"]. 2. "Seeds many, minutely pitted, aril absent." [genus description]. 3. "Seed...0.4-1.5 × 0.3-1.2 mm, comma- to C-shaped, obovate, reniform, or suborbicular"; "seeds are thought to fall through the apical pores of the capsules as their stalks swing in the wind" [genus description]. 4. "Capsules glabrous, oblong-clavate, 15-17 mm long". 5. "The characteristic fruit-capsule is a 'pepper pot', rounded to oblong or club-shaped, which opens by a ring of pores just below the stigmatic disk; the fine seeds are shaken through the pores by the slightest breeze and scattered over the ground" [genus description].
7.05		
7.06		
7.07	1. Davis, PH (Editor) (1965) Flora of Turkey and the East Aegean Islands. Volume 1. P. 226. Edinburgh University Press, Edinburgh. 2. ZipcodeZoo.com (http://zipcodezoo.com/Plants/P/Papaver_oreophilum.asp). 3. Gunn, CR (1980) Seeds and fruits of Papaveraceae and Fumariaceae. Seed Science	1. "Capsule glabrous, obovate-clavate, somewhat ribbed, with a bluish-black bloom" [description of <i>Papaver lateritium</i> , but <i>P. oreophilum</i> is listed as closely related and "may not be specifically distinct"]. 2. "Seeds many, minutely pitted, aril

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7.08		
8.01	1. ZipcodeZoo.com (http://zipcodezoo.com/Plants/P/Papaver_oreophilum.asp). 2. Mihalik, E (1998) Sect. II: Biology of Poppy. 1: Taxonomy. In Poppy: the genus Papaver. Bernath, J, Editor. Harwood Academic Publishers, Australia.	1. "Seeds many, minutely pitted, aril absent." [genus description]. 2. "Seeds are usually numerous per fruit. However, in some cases their number is much less and in the extreme, only one seed is present." [family description]
8.02		
8.03		
8.04		
8.05		