

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>Scabiosa olgae</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?	?	
3.01	Naturalized beyond native range	n	-1
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		
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	?	
4.11	Climbing or smothering growth habit	n	0
4.12	Forms dense thickets	?	

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	?	
6.03	Hybridizes naturally		
6.04	Self-compatible or apomictic		
6.05	Requires specialist pollinators	?	
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	n	-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)		
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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section	# questions answered	satisfy minimum?
A	10	Yes
B	6	Yes
C	7	Yes
total	23	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?449666). 3. Czerepanov, SK (1995) Vascular Plants of Russia and Adjacent States (the former USSR). Cambridge University Press, Cambridge and New York. 4. Shishkin, BK and Bobrov, EG (1957) Flora of the U.S.S.R. Volume XXIV. Dipsacaceae, Cucurbitaceae, Campanulaceae. Pp. 42-49. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad, 1957 and Israel Program for Scientific Translations, Jerusalem (1972). 5. Walters, SM et al (1984) The European Garden Flora. Volume VI. Pp. 463-464. Cambridge University Press, Cambridge (Cambridgeshire) and New York.</p>	<p>1. Global plant hardiness zones 4-8. 2. Caucasus: Georgia. 3. Caucasus. 4. "Caucasus: W. Transc. (from Tuapse to N. Abkhaziya)." 5. "Caucasus (W Transcaucasus)".</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?449666). 3. Czerepanov, SK (1995) Vascular Plants of Russia and Adjacent States (the former USSR). Cambridge University Press, Cambridge and New York. 4. Shishkin, BK and Bobrov, EG (1957) Flora of the U.S.S.R. Volume XXIV. Dipsacaceae, Cucurbitaceae, Campanulaceae. Pp. 42-49. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad, 1957 and Israel Program for Scientific Translations, Jerusalem (1972). 5. Walters, SM et al (1984) The European Garden Flora. Volume VI. Pp. 463-464. Cambridge</p>	<p>1. Only two climatic regions. 2. Caucasus: Georgia. 3. Caucasus. 4. "Caucasus: W. Transc. (from Tuapse to N. Abkhaziya)." 5. "Caucasus (W Transcaucasus)".</p>

	University Press, Cambridge (Cambridgeshire) and New York.	
2.04	Atlapedia Online (http://www.atlapedia.com/online/countries/georgia.htm).	For Georgia: along the coast average annual precipitation varies from 1,200 to 2,800 mm (47 to 110 inches) to 600 to 800 mm (24 to 31.5 inches) in the mountainous regions.
2.05		no evidence
3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05	Holm, L, JV Pancho, JP Herberger, and DL Plucknett (1979) A Geographical Atlas of World Weeds. John Wiley and Sons, New York.	Eight congeners are present as weeds in 7 countries [not enough evidence to be considered weeds].
4.01	Shishkin, BK and Bobrov, EG (1957) Flora of the U.S.S.R. Volume XXIV. Dipsacaceae, Cucurbitaceae, Campanulaceae. Pp. 42-49. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad, 1957 and Israel Program for Scientific Translations, Jerusalem (1972).	no description of these traits
4.02		
4.03	Shishkin, BK and Bobrov, EG (1957) Flora of the U.S.S.R. Volume XXIV. Dipsacaceae, Cucurbitaceae, Campanulaceae. Pp. 42-49. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad, 1957 and Israel Program for Scientific Translations, Jerusalem (1972).	no description of parasitism
4.04		
4.05	Shishkin, BK and Bobrov, EG (1957) Flora of the U.S.S.R. Volume XXIV. Dipsacaceae, Cucurbitaceae, Campanulaceae. Pp. 42-49. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad, 1957 and Israel Program for Scientific Translations, Jerusalem (1972).	no evidence
4.06		
4.07	Shishkin, BK and Bobrov, EG (1957) Flora of the U.S.S.R. Volume XXIV. Dipsacaceae, Cucurbitaceae, Campanulaceae. Pp. 42-49. Izdatel'stvo Akademii Nauk SSSR, Moskva-	no evidence

	Leningrad, 1957 and Israel Program for Scientific Translations, Jerusalem (1972).	
4.08		
4.09	ZipcodeZoo.com (http://zipcodezoo.com/Plants/S/Scabiosa_olgae.asp).	"Sun Exposure: Full sun." [genus description].
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. ZipcodeZoo.com (http://zipcodezoo.com/Plants/S/Scabiosa_olgae.asp). 3. Shishkin, BK and Bobrov, EG (1957) Flora of the U.S.S.R. Volume XXIV. Dipsacaceae, Cucurbitaceae, Campanulaceae. Pp. 42-49. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad, 1957 and Israel Program for Scientific Translations, Jerusalem (1972).	1. Mollisols and alfisols occur in the region of origin, but since it is not well-defined, there are potentially large regions of the "rocky land" soil order type which may accommodate the species. 2. "Prefers organic, moist, well-drained soil." [genus description]. 3. "Limestones on bluff shores".
4.11	1. Shishkin, BK and Bobrov, EG (1957) Flora of the U.S.S.R. Volume XXIV. Dipsacaceae, Cucurbitaceae, Campanulaceae. Pp. 42-49. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad, 1957 and Israel Program for Scientific Translations, Jerusalem (1972). 2. ZipcodeZoo.com (http://zipcodezoo.com/Plants/S/Scabiosa_olgae.asp). 3. Walters, SM <i>et al</i> (1984) The European Garden Flora. Volume VI. Pp. 463-464. Cambridge University Press, Cambridge (Cambridgeshire) and New York.	1. "Perennial; root woody, multicipital, producing 3-10 stems; stems ascending, 25-45 cm, simple, woody in lower part". 2. "Erect, compact herbaceous perennial."; "Nearly flat basal foliage hugs the ground." [genus description]. 3. "Stems 25-45 cm".
4.12	1. Shishkin, BK and Bobrov, EG (1957) Flora of the U.S.S.R. Volume XXIV. Dipsacaceae, Cucurbitaceae, Campanulaceae. Pp. 42-49. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad, 1957 and Israel Program for Scientific Translations, Jerusalem (1972). 2. ZipcodeZoo.com (http://zipcodezoo.com/Plants/S/Scabiosa_olgae.asp). 3. Walters, SM <i>et al</i> (1984) The European Garden Flora. Volume VI. Pp. 463-464. Cambridge University Press, Cambridge (Cambridgeshire) and New York.	1. "Perennial; root woody, multicipital, producing 3-10 stems; stems ascending, 25-45 cm, simple, woody in lower part". 2. "Erect, compact herbaceous perennial."; "Nearly flat basal foliage hugs the ground." [genus description]. 3. "Stems 25-45 cm".
5.01		terrestrial

5.02		Dipsacaceae
5.03		Dipsacaceae
5.04	Shishkin, BK and Bobrov, EG (1957) Flora of the U.S.S.R. Volume XXIV. Dipsacaceae, Cucurbitaceae, Campanulaceae. Pp. 42-49. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad, 1957 and Israel Program for Scientific Translations, Jerusalem (1972).	Perennial; root woody, multicipital, producing 3-10 stems; stems ascending, 25-45 cm, simple, woody in lower part.
6.01		no evidence
6.02	Walters, SM et al (1984) The European Garden Flora. Volume VI. Pp. 463-464. Cambridge University Press, Cambridge (Cambridgeshire) and New York.	"Propagation is by seed or, in the case of woody species, by cuttings" [genus description].
6.03		
6.04		
6.05	ZipcodeZoo.com (http://zipcodezoo.com/Plants/S/Scabiosa_olgae.asp).	"Attracts butterflies" [genus description].
6.06		
6.07		
7.01		
7.02		no evidence
7.03		no evidence
7.04		
7.05		
7.06		
7.07		
7.08		
8.01		
8.02		
8.03		
8.04		
8.05		