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

Silene pygmaea			
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)	?	
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	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		
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	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	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	n	-1
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**

section	**# questions answered**	**satisfy minimum?**
A	9	Yes
B	6	Yes
C	8	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	1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnd.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?446896). 3. Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970).	1. Global plant hardiness zones 4-7. 2. Caucasus: Georgia; Russian Federation - Dagestan [temperate Asia]. 3. "Caucasus: Main Range, Daghestan, W. Transc. (Mingrelia Mountains)."
2.02		
2.03	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?446896). 3. Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970).	1. Most likely two, but possibly three climatic regions. Unsure based on distribution range. 2. Caucasus: Georgia; Russian Federation - Dagestan [temperate Asia]. 3. "Caucasus: Main Range, Daghestan, W. Transc. (Mingrelia Mountains)."
2.04	1. Atlapedia Online (http://www.atlapedia.com/online/countries/georgia.htm). 2. Atlapedia Online (http://www.atlapedia.com/online/countries/russia.htm).	1. 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. 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		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.	One congener is a serious weed in 4 countries; 3 congeners are principal weeds in 3 countries.
4.01	Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970).	no description of these traits
4.02		
4.03	Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970).	no description of parasitism
4.04		
4.05	Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970).	no evidence
4.06		
4.07	Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970).	no evidence
4.08		
4.09		
4.1	USDA, National Resources Conservation Services (NRCS), Soil Survey Division, World Soil Resources	Georgia: mostly entisols and rocky land with small amounts of alfisols, inceptisols, mollisols, and ultisols (and

	(http://soils.usda.gov/use/worldsoils/mapindex/order.html).	a very small region of histisols); Russian Federation: Dagestan: mostly rocky land with some entisols and mollisols and a small amount of inceptisols and aridisols (and possibly a small amount of histisols) [but since the rocky land soil order type is so prevalent in all of the countries, it is difficult to determine if the species occurs more often in this type].
4.11	1. Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970). 2. Walters, SM *et al* (1984) The European Garden Flora. Volume III. Dicotyledons (Part I). P. 179. Cambridge University Press, Cambridge (Cambridgeshire) and New York.	1. "Perennial; stems several, 8-20 cm long, ascending". 2. "Herbs, or sometimes small shrubs with woody stocks." [genus description].
4.12	1. Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970). 2. Walters, SM *et al* (1984) The European Garden Flora. Volume III. Dicotyledons (Part I). P. 179. Cambridge University Press, Cambridge (Cambridgeshire) and New York.	1. "Perennial; stems several, 8-20 cm long, ascending". 2. "Herbs, or sometimes small shrubs with woody stocks." [genus description].
5.01		terrestrial
5.02	1. Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970). 2. Walters, SM *et al* (1984) The European Garden Flora. Volume III. Dicotyledons (Part I). P. 179. Cambridge University Press, Cambridge (Cambridgeshire) and New York.	Caryophyllaceae
5.03	1. Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970). 2. Walters, SM *et al* (1984) The European Garden Flora. Volume III.	Caryophyllaceae

	Dicotyledons (Part I). P. 179. Cambridge University Press, Cambridge (Cambridgeshire) and New York.	
5.04		
6.01		no evidence
6.02		
6.03		
6.04		
6.05		
6.06		
6.07		
7.01		
7.02		no evidence
7.03		no evidence
7.04	1. Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970). 2. Walters, SM *et al* (1984) The European Garden Flora. Volume III. Dicotyledons (Part I). P. 179. Cambridge University Press, Cambridge (Cambridgeshire) and New York.	1. "Capsule ovoid, 6 mm long and 4 mm broad"; "seeds reniform, 1 mm long, sharply tuberculate [warty] on the back". 2. "Fruit a capsule with variably-developed basal septa, dehiscing apically"; "seeds numerous, usually 1-2 mm" [genus description]. [no adaptations to wind dispersal]
7.05		
7.06		
7.07	1. Shishkin, BK (1936) Flora of the U.S.S.R. Volume VI. Centrospermae. Pp. 442, 505. Izdatel'stvo Akademii Nauk SSSR, Moskva-Leningrad and Israel Program for Scientific Translations, Jerusalem (1970). 2. Walters, SM *et al* (1984) The European Garden Flora. Volume III. Dicotyledons (Part I). P. 179. Cambridge University Press, Cambridge (Cambridgeshire) and New York.	1. "Capsule ovoid, 6 mm long and 4 mm broad"; "seeds reniform, 1 mm long, sharply tuberculate [warty] on the back". 2. "Fruit a capsule with variably-developed basal septa, dehiscing apically"; "seeds numerous, usually 1-2 mm" [genus description]. [no adaptations to external dispersal]
7.08		
8.01		
8.02		
8.03		
8.04		
8.05		