

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>Spiraea mongolica</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)	y	1
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		
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		
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			0

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	1. PERAL NAPPFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPPFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20gnd.tif). 2. Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	1. Global plant hardiness zones 2-9. 2. "Gansu, Hebei, Henan, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang."
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. Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	1. Three climatic regions. 2. "Gansu, Hebei, Henan, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang."
2.04	Climate Source (http://www.climatesource.com/cn/fact_sheets/chinappt_xl.jpg).	In the provinces listed for China, average annual precipitation ranges from <2 in/yr to >196.9 in/yr.
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.	Five congeners are present as weeds in the United States [not enough evidence to be considered weeds].
4.01	Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	no description of these traits
4.02		

4.03	Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	no description of parasitism
4.04		
4.05	Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	no evidence
4.06		
4.07	Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	no evidence
4.08		
4.09		
4.1	USDA, National Resources Conservation Services (NRCS), Soil Survey Division, World Soil Resources (http://soils.usda.gov/use/worldsoils/mapindex/order.html).	The provinces of China are not well-defined on the soil orders map, but it is highly likely that the following soil order types occur in the provinces of the region of origin: alfisols, aridisols, entisols, gelisols, inceptisols, mollisols, and ultisols (and the histisols and rocky land soil order types also occur in this area).
4.11	Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	Shrubs to 3 m tall.
4.12		
5.01		terrestrial
5.02	Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	Rosaceae; "Shrubs to 3 m tall"
5.03	Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	Rosaceae; "Shrubs to 3 m tall"
5.04	Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press	"Shrubs to 3 m tall".

	(Beijing) and Missouri Botanical Garden (St. Louis).	
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	Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	"Follicles straightly spreading, glabrous" [species description]; "Follicles bony, often dehiscent along adaxial suture. Seeds linear to oblong, minute; testa membranous." [genus description]. [no evidence of adaptations to wind dispersal]
7.05		
7.06		
7.07	Lingdi, L and Alexander, C (1994) <i>Spiraea mongolica</i> . Pp. 47 & 69. In: Wu, Z and Raven, PH (editors). Flora of China. Vol. 9. Science Press (Beijing) and Missouri Botanical Garden (St. Louis).	"Follicles straightly spreading, glabrous" [species description]; "Follicles bony, often dehiscent along adaxial suture. Seeds linear to oblong, minute; testa membranous." [genus description]. [no evidence of adaptations to external dispersal]
7.08		
8.01		
8.02		
8.03		
8.04		
8.05		