

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>Chrysosplenium valdivicum</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	?	
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	?	
4.11	Climbing or smothering growth habit	?	
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	?	
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	y	1
7.05	Propagules water dispersed		
7.06	Propagules bird dispersed		
7.07	Propagules dispersed by other animals (externally)	y	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			-1

Outcome	Accept
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section	# questions answered	satisfy minimum?
A	9	Yes
B	4	Yes
C	8	Yes
total	21	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%20lgn d.tif). 2. Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile. 3. Ramírez, C, Hauenstein, E, San Martín, J, and Contreras, D (1989) Study of the flora of Rucamanque, Cautin Province, Chile. Annals of the Missouri Botanical Garden 76: 444-453. 4. Hooker, WJ (1842) <i>Chrysosplenium valdivicum</i> . Vol. I. The London Journal of Botany. Hippolyte Bailliere, Publisher, London.	1. Global plant hardiness zones 8-9. 2. Occurs in humid forests in the provinces of Valdivia in Chile and also in Argentina. 3. Occurs in Rucamanque, Cautin Province, Chile. 4. "Los Andes' province of Valdivia [Chile]".
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. Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile. 3. Ramírez, C, Hauenstein, E, San Martín, J, and Contreras, D (1989) Study of the flora of Rucamanque, Cautin Province, Chile. Annals of the Missouri Botanical Garden 76: 444-453. 4. Hooker, WJ (1842) <i>Chrysosplenium valdivicum</i> . Vol. I. The London Journal of Botany. Hippolyte Bailliere, Publisher, London.	1. Occurs in two climatic regions. 2. Occurs in humid forests in the provinces of Valdivia in Chile and also in Argentina. 3. Occurs in Rucamanque, Cautin Province, Chile. 4. "Los Andes' province of Valdivia [Chile]".
2.04	Atlapedia Online (http://www.atlapedia.com/online/countries/chile.htm).	Rainfall increases from almost nothing in the Atacama Desert in the north to 5,080 mm (200 inches) in the south.
2.05		no evidence
3.01		no evidence
3.02		no evidence
3.03		no evidence
3.04		no evidence
3.05		no evidence

4.01	Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile.	no evidence
4.02		
4.03	Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile.	no evidence
4.04		
4.05	Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile.	no evidence
4.06		
4.07	Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile.	no evidence
4.08		
4.09	Hooker, WJ (1842) <i>Chrysosplenium valdivicum</i> . Vol. I. The London Journal of Botany. Hippolyte Bailliere, Publisher, London.	"Moist shady places".
4.1	USDA, National Resources Conservation Services (NRCS), Soil Survey Division, World Soil Resources (http://soils.usda.gov/use/worldsoils/mapindex/order.html).	Chile (Valdivia): region is not well-defined on the soils map, so any of the following soil orders could be occurring in the native region: aridisols, andisols, entisols, inceptisols, spodosols, and ultisols/vertisols (it was not possible to differentiate which type was present, even at a higher magnification of the map); Argentina: since province(s) are not specified, it could be that the soil orders in the region of origin do not fit our criteria.
4.11	Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile.	"Perennial, crawling plant that grows in humid forests".
4.12		
5.01		terrestrial
5.02	Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile.	Saxifragaceae
5.03	Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile.	Saxifragaceae
5.04	ZipcodeZoo.com (http://zipcodezoo.com/Plants/C/Chrysosplenium_valdivicum.asp).	"Herbs perennial, small, usually with stolons, bulbs, or bulbils" [genus description].

6.01		no evidence
6.02		
6.03		
6.04		
6.05		
6.06	ZipcodeZoo.com (http://zipcodezoo.com/Plants/C/Chrysosplenium_valdivicum.asp).	"Herbs perennial, small, usually with stolons, bulbs, or bulbils" [genus description].
6.07		
7.01		
7.02		no evidence
7.03		no evidence
7.04	1. Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile. 2. Armesto, JJ and Rozzi, R (1989) Seed dispersal syndromes in the rain forest of Chiloé: evidence for the importance of biotic dispersal in a temperate rain forest. Journal of Biogeography 16: 219-226. 3. ZipcodeZoo.com (http://zipcodezoo.com/Plants/C/Chrysosplenium_valdivicum.asp).	1. "Fruto una capsula, hasta 5 mm de largo...que se abre arriba y contiene 8-10 semillas casi redondas, cafe oscuro, brillantes, de 1 mm de diametro, muy finamente punteadas" [Fruits are capsules, up to 5 mm long...capsule opens up at top and contains 8-10 seeds that are almost round, dark brown, shiny, 1 mm diameter, pointed at the end]. 2. Species is categorized as having the "Multiple" dispersal syndrome, which = "dust-like diaspores that may be carried by wind, water, or on animal bodies". 3. "Fruit a capsule, with 2 subequal or distinctly unequal carpels. Seeds many, ovoid to ellipsoid, smooth, papillose, tuberculate, puberulous, sulcate, or other texture" [genus description]. [no evidence of adaptations to wind dispersal?]
7.05		
7.06		
7.07	1. Schick, MM (1980) Flora del Parque Nacional Puyehue. Editorial Universitaria, Santiago, Chile. 2. Armesto, JJ and Rozzi, R (1989) Seed dispersal syndromes in the rain forest of Chiloé: evidence for the importance of biotic dispersal in a temperate rain forest. Journal of Biogeography 16: 219-226. 3. ZipcodeZoo.com (http://zipcodezoo.com/Plants/C/Chrysosplenium_valdivicum.asp).	1. "Fruto una capsula, hasta 5 mm de largo...que se abre arriba y contiene 8-10 semillas casi redondas, cafe oscuro, brillantes, de 1 mm de diametro, muy finamente punteadas" [Fruits are capsules, up to 5 mm long...capsule opens up at top and contains 8-10

	divicum.asp).	seeds that are almost round, dark brown, shiny, 1 mm diameter, pointed at the end]. 2. Species is categorized as having the "Multiple dispersal syndrome, which = "dust-like diaspores that may be carried by wind, water, or on animal bodies". 3. "Fruit a capsule, with 2 subequal or distinctly unequal carpels. Seeds many, ovoid to ellipsoid, smooth, papillose, tuberculate, puberulous, sulcate, or other texture" [genus description]. [no evidence of adaptations to external dispersal?]
7.08		
8.01		
8.02		
8.03		
8.04		
8.05		