

<i>Sasa palmata</i> (dwarf bamboo)		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 FL 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	y	2
3.02	Garden/amenity/disturbance weed	y	2
3.03	Weed of agriculture		
3.04	Environmental weed	y	4
3.05	Congeneric weed		
4.01	Produces spines, thorns or burrs	n	0
4.02	Allelopathic		
4.03	Parasitic	n	0
4.04	Unpalatable to grazing animals	n	-1
4.05	Toxic to animals	n	0
4.06	Host for recognised pests and pathogens	n	0
4.07	Causes allergies or is otherwise toxic to humans		
4.08	Creates a fire hazard in natural ecosystems		
4.09	Is a shade tolerant plant at some stage of its life cycle	y	1
4.10	Grows on infertile soils (oligotrophic, limerock, or excessively draining soils). North & Central Zones: infertile soils; South Zone: shallow limerock or Histisols.		
4.11	Climbing or smothering growth habit		
4.12	Forms dense thickets	y	1
5.01	Aquatic	n	0
5.02	Grass	y	1
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	n	-1
6.04	Self-compatible or apomictic		
6.05	Requires specialist pollinators	n	0
6.06	Reproduction by vegetative propagation	y	1
6.07	Minimum generative time (years)	>4	-1
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	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)	n	-1
8.03	Well controlled by herbicides	n	1
8.04	Tolerates, or benefits from, mutilation or cultivation		
8.05	Effective natural enemies present in U.S.		
Total Score			10
Implemented Pacific Second Screening			n/a
Risk Assessment Results			High

section	# questions answered	satisfy minimum?
A		9 yes
B		7 yes
C		14 yes
total		30 yes

	Reference	Source data
1.01		Cultivated, but no evidence of selection for reduced weediness.
1.02		skip to 2.01
1.03		skip to 2.01
2.01	1. PERAL NAPFFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPFFAST%20Global%20zones/10-year%20climate/PLANT_HARDINESS_10YR%20lgnd.tif). (accessed 23 June 2014) 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?409896 (23 June 2014).	No computer analysis was performed. 1. Global hardiness zone: 7, 8, 9; equivalent to USDA Hardiness zones: . 2. Native to Russian far east (Kurile Islands, Sakhalin) and Eastern Asia (Japan-Hokkaido, Honshu, Kyshu, Shikoku)
2.02	1. PERAL NAPFFAST Global Plant Hardiness (http://www.nappfast.org/Plant_hardiness/NAPFFAST%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?409896 (23 June 2014).	No computer analysis was performed. 1. Global hardiness zone: 7, 8, 9; equivalent to USDA Hardiness zones: . 2. Native to Russian far east (Kurile Islands, Sakhalin) and Eastern Asia (Japan-Hokkaido, Honshu, Kyshu, Shikoku)
2.03	1. Köppen-Geiger climate map (http://www.hydrol-earth-syst-sci.net/11/1633/2007/hess-11-1633-2007.pdf).	1. Distribution in the native/cultivated range occurs in Cfa
2.04	1. Climate Charts (http://www.climate-charts.com [accessed 5/29/2014]). 2. Discover Life (www.discoverlife.org [accessed 5/29/2014])	1. 2. 28.5-97.4 inches
2.05	1. http://www.bamboogardencenter.com/products.html?page=shop.product_details&product_id=557 , http://www.lewisbamboo.com/palmata.html , http://www.bamboogardensla.com/photocatalog/dwarfbamboos.html (accessed 23 June 2014)	Readily available from internet nurseries.
3.01	1. USDA Plants Database (http://plants.usda.gov [accessed 6/23/2014]). 2. Grassbase Kew Data Sources (http://www.kew.org/data/grasses-db.html [accessed 6/23/2014]). 3. 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?409896 (23 June 2014). 4. Plants For a Future (www.pfaf.org [accessed 24 June 2014]) 4. Online Atlas of the British and Irish Flora (http://www.brc.ac.uk [accessed 24 June 2014]). 5. Randall (2012) A Global Compendium of Weeds 2nd Ed. Department of Agriculture and Food, Western Australia.	1. present in Tennessee. 2. northern and southwestern Europe and New Zealand 3. listed as naturalized elsewhere on GRIN. 3. Widely naturalized in Britain. 4. This bamboo is becoming widely naturalised in abandoned gardens, damp woodlands and along shaded, overgrown stream banks. 5. Listed as "naturalized" in multiple countries/continents.
3.02	1. Ryves, Clement, Foster (1996) Alien Grasses of the British Isles. Botanical Society of the British Isles, London. 2. Royal Horticultural Society, UK (http://www.rhs.org.uk [accessed 1 July 2014]). 3. Randall (2012) A Global Compendium of Weeds 2nd Ed. Department of Agriculture and Food, Western Australia.	1. England, environmental weed, Garden thug 2. Listed as a garden thug. 2. Listed as weed with no further information in Europe and Japan
3.03		No Evidence Found
3.04	1. Randall (2012) A Global Compendium of Weeds 2nd Ed. Department of Agriculture and Food, Western Australia.	1. Listed as environmental weed in UK

3.05		No Evidence Found
4.01		No Evidence Found
4.02		No Evidence Found
4.03	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?409896 (00 Month 0000).	1. Family: Poaceae (not a parasitic family).
4.04	1. Takatsuki et al. (1998) Decline of <i>Sasa palmata</i> community by grazing of sika deer (<i>Cervus nippon</i>) at Ashiu Research Forest Station [Kyoto, Japan]. Forest Research, Kyoto: , 13-23	1. Fecal analysis showed that the proportion of <i>Sasa</i> in the feces was great all year round and was highest during winter (54.12+-16.73%). This indicates that <i>Sasa</i> was an important food plant for sika deer, particularly during winter. Heavy grazing of <i>Sasa</i> leaves and dead culms were observed in the gentle terrain at high elevation or on ridges.
4.05		No Evidence Found
4.06	1. Royal Horticulture Society (http://www.rhs.org.uk [accessed 24 June 2014])	1. Generally pest and disease free
4.07		No Evidence Found
4.08		No Evidence Found
4.09	1. Smith and Mack (2012) Shade tolerance of temperate Asian bamboos: a harbinger of their naturalization in Pacific Northwest coniferous forests?. <i>Bio Inv</i> 15:2081-2093. 2. Oregon Invasive Species Council (2014) Palm Leaf/Broad Leaf Bamboo. (www.cascadepacific.org/shop/wpimages/mid-coast-cwma-documents.pdf). 3. Squire (2007) "The Bamboo, Grass, and Palm Specialist: the Essential Guide" New Holland Publishers, UK.	1. <i>Sasa palmata</i> displays strong tolerance of low light (grown in shade treatments ranging from 0-90% shade). 2. Grows in full sun to deep shade 3. Included in list of "Bamboos that can grow in shade."
4.10		No Evidence Found
4.11		No Evidence Found
4.12	1. Royal Horticulture Society (http://www.rhs.org.uk [accessed 24 June 2014])	1. <i>S. palmata</i> is a vigorous small bamboo forming a thicket
5.01	1. USDA-GRIN taxonomy for plants (http://www.ars-grin.gov [accessed 6/9/2014])	1. Family Poaceae
5.02	1. USDA-GRIN taxonomy for plants (http://www.ars-grin.gov [accessed 6/9/2014])	1. Family Poaceae
5.03	1. USDA-GRIN taxonomy for plants (http://www.ars-grin.gov [accessed 6/9/2014])	1. Family Poaceae
5.04	1. Wang, K. et al. 2010. Identification of genes related to the development of bamboo rhizome bud. <i>Journal of Experimental Botany</i> , 61(2): 551-561.	1. According to the type of the rhizome, bamboos have been divided into three groups: scattered bamboos with a monopodial rhizome, caespitose bamboos with a sympodial rhizome, and pluricaespitose bamboos with a monopodial and sympodial rhizome. The rhizome bud can either develop into a bamboo shoot which will grow into a bamboo culm in a very short period, or develop into a new rhizome which will enable the sustainable production of the bamboo grove.
6.01		No Evidence Found
6.02		No Evidence Found
6.03	1. John, CK et al. 1994. Selection - A valuable method for bamboo improvement. <i>Current Science (Bangalore)</i> , 66(11): 822-824.	1. The peculiar flowering behaviour in bamboos make genetic improvement by hybridizations very difficult. The flowering and seeding at long intervals (7-120 years) render the overlapping of flowering in more than one species, in the same locality very difficult to obtain, making attempts at hybridizations impossible.
6.04	1. Plants for a Future (www.pfaf.org [accessed 6/23/2014])	1. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Wind. But no evidence of self-pollination

6.05	1. Shor, B., Southern California Chapter. From Flowers to Seedlings. American Bamboo Society. Accessed: 18 March 2014. http://www.bamboo.org/GeneralInfoPages/FromFlowersToSeedlings.html	1. Most bamboos are wind-pollinated. Insects may be involved with some species.
6.06	1. Wang, K. et al. 2010. Identification of genes related to the development of bamboo rhizome bud. Journal of Experimental Botany, 61(2): 551–561.	1. The rhizome bud can either develop into a bamboo shoot which will grow into a bamboo culm in a very short period, or develop into a new rhizome which will enable the sustainable production of the bamboo grove.
6.07	1. Plants for a Future (www.pfaf.org [accessed 6/23/2014])	1. Plants only flower at intervals of many years.
7.01		No Evidence Found
7.02	1. Scurlock et al. 2000 Bamboo: an overlooked biomass resource? Biomass and Bioenergy, 19:229-244. 2. Liese and Hamburg. 1987. Research on bamboo. Wood Science and Technology, 21:189-209	1. Cultivated for erosion control, windbreaks, building material, food, bamboo fiber clothes, etc. 2. Also, has been proposed as a source for pulp for paper and possible biofuel source.
7.03	1. John, CK et al. 1994. Selection - A valuable method for bamboo improvement. Current Science (Bangalore), 66(11): 822-824.	1. Very unlikely. The longevity of the seeds varies from species to species, but usually only last 2-3 months under natural conditions. Furthermore, seeds must be sowed immediately in optimal conditions to prevent damping off.
7.04		No morphological features (i.e., wings) that would suggest bamboo seeds are adapted for wind.
7.05		No Evidence Found
7.06		No Evidence Found
7.07		No morphological features that would suggest bamboo seeds are adapted for attachment.
7.08		No Evidence Found
8.01		No Evidence Found
8.02	1. Janzen 1976 Why bamboos wait so long to flower. Annual Review Ecological Systems 7:347-391 2. John, CK et al. 1994. Selection - A valuable method for bamboo improvement. Current Science (Bangalore), 66(11): 822-824.	1. Some evidence that bamboo seeds can be dormant for several months if kept dry, there is no evidence of dormancy for wetted bamboo seeds. 2. The longevity of the seeds varies from species to species. Under natural conditions it is for 2-3 months.
8.03	1. Invasives information exchange. Plant network. (http://plantnetwork.org [accessed 24 June 2014]) 2. Sturkie, Brown, Watson (1968) Bamboo growing in Alabama. (http://www.ag.auburn.edu/hort/landscape/bamboo.html [accessed 24 June 2014])	1. Culzean Castle Garden – CDA herbicide application in autumn, leave all winter, herbicide application in late spring, cut in the summer, treat any re- growth with CDA herbicide application in autumn; the following spring growth will be small and easily managed. Persistence is key! 2. Graze it with cattle during the summer. If the plants are so large that cattle cannot bend them over to graze the leaves, they should be cut and the cattle allowed to graze the new plants as they emerge. Cut the old plants in winter or early spring and the new shoots as they emerge in the spring and summer. This will require cutting several times. Spray the area with a herbicide. Of the several tested at Auburn, Sodium TCA (sodium salt of trichloroacetic acid) gave best success. This should be sprayed on the soil over the areas in which the bamboo is growing at a rate of 50 pounds active ingredient in at least 100 gallons of water per acre. It is preferable to apply it in late winter or early spring before new growth starts. Rain will carry the chemical down to the root system and it will be absorbed. This will sterilize the soil for about 90 days, so nothing should be planted on the area until about June.
8.04		No Evidence Found
8.05		No Evidence Found