Keywords: Low Risk, Naturalized, Uncertain origin, Edible bamboo, Sympodial, Long-lived

Family: ***Poaceae***

Taxon: ***Dendrocalamus asper***

Synonym: *Bambusa aspera Schult. & Schult. f. (basionyı*
Bambusa macroculmis Rivière
Dendrocalamus macroculmis (Rivière) J. Hou
Gigantochloa aspera (Schult. & Schult. f.) Ku

Common Name: giant bamboo
rough giant bamboo

Questionaire : current 20090513 **Assessor:** Chuck Chimera **Designation:** L
Status: Assessor Approved **Data Entry Person:** Chuck Chimera **WRA Score -3**

101	**Is the species highly domesticated?**	**y=-3, n=0**	**n**
102	**Has the species become naturalized where grown?**	**y=1, n=-1**	
103	**Does the species have weedy races?**	**y=1, n=-1**	
201	**Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"**	**(0-low; 1-intermediate; 2-high) (See Appendix 2)**	**High**
202	**Quality of climate match data**	**(0-low; 1-intermediate; 2-high) (See Appendix 2)**	**Low**
203	**Broad climate suitability (environmental versatility)**	**y=1, n=0**	**n**
204	**Native or naturalized in regions with tropical or subtropical climates**	**y=1, n=0**	**y**
205	**Does the species have a history of repeated introductions outside its natural range?**	**y=-2, ?=-1, n=0**	**y**
301	**Naturalized beyond native range**	**y = 1*multiplier (see Appendix 2), n= question 205**	**y**
302	**Garden/amenity/disturbance weed**	**n=0, y = 1*multiplier (see Appendix 2)**	**n**
303	**Agricultural/forestry/horticultural weed**	**n=0, y = 2*multiplier (see Appendix 2)**	**n**
304	**Environmental weed**	**n=0, y = 2*multiplier (see Appendix 2)**	**n**
305	**Congeneric weed**	**n=0, y = 1*multiplier (see Appendix 2)**	**n**
401	**Produces spines, thorns or burrs**	**y=1, n=0**	**n**
402	**Allelopathic**	**y=1, n=0**	
403	**Parasitic**	**y=1, n=0**	**n**
404	**Unpalatable to grazing animals**	**y=1, n=-1**	
405	**Toxic to animals**	**y=1, n=0**	**n**
406	**Host for recognized pests and pathogens**	**y=1, n=0**	
407	**Causes allergies or is otherwise toxic to humans**	**y=1, n=0**	**n**
408	**Creates a fire hazard in natural ecosystems**	**y=1, n=0**	**n**
409	**Is a shade tolerant plant at some stage of its life cycle**	**y=1, n=0**	**y**

410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y=1, n=0**	**y**
411	**Climbing or smothering growth habit**	**y=1, n=0**	**n**
412	**Forms dense thickets**	**y=1, n=0**	**n**
501	**Aquatic**	**y=5, n=0**	**n**
502	**Grass**	**y=1, n=0**	**y**
503	**Nitrogen fixing woody plant**	**y=1, n=0**	**n**
504	**Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)**	**y=1, n=0**	**n**
601	**Evidence of substantial reproductive failure in native habitat**	**y=1, n=0**	**n**
602	**Produces viable seed**	**y=1, n=-1**	
603	**Hybridizes naturally**	**y=1, n=-1**	**n**
604	**Self-compatible or apomictic**	**y=1, n=-1**	
605	**Requires specialist pollinators**	**y=-1, n=0**	**n**
606	**Reproduction by vegetative fragmentation**	**y=1, n=-1**	**n**
607	**Minimum generative time (years)**	**1 year = 1, 2 or 3 years = 0, 4+ years = -1**	**>3**
701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**y=1, n=-1**	**n**
702	**Propagules dispersed intentionally by people**	**y=1, n=-1**	**n**
703	**Propagules likely to disperse as a produce contaminant**	**y=1, n=-1**	**n**
704	**Propagules adapted to wind dispersal**	**y=1, n=-1**	
705	**Propagules water dispersed**	**y=1, n=-1**	**n**
706	**Propagules bird dispersed**	**y=1, n=-1**	**n**
707	**Propagules dispersed by other animals (externally)**	**y=1, n=-1**	**n**
708	**Propagules survive passage through the gut**	**y=1, n=-1**	
801	**Prolific seed production (>1000/m2)**	**y=1, n=-1**	
802	**Evidence that a persistent propagule bank is formed (>1 yr)**	**y=1, n=-1**	
803	**Well controlled by herbicides**	**y=-1, n=1**	**y**
804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	**y=1, n=-1**	**y**
805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	**y=-1, n=1**	

Designation: L **WRA Score** -3

Supporting Data:

101	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Is the species highly domesticated? No]
102	2013. WRA Specialist. Personal Communication.	NA
103	2013. WRA Specialist. Personal Communication.	NA
201	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Species suited to tropical or subtropical climate(s) 2- High] "The origin of Dendrocalamus asper is not certain, but is thought to be in South-East Asia. Dendrocalamus asper is planted throughout tropical countries, including Ghana, Benin, DR Congo, Kenya and Madagascar."
202	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Quality of climate match data 0-Low] "The origin of Dendrocalamus asper is not certain, but is thought to be in South-East Asia."
203	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Broad climate suitability (environmental versatility)? No] "In tropical Asia Dendrocalamus asper is planted or naturalized up to 1500 m altitude. It thrives best, however, at 400–500 m altitude, in areas with average annual rainfall of about 2400 mm." [Thrives in lower elevation, tropical climates]
204	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Native or naturalized in regions with tropical or subtropical climates? Yes] "The origin of Dendrocalamus asper is not certain, but is thought to be in South-East Asia. Dendrocalamus asper is planted throughout tropical Asia and has been introduced in other tropical countries, including Ghana, Benin, DR Congo, Kenya and Madagascar."
205	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Does the species have a history of repeated introductions outside its natural range? Yes] "D. asper has been introduced into other tropical countries, such as Sri Lanka. It has been planted in botanical, experimental or private gardens in the New World and Australia, and also in warm temperate areas of Europe and America."
301	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Naturalized beyond native range? Yes] "The origin of D. asper is not certain, but it thought to be somewhere in South-East Asia. It is planted throughout tropical Asia, and in many parts of Malaysia (e.g. Sabah and Sarawak) and Indonesia (e.g. Sumatra, East Java, South Sulawesi, Seram, western Irian Jaya) it has become naturalized."
302	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Garden/amenity/disturbance weed? No] No evidence
303	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Agricultural/forestry/horticultural weed? No] No evidence
304	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Environmental weed? No] No evidence
305	2012. Randall, R.P.. A Global Compendium of Weeds. 2nd Edition. Department of Agriculture and Food, Western Australia	[Congeneric weed? No] Several Dendrocalamus species are listed as naturalized
401	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Produces spines, thorns or burrs? No] "Bamboo with a short, thick rhizome and densely tufted stems; stem (culm) erect with pendulous tip, 15–30 m tall, 8–20 cm in diameter, hollow but sometimes almost solid at base, wall 11–36 mm thick, when young covered with fine, velvety, golden brown, appressed hairs, later glabrous; lowest internodes 10–20 cm long, upper ones 30–50 cm or more, white waxy below the nodes; nodes swollen, lowest nodes bearing aerial roots. Leaves alternate, simple; stem leaves with sheath up to 50 cm × 25 cm, brown hairy, with prominent auricles, ligule up to 10 mm long and blade up to 50 cm × 7 cm; branch leaves with sheath glabrous or with scattered appressed pale hairs, auricles absent, ligule 2 mm long, blade 15–30(–45) cm × 1–2.5(–8.5) cm, shortly stalked at base, glabrous above, hairy but glabrescent below."
402	2010. Sinha, A.. Exploring the feasibility of bamboo and vegetable intercropping in Jharkhand, India. Asia-Pacific Agroforestry Newsletter. 10: 5-6.	[Allelopathic? Unknown] "In general, the yield of all crops, with the exception of pea, decreased when cultivated in a bamboo plantation as compared to the data from the monoculture plantation (Figure 1). The results may be due to increased competition for growth resources like sunlight, moisture and nutrients in bamboo plots compared to those without bamboo plots. The yield of pea increased under the bamboo plantation. Further research is needed to explore whether D. asper generates an allelopathic effect with the other crops which results in reduced yield."

403	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Parasitic? No] "Bamboo with a short, thick rhizome and densely tufted stems…"
404	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Unpalatable to grazing animals? Unknown] "The young and tender shoots are consumed as a vegetable." [Palatable to humans, so likely also palatable to grazing animals]
405	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Toxic to animals? No] No evidence
405	2008. Wagstaff, D.J.. International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	[Toxic to animals? No] No evidence
406	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Host for recognized pests and pathogens?] "Pests recorded Fungus diseases: Epichloe bambusae"
406	2007. Bamboo Information Network. Pests and Diseases of Some Exotic and Endemic Bamboo Species in the Cordillera Region. http://www.pcaarrd.dost.gov.ph/home/momentum/bamboo/ [Accessed 18 Mar 2013]	[Host for recognized pests and pathogens?] "The most prevalent insect pest observed was the aphid (Psudoregma bambucicola). The hosts of this insect were Dendrocalamus asper, Bambusa vulgaris, Dinochloa spp., B. toltoides, Dendrocalamus latiflorus, and Nastus elatus."
406	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Host for recognized pests and pathogens?] "The powder-post beetles Dinoderus minutus and Dinoderus brevis cause considerable damage to harvested stems."
407	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Causes allergies or is otherwise toxic to humans? No] "The young and tender shoots may be consumed as a vegetable, although in areas where D. asper is used primarily as a building material, the shoots will rarely be collected as a vegetable."
407	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Causes allergies or is otherwise toxic to humans? No] "In Benin the stems are used for construction and as support for TV antennas. In Asia the mature stems are used for construction, furniture, boards, musical instruments, household utensils, crafts, outriggers of fishing boats and for paper making, the upper internodes are used as containers and cooking pots. The young and tender shoots are consumed as a vegetable." [Widely used with no evidence of toxicity or allergenic properties]
408	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Creates a fire hazard in natural ecosystems? No] "In tropical Asia Dendrocalamus asper is planted or naturalized up to 1500 m altitude. It thrives best, however, at 400–500 m altitude, in areas with average annual rainfall of about 2400 mm." [No evidence, and unlikely given wet forest habitat]
409	1993. Poffenberger, M./McGean, B. (eds.). Community Allies: Forest Co-Management in Thailand. Research Network Report Number 2. Center for Southeast Asia Studies, University of California, Berkeley, CA	[Is a shade tolerant plant at some stage of its life cycle? Yes] "The villagers' top management priority at this point in the evolving program is to enhance the forest's productivity by enrichment underplanting with the popular sweet bamboo (Dendrocalamus asper). This shade-tolerant bamboo species is especially favored in the region for eating as well as construction purposes."
410	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Tolerates a wide range of soil conditions ? Yes] "Dendrocalamus asper will grow in any type of soil, but it prefers heavy soils with good drainage."
411	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Climbing or smothering growth habit? No] "Bamboo with a short, thick rhizome and densely tufted stems; stem (culm) erect with pendulous tip, 15–30 m tall, 8–20 cm in diameter, hollow but sometimes almost solid at base, wall 11–36 mm thick, when young covered with fine, velvety, golden-brown, appressed hairs, later glabrous; lowest internodes 10–20 cm long, upper ones 30–50 cm or more, white waxy below the nodes…"
412	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Forms dense thickets? No] "Densely tufted, sympodial bamboo." [A sympodial bamboo, so dense growth is clumped in a discrete area]
501	2013. WRA Specialist. Personal Communication.	[Aquatic? No] Terrestrial
502	2013. USDA ARS National Genetic Resources Program. Germplasm Resources Information Network - (GRIN). http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Grass? Yes] Poaceae

503	2006. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 22 (Poaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Nitrogen fixing woody plant? No] Poaceae
504	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "Dendrocalamus asper can be propagated by rhizome, stem and branch cuttings."
504	2010. Gordon, D.R./Mitterdorfer, B./Pheloung, P.C. et al.. Guidance for addressing the Australian Weed Risk Assessment questions. Plant Protection Quarterly. 25(2): 56-74.	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] "This question relates to perennial plants with tubers, corms or bulbs. This question is specifically to deal with plants that have specialized organs and should not include plants merely with rhizomes/ stolons"
601	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Evidence of substantial reproductive failure in native habitat? No] "The origin of D. asper is not certain, but it thought to be somewhere in South-East Asia. It is planted throughout tropical Asia, and in many parts of Malaysia (e.g. Sabah and Sarawak) and Indonesia (e.g. Sumatra, East Java, South Sulawesi, Seram, western Irian Jaya) it has become naturalized."
602	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Produces viable seed? Not for a long period of cultivation] "Flowering occurs in plants that are 100–120 years old. After flowering, the plant dies." … "Dendrocalamus asper can be propagated by rhizome, stem and branch cuttings."
603	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Hybridizes naturally? No] "Flowering occurs in plants that are 100–120 years old. After flowering, the plant dies." … "Dendrocalamus asper is available in many botanical gardens in the tropics. Due to its vegetative reproduction, the genetic diversity of the species is low." [No evidence, and unlikley given effective sterility of plant up until the end of its life]
604	1993. Nadgauda, R.S./John, C.K./Mascarenhas, A.F.. Floral biology and breeding behavior in the bamboo Dendrocalamus strictus Nees.. Tree physiology. 13(4): 401-408.	[Self-compatible or apomictic? Unknown] "Dendrocalamus strictus is wind pollinated. There are reports that some bamboos may be self compatible (Kondas et al. 1973, Venkatesh 1984). In D. strictus, protogyny effectively prevents self pollination." [Biology of related species prevents self-pollination]
605	2006. Wu, Z.Y./Raven, P.H./Hong, D.Y. (eds.). Flora of China. Vol. 22 (Poaceae). Science Press & Missouri Botanical Garden Press, Beijing & St. Louis	[Requires specialist pollinators? No] "Spikelets 6–9 mm; florets 4 or 5, apical one sterile. Glumes 1 or 2, ovate lanceolate; lemma broadly ovate, margins ciliate; palea about as long as lemma, keels and margins ciliate, 1–3-veined between and 2 veined on either side of keels. Anthers 3–5 mm, apex apiculate. Ovary hairy; style hairy; stigmas 1." [Wind-pollinated]
606	1986. Wong, K.M.. The Growth Habits of Malayan Bamboos. Kew Bulletin. 41(3): 703-720.	[Reproduction by vegetative fragmentation? No evidence] "The compact clump of Dendrocalamus asper is a typical habit based on a sympodial short-necked rhizome system producing closely spaced culms." [A clumping bamboo species]
607	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Minimum generative time (years)? 100+] "Flowering occurs in plants that are 100–120 years old. After flowering, the plant dies."
701	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] "Flowering occurs in plants that are 100–120 years old. After flowering, the plant dies." [No evidence & highly unlikely given the long time to flowering]
702	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Propagules dispersed intentionally by people? Yes] "The origin of D. asper is not certain, but it thought to be somewhere in South-East Asia. It is planted throughout tropical Asia, and in many parts of Malaysia (e.g. Sabah and Sarawak) and Indonesia (e.g. Sumatra, East Java, South Sulawesi, Seram, western Irian Jaya) it has become naturalized." … "D. asper has been introduced into other tropical countries, such as Sri Lanka. It has been planted in botanical, experimental or private gardens in the New World and Australia, and also in warm temperate areas of Europe and America."
703	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Propagules likely to disperse as a produce contaminant? No] "Flowering occurs in plants that are 100–120 years old. After flowering, the plant dies." [Unlikely, given long interval to flowering. Plants are effectively sterile]
704	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Propagules adapted to wind dispersal?] "Flowering occurs in plants that are 100–120 years old. After flowering, the plant dies." [Possibly after 100+ years of growth]

705	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Propagules water dispersed? No] "Fruit not developing." … "Dendrocalamus asper can be propagated by rhizome, stem and branch cuttings" [No evidence, and unlikely given lack of flowering until reaching age of 100+ years]
706	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Propagules bird dispersed? No] "Fruit not developing." … "Dendrocalamus asper can be propagated by rhizome, stem and branch cuttings" [Even if seeds were produced, they are not adapted for internal consumption & dissemination by birds]
707	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Propagules dispersed by other animals (externally)? No] "Fruit not developing." … "Dendrocalamus asper can be propagated by rhizome, stem and branch cuttings" [No evidence, and unlikely given lack of flowering until reaching age of 100+ years]
708	2013. WRA Specialist. Personal Communication.	[Propagules survive passage through the gut? Unknown]
801	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Prolific seed production (>1000/m2)? Unknown] "Flowering occurs in plants that are 100–120 years old. After flowering, the plant dies." [Probably Yes during infrequent mass flowering episodes]
802	2008. Louppe, D./Oteng-Amoako, A.A./Brink, M.. Timbers 1: volume 7 of Plant Resources of Tropical Africa. PROTA, Wageningen, Netherlands	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] "Flowering occurs in plants that are 100–120 years old. After flowering, the plant dies." [No information on seed viability after infrequent flowering episodes]
803	1961. Cruzado, H.J./Muzik, T.J./Kennard, W.C.. Control of Bamboo in Puerto Rico by Herbicides. Weeds. 9 (1): 20-26.	[Well controlled by herbicides? Yes] "Observations 24 months after treatment (Table 1) showed that the following bamboo species were eradicated by basal application of monuron at the rate of 1.6 pounds of chemical in 2 gallons of water per 50 culms: B. tulda, B. textilis, G. apus, D. asper, and D. strictus. P. meyeri was more sensitive and was killed at the 0.8-pound rate. B. textilis, D. asper, and D. strictus also were eradicated with dalapon at the 1.6-pound rate."
804	2005. CAB International. Forestry Compendium. CAB International, Wallingford, UK	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "Young shoots are usually harvested during the rainy season. Older culms, aged 5-7 years, are preferably harvested in the dry season." [Tolerates repeated harvests]
805	2013. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)? Unknown]

Summary of Risk Traits

High Risk / Undesirable Traits

- Reported to be naturalized (but area of origin uncertain)
- Thrives in tropical climates
- Shade tolerant
- Tolerates many soil conditions (and potentially able to exploit many different habitat types)
- Will resprout after repeated cutting or harvesting of shoots & culms (may be difficult to remove from unwanted areas)

Low Risk / Desirable Traits

- Despite ability to spread, no negative impacts have been documented
- Non-toxic
- Edible shoots
- Landscaping and ornamental value
- A sympodial, or clumping bamboo
- Flowering occurs in plants that are 100–120 years old
- Lack of seed production until possibly at the end of long life cycle