Family: ***Rosaceae***

Taxon: ***Spiraea cantoniensis***

Synonym: *Spiraea reevesiana Lindl.* ***Common Name:*** Reeve's spiraea

Questionaire : current 20090513 **Assessor:** Patti Clifford **Designation:** EVALUATE

Status: Assessor Approved **Data Entry Person:** Patti Clifford **WRA Score 4**

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)**	**Low**
202	**Quality of climate match data**	**(0-low; 1-intermediate; 2-high) (See Appendix 2)**	**Intermediate**
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)**	**y**
305	**Congeneric weed**	**n=0, y = 1*multiplier (see Appendix 2)**	**y**
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**	**y**
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**	
409	**Is a shade tolerant plant at some stage of its life cycle**	**y=1, n=0**	**n**
410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**y=1, n=0**	
411	**Climbing or smothering growth habit**	**y=1, n=0**	

412	**Forms dense thickets**	**y=1, n=0**	
501	**Aquatic**	**y=5, n=0**	**n**
502	**Grass**	**y=1, n=0**	**n**
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**	
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**	
701	**Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)**	**y=1, n=-1**	
702	**Propagules dispersed intentionally by people**	**y=1, n=-1**	**y**
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**	**y**
706	**Propagules bird dispersed**	**y=1, n=-1**	
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**	**n**
802	**Evidence that a persistent propagule bank is formed (>1 yr)**	**y=1, n=-1**	
803	**Well controlled by herbicides**	**y=-1, n=1**	
804	**Tolerates, or benefits from, mutilation, cultivation, or fire**	**y=1, n=-1**	
805	**Effective natural enemies present locally (e.g. introduced biocontrol agents)**	**y=-1, n=1**	

Designation: EVALUATE **WRA Score** **4**

Supporting Data:

101	2011. WRA Specialist. Personal Communication.	[Is the species highly domesticated? No] No evidence of domestication that reduces invasive characteristics.
102	2011. WRA Specialist. Personal Communication.	[Has the species become naturalized where grown?] NA
103	2011. WRA Specialist. Personal Communication.	[Does the species have weedy races?] NA
201	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"? Low] Native to: China - Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang
202	2011. USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN) [Online Database Index]. National Germplasm Resources Laboratory, Beltsville, Maryland. http://www.ars-grin.gov/cgi-bin/npgs/html/index.pl	[Quality of climate match data? Intermediate] Native to: China - Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang
203	1999. Gilman, E.F.. Spiraea cantoniensis. Fact Sheet FPS-558. University of Florida, http://hort.ufl.edu/database/documents/pdf/shrub_fact_sheets/spicana.pdf	[Broad climate suitability (environmental versatility)? No] USDA Hardiness zones 7-9.
203	2003. Lingdi,L./Alexander, C.. Flora of China Vol. 9 Spiraea cantoniensis. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=131015	[Broad climate suitability (environmental versatility)? No] Grows on slopes 200-300 m.
203	2004. Levy-Yamamori, R./Taaffe, G.. Garden plants of Japan. Timber Press, Portland, OR	[Broad climate suitability (environmental versatility)? No] USDA hardiness zone: 7
204	1998. Binggeli, P./Hall, J.B./Healey, J.R.. An overview of invasive woody plants in the tropics. School of Agricultural and Forest Sciences Publication Number 13. University of Wales: .	[Native or naturalized in regions with tropical or subtropical climates? Yes] Listed as moderately invasive in the tropics, but no mention of impacts or control.
204	2007. Tassin, J./Triolo, J./Lavergne, C.. Ornamental plant invasions in mountain forests of Re´union (Mascarene Archipelago): a status review and management directions. African Journal of Ecology. 45(3): 444–447.	[Native or naturalized in regions with tropical or subtropical climates? Yes] Spiraea cantoniensis is a weed in the forested mountatins of Reunion. It is being managed to prevent negative impacts to the forest.
205	2003. Cothran, J.R.. Gardens and historic plants of the antebellum South. University of South Carolina Press, http://books.google.com/books?id=s8OcSmOKeCkC&pg=PA254&dq=spiraea+cantoniensis&hl=en&ei=J2QvTvDPCZPGsAPj7bTwDw&sa=X&oi=book_result&ct=result&res	[Does the species have a history of repeated introductions outside its natural range? Yes] Introduced into North America in 1844.
205	2003. Lingdi,L./Alexander, C.. Flora of China Vol. 9 Spiraea cantoniensis. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=131015	[Does the species have a history of repeated introductions outside its natural range? Yes] Widely cultivated in China and Japan.
205	2004. Levy-Yamamori, R./Taaffe, G.. Garden plants of Japan. Timber Press, Portland, OR	[Does the species have a history of repeated introductions outside its natural range? Yes] Introduced into Europe in 1824.
205	2011. Floridata. Spiraea cantoniensis. Floridata, http://www.floridata.com/ref/s/spir_can.cfm	[Does the species have a history of repeated introductions outside its natural range? Yes] "There are about 90 species of Spiraea, mostly in Europe, Asia and North America. Reeve's spirea is one of the most beautiful and popular among a large group of long-cultivated ornamentals. It has a relatively long flowering period, and in the Deep South is almost evergreen."
301	2010. Sanchez Gullon, E.. Flora alóctona ornamental naturalizada en la provincia de Huelva (Andalucía Occidental, España) I.. Bouteloua. 7: 21-28.	[Naturalized beyond native range? Yes] Naturalized in acebuchal Guadiana river banks, Spain.

301	2011. Henderson University. Reeve's Spirea. Henderson State University, http://www.hsu.edu/interior2.aspx?id=5767	[Naturalized beyond native range? Yes] Sparingly naturalized in Arkansas and Louisiana.
302	1998. Binggeli, P./Hall, J.B./Healey, J.R.. An overview of invasive woody plants in the tropics. School of Agricultural and Forest Sciences Publication Number 13. University of Wales: .	[Garden/amenity/disturbance weed? No] Listed as moderately invasive in the tropics, but no mention of impacts or control.
302	2007. Henderson, L.. Invasive, naturalized and casual alien plants in southern Africa: a summary based on the Southern African Plant Invaders Atlas (SAPIA). Bothalia. 37(2): 215–248.	[Garden/amenity/disturbance weed? No] Listed as a casual alien in South Africa.
303	1998. Binggeli, P./Hall, J.B./Healey, J.R.. An overview of invasive woody plants in the tropics. School of Agricultural and Forest Sciences Publication Number 13. University of Wales: .	[Agricultural/forestry/horticultural weed? No] Listed as moderately invasive in the tropics, but no mention of impacts or control.
304	1998. Binggeli, P./Hall, J.B./Healey, J.R.. An overview of invasive woody plants in the tropics. School of Agricultural and Forest Sciences Publication Number 13. University of Wales: .	[Environmental weed?] Listed as moderately invasive in the tropics, but no mention of impacts or control.
304	2007. Tassin, J./Triolo, J./Lavergne, C.. Ornamental plant invasions in mountain forests of Re´union (Mascarene Archipelago): a status review and management directions. African Journal of Ecology. 45(3): 444–447.	[Environmental weed? Yes] Spiraea cantoniensis is a weed in the forested mountatins of Reunion. It is being managed to prevent negative impacts to the forest.
305	1998. Remaley, T.. Japanese spiraea - Spiraea japonica. Plant Conservation Alliance, Alien Plant Working Group., http://www.dcnr.state.pa.us/forestry/invasivetutorial/japanese_spiraea.htm	[Congeneric weed? Yes] Spiraea japonica is naturalized in the northeast southeast and midwest of the United States. "Japanese spiraea can rapidly take over disturbed areas. Growing populations creep into meadows, forest openings, and other sites. Once established, spiraea grows rapidly and forms dense stands that outcompete much of the existing native herbs and shrubs. Seeds of Japanese spiraea last for many years in the soil, making its control and the restoration of native vegetation especially difficult. "
401	2003. Lingdi,L./Alexander, C.. Flora of China Vol. 9 Spiraea cantoniensis. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=131015	[Produces spines, thorns or burrs? No] "Shrubs to 1.5 m tall. Branchlets arching, dark red-brown, turning gray-brown when old, slender, terete, glabrous or pubescent; buds ovoid, small, with several scales, glabrous or puberulous apically or on scale margins. Petiole 4–7 mm, glabrous; leaf blade gray-blue abaxially, dark green adaxially, rhombic-lanceolate to rhombic-oblong, 2–8 × 0.7–2 cm, glabrous or abaxially pubescent, pinnately veined, base cuneate, margin incised serrate above middle, apex acute. "
402	2011. WRA Specialist. Personal Communication.	[Allelopathic?] Unknown.
403	2003. Lingdi,L./Alexander, C.. Flora of China Vol. 9 Spiraea cantoniensis. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=131015	[Parasitic? No] Rosaceae.
404	2011. Deer-departed.com. Deer resistant rarely damaged shrubs. Deer-departed.com, http://www.deer-departed.com/rarely-damaged-shrubs.html	[Unpalatable to grazing animals? Yes] Rarely damaged by deer.
404	2011. Glen, C.. Deer resistant plants recommended for New Hanover County landscapes Urban horticulture fact sheet 15. New Hanover Cooperative Extension, http://www.nhcgov.com/Arboretum/Documents/Deer%20Resistant%20Plants.pdf	[Unpalatable to grazing animals? Yes] Seldom damaged by deer.
405	2011. National Center for Biotechnology Information. PubMed. U.S. National Library of Medicine, Bethesda, Maryland http://www.ncbi.nlm.nih.gov/	[Toxic to animals? No] No evidence.
405	2011. Specialized Information Services, U.S. National Library of Medicine. TOXNET toxicology data network [online database]. National Institutes of Health, http://toxnet.nlm.nih.gov/	[Toxic to animals? No] No evidence.

406	1999. Gilman, E.F.. Spiraea cantoniensis. Fact Sheet FPS-558. University of Florida, http://hort.ufl.edu/database/documents/pdf/shrub_fact_sheets/spicana.pdf	[Host for recognized pests and pathogens?] Pest resistance: no serious pests are normally seen on the plant
407	2011. National Center for Biotechnology Information. PubMed. U.S. National Library of Medicine, Bethesda, Maryland http://www.ncbi.nlm.nih.gov/	[Causes allergies or is otherwise toxic to humans? No] No evidence of toxicity or allergies.
407	2011. Specialized Information Services, U.S. National Library of Medicine. TOXNET toxicology data network [online database]. National Institutes of Health, http://toxnet.nlm.nih.gov/	[Causes allergies or is otherwise toxic to humans? No] No evidence of toxicity or allergies.
408	2011. WRA Specialist. Personal Communication.	[Creates a fire hazard in natural ecosystems?] Unknown.
409	1999. Gilman, E.F.. Spiraea cantoniensis. Fact Sheet FPS-558. University of Florida, http://hort.ufl.edu/database/documents/pdf/shrub_fact_sheets/spicana.pdf	[Is a shade tolerant plant at some stage of its life cycle? No] Grows in full sun.
409	2004. Levy-Yamamori, R./Taaffe, G.. Garden plants of Japan. Timber Press, Portland, OR	[Is a shade tolerant plant at some stage of its life cycle? No] Best in full sun, but tolerates light shade.
410	1999. Gilman, E.F.. Spiraea cantoniensis. Fact Sheet FPS-558. University of Florida, http://hort.ufl.edu/database/documents/pdf/shrub_fact_sheets/spicana.pdf	[Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)? Yes] Soil tolerances: slightly alkaline; clay; sand; acidic; loam
411	2003. Lingdi,L./Alexander, C.. Flora of China Vol. 9 Spiraea cantoniensis. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=131015	[Climbing or smothering growth habit? No] Shrubs to 1.5 m tall.
412	2011. WRA Specialist. Personal Communication.	[Forms dense thickets?] Unknown.
501	2003. Lingdi,L./Alexander, C.. Flora of China Vol. 9 Spiraea cantoniensis. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=131015	[Aquatic? No] Terrestrial; shrub.
502	2003. Lingdi,L./Alexander, C.. Flora of China Vol. 9 Spiraea cantoniensis. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=131015	[Grass? No] Rosaceae.
503	2010. Song, C.J./Ma, K.M./Fu, B.J./Qu, L.Y./Xu, X.L./Liu, Y./Zhong, J.F.. Distribution patterns of shrubby N-fixers and non-N fixers in an arid valley in Southwest China: implications for ecological restoration. Ecological Restoration. 25: 553-564.	[Nitrogen fixing woody plant? No] Not a nitrogen fixer.
504	2003. Lingdi,L./Alexander, C.. Flora of China Vol. 9 Spiraea cantoniensis. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=131015	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] Shrub (woody).
601	2011. WRA Specialist. Personal Communication.	[Evidence of substantial reproductive failure in native habitat? No] No evidence.
602	1999. Gilman, E.F.. Spiraea cantoniensis. Fact Sheet FPS-558. University of Florida, http://hort.ufl.edu/database/documents/pdf/shrub_fact_sheets/spicana.pdf	[Produces viable seed? Yes] Propagation is by seeds, cuttings, or division.
603	2011. WRA Specialist. Personal Communication.	[Hybridizes naturally?] Unknown
604	2011. WRA Specialist. Personal Communication.	[Self-compatible or apomictic?] Unknown.

605	2007. Stubbs, C.S./Drummond, F./Ginsberg, H.. Effects of invasive plant species on pollinator service and reproduction in native plants at Acadia National Park. Technical Report NPS/NER/NRTR - 2007/096. National Park Service, http://www.pwrc.usgs.gov/pro	[Requires specialist pollinators? No] Beetles, flies, ants, and bees all pollinate Spiraea alba [species in same genus as Spiraea cantoniensis].
605	2011. Pollen library .com. Meadowsweet (Spiraea). Pollenlibrary.com, http://www.pollenlibrary.com/Genus/Spiraea/	[Requires specialist pollinators? No] Spiraea are insect pollinatedd [genus level description].
606	1999. Gilman, E.F.. Spiraea cantoniensis. Fact Sheet FPS-558. University of Florida, http://hort.ufl.edu/database/documents/pdf/shrub_fact_sheets/spicana.pdf	[Reproduction by vegetative fragmentation? No] Propagate by seeds, cuttings, and division.
606	2004. Levy-Yamamori, R./Taaffe, G.. Garden plants of Japan. Timber Press, Portland, OR	[Reproduction by vegetative fragmentation? No] Propagate by division and stem cuttings.
607	2011. Floridata. Spiraea cantoniensis. Floridata, http://www.floridata.com/ref/s/spir_can.cfm	[Minimum generative time (years)?] Very fast growing.
701	2011. WRA Specialist. Personal Communication.	[Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)? No] No evidence of accidental dispersal.
702	1918. Britton, N.L.. Flora of Bermuda. C. Scribner's sons, http://books.google.com/books?id=TarPAAAAMAAJ&pg=PA165&lpg=PA165&dq=Spiraea+cantoniensis+%2B+%22naturalized%22&source=bl&ots=v8ZfRe61pR&sig=38FbjLQ4C7eySGwyE4OMPDqqeFU&hl=en&ei=4-JKTqm_J6vUiAKMmb	[Propagules dispersed intentionally by people? Yes] Spiraea cantoniensis is commonly planted in Bermuda.
702	2011. Floridata. Spiraea cantoniensis. Floridata, http://www.floridata.com/ref/s/spir_can.cfm	[Propagules dispersed intentionally by people? Yes] "There are about 90 species of Spiraea, mostly in Europe, Asia and North America. Reeve's spirea is one of the most beautiful and popular among a large group of long-cultivated ornamentals. It has a relatively long flowering period, and in the Deep South is almost evergreen."
703	2011. WRA Specialist. Personal Communication.	[Propagules likely to disperse as a produce contaminant? No] No evidence of produce contaminant.
704	2003. Lingdi,L./Alexander, C.. Flora of China Vol. 9 Spiraea cantoniensis. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=131015	[Propagules adapted to wind dispersal?] Follicles straightly spreading, glabrous.
704	2011. WRA Specialist. Personal Communication.	[Propagules adapted to wind dispersal?] Unknown [other Spiraea species seeds are dispersed by strong winds]
705	2010. Sanchez Gullon, E.. Flora alóctona ornamental naturalizada en la provincia de Huelva (Andalucía Occidental, España) I.. Bouteloua. 7: 21-28.	[Propagules water dispersed? Yes] Naturalized in acebuchal Guadiana river banks, Spain.
706	2011. WRA Specialist. Personal Communication.	[Propagules bird dispersed?] Unknown.
707	2003. Lingdi,L./Alexander, C.. Flora of China Vol. 9 Spiraea cantoniensis. Missouri Botanical Garden and Harvard University Herbaria, http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=131015	[Propagules dispersed by other animals (externally)? No] Follicles straightly spreading, glabrous.
708	2011. WRA Specialist. Personal Communication.	[Propagules survive passage through the gut?] Unknown.
801	1991. Habeck, R.J.. Spiraea betulifolia. In: Fire Effects Information System, [online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory, http://www.fs.fed.us/database/feis/plants/shrub/spibet/all.	[Prolific seed production (>1000/m2)? No] Overall seed production is low for Spiraea betulifolia. (species in the same genus description).

801	2005. USDA Forest Service. Weed of the week - Japanese spiraea. USDA Forest Service, Newton Square http://www.na.fs.fed.us/fhp/invasive_plants/weeds/japanese-spiraea.pdf	[Prolific seed production (>1000/m2)? No A single plant produces hundreds of small seeds. (species in same genus description)
801	2011. WRA Specialist. Personal Communication.	[Prolific seed production (>1000/m2)? No] Based on other species in this genus there is not a large amount of seed produced.
802	2011. WRA Specialist. Personal Communication.	Evidence that a persistent propagule bank is formed (>1 yr)?] Unknown.
803	2011. WRA Specialist. Personal Communication.	[Well controlled by herbicides?] Unknown.
804	2011. WRA Specialist. Personal Communication.	[Tolerates, or benefits from, mutilation, cultivation, or fire?] Unknown.
805	2011. WRA Specialist. Personal Communication.	[Effective natural enemies present locally (e.g. introduced biocontrol agents)?] Unknown.