

Species Dataform and Scoresheet for *Spiraea japonica* L. and/or *Spiraea x bumalda* Burven [*S. albiflora* x *japonica*] (Japanese Spiraea)

<b>Species Dataform and Scoresheet</b>		
<b><i>Spiraea japonica</i> L. and/or <i>Spiraea x bumalda</i> Burven [<i>S. albiflora</i> x <i>japonica</i>] (Japanese Spiraea)</b>		
Native range: Japan and China Date evaluated: April 7, 2009		
	<b>Answer Choices</b>	<b>Response</b>
<b>Introductory Questions</b>		
<b>1. Current federal and state regulations</b>	Y/N	N
Comments: Appears on several invasive species lists (not laws) in the Southeastern U.S., including Tennessee (Rank 1 Severe threat), Kentucky (Significant threat), Virginia (Medium invasiveness), and U.S. Forest Service Policy (Category 2, Species suspected to be invasive) (Invasive.org 2009).		
<b>2. Occurrence in the horticultural trade</b>	Y/N	Y
Comments: Cultivated (Weakley 2008).		
<b>3. North Carolina nativity</b>	Y/N	N
Comments: Native of Japan and China (Weakley 2008).		
<b>4. Presence in natural areas</b>	Y/N	Y
Comments: Establishes quickly in disturbed areas and spreads to adjacent woodlands (Remaley 2003).		
<b>5. Non-invasive cultivars</b>	Y/N	N
Comments: Researchers at North Carolina State University are working on developing new, seedless, noninvasive cultivars for landscape applications.		
	Maximum Point Value	Number of Points Assigned
<b>Section 1. Ecological Impact</b>		
<b>1a. Impact on abiotic ecosystem processes</b>	10	0
Comments: Unknown impact on abiotic ecosystem processes.		
<b>1b. Impact on plant community structure</b>	20	5
Comments: Dense growth displaces native herbs and shrubs (Swearingen et al. 2002). Grows rapidly to produce dense stands that outcompete native vegetation (Duever 2003).		
<b>1c. Impact on species of special concern</b>	5	0
Comments: Unknown impact on species of special concern.		
<b>1d. Impact on higher trophic levels</b>	5	0
Comments: Unknown impact on higher trophic levels.		
<b>Section 1. Subrank</b>	<b>40</b>	<b>5</b>
<b>Section 2. Current Distribution and Potential for Expansion</b>		
<b>2a. Local range expansion</b>	7	0
Comments:		
<b>2b. Long-distance dispersal potential</b>	13	13
Comments: Seeds can be dispersed by water (Swearingen et al. 2002). Water-dispersed		

seeds deposited along streambanks (Duever 2003).		
<b>2c. Reproductive characteristics</b>	8	6
Comments: Tolerates a wide range of environmental conditions (Swearingen et al. 2002). Produces a large number of water-dispersed seeds (Swearingen et al. 2002). Propagated by sucker division and cuttings (Duever 2003).		
<b>2d. Range of communities</b>	6	0
Comments: Roadsides, woodland borders, old home-sites in the Mountains and Piedmont of North Carolina (Weakley 2008). Range of specific community types unknown.		
<b>2e. Similar habitats invaded elsewhere</b>	6	6
Comments: Invades fields, forests, stream and river edges in the Mid-Atlantic United States (Swearingen et al. 2002). Invades stream margins, mesic forest edges and openings, and old fields (Duever 2003). Natural communities of North Carolina (Shafale and Weakley 1990) = River floodplains, low elevation mesic forests, low elevation dry and dry-mesic forest and woodlands.		
<b>Section 2. Subrank</b>	<b>40</b>	<b>25</b>
<b>Section 3. Management Difficulty</b>		
<b>3a. Herbicidal control</b>	5	0
Comments: A glyphosate or triclopyr herbicide solution may be applied to large thickets of Japanese spiraea (Remaley 2005).		
<b>3b. Nonchemical control methods</b>	2	1
Comments: Cutting may be effective for small populations, and repeated cutting or mowing will control the spread of Japanese spiraea but not eradicate it (Swearingen et al. 2002). Stems should be cut close to the ground, prior to seed production, at least once per growing season (Remaley 2005).		
<b>3c. Necessity of individual treatments</b>	2	2
Comments: Individual stems should be cut as close to the ground level as possible prior to seed production (Remaley 2005). In areas where foliar application is not appropriate, herbicides may be applied in a cut stump method (Invasive.org 2003).		
<b>3d. Average distribution</b>	2	1
Comments: Depending on the cultivar, plants may be tall or short growing forms (Duever 2003). May establish dense stands (Duever 2003).		
<b>3e. Likelihood for reestablishment</b>	2	2
Comments: Stems may resprout after cutting or mowing, so repeated cutting will be necessary over the long-term (Duever 2003). Japanese spiraea produces an abundance of seeds that remain viable in the soil for many years (Duever 2003). Stems should be cut back at least once per growing season (Remaley 2005).		
<b>3f. Accessibility of invaded areas</b>	2	1
Comments: Seeds are dispersed by water and able to germinate in a wide range of soil and light conditions (Swearingen et al. 2002), so individuals may establish in areas difficult to access for treatment.		
<b>3g. Impact on native species and environment</b>	5	2
Comments: Herbicides may have an effect on non-target vegetation (Remaley 2005).		
<b>Section 3. Subrank</b>	<b>20</b>	<b>9</b>

<b>Section 4. Benefits and Value</b>		
<b>4a. Estimated wholesale value</b>	-7	-4
Comments: The annual estimated wholesale value attributed to this species is \$13,694,900 (Trueblood 2009).		
<b>4b. Percentage of total sales</b>	-5	-2
Comments: Among the producers that sell this species, the highest percentage of total sales attributed to this species from any one grower is estimated to be 6-10% (Trueblood 2009).		
<b>4d. Ecosystem services</b>	-1	0
Comments:		
<b>4e. Wildlife habitat</b>	-1	0
Comments:		
<b>4f. Cultural and social benefits</b>	-1	0
Comments:		
<b>Section 4. Subrank</b>	<b>-15</b>	<b>-6</b>
<b>Overall Score</b>	<b>100</b>	<b>33</b>
<b>Overall Recommendation:</b> Noninvasive and recommended for use – These species have limited ecological impact, distribution and invasive potential, and management difficulty in relation to economic value. They may be locally problematic but their reproductive biology and other traits limit their rate of invasion to natural areas. (Overall Score: 0 – 33)		
<b>Summary:</b> <i>Spiraea japonica</i> and/or <i>S. x bumalda</i> (Japanese spiraea) is noninvasive in North Carolina and may be recommended for horticultural use with specific guidance by the North Carolina Nursery and Landscape Association. However, Japanese spiraea was only one point away from being classified as moderately weedy in the assessment. The ecological impacts of Japanese spiraea in natural areas are largely unknown, but dense stands may displace native herbs and shrubs. There is potential for the additional invasion of Japanese spiraea to natural areas due to the high potential for natural dispersal of the seeds via water. The difficulty of managing Japanese spiraea is moderate considering the availability of control methods, but management may be costly considering the time and labor required to effectively treat stands of this species. Japanese spiraea is economically valuable to the nursery industry. Researchers at North Carolina State University are working on developing new, seedless, noninvasive cultivars for landscape applications. Use of seedless cultivars would be desirable when they become available.		
<b>References:</b>		
Duever, L.C. (2003) <i>Spiraea japonica</i> . FloriData. Tallahassee, Florida. ( <a href="http://www.floridata.com/ref/S/spir_jap.cfm">http://www.floridata.com/ref/S/spir_jap.cfm</a> ) Accessed: April 7, 2009.		
Invasive.org: The Bugwood Network, USDA Forest Service, and USDA APHIS PPQ. (2009) Invasive Plants of the Thirteen Southern States. ( <a href="http://www.invasive.org/south/seweeds.cfm">http://www.invasive.org/south/seweeds.cfm</a> ) Accessed: March 24, 2009.		
Remaley, T. (2005) Fact Sheet: Japanese Spiraea. Plant Conservation Alliance's Alien Plant Working Group. ( <a href="http://www.nps.gov/plants/alien/fact/spja1.htm">http://www.nps.gov/plants/alien/fact/spja1.htm</a> ) Accessed: April 7, 2009.		

Remaley, T. (2003) Southeast Exotic Pest Plant Council Invasive Plant Manual. Southeast Exotic Pest Plant Council. (<http://www.invasive.org/eastern/eppc/>) Accessed: April 7, 2009.

Shafale, M.P. and A.S. Weakley. (1990) Classification of the Natural Communities of North Carolina. 3rd Approximation. North Carolina Natural Heritage Program. Raleigh, NC.

Swearingen, J., Reshetiloff, K., Slattery, B., and S. Zwicker. (2002) Plant Invaders of Mid-Atlantic Natural Areas, Natural Park Service and U.S. Fish and Wildlife Service, 82 pp.

Trueblood, C.E. (2009) Chapter 3. An estimate of the commercial value of potentially invasive ornamental nursery crops grown in North Carolina. In An Invasive Species Assessment System for the North Carolina Horticultural Industry, a thesis submitted to the Graduate Faculty of North Carolina State University. North Carolina State University, Raleigh, NC.

Weakley, A.S. "Flora of the Carolinas, Virginia, Georgia, northern Florida, and surrounding areas." University of North Carolina. Working draft. 7 April 2008.

Trueblood, C.E. 2009. Results of the North Carolina Invasive Species Assessment System and Individual Species Evaluations. In An Invasive Species Assessment System for the North Carolina Horticultural Industry. MS Thesis. North Carolina State University, Raleigh, pp. 160-163.