Species Dataform and Scoresheet for *Vinca minor* L. (Common periwinkle)

Species Dataform and Scoresheet		
***Vinca minor* L. (Common periwinkle)**		
Native range: Europe Date evaluated: April 14, 2009		
	Answer Choices	**Response**
Introductory Questions		
1. Current federal and state regulations	Y/N	N
Comments: Appears on several invasive species lists (not laws) in the Southeastern U.S., including South Carolina (Watch), Tennessee (Rank 2, Significant threat), Kentucky (Significant threat), and Virginia (Low invasiveness) (Invasive.org 2009).		
2. Occurrence in the horticultural trade	Y/N	Y
Comments: Commonly planted in shade gardens and valued in landscaping (Darcy and Burkart 2002).		
3. North Carolina nativity	Y/N	N
Comments: Native of Europe (Weakley 2008).		
4. Presence in natural areas	Y/N	Y
Comments: Persistent and spreading from cultivation in North Carolina (Weakley 2008). Escapes cultivation and invades natural areas in the Mid-Atlantic United States (Swearingen et al. 2002).		
5. Non-invasive cultivars	Y/N	N
Comments:		
	Maximum Point Value	Number of Points Assigned
Section 1. Ecological Impact		
1a. Impact on abiotic ecosystem processes	10	5
Comments: *Vinca minor* may have an allelopathic effect on root growth of native species (Darcy and Burkart 2002).		
1b. Impact on plant community structure	20	15
Comments: *Vinca minor* reduces seedling recruitment, and over time, the increased spread of *V. minor* prevents the replacement of canopy trees and may alter forest succession (Darcy and Burkart 2002). Reduces the recruitment of native tree seedlings by outshading plants on the forest floor (Bultman and DeWitt 2008). *Vinca minor* has a significant negative impact on woody seedlings (Darcy and Burkart 2002). *Vinca minor* forms a dense monotypic evergreen groundcover that displaces native plants (Swearingen et al. 2002).		
1c. Impact on species of special concern	5	0
Comments: Threatens native plants and communities, including native wildflowers (Swearingen et al. 2002). Specific affected species unknown.		
1d. Impact on higher trophic levels	5	1
Comments: Infestations of *Vinca minor* alter the assemblage of forest floor spiders, which may have important impacts on forest ecosystem processes including nutrient cycling, decomposition, and mineralization (Bultman and DeWitt 2008).		
Section 1. Subrank	***40***	***21***

Section 2. Current Distribution and Potential for Expansion		
2a. Local range expansion	7	1
Comments: Persistent and spreading from cultivation in North Carolina (Weakley 2008).		
2b. Long-distance dispersal potential	13	0
Comments: Spreads only by vegetative means (Swearingen et al. 2002). Other than planting, it may spread a few inches a year.		
2c. Reproductive characteristics	8	2
Comments: Propagates through vegetative reproduction (Darcy and Burkart 2002). Spreads by vegetative means (Swearingen et al. 2002). Seed viability not reported (Miller 2003).		
2d. Range of communities	6	2
Comments: Forms extensive infestations in open to dense canopied forests in the southeastern United States (Miller 2003). Invades riparian forest areas in North Carolina (Vidra et al. 2006). Natural communities of North Carolina (Shafale and Weakley 1990) = River floodplains		
2e. Similar habitats invaded elsewhere	6	2
Comments: Bultman and DeWitt (2008) studied the effects of *Vinca minor* invasion in a mature forest dominated by American beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), and black maple (*Acer nigrum*) in Michigan. Natural communities of North Carolina (Shafale and Weakley 1990) = Low elevation dry and dry-mesic forest and woodlands.		
Section 2. Subrank	***40***	***7***
Section 3. Management Difficulty		
3a. Herbicidal control	5	0
Comments: A glyphosate herbicide may be applied to cut plants (Swearingen et al. 2002). Glyphosate or triclopyr herbicides provide effective control (Miller 2003).		
3b. Nonchemical control methods	2	1
Comments: *Vinca minor* may be removed by digging and mowing, but all parts of the plant must be removed (Swearingen et al. 2002).		
3c. Necessity of individual treatments	2	0
Comments: Dense patches may be treated with herbicide applications.		
3d. Average distribution	2	0
Comments: May establish dense patches in mature forests (Darcy and Burkart 2002).		
3e. Likelihood for reestablishment	2	2
Comments: All plant parts must be removed for effective control (Swearingen et al. 2002).		
3f. Accessibility of invaded areas	2	1
Comments: *Vinca minor* may form extensive mats under forest canopies (Miller 2003) that may be difficult to easily access.		
3g. Impact on native species and environment	5	2
Comments: Nontarget plants may be injured or killed by root uptake of herbicides (Miller 2003).		
Section 3. Subrank	***20***	***6***
Section 4. Benefits and Value		

4a. Estimated wholesale value	-7	-5
Comments: The annual estimated wholesale value attributed to this species is $20,552,800 (Trueblood 2009).		
4b. Percentage of total sales	-5	-3
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 11-25% (Trueblood 2009).		
4d. Ecosystem services	-1	0
Comments:		
4e. Wildlife habitat	-1	0
Comments:		
4f. Cultural and social benefits	-1	0
Comments:		
Section 4. Subrank	***-15***	***-8***
Overall Score	**100**	**26**
Overall Recommendation: 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)		
Summary: *Vinca minor* (Common periwinkle) is noninvasive in North Carolina and may be recommended for horticultural use by the North Carolina Nursery and Landscape Association. *Vinca minor* rarely produces seeds and generally spreads slowly from ornamental plantings. While *V. minor* is rarely found in natural areas in North Carolina, this species may have serious ecological impacts in localized areas. Dense patches of *Vinca minor* reduce seedling recruitment, displace native plants, and over time, the increased spread of *V. minor* may alter forest succession. *Vinca minor* has low long-distance dispersal potential and spreads only by vegetative means. The difficulty of managing *V. minor* is low. *Vinca minor* has high economic value to the nursery industry.		
References:		

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