

Species Dataform and Scoresheet for *Pyrus calleryana* Decne. (Callery pear)

<b>Species Dataform and Scoresheet</b>		
<b><i>Pyrus calleryana</i> Decne. (Callery pear)</b>		
Native range: 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	Y
Comments: Appears on the South Carolina invasive species list (not law) as a species to watch (Invasive.org 2009).		
<b>2. Occurrence in the horticultural trade</b>	Y/N	Y
Comments: Commonly cultivated (Weakley 2008).		
<b>3. North Carolina nativity</b>	Y/N	N
Comments: Native of China (Weakley 2008).		
<b>4. Presence in natural areas</b>	Y/N	Y
Comments: Rare in natural areas. Commonly naturalized along roadsides and old fields in North Carolina (Weakley 2008). Impact on natural areas and undisturbed woods less understood and documented than the impact in marginal areas, including fence rows, fallow fields, railroad beds, and the edges of disturbed woodlands (Vincent 2005). Recently spread into natural areas (Culley and Hardiman 2007).		
<b>5. Non-invasive cultivars</b>	Y/N	N
Comments: <i>Pyrus calleryana</i> cross-pollinates with other pear species and produces fertile progeny (Vincent 2005). 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: May establish large thorny thickets (Vincent 2005). May form dense, monocultural stands in open areas outside of a closed canopy (Culley and Hardiman 2007). May impede the establishment of late- to middle-stage successional species in disturbed or open sites (Culley and Hardiman 2007). Invades and degrades newly restored wetland prairies (Culley and Hardiman 2007).		
<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	7

Comments: Range is expanding along roadsides and fields (not natural areas) in North Carolina (Weakley 2008). Highly naturalized in Maryland and Northern Virginia, indicating that <i>P. calleryana</i> may become a serious pest in North Carolina as well (Weakley 2008). Rapidly becoming naturalized in the eastern United States (Vincent 2005).		
<b>2b. Long-distance dispersal potential</b>	13	13
Comments: Birds readily eat the fruits, spreading the seeds (Vincent 2005).		
<b>2c. Reproductive characteristics</b>	8	6
Comments: Reproduces readily in the wild (Vincent 2005). Fruits are bird-dispersed (Vincent 2005). Highly adaptable and tolerant of a wide range of environmental conditions, including low pH, high pH, wet soils, dry soils, sandy soils, and clay soils (Vincent 2005). Exhibits weedy and invasive characteristics, including rapid growth, early and abundant flowering, and wide tolerance to a variety of environmental conditions (Culley and Hardiman 2007). Populations may become established by seed and root sprouts (White et al. 2005). Readily resprouts when cut (White et al. 2005).		
<b>2d. Range of communities</b>	6	0
Comments: Naturalizes in fields, roadsides, and disturbed areas from North Carolina northward (Weakley 2008). Rare in natural communities in N.C.		
<b>2e. Similar habitats invaded elsewhere</b>	6	2
Comments: May be problematic in pine reforestations in Arkansas (Vincent 2005). Invasive in grasslands and open woodlands in Illinois (White et al. 2005). Natural communities of North Carolina (Shafale and Weakley 2008) = Low elevation dry and dry-mesic forest and woodlands.		
<b>Section 2. Subrank</b>	<b>40</b>	<b>28</b>
<b>Section 3. Management Difficulty</b>		
<b>3a. Herbicidal control</b>	5	3
Comments: After trees have been cut, glyphosate or triclopyr herbicides may be applied immediately to the freshly cut trunk (Culley and Hardiman 2007).		
<b>3b. Nonchemical control methods</b>	2	2
Comments: Mowing of small trees is ineffective due to prolific sprouting from any remaining trunk or root systems (Culley and Hardiman 2007). Few, if any, natural controls (Vincent 2005).		
<b>3c. Necessity of individual treatments</b>	2	2
Comments: Herbicide applications should be made to trunks of trees that have been cut down (Culley and Hardiman 2007).		
<b>3d. Average distribution</b>	2	1
Comments: Callery pear is a tree 10-20 m tall (Vincent 2005). In some areas, large thickets of trees of various ages and sizes have been observed (Vincent 2005).		
<b>3e. Likelihood for reestablishment</b>	2	2
Comments: Extensive long-lasting seed bank allows seedlings to repopulate an area (Culley and Hardiman 2007). Fruits are bird-dispersed (Vincent 2005) and may be reintroduced to a treated area.		
<b>3f. Accessibility of invaded areas</b>	2	1
Comments: Fruits are bird-dispersed (Vincent 2005) and may be spread to areas difficult to access for management. However, <i>P. calleryana</i> prefers full sunlight and has a low shade		

tolerance, which prevents the species from establishing in the understory of a closed canopy cover (Culley and Hardiman 2007).		
<b>3g. Impact on native species and environment</b>	5	2
Comments: Glyphosate and triclopyr herbicide applications may impact non-target species.		
<b>Section 3. Subrank</b>	<b>20</b>	<b>13</b>
<b>Section 4. Benefits and Value</b>		
<b>4a. Estimated wholesale value</b>	-7	-2
Comments: The annual estimated wholesale value attributed to this species is \$3,792,200 (Trueblood 2009).		
<b>4b. Percentage of total sales</b>	-5	-1
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 1-5% (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>-3</b>
<b>Overall Score</b>	<b>100</b>	<b>43</b>
<b>Overall Recommendation:</b> Moderately weedy and recommended for use with specific guidance – These species have less than high ecological impact, distribution and invasive potential, and management difficulty in relation to economic value. These plants should not be grown in close proximity to natural areas that have communities similar to those where this plant has been found to naturalize or near natural areas that have sensitive or threatened plants and/or natural communities. (Overall Score: 34 – 66)		
<b>Summary:</b> <i>Pyrus calleryana</i> (Callery pear) is moderately weedy in North Carolina and may be recommended for horticultural use with specific guidance by the North Carolina Nursery and Landscape Association. <i>Pyrus calleryana</i> is commonly naturalized along roadsides and old fields in North Carolina, and the ecological impacts on natural areas has not been well-documented. However, <i>P. calleryana</i> is highly naturalized in Maryland and Northern Virginia, and may become a more serious weedy species in North Carolina. <i>Pyrus calleryana</i> may establish large thorny thickets that impede the establishment of late- to middle-stage successional species in disturbed or open sites and degrade newly restored wetland areas. There is potential for the additional invasion of Callery pear, possibly to natural areas due to the high potential for natural dispersal. However, <i>P. calleryana</i> prefers full sunlight and has a low shade tolerance, which prevents the species from establishing in the understory of a closed canopy cover and is generally an early successional species that is outcompeted over time. Management of <i>P. calleryana</i> may be costly considering the time and labor required to effectively treat stands of this species. <i>Pyrus calleryana</i> 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>		

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