

<b>MN NWAC Risk Assessment Worksheet (04-2011)</b>	<b>Common Name</b>	<b>Latin Name</b>
	<b>Narrowleaf Bittercress</b>	<b><i>Cardamine impatiens L.</i></b>
<b>Reviewer</b>	<b>Affiliation/Organization</b>	<b>Date (mm/dd/yyyy)</b>
<b>Monika Chandler</b>	<b>Minnesota Department of Agriculture</b>	<b>05/18/11</b>

<b>Box</b>	<b>Question</b>	<b>Answer</b>	<b>Outcome</b>
1	Is the plant species or genotype non-native?	Yes (1).	Go to box 3.
3	Is the plant species, or a related species, documented as being a problem elsewhere?	Yes. It is a noxious weed in CT and MA. It is considered invasive in IN (2), NJ (3) and NY (4).	Go to box 6.
6	Does the plant species have the capacity to establish and survive in Minnesota?		
	A. Is the plant, or a close relative, currently established in Minnesota?	Yes. There are multiple documented infestations.	Go to box 7.
7	Does the plant species have the potential to reproduce and spread in Minnesota?		
	A. Does the plant reproduce by asexual/vegetative means?	No.	Go to question C.
	C. Does the plant produce large amounts of viable, cold-hardy seeds?	Yes and the species is self-compatible (3).	Go to question F.
	F. Are sexual propagules – viable seeds – effectively dispersed to new areas?	Yes. Seeds can germinate in water so rivers and streams are considered a method of long-range dispersal (3). Humans and wildlife can also move seed inadvertently.	Go to question I.
	I. Do natural controls exist, species native to Minnesota, that are documented to effectively prevent the spread of the plant in question?	No.	Go to box 8.
8	Does the plant species pose significant human or livestock concerns or has the potential to significantly harm agricultural production, native ecosystems, or managed landscapes?		
	A. Does the plant have toxic qualities, or other detrimental qualities, that pose a significant risk to livestock, wildlife, or people?	No.	Go to question B.

Box	Question	Answer	Outcome
	B. Does, or could, the plant cause significant financial losses associated with decreased yields, reduced crop quality, or increased production costs?	No.	Go to question C.
	C. Can the plant aggressively displace native species through competition (including allelopathic effects)?	Yes (3). <i>Cardamine impatiens</i> has been observed to be highly invasive in MN and outcompete other vegetation in natural areas.	Go to box 9.
9	Does the plant species have clearly defined benefits that outweigh associated negative impacts?		
	A. Is the plant currently being used or produced and/or sold in Minnesota or native to Minnesota?	No.	Go to box 10.
10	Should the plant species be enforced as a noxious weed to prevent introduction &/or dispersal; designate as prohibited or restricted?		
	A. Is the plant currently established in Minnesota?	Yes, at multiple sites in several counties.	Go to question B.
	B. Does the plant pose a serious human health threat?	No.	Go to question C.
	C. Can the plant be reliably eradicated (entire plant) or controlled (top growth only to prevent pollen dispersal and seed production as appropriate) on a statewide basis using existing practices and available resources?	Yes. Observations indicate that appropriate applications of Garlon 4 (active ingredient is triclopyr) controls C. impatiens (personal communication, K. Farber, 05/17/11).	List as a prohibited/eradicate noxious weed (eradication possible and reasonable) or prohibited/control noxious weed (eradication not possible or reasonable)

Box	Question	Answer	Outcome
<b>Final Results of Risk Assessment</b>			
	<b>Review Entity</b>	<b>Comments</b>	<b>Outcome</b>
	NWAC Listing Subcommittee		Possible Prohibited Control or Species of Concern
	NWAC Full-group		List as a Prohibited Control Species
	MDA Commissioner	Approved as a Prohibited Control Species	Listed as a Prohibited Control Species
		File Number: MDARA00003NLBT_11_30_2011	

**References:**

1. USDA, NRCS. 2011. The PLANTS Database (<http://plants.usda.gov>, 17 May 2011). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
2. Indiana Native plant and Wildflower Society. Attention – new invasive plant in Indiana! (<http://www.inpaws.org/Invasive%20Plants%20in%20Indiana.html> 17 May 2011).
3. Glen, S.D. and K. Barringer. 2004. *Cardamine impatiens* L. (Brassicaceae) in New Jersey. *Journal of the Torrey Botanical Society* 131(3):257-260.
4. Glenn, S. and G. Moore. 2009. *Cardamine impatiens* L. (<http://nyis.info/PlantAssessments/Cardamine.impatiens.NYS.pdf> 17 May 2011).

## **Notes about *Cardamine impatiens* distribution**

### **North American distribution and detection in Minnesota**

Narrowleaf bittercress is reported in the northeastern United States and New Brunswick and Ontario in Canada, but was not reported in Minnesota until 2008. It was found at the Riverside Park site in St. Paul Park by Connie Fortin with Fortin Consulting, a private company restoring the park to native vegetation. In 2008, Fortin Consulting sent narrowleaf bittercress samples to the Minnesota Department of Natural Resources (DNR) for a definitive identification. Only a few plants were observed by Fortin Consulting staff in 2008. By May 2009, there was a population explosion of narrowleaf bittercress. Mature, flowering plants were hand-pulled and removed by a National Park Service invasive species crew. In June 2009, large patches of seedlings and rosettes were observed throughout approximately eight acres. Narrowleaf bittercress has been observed, but not documented on adjacent private land. Connie Fortin and DNR staff also found small infestations of narrowleaf bittercress at Afton, Fort Snelling, Great River Bluffs, and William O'Brien State Parks and Big Willow Park in Minnetonka. Adam Robbins and Nathan Johnson with St. Paul Parks and Recreation found a small infestation of narrowleaf bittercress at Crosby Farm/Hidden Falls Park in St. Paul and reported the infestation to the Ramsey County Cooperative Weed Management Area. All plants were hand-pulled from Crosby Farm/Hidden Falls Park and Big Willow Park sites. Some plants may remain at the state park sites and adjacent areas.

Given the wide distribution of this species, eradication may not be a realistic goal.