

MN NWAC Risk Assessment Worksheet (04-2011)	Common Name	Latin Name
	Oriental Bittersweet	<i>Celastrus orbiculatus</i>
Reviewer	Affiliation/Organization	Date (mm/dd/yyyy)
Monika Chandler	MN Dept. of Agriculture	02/03/2011

Box	Question	Answer	Outcome
1	Is the plant species or genotype non-native?	Yes, Oriental bittersweet is native to China, Japan, Korea, Mongolia, Russian Federation.	Go to box 3
3	Is the plant species, or a related species, documented as being a problem elsewhere?	Yes, Oriental bittersweet is a noxious weed in CT, MA, NH, NC, and VT. The US Forest Service ranked this species as Category 1: highly invasive.	Go to box 6
6	Does the plant species have the capacity to establish and survive in Minnesota?	Yes, there are documented infestations in the Twin Cities and Winona that are many years old.	Go to box7
7	Does the plant species have the potential to reproduce and spread in Minnesota?	Yes, Oriental bittersweet reproduces by seed, stolon, and rhizome. Consumption of fruit containing seed by birds and other wildlife facilitates spread. Humans can disperse Oriental bittersweet seeds when collecting, transporting, and disposing of the fruiting branches	Go to box 8
	A. Does the plant reproduce by asexual/vegetative means?	Yes, it can reproduce by stolon and rhizome.	Go to question B
	B. Are the asexual propagules effectively dispersed to new areas?	No, unless propagules are dispersed by human activities.	Go to question C
	C. Does the plant produce large amounts of viable, cold-hardy seeds?	Yes, Oriental bittersweet is a prolific seed producer and the seed is cold hardy. Seed viability in soil is not long (generally 1-3 years). Most seedlings result from seed rain.	Go to Question F
	F. Are sexual propagules – viable seeds – effectively dispersed to new areas?	Yes, birds and other wildlife can vector Oriental bittersweet seed dispersal. Seed may also be moved in water.	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

Box	Question	Answer	Outcome
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?	Yes, see answer to box 3	Go to box 9
	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
	B. Does, or could, the plant cause significant financial losses associated with decreased yields, reduced crop quality, or increased production costs?	Yes, Oriental bittersweet could cause significant financial losses to the forestry sector.	Go to box 9
9	Does the plant species have clearly defined benefits that outweigh associated negative impacts?	No, the negative impacts outweigh benefits.	Go to box 10
	A. Is the plant currently being used or produced and/or sold in Minnesota or native to Minnesota?	Yes, Oriental bittersweet is produced and sold by the floriculture and nursery industries. The stems and fruit are used in flower arrangements. Historically, Oriental bittersweet was sold as an ornamental landscape vine. Few vendors sell Oriental bittersweet plants today, but it may be mistakenly mixed into nursery stock and labeled as American bittersweet. Birds and other wildlife can utilize the fruit as a food source.	Go to question B
	B. Is the plant an introduced species and can its spread be effectively and easily prevented or controlled, or its negative impacts minimized through carefully designed and executed management practices?	Oriental bittersweet is an introduced species. Its spread cannot be effectively and easily prevented due to bird vectored seed dispersal.	Go to question C
	C. Is the plant native to Minnesota?	No	Go to question D

Box	Question	Answer	Outcome
	D. Is a non-invasive, alternative plant material commercially available that could serve the same purpose as the plant of concern?	Yes, the horticultural industry developed several cultivars of the American bittersweet, a native vine. Also, the American bittersweet species is sold and planted.	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, there are documented infestations in the Twin Cities and Winona.	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?	It may be possible to eradicate the known infestations. However, it is likely there are additional infestations that have not been documented yet. Oriental bittersweet can be controlled with existing mechanical and chemical methods.	
		If the answer to question C is “yes”	List the plant as a prohibited/eradicate noxious weed (eradication possible and reasonable) or prohibited/control noxious weed (eradication not possible or reasonable) as appropriate
		If the answer to question C is “no”	List the plant as a restricted noxious weed.
Final Results of Risk Assessment			
	Review Entity	Comments	Outcome
	NWAC Listing Subcommittee	General consensus of subcommittee was to put forward to full NWAC for review and listing on the Prohibited/ Eradicate list	Sent to full member NWAC for approval

Box	Question	Answer	Outcome
	NWAC Full-group	NWAC was presented with background information at their February 2, 2011 meeting. Monika Chandler presented background information presented with the risk assessment outcomes for this species.	NWAC Members unanimously approved listing Oriental Bittersweet on the state's Prohibited/Eradicate noxious weed list. Monika was asked to give a follow-up to Oriental bittersweet status in Minnesota in the spring of 2012
	MDA Commissioner	Sent NWAC's request to list as a Prohibited/Eradicate Noxious Weed on February 3, 2011	Commissioner approved the listing of Oriental bittersweet as a Prohibited/Eradicate Noxious Weed on March 3, 2011.
		FILE #: MDARA00001OB_02_03_2011	

References:

Ellsworth, Joshua W., Robin A. Harrington, and James H. Fownes. 2004. Survival, growth, and gas exchange of *Celastrus orbiculatus* seedlings in sun and shade. *The American Midland Naturalist* 151(2):233-240.

Ellsworth, Joshua W., Robin A. Harrington, and James H. Fownes. 2004. Seedling emergence, growth, and allocation of Oriental bittersweet: effects of seed input, seed bank, and forest floor litter. *Forest Ecology and Management* 190:255-264.

Howard, Janet L. 2005. *Celastrus orbiculatus*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: <http://www.fs.fed.us/database/feis/> [2011, January 18].

NBII & IUCN/SSC ISSG. 2005. *Celastrus orbiculatus*. In: Global Invasive Species Database, [Online]. Available: <http://www.issg.org/database/species/ecology.asp?si=156&fr=1&sts=&lang=EN> [2011, January 30].