MN NWAC Risk Assessment Worksheet (04-2011)	Common Name	*Latin Name*
	Eastern & Western Poison Ivy	***Toxicodendron radicans* (L.) Kuntze & *Toxicodendron rydbergii* (Small ex. Rydb.) Greene** (Synonyms: *Rhus radicans*, *Rhus toxicodendron*, and *Toxicodendron negundo* & *Rhus radicans* var. *rydbergii*, *Rhus radicans* var. *vulgaris*, *Rhus toxicodendron* var. *vulgaris*, *Toxicodendron longipes*, and *Toxicodendron desertorum*, respectively)
Reviewer	**Affiliation/Organization**	**Date (mm/dd/yyyy)**
James Calkins	**Minnehaha Creek Watershed District**	**05/1/2013**

Two species of poison ivy are native to Minnesota – eastern poison ivy (*Toxicodendron radicans*) and western poison ivy (*T. rydbergii*). They are members of the Sumac/Cashew Family (Anacardiaceae). Several subspecies of eastern poison ivy have been named including *Toxicodendron radicans* ssp. *negundo* which is the subspecies found in Minnesota. Eastern poison ivy is a woody perennial shrub or vine. It is native across much of North America, including the Upper Midwest and Minnesota, east of the Rocky Mountains and in Mexico and Central America. Western poison ivy is native to western, north central, and northeastern North America and primarily grows as a woody shrub or groundcover. Although poison ivy is widely distributed and tolerates shade and a wide variety of soils relative to pH, moisture, and fertility, it performs best on moist, fertile soils in full sun. Hardy to at least USDA Cold Hardiness Zone 3, it is common in native plant communities, but is often overlooked until fall when it develops striking yellow, orange and red fall colors.

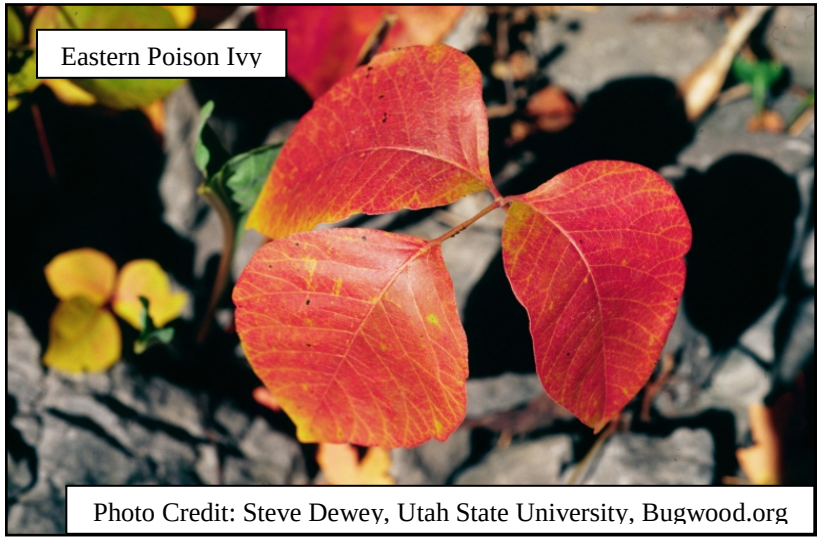

Photo Credit: Steve Dewey, Utah State University, Bugwood.org

Leaves of three, let it be, poison ivy produces an oily, resinous compound called urushiol that causes an itchy rash in 50- 85% of the human population and gives the plant a bad reputation. Interestingly, most wild and domesticated animals seem to be unaffected and poison ivy plants and fruits are eaten without negative effect by a number of mammals and birds.

Box	Question	Answer	Outcome (i.e., Go to box:?)
1	Is the plant species or genotype non-native?	No; poison ivy is native to North America and is found throughout Minnesota.	Go to Box 2

Box	Question	Answer	Outcome (i.e., Go to box:?)
2	Does the plant species pose significant human or livestock concerns or has the potential to significantly harm agricultural production?	Yes; exposure causes a rash in for 50-85% of the human population.	
	A. Does the plant have toxic qualities that pose a significant risk to livestock, wildlife, or people?	Yes; poison ivy contains the chemical compound urushiol which causes an itchy rash in humans; generally is not a problem for livestock, pets or wildlife, but can be a significant problem for portions of the human population. If no, Go to Question B	Go to Box 9
	B. Does the plant cause significant financial losses associated with decreased yields, reduced quality, or increased production costs?	No; the species would not be considered a risk and would not be regulated in any way.	
3	Is the plant species, or a related species, documented as being a problem elsewhere?	Yes; native in Michigan, but listed as a noxious weed.	
4	Are the plant's life history & growth requirements sufficiently understood?	Yes.	
5	Gather and evaluate further information:	(Comments/Notes)	
6	Does the plant species have the capacity to establish and survive in Minnesota?	Yes.	
	A. Is the plant, or a close relative, currently established in Minnesota?	Yes; poison ivy is native in Minnesota.	
	B. Has the plant become established in areas having a climate and growing conditions similar to those found in Minnesota?		
7	Does the plant species have the potential to reproduce and spread in Minnesota?	Yes; seed and vegetatively by rhizomes.	
	A. Does the plant reproduce by asexual/vegetative means?	Yes; spreads by rhizomes to produce colonies.	
	B. Are the asexual propagules effectively dispersed to new areas?	No.	
	C. Does the plant produce large amounts of viable, cold-hardy seeds?	Information on seed production is variable.	

Box	Question	Answer	Outcome (i.e., Go to box:?)
	D. If this species produces low numbers of viable seeds, does it have a high level of seed/seedling vigor or do the seeds remain viable for an extended period?		
	E. Is this species self-fertile?	Plants are dioecious.	
	F. Are sexual propagules – viable seeds – effectively dispersed to new areas?	Yes; dispersed by animals; fruits eaten by wildlife and seeds pass through digestive system unharmed and are deposited in new areas.	
	G. Can the species hybridize with native species (or other introduced species) and produce viable seed and fertile offspring in the absence of human intervention?	Yes; able to hybridize with western poison ivy (*Toxicodendron rydbergii*) which is also native to Minnesota.	
	H. If the species is woody (trees, shrubs, and woody vines) is the juvenile period less than or equal to 5 years for tree species or 3 years for shrubs and vines?	Yes; begins to flower and fruit when plants are three years old.	
	I. Do natural controls exist, species native to Minnesota, that are documented to effectively prevent the spread of the plant in question?	No.	
8	Does the plant species pose significant human or livestock concerns or have the potential to significantly harm agricultural production, native ecosystems, or managed landscapes?	Causes dermatitis (Rhus Dermatitis) in humans.	
	A. Does the plant have toxic qualities, or other detrimental qualities, that pose a significant risk to livestock, wildlife, or people?	Causes dermatitis (Rhus Dermatitis) in humans.	
	B. Does, or could, the plant cause significant financial losses associated with decreased yields, reduced crop quality, or increased production costs?	No.	
	C. Can the plant aggressively displace native species through competition (including allelopathic effects)?		

Box	Question	Answer	Outcome (i.e., Go to box:?)
	D. Can the plant hybridize with native species resulting in a modified gene pool and potentially negative impacts on native populations?	No; can hybridize with western poison ivy (*Toxicodendron rydbergii* which is also native to Minnesota), but both species are native so no negative effects on native ecosystems	
	E. Does the plant have the potential to change native ecosystems (adds a vegetative layer, affects ground or surface water levels, etc.)?	No; native to Minnesota and found in most native ecosystems.	
	F. Does the plant have the potential to introduce or harbor another pest or serve as an alternate host?	No.	
9	Does the plant species have clearly defined benefits that outweigh associated negative impacts?	Yes; poison ivy plants do have ecosystem benefits – soil stabilization and food for wildlife; has been suggested as a barrier plant for crime prevention.	
	A. Is the plant currently being used or produced and/or sold in Minnesota or native to Minnesota?	Yes; not commercially grown in Minnesota, but native and widespread in Minnesota.	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?	No; poison ivy is not an introduced species in Minnesota – it is native to Minnesota.	Go to Question C
	C. Is the plant native to Minnesota?	Yes.	Go to Question E
	D. Is a non-invasive, alternative plant material commercially available that could serve the same purpose as the plant of concern?		
	E. Does the plant benefit Minnesota to a greater extent than the negative impacts identified at Box #8?	Widespread in Minnesota and serves as a food source for a number of mammals and many species of birds including songbirds and game birds	Yes, Go to Box 11 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?		

Box	Question	Answer	Outcome (i.e., Go to box:?)
	A. Is the plant currently established in Minnesota?	Yes; native, common, and widely distributed across the state.	Go to Question B
	B. Does the plant pose a serious human health threat?	Depends on what is meant by serious.	
	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?	No; would be very difficult and expensive to eradicate on a statewide basis; some would question whether a native plant should be eradicated.	List as a Restricted Noxious Weed
11	Should the plant species be allowed in Minnesota via a species-specific management plan; designate as specially regulated?	Yes.	Designate as a **Specially Regulated Plant**

Final Results of Risk Assessment

	Review Entity	Comments	Outcome
	NWAC Listing Subcommittee	First review – 06/20/2013, Final Review 08/12/2013 Native and valuable in native ecosystems; erosion control and wildlife food plant (leaves, stems, and fruits).	**List as a Specially Regulated Plant and continuing the existing management plan.**
	NWAC Full-group	Reviewed 12/18/2013	Voted 13 – 0 to remain as a Specially Regulated Plant continuing the existing management plan
	MDA Commissioner	Reviewed 02_24/2014	Accepted NWAC's Recommendation to remain as a Specially Regulated Plant and to continue implementing the existing management plan.
	File # MDARA00032POSIV_2_24_2014	**Specially Regulated Plant**	

References:

1. Meanley, B. 1956. Foods of the Wild Turkey in the White River Bottomlands of Southeastern Arkansas. The Wilson Bulletin 68(4):305-311. Wilson Ornithological Society. http://www.jstor.org/stable/4158531

2. Roberts, T.H. and D.H. Arner. 1984. Food Habits of Beaver in East-Central Mississippi

3. The Journal of Wildlife Management 48(4):1414-1419. http://www.jstor.org/stable/3801808

4. Stoll, R.J. 1980. Foods of ruffed grouse in Ohio. No. 7. Ohio Dept. of Natural Resources, Division of Wildlife.

5. Steyskal, G. 1951. Insects Feeding on Plants of the Toxicodendron-Section of the Genus Rhus (Poison Oak, Ivy, or Sumac). The Coleopterists Bulletin 5(5/6; Oct. - Dec.):75-77. Published by: The Coleopterists Society. http://www.jstor.org/stable/3998471

6. Swenk, M.H. and L.F. Selko. 1938. Late Autumn Food of the Sharp-Tailed Grouse in Western Nebraska. The Journal of Wildlife Management 2(4):184-189. http://www.jstor.org/stable/3795665

7. Beverly R. Durgan. 1998. Identification of the Primary Noxious Weeds of Minnesota. University of Minnesota Extension FO-5620-S. http://www.extension.umn.edu/distribution/horticulture/components/05620-12.pdf

8. Annala, M., E.A. Tillman, G. Backus, K.L. Keacher, and M.L. Avery. 2012. Crow Pellets from Winter Roosts in Lancaster, Pennsylvania. Northeastern Naturalist 19(3):527-532.

9. Adams, D. 1988. Autumn Foods of White-Tailed Deer. Proceedings Arkansas Academy off Science. http://libinfo.uark.edu/aas/issues/1988v42/v42a17.pdf

10. Toxicodendron radicans, T. rydbergii - USDA Forest Service. http://www.fs.fed.us/database/feis/plants/shrub/toxspp/all.html

11. Senchina, D. 2008. Fungal and animal associates of Toxicodendron spp. Anacardiaceae) in North America. Perspectives in Plant Ecology, Evolution and Systematics 10(3):197–216. http://dx.doi.org/10.1016/j.ppees.2008.02.001

12. Toxicodendron rydbergii (Small ex Rydb.) Greene western poison ivy ANACARDIACEAE http://www.fs.fed.us/global/iitf/pdf/shrubs/Toxicodendron%20rydbergii.pdf

13. Mohan JE, Ziska LH, Schlesinger WH,Thomas RB, Sicher RC, George K, Clark JS. 2006. Biomass and toxicity responses of poison ivy (Toxicodendron radicans) to elevated atmospheric CO2. Proceedings of the National Academy of Sciences 103: 9086–9089.