

MN NWAC Risk Assessment Worksheet (04-2011)	Common Name	Latin Name
	Common Reed	<i>Phragmites australis</i> (Cav.) Trin. Ex Steud subsp. <i>australis</i>
Reviewer	Affiliation/Organization	Date (mm/dd/yyyy)
Anthony Cortilet	Minnesota Department of Agriculture	09/12/2012

Box	Question	Answer	Outcome
1	Is the plant species or genotype non-native?	<i>Phragmites australis</i> has a cosmopolitan distribution. <i>Phragmites australis</i> subsp. <i>americanus</i> is native to North America. In the U.S. there is strong genetic phylogeographic evidence that a non-native variety (<i>Phragmites australis</i> subsp. <i>australis</i>) was introduced to North America sometime in the early 1900's at a shipping port along the Atlantic coast. Eleven haplotypes have been found to be common in North America. One Haplotype (M) has been found to be widely distributed across continents. Haplotype M is thought to be replacing native haplotypes in North America ^{1, 4, 5, 8, 9, 13, 14, 15, 16}	Research and morphological evidence suggest that <i>Phragmites australis</i> subsp. <i>australis</i> is non-native. Go to 3
3	The plant, or a related species, is documented as being a problem elsewhere?	<i>P. australis</i> subsp. <i>australis</i> has been found to be problematic in 18 states – mostly east coast, upper Midwest, and the Great Plains. It is documented to be extremely invasive along the Great Lakes, Platte River in NE and in WI and MI ^{14, 8, 9, 17, 23, 24}	Yes Go to Box 6
6	The Plant has the capacity to establish and survive in MN?		
A.	Is the plant, or a close relative established in MN?	Yes. Both <i>P. australis</i> subsp. <i>americanus</i> and <i>P. australis</i> subsp. <i>australis</i> have been documented morphologically and molecularly in MN ^{8,9,15,16,17}	Go to Box 7
7	The plant has the potential to reproduce and spread in MN?		

Box	Question	Answer	Outcome
A.	Does the plant reproduce by asexual/vegetative means?	Yes. Subsp. <i>australis</i> reproduces vigorously by rhizomes, and broken pieces of rhizome/root material (stolen fragments) can be carried by water and re-root. Abundant viable seed is also produced making seed an important invasion vector ^{4, 5, 9, 23, 24}	Go to Question 7B
B.	Are the asexual propagules – vegetative parts having the capacity to develop into new plants – effectively dispersed to new areas?	Yes. Because <i>Phragmites</i> is either directly related to aquatic habitats or established nearby, water action along lakes, ponds, wetlands, or streams can break root fragments off of the plant and transport downstream to new areas. Rhizome or stolon fragments can also be transported by humans and equipment ^{4,5,13}	Go to Question 7I
I.	Do natural controls exist, species native to Minnesota that are documented to effectively prevent the spread of the species in question?	Not at this time. Biological control research is being conducted through CABI Switzerland and under quarantine at the University of Rhode Island. Three stem-mining noctuid moth species are under consideration and have shown some promise. Funding is in question and a time-table for potential U.S. release is unknown at this time ¹⁸	Go to Box 8
8	The plant poses 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?	There have been no reported toxic qualities associated with <i>Phragmites</i> . However, most of the literature cited references detrimental qualities for wildlife habitat and biological diversity. It has been shown to reduce habitat suitability for threatened and endangered species along the Platte River in NE, including whooping cranes ^{23, 24}	If no – Question B If yes – Box 9
B.	Does, or could, the plant cause significant financial losses associated with decreased yields, reduced crop quality, or increased production costs?	No known impacts to production in the literature.	Question C

Box	Question	Answer	Outcome
C.	Can the plant aggressively displace native species through competition (including allelopathic effects)?	Yes. Through morphological and molecular research subsp. <i>australis</i> is thought to be displacing native haplotypes of subsp. <i>americanus</i> in North America and has been shown to be spreading to regions where historically <i>Phragmites</i> has not been documented over the past century in the United States ^{8, 9, 13, 14, 19}	Box 9
9	The plant has clearly defined benefits that outweigh associated negative impacts?		
A.	Is the plant currently being used or produced and/or sold in MN or native to MN?	<i>Phragmites</i> subsp. <i>americanus</i> is native and may be sold in certain wetland mixes/restoration mixes. However, no known sales in the nursery trade at this time have been established ^{20, 21, 22}	If yes – Question B If no – Box 10
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?	<i>Phragmites</i> subsp. <i>australis</i> is thought to be introduced through morphological and molecular research ^{8, 9, 15, 16} . Most researchers and land managers from infested states believe that subsp. <i>australis</i> can be minimized by properly teaching land managers the morphological characteristics separating subsp. <i>americanus</i> and <i>australis</i> and providing immediate management action when <i>australis</i> is discovered ^{2, 4, 5, 6, 7, 12, 13, 15, 16, 19} There is a concern that if enforcement were required under the noxious weed law, current enforcement agents at local and county governments, would have difficulty telling the morphological differences between the two subspecies making enforcement actions difficult. However, states like NE have listed it as a noxious weed and have been relatively successful through University of NE Extension in providing enforcement agents in local governments with education on discerning between the native and non-native.	Go to Box 10
10	Enforce control as a noxious weed to prevent introduction &/or dispersal; designate as Prohibited or Restricted		

Box	Question	Answer	Outcome
A.	Is the plant currently established in MN?	Yes ^{2, 8, 15, 16}	Go to Question B
B.	Does the plant pose a serious human health threat	No threat to human health has been documented at this time.	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?	No surveys exist to document the species range in MN, therefore, this species is not documented to be widely distributed in MN. Therefore, several researchers at the U of M with intimate knowledge of this species, and DOT and DNR land managers have reported seeing the non-native varieties along rivers, roadsides, wetlands, boat docks, etc. and feel that if we don't regulate soon, it will become an unsolvable problem ^{5, 6, 7, 12, 15, 16, 19, 23}	Yes – List as a Prohibited Eradicate or Control Noxious Weed. No – List as a Restricted Noxious Weed

Final Results of Risk Assessment

	Review Entity	Comments	Outcome
	NWAC Listing Subcommittee	9/13/12 – Control not thought to be possible or feasible <ul style="list-style-type: none"> - Eradication statewide not thought to be feasible so why expect landowners to attempt eradication? - Potential environmental impacts by forcing either control or eradication - Issues with regulation concerning aquatic (MN DNR) vs. terrestrial (MDA) - Group spent a lot of time debating this issue; no real consensus to support regulation at this time. 	Undecided.
	NWAC Full-group		Voted to Recommend listing as a Restricted Noxious Weed

Box	Question	Answer	Outcome
	MDA Commissioner		Commissioner Approved as a Restricted Noxious Weed – 1/14/2013
File #	MDARA00020COMRED_1_18_2013		

References:

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- 2) MN DNR. Non-native subspecies of *Phragmites* (Common Reed) (*Phragmites australis*, subsp. *australis*) - <http://www.dnr.state.mn.us/invasives/aquaticplants/phragmites/index.html>
- 3) USDA Plants Database - <http://plants.usda.gov/java/profile?symbol=phau7>
- 4) Invasive *Phragmites* – Best Management Practices 2011. Ontario Ministry of Natural Resources, Peterborough, Ontario. Version 2011. 15p. - [http://www.ontarioinvasiveplants.ca/files/Phragmites BMP July 13.pdf](http://www.ontarioinvasiveplants.ca/files/Phragmites_BMP_July_13.pdf)
- 5) A guide to the Control and Management of Invasive *Phragmites*. Michigan Department of Environmental Quality. – http://www.michigan.gov/documents/deq/deq-ogl-ais-guide-PhragBook-Email_212418_7.pdf
- 6) A Landowners’s Guide to *Phragmites* Control. Michigan Department of Environmental Quality. - http://www.michigan.gov/documents/deq/deq-ogl-Guide-Phragmites_204659_7.pdf
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- 13) Marks, M., B. Lapin and J. Randall. 1994. *Phragmites australis* (*P. communis*): Threats, management and monitoring. Natural Areas Journal 14: 285-294.
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- 15) Meyer, M. 2012. Common Reed in Minnesota. The Scoop. Vol. 35 (2). 48 – 49.
- 16) Dr. Mary Meyer. University of Minnesota Extension Horticulturist. 2012. Personal communication.

- 17) EDDMapS. Common Reed *Phragmites australis* (Cav.) Trin. Ex Steud. Distribution MN DNR. - <http://www.eddmaps.org/distribution/viewmap.cfm?sub=3062>
- 18) Patrick Häfliger. Weed Biological Control Scientist. CABI Switzerland. Personal communication, 2012.
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- 20) Tim Power. Minnesota Nursery and Landscape Association Regulatory Consultant. Personal communication, 2012.
- 21) Stephen Shimek. Minnesota Department of Agriculture. Nursery Inspection Program. Personal communication, 2012.
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