NAME OF SPECIES: Phragmites australis (Cav.) Trin. ex Steud. (1).	
Synonyms: P. communis (L.) Trin.; P. communis Trin. var. berlandieri (Fourn.) Fernald.; P. communis Trin. subsp. berlandieri (Fourn.) A. Love and D. Love.; P. phragmites (L.) Karst. (2); P. maximus var. berlandieri (Fourn.) (3); P. australis subsp. americanus Saltonstall, Peterson, & Soreng. (4).	
Common Name: Common Reed, Common Reed Grass, Giant Reed Grass, Phragmites.	
A. CURRENT STATUS AND DISTRIBUTION	
I. In Wisconsin?	1. YES ☒ NO ☐
	2. Abundance: Widely distributed and locally abundant throughout Wisconsin (5).
	3. Geographic Range: Herbarium records exist from 47 counties in Wisconsin (5), but herbarium records don't distinguish between introduced and native types.
	4. Habitat Invaded: Aquatic Emergent Wetland Disturbed Areas ☒ Undisturbed Areas ☒ roadsides and ditches
	5. Historical Status and Rate of Spread in Wisconsin: Populations of Phragmites existed in precolonial Wisconsin. Less is known of the naturalization of transported (e.g. European) germplasm in Wisconsin. A genetic study indicates the invasive halotypes are likely Eurasian in origin. Native phragmites has a different phenotypic characteristics and grows differently- more scattered, less dense.
	6. Proportion of potential range occupied: Has the potential to expand, part as a weed shift following control or suppression of reed canarygrass and/or purple loosestrife. Expanding rapidly on Great Lakes shores as lake levels drop.
II. Invasive in Similar Climate Zones	1. YES ☒ NO ☐ Where (include trends): Invasive in temperate European wetlands (6). Very invasive on Atlantic coast of eastern states.
III. Invasive in Similar Habitat Types	1. Upland ☐ Wetland ☒ Dune ☐ Prairie ☐ Aquatic ☒ Forest ☐ Grassland ☐ Bog ☒ Fen ☒ Swamp ☒ Marsh ☒ Lake ☒ Stream ☒ Other: Roadside ditches, stormwater wetlands, deep and shallow marshes, wet meadows, sedge meadows, coniferous bogs, lake and pond margins, oxbows, springs and seeps, and riparian backwaters.
IV. Habitat Effected	1. Soil types favored (e.g. sand, silt, clay, or combinations thereof, pH): Grows best on alkaline mineral clay (5) (7). Tolerant of moderately saline soils (8) and acidic soils (7).
	2. Conservation significance of threatened habitats: Wetlands provide billions of dollars annually in ecosystems services. Simplified and homogenized systems do not provide congruent magnitude of nutrient and carbon sequestration and retention.
V. Native Habitat	1. List countries and native habitat types: Phragmites is a cryptogenic species with circumtemperate distribution. There is convincing evidence that Phragmites is native to North America; Phragmites was found in 3,000-year-old peat samples from Connecticut and in 1,000-year-old Native American artifacts in Colorado (8). The origin of diversity for this taxon is unknown (7).
VI. Legal Classification	1. Listed by government entities? Yes. Noxious in AL, VT, WA. Regulated in CT, MA, SC. (9).
	2. Illegal to sell? YES ☒ NO ☐ Notes: states listed above

B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
I. Life History	1. Type of plant: Annual ☐ Biennial ☐ Monocarpic Perennial ☐ Herbaceous Perennial ☒ Vine ☐ Shrub ☐ Tree ☐
	2. Time to Maturity: Successful seedling establishment requires 1 - 2 years (8); flowers in the third growing season (7).
	3. Length of Seed Viability: Greater than 60 months (10). Seed germination is promoted by hypoxia in moderately saline water (5 - 10 g/L NaCl) (11).
	4. Methods of Reproduction: Asexual ☒ Sexual ☒ Please note abundance of propagules and and other important information: Seed production may be low due to a preponderance of vegetative expansion (7).
	5. Hybridization potential: Unknown. There is speculation that invasive cultivated varieties have recently been introduced to North America from Europe, and that these my introgress with native genotypes. However, relevant experiments have not been able to conclude that introgressive hybridization between North American and European genotypes has occurred (8). Saltonstall et al. (12) recognized three genetically divergent taxa, P. australis subsp. americanus (native genotypes), P. australis var. berlandieri (Gulf Coast genotypes) and P. australis (introduced genotypes) with some degree of sympatry. Introgression may become more commonplace if these infraspecific taxa expand their ranges.
II. Climate	1. Climate restrictions: Phragmites is most abundant in the northern hemisphere (8).
	2. Effects of potential climate change: No information?
III. Dispersal Potential	1. Pathways - Please check all that apply: Intentional: Ornamental ☒ Forage/Erosion control ☐ Medicine/Food: Other: Unintentional: Bird ☒ Animal ☒ Vehicles/Human ☒ Wind ☒ Water ☒ Other: Seeds can lodge in animal fur and bird feathers, particularly Red Winged Blackbirds (7).
	2. Distinguishing characteristics that aid in its survival and/or inhibit its control: Litter removal by prescribed fire increases Phragmites stem density. Phragmites can grow at water depths greater than 2 meters, but is reportedly incapable of vegetative spread at water depths greater than 0.5 - 1.0 meters. Phragmites roots consume very little oxygen compared to other wetland plants (8). Phragmites is also tolerant of temporary drawdown conditions. Tolerant of saline conditions, McNabb and Batterson (13) posit that road salt runoff is promoting Phragmites expansion. Phragmites is an extremely polymorphic species throughout its range (8). Can spread vegetatively via rhizomes and stolons (9).
IV. Ability to go Undetected	1. HIGH ☐ MEDIUM ☐ LOW ☒

C. DAMAGE POTENTIAL	
I. Competitive Ability	1. Presence of Natural Enemies: In Europe, Phragmites is primary or secondary host to 20 species of herbivores, saprovores, and parasites. Competitive release (evolution of increased competitive ability hypothesis) may play a mechanistic role in Phragmites invasiveness (8). However, no biological control agents that are sufficiently lethal to Phragmites have been identified (7).
	2. Competition with native species: Phragmites establishment and shoot production is poor in closed-canopy vegetation (14). Once established, its dense topgrowth and rhizomes exclude and preclude native species (7).
	3. Rate of Spread: HIGH(1-3 yrs) ☒ MEDIUM (4-6 yrs) ☒ LOW (7-10 yrs) ☐ Notes: Rate of spread is dependent upon degree of disturbance present. Rate of spread may be accelerated by nutrient inputs (7).
II. Environmental Effects	1. Alteration of ecosystem/community composition? YES ☒ NO ☐ Notes: Relationships between Phragmites invasions and declines in species density, richness, and diversity have been extensively documented.
	2. Alteration of ecosystem/community structure? YES ☒ NO ☐ Notes: Increases canopy height and density. Mammilian and avian densities in dense Phragmites stands are usually low (7).
	3. Alteration of ecosystem/community functions and processes? YES ☒ NO ☐ Notes: Phragmites invasions alter fire regimes (7).
	4. Allelopathic properties? YES ☒ NO ☐ Notes: Seed germination is inhibited in established, closed Phragmites stands (15).
D. SOCIO-ECONOMIC Effects	
I. Positive aspects of the species to the economy/society:	Notes: Historically, Phragmites was a raw material used by indigeneous peoples. Ornamental in some gardens and landscape designs. Want to allow growing and selling of native species.
II. Potential socio-economic effects of restricting use:	Notes: N/A
III. Direct and indirect effects :	Notes: N/A
IV. Increased cost to a sector:	Notes: N/A
V. Effects on human health:	Notes: N/A
E. CONTROL AND PREVENTION	
I. Costs of Prevention (including education; please be as specific as possible):	Notes:

F. REFERENCES USED:

II. Responsiveness to prevention efforts:	Notes: Areas that have been invaded by Phragmites have excellent potential for recovery (7).
III. Effective Control tactics:	Mechanical ☒ Biological ☐ Chemical ☒ Times and uses: Mowing, burning, herbicide application, and water level manipulation are the most commonly used control measures. Broad-spectrum herbicides are required and these preclude reestablishment of native species. Relatively new herbicides have been developed for wet soil conditions.
IV. Minimum Effort:	Notes: 3 - 5 years of intensive effort are required to begin to set this species back. Due to its reinvasion potential, some level of effort may be required indefinitely (7).
V. Costs of Control:	Notes: Variable and site-specific.
VI. Cost of prevention or control vs. Cost of allowing invasion to occur:	Notes: N/A
VII. Non-Target Effects of Control:	Notes: Mowing or foliar herbicide application may impact native species. Use of prescribed fire may result in peat fires.
VIII. Efficacy of monitoring:	Notes: Early detection and intervention can greatly reduce the time and resources that must be invested into controlling established Phragmites stands.
IX. Legal and landowner issues:	Notes: DNR approval and permitting may be required for control in some wetland projects.

☒ UW Herbarium
☐ WI DNR
☒ TNC
☐ Native Plant Conservation Alliance
☐ IPANE
☒ USDA Plants

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Author(s), Draft number, and date completed: Craig A. Annen, April 21, 2007.

Reviewer(s) and date reviewed: M. Martin, September 13,2007. Kelly Kearns, Sept. 18, 2007

Approved and Completed Date: