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| **NAME OF SPECIES: Cirsium palustre (L.) Scop. (1)** | |
| **Synonyms: Cnicus palustris (L.) Willd. (1)** | |
| **Common Name: Marsh thistle, European swamp thistle (1)** | |
| **A. CURRENT STATUS AND DISTRIBUTION** | |
| I. In Wisconsin? | 1. YES ☒ NO ☐ |
| | 2. Abundance: 57 recorded occurrences in WI (1); however this species is vastly under-reported. 223 occurrences on CNNF (8). |
| | 3. Geographic Range: 10 counties in northeastern WI (1). |
| | 4. Habitat Invaded:<br>Disturbed Areas ☒ Undisturbed Areas ☒ |
| | 5. Historical Status and Rate of Spread in Wisconsin: First recorded in 1961 (1). Cirsium palustre is well-established in northern Wisconsin and northern Michigan, and local abundance and range are increasing in those states (5). |
| | 6. Proportion of potential range occupied: N/A |
| II. Invasive in Similar Climate Zones | 1. YES ☒ NO ☐<br>Where (include trends): Cirsium palustre is well-established in northern Michigan, and established in a more scattered manner in New Hampshire, New York, Massachusetts, and Maine. It is also found in Eastern Canada and British Columbia. (5). |
| III. Invasive in Similar Habitat Types | 1. Upland ☒ Wetland ☒ Dune ☐ Prairie ☐ Aquatic ☐<br>Forest ☒ Grassland ☒ Bog ☒ Fen ☒ Swamp ☒<br>Marsh ☒ Lake ☐ Stream ☐ Other: In Wisconsin it is found in sphagnum bogs, wet roadsides, sedge marshes, and openings in black spruce swamps (1). It invades a wide variety of wetland and moist upland habitats, including wet meadows/marshes, shrub wetlands, swamps, floodplain forests, bogs/fens, coastal grasslands, forest edge/old fields, roadsides/ditches, mid- and late-successional forests, and lakeshores/beaches (5). |
| IV. Habitat Effected | 1. Soil types favored or tolerated: European marsh thistle prefers acidic, wet soils (4). |
| | 2. Conservation significance of threatened habitats: Several communities C. palustre invades, such as bogs and fens, are of conservation significance, and its ability to invade undisturbed vegetation suggests that it may pose a threat to high-quality examples of these. In British Columbia, it has been implicated in the degradation of sedge (Carex spp.) meadows. (5)<br>Some of the threatened communities in WI are ranked G2-G3, and S1-S3. (6) |
| V. Native Habitat | 1. List countries and native habitat types: Native to Europe and Siberia, including Denmark, Faroe Islands, Finland, Ireland, Norway, Sweden, United Kingdom, Austria, Belgium, Czechoslovakia, Germany, Hungary, Netherlands, Poland, Switzerland, Belarus, Estonia, Latvia, Lithuania, Moldova, Russian Federation (European part, Eastern Siberia, Western Siberia), Ukraine, Albania, Italy, Romania, Yugoslavia, France, Portugal, and Spain (3). |

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| VI. Legal Classification | 1. Listed by government entities? Yes. Noxious in AK and IA. (2). |
| | 2. Illegal to sell? YES ☐ NO ☒<br>Notes: |
| **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: Flowers and produces seed in second year of growth (5). Can remain in a vegetative rosette state 2-3 years (9). |
| | 3. Length of Seed Viability: The seedbank longevity is typically 3-12 months, but some seeds may survive for 2-3 years (5). |
| | 4. Methods of Reproduction: Asexual ☐ Sexual ☒<br>Notes: Reproduces entirely be seed, producing up to 2000 seeds per plant in the second year of growth (5). Can self pollinate (9). |
| | 5. Hybridization potential: N/A |
| II. Climate | 1. Climate restrictions: It prefers moist ground and climates with long, cold winters (5). |
| | 2. Effects of potential climate change: A warming trend would not favor this species. |
| III. Dispersal Potential | 1. Pathways - Please check all that apply:<br><br>Unintentional: Bird ☐ Animal ☐ Vehicles/Human ☒ Wind ☒ Water ☐ Other: It is also spread by logging equipment, readside mowing during seeding and as a possible seed contaminant (5).<br><br>Intentional: Ornamental ☐ Forage/Erosion control ☐ Medicine/Food: ☐ Other: |
| | 2. Distinguishing characteristics that aid in its survival and/or inhibit its control: Prolific seed producer, producing up to 2000 wind borne seeds per plant. It often seems to first establish in disturbed habitats (e.g. roadsides), then move out from these sites into undisturbed, minimally managed, or late successional habitats. (5). |
| IV. Ability to go Undetected | 1. HIGH ☐ MEDIUM ☒ LOW ☐ |
| **C. DAMAGE POTENTIAL** | |
| I. Competitive Ability | 1. Presence of Natural Enemies: No - no effective bio-control agents for this species have yet been found (5). |
| | 2. Competition with native species: Competes directly with and probably displaces the native swamp thistle, Cirsium muticum, and threatens a number of rare wetland species (5). |
| | 3. Rate of Spread:<br>-changes in relative dominance over time:<br>-change in acreage over time:<br>HIGH(1-3 yrs) ☐ MEDIUM (4-6 yrs) ☒ LOW (7-10 yrs) ☐<br>Notes: |

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| II. Environmental Effects | 1. Alteration of ecosystem/community composition?<br>YES ☒ NO ☐<br>Notes: Forms tall, dense colonies which can displace native species. It has even been noted to compete with tree seedlings. Because the plants are extremely spiny, they are unpalatable to deer and other wildlife, which may impact wildlife use of habitats. (5) |
| | 2. Alteration of ecosystem/community structure?<br>YES ☒ NO ☐<br>Notes: Plants can grow greater than 2m tall, which may allow them to overtop native species when they invade herbaceous habitats such as wet meadows. They also tend to form dense ungainly colonies, which may result in increased vegetation density. (5) |
| | 3. Alteration of ecosystem/community functions and processes?<br>YES ☐ NO ☒<br>Notes: Apparently present in New England since at least 1902 and in the Great Lakes region since at least 1934. Nonetheless, no reports of impacts on ecosystem processes or system-wide parameters were found. (5) |
| | 4. Allelopathic properties? YES ☐ NO ☒<br>Notes: |
| **D. SOCIO-ECONOMIC Effects** | |
| I. Positive aspects of the species to the economy/society: | Notes: N/A |
| II. Potential socio-economic effects of requiring controls:<br>Positive:<br>Negative: | Notes: N/A |
| III. Direct and indirect socio-economic effects of plant: | Notes: C. palustre can invade wet pastures and meadows which can have an effect on grazing lands (7) |
| IV. Increased cost to sectors caused by the plant: | Notes: N/A |
| V. Effects on human health: | Notes: N/A |
| VI. Potential socio-economic effects of restricting use:<br>Positive:<br>Negative: | Notes: N/A |
| **E. CONTROL AND PREVENTION** | |
| I. Costs of Prevention (including education; please be as specific as possible): | Notes: N/A |
| II. Responsiveness to prevention efforts: | Notes: |
| III. Effective Control tactics: | Mechanical ☒ Biological ☐ Chemical ☒<br>Times and uses: After one treatment an 80% reduction noted on CNNT using root-stabbing (digging) technique (Ferry). For smaller |

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| | infestations repeated mowing or selective cutting close to the ground can reduce an infestation within three or four years. Early spring (the first week of May) look for dead stalks of previous year. The rosettes can be hand-pulled or dug. Flowering heads can be cut off while in the unopened bud stage. If cut during or after flowering, flower heads should be gathered and destroyed. C. palsutre plants have a strong tendency to resprout when cut so manual control meathods may need to be repeated for several years to enure succesful control.<br>For larger infestations, herbicides may be necessary. An herbicide specific for broad-leaved species may minimize collateral damage in grass-dominated ecosystems. If glyphosate is required, collateral damage can be minimized by cutting stems near ground level, then spraying a small amount of solution into the cut hollow stems. Glyphosate can be used during the stage when plants are 6 to 10 inches tall, during the bud to flowering stage, or when applied to rosettes in the fall. (4) (5) |
| IV. Minimum Effort: | Notes: Regardless of the control program selected, yearly monitoring and treatment are probably necessary for several years or more (5). 3 years based on seed viability. Very difficult to control even with several years of removing all flowering plants.(11) |
| V. Costs of Control: | Notes: $300/acre on Cheq-Nic N.Forest. |
| VI. Cost of prevention or control vs. Cost of allowing invasion to occur: | Notes: N/A |
| VII. Non-Target Effects of Control: | Notes: The necessity of cutting several times per season because of resprouting may result in more trampling damage to native species than in cases where one cut per season is sufficient. If use of glyphosate is necessary, this could also result in some damage to natives. (5) |
| VIII. Efficacy of monitoring: | Notes: Easy to spot due to height and color on roadsides. Harder to differentiates from Native Marsh Thistle in a natural setting. |
| IX. Legal and landowner issues: | Notes: N/A |

## F. REFERENCES USED:

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

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| 2 | USDA, NRCS. 2006. The PLANTS Database (http://plants.usda.gov, 18 April 2007). National Plant Data Center, Baton Rouge, LA 70874-4490 USA |
| 3 | USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland. URL: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?401604 (19 April 2007) |
| 4 | Wisconsin Department of Natural Resources, Invasive Species Website. http://www.dnr.state.wi.us/invasives/fact/thistle_EMarsh.htm |

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| 5 | NatureServe. 2006. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: April 19, 2007). |
| 6 | WDNR Natural Heritage Inventory Working List. http://www.dnr.state.wi.us/org/land/er/wlist/ |
| 7 | British Columbia, Ministry of Agriculture and Lands. http://www.agf.gov.bc.ca/cropprot/weedguid/plumethist.htm |
| 8 | Chequamegon-Nicolet National Forest database. |
| 9 | Invasive Species to watch for- Cirsium palustre. 2002. Menziesia-Newsletter for the Native Plant Society of British Columbia (NPSBC). Volume 17 issue 4. Available at: npsbc.org/newsletter/menziesia02Fall.pdf. |
| Ferry | Ferry Maureen. 2007. Personal Communication with M.Brzeskiewicz. |
| 11 | Steve Garksy. Botonist for Great Lakes Fish and Wildlife Commission. |


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