NAME OF SPECIES: Epipactis helleborine.

Synonyms: Amesia latifolia (L.) A. Nelson & J.F. Macbr.; Epipactis latifolia (L.) All.; Serapias helleborine L.	
Common Name: Broad-leaved Helleborine, Helleborine, Helliborne Orchid.	
A. CURRENT STATUS AND DISTRIBUTION	
I. In Wisconsin?	1. YES ☒ NO ☐
	2. Abundance: Distribution presently mostly limited to eastern Wisconsin within a few miles of Lake Michigan (1). can be common and locally abundant
	3. Geographic Range: Found in 12 counties in eastern Wisconsin (1).
	4. Habitat Invaded: Beech Maple Forest, White Cedar Stands, logged Aspen forest Disturbed Areas ☐ Undisturbed Areas ☒
	5. Historical Status and Rate of Spread in Wisconsin: Introduced to eastern North America as a medicinal plant. It is now naturalized and spreading westward (2). Earliest herbarium specimen from Wisconsin was collected in 1930 in Milwaukee County (1).
	6. Proportion of potential range occupied: Capable of expanding.
II. Invasive in Similar Climate Zones	1. YES ☒ NO ☐ Where (include trends): Very common in Western UP
III. Invasive in Similar Habitat Types	1. Upland ☒ Wetland ☒ Dune ☐ Prairie ☐ Aquatic ☐ Forest ☒ Grassland ☐ Bog ☐ Fen ☐ Swamp ☐ Marsh ☒ Lake ☐ Stream ☒ Other: Moist to dry, rocky, shaded, deciduous woods, cedar swamps, forested stream margins, lawns, cracks in sidewalks.
IV. Habitat Effected	1. Soil types favored (e.g. sand, silt, clay, or combinations thereof, pH): Poorly drained soils (3).
	2. Conservation significance of threatened habitats: varies
V. Native Habitat	1. List countries and native habitat types: Eurasia, North Africa, Asia (2).
VI. Legal Classification	1. Listed by government entities? No (4).
	2. Illegal to sell? YES ☐ NO ☒ 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: Typically, two growing seasons.
	3. Length of Seed Viability: Unknown.
	4. Methods of Reproduction: Asexual ☒ Sexual ☒ Please note abundance of propagules and and other important information: Produces long, thin rhizomes and fibrous roots (3). A high degree of cross-pollination has been reported in E. helleborine (5).

	5. Hybridization potential: Possibly high. Several ecotypic and horticultural variants have been described (3) (6) (7).
II. Climate	1. Climate restrictions: Grows from 0 - 1300 m above sea level, mostly within temperate regions (3). Appears somewhat restricted to near Lakeshore in WI.
	2. Effects of potential climate change: Unknown.
III. Dispersal Potential	1. Pathways - Please check all that apply: Intentional: Ornamental ☒ Forage/Erosion control ☐ Medicine/Food: Planted for folk medicine (2). Other: Unintentional: Bird ☐ Animal ☐ Vehicles/Human ☐ Wind ☒ Water ☐ Other:
	2. Distinguishing characteristics that aid in its survival and/or inhibit its control: N/A
IV. Ability to go Undetected	1. HIGH ☒ MEDIUM ☐ LOW ☐
C. DAMAGE POTENTIAL	
I. Competitive Ability	1. Presence of Natural Enemies: Undocumented.
	2. Competition with native species: Not known to outcompete natives.
	3. Rate of Spread: HIGH(1-3 yrs) ☐ MEDIUM (4-6 yrs) ☐ LOW (7-10 yrs) ☐ Notes: N/A
II. Environmental Effects	1. Alteration of ecosystem/community composition? YES ☐ NO ☒ Notes: Uncertain if it displaces native species
	2. Alteration of ecosystem/community structure? YES ☐ NO ☒ Notes: Tends to have scattered distribution or mixed with other species.
	3. Alteration of ecosystem/community functions and processes? YES ☐ NO ☐ Notes: N/A
	4. Allelopathic properties? YES ☐ NO ☐ Notes: N/A
D. SOCIO-ECONOMIC Effects	
I. Positive aspects of the species to the economy/society:	Notes: Cultivated variety not widely used in commerce.
II. Potential socio-economic effects of restricting use:	Notes: Some orchid growers may want to grow it.
III. Direct and indirect effects :	Notes: N/A
IV. Increased cost to a sector:	Notes: N/A

F. REFERENCES USED:

V. Effects on human health:	Notes: Has some medicinal qualities (2).
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: No data are available.
III. Effective Control tactics:	Mechanical ☐ Biological ☐ Chemical ☐ Times and uses: Hand pulling is fairly effective.
IV. Minimum Effort:	Notes: No data are available.
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: In some cases control may require the use of herbicides
VIII. Efficacy of monitoring:	Notes: If detected early, E. helleborine can be eradicated. Subsequent monitoring is usually necessary.
IX. Legal and landowner issues:	Notes: NA

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

Number	Reference
1	Wisconsin State Herbarium. 2007. WISFLORA: Wisconsin Vascular Plant Species (http://www.botany.wisc.edu/wisflora/). Dept. Botany, Univ. Wisconsin, Madison, WI 53706-1381 USA.
2	Connecticut Botanical Society Website (http://www.ct-botanical-society.org/galleries/epipactishell.html).
3	Flora of North America (2002) volume 26, Magnoliophyta: Liliidae: Liliales and Orchidales.
4	USDA, NRCS. 2007. The PLANTS Database (http://plants.usda.gov, 16 March 2007). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
5	Piper, J.G. and S. Waite. 1988. The Gender Role of Flowers of Broad-Leaved Helleborine, Epipactis helleborine (L.) Crantz (Orchidaceae). Functional Ecology 2(1):35-40.
6	Scacchi, R., R. Lanzara, and G. De Angelis. 1987. Study of Electrophoretic Variability in Epipactis helleborine (L.) Crantz, E. palustris (L.) Crantz, and E. microphylla (Ehrh.) Swartz (fam. Orchidaceae). Genetica 72(3):217-224.
7	Brzosko, E., A. Wroblewska, and I. Taaj. 2004. Genetic Variation in Five Popualtions of Epipactis helleborine from Two National Parks in Northeast Poland. Plant Systematics and Evolution 248(1-4):57-69.

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Approved and Completed Date: