
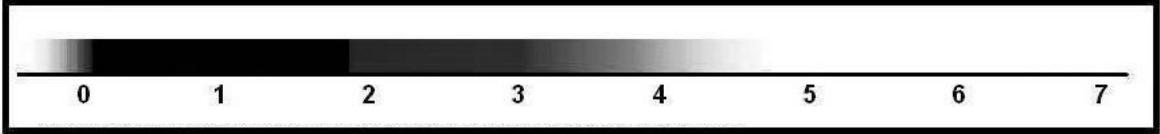


I. Current Status and Distribution *Glossostigma cleistanthum*

a. Range	Global/Continental	Wisconsin
<p>Native Range Australia, New Zealand¹</p>	 <p>Figure 1: U.S and Canada Distribution Map²</p>	<p>Not recorded in Wisconsin²</p>
<p>Abundance/Range Widespread: Locally Abundant: Sparse:</p>	<p>Undocumented New Jersey, Connecticut¹ Pennsylvania, Rhone Island¹</p>	<p>Not applicable Not applicable Not applicable</p>
<p>Range Expansion Date Introduced: Rate of Spread:</p>	<p>First recorded in 1992, Connecticut¹; originally misidentified as <i>G. diandrum</i> Rapid¹</p>	<p>Not applicable Not applicable</p>
<p>Density Risk of Monoculture: Facilitated By:</p>	<p>High; can reach 100,000 plants/m²⁽³⁾ Undocumented</p>	<p>Undocumented Undocumented</p>
<p>b. Habitat</p>	<p>Lakes, ponds, reservoirs, abandoned quarries, shorelines, wetlands, rivers¹; rock pools, creek beds, swamps⁴</p>	
<p>Tolerance</p>	<p>Chart of tolerances: Increasingly dark color indicates increasingly optimal range</p>	
		
<p>Preferences</p>	<p>Oligotrophic conditions¹; high clarity¹; low pH, conductivity, alkalinity and phosphorus¹; sandy or muddy substrates^{1,5}; full sun⁵</p>	
<p>c. Regulation</p>		
<p>Noxious/Regulated²:</p>	<p>WA</p>	
<p>Minnesota Regulations:</p>	<p><i>Not regulated</i></p>	
<p>Michigan Regulations:</p>	<p><i>Not regulated</i></p>	
<p>Washington Regulations:</p>	<p>State Wetland and Aquatic or Noxious Weed Quarantine List (listed as <i>G. diandrum</i>)</p>	

II. Establishment Potential and Life History Traits

a. Life History	Small aquatic creeping submersed perennial or emersed annual ¹
Fecundity	High ¹
Reproduction	
Importance of Seeds:	Important; a square meter of dense plants can produce up to 23,000 seeds/year ¹
Vegetative:	Reproduces by rhizome fragmentation ¹
Hybridization	Undocumented
Overwintering	
Winter Tolerance:	High ^{1,3} ; remains green and viable under ice ¹
Phenology:	Flowers from August to November in Australia ⁴
b. Establishment	
Climate	
Weather:	Temperate regions ¹
Wisconsin-Adapted:	Likely
Climate Change:	Undocumented
Taxonomic Similarity	
Wisconsin Natives:	Medium; family Scrophulariaceae
Other US Exotics:	Medium; family Scrophulariaceae
Competition	
Natural Predators:	Undocumented
Natural Pathogens:	Undocumented
Competitive Strategy:	Undocumented
Known Interactions:	Undocumented
Reproduction	
Rate of Spread:	High
Adaptive Strategies:	Undocumented
Timeframe	Within 2 years of discovery a population spread lakewide to cover approximately 12,000m ² of nearshore habitat ¹
c. Dispersal	
Intentional:	Aquarium plant, ornamental ¹
Unintentional:	Wind/water currents; mud; waterfowl and geese; escape from cultivation ¹
Propagule Pressure:	Medium; fragments easily introduced, but source populations not near Wisconsin



Figures 2 and 3: Courtesy of the Connecticut Agricultural Experiment Station, Invasive Aquatic Plant Program³

III. Damage Potential	
a. Ecosystem Impacts	
Composition	Dense mats can exclude other native species ¹
Structure	Undocumented
Function	Undocumented
Allelopathic Effects	Undocumented
Keystone Species	Undocumented
Ecosystem Engineer	Undocumented
Sustainability	Undocumented
Biodiversity	Undocumented
Biotic Effects	Undocumented
Abiotic Effects	Undocumented
Benefits	Undocumented
b. Socio-Economic Effects	
Benefits	Aquarium plant, ornamental ¹
Caveats	Risk of release and population expansion may outweigh benefits of use
Impacts of Restriction	Increase in monitoring, education, and research costs
Negatives	Undocumented
Expectations	Undocumented
Cost of Impacts	Undocumented
“Eradication” Cost	Undocumented
IV. Control and Prevention	
a. Detection	
Crypsis:	Similar to <i>Elatine</i> spp., <i>Limosella</i> spp. and other <i>Glossostigma</i> spp. ¹
Benefits of Early Response:	Undocumented
b. Control	
	Undocumented

¹ Les, D.H., R.S. Capers, N.P. Tippery. 2006. Introduction of *Glossostigma* (Phrymaceae) to North America: a taxonomic and ecological overview. *American Journal of Botany* 93(6):927-939.

² United States Department of Agriculture, Natural Resource Conservation Service. 2011. The PLANTS Database. National Plant Data Center, Baton Rouge, LA, USA. Retrieved March 4, 2011 from: <http://plants.usda.gov/java/profile?symbol=GLDI>

³ Connecticut Agricultural Experiment Station. 2008. *Glossostigma cleistanthum*. Retrieved March 4, 2011 from: <http://www.ct.gov/caes/cwp/view.asp?a=2799&q=345522>

⁴ Barker, W.R. 1992. PlantNET – New South Wales Flora Online. Retrieved March 4, 2011 from: <http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Glossostigma~cleistanthum>

⁵ Jacono, C.C. 2007. *Glossostigma cleistanthum* (mud mat). USGS Southeast Ecological Science Center. Retrieved March 4, 2011 from: http://fl.biology.usgs.gov/Nonindigenous_Species/Glossostigma/glossostigma.html