NAME OF SPECIES: Grass carp (Ctenopharyngodon idella)

A. CURRENT STATUS AND DISTRIBUTION	
1. In Wisconsin?	a. YES ☒ NO ☐
	b. Abundance:
	c. Geographic Range: noted in several locations throught the state, appeared to be most abundant in southeastern WI, though have been extirpated from a number of waters there (see USGS web site, nas.er.usgs.gov)
	d. Type of Waters Invaded (rivers, ponds, lakes, etc): quiet waters - lakes, ponds, pools, backwaters of large rivers
	e. Historical Status and Rate of Spread in Wisconsin: First noted on USGS web site in WI in 1975
2. Invasive in Similar Climate Zones	YES ☒ NO ☐ Where: see below
3. Similar Habitat Invaded Elsewhere	YES ☒ NO ☐ Where: Mississippi River, portions of Great Lakes, Illinois River, Ohio River, other contained waters in neighboring states where stocked for plant control
4. In Surrounding States	YES ☒ NO ☐ Where: IL, MI, OH, IN, MN
5. Competitive Ability	High: These fish are able to survive in a variety of temperatures and in poor water quality, allowing them to successfully compete with other fish and animals for food. They eat not only the plants they were often stocked to control, but also non-target plants. Low:
B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
1. Temperature:	Range: fry and fingerlings: 0 - 40 deg. C; preferred temperature ~25 deg. C; feeding declines below 14 deg. C
2. Spawning Temperature:	Range: peak spawning temps. 19 - 20 deg. C
3. Number of Eggs:	Range: wide range of fecundity found, from 250,000 to nearly 2 million eggs in individual females
4. Preferred Spawning Substrate:	peak spawning associated with rise in water levels; typically require large riverine systems
5. Hybridization Potential:	can hybridize with bighead carp - hybrid believed to be sterile
6. Salinity Tolerance	Fresh: ☒ Marine: ☐ Brackish: ☒
7. Oxygen Regime	Range: lethal low oxygen level for juveniles is less than 0.5 mg/L Oxygen consumption increases with increased water temperature, decreases with fish age and mass

8. Water Hardness Tolerance	Range:
9. Easily confused for Native Species?	List: none found, easily confused with invasive black carp
C. DAMAGE POTENTIAL	
1. Likelihood of Damage	a. Presence of Natural Enemies:
	b. How well introductory and expansion pathways can be described and quantified: Authorized and unauthorized introductions for biological control of vegetation, first brought to the US in 1963 - some escaped but many were intentionally stocked
2. Environmental Impacts	a. Alteration of ecosystem composition, structure and function: Eat vegetation, compete for food with invertebrates and other fish; can significantly alter the food web and trophic structure of aquatic systems by inducing changes in plant, invertebrate, and fish communities
	c. Damage to ecosystem resilience/sustainability: Can lead to decreases in plant populations/cover; have the potential to modify preferred habitat for many species. May lead to a decline in organisms that require structural littoral habitats and food chain based on plant detritus, macrophytes, and attached algae
	d. Loss of biological diversity: Grass carp are used to control target plant species, but they may prey on preferred rather than target plant species
	e. Abiotic modifications (affects on turbidity, H2O chemistry, etc.):
	f. Biotic effects on other species (loss of cover, nesting sites, forage, changing competitive relationships: Potential to cause significant changes in the composition of macrophyte, phytoplankton, and invertebrate communities, interfere with the reproduction of other fish, and decrease refugia for other fish
D. NET SOCIO/ECONOMIC IMPACT	
1. Positive aspects of the species to the economy/society:	Effect: can provide aquatic plant control
2. Direct and indirect effects of the invasive species:	Effect:
3. Type of damage caused by organism:	Effect: Could potentially impact populations of desirable fish, thus impacting commercial and recreational fishing
Industries affected by invasive:	Effect:
4. Loss of aesthetic value affecting recreation and tourism:	Effect: Impact aesthetics by changing/depleting plant communities

5. Increased cost to a sector (monitoring, inspection, control, public education, modifying practices, damage repair, lower yield, loss of export markets due to quarantine:	Effect:
6. Cost of prevention or control relative to cost of allowing invasion to occur (cost of prevention is borne by different groups than cost of control):	Effect:
7. Cost at different levels of invasion:	Effect:
E. CONTROL AND PREVENTION POTENTIAL	
1. Costs of Prevention (including Education):	
2. Responsiveness to Prevention Efforts:	
3. Detection Capability:	
4. Control Tactics Effective:	Mechanical: ☐ Biological: ☐ Chemical: ☒
5. Efficacy/Feasibility of Control (effort, # of staff):	Chemical control can work, but is best in waters containing only grass carp, as chemicals not selective for just this species
6. Cost of Control:	High: ☐ Medium: ☐ Low: ☐
7. Non-Target Effects of Control:	see #5
8. Threshold at which control would be attempted:	
9 Efficacy of Monitoring:	