

NAME OF SPECIES: Asian clam (*Corbicula fluminea*)

A. CURRENT STATUS AND DISTRIBUTION	
1. In Wisconsin?	a. YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> b. Abundance: variable - ability to reproduce rapidly coupled with low tolerance of cold temps. can produce wide swings in populations from year to year in northern waters c. Geographic Range: Mississippi and St. Croix Rivers, Lakes Michigan and Superior d. Type of Waters Invaded (rivers, ponds, lakes, etc): lakes, rivers, streams e. Historical Status and Rate of Spread in Wisconsin: 1 <sup>st</sup> reported in St. Croix River in 1977, Mississippi River 1981, St Loius River estuary in 1999 and 2001, found in Lakes Michigan and Superior (1 <sup>st</sup> Superior sighting 1997), does not appear to have spread rapidly once introduced
2. Invasive in Similar Climate Zones	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Where: est. in much of U.S., very successful in the south, established across U.S. above 40 deg. latitude
3. Similar Habitat Invaded Elsewhere	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Where: No. MN
4. In Surrounding States	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Where: IL, MN, IN, MI,
5. Competitive Ability	High: Where able to become well established, can be highly invasive; some are hermaphroditic, increasing ability to invade and reproduce rapidly. Low: Limited thermal tolerance may limit success in parts of WI.
B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
1. Temperature:	Range: 36 - 86 deg. F (some may survive at lower temps but not thrive)
2. Spawning Temperature:	Range: lasts ~6 months beginning early summer; can occur almost continuously at water temps > 16 deg. C (61 deg. F). Temps > 37 deg. C or < 1 deg. C inhibit spawning
3. Number of Eggs:	Range: Release veligers brooded in parent's gills - single clam can release hundreds per day, up to 70K per year * Hermaphrodites exist and can self-fertilize
4. Preferred Spawning Substrate:	Fine clean sand, clay, and coarse sand preferred; can be found in low numbers on almost any substrate
5. Hybridization Potential:	none found
6. Salinity Tolerance	Fresh: <input checked="" type="checkbox"/> Marine: <input type="checkbox"/> Brackish: <input checked="" type="checkbox"/>

7. Oxygen Regime	Range: prefer high DO, DO < 3.0 mg l <sup>-1</sup> at the sediment-water interface shown to significantly impair growth
8. Water Hardness Tolerance	Range: there appear to be a number of studies looking at the response of <i>Corbicula</i> sp. to specific metals, chemicals, etc., but was unable to find general hardness tolerance.
9. Easily confused for Native Species?	List: none found - some people have confused them with zebra mussels
<b>C. DAMAGE POTENTIAL</b>	
1. Likelihood of Damage	a. Presence of Natural Enemies: Eaten by native and non-native fish, birds, raccoons, and crayfish.
	b. How well introductory and expansion pathways can be described and quantified: Thought to first enter U.S. when imported for food; now spread via bait bucket release, accidental introduction with imported aquatic species, intentional introduction - bought as food and released, aquarium releases, passive movement with currents
2. Environmental Impacts	a. Alteration of ecosystem composition, structure and function: can alter benthic substrates
	c. Damage to ecosystem resilience/sustainability: potential to reduce species diversity
	d. Loss of biological diversity: Can reach thousands per square meter, dominating benthic community, displacing native species
	e. Abiotic modifications (affects on turbidity, H <sub>2</sub> O chemistry, etc.): none found
	f. Biotic effects on other species (loss of cover, nesting sites, forage, changing competitive relationships: compete with native mussels for food and space; compete with juvenile fish (filter feeders) for food
<b>D. NET SOCIO/ECONOMIC IMPACT</b>	
1. Positive aspects of the species to the economy/society:	Effect: Commercialized as fish bait; sold for food (primarily in Asia)
2. Direct and indirect effects of the invasive species:	Effect: cost to industry to remove from water intakes, costs likely passed on to consumers
3. Type of damage caused by organism:	Effect: biofouling
Industries affected by invasive:	Effect: power plants and industrial water systems; can also cause problems in irrigation canals and pipes
4. Loss of aesthetic value affecting recreation and tourism:	Effect: none found
5. Increased cost to a sector (monitoring, inspection, control, public education, modifying practices, damage	Effect: increased cost to industries affected

repair, lower yield, loss of export markets due to quarantine:	
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:
<b>E. CONTROL AND PREVENTION POTENTIAL</b>	
1. Costs of Prevention (including Education):	unknown
2. Responsiveness to Prevention Efforts:	unknown - variety of pathways to target
3. Detection Capability:	fairly easy to detect when present, as adults aren't very mobile.
4. Control Tactics Effective:	Mechanical: <input checked="" type="checkbox"/> Biological: <input type="checkbox"/> Chemical: <input checked="" type="checkbox"/>
5. Efficacy/Feasibility of Control (effort, # of staff):	manual removal, drastic temperatures, and chemicals are used to control them in water intake pipes/industry. No know treatment in natural areas
6. Cost of Control:	High: <input checked="" type="checkbox"/> Medium: <input type="checkbox"/> Low: <input type="checkbox"/>
7. Non-Target Effects of Control:	controls used in industry not feasible in natural areas
8. Threshold at which control would be attempted:	n/a
9 Efficacy of Monitoring:	n/a - found little information on monitoring for this species.