NAME OF SPECIES: Rusty Crayfish (Orconectes rusticus)

A. CURRENT STATUS AND DISTRIBUTION	
1. In Wisconsin?	a. YES ☒ NO ☐
	b. Abundance: Abundant in many waters statewide (*does Jake have some estimate of the number of infested waters?*) This has been updated recently. Please see Julia Solomon and/or Matt Rehwald for the official list.
	c. Geographic Range: Lakes Michigan and Superior, numerous lakes and rivers statewide
	d. Type of Waters Invaded (rivers, ponds, lakes, etc): lakes, rivers, wetlands
	e. Historical Status and Rate of Spread in Wisconsin: Were introduced to Wisconsin in the late 1950s.
2. Invasive in Similar Climate Zones	YES ☒ NO ☐ Where: Numerous waters throughout MN, WI, MI, IA, IL, and other states
3. Similar Habitat Invaded Elsewhere	YES ☒ NO ☐ Where: see above
4. In Surrounding States	YES ☒ NO ☐ Where: see above - are native to the Ohio River valley
5. Competitive Ability	High: Aggressive, prolific, able to displace native crayfish, have demonstrated the ability to survive, thrive, and spread in WI Low:
B. ESTABLISHMENT POTENTIAL AND LIFE HISTORY TRAITS	
1. Temperature:	Range:
2. Spawning Temperature:	Range: Mate in late summer, fall, or early spring. Fertilization occurs was waters warm in April and May
3. Number of Eggs:	Range: 80 - 575; young protected by females for several weeks after hatching
4. Preferred Spawning Substrate:	Prefer to live in areas with cobble, rocks, logs, or other debris for cover, bottom types may be clay, silt, sand, gravel, or rock
5. Hybridization Potential:	Known to hybridize with *O. propinquus,* a resident crayfish species in WI. (Perry et al, 2002)
6. Salinity Tolerance	Fresh: ☒ Marine: ☐ Brackish: ☐
7. Oxygen Regime	Range:
8. Water Hardness Tolerance	Range:

9. Easily confused for Native Species?	List: yes, may be confused with some native crayfish species
C. DAMAGE POTENTIAL	
1. Likelihood of Damage	a. Presence of Natural Enemies: fish
	b. How well introductory and expansion pathways can be described and quantified: Likely first introduced via bait bucket release, also aquarium releases, were harvested commercially for bait and biological supply - it's suspected that some populations may have been planted intentionally for future commercial harvest or for plant control, once introduced, can naturally disperse within rivers and connected lakes
2. Environmental Impacts	a. Alteration of ecosystem composition, structure and function: Opportunistic feeders, they eat small fish, fish eggs, insects/invertebrates. They also eat aquatic vegetation, damaging habitat important for spawning, cover and food. They are aggressive and capable of displacing native crayfish.
	c. Damage to ecosystem resilience/sustainability: Rusty crayfish have a high metabolic rate, consuming more food than native crayfish. By displacing natives and removing aquatic vegetation, they are capable of altering the ecosystem.
	d. Loss of biological diversity: They destroy plant bed abundance and diversity. They also displace native crayfish, both through competition for food and by forcing them out of hiding places, increasing fish predation on natives.
	e. Abiotic modifications (affects on turbidity, H2O chemistry, etc.): Removal of aquatic plants can increase erosion and turbidity
	f. Biotic effects on other species (loss of cover, nesting sites, forage, changing competitive relationships: See all of the answers above, also, it's been reported that they provide lower food quality than native crayfish to fish that eat them
D. NET SOCIO/ECONOMIC IMPACT	
1. Positive aspects of the species to the economy/society:	Effect: Can be harvested for food and bait
2. Direct and indirect effects of the invasive species:	Effect: May impact sport fish spawning, due to destruction of plant beds, which has the potential to impact sport fish recruitment
3. Type of damage caused by organism:	Effect:
Industries affected by invasive:	Effect:
4. Loss of aesthetic value affecting recreation and tourism:	Effect: Some fear swimming in heavily infested waters - fear of getting pinched. Also, the aesthetics of the lake may be impacted when plant beds are destroyed.

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:	Since bait bucket and aquarium releases are primary mechanisms for introduction into new waters, there are good groups to target with prevention of spread education.
3. Detection Capability:	Crayfish are not difficult to catch, but may need an expert to confirm specimen is a rusty.
4. Control Tactics Effective:	Mechanical: ☐ Biological: ☐ Chemical: ☐
5. Efficacy/Feasibility of Control (effort, # of staff):	No known control options; some research into manipulating fish populations to control rusty crayfish
6. Cost of Control:	High: ☐ Medium: ☐ Low: ☐
7. Non-Target Effects of Control:	
8. Threshold at which control would be attempted:	
9 Efficacy of Monitoring:	Active monitoring programs in WI (*Ron and Jake - like to add anything here?*)