Invasive Crayfish Collaborative Virtual Lightning Talks

Session 1: April 27, 2026

2:00-3:15 PM CT

2:00-2:05: Introductions and Welcome

2:05-2:15 PM: "Claws in the Current: How Crayfish Threaten Salmonids"
Julian Olden, University of Washington
Olden presented a literature review examining crayfish impacts on salmonids, finding only 35 studies since 1960 on these interactions. Research has primarily focused on lake trout, brown trout, and rainbow trout, with signal crayfish being the most studied species. Key findings revealed that the egg stage is most vulnerable, with crayfish consuming an average of nearly 3 eggs per individual per day. The research showed a plateau in studies since 2020, leaving outstanding questions about detection mechanisms, broader population-level effects, and the balance between negative impacts and potential benefits crayfish may provide.

2:16-2:26 PM: "Microplastics in Red Swamp Crayfish in the Chicago Area Waterway System"
Reuben Keller, Loyola University Chicago
Graduate student Tava Oosterbaan's research examined microplastic loads in red swamp crayfish along the Chicago Area Waterway System. Surprisingly, the study found that microplastic levels in crayfish GI tracts declined downstream of water reclamation plants, contrary to their hypothesis. The research discovered dense aggregations of microplastic fibers ("fiber balls") in some crayfish, with these specimens more likely found upstream or far downstream of treatment facilities, suggesting microplastics remain suspended rather than settling into sediment.

2:27-2:37 PM: "The Effect of Temperature on Competitive Interactions Between Two Species of Invasive Crayfish"
Jackson Rohrbaugh, Loyola University Chicago
Rohrbaugh investigated competition between rusty crayfish and red swamp crayfish in the North Shore Channel, where distinct distribution patterns suggested temperature-mediated competition. Experimental trials at 5°C and 20°C demonstrated that while red swamp crayfish showed more aggressive interactions and wins overall, rusty crayfish performed better in colder temperatures, confirming that red swamp crayfish are less competitive in cold water environments.

2:38-2:48 PM: "Pathogen outbreak mitigates invasive species impacts"
Cheyenne Stratton, Missouri Department of Conservation
Stratton's dissertation research examined how a microsporidian outbreak (cotton tail or porcelain disease) affected rusty crayfish populations in Wisconsin's Trout Lake. After rusty crayfish were introduced in the 1980s and became well-established, the population experienced a large collapse, with 48% infected by 2019. Mesocosm experiments in 2022 revealed that

infection decreased crayfish activity, increased mortality rates, and resulted in lower macrophyte consumption compared to uninfected individuals, demonstrating how pathogens can alter invasive species impacts through trait-mediated effects.

2:49-2:59 PM: "Effect of Surface Area on Survival and Growth Rate of Procambarus clarkii Juveniles in a Recirculating Aquaculture System"
Renee Hintz, Auburn University
Hintz investigated whether production in recirculating aquaculture systems could be increased by adding 3D surface area while holding stocking density constant at 50/m². Testing four treatments with varying amounts of PVC ribbon in 13-gallon tanks, the study found no significant differences in carapace length across treatments. Results indicated that stocking density could be increased from 50 to 125 crayfish per square meter of surface area (2.5 individuals per liter), with cannibalism and predation identified as primary causes of mortality.

Session 1 Attendees

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