



Crayfish prevalence and store owner knowledge in the Great Lakes pet trade

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Background

- ❖ Invasive crayfish are an increasing issue across the Great Lakes and beyond.
- ❖ Crayfish in the trade, including non-native species, are not well understood.
- ❖ State-level regulations regarding possession and sale vary widely and can be unclear.
- ❖ There is growing concern of introduction of non-native species due to the pet trade.

The Questions

❖ Prevalence?

- Distribution across the region
- "Hitchhiker" crayfish

❖ Species?

- Species found
- Common naming trends

❖ Reality?

- Store knowledge of regulations
- Store ID ability
- Findings compared to regulations





Methods



Surveys in NY, PA, MI, OH, IN, IL



Master shop list created via Google Maps



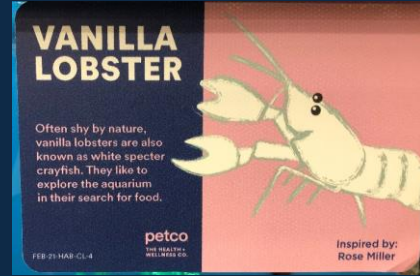
Visual inspection and structured interview

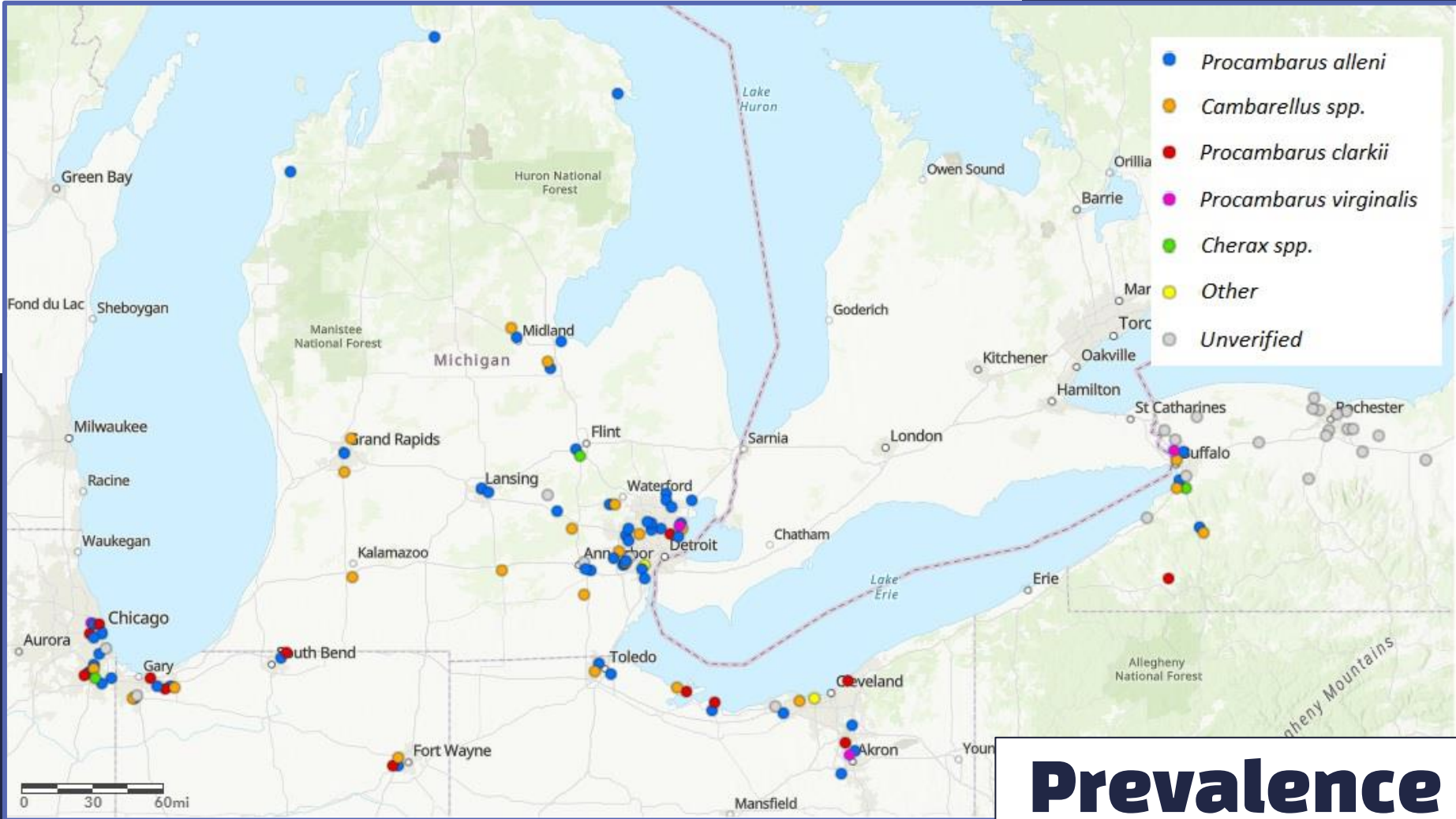


Supplemental data from MN and WI DNR

Stores Visited



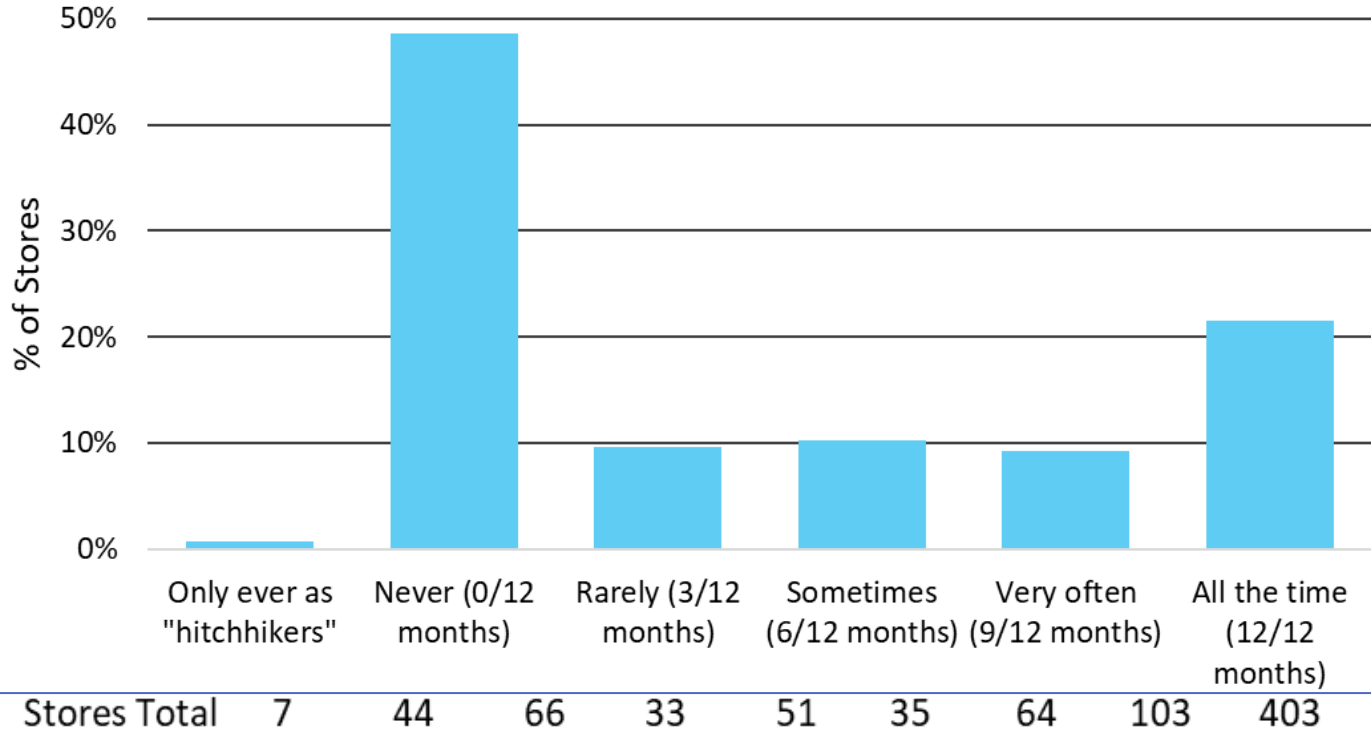




Crayfish Presence in Stores by State

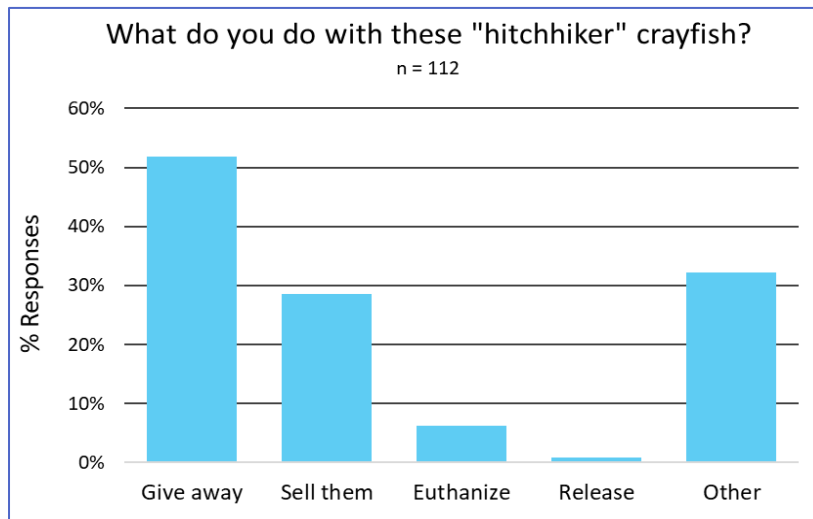
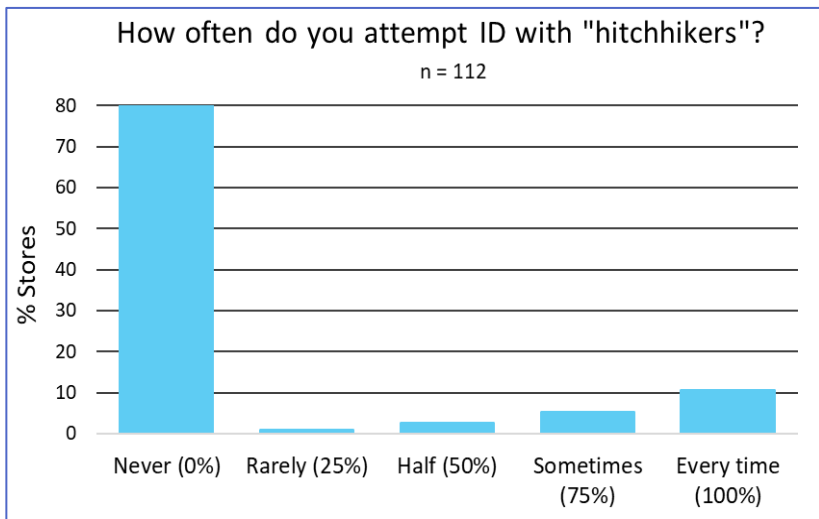
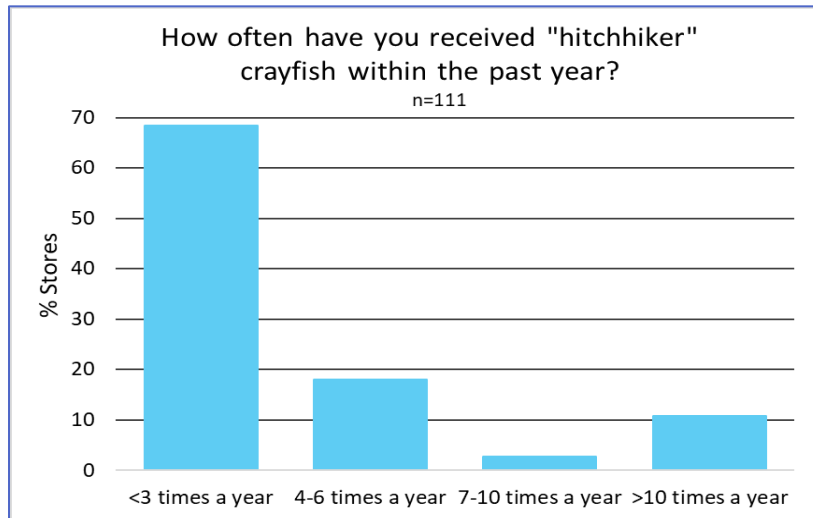
How often does your store purchase crayfish as part of its regular inventory?

n = 293

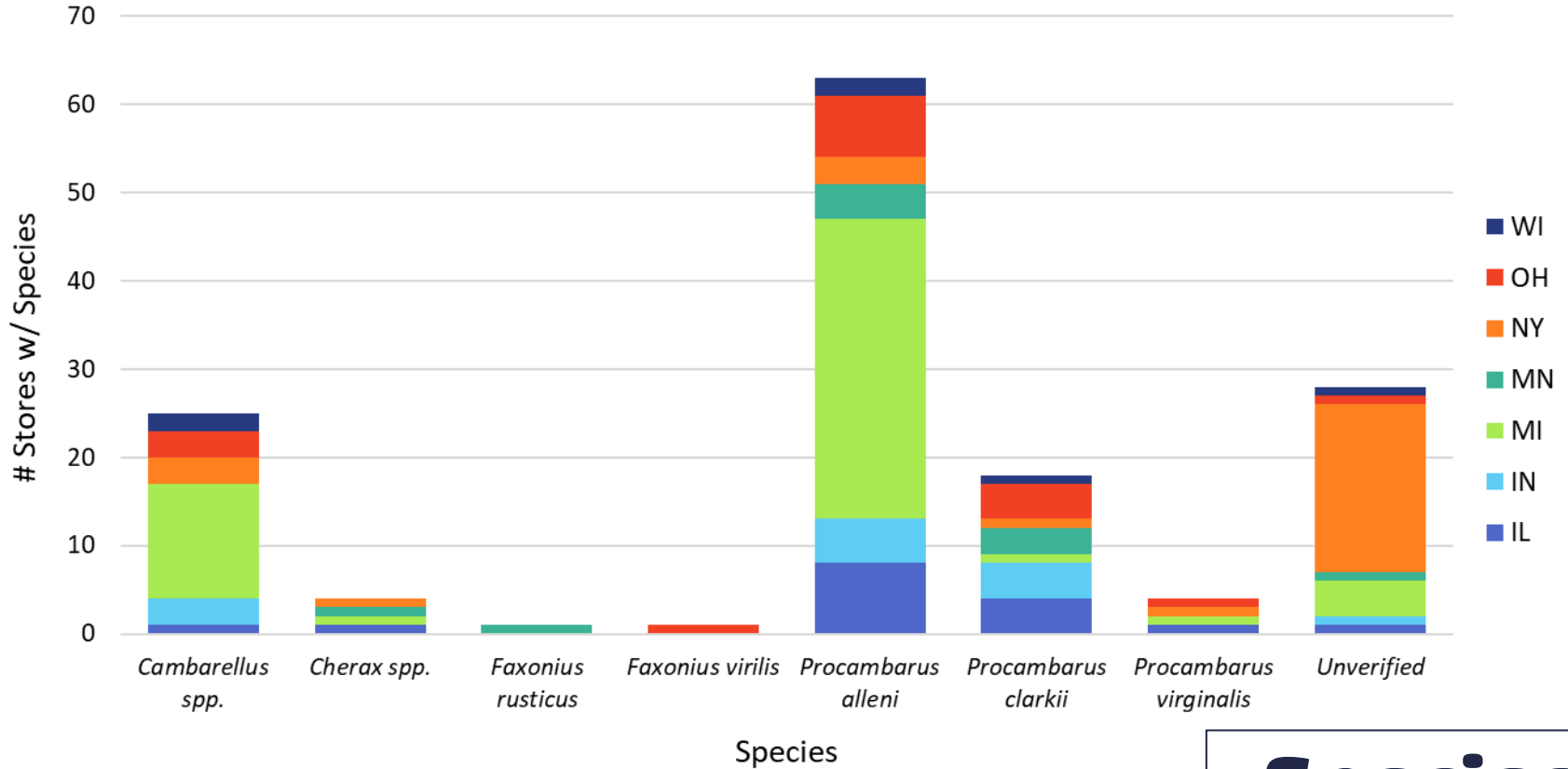




**~40% of stores
(112/289)
acknowledged
receiving
"hitchhiker"
crayfish...**

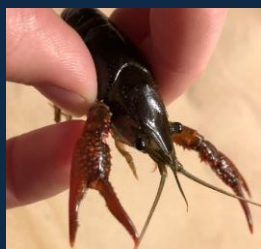


Crayfish Species Sold in Retail Pet Trade



Species





Procambarus clarkii



Procambarus alleni

Cambarellus spp.



Procambarus virginalis



Scientific Name	Common Name	Trade Names
<i>P. alleni</i>	Florida crayfish	Electric blue, Vanilla, White, Blue, Orange flame, Feeder
<i>P. clarkii</i>	Red swamp crayfish	Tricolor ghost, Ghost, Red swamp, Orange, Tangerine, Vanilla, Feeder
<i>P. virginalis</i>	Marbled crayfish, Marmokrebs	Self-cloning, Blue Bosemani, Feeder
<i>C. quadricarinatus</i>	Australian red-claw crayfish	Electric blue, yabbie
<i>Cambarellus spp.</i>	CPOs, Mexican Mini	CPOs, Mexican mini, Dwarf Mexican, Dwarf



blue lobster
Procambarus paeninsulanus

freshwater

average adult size: length: 2 in

temperature: 72-82°F

temperament: semi-aggressive

characteristics: territorial

care level: easy

P. alleni

tangerine lobster
Cherax quadricarinatus

freshwater

average adult size: length: 2 in

temperature: 72-82°F

temperament: semi-aggressive

characteristics: territorial

care level: easy

P. clarkii

vanilla lobster
Cherax quadricarinatus

freshwater

average adult size: length: 2 in

temperature: 72-82°F

temperament: semi-aggressive

characteristics: territorial

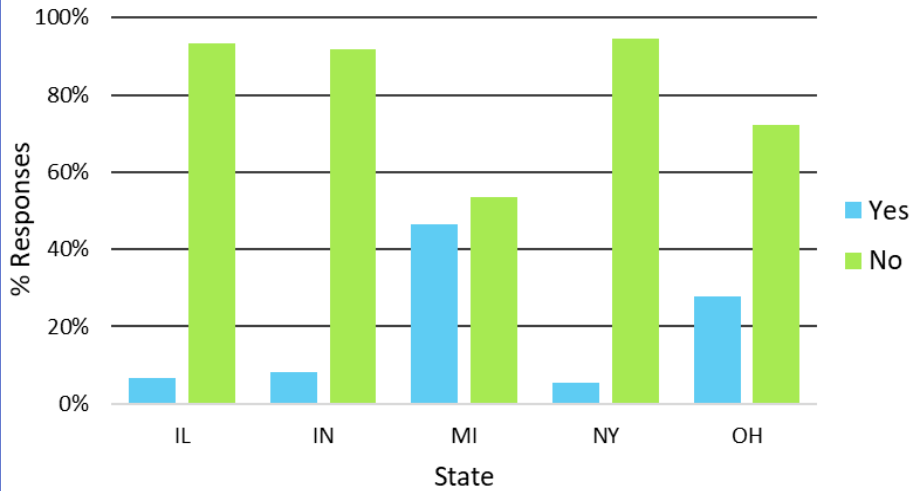
care level: easy

P. alleni and *P. clarkii*

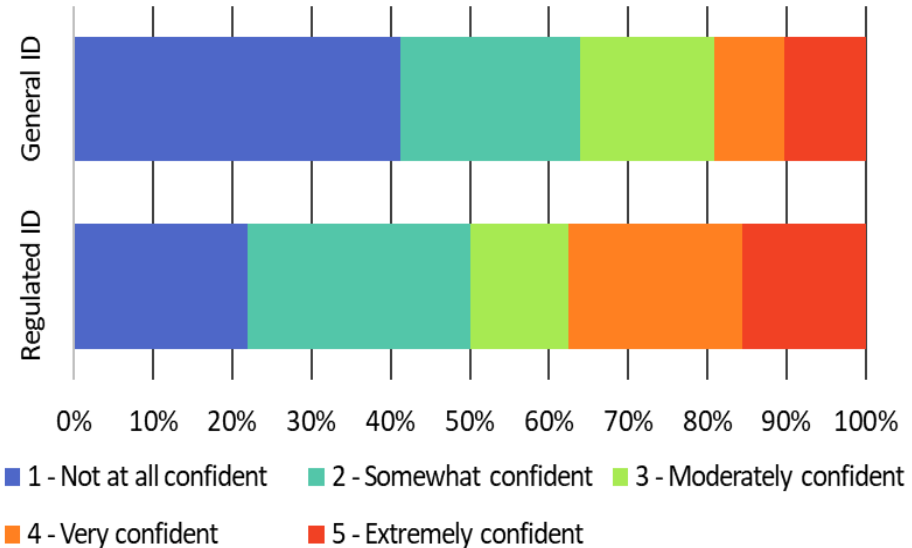
Regulations

For this research regulated signified state documentation used terms: restricted, prohibited, invasive, injurious, or species of concern.

Awareness of Regulated Crayfishes by State



Crayfish ID Confidence



Regulated Species* Encounters

IN	# Stores
<i>Procambarus clarkii</i>	4
MI	
<i>Procambarus clarkii</i>	1
<i>Procambarus virginalis</i>	1
MN	
<i>Faxonius rusticus</i>	1
<i>Procambarus clarkii</i>	3
OH	
<i>Faxonius virilis</i>	1
<i>Procambarus clarkii</i>	4
<i>Procambarus virginalis</i>	1
WI	
<i>Cambarellus spp.</i>	2
<i>Procambarus alleni</i>	2
<i>Procambarus clarkii</i>	1



Summary



Crayfish are in pet stores throughout the basin; distribution is not even and temporal.



Non-native crayfish species were confirmed in the pet retail trade in seven of eight Great Lake states.



P. alleni was the dominant species, but other concerning species were present.



Trade names and incorrect information add confusion to an already complicated organism to ID.



Regulated species were found in at least one store in over half of the Great Lake states, and stores often lacked knowledge of them.

Next Steps

Current grant

- Grant runs out in late summer 2023
- Finalize pathways manuscript (led by Co-PI Budnick)
- Publish manuscript based on work presented today

Phase II (In Development)

- Build upon existing IJ relationships
- Concentrated outreach to retailers
- Start to develop basin-wide network for crayfish surveillance
 - ID and collection method training workshops
 - Focal groups
 - CISMAs and similar groups
 - Law Enforcement
 - Watershed councils

Acknowledgments

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