Where everybody knows your name: brook trout remember conspecifics for at least a week



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Outline

- Background on brook trout (Salvelinus fontinalis)
 Research goals
- Methods
- Results
- Discussion



- First principles
 - Occupy pools in streams
 - Size-mediated, linear dominance hierarchies (A>B>C...)
 - Food-limited during summer
 - Individual recognition





- Fish Movement
 - Some trout move among the localized hierarchies
 - Personality: mobile or sedentary
 - Residents or intruders
 - Ask Dr. Shannon White about transitive Inference



Unanswered questions

- What if a fish leaves a pool but comes back days later?
- Does everyone still remember his name?





Do brook trout remember each other for at least a week?

- Fish from Paint Bank Hatchery
- Held in separate aquaria
- Testing in 300 gallon artificial pools; flow and feeder





- Two residents acclimated to testing tank for >1 week
- Unfamiliar intruder introduced

Quantify behaviors

- 1-hour video
- Chase/flee when rank certain
- Lateral displays for unfamiliar rivals

- Intruder and residents left together for 8 hours
- Intruder removed, placed into identical pool with three other rivals
- Seven days later: repeat
- Data analysis
 - Compare behaviors in first and second tests
 - Prediction: less time spent in lateral displays during second test
- Seven replicates so far

Lateral displays less frequent in second test (p=0.08 by paired t-test; n=7)

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- Do some individuals have better memory than others?

We need more replicates If trends hold, we'll test longer intervals

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