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Ecohydrology for Fish Passage

International Conference on Engineering and  
Ecohydrology for Fish Passage 2017

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Jun 20th, 3:30 PM - 3:50 PM

# Mismatch between sea lamprey behaviour and trap location explains low trapping success

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McLaughlin, Rob; Rous, Andrew; McLean, Adrienne; Bravener, Gale; Pratt, Tom; Barber, Jess; Imre, Istvan; Holbrook, Chris; and Castro-Santos, Ted, "Mismatch between sea lamprey behaviour and trap location explains low trapping success" (2017). *International Conference on Engineering and Ecohydrology for Fish Passage*. 5.  
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**Presenter Information**

Rob McLaughlin, Andrew Rous, Adrienne McLean, Gale Bravener, Tom Pratt, Jess Barber, Istvan Imre, Chris Holbrook, and Ted Castro-Santos

# Mismatch between sea lamprey behaviour and trap location explains low trapping success

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Gale Bravener, Tom Pratt, Fisheries and Oceans Canada

Jess Barber, USFWS

Istvan Imre, Algoma University

Chris Holbrook, Ted Castro-Santos, USGS

 @McLResearchLab

# Acknowledgements



**Brookfield**  
Renewable Power



# Context: Control of Invasive Species

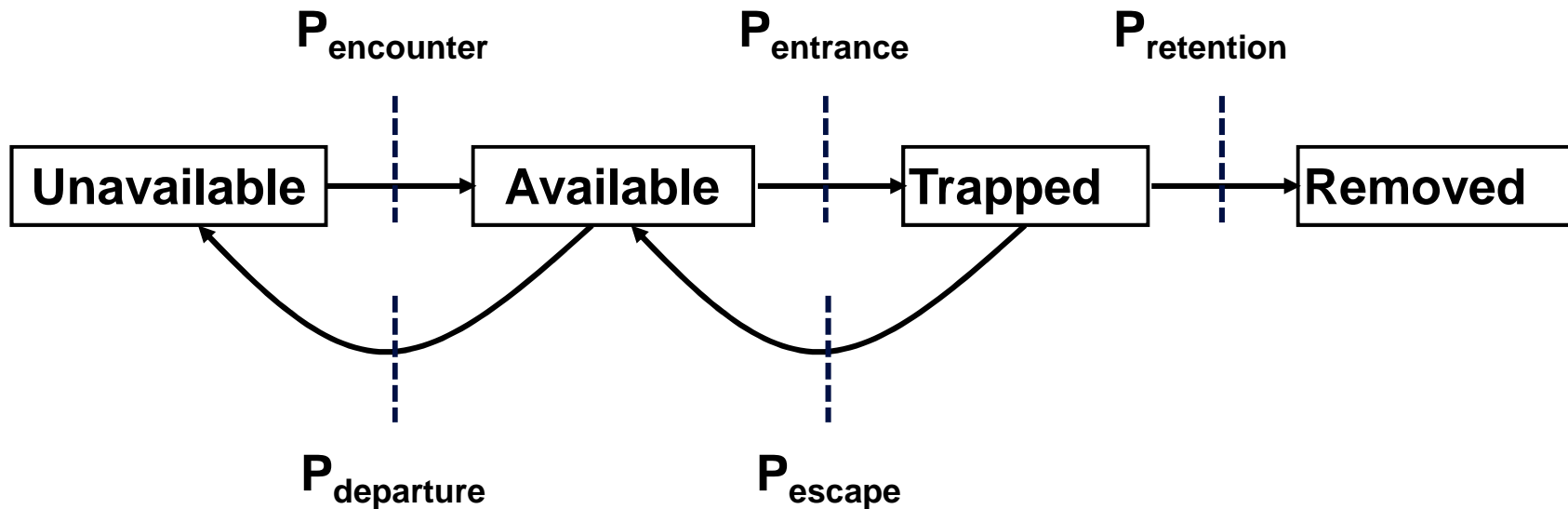


# A BETTER MOUSETRAP



BY CATHERINE HARRELL

# Context: Conceptual Framework



# Context: Earlier Observation

Component of trapping	
Encounter	0.06 – 0.08
Entrance	0.10 – 0.33
Retention	1.0
N	662



# Questions:

Probability of encounter is low because individuals:

- stop before reaching the trap location?
  - wall of generating station
- reach the wall, but are located away from the traps?
  - widely dispersed and attached
  - aggregated away from the traps

Probability of encounter is influenced by discharge

# Methods: Site



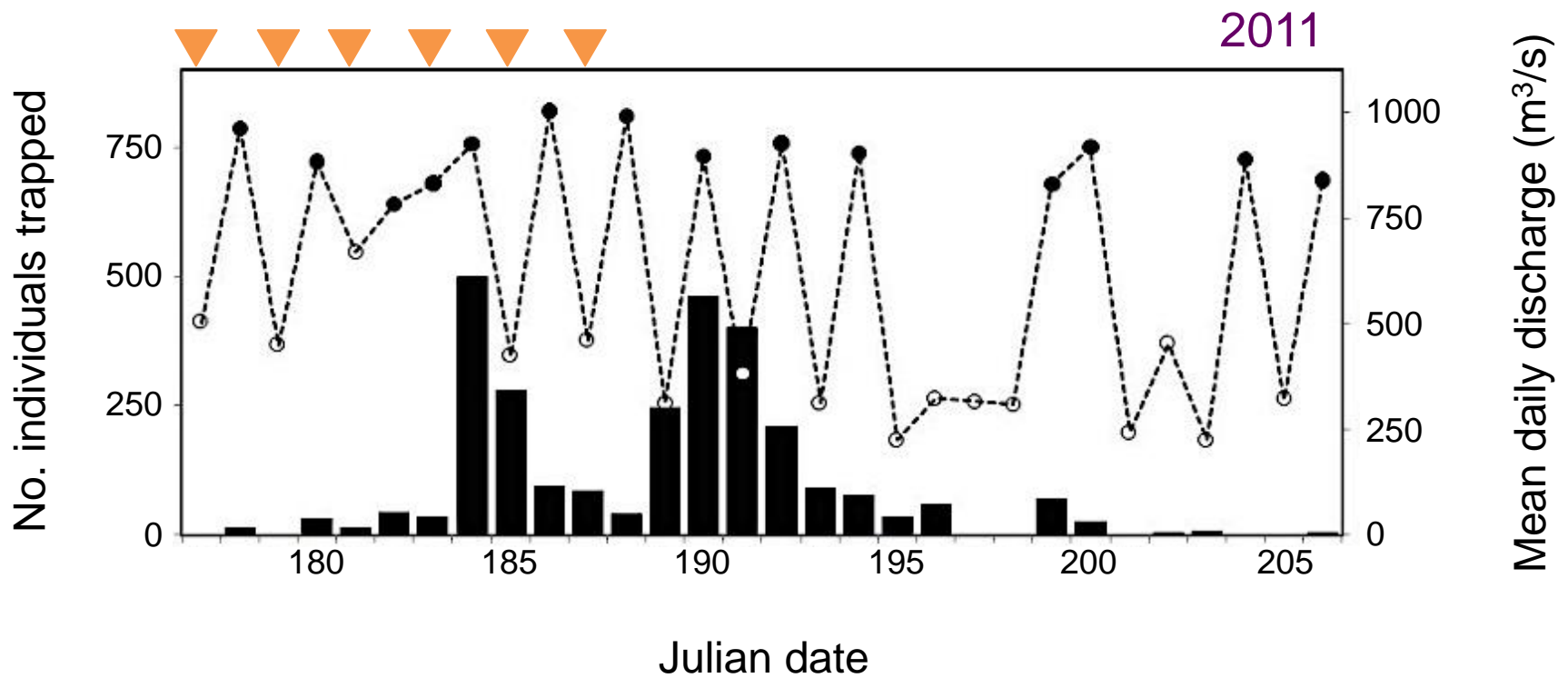
# Methods: Discharge Experiment



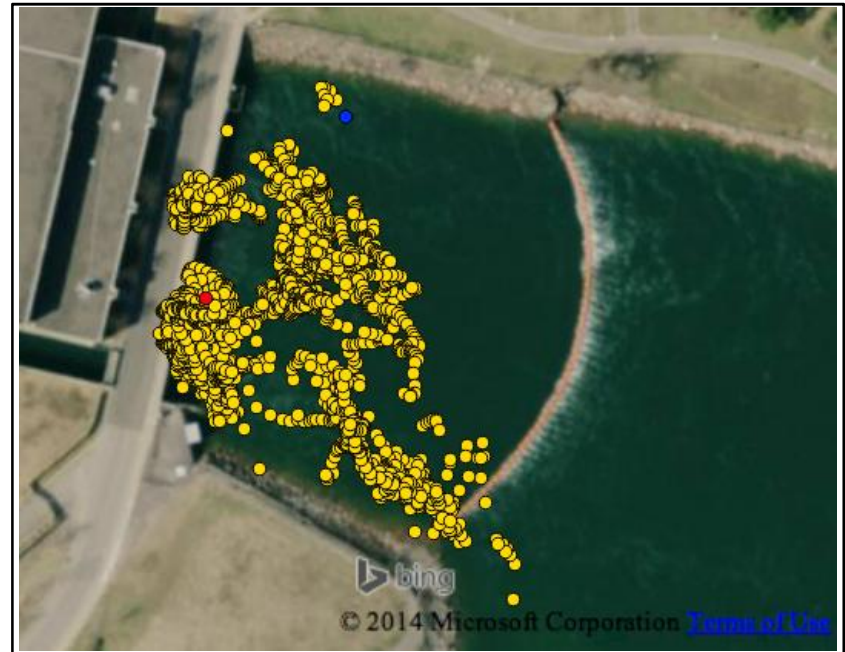
# Methods: Acoustic Telemetry



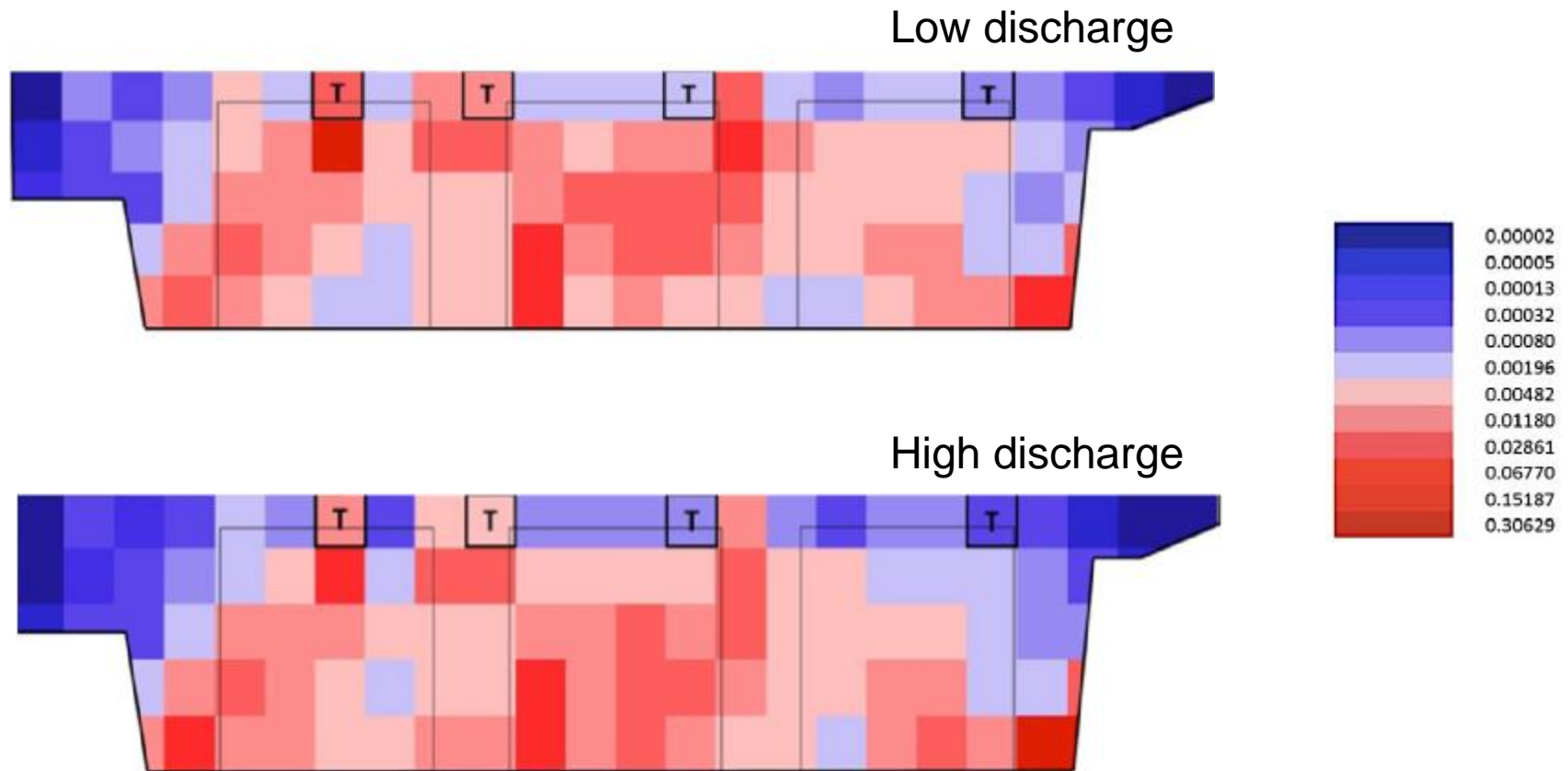
# Methods: Experimental Design



# Results: Horizontal Space Use



# Results: Vertical Space Use



# Conclusions:

Probability of encounter is low because individuals:

- stop before reaching the trap location?
  - wall of generating station
- reach the wall, but are located away from the traps?
  - widely dispersed and attached
  - aggregated away from the traps (spatial mismatch)

Probability of encounter is **weakly** influenced by discharge



# Conclusions:

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- stop before reaching the trap location?
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Probability of encounter is **weakly** influenced by discharge

# Significance



# Questions



# Context: Earlier Observation

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