

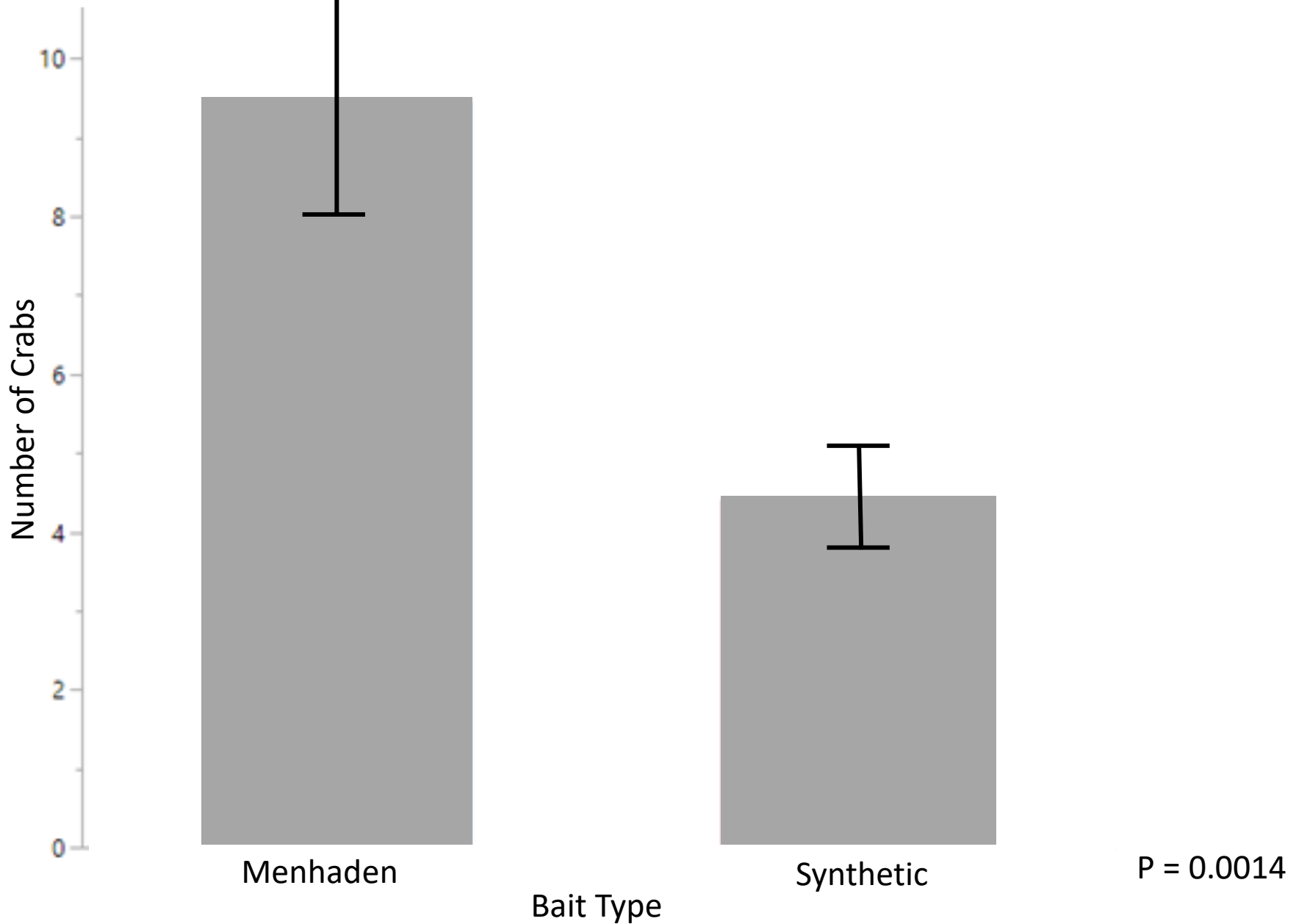
Behavior of blue crab (*Callinectes sapidus*) in response to bait type

Tristan Colaizzi, Williams College

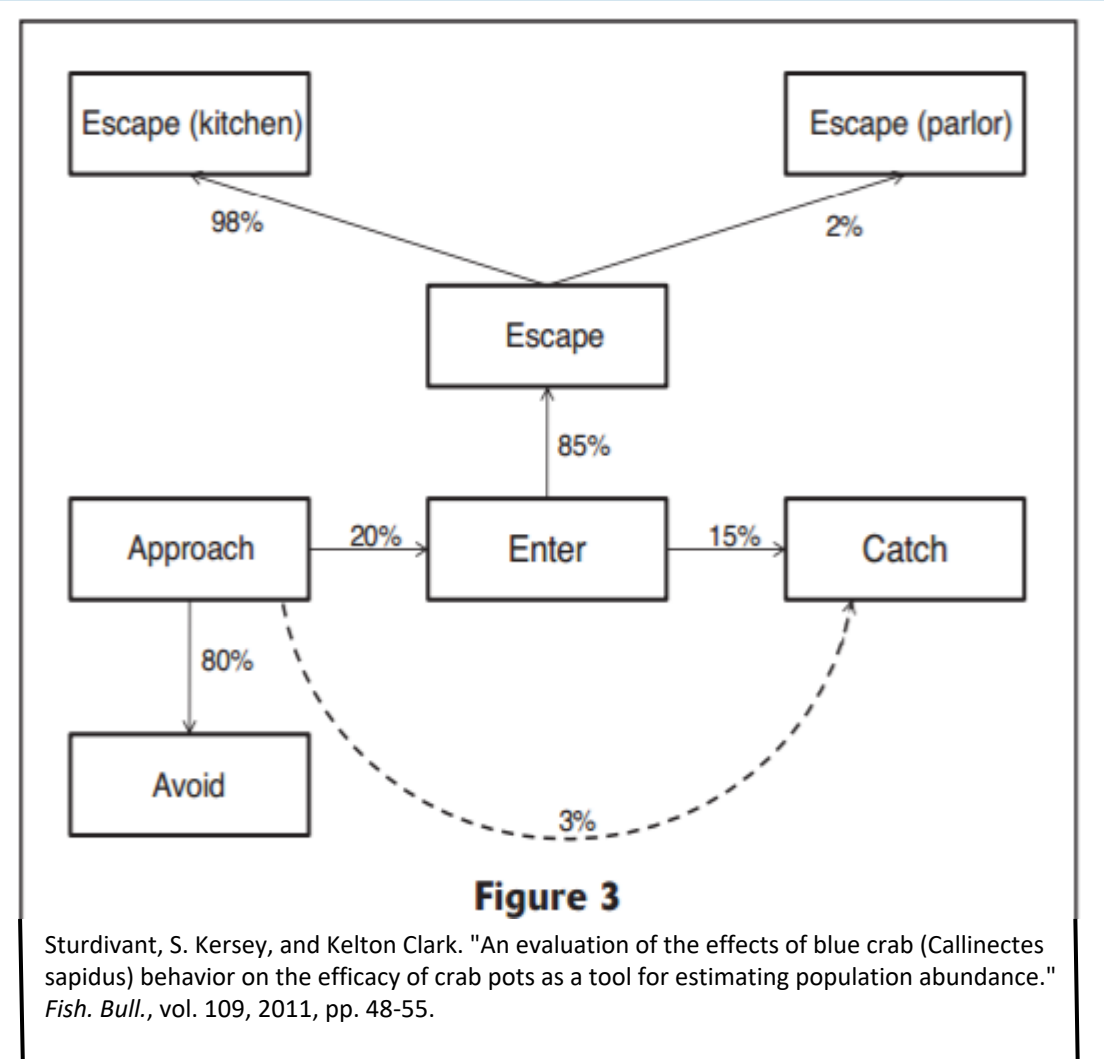
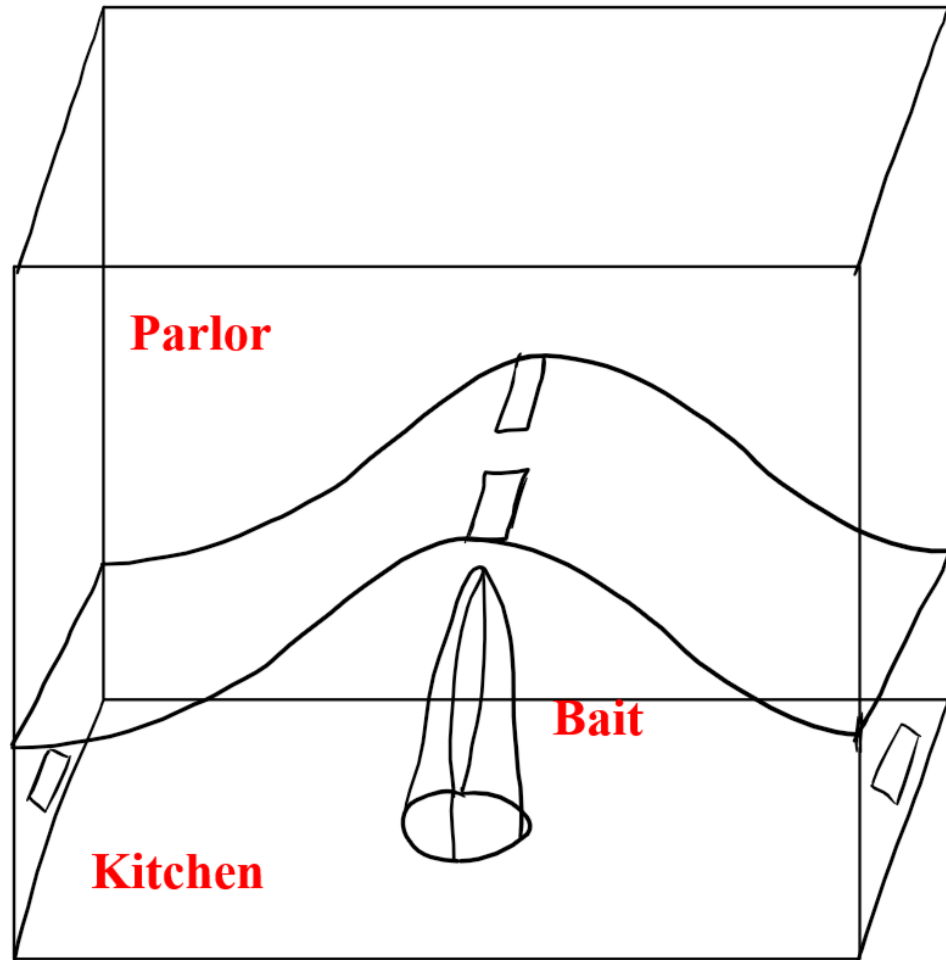
Mentor: Amber DeMarr

Average Number of Crabs Per 10 Pots VS. Bait Type

Goal:



Why:



Conditions:



Menhaden



Organo96

OrganoProtein



KEPLEY BIOSYSTEMS INC

Organo-Bait:

- Synthesized from calcium sulfate, water, and sodium benzoate
- Adjustable formula for varying water conditions and release durations
- No environmental impact
- Lower price per pot

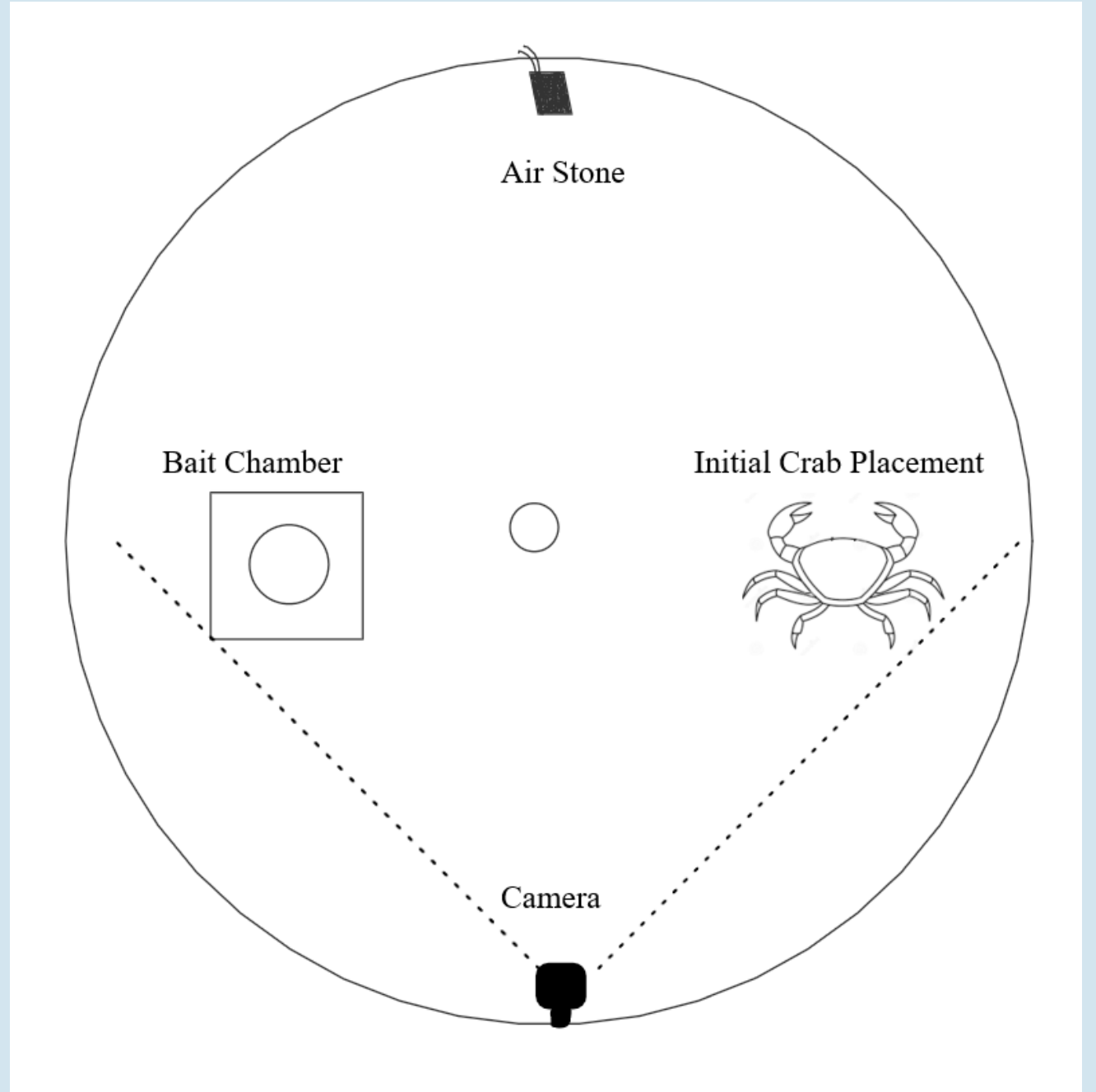


Experimental Design:



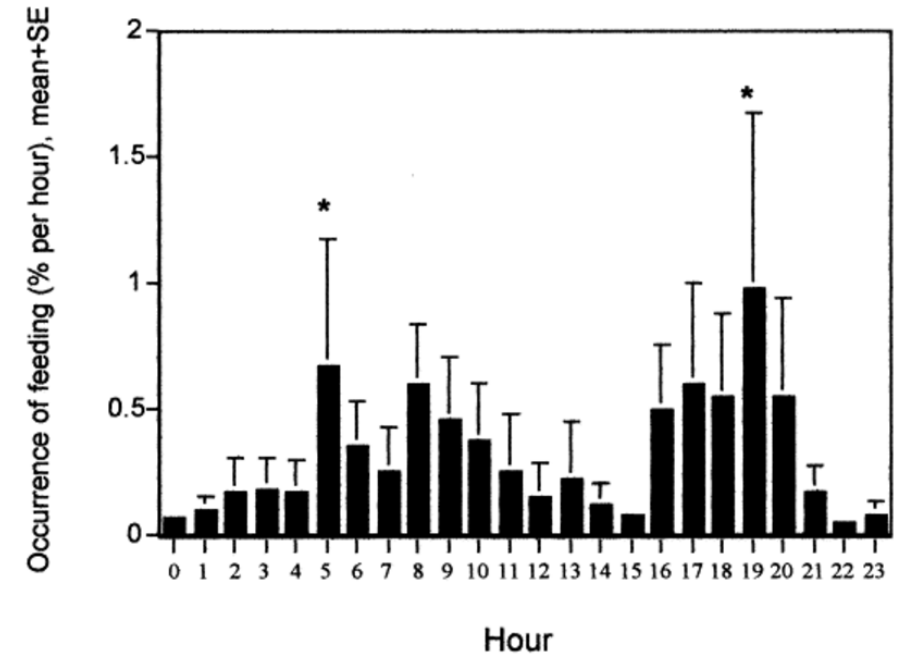
Settings:

- Time Lapse Photo (1Photo/5Sec)
- Wide angle at 10MP, ISO800, +.5EV Comp



Controls:

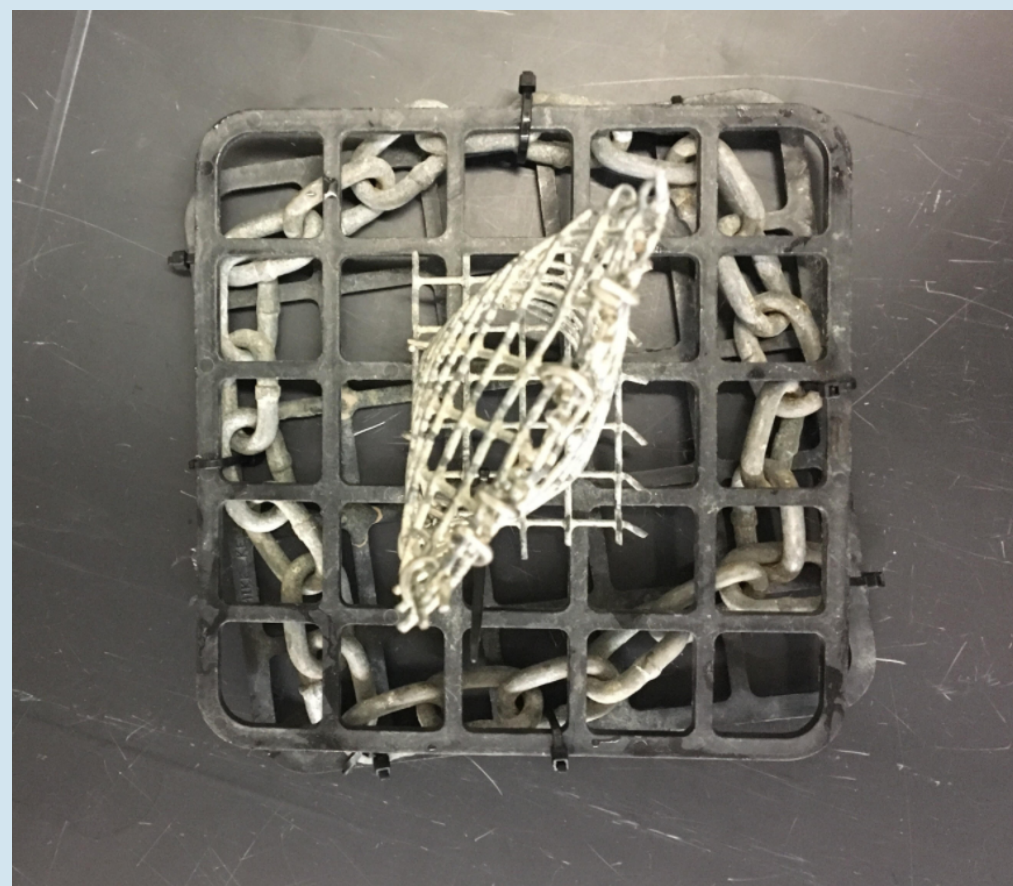
- Crabs measured 5.5 to 6.5 inches (140-165mm)
- Trials started in early morning or late afternoon
- All crabs were caught using traditional menhaden
- 1500L tanks were drained and washed for each trial
- Crabs were starved for at least 48hrs



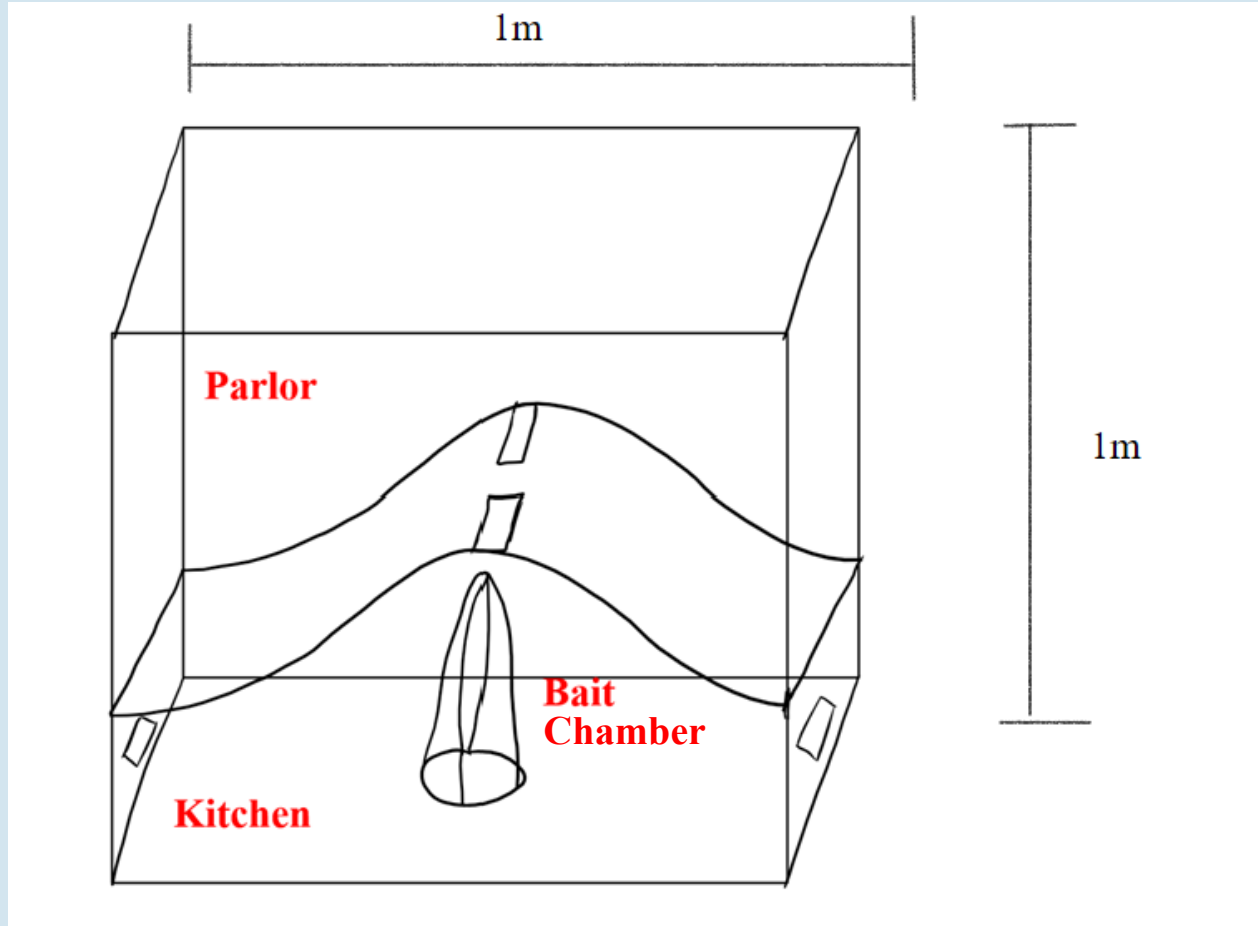
Clarka, Mary E. "Foraging and Agonistic Activity Co-Occur in Free-Ranging Blue Crabs (*Callinectes Sapidus*): Observation of Animals by Ultrasonic Telemetry." *Journal of Experimental Marine Biology and Ecology*, vol. 233, no. 1, Jan. 1999, pp. 143–160.



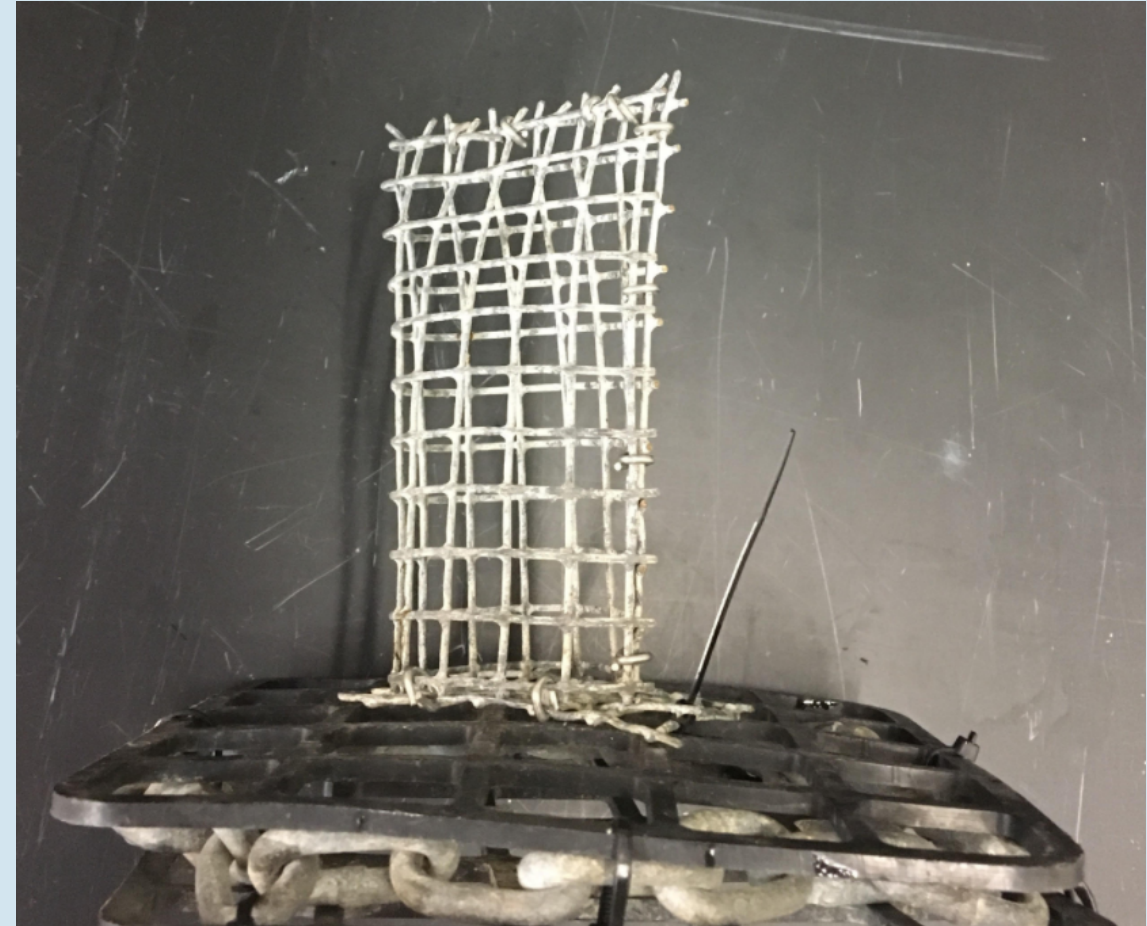
Bait Chamber:



Dimensions:

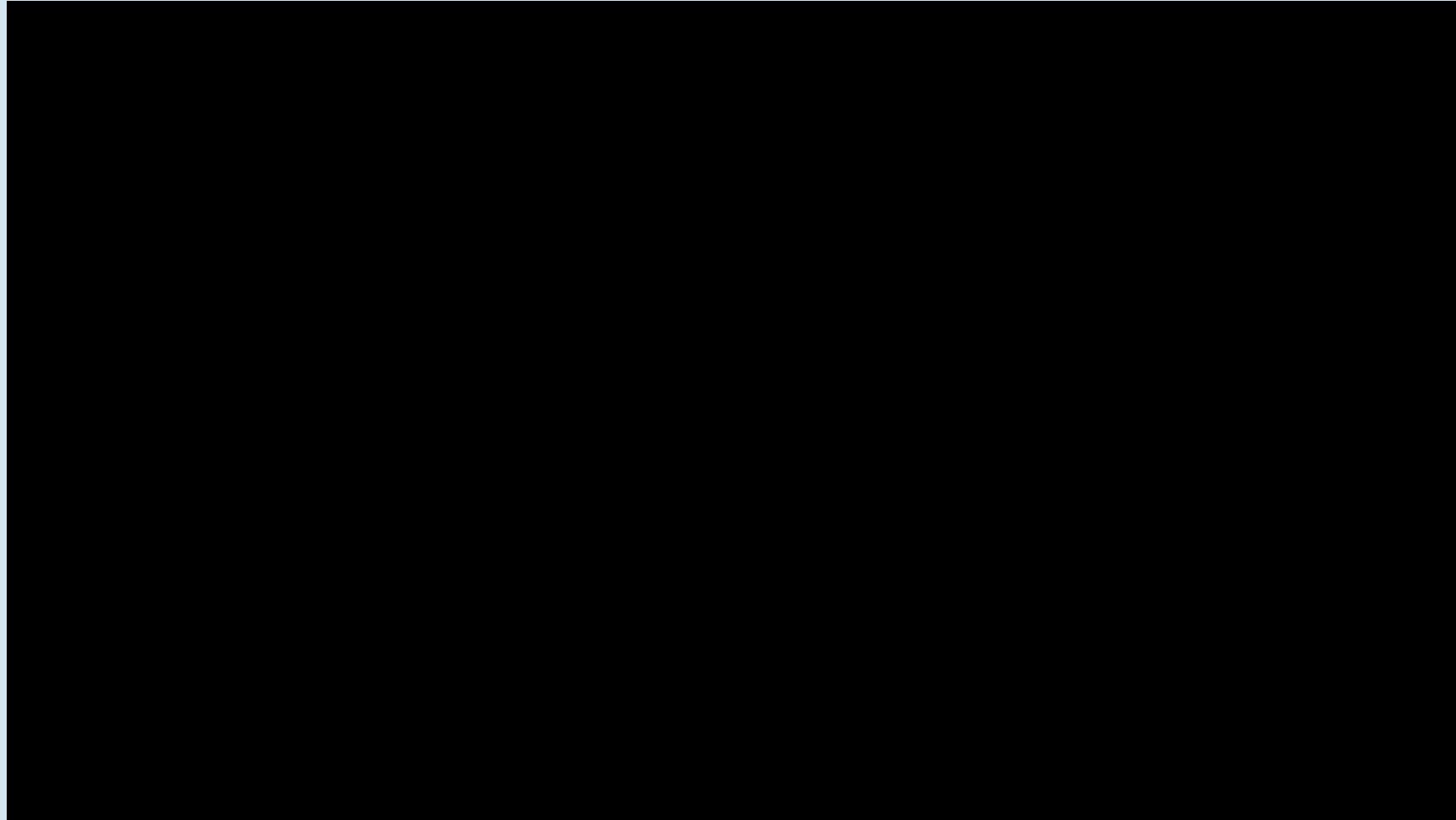


36 in²



9 in²

Examining Behavior: Bait Attraction



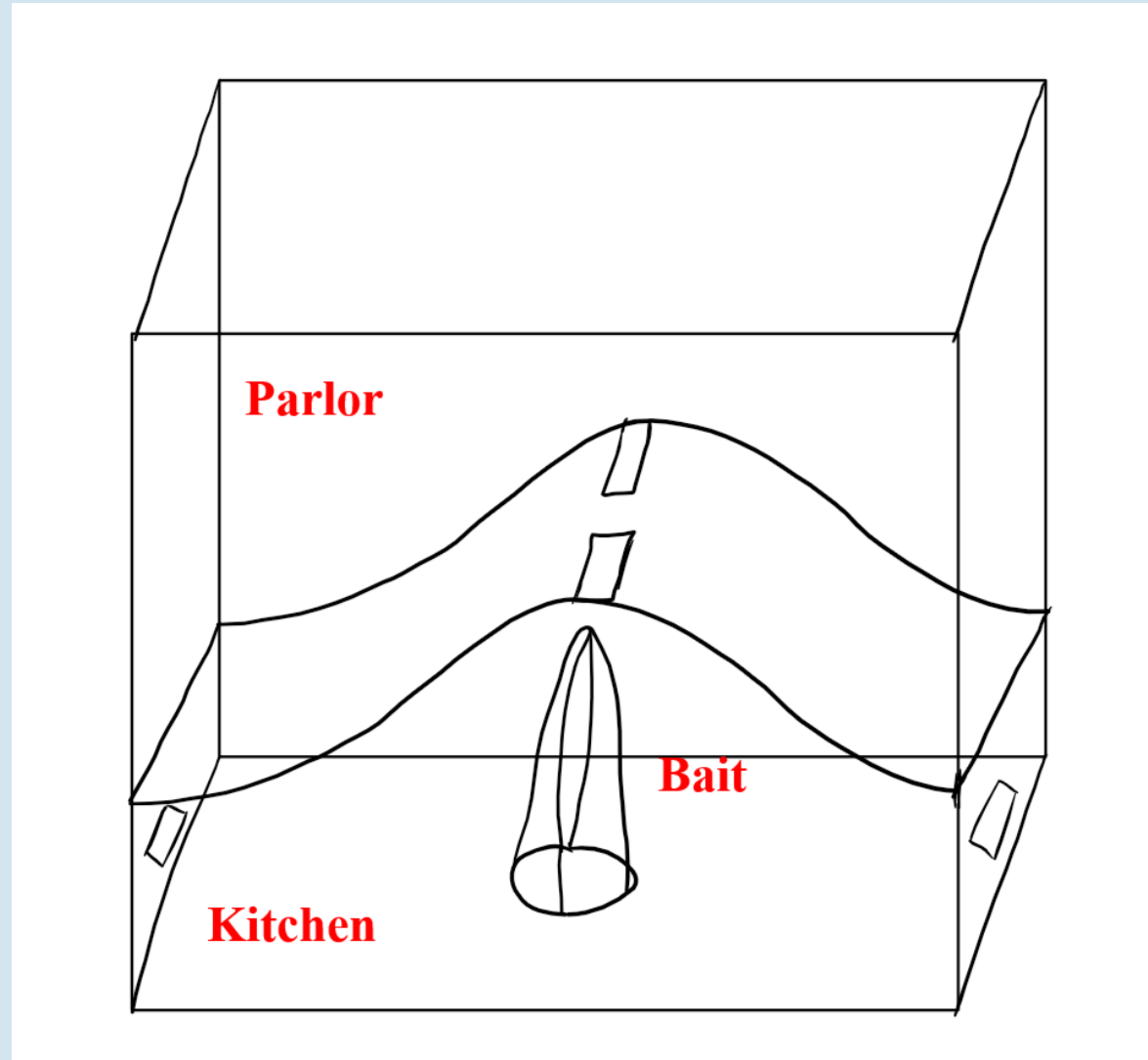
Time

Duration

Initial Interest — Initial Movement = Latency

Eating

Increasing Catch Success:



Defining Eating:

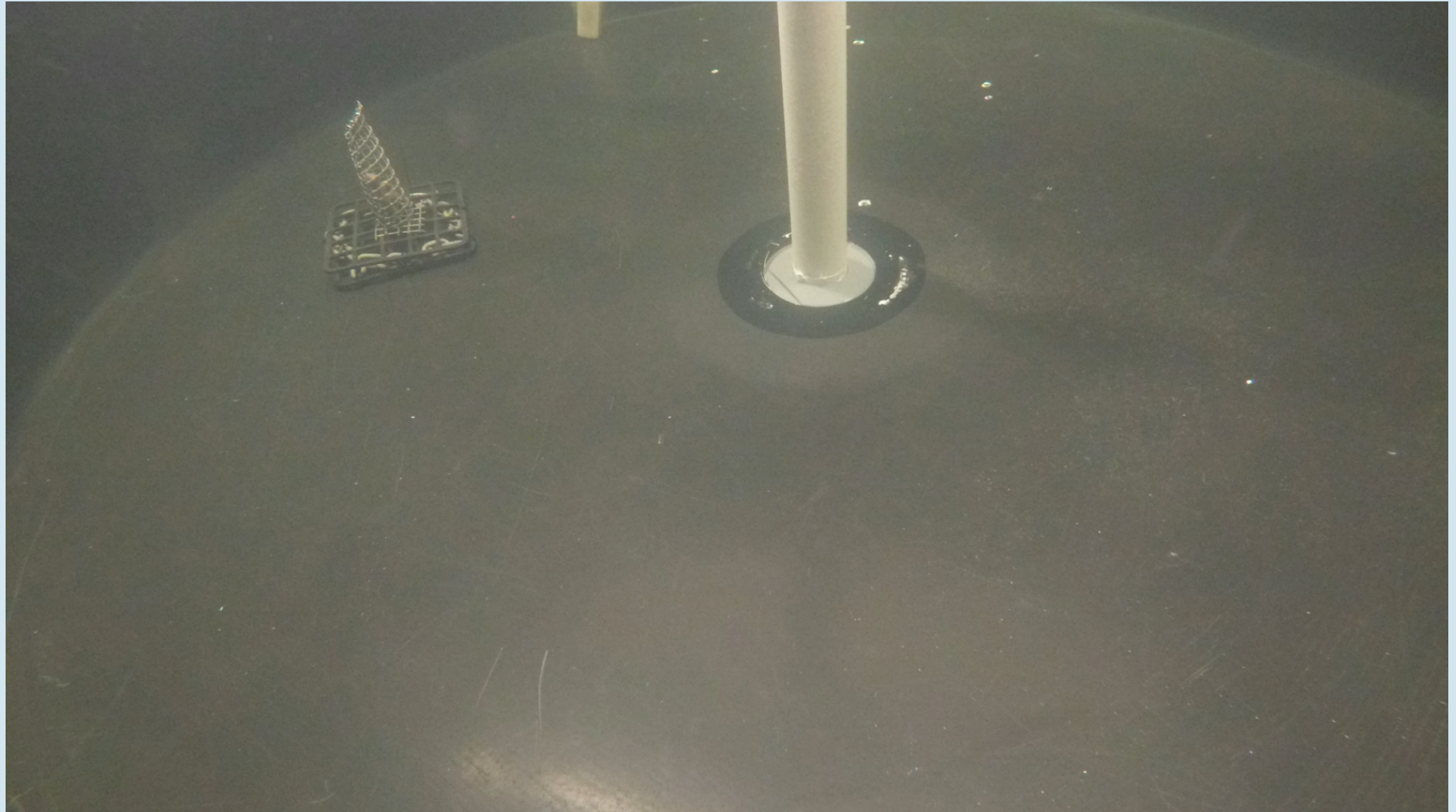


Eating

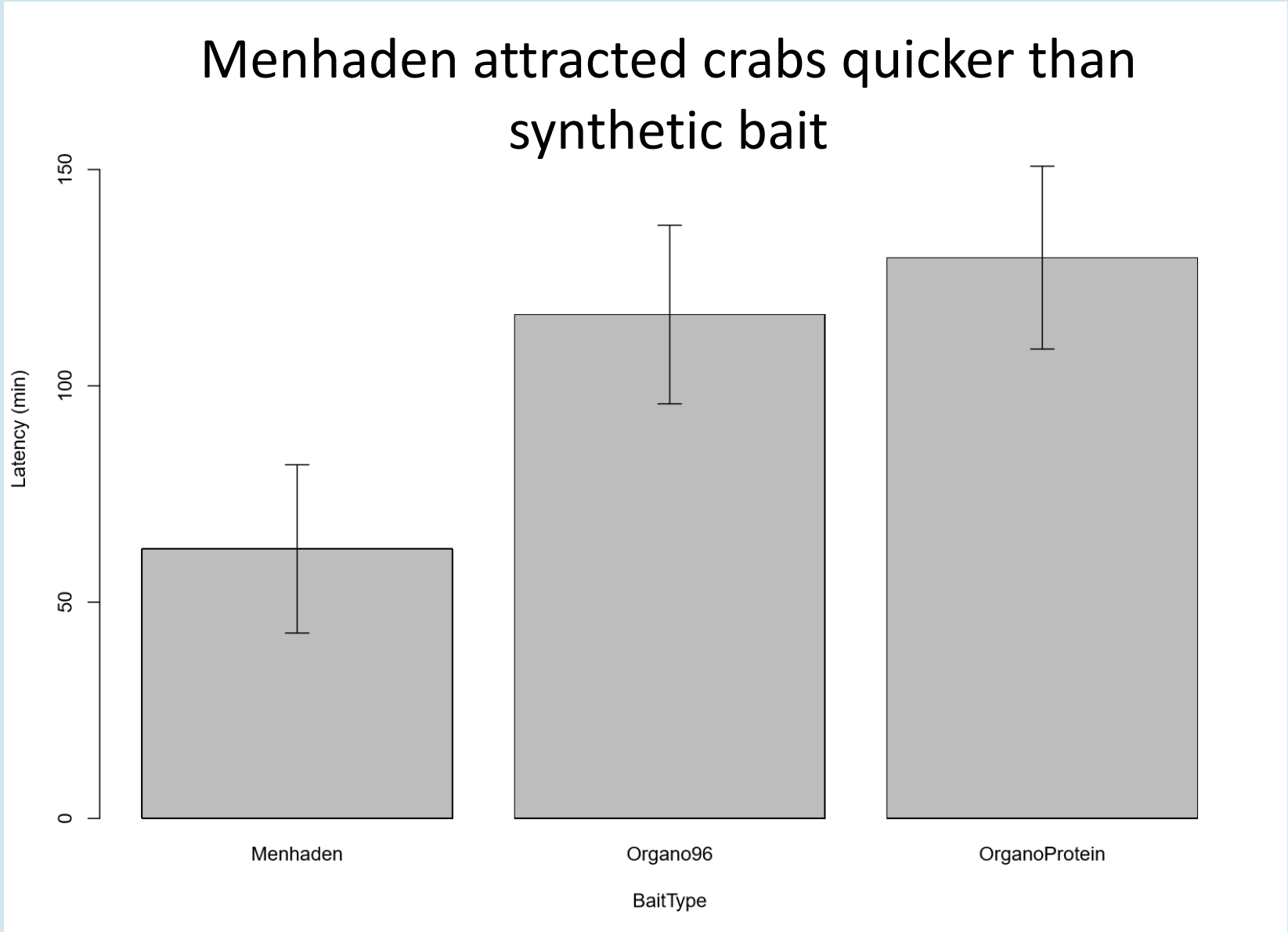


Not Eating

Example Trial:

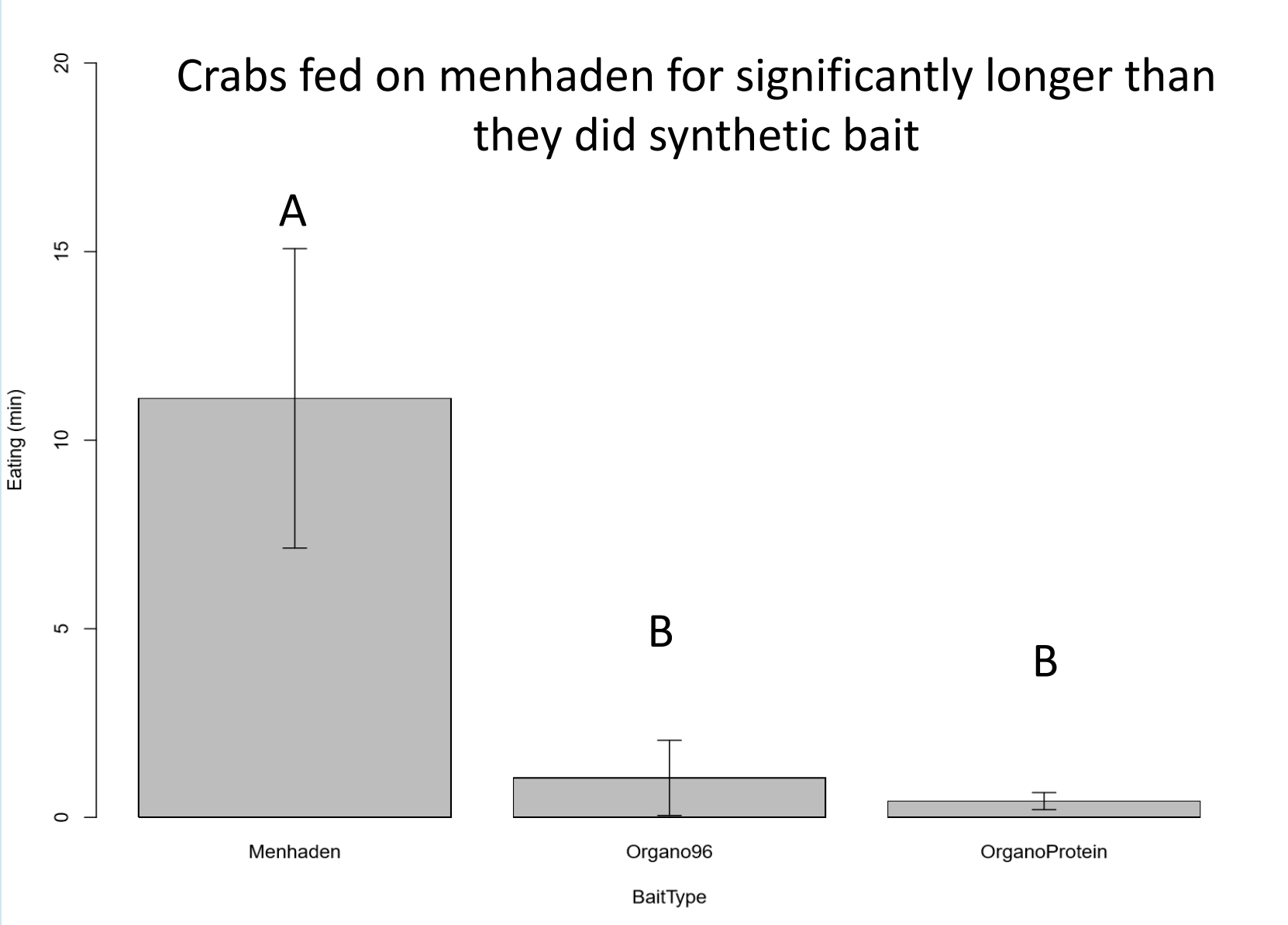


Findings:



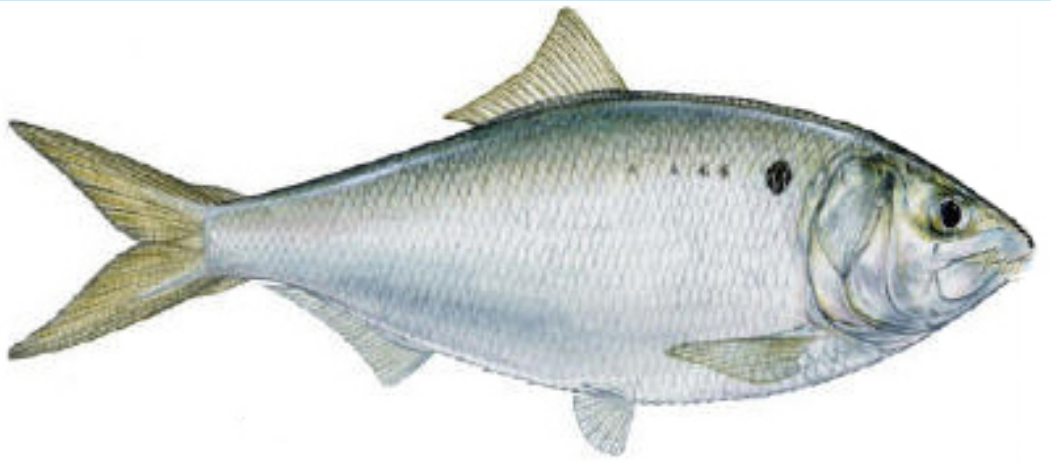
$(F(2,27) = 3.0537, p = 0.06374)$

Findings:



($F(2,27) = 6.42, p = 0.005237$)

Discussion:



Discussion:

- Menhaden attracts crabs significantly longer
- Menhaden may attract crabs quicker than Organobait
- Organobait may cause fewer crabs to enter the parlor
- Organobait may increase escape rate and therefore decrease catch

