

Habitat Preference of the Introduced Green Crab *Carcinus maenas*

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OBJECTIVE

Determine if the European Green Crab has a habitat preference in order to assist in eradication efforts and understand its basic ecology in Seadrift Lagoon.

BACKGROUND

- Native to Europe
- Invasive Species in U.S since 1800's¹
- Large salinity range
- Preys on bivalves & crustaceans
- Found in intertidal and shallow sub tidal areas¹
- Commonly found under rocks and algae



Figure 1: Seadrift Lagoon- location of European Green Crab eradication since 2009

RESEARCH QUESTIONS

Between habitats of algae and sand will there be a difference in:

- Number of crabs
- Size of crabs
- Male to Female ratio

METHODS

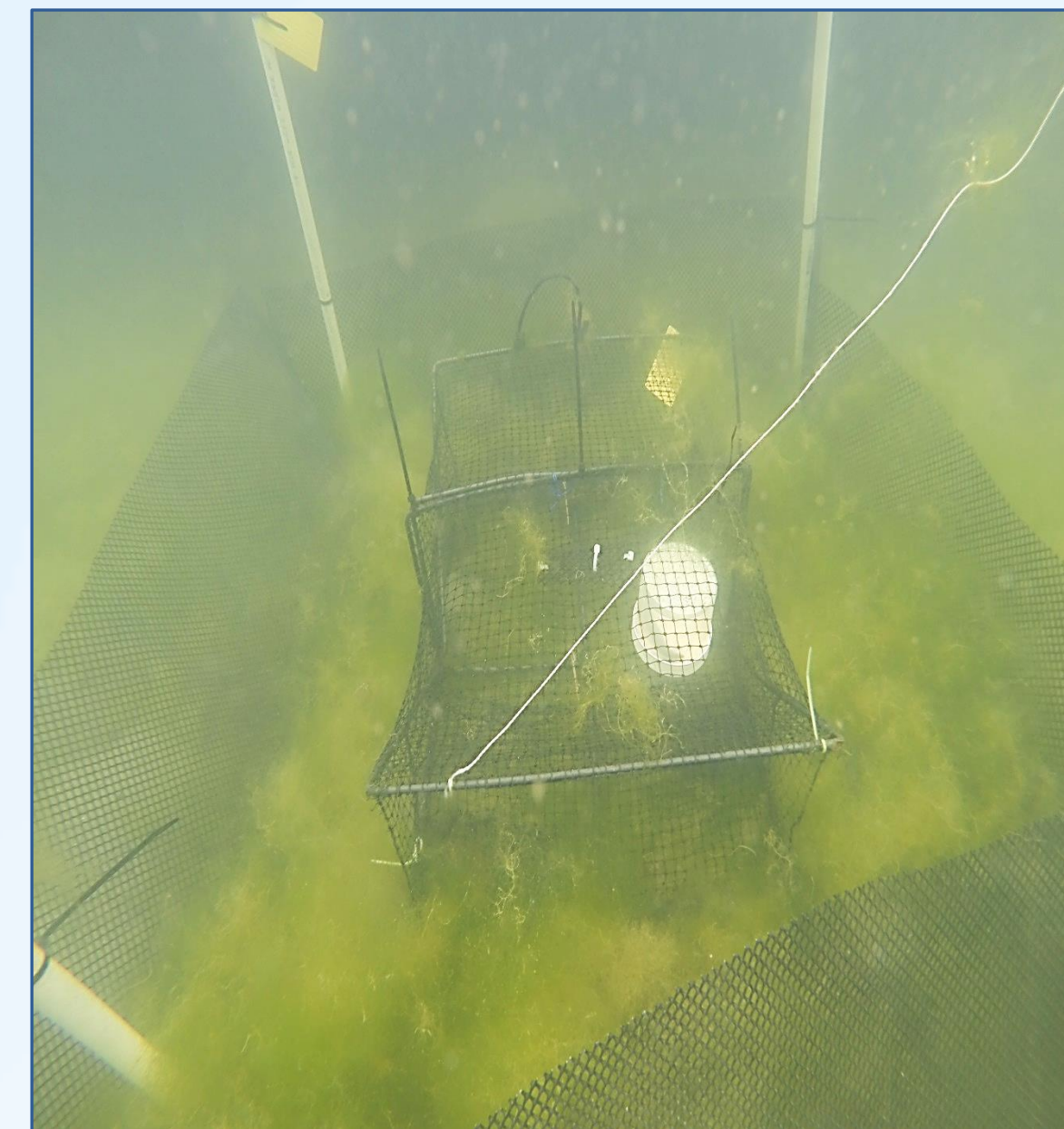


Figure 2: Treatment Algae

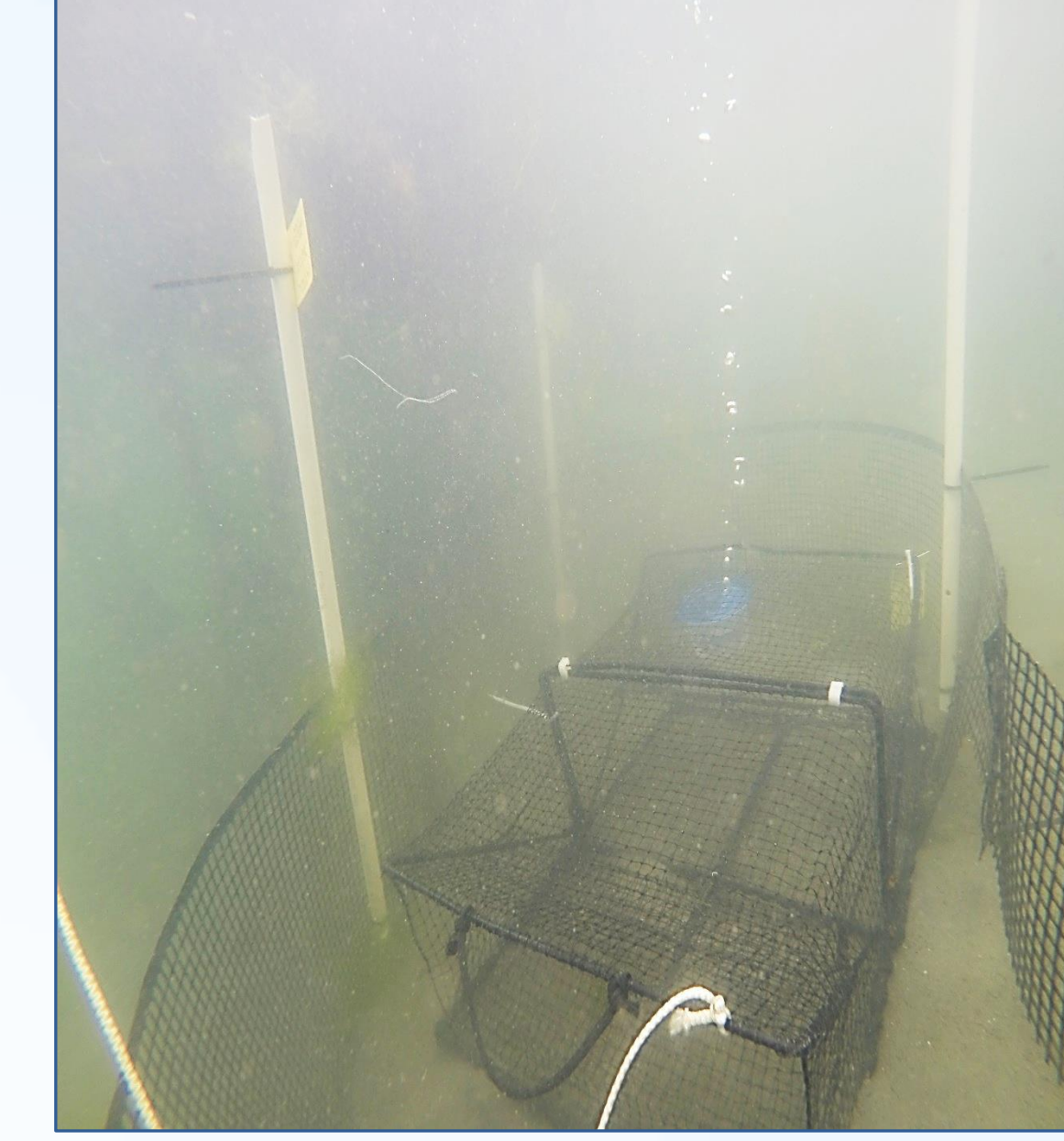


Figure 3: Treatment Sand

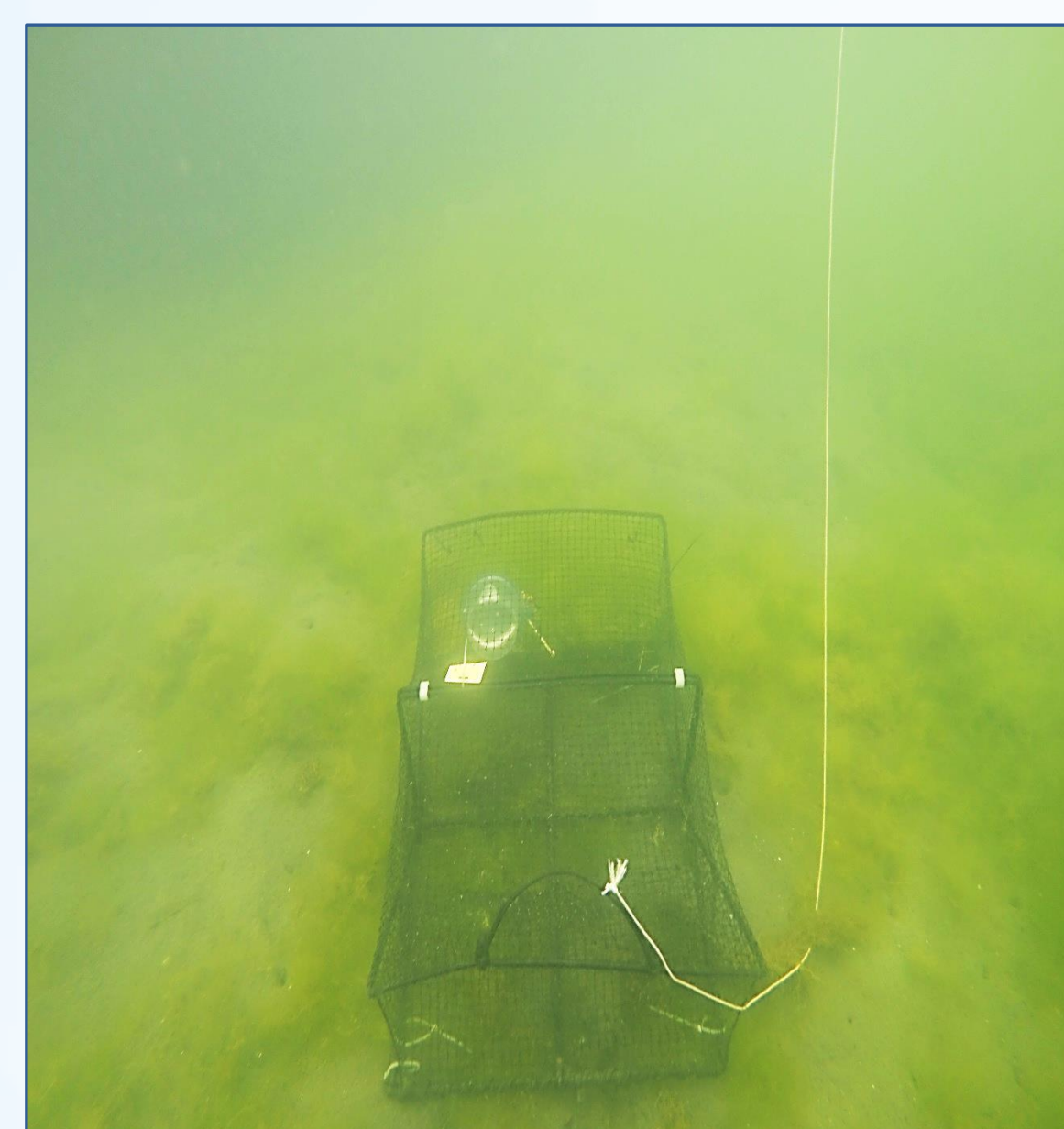


Figure 4: Control

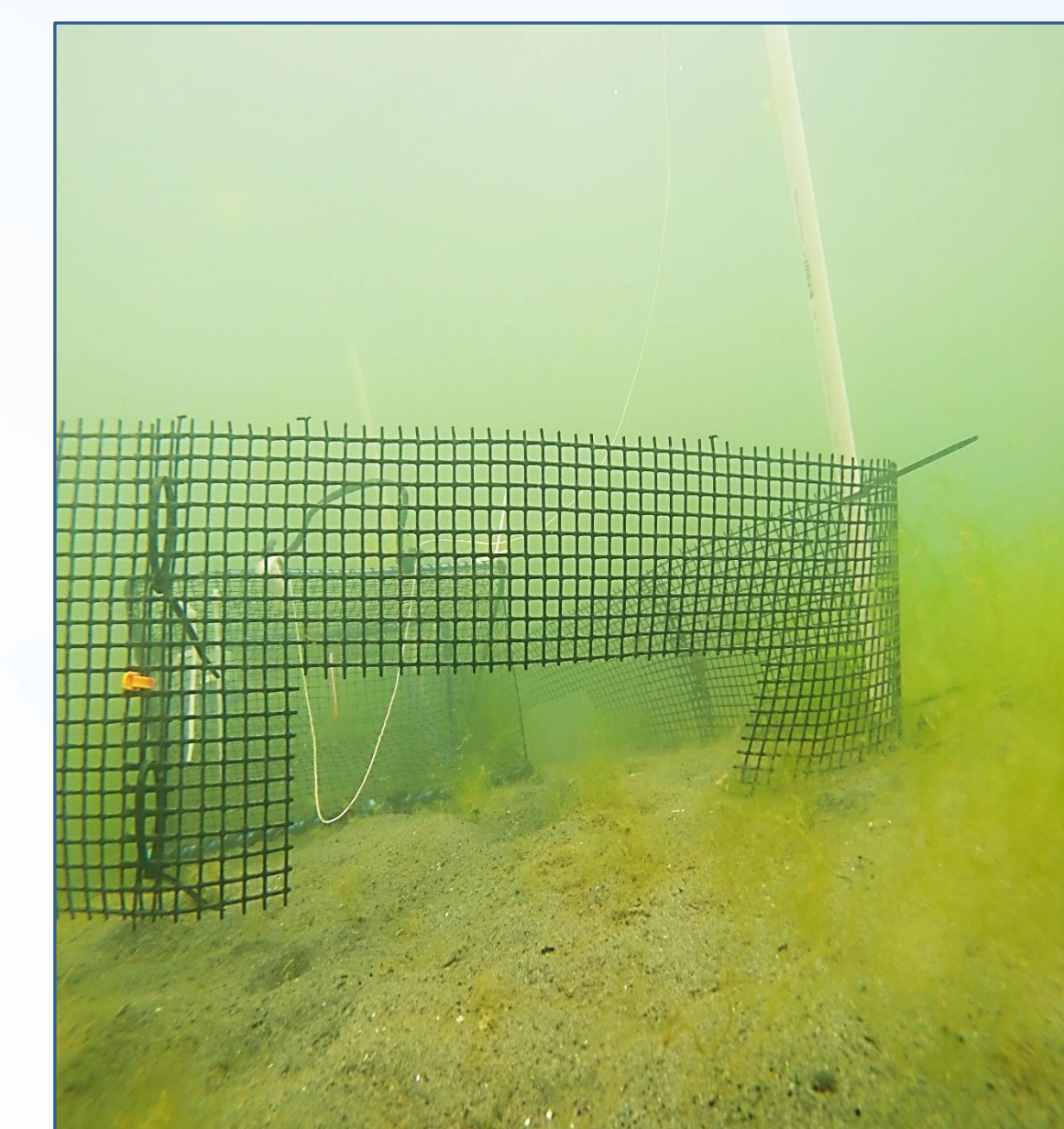


Figure 5: Cage Control

- Location: Seadrift Lagoon
- Two treatments and two controls (6 replicates each)
- 24 cages placed a meter apart
- Crabs collected in 24 hour increments
- Measured and sexed based upon trap
- Repeated 6 times

RESULTS

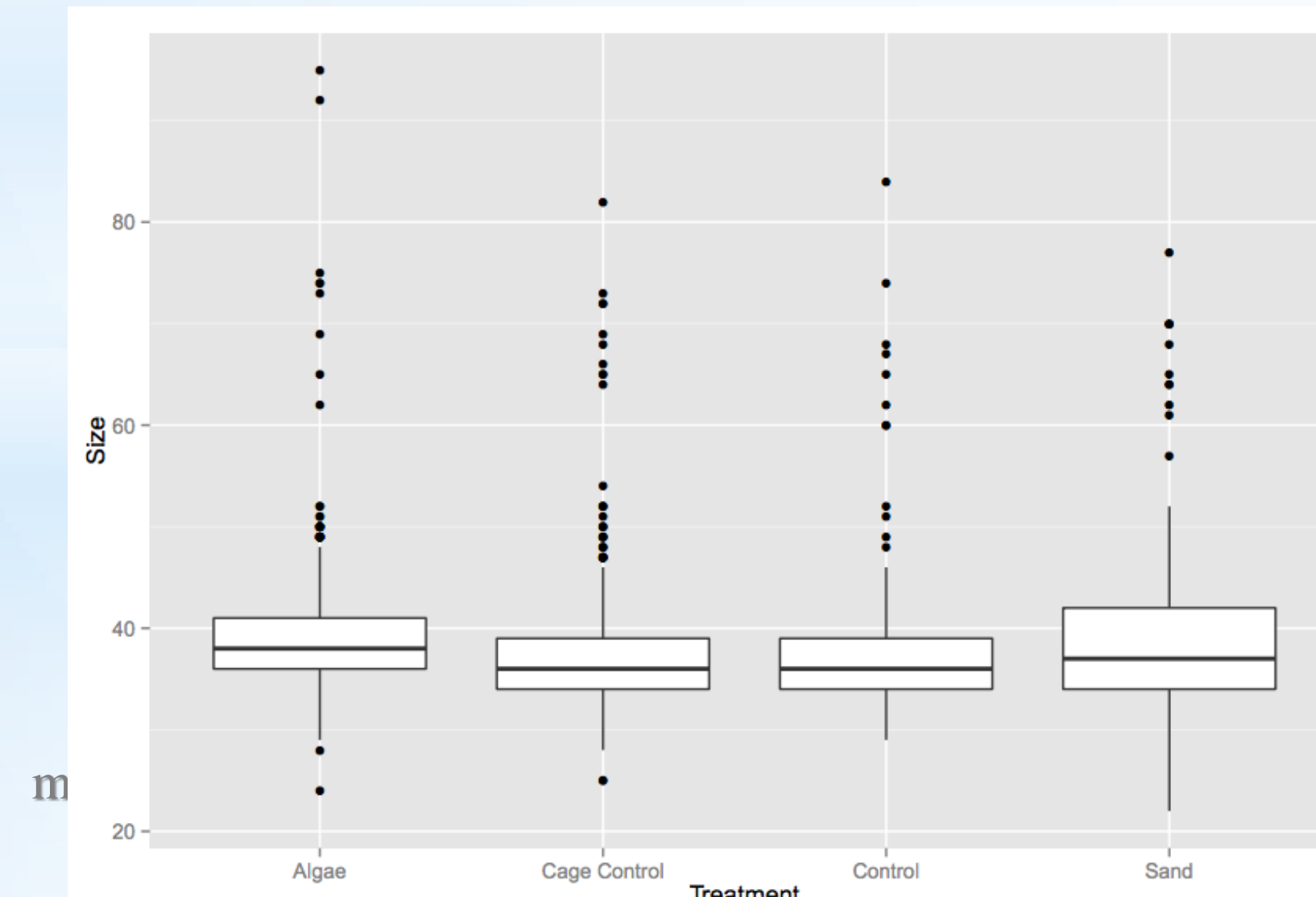


Figure 6: Average size of crabs by treatment. No significant difference between treatments. [Poisson Regression]

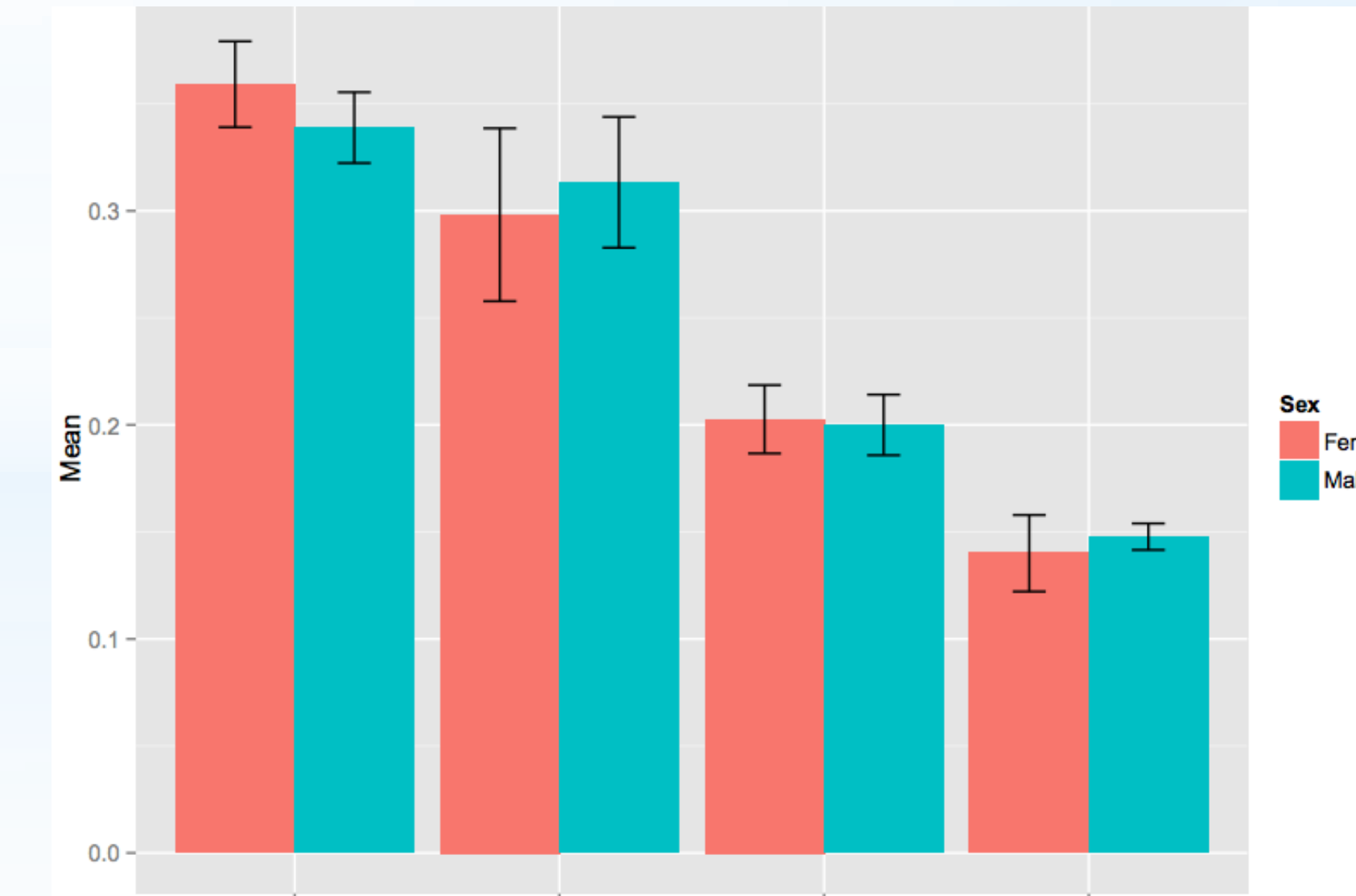


Figure 7: Mean of crabs that went into each treatment by sex. Compares sexes independent of treatment. No significant difference between sexes. [Poisson Regression]

RESULTS

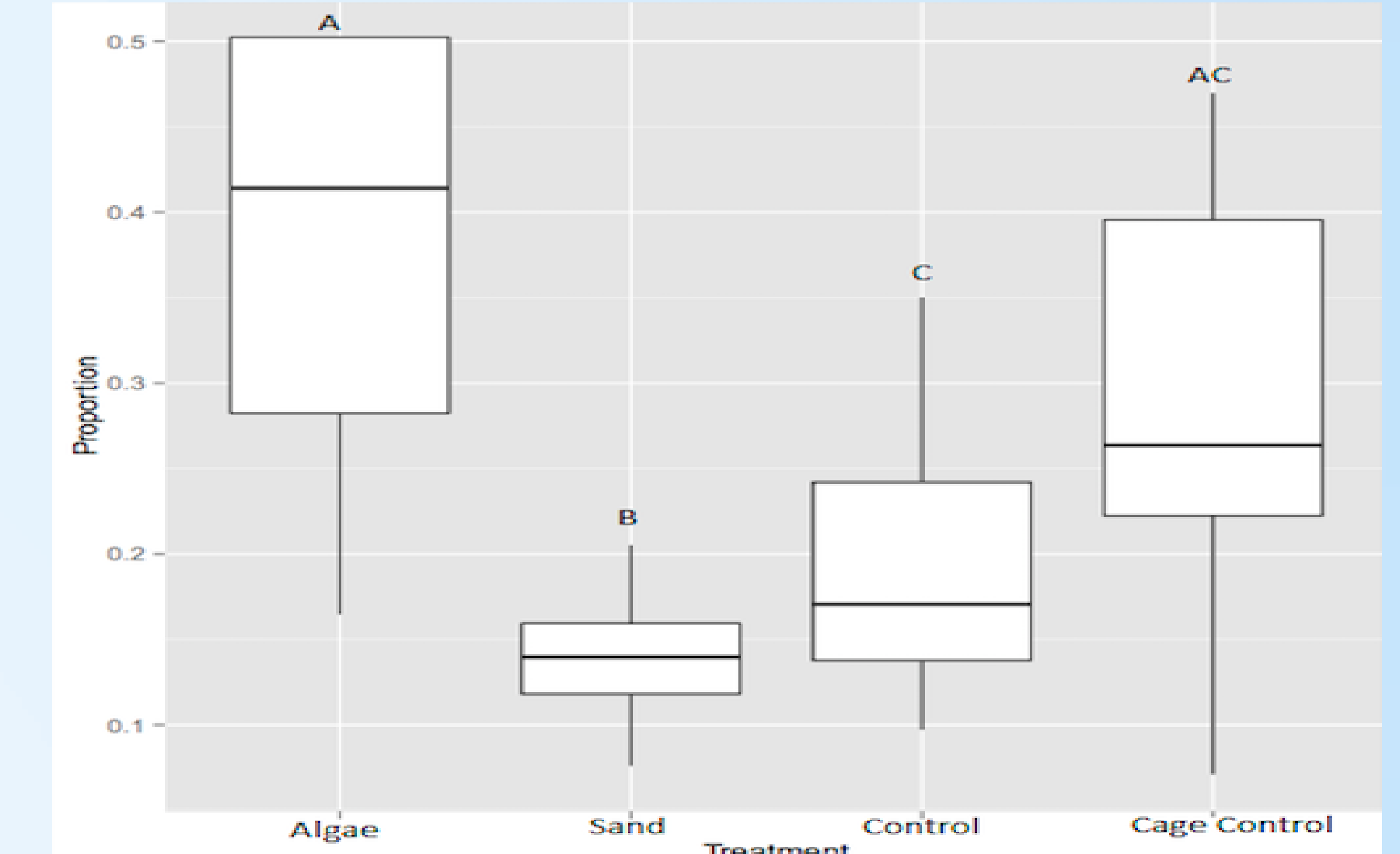


Figure 8. Proportion of Number of Crabs per Treatment. Letters indicate significant different treatments at alpha > .05 [Beta Regression for proportion]

DISCUSSION

- The number of Green Crabs could be larger in algae due to crabs seeking protection from predators, current, sunlight etc.²
- To obtain better results I would suggest doing this experiment again and keeping the controls on sandy bottoms only
- For future eradication, cages should be placed on algae-covered areas until further testing can be done

ACKNOWLEDGMENTS & REFERENCES

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1. deRivera CE, Grosholz ED, and GM Ruiz (2011) Multiple and long-term effects of an introduced predatory crab. *Marine Ecology Progress Series* 429: 145-155
2. Moksnes, P.O, L. Pihl, and J. Montfrans. "Predation on Postlarvae and Juveniles of the Shore Crab *Carcinus Maenas*: Importance of Shelter." *Marine Ecology Progress Series* 166 (1998): 211-25

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