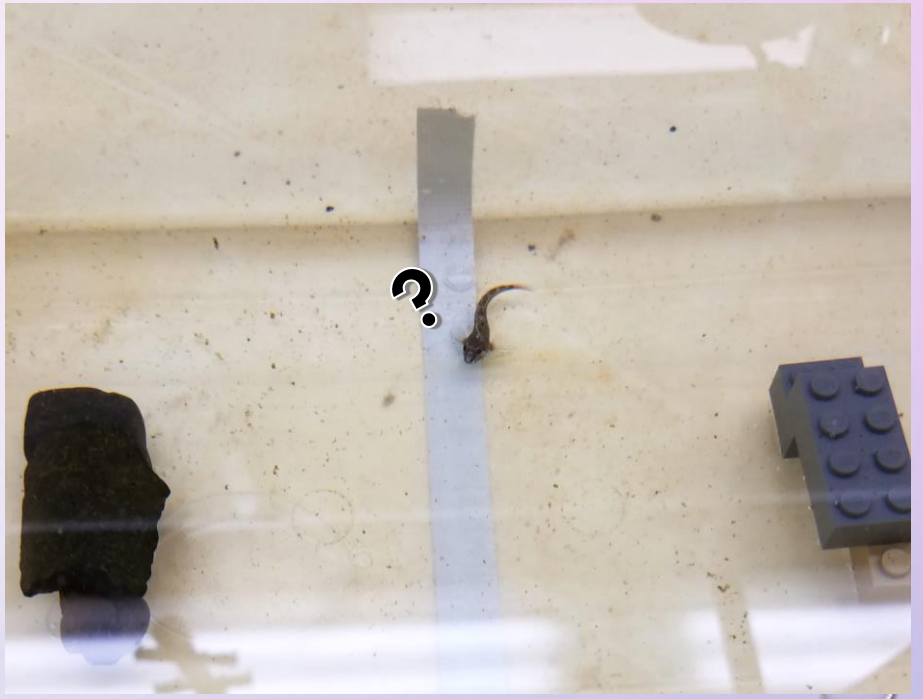


DOES MATERIAL MATTER?

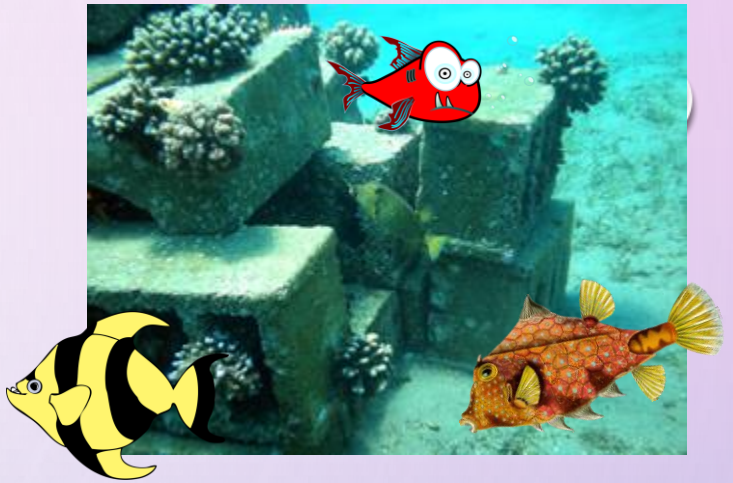
TIDEPOOL SCULPIN AND MICROHABITAT CHOICE

By Sierra Payne

INTRODUCTION

BACKGROUND

Photo credit: David Armstrong/Marine photobank



- Fisheries declining since 1996
  - 90% of stocks – overfished or fully fished (FAO 2016)
- Artificial reefs – proposed tool to increase fishery yield (Baine 2001)
- Natural reefs > Artificial reefs (Carr and Hixon 1997)
- Driving factors for habitat choice
  - Habitat complexity (Carr and Hixon 1997, Beukers and Jones 1998, Laegdsgaard and Johnson 2001)
    - more complex habitat has more holes and crevices of varying sizes
  - Potential for food (Carr and Hixon 1997, Laegdsgaard and Johnson 2001)
- Other contributing factors
  - **HABITAT MATERIAL?**

Photo credit: Toby Hudson

BACKGROUND

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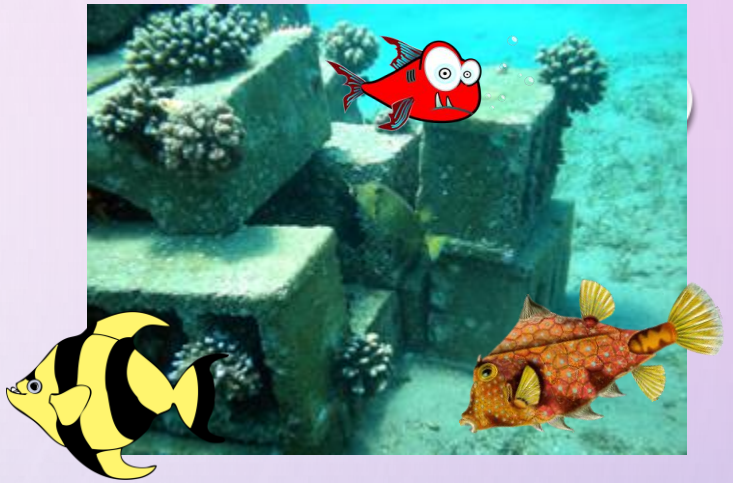

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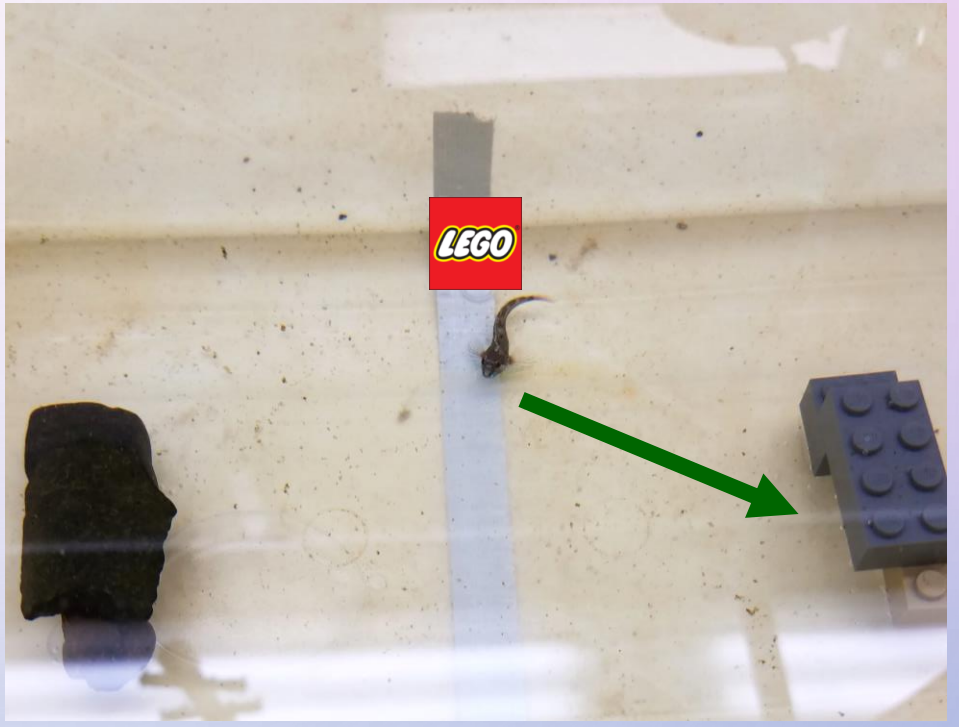
Photo credit: Toby Hudson

MY EXPERIMENT

- Do Tidepool sculpin have an aversion for man-made objects?
- Tidepool sculpin
  - Intertidal fish
  - Prefer lots of structures – provide shelter (Davis 2000, Arakaki and Tokeshi 2005)
  - Shelters protect against
    - Predation and environmental stressors (Davis 2000, Arakaki and Tokeshi 2005)
  - have favored tidepools (Knope et al. 2017)
  - Learn where shelters are (White and Brown 2015)
  - Return when they feel threatened



- **Hypothesis: When given the choice between two shelters, a sculpin will choose the shelter most similar to one it is acclimated to, regardless of material.**
- Alternative Hypothesis: The sculpin will choose a shelter made of natural material, regardless of acclimated shelter

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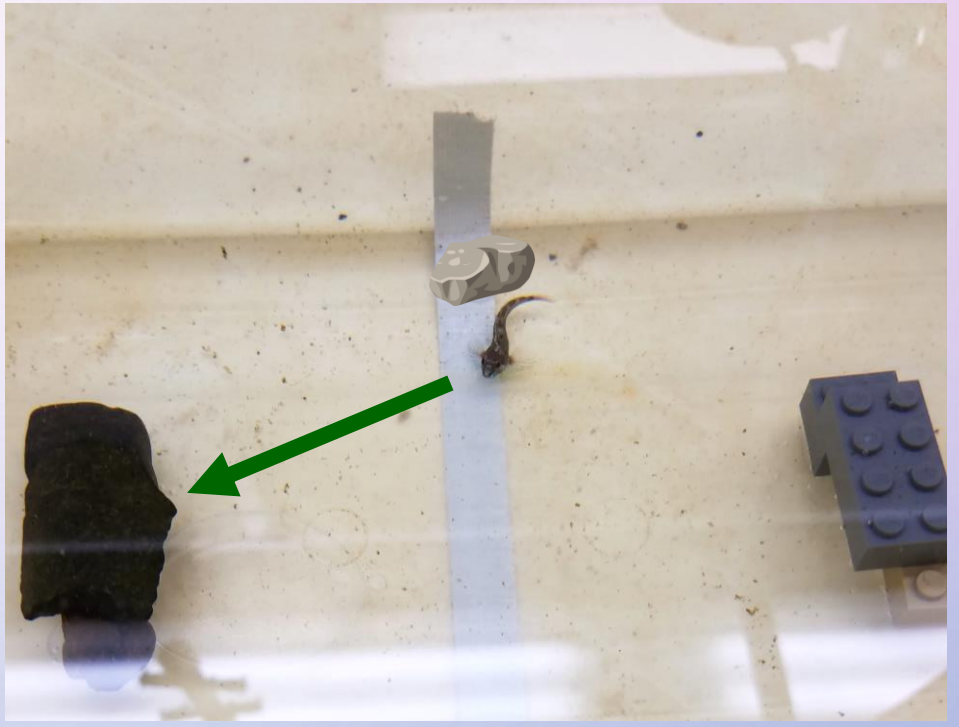

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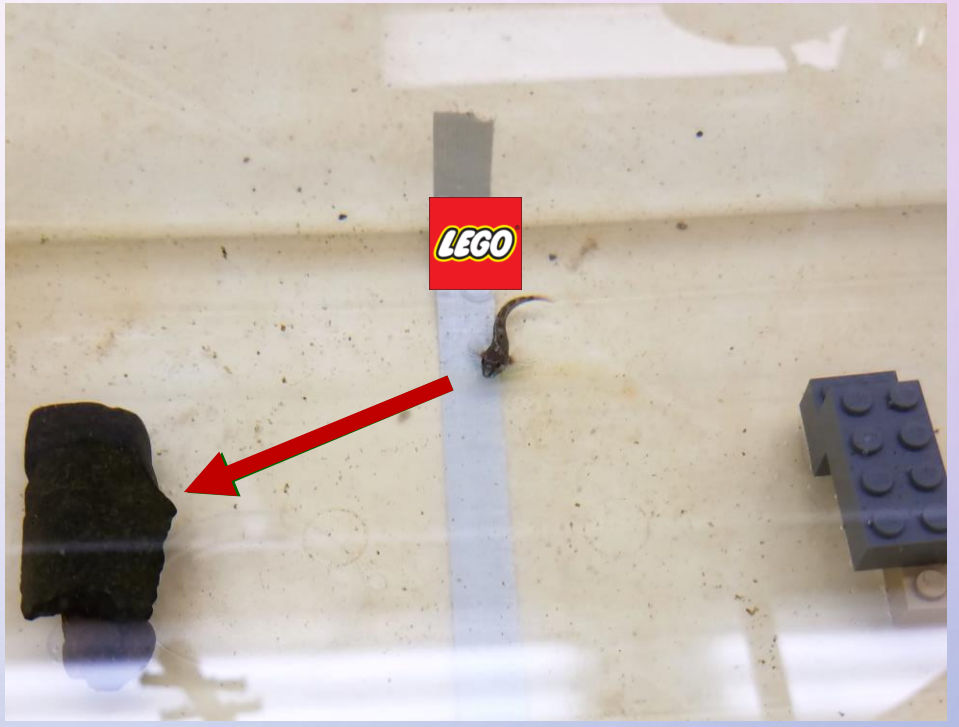

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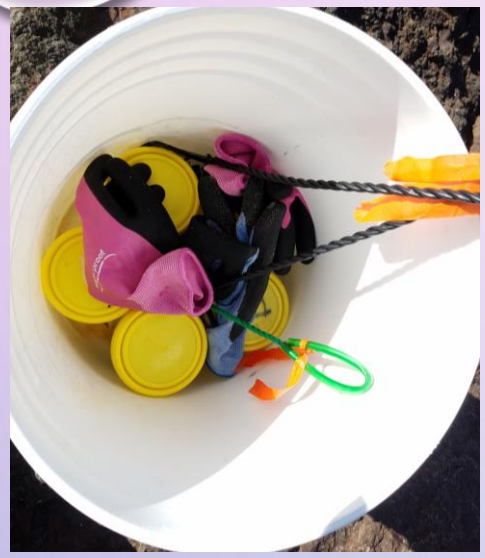
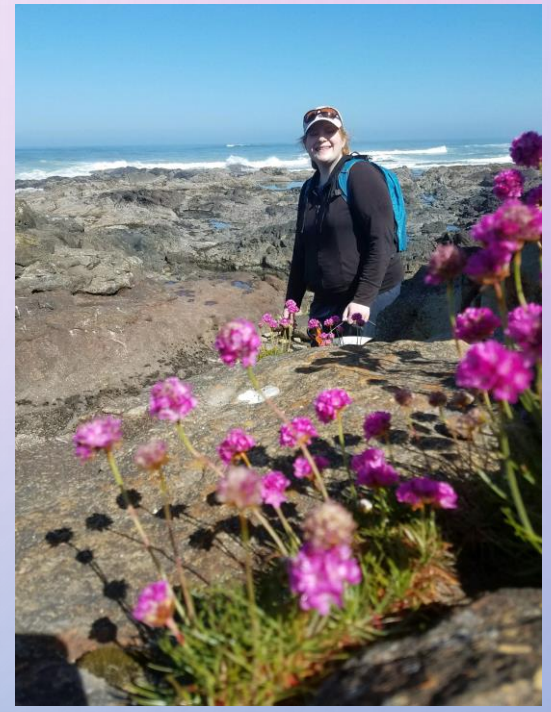
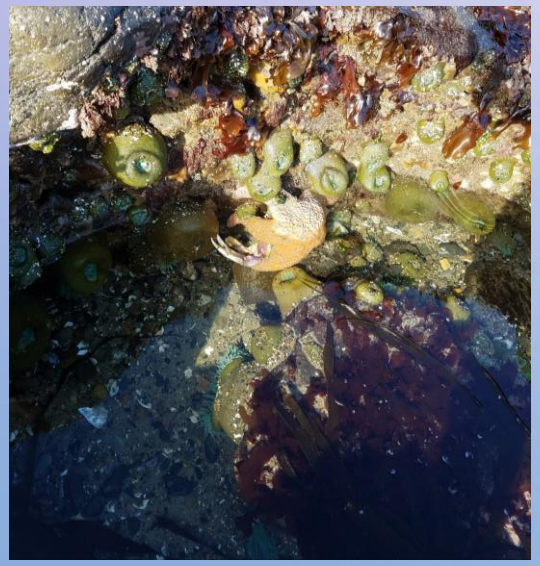
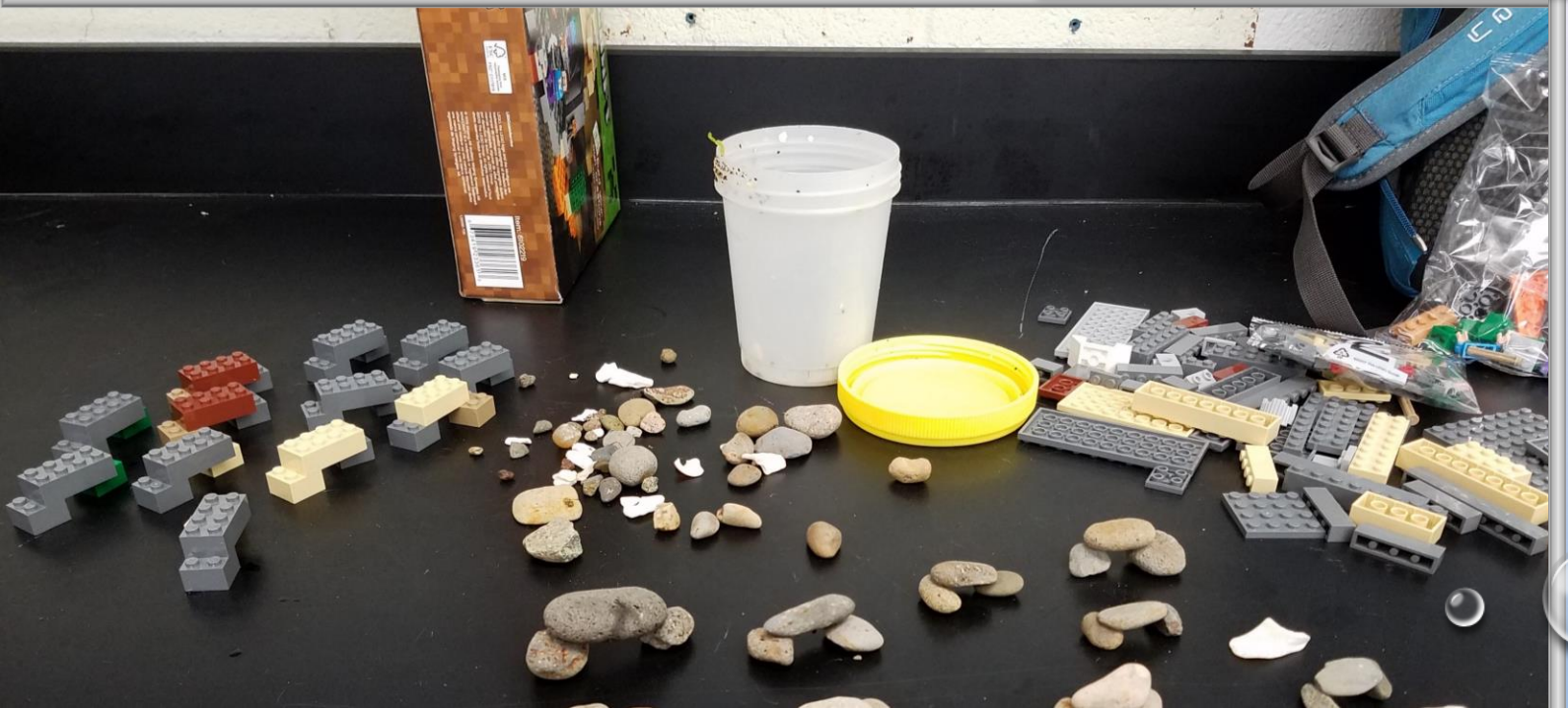
METHODS

YACHATS BEACH

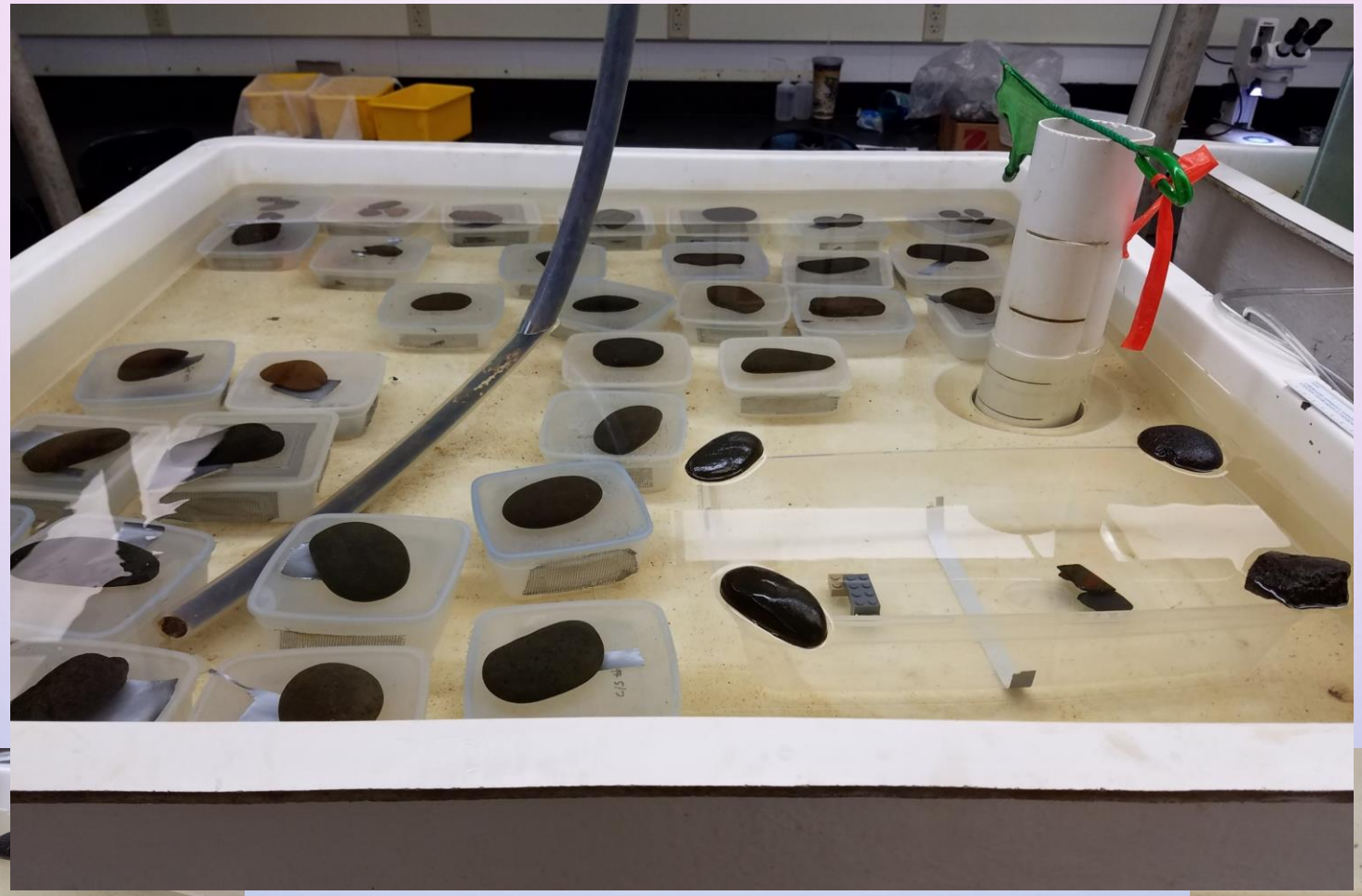


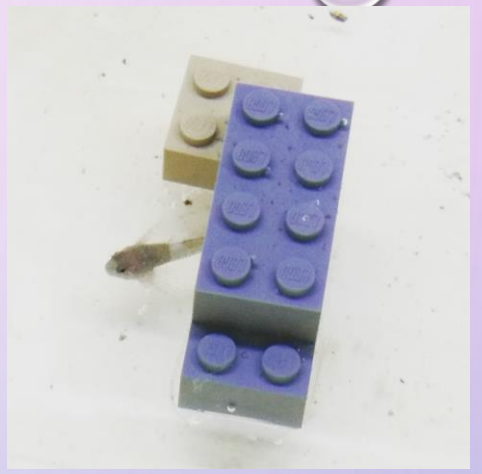


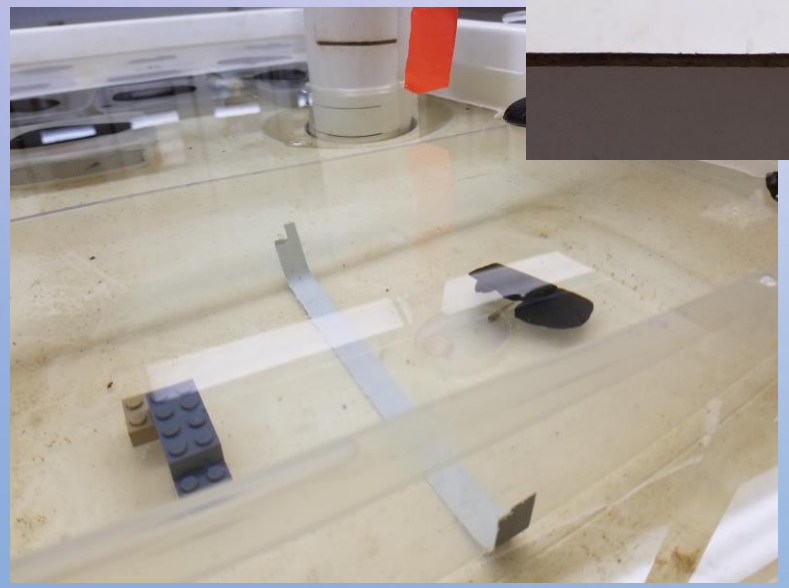




ACCLIMATION CONTAINERS



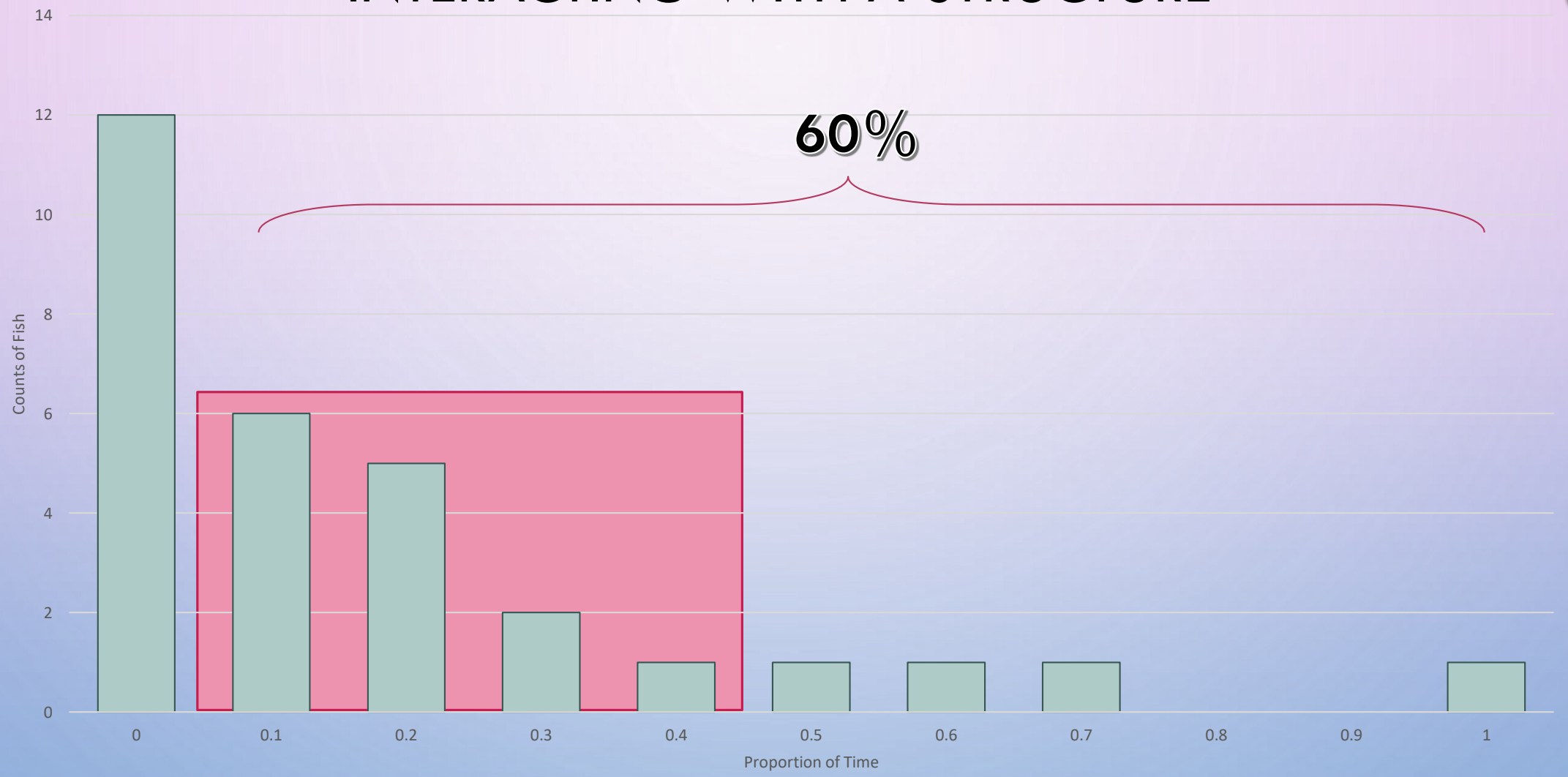




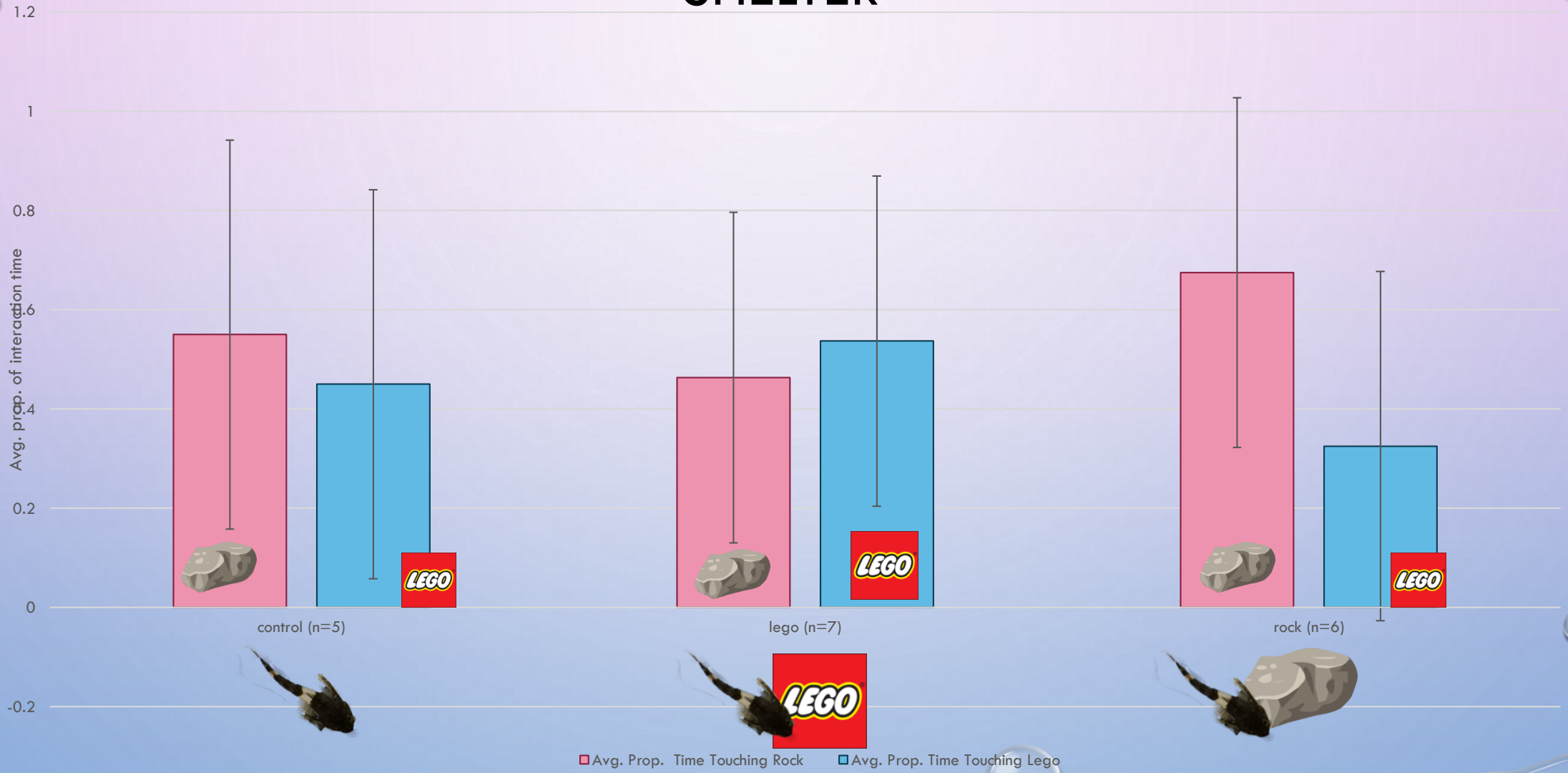
TRIALS

RESULTS/DISCUSSION

FREQUENCY OF THE PROPORTION OF TIME SPENT INTERACTING WITH A STRUCTURE



AVG. PROP. OF INTERACTION TIME SPENT WITH EITHER SHELTER



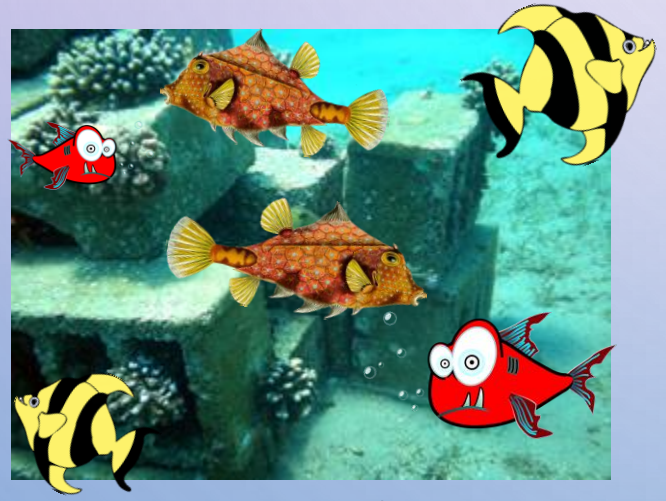
AVG. MINS. SPENT ON EITHER SIDE BY INTERACTING FISH

CONCLUSION

Photo credit: David Armstrong/Marine photobank

Photo credit: Toby Hudson

CONCLUSION



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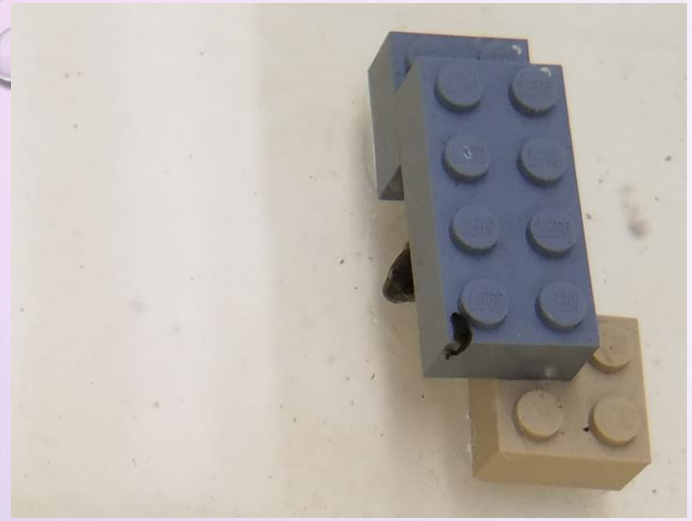

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- SAMANTHA ROOF

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QUESTIONS?