CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
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Project Number
J2305

Project Title
Where Does Kelp Go?

Abstract

Objectives/Goals
The objective of this project was to determine the role of the amphipod Megalorchestia corniculata (beach hoppers) in the removal of giant kelp blades once they have washed up on beaches.

Methods/Materials
80 Beach Hoppers, kelp blades, 7X 5 gallon buckets, sand, GoPro digital camera, digital weighing scale, red light, spray bottle, exact knife, collecting permit, ruler. Beach hoppers were collected and placed in 5 gallon buckets with 2 inches of wet sand on the bottom. Two nine inch cuts of kelp blades were placed in each of three replicate treatment buckets. Photographic images were taken daily of each blade for each treatment and control for 7 days. Time lapse photography was used to monitor beach hopper activity and kelp removal.

Results
Kelp blade removal was observed in the treatment buckets but not in the control buckets. There was no change in the percent of kelp blade removal in the control treatments. In contrast, the percent of kelp blade removal increased each day over 7 days at a constant rate. Over the course of 7 days approximately 20% of the kelp blade was removed in the treatment bucket. Time lapse photography showed that the beach hoppers were most active at night and consumption of kelp was observed then.

Conclusions/Discussion
The Beach Hopper (Megalorchestia corniculata) feed at night and are a contributing factor to the removal of kelp blades on sandy beaches. This experiment is likely a lower estimate of the beach hopper influence on kelp removal because in natural conditions a greater number of beach hoppers would be present.

Summary Statement
I demonstrated that the amphipod Megalorchestia corniculata plays an important role in kelp removal after it is washed up on the beach.

Help Received
I designed and carried out the experiment by myself. Dr. Jenny Dugan of the Marine Science Institute at UCSB helped me collect the beach hoppers, kelp and sand. Both Dr. Dugan and Dr. Carlson (UCSB) advised me on data collection.