CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY

Name(s)
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Project Number
S1115

Project Title
The Heat Is On: The Potential Effects of Predicted Rising Oceanic Temperatures

Abstract

Objectives/Goals
The marine plant Halimeda, a genus of calciferous green algae have important roles in marine ecosystems that range from producing sand to removing carbon dioxide from the water. My experiment is focused on how predicted oceanic temperatures would affect the growth of one species of Halimeda plant, by measuring parameters such as pH, salinity, dissolved oxygen, length, and mass. I hypothesize that increased will decrease dissolved oxygen, decrease pH, and increase salinity, and therefore result in a decrease in calcification and growth of Halimeda, as measured by mass and length.

Methods/Materials
#7 Halimeda plants
#6 Rubbermaid Containers (16Q, 15 lbs capacity)
#Distilled Water 18 gal +
#1 Thermometer (Range:-20˚c- 110˚c)
#6 Water heaters (Elite Radiant Water Heater 50w)
#1 Measuring Cup (2 cups capacity)
#Instant Ocean (15 lbs bag, 50 us gallons)
#1 pH meter (Pen Type pH meter. Range 00.1-14.0 pH)
#Dissolved Oxygen Kit (La Motte Dissolved Oxygen Code 5860)
#Refractometer (RHS-10ATC. Range: 0-100 ppt of Salinity.
#1 Ruler
#1 Food Scale
#1 bottle, Water Conditioner (Aqua Safe
Daily I measured the pH,temperature, and salinity. Four times a week I measured the DO and once a week I would measure each plants mass and length.

Results
The medium group experienced the most drastic change in percent change in mass, indicating that constantly changing water temperatures had the most affect in the changes of plant growth in the marine plant, Halimeda.

Conclusions/Discussion
Overall, the results did not entirely support my hypothesis. Instead my results indicated that fluctuating water temperatures have more profound effects on the growth and mass on the marine plant, Halimeda as opposed to increased water temperatures.

Summary Statement
My project is centered toward observing the possible effects of rising oceanic temperatures on the marine plant, Halimeda as a result of human activities that accelerate Global Warming and Global Climate Change.

Help Received
My mentor Breanna Harris, who is a graduate student at UCR helped me with proof reading my abstract as well as helping me find the equipment necessary for my project, such as the refractometer and the pH meter.