A Novel Carbon Dioxide Filtration Device Utilizing Calcium hydroxide and Chlorophyta to Remediate the Impact of Global Climate Change on Aquatic Ecosystems

Milford, Ashlyn (School: Cascia Hall Preparatory School)

Climate change is an area of growing concern that threatens the earth as a whole. Due to an excess production of carbon dioxide released into the atmosphere, the difference in pressure encourages the ocean to absorb the carbon dioxide. As a result, the temperature of oceans are increasing and the pH levels are becoming more acidic. Coral bleaching, dead zones, and loss of marine life are just a few of the notable effects. This study examines a carbon dioxide filtration system that's focus is increasing pH and dissolved oxygen levels. There are 3 phases of the study. Phase 1 includes the chemical treatment, calcium hydroxide, to increase the pH of acidic ocean water as studied through pH level testing and a titration test. Phase 2 includes the role of saltwater algae and how to incorporate it into the system, as studied through a 3 day algae test, measuring pH level, dissolved oxygen levels, absorbance, and conductivity. Phase 3 includes the remediation system design and prototype trial runs. Each test was conducted in order to determine the best way to incorporate both the chemical and algae components into the final product of the remediation system. All conclusions examine the finalized filtration system's effectiveness and practicality.

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