Undergraduate Research Symposium May 18, 2012 Mary Gates Hall

Online Proceedings

POSTER SESSION 1

MGH 241, Easel 166

12:00 PM to 1:30 PM

Ocean Acidification in a Closed System

Landung (Don) Setiawan, Sophomore, Undeclared, Everett Community College
Anastasia Bernhard, Sophomore, Undeclared, Everett Community College
Mentor: Ardi Kveven, Ocean Research College Academy, Everett Community College

Marine based industries, particularly the shellfish industry, are increasingly concerned about the viability of their product due to changing ocean pH conditions. Many other organisms with calcareous shells or exoskeletons are impacted by this change in sea water acidity due to anthropogenic gases. One such organism is the Artemia salina, or brine shrimp. Acidification causes dissolution of the shells into calcium and carbonate ions that float freely in the water. It was hypothesized that three closed systems could be created to replicate the ocean conditions of the present and future, specifically in 50 years and 100 years. Brine shrimp were chosen to be test subjects due to their ease of propogation. The closed systems provided pH, Ca2+ concentration, and the vitality of the tested brine shrimp community data. The working hypothesis is that Ca2+ ion concentration will increase as the exoskeletons dissolve with the decrease of pH.

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Bioaccumulation of Heavy Metals in Possession Sound

Lindsey Gipson, Sophomore, Undeclared, Everett Community College
Mentor: Ardi Kveven, Ocean Research College Academy, Everett Community College

Bioaccumulation of heavy metals due to river runoff is a pressing issue. Through the Ocean Research College Academy (ORCA), I will conduct research during the spring term analyzing the presence of heavy metals in the Puget Sound and the possible bioaccumulation in harbor seals. Sediment is collected using a Van Veen Grab from set sites around the Puget Sound once a month for the span of a year. Sediment samples will also be taken from various sites along the Snohomish River during the month of April. These samples will be sent to the Everett Environmental Laboratory to be tested for levels of mercury, arsenic, lead, zinc, cadmium, and copper. We will then attempt to obtain harbor seal excrement from the Everett Marina and send to the lab to be tested for the heavy metals listed above by the beginning of May. The data will be used to compare the amount of heavy metals found in the sediment of the Puget Sound to the amount of heavy metals found in secondary consumers (in this study harbor seals).