CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
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Project Number
22774

Project Title
There Is More in Our H(2)O than Just H and O!

Abstract

Objectives/Goals
My objective was to learn if proximity to sources of inland runoff affects ocean water quality by testing and comparing the pH, ammonia, dissolved oxygen, and nitrogen levels.

Methods/Materials
I selected six test sites in Carpinteria, CA and collected samples over a period of thirty days of ocean water and the tributaries. Then I measured the temperature and pH, ammonia (NH_3), dissolved oxygen, and nitrogen levels in each sample using LaMotte test tablets.

Results
In testing the waters of Carpinteria, there were many variables. These variables did not measurably affect the test results. Water temperature differed, but there was no pattern between test results and temperature. Rain experienced during the testing period did not affect results; the rainfall was less than 1/2 inch. Carpinteria Salt Marsh had the most extreme range of data for each test. Although Carpinteria Creek and Carpinteria Lagoon seemed like they would have similar results, they had different results. There was little correlation between the tributaries and the bodies of water into which they flowed. Carpinteria Salt Marsh and Holly Street Beach also seemed like they would have similar results; they had little correlation. In answer to my question: Does proximity to sources of inland runoff affect the pH, ammonia, dissolved oxygen, and nitrogen contents of nearby bodies of water, my tests indicate the answer is there is little correlation in times of low flow in those tributaries.

Conclusions/Discussion
In times of low flow, inland runoff does not measurably affect ocean water quality. I predict with a lot of runoff, the water chemistry will be affected. This is demonstrated by the relationship between Carpinteria Creek and the Lagoon. When there is little flow in the creek, they had different chemical compositions. Carpinteria Salt Marsh and Holly Street Beach also support my opinion. Different results were observed in these two areas because the Salt Marsh does not flow out near Holly Street Beach. This might t because the ocean is a large body of water and any tributary that flows into it is so small, it does not make a difference.

Summary Statement
My project involed testing the creeks and oceans around Carpinteria, CA, for ammonia, nitrogen, dissolved oxygen, and pH in an effort to discover any types of pollution.

Help Received
Dad helped a little bit with board graphics, Mom and Dad drove me around to test sites.