



Journal of Student Research on Puget Sound

The collected reports of the student scientific explorations aboard the *SV Carlyn*

Salish Sea Expeditions is a catalyst for students in their inquiry of Puget Sound through boat based-scientific exploration.

If there is more plankton, then the clarity will be less because plankton made the water cloudy.

**Cleveland High School - 10th-12th Grade
Seattle, Washington**



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Salish Sea Expeditions
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School: Cleveland High School
Dates: October 4-5th, 2006
Grade: 10-12th grade
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I. Title

Plankton and Water Clarity – Cleveland High Schools Investigation in Central Puget Sound

II. Abstract

Our prediction was; if there is more plankton, then the clarity will be less because plankton made the water cloudy. What we had predicted for the experiment was false. We dropped a zooplankton and a phytoplankton net in the water for 5 minutes, and then collected the sample in a jar. We used a secchi disk to measure the clarity of the water. We also checked the specimen under a microscope. Among other scientific activities we measured salinity, dissolved oxygen, measured temperature, and much more. Our data led us to reject our prediction because the water was pretty clear and we collected lots of plankton.

Our group was out for two days sailing the sound and camping on Blake Island. We learned boat schematics and how to set sail, and even drove the boat. We set up tents and cooked our own food, though we shared a large amount of it with raccoons. We need everyone on board to do a future study because they're good scientists and captains. <3 =)

III. Introduction

The direct reason we chose our subject, plankton, was because we wanted to know why our waters, Puget Sound, are so ugly compared to say, the Bahamas. Our group thought where there was darker, dense water there was more plankton. We wanted to study the clarity of the water and how much plankton was in it.

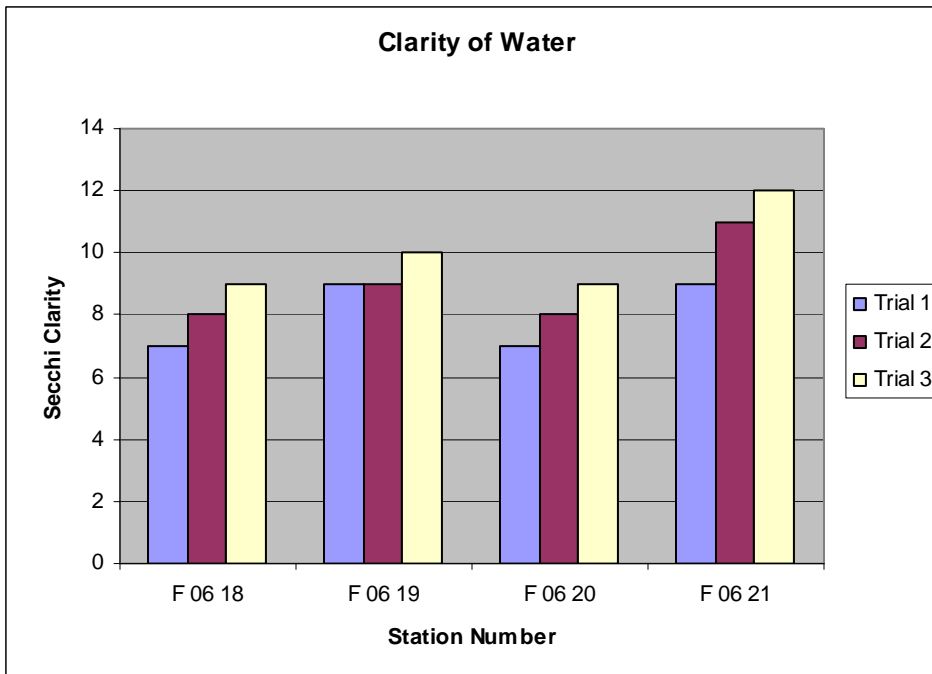
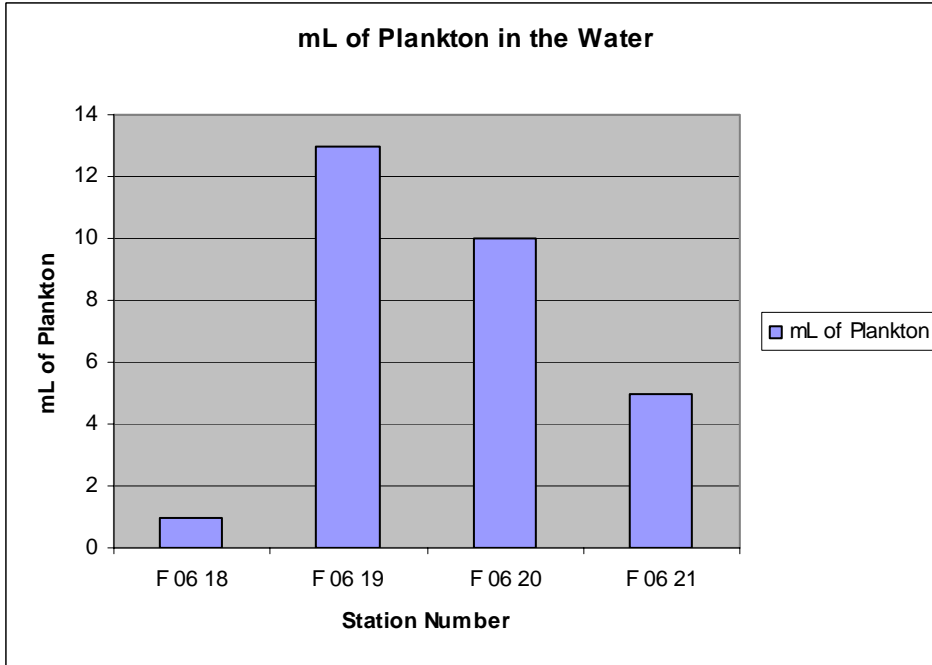
IV. Experimental Design

We sampled the water at four different locations: Elliot Bay, twice close to Blake Island, and last off of Alki point. To take water samples we used the Niskin bottle and lowered it to four (4) meters in the water. We used the probe to measure dissolved oxygen and the temperature. The Secchi disk helped us to measure the clarity of the water, meaning how clear it was. We also used the phytoplankton net and the zooplankton to catch plankton. We lowered it about four meters down for about five minutes during each tow. To measure the plankton we used graduated cylinders and measured them in milliliters. We compared how much plankton we caught in the morning compared to what we caught in the afternoon. Some people also identified plankton through the microscopes.

V. Results

We found out that the plankton did not have any relationship with the clarity of the water. With the different results that each of us collected, we discovered that there was more

plankton in water with more clarity, opposite to what we predicted. Observing the two graphs that we made, we realized that the area with the least clarity of water (8 meters), had the least amount of plankton (1 millileter). The greatest clarity found (9.33 meters) in the water had the most plankton (13 milliliters). Our results were very surprising because we thought that the there would be more plankton the area of the water where there was less clarity because we believe that the plankton absorb or block the sunlight.



VI. Discussion

We believed that where there was more plankton then there would be less clarity. We do not believe that our prediction was right. It might have depended on the location that we were in. Maybe plankton survive better where the water is cleaner. Maybe it's not the plankton that is affecting the waters clarity, it could be something else or a combination. It may be because of the sewerage or the pollution. If we were to change our experiment we should keep the nets in longer or test for something else like pollution. If I were to do this experiment again I would do different locations just to see how much our predictions are right I would do more testing and sampling in the water.

VII. Cruise Summary

Camping site:

- We were camping at Blake Island.
- We were in tents, the tents were pretty big and we shared the tents with the people of our choice.
- We had a great experience with raccoons.
- There were bathrooms up a hill and it had running water.

Food & Cooking:

- We got to choose all the foods we ate during the camp/boat trip.
- We had the opportunity to help cook while we were camping out.
- Before we went to bed we came together and ate cheesecake and s'mores.
- In the morning they woke us up to a nice hot breakfast (we had to help prepare!).

Sailing and Navigation:

- We got to sail the boat .
- We learned a lot about how it works and put up the sails.
- During the sailing period of the trip some people got sea sick (eeaww).
- On the way home, there were no waves so we sailed in and it took us a while to get home

Weather Preparation:

- It was cold. It would have been smart to bring plenty warm clothing.
- It didn't rain and that was the good part.

Shore Activities:

- We took many walks along the shore.
- Everybody participated in group talks.
- A few of the kids got together and built the tents.
- We got to make a fire with the leaves surrounding us.

Wildlife Sightings

- There were many deer.
- Fishes and crabs on the shore.
- Raccoons.
- Bald Eagles