



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.

**Peak to Peak School--Grade 7
Lafayette, Colorado**

Spring 2008

Salish Sea Expeditions
647 Horizon View Pl. N.W.
Bainbridge Island, WA 98110

phone: 206.780-7848
www.salish.org



Peak to Peak Adventure to the Salish Sea

ABSTRACT

Salish was the trip of the lifetime. There was fun packed in everything, the food, the games, the sailing, and even the science. The sailing was a main part of our trip. We set up all the sails, some at the same time and some at different times. We learned the parts of the sail and how to drive the boat. The games were amazing and known as the boat's gaming tradition. Even the crew was fun, especially the cook who had the most wonderful food. But even though we enjoyed all of these things the main thing we were there for was the science. We designed our own experiments, procedure and all. Our experiment was about where the majority of plankton lived, where, and why? We speculated that plankton would live closer to the surface because of warmer temperature, less salinity, and higher concentrations of light. Later on in this project we realized we had made a huge error, we would need to do phytoplankton and zooplankton instead of grouping them and only plankton. We redesigned our experiment and everything ran much smoother. The crew explained how the instruments worked and what they recorded, they showed us ways to organize it, and helped us assign positions and what to do. We learned very much especially that the more precise and specific your experiment is the better it will probably work out. As test continued we began to learn that our data was inconclusive and we were not able to reach a verdict on if our hypothesis was correct or incorrect so we left it as undecided. The science was fun and really hard. Altogether, everything made the trip that much more interesting and better. We hope you enjoy and learn much from the rest of our essay.

INTRODUCTION

PREDICTION:

- IF we measure plankton at different depths.
- THEN there will be more plankton at the surface.
- BECAUSE of warmer temperatures, less salinity, and more light.

Overall it was a fun trip, but the science made it educational. We, being students of science, had to use the scientific method to display our information. So, we will start off with the prediction, as it was written on the board. Our prediction was that we would find more plankton near the surface. Even though we live so far from the ocean, what we learned is valuable information that teaches us about the lands around, and provides an insight to what happens in the ocean other than just water sitting around. We come away with new views.

Now we are going to talk about Puget Sound, the great water inlet of Washington. As we learned in Washington, Puget Sound is a subduction zone where the Juan de Fuca plate is going under the North American plate. It is crowded with islands that are part of the national parks. The importance of plankton is that they feed the whales and eat nutrients in the water. They are also

food for other animals. Phytoplankton are plant like while the zooplankton look like bugs and animals.

Home to both strange water wildlife and strange land animals, Puget Sound was very unique and different from Colorado. New discoveries were made every day, and we had fun that was off the charts.

TRIP SUMMARY

First day

We got there by driving to the school at 5:00. Then we drove to the airport at 6:00 clock. Our plane left at 8:00 a.m. After a two hour plane ride we landed in Washington and drove to the Salish port, where we started our exciting trip that will be something we will never forget. First we got the all mighty BANANA SUITS!!!! We got different color life vests (Blue life vest: water, Red life vest: wind). Then there was an awesome ride to our first island we slept on Peanut Island (James Island)!!!!!! It was extremely windy that night but the food was great on land, we had hobo pockets for dinner and chocolate fondue for desert. On the boat they had pesto, it was really good. On land there were raccoons that would start screech in the middle of the night.

Second Day

On land was wind and for breakfast was delicious. We packed up all the stuff and the water group came on land and some of the people went on a hike on the island. The rest of the group was learning some cool stuff on the beach. After that we got on the boat and started to sail into big waters. We were going slower than walking speed. Many people got sea sick but only two people threw up. Then we decided to turn around. Some people were very happy that we turned around. Later in the day we got to our island for the night, it was Spenser's Spit. After water group got set up they went to explore the island.

Third Day

When we got packed up in the morning we all loaded back on to the boat. The whole rest of the day was smooth sailing. When we went through pole pass we all sang our weird songs. And we all cheered when we made it through. After we all got to Jones Island. We got set up and had dinner. After we all finished water came on land and played games. After all the fun we went to sleep wondering what the next day would be like.

EXPERIMENT PROCEDURE

Prediction:

If we measure plankton at different depths then there will be more plankton near the surface because of warmer temperatures, less salinity, and more light.

Manipulated Variable: depth and location.

Responding Variable: salinity, temp, light, and amount of plankton.

Controlled Variable: tools and duration of time.

Equipment Used	What it Does
• Secchi Disk	Light penetration in meters
• Niskin Bottle	Collects water samples from various depths
• Thermometer	Temp in Celcius
• Refractometer	Concentration of salt in water
• Nets	Collect plankton
• Timer	Time
• Line	Measure in meters

DATA

Date: April 15, 2008
 Scribe: Mo (Morgan Hazzard)
 Cloud Cover: 93%
 Beaufort Scale: Force 2 (1-3 Knots)
 Precipitation: Yes
 Time: 1:15 pm
 Latitude: N 48 25.3'
 Longitude: W 122 47.6'
 Position: Lopez S

Data:	2m	7m
Salinity:	34 ppt	33 ppt
Temp:	7.8 C	7.7 C
Nets: Zooplankton	22 ml	30 ml
Phytoplankton	13 ml	10.5 ml
Secchi Disk:	To Windy	

Date: April 15, 2008
 Scribe: Galen
 Cloud Cover: 100%
 Beaufort Scale: Force 2
 Precipitation: No
 Time: 3:50
 Latitude: 48 32.628'
 Longitude: 122 50.278'
 Position: Thatcher's Passage

Data:	2m	7m
Salinity:	32 ppt	34 ppt
Temp:	8.1 C	8.3 C
Nets: Zooplankton	19 ml	19ml
Phytoplankton	34 ml	31 ml
Secchi Disk:	Avg 5.5 m	

Date: April 16, 2008
 Scribe: Yaejin

Cloud Cover: 100%
Beaufort Scale: Force 2
Precipitation: ?
Time: 10:58 am
Latitude: N 48 34.3'
Longitude: W 122 52.0'
Position: Harney Channel

Data:	2m	7m
Salinity:	35 ppt	31 ppt
Temp:	8.1 C	8.0 C
Nets: Zooplankton	10 ml	56 ml
Phytoplankton	85 ml	70 ml
Secchi Disk:	Avg 5.6	

Discussion

Prediction:

If we measure plankton at different depths

Then there will be more plankton near the surface

Because of warmer temperatures, more sunlight and less salinity

Problems:

There were some problems with some of the deployments. One problem was the boat was moving so we were unable to get the science equipment very deep. Also we didn't even deploy the second day because the water was too rough. This also spawned another problem because now we had one less deployment. While we encountered a large wave on of our test tubes spilled resulting in a missing essential piece of information.

Next time...

If we could do this experiment again we should have collected more data (day 2). We should have waited until the boat completely stopped (put anchor down) so, we could get our equipment to an accurate depth. We should not have gone into big water, so we could get more experimenting time. We should have been more cautious about what we do with each test tube to prevent missing any data.

Conclusion:

The end result of our experiment was that it was undecided. We decided that because we had some missing data and it was too similar. Also we didn't have enough data.

WHAT WE LEARNED

The stuff that we learned on Salish sea expeditions was sailing. Sailing was awesome. We learned how to set sails and tack also how to drive the boat and be Capitan. With all our sailing and new talent we were able to sail the boat on our own. We sailed to many different islands we

went to James Island AKA peanut island, Jones Island, Spencer spit and cypress. Every day two people would check the weather to see where we could sail in so we knew what we where getting in to. Before we got to cypress we were faced with a challenge in which the wind watch (red life jackets) had to set all 4 (Jib, mizzen, stay and main) sails the water watch (blue life jackets) could talk but not touch while the wind watch could touch but not talk. In the next challenge we needed to deploy all our science equipment but now the water watch could touch but not talk while the wind watch could talk but not touch. We passed both challenges with flying colors. At the end of the trip we could set and strike all the sails. The entire trip was really fun but hard we all loved this amazing sailing trip