

Note: This lab memo was written in a group.

Introduction

Before we began our experiment, our group hypothesized general information about our four different sampling locations: College Creek, upstream of Fern Lake, in Fern Lake near the outlet, and in Jolly Giant Creek upstream of the dorms. This general information included estimations for the four following measures of water quality: turbidity, temperature, pH, and dissolved oxygen. After each of these hypotheses, our group went to each sampling location and tested each of the four aforementioned indicators of water quality.

Materials and Methods

Our materials for this lab that we used to measure water quality were pH, turbidity, temperature, and dissolved oxygen readers. Our pH meter was not working correctly, therefore we had to gather the data from another group to record in our results. Additionally, we made use of a bucket, a pencil, a data sheet, our willing minds, and positive vibes. In the course of measuring turbidity, we triplicated our data for more accurate results. Something interesting to note: our calibrated turbidity reading was not 10 NTUs, but, rather, 10.18 NTUs. Our data for College Creek was given to our group as historical data due to a relatively recent introduction of the New Zealand Mud Snail, an invasive species.

Results

Overall, our group's water quality data showed relatively good results for the sampling locations around Humboldt State University's campus. The only oddities were found in the locations of College Creek and the Jolly Giant Creek upstream of the dorms. Upstream of Jolly Giant Creek our data for the pH of the water was given as 5.41, which is a bit low for the water system. The oddity found in College Creek was much more severe - the turbidity reading was found to be 26 NTUs, which is much higher than normal. This was not data measured by our group, but, rather, the historical data given to us. Aside from these abnormalities in water quality, all other readings were satisfactory.

Location	DO (mg/L)	Temperature (°C)	pH	Avg. Turbidity Reading from the site (NTU)
College Creek	9.7	13.7	6.9	26
Upstream of Fern Lake	10.47	12.1	6.65	0.73
Fern Lake near the Outlet	7.16	15.1	6.45	1.44
Jolly Giant Creek upstream of the dorms	10.63	12	5.41	0.47

Discussion

Our results show that each of the water systems measured are in good relative health. The College Creek data was skewed as a result of all the anthropogenic sources of waste. The stream is located quite closely to a large dorm complex and it was seen to not only have invasive New Zealand Mud Snails, but trash from resident students as well. Our original question could be phrased as "How is the water quality of the system?". It has been answered in the following ways: for the majority of the measurements of the four various water systems, the water quality is acceptable. The only major discrepancies were found in College Creek, a water system close to student dorms that collects much anthropogenic pollution as a result of this. Therefore the data answers our original questions pertaining to water quality.

Conclusion

To conclude, our data shows that most of the water sites we tested fall into acceptable parameters for such systems. Aside from the abnormalities found within College Creek, due to previously stated issues, the water quality is up to standard.

Appendices

Individual Tasks:

- **Data Writing:** Sophia Bacting, Katelyn Brady, Max Wrigley, & Sabrinna Rios Romero
- **Collections:** Sophia Bacting, Katelyn Brady, Max Wrigley, & Sabrinna Rios Romero
- **Picture Documentations:** Sophia Bacting

College Creek:



Fern Lake near the outlet:

Upstream of Fern Lake:

Jolly Giant Creek-Upstream of Dorms:



Location	DO (mg/L)	Temperature (°C)	pH	Turbidity Reading with 10 NTU Sample	Turbidity Reading from the site (NTU)
College Creek	9.7	13.7	6.9	N/A	26
Upstream of Fern Lake	10.47	12.1	6.65	10.18	[0.78][1.03][0.93]
Fern Lake near the Outlet	7.16	15.1	6.45	10.18	[1.89][1.08][1.90]
Jolly Giant Creek upstream of the dorms	10.63	12	5.41	10.18	[1.17][0.41][0.37]

Raw Data