**Conclusions**

The intensity of the El Nino storm did in fact drastically affect the levels of nutrients found in the Arroyo del Valle creek. The intensity of the winter storms also affected other factors of the creek, such as the temperature and the flow rate.

We had predicted that the intensity of the El Nino storms would lower the levels of nutrients found in the creek this winter. After collecting all of our data, we compared it to the data gathered from the Arroyo del Valle Creek from previous years. Factors that could have influenced the levels of nutrients are all of the run-off soil, and flood water that was drained into the creek through storm drains and gutters. Also pollution from items caused by items that were carried down the creek may also have influenced the levels.

The phosphate levels found this winter in the creek were very low. This winter the averaged level was .08ppm. Previous winter's averaged phosphate level was .52ppm. There was a drastic difference between the phosphate levels from this winter, as opposed to the phosphate levels from previous winters. Phosphate in as important nutrient because plants need phosphates to grow. If there are a lot of phosphates, then there will be a lot of plants both on land and in the water.

Another important nutrient for plant growth is nitrate. This winter's average nitrate level was .08ppm. Previous years combined average level was .87ppm. This also was a drastic difference. Our hypothesis was correct in this instance as well.

The levels of dissolved oxygen, or DO, in the creek this winter was 7.33ppm. This is lower than the average of past year's level of 9.56. The DO level helps to determine the productivity level of the creek as well. DO is a waste product of photosynthesis, so a higher DO indicates higher amount of plants in the water.

The pH of the water was lower than that of previous year's as well. The combined average pH of the Arroyo del Valle Creek this winter was 7.33. The combined average of pH from previous winters was 8.16. pH levels let us know the acidity level of a water system, and any shifts can cause an unbalance in aquatic equilibrium

The combined average temperature this winter was 11.2C. That is drastically lower than the combined average from previous winters of 17.1C. We were surprised by how much lower the temperature of the water was. The temperature was probably lower because the depth was much greater. The deeper a body of water is, the colder it tends to be. It is harder for the light from the sun to penetrate very far into deep water, so it tends to be colder.

The flow rate of the creek was also drastically lower this winter that previous winters. The combined average flow rate this winter was 1.21 ft/sec. This indicates that the styrofoam ball that we used to test the rate of flow with traveled 1.21 feet per every second that passed. This is incredibly fast! One reason may be because of the constant rain, which dramatically affected the levels of the creek, and also rushed into the creek from storm drains and gutters.

All of the levels of nutrients found in our creek were lower this year. The intensity of the El Nino storm did infact affect the levels of everything in our creek. Our hypothesis was correct.

[**Back Home**](http://docs.google.com/Index.html)