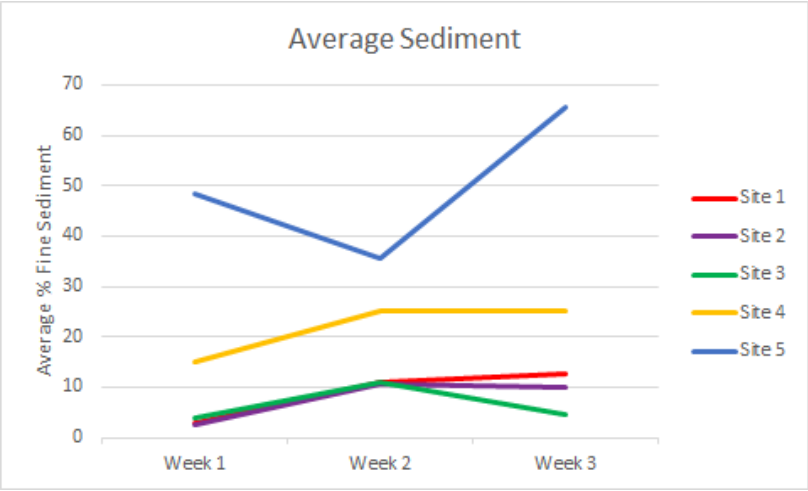
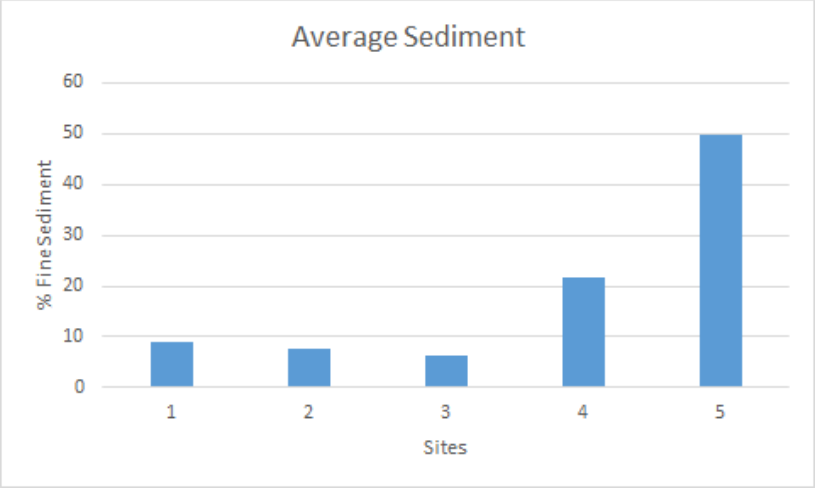
The issue we investigated was whether there was a higher amount of fine sediment at lower elevations in Sonoma Creek. We chose to do this because we had done experiments in other creeks in our watershed and wanted to expand our research to other locations. We wanted to see if Sonoma Creek was a good area for salmon and trout to spawn.

We already knew that rainbow trout are located in the upper area of the creek in Sugarloaf National Park. Knowing that the trout spawn there, we wanted to make sure that the amount of fine sediment was adequate for spawning. We also knew that the area of Sonoma Creek in Sugarloaf had varying elevations the further downstream we went.

We first went to Sonoma Creek located Sugarloaf State Park and identified five sites to test. Since we wanted to test the average amount of fine sediment at different elevations, we chose sites that represented the widest range of elevation. Our first site, located at Heritage Tree had an elevation of 1320 feet; our second site had an elevation of 1280 feet; our third site had an elevation of 1240 feet; our fourth site had an elevation of 760 feet, and our fifth site had an elevation of 720 feet. Over the course of three consecutive Friday mornings, we tested at each of the five sites. At each site, we took 10 different fine sediment measurements. In order to do so we used a transect tape and laid it in the water for a total of ten feet. We then used an iPhone to calculate ten randomized numbers and used those numbers to look at the transect tape. For example, if the number was 2.7, we would look at the sediment at 2.7 on the transect tape with the underwater viewer. Lexi used the underwater viewer and her judgment (based on a source of different sizes of fine sediment) to determine how much fine sediment there was. Once we finalized all of our data and got the measurements for the different amounts of fine sediment, we averaged the numbers. We collaborated with two community partners, Caitlin Cornwall, the research program manager at the Sonoma Ecology Center and John Roney, the park manager at Sugarloaf State Park. Caitlin Cornwall gave us advice about what to test and how to do so, and gave us information about where we could find certain fish within Sonoma Creek. John Roney assisted us in the beginning of the project to help us find specific sites within Sugarloaf State Park.





The top graph shows the average percentage of fine sediment at all five sites throughout the three weeks of testing. Site 1, 2, and 3 have a lower average starting at week one but increase by week three. However, although site 3 is at a lower elevation than site 1 and 2, we believe that site 3 decreased in its average by week three because the site had lots of gravel and faster moving water that could have moved the sediment farther downstream. With site 5, the average dramatically dropped week 2. We think that the cause could have been because it rained that day, therefore the water could have been running much faster than usual thus moving the sediment farther downstream. The bottom graph shows the average percentage of fine sediment at each site throughout all three weeks. The trend shows that the lower in elevation you go, the more fine sediment will be in the water. With an exception to site 3, due to the reasons explained previously. The movement of fine sediment is contributed by many things: rain, water, wind, and erosion.

Sonoma Creek Watershed. (n.d.). Retrieved May 02, 2016, from http://www.sscrcd.org/watershed-sonoma-creek.php

This source gives background information about sonoma creek. It gives a summary of how long sonoma creek is, where it is located, and some general information about wildlife and the habitat surrounding sonoma creek. This source is important because it gives background information about sonoma creek and an explanation of where we researched and took out data.

Kemp, P., Et Al. (2011). The impacts of fine sediment on riverine fish. *Hydrological Processes*, *25*(11), 1800-1821. http://dx.doi.org/10.1002/ Hyp.7940

This is a scholarly journal article about the impacts of fine sediment on riverine fish. This is good background information because our study is researching the effects of sediment on fish. It gave us a good source to rely on when doing our research.