The Average Fine Sediment Levels at Different Elevations in Sonoma Creek

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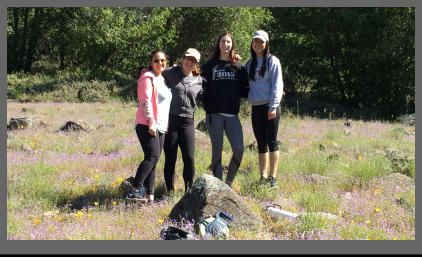


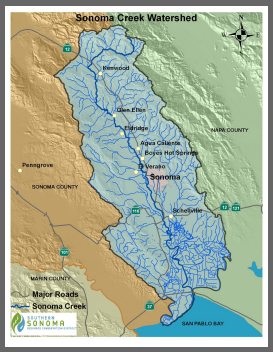
What is the difference in average fine sediment at different elevations in Sonoma Creek?

What is sediment?

- Geology definition: mineral or organic matter deposited by water, air, or ice
- An abundance of sediment can harm rainbow trout and cause them to:
  - Lower oxygen intake
  - Clog the gills
  - Lead to deformities or death
- Effects of fine sediment on redds can cause:
  - Stress, reduced oxygen acquisition, physical damage to gills, abrasion of tissues
- Effects of fine sediment on matured trout could:
  - Disrupt development

Sonoma Creek

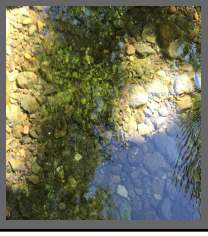
- Sonoma Creek is 170 miles long
- Flows 31 miles from its headwaters in Sugarloaf State Park to the northernmost part of San Pablo Bay
- There is evidence of rainbow trout within sonoma creek and Sugarloaf State Park

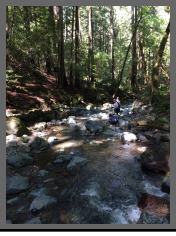


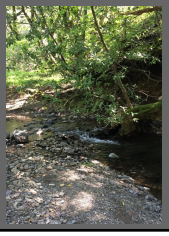
Sugarloaf State Park

Observations Before Testing

- There was evidence of erosion and sediment buildup from all sites along Sonoma Creek, even in areas we did not test
- There were a lot a large rocks that took up much of the surface area
- The water looked very clear and low

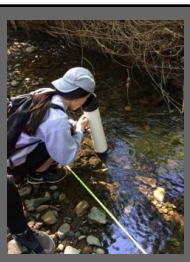






Our Timeline

- Finalized our question to compare the fine sediment levels in Sonoma Creek at different elevations
- We also wanted to see how that affects rainbow trout spawning and development
- Went to scope out the area and selected five sites along Sonoma Creek to test
- Collected data on three different Friday mornings

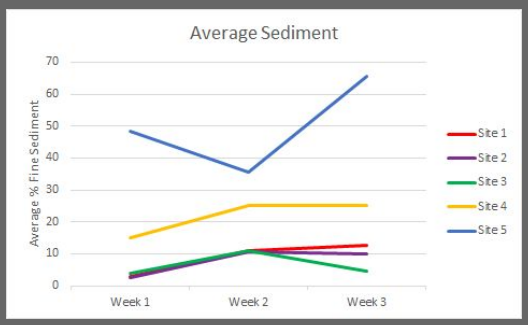


Equipment and Method

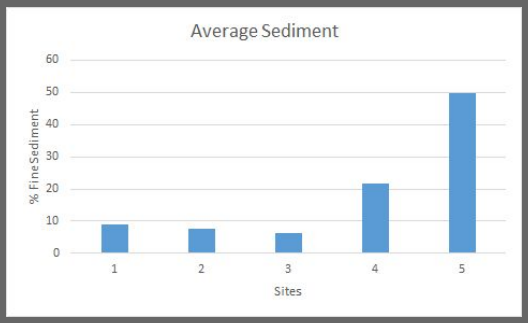
- Equipment
  - Transect tape
  - Underwater viewer
  - Calculator with randomization tool

- Methods
  - Layed 10 ft of the transect tape in the water
  - Used the randomization method to find ten spots along the transect tape
  - Used the underwater viewer to estimate the amount of fine sediment
  - Averaged the amount

Results



Results Cont.

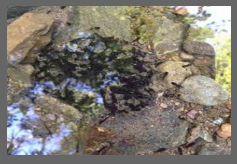


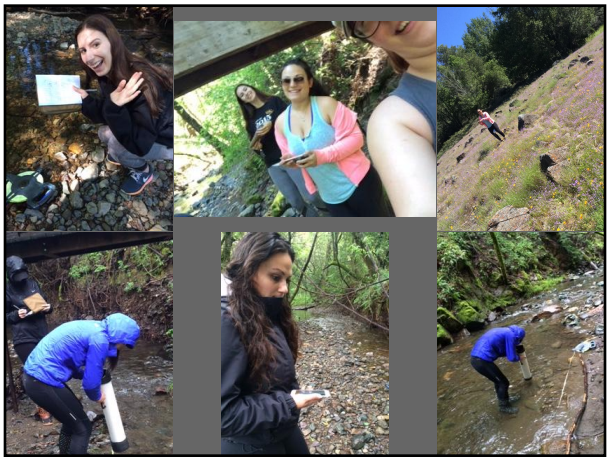
Discussion

- Our results show that there is a difference in average fine sediment in Sonoma Creek
- Higher elevations have less fine sediment compared to lower elevations
- This is caused by water constantly moving the sediment downstream
- In the future scientist can use turbidity tests to strengthen the data alongside with the underwater viewer

Challenges

- Rained on week 2 which made it hard to see the sediment
- At our furthest site we found frog eggs and we had to make sure we did not step on them while we were doing our testing





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Thank you to our community partners at Sonoma Ecology Center, Caitlin Cornwall and Sugarloaf State Park, John Roney for your guidance.

Thank you for your time.

Any questions or comments?

Picture Sources

- Slide 4: Map of Sonoma Creek
  http://www.sscrcd.org/watershed-sonoma-creek.php
- Slide 6: http://sciencedakineblog.blogspot.com/2010/08/transeeeeect-tapeeeeeee.html
  https://www.wardsci.com/store/catalog/product.jsp?catalog_number=210165
- Slide 7: Map of Sugarloaf
  http://www.mappery.com/Sugarloaf-Ridge-State-Park-Map

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