San Joaquin River’s Sediment Texture Features

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Abstract

• Are there any correlations between the textural features of the sediments between Turlock Lake and Riverbank formations based on their size? The environment and the energy of the water flow have an affect on the sediments’ Properties. The properties that were measured were: roundness, luster vs. dull, rough vs. smooth, and shape

• The bigger the rock, the rounder it will be because of the low energy flow of the river. All the properties will be compared with the different grain sizes. The bigger the rock, the rounder it will be because of the low energy flow of the river. Higher energy flow will shape rocks into spheres.

• Methods
  - The properties measured were roundness, luster vs. dull, rough vs. smooth, and shape. A scale of 1-6 was used to determine how well rounded and how smooth a grain is.

• A scale 1-4 was used to measure luster with 4 being very shiny and 1 being very dull.

• Shape index was used to determine the shape of the grain.

• Background
  - The researched sediments that were came from the Sierra Nevada Granite about 10 thousand to 1 million years ago. The different rocks that broke down from the Sierra Nevada were deposited down the river. On their journey down the river their original textural features were changed based on the energy of the water flow and the environment of the river. Some sediments did not traveled too far from their original source but others did.

Results

The sediments that stop on their journey were because the energy of the water flow was not strong enough to move the sediment through the system. Other sediments that were able to move down the system broke off into pieces and their features changed as they traveled until they were deposited on their final destination.

Discussion

The original form of the sediment is unknown. What we do know is that the sediment’s textural features changes as they travel through the system. The sediments that travel a long period of time in the system get smoother. Big sediments are round because the river with low energy flow is not able to move the sediment trough the system. The luster of the sediment is determine by different factors. One is the composition of the sediment. The more compositions the sediment has the least shiny it will be.

Conclusions

• Based on the research of the sediment from the San Joaquin River I came to the conclusion that there are different factors that have an affect of the sediment’s properties. Between the smaller grain sizes and the bigger grain sizes there are some differences. The differences are the smaller the sediments they tend to have more luster and their shape changes to a more angular.

• Goal for future study
  - Other studies will focus on the compositions of the sediments to determine if the compositions has an affect on their textural feature.
  - Another study will focus on the environment that the salmon like. Can salmon be brought back to the river? By learning how the sediments are transfer on the system and their textural feature we will know what type of energy flow that will benefit the salmon’s living environment.

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