

## **PARTICLE SIZE DISTRIBUTION OF FLUVIAL SEDIMENTS OF DEDURU OYA**

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Fluvial sediments play a crucial role in shaping the Earth's surface and influencing various geological and ecological processes. Fluvial sediment analysis specifically focuses on the study of sediment transported and deposited by rivers and streams. Fluvial sediments are essential indicators of river dynamics, erosion processes, sediment transport, and the interaction between rivers and their surrounding environments. The objective of the study is to identify the particle size distribution of the fluvial sediments of Deduru Oya. For that, 23 sediment samples - seven from high elevations, nine from mid elevations and seven from low elevations - were collected and their particle size distribution was analyzed by using Hydrometer and Sieve Analysis. The tests were carried out according to ASTM Standards. The sediments were graded according to their particle size distribution graphs, ranging from Well Graded, Uniformly Graded, and Gap Graded soils. It is observed that samples collected from the higher elevations tend to demonstrate a good particle distribution. The samples collected from the mid elevations have poor gradation with one or two particle size domination. The soil samples collected from the lower elevations have a well graded distribution. Another observation was, the sediment particles that were collected for this study do not behave similar to the classic stream sediment particle size distribution. In this study some upper stream samples contained clay and silt particles with less coarse particles. Mature stage soil samples mostly have the expected outcome with high concentrations of fine sand particles. The old stage soil samples have a wide range of particle distribution instead of high concentrations of clay and silt. Most of the soil samples have higher concentrations of fine sand, a mean of 49.39%. Thus, the particle size composition of the fluvial sediments in fluvial systems of Deduru Oya depends both natural processes and anthropogenic influence.

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