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## **Channel Bottom Alluvium Sourcing through Sedimentological Characteristics within Mill Creek, Rankin County, Mississippi**

**Chad Killcreas and Zachary A. Musselman**

Millsaps College, 1701 N. State St., Box 150648, Jackson, Mississippi 39210

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### **ABSTRACT**

The goal of this study was to investigate a possible relationship between in-channel alluvium and substrate found in Mill Creek sampled from various points between its headwaters near Brandon, Mississippi, and its mouth in Pelahatchie Bay within the Ross Barnett Reservoir. Textural characteristics of 26 samples were analyzed to determine grain size, shape, and roundness/angularity. We hypothesize that the dominant grain size and other textural characteristics of the channel bottom alluvium transported by the stream can be used to correlate them with their source. This study also hopes to provide evidence that anthropogenic factors may be, at least in part, responsible for the perceived increase in sediment transported by the stream in recent years. Mill Creek originates in manmade lakes and has experienced drastic changes in land use within its drainage basin over the last few decades. The amount of land in farms within Rankin County has dropped from 63% in 1950 to 26% in 2002. Preliminary results show that the dominant sediment being transported are fine and very fine, angular to sub-angular, clear sands with little to no coatings. Mineralogically the sediment is dominated by quartz with some potassium feldspar, calcite, and possibly gypsum.