DEVELOPING QUARRY CAPTURE PREVENTION TECHNIQUES ON THE BUTTAHATCHIE RIVER[1]

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Abstract: Alluvial deposits *(Holocene)* have made the harvest of sand and gravel profitable in the Buttahatchie River watershed. Historically, excavations in and adjacent to the river have altered the location and stability of the channel. Many inactive, pre-regulation quarries are still found concentrated along the lower 20 km of the main channel. Construction of the Tennessee-Tombigbee Watershed, of which the Buttahatchie River is a tributary, and the resultant head-cutting, have further exacerbated the process of "quarry capture", whereby the river channel changes course into a quarry[3].

With partners from Mississippi State University, and with support from the US Fish & Wildlife Service, The Nature Conservancy has undertaken a project to develop and implement stabilization BMPs to prevent further quarry capture on the Buttahatchie River. Utilizing LiDAR mapping of the area and modeling of flow patterns, this project will identify points vulnerable to quarry capture, and design and construct appropriate stabilization techniques. Techniques are expected to be *both* specific to the individual characteristics of each site, *and* exportable to vulnerable channels in other watersheds.

Additional Keywords: gravel quarries, channel adjustment, channel capture, river bank stabilization

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[3] Pollen, N., A. Simon, L. Klimetz, and D. Klimetz. 2005. Stability Analysis of the Buttahatchie River, Mississippi and Alabama. Submitted by USDE-Agricultural Resources Service National Sedimentation Laboratory to Mississippi Department of Environmental Quality, 135pp.