Tufa Diagenesis in a Carbonate Karst Fluvial Environment

[Abstract]

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Tufa Diagenesis in a Carbonate Karst Fluvial Environment [Abstract]

Moderate amounts of tufa, often referred to as meteogene travertine, are found precipitating in Gorman Stream, a small stream originating as a karst spring within close proximity to the Colorado River in Colorado Bend State Park, San Saba County, Texas. The karst spring and associated stream coarse are developed in the Ordovician Ellenburger Formation. Tufa deposits cover plant material and stream channel. The deposits continue with increasing density throughout the remainder of Gorman Stream where it eventually develops large stalactite-like structures within the 10-meter tall Gorman Falls. Water chemistry was analyzed throughout the length of the mapped stream, including: pH, total dissolved solid, and temperature. Water emerging from Gorman Springs is under-saturated with calcite. Overland flow continues to increase in carbonate concentration throughout the first several hundred meters of stream course before tufa precipitation begins. In the downstream section, tufa concentration increases with spatial variability. Current research is being conducted by analyzing variation in fluid geochemistry in order to determine the control of spatial variation of the tufa deposits.