Geoarchaeology and the Tuscaloosa Gravels

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Learning about prehistoric cultures of the first Mississippians involves an in-depth knowledge of the details about their natural environment. Understanding the natural resources available to the early Native Americans provides us with essential insight to how they adapted to different regions of Mississippi as they developed and traded natural resources. As in most cases, throughout much of the thousands of years of time that spans Mississippi's vast archaeological record, utilized stone (referred to as lithics) is the only thing that has survived from their existence for archaeological study. We do know that the trade of lithics was an essential aspect to large swaths of the state because the geology in certain areas provides literally no availability of adequate naturally-occurring stone resources. Human existence has always been about natural resource logistics, and the first inhabitants mastered the geologic resources that were available. As we study and map the geology of the state we re-learn about, in great detail, where certain lithic resources naturally originated. This insight is invaluable when studying lithics from archaeological sites as it provides insight to exactly where people have been and from what distance and regions of trade people have been in contact with. This article will focus on one resource in particular--the gravels of Tuscaloosa Formation.

Outcrops of the Tuscaloosa Formation are Cretaceous age chert gravels derived from Paleozoic era limestones that occur along the Mississippi-Alabama border from Tishomingo County south to Lowndes County. Gravels of the Tuscaloosa Formation are predominantly chert with lesser occurrences of grainy clasts of metamorphic quartz and white vein quartz that derived from deeper in the Alabama Piedmont. Chert gravels of this formation are derived largely from the erosion of the bedrock of the Fort Payne, Tuscumbia, and Bangor limestones which the Tuscaloosa Formation unconformably on-laps bordering the foothills of the Appalachians and the Gulf Coastal Plain. Gravels from the Tuscaloosa Formation can also be redeposited to lower elevations into terraces and stream valleys along the Tombigbee River and its tributaries. These chert gravel resources were utilized widely throughout the north-central and east-central Mississippi Flatwoods region, in the hills of the Wilcox belt, and across the Black Belt region of northeast Mississippi due to lack of

Stylolite in Tuscumbia Limestone from riprap at the Ross Barnett Reservoir spillway, Rankin County, Mississippi.

naturally-available chert resources occurring in the area. These chert gravels vary naturally in color in shades of tan, red, pink, gray, black, brown, yellow, and white. Tuscaloosa chert gravel clast commonly retain pressure-solution features, called stylolites, from their origins in the bedrock limestone. These occur as zig-zag patterns and are typically infilled with secondary quartz or chalcedony minerals. These flaws in the rock often cause problems during the manufacturing of stone tools by pre-historic peoples. Heat-treating to better the stone was a common practice for processing Tuscaloosa gravel. Heat-treated Tuscaloosa chert gravel typically exhibits a distinctive red and pink mottled appearance and can strongly contrasts the stylolites in the stone.

Lithic materials are a growing field of study for MDEQ's Office of Geology. Updates to the website and a Native Lithic Material Sources map was recently published. Find out more here.

Mississippi's Native Lithic Material Sources

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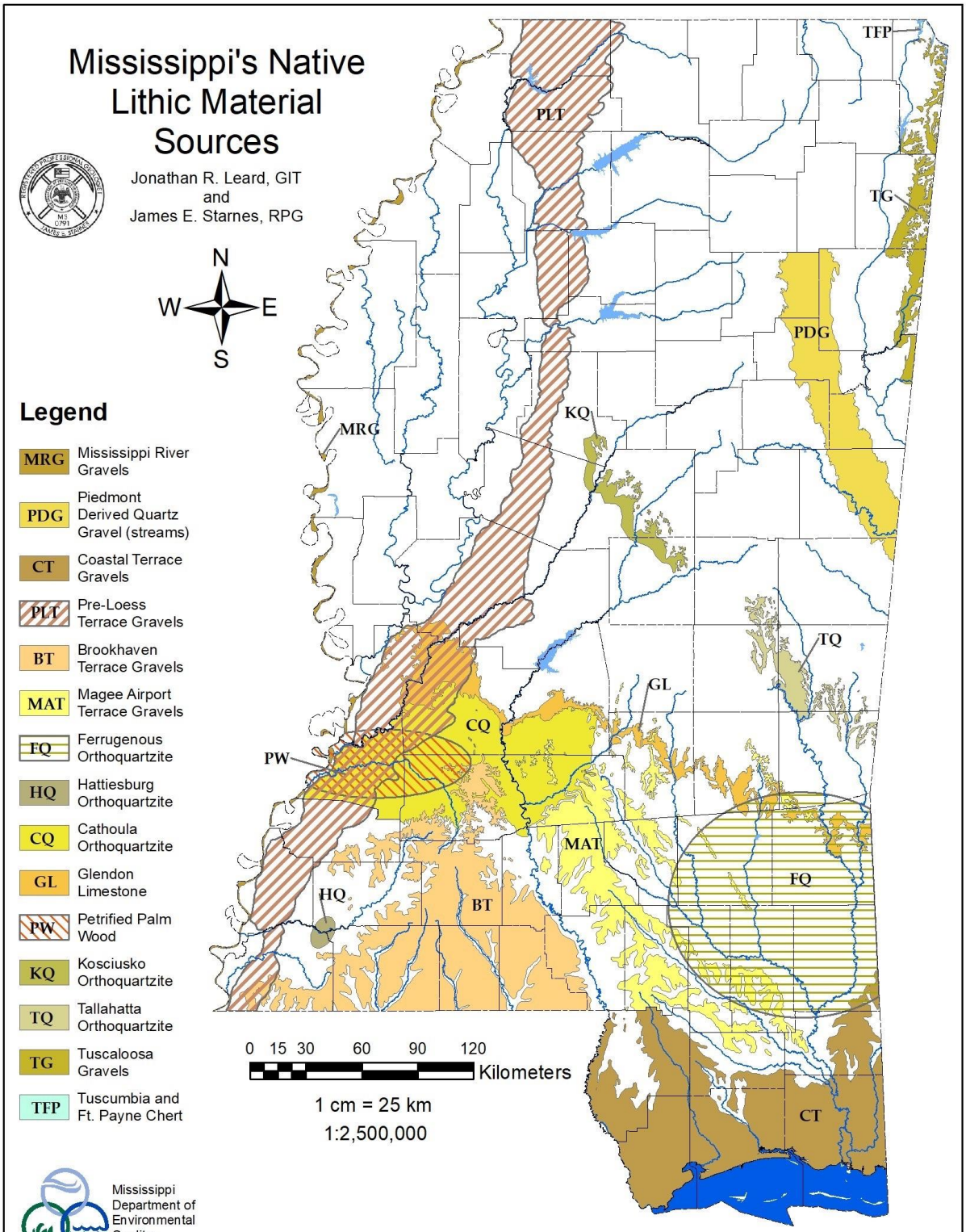

Legend

- MRG — Mississippi River Gravels
- PDG — Piedmont Derived Quartz Gravel (streams)
- CT — Coastal Terrace Gravels
- PLT — Pre-Loess Terrace Gravels
- BT — Brookhaven Terrace Gravels
- MAT — Magee Airport Terrace Gravels
- FQ — Ferrugenous Orthoquartzite
- HQ — Hattiesburg Orthoquartzite
- CQ — Cathoula Orthoquartzite
- GL — Glendon Limestone
- PW — Petrified Palm Wood
- KQ — Kosciusko Orthoquartzite
- TQ — Tallahatta Orthoquartzite
- TG — Tuscaloosa Gravels
- TFP — Tuscumbia and Ft. Payne Chert

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