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## Chert Gravel and Neogene Drainage in East-central Kansas

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### ABSTRACT

Eastern Kansas has an active geomorphic regime dominated by stream erosion, which is strongly influenced by bedrock structure. Alluvial deposits of chert gravel of presumed Neogene age are widespread and abundant on hilltops and high terraces throughout the region. Many of these gravels contain quartzite and other exotic pebbles derived from western sources. Geographic information system (GIS) techniques are used to document and analyze the spatial distribution of upland chert gravel deposits. On this basis, Neogene drainage routes may be recognized for the ancestral Arkansas, ancestral Verdigris, ancestral Neosho, and ancestral Marais des Cygnes.

These drainages bore little resemblance in position or direction to the modern rivers. Stream captures, valley entrenchment, and wholesale inversion of topography led to the modern drainage systems. During entrenchment, streams have shifted systematically southward and eastward, possibly as a result of long-term and continuing crustal tilting (neotectonism) down toward the Gulf of Mexico.

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