

## ABSTRACT

Sediments exposed within the banks of a low-order tributary in central West Virginia reveal that alluvial and colluvial systems were both geomorphologically active from late middle Wisconsin (OIS 3) through more recent time. This complex deposit records distinct depositional episodes including a lower sediment package containing organic-bearing slackwater deposits and alluvial deposits unconformably underlying an upper package consisting of co-alluvium, a variant of colluvium and alluvium, with pedogenic overprinting. Geomorphologic reconstruction suggests the lower sediment package is largely alluvium deposited in high-energy streams bracketed by two distinct periods of slackwater deposition and associated organic matter accumulation. The upper sediment package was deposited under co-alluvial conditions with both colluvial and alluvial processes contributing sediment.

Radiometric dating of the lowermost and topmost organic-bearing units indicates that sedimentation and hollow infilling commenced prior to 39,320  $^{14}\text{C}$  years before present (YBP) and ceased by approximately 33,800  $^{14}\text{C}$  YBP. Geomorphologic responses to changing environmental conditions, possibly related to the occasional intrusion of warm tropical air into the area, during the late phases of OIS 3 and the transition to OIS 2 are responsible for deposition of the lower sediment package. Deposition of the upper co-alluvial package occurred from subsequent to 33,800  $^{14}\text{C}$  YBP by both high-energy stream and colluvial processes. Furthermore, the weak degree of pedogenic development above a paleosol at the upper sediment package base suggests the upper portion of the deposit may be significantly younger than the underlying sediments and possibly emplaced by geomorphic instability linked to the OIS 2-OIS 1 transition.