

Presentation 3: Shawn Joy

The Trouble with the Curve: Reevaluating the Gulf of Mexico Sea-Level Curve

During last glacial episode, roughly 5% of Earth's surface water was locked within ice sheets, resulting in a reduction in global sea-levels by 134 meters. The reintroduction of freshwater into the oceans radically changed global sea-levels and littoral landscapes. Over the last 20,000 years, approximately 15-20 million km² of landscape has been submerged worldwide. Sea-level rise explains the rarity of glacial period coastal archaeological sites. Understanding Florida's Paleoindians' interactions with the coastal environment requires an accurate sea-level curve for the Gulf of Mexico. Balsillie and Donoghue (2004) sea-level curve has been the standard model for oceanic transgression in the Gulf for over a decade. Yet, when compared to both local and global sea-level curves, there are discontinuities within their model. This paper will address the issues with Balsillie and Donoghue (2004) curve, introduce new data and methodologies to enhance the Gulf of Mexico sea-level curve, and improve distribution modeling for submerged archaeological sites.