

Rivers of the Anthropocene Phase 1: A Comparative Study of the Tyne and Ohio River Valleys

Aaron M. Stump¹, Broxton W. Bird¹, Jeremy Wilson²

¹Department of Earth Sciences, IUPUI School of Science; ²Department of Anthropology, IUPUI School of Liberal Arts

The Rivers of the Anthropocene project is an international effort. Our part is an attempt to determine flood frequency and land use by American Indian tribes of the Mississippian Culture along the Ohio River. Methodologically, we will measure the physical and geochemical properties of lacustrine sediments recovered from Hovey Lake, a flood plane lake located on the Ohio River in southwestern Indiana. Sediment cores taken from Hovey Lake are being measured for bulk density and loss-on-ignition tests to determine organic composition by weight. Magnetic susceptibility is also being measured to determine variations in the delivery of terrestrial material (e.g. from flooding/land erosion) to the lake. Land use will be evaluated by measuring variations in the elemental abundance and isotopic composition of nitrogen and organic carbon, which has been used in the past to identify prehistoric land use. Here we present the initial results of our ongoing work, including sedimentological and chronological data. Ultimately, these data will help bring together historical records, geochemical records, and other contributions from scientists around the world in our attempt to better understand mankind's impact on our environment.

Mentor: Broxton W. Bird, Department of Earth Sciences, School of Science, IUPUI