

Evaluation of Modern Analogs for Large-Scale, Late-Paleozoic Paleoriver Systems

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A variety of interpretations have been made regarding the depositional dynamics of ancient systems that characterize late Paleozoic sedimentary systems in the eastern and midcontinental U.S. Some of these paleorivers were large and may have rivaled the modern Amazon or Changjiang (Yangtze) river systems in terms of scale.

In addition to size scaling, other aspects of these modern analogs can aid in the understanding of late Paleozoic depositional systems. In both the Amazon and Changjiang system, deltaic and estuarine components are strongly influenced by large-range tidal systems. Because of the large size and low slope of the lower reaches of these rivers, tidal influences can extend for hundreds of km upstream from the coastal areas. Of the many unique characteristics of such tidally influenced rivers, the twice daily rise and fall of the tides results in the development of integrated tidal-flat/floodplains throughout the lower courses of these rivers.

Yet another similarity of these modern analogs to late Paleozoic paleorivers is the abundant of fine-grained sediment, particularly as it is concentrated within the coastal portions of the depositional system. Unlike estuarine models that predict coarse-grained in both the fluvial and marine ends of the depositional systems, both the Amazon and Changjiang system exhibit a marine-fining trend in their sedimentological dynamics. Ongoing research in these modern analogs is helping to provide the tools needed to complete our understanding of late Paleozoic siliciclastic systems.