

Stratigraphy and Sedimentology of the Late Cretaceous Kaiparowits and Wahweap Formations, Grand Staircase-Escalante National Monument, Utah

By

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This project will study the stratigraphy and sedimentology of the Late Cretaceous Kaiparowits and Wahweap formations, which crop out in the Grand Staircase-Escalante National Monument of southern Utah. The goals of the project are to establish a chronostratigraphic, paleogeographic, and paleoenvironmental framework for both formations. Also, based upon recent concepts and models of nonmarine sequence stratigraphy, it will be determined if the fully alluvial strata of the Kaiparowits and Wahweap formations can be delineated into a sequence stratigraphic framework. To accomplish these goals, both field and laboratory based investigations will be performed, with particular attention devoted to architectural analysis, paleosol analysis, provenance analysis, radiometric age dating of bentonites, and regional correlation.

The value of this project is as an empirical-based 'ground truth' study of recent model-driven concepts of alluvial sequence stratigraphy. In part, the objective of this study is to determine whether the alluvial strata of the Kaiparowits and Wahweap formations can be stratigraphically delineated into a sequence stratigraphic framework. Empirical-based studies, such as this, are crucial for establishing the utility and reliability of recent models and theories for alluvial sequence stratigraphy.