# Quantification of Fluvial Stratigraphic Architecture Using High-Resolution Laser Imaging (LiDAR)

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The stratigraphic architecture and heterogeneity of fluvial deposits affect the distribution, connectivity, and quality of associated reservoir sandstones. These attributes are often difficult or impossible to determine based on subsurface data and many assumptions are often necessary to estimate these parameters for 3-D reservoir characterization and modeling.
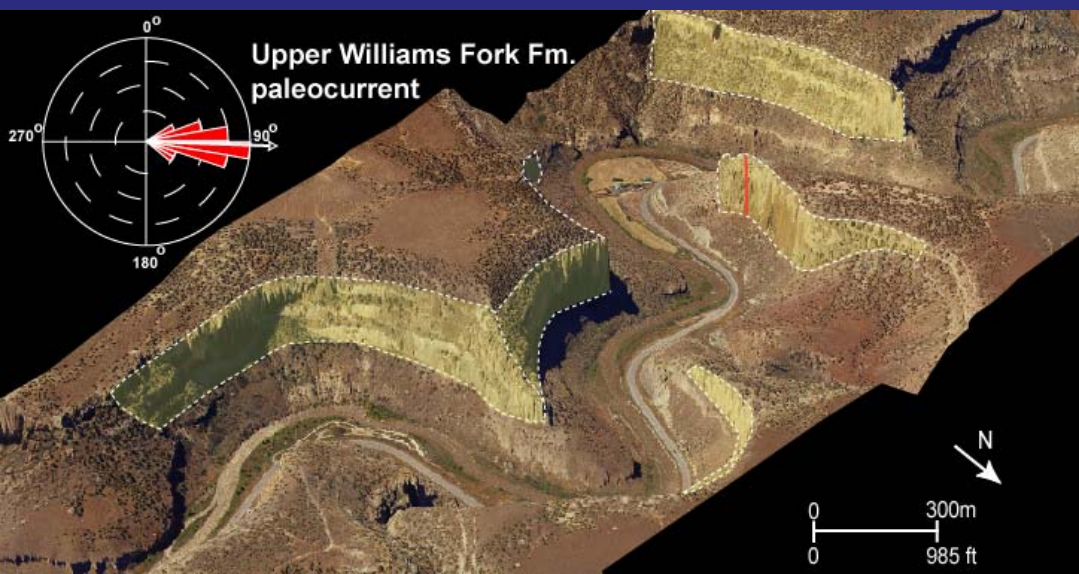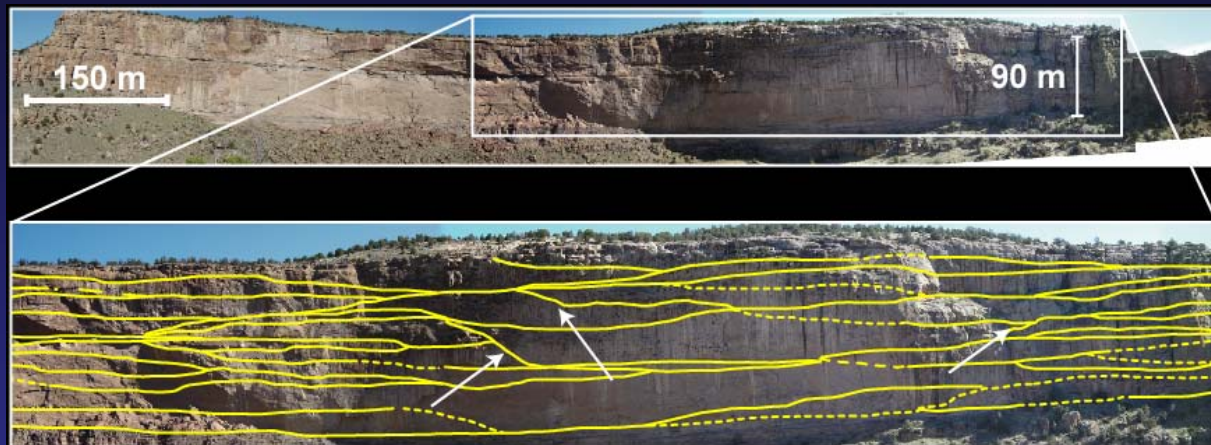
This project evaluates fluvial channel-body (sandstone-body) dimensions and architecture using outcrop analogs of the Lower and Upper Williams Fork Formation in Coal and Plateau Creek Canyons, Piceance Basin, Colorado. Unlike previous studies, to obtain detailed measurements of fluvial sandstone-body geometries, we utilized high-resolution aerial LiDAR and orthophotography. These data and results are important to improve 3-D fluvial characterization and modeling efforts of analogous subsurface petroleum reservoirs.