

Characterizing alluvial fan deposits in Vermont and eastern New York

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Over fifty alluvial fans have been identified and mapped throughout the state of Vermont and the Catskill region of New York. The fans are predominantly located in narrow stream valleys where high, steep hillslopes abruptly border a flat valley. Smaller fans (up to 10 meters high at the apex) are prevalent in valleys with underfit streams, or a well-developed fluvial terrace system that prevents upland-derived sediment from entering the larger trunk stream. Large fans (over 10 meters high at the apex) are present in wide river valleys where larger drainage basins empty into a major river, such as along the Connecticut River in Vermont and the Hudson and Susquehanna Rivers of New York. The surfaces of larger fans tend to be stable and contain incised streambeds, providing space for people to build houses, farms, and highways on the fans. Initial trenching of small alluvial fans in Vermont shows periods of hillslope erosion, represented by gravel and cobble deposits in the fan stratigraphy, followed by periods of depositional quiescence, represented by buried paleosols. The repetitious stratigraphy may be representative of regional megastorms that have passed through the area, or may reflect local severe thunderstorms capable of triggering hillslope erosion. The long term goal of this research is to compare the records of alluvial fan deposition with the presence of terrestrial sediment layers in lake cores taken from the same geographic region (see abstract by Noren et al., this meeting).