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# 1982 SECTION ABSTRACT FORM

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LATE CENOZOIC HISTORY OF THE UPPER WEBER AND PROVO RIVERS, N.E. UTAH

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Body of Abstract

Remnants of erosion surfaces and paleochannels show streams on the eastern slope of the Wasatch Mountains flowed eastward into the Weber River north of Heber Valley prior to normal faulting in the back valleys. Farther south, subsequent relative lowering of Heber Valley rejuvenated the Provo River basin and allowed drainage from the Strawberry area into Heber Valley to cut Daniels Canyon. Faulting also periodically disrupted stream channels in the Weber drainage and >200m thick fills accumulated in some of the back valleys. Amino acid ratios on gastropod shells suggest the closed-basin fill in the Ross Creek drainage north of Heber Valley was still being deposited ca. 500–700ka. Later, headward erosion at the north end of Heber Valley captured Ross Creek basin and continued eastward towards Rhodes Valley.

Soil profiles with stage III to V carbonate (23–75%) on terrace remnants 38–117m above the Weber River and on alluvial fans in Rhodes Valley testify to aggradational episodes related to glaciation in the Uinta Mountains ≥200ka. Similar fan remnants are found in Heber Valley. Lower (4–12m) continuous terraces along the Weber and uppermost Provo rivers grade into hummocky moraines in the rivers' headwaters showing they date from the last major glaciation. Weakly developed soil profiles with cambic B horizons, similar to those on the lower terraces, on the floors of Heber and northern Rhodes valleys indicate the floors were covered with outwash during the last glaciation. Soils with argillic horizons but no carbonate suggest the outwash filling southern Rhodes Valley is older. Because the diversion of the upper Provo River into Heber Valley was aided by extensive outwash deposition in southern Rhodes Valley, the diversion may predate the last major glaciation. Deep (30m) trenching of the Rhodes outwash by the Provo River following the diversion protected it from the later burial or erosion which left no evidence of correlative intermediate-age fluvial surfaces elsewhere in the river valleys.

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