



Figure S5. About 4 km south of Sand canyon near the mouth of Deer Creek Canyon, erosion from a blown out drainage canal exposed the upper 2 m of the range front strand of the Jackson Mountains fault zone in pre-Sehoo alluvial-fan sediments (see figure). The footwall consists of poorly sorted silty, sandy, cobbly alluvium with moderately well developed 25-cm-thick stage II+ Bk and 15-cm-thick Bk soil horizons. Both the degree of soil development and the fact that the Lahontan highstand shoreline is etched into the surface of the fan 600-700 m downslope of the Deer Creek exposure are consistent with a late Pleistocene age for these sediments. Two deposits of very poorly sorted silty, sandy, cobbly fault-scarp colluvium in the hanging wall are juxtaposed against the fan sediments across a west-dipping fault zone that in places is cemented with calcium carbonate. The lower, faulted scarp colluvium is capped by a 20-cm-thick buried soil that consists of A and incipient Bw soil horizons. Exposed thickness of the lower colluvium is about 50 cm. The upper colluvium consists of similar sediments and is capped with weakly developed Av and Bw soil horizons. The lower half of the upper colluvial wedge is in depositional contact with the carbonate-cemented fault zone, but the upper half lies on an inclined erosional remnant of the fault scarp free face. We interpret this exposure as evidence of a younger surface-rupturing earthquake with vertical separation of 1-1.5 m. The weakly developed soils bracketing the younger colluvium are consistent with a middle to late Holocene age for this earthquake. Lack of exposure of the base of the lower colluvium hinders estimation of the age of formation of this deposit, but the weak soil formed between the two colluviums suggests to us that the older earthquake may be latest Pleistocene or early Holocene in age. The fault scarp at the site was disturbed by the canal blowout, but we measured 4.6 m of vertical separation across a better-preserved compound scarp formed on similar pre-Sehoo fan deposits a few hundred meters south of Deer Creek (Fig. S1, S2). Our estimate of 1-1.5 m of vertical separation during the MRE suggests that the larger scarps likely record a total of 3 or 4 surface ruptures along this part of the range front trace in the late Quaternary.

Measurement of total slip near Deer Creek is complicated because about 1.5 km to the southwest, a prominent fault trace splits away from the range front and extends northward for about 6 km before rejoining the range front just north of Sand canyon. At the latitude of the Deer Creek exposure, the piedmont trace is marked by a small (vertical separation of 1.4 m) scarp in middle(?) Holocene alluvium, and larger (vertical separation of 3.7 m) scarps in Sehoo-aged lacustrine sediments. We interpret that the smaller scarp formed during the MRE and thus its size likely indicates the larger scarps along the piedmont trace are the result of 2 or 3 surface-rupturing earthquakes of similar size. We conclude from this evidence that total post-Sehoo vertical slip across the JMFZ at the latitude of Deer Creek is 5-7 m.