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Soils and sediments in Jordan as archives of climate change

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Paleosols and sediments in Jordan indicate that the landscape changed mainly during comparatively short periods of instability. These were seemingly characterized by the frequent occurrence of heavy precipitation events which led to landslides. Most old land surfaces were buried by rubble before finer sediments were deposited. Despite intensive land use since the beginnings of agriculture, there is so far no indication that human activity was related to these instabilities. Agriculture may have aggravated the impact of extreme events, but it seems unlikely that the deposition of widespread valley fills was related to human activity. On the one hand, the distribution of soils and sediments is determined by the geology, relief, and climate zone. On the other hand, man-induced erosion should be connected with increased runoff and therefore incision of valleys. It seems possible that the deposition of Medieval valley fills was connected with climate variations as proposed by Vita-Finzi (1995). Roman pottery in buried river gravels indicates that historical climate fluctuations had a significant impact on the delivery of springs. The decreasing maturity of the soil sediments points to drier conditions since the Early Middle Ages.