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GEOLOGICAL CONSTRAINTS ON ARCHAEOLOGICAL SITES IN THE WESTERN DESERT OF EGYPT

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The Western Desert of Egypt is extremely rich in evidence of prehistoric habitation, although the present climate is totally unsuitable for the support of life. Remnants of Aterian, Acheulean and Mousterian occupation are all represented in the region, and the location of sites is strongly controlled by the geologic setting. Numerous sites exist in depressions which enclose oases. In these areas, the history is complicated by continuous human habitation for at least the past 6,000 years. In contrast, the open desert contains ancient playa deposits that have been interpreted by F. Wendorf and others as consisting of alternating intervals of arid and semiarid climate. Some of these sites are now largely obscured by eolian deposits.

We investigated two sites of early human habitation in the wadis of the Gif Kebir plateau in southwestern Egypt. These were influenced by both recent eolian domination and the local bedrock geology. The predominant eolian regime of the past 10,000 years has resulted in the formation of sand dunes that blocked the wadis and created lake deposits upstream. Lacustrine deposition kept pace with, and was controlled by dune formation, leading to conditions that favored habitation. Tertiary volcanic intrusions in the plateau were accompanied by low-grade local metamorphism of the surrounding sandstone, thus providing the hard, flint-like material necessary for producing implements. Additional intrusions can be identified on Earth-orbital images, and indicate promising areas for future investigation.