This study presents distinct and small task-specific sites associated with the Middle to Late Epipaleolithic period exposed during a salvage excavation at the site of Ashalim at the fringe of the northwestern Negev desert dune field (Israel). Six areas spanning the Geometric-Kebaran to Harifian periods were excavated upon a unique 4 m high and 100 m wide linear structure.

The structure was a vegetated linear dune that blocked the underlying drainage system and led to the development of standing bodies of water which, together with the exposed wet bottom provided fauna and flora resources during the winter and spring. The relatively large number of sickle blades and lunates uncovered during the excavations suggest cereal consumption combined with hunting activities.

Ten optically-stimulated luminescence (OSL) measurements conducted for the dune structure indicate that the occupations of the site post-date \(~15.5\pm3.1\) ka BP, while bodies of water were present intermittently until at least \(~11\) ka BP, possibly even after the Harifian occupation. Two radiocarbon dating taken for excavated ostrich eggshell fragments further support this time range. The current study demonstrates how aeolian-fluvial interactions, and not necessarily a wetter climate, are important for forming conditions conducive for occupation by prehistoric groups in arid zones.