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## Geoarchaeological and paleoenvironmental reconstruction of the Late Quaternary climate- environmental-human nexus in the Kurdistan region of Iraq

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During the late Quaternary, Iraqi Kurdistan was the scenario of several fundamental human-related

events including the dispersion of Homo in Asia and Europe, the origin of agriculture, the beginning

of urbanization, and the formation of the first state entities. We present the initial results of a geoarchaeological investigation in this area, which aims to reconstruct a detailed framework of the relationship between climatic changes, landscape responses, human adaptation, and settlement distribution during the Late Quaternary. Paleoenvironmental and paleoclimatic data were collected

from two key areas: the territory of the Navkur and Faideh plains, in northern Kurdistan, and a portion

of the Erbil plain, in southern Kurdistan. In the two regions, the Land of Niniveh and MAIPE archaeological missions are operating. Remote sensing, GIS analyses, and geomorphological survey

are the tools used for the geomorphological reconstruction of ancient hydrology (fluvial pattern) and

the evolution of distinct landforms. Geochemical and geochronological analyses on speleothems from

the Zagros piedmont caves of same region provide information on Holocene climatic variability in the area. Whereas environmental settings and human land use are investigated on the basis of sedimentological, palynological, micropaleontological, and geochemical analyses of a fluvio-lacustrine sequences preliminary dated between 40 and 9 ka BP. The lacustrine sequence is

composed  
by clayey and silt-sandy sediments alternating calcareous and organic matter-rich layers.  
Environmental and geomorphological data have been compared with archaeological information  
(mostly the chronological distribution of the archaeological sites) to interpret exploitation of  
natural  
resources, the settlement dynamics and shift in land use.