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How climate change affected the evolution of ancient civilizations in eastern Ancient Silk Road?

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The study of the coupling relationship between climate change and civilization evolution along the Ancient Silk, can provide valuable insights for understanding the history, pattern and mechanism of man-land relation evolution from a long-run perspective. Here we provide two case studies from the Hexi Corridor and Qaidam basin in northwest China, where locates at eastern Ancient Silk Road, and became a center for trans-continental exchange since the second Millennium BC, hydrological change in these areas is very drastic. The results reveal three significant desertification events occurred in these two areas during late Holocene, which was likely related to precipitation variation in surrounding mountains instead of basins, and triggered the shrinkage of ancient oases and then the decline of ancient civilizations. We also try to explain the linkage between climate change and the evolution of ancient civilizations in the two areas.