

## QUATERNARY CLIMATE CHANGES IN ARABIA

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Quaternary climatic fluctuations occurred in Arabia culminating in present-day hyperarid conditions. Evidence of these changes is in historical records, C14 dating, U/Th ratios and oxygen isotope ratios. The Rub' al Khali, the worlds largest sand -dune desert has existed since 6.2ka. Arab historians record that 0.7-1.3ka was moister when the Hofuf River flowed. The Sabaeen and Kinda kingdoms flourished 1.4-2.1ka ago during moister conditions. C14 dating of Neolithic remains shows moister climate 5-5.5ka BP. Hyperarid high dunes existed 5.5-6.2ka ago. A Neolithic Wet Phase 6.2-9.7ka BP with interdune lakes in the Rub' al Khali was preceded by a 7ka hyperarid interval. A pluvial period 17-36 ka ago caused 130m sea-level lowering, no Persian Gulf, and lakes in the Rub' al Khali. Aridity 36-70ka BP caused sand movement from wadis in the shrunken Gulf. Spleothem U/Th dating indicates 70-270ka was moist and the preceding interval to 325ka ago arid . Karstification 325-560ka BP due to wet climates is shown bu U/Th speleothem dates. 560-700ka BP was warmer as shown by oxygen isotpe ratios, while 700-2000ka ago was cooler with well-developed drainage systems and large bordering alluvial fans.