

Southern California hydroclimate over the last 150 kyrs: New results from the Searles and Death Valley basins

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Closed-basin lakes in the U.S. Great Basin provide important records of the impact of past climate changes on the region's hydrology. Existing records from the Searles and Death Valley basins in Southern California leave many questions unanswered, including whether similar hydrological responses were observed in the last two glacial-interglacial transitions and whether wet-dry transitions in the last glacial period consistently occur during stadial-interstadial changes. Here we present data from a new 80-m sediment core from the Searles Basin and an existing Death Valley sediment core, as well as new sampling of tufa in the Searles Basin. High-precision U/Th dating provides a firm chronological framework for the two basins' sediment cores and enables comparison of shoreline deposits and core data. Multi-proxy data from the new Searles Basin core and lake level constraints from tufas offer detailed examination of past hydrological conditions. Together, these data provide a clearer picture of glacial-interglacial and millennial-scale variability in the region, including apparent resolution of existing discrepancies in the nature of the penultimate deglaciation, and they allow us to begin to link core and shoreline data at high resolution. We will present the current state of our study of these two linked basins and the emerging implications for our understanding of past changes in regional hydroclimate.