

¹⁴C-dating and dendrochronology of ancient trees in the Taklamakan Desert, Xinjiang, China

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ABSTRACT: The response of Central Asian water resources to climate change is uncertain, posing a major challenge to 21st Century policy and planning. Here, we propose to approach this problem from a palaeoclimate perspective, and request funds to ¹⁴C-date samples collected during a field expedition to the Tarim Basin, Xinjiang, western China, in August 2011. Wood and shell samples collected during reconnaissance expeditions to the Tarim Basin in 2010 and 2011 give pilot ¹⁴C ages that place the last wet period in the Tarim Basin during the Little Ice Age (LIA; ca. CE1150 to CE1880; cf. Holzhauser et al., 2005). These preliminary results suggest that: (1) the hydrology of mid-latitude Central Asia is highly sensitive to remote climate anomalies, and (2) that hydroclimatic changes between Central and South Asia were antiphased during LIA time. We would like to conduct ¹⁴C dating, $\delta^{13}\text{C}$, and dendrochronology on wood samples collected during our 2011 expedition to the Tarim Basin. From this information we hope to learn more about hemispheric climate linkages, and to anticipate the sign of future Central Asian water balance under continued atmospheric warming.