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博斯腾湖碳酸盐和同位素组成的全新世古环境演变高分辨记录及与冰川活动的响应 [点此下载全文](#)

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摘要:

本文通过对在新疆南部塔里木盆地北缘博斯腾湖采集的一根953cm的岩心进行了早全新世以来的古气候重建。对BSTC2000岩心进行了碳酸盐矿物组成、Ca/1000Sr, 有机质TOC, C/N和C/S分析, 并结合BSTC2000岩心附近的一个沉积物剖面的孢粉资料, 利用多指标重建了8500aBP以来的古气候变化特征。在2个平行岩心中对保存的植物叶片、草籽, 以及全有机质进行了9个AMS14C年代测定。8500~8100aBP气候冷湿, 钻孔位置为河流-滨湖相环境, 沉积物中有3层泥炭层。从8100~6400aBP, 气温升高, 湖泊扩张, 气候暖湿, 湖泊可能为最高湖面时期。而从6400~5100aBP湖泊稍微下降, 气候变冷。在中全新世晚期从5100~3100aBP气候变得高温干旱, 但其间的4400~3800aBP有短暂的气候变冷, 早期大量的冰雪融水补给博斯腾湖, 使得湖泊水位上升。湖泊的第二个高湖面期是5200~3800aBP。在3100~2200aBP气候冷湿, 由于蒸发减弱而湖泊有所扩张, 湖泊在3100至2800aBP期间是最后一次短暂的高湖面期。这次短期高湖面后, 湖泊由于较长时期的低温而引起的供水减少, 湖泊收缩。从2200~1200aBP, 气候变得干热, 湖泊收缩。尽管从1200aBP以来, 温度有所下降, 气候变得暖干, 湖泊又开始有所上升, 但是没有达到博斯腾湖出水口孔雀河的海拔高度。

关键词: [博斯腾湖](#) [古环境变化](#) [碳酸盐](#) [同位素组成](#) [冰川活动](#)

The Palaeoenvironmental Variation from the High-Resolution Record of the Holocene Sediment Carbonate and Isotopic Composition in Bosten Lake and Responding to Glacial Activity [Download Fulltext](#)

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Abstract:

Information on the Early Holocene palaeoclimate in Bosten lake in the northern part of Tarim Basin(southern Xinjian)is studied from a 953 cm long core taken from Bosten lake. Multi-proxy analysis of core BSTC2000, including the mineralogical components of carbonate minerals, carbonate content, stable isotopic compositions of carbonate, Ca/1000Sr, TOC, C/N and C/S of organic matters, combined with the pollen data from a section near BSTC2000 core, is used to reconstruct the climatic change since 8500 a BP. The chronology is provided by 9 AMS 14C dates done on leaf, seed, or organic matter from two parallel cores. Climate was cold and wet during 8500 to 8100 a BP, it was a shallow river-lakeshore facies and 3 peat sediment interlayers. Temperature increased from 8100 to 6400 a BP and lake expanded, the climate was warm and humid, it was a highest lake level period. Lake level decreased a little in the cold period from 6400 to 5100 a BP. During the late of Mid-Holocene, it was a highest temperature and dry climate from 5100 to 3100 a BP, but there was a short-time cold period during 4400 to 3800 a BP, a mount of ice and snow melting water supplied lake at the early time and made the lake level increased. It was the second high lake level period during 5200-3800 a BP. The cool and wet climate during 3100 to 2200 a BP and lake level expanded with the evaporation decreasing, the lake had the last short-time high level during 3100 to 2800 a BP. After this short-time high lake level period, lake shrank as the long time lower temperature and reducing supplying water. From 2200 to 1200 a BP, it was a high temperature and dry climate, and lake shrank. Although from 1200 a BP to the present, the temperature decreased a little but it was a warm and dry climate. Lake level rose a little again, but it did not get to the bed's altitude of Kongque River that was a outflow river of Bosten lake.

Keywords: [Bosten lake](#) [palaeoenvironmental variation](#) [carbonate](#) [isotopic composition](#) [glacial activity](#)

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