

# Lake Qinghai Drilling Project

China



## Goal & Scientific Objective

The scientific objectives of the Lake Qinghai Drilling Project are (i) to obtain an improved understanding of the late Cenozoic environmental history of the Lake Qinghai region and the development of the East Asian monsoon climate, (ii) to understand the Late Cenozoic tectonic evolution of the Lake Qinghai basin and the growth of the northeastern margin of the Tibetan Plateau and its effects on regional climate, and (iii) to correlate Lake Qinghai environmental records with other regional and global paleoclimatic records to obtain a better understanding of the connection between regional climatic change, the development of the East Asian monsoon system, prevailing westerlies, and, ultimately, the evolution of global climate

## Operational Achievements

13 core holes were drilled offshore with a total length of 547.9 m

Two onshore holes were drilled down to a depth of 1108.9 m and 628.5 m, respectively. No downhole logging was performed.

## Data & Sample Access

Core is stored at the University of Minnesota at Minneapolis, Department of Earth Sciences, National Lacustrine Core Repository (LacCore)

## Web & Media Resources

<http://qinghai.icdp-online.org/>

## Timeline

2002 ICDP proposal submission

2005 (July – September) drilling operations

## Principal Investigators

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*The platform is leaving the base for the drilling site.*

## Scientific Findings

Radiocarbon dates indicate that these cores provide a record extending back to ca. 20 ka.

Results suggest that solar activity influences decadal regional temperatures, and that it is the East Asian summer monsoon as opposed to the Indian summer monsoon that acts as the dominate moisture source at the decadal scale within the local region.

Lake Qinghai millennial-centennial climate events in Holocene are linked with Westerlies changes, and with East Asian summer monsoon front shift as well as winter monsoon, on centennial-decadal scale Lake Qinghai climate changes are controlled more by solar activities.

## Key Publications

Xu, Z.Q.; Yang, J.S.; Wang, C.S.; An, Z.S.; Li, H.B.; Wang, Q.; Su, D.C. (2017): Fifteen years of the Chinese Continental Scientific Drilling Program. *Scientific Drilling* 22 1-18. doi:10.5194/sd-22-1-2017

Henderson, A.C.G.; Holmes, J.A. (2008): Palaeolimnological evidence for environmental change over the past millennium from Lake Qinghai sediments: A review and future research prospective. *Quaternary International* 194(1-2) 134-147. doi:10.1016/j.quaint.2008.09.008

An, Z.S.; Ai, L.; Song, Y.G.; Colman, S.M. (2006): Lake Qinghai Scientific Drilling Project. *Scientific Drilling* 2 20-22. doi: 10.2204/iodp.sd.2.05.2006