



Climate history from a lake at almost 5000 metres above sea level

July 23, 2025 | Andri Bryner

Topics: Ecosystems | Climate Change & Energy

Surprisingly little is known about the climate history of the greater Tibet-Himalaya region. However, this information is urgently needed to predict how climate change will alter the water cycle there. Information stored in the sediments of Tibet's Nam Co Lake should now allow new conclusions to be drawn. A video presents the project.

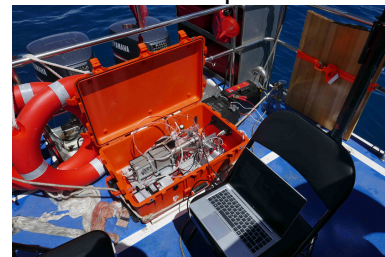
The water resources of the Tibetan plateau are crucial for almost a quarter of the world's population. The sediments of Lake Nam Co, a good 100 kilometres north of Lhasa, contain a treasure of information. They can explain how geology and climate have influenced the water cycle in the greater region and how this can be used to predict future changes. Until now, no data on this was available. In 2024, a large team set out as part of the [ICDP](#) (International Continental Scientific Drilling Program) to drill sediments at the bottom of China's second-largest salt lake, at 4,718 metres above sea level, and examine them scientifically. Around 1,300 metres of sediments from seven drilled cores are now in the cold storage rooms and laboratories of the participants.



The sediment cores in plastic tubes (liners) are cut into 1-metre-long pieces on the drilling



This press was used directly on the drilling platform on Lake Nam Co to extract pore water



Gas analysis on the tender boat to the drilling platform. Improvisation and precise science are not mutually exclusive. (Photo: Eawag)

Eawag researchers were also involved in the expedition. Over the past few years, they have developed a method for determining the age of the deposits directly on site using noble gases trapped in the pore water. Specifically, they measure helium-4, which is produced by the decay of uranium and thorium. The usual radiocarbon dating method (C-14 method) does not work at this location because, on the one hand, there is hardly any organic material at this altitude and, on the other hand, the history of the lake goes back much further than the approximately 50,000 years that can be dated using the C-14 method. The actual age of the lake and the first deposits in the drilled cores is still unknown. Researchers estimate it to be several million years old. In addition to determining the age, Eawag is also supporting the scientific team in analysing how the lake physically "works" so that the signals from the sediments can be interpreted.

The following video from the ICDP, supplemented with explanations and images from Eawag researcher Prof. Rolf Kipfer, provides an insight into this fascinating project:

Cover picture: The ICDP drilling platform on Nam Co Lake at 4718 metres above sea level (Photo: ICDP).

Research pages

[Environmental Isotopes](#)
[Sedimentology](#)

Related Links

platform. The team drilled a total of 1,300 metres of sediment. (Photo: Eawag)
ICDP Program

ICDP, project NamCore

Sinergia DIGESTED
from small sediment packages for gas analysis. (Photo: Eawag)

Contact



Rolf Kipfer

Tel. +41 58 765 5530

rolf.kipfer@eawag.ch



Andri Bryner

Media officer

Tel. +41 58 765 5104

andri.bryner@eawag.ch

<https://www.eawag.ch/en/info/portal/news/news-detail/climate-history-from-a-lake-at-almost-5000-metres-above-sea-level>