

Science News

Drilling Project in the Dead Sea Aimed at Climate History and History of Humankind

ScienceDaily (Dec. 22, 2010) — About 50 miles from Bethlehem, a drilling project is determining the climate and earthquake activity of the area. Scientists from eight nations are examining the ground below the Dead Sea, by placing a borehole in this deepest basin in the world.

The International Continental Scientific Drilling Program ICDP brings together research teams from Israel, Japan, Norway, Switzerland, the USA and Germany. Researchers from Jordan and Palestine are also involved.

Scientists and technicians of the GFZ German Research Centre for Geosciences have now completed a geophysical measurement procedure in the hole and helped with the initial examination of the cores in a field laboratory. "We have drilled through about half a million years of sedimentary deposits," estimates Dr. Ulrich

Harms from the ICDP's operational support group at the GFZ. "From this, we can deduce not only the climate history, but also the earthquake activity in this seismically very active region." The direction and inclination of the well were determined with high precision below this lake which is around 300 meters deep here, and the physical properties of the rocks were measured down to the bottom of the 460 meters deep borehole.



Barge drilling in the Dead Sea. (Credit: © OSG-GFZ, ICDP)

These unique measurements are used to record a continuous survey of the deposits in the Dead Sea and to compare it with the recovered cores. Although scientific drilling attempts to recover cores over the entire length of a hole, it is not always possible. These special borehole measurements are conducted to cover the gaps. In addition, a second series of cores is obtained from a second well in order to verify and secure the data.

"If everything goes perfectly, we may soon be able to provide information about past climate and environmental changes in the Bethlehem area," says Ulrich Harms. His colleague Professor Achim Brauer, a paleo-climatologist at the GFZ, is one of the initiators of the ICDP project. He and his team will analyze the drill cores. They are not just interested in the climate 2,000 years ago but in the climate of the whole history of humankind. The Dead Sea region is considered a land bridge across which early humans migrated in several waves from Africa to the north.