Back to the dead (sea, that is)

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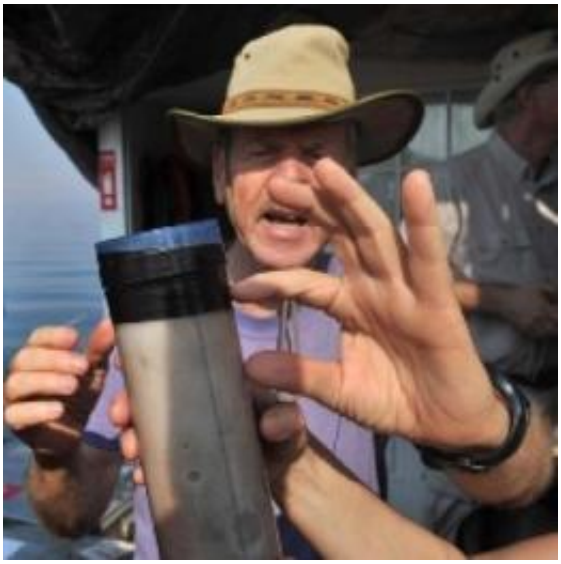

Professor Zvi Ben-Avraham examines the first extracted core of the Dead Sea drilling project. Credit: AFTAU

They'll drill through four ice ages, epic sandstorms, mankind's migration from Africa to the New World, and the biggest droughts in history. Tel Aviv University is heading an international study that for the first time will dig deep beneath the Dead Sea, 500 meters (about a third of a mile) down under 300 meters (about a fifth of a mile) of water. Drilling with a special rig, the researchers will look back in time to collect a massive amount of information about climate change and earthquake patterns.

The study, led by Prof. Zvi Ben-Avraham of Tel Aviv University's Minerva Dead Sea Research Center, "aims to get a complete record in

unprecedented resolution — at one year intervals — of the last 500 thousand years," says Prof. Ben-Avraham.

A crazy sandstorm 365,250 years ago?

Looking at the core sample to be dug about five miles offshore near Ein Gedi, the researchers hope to pinpoint particular years in Earth history to discover the planet's condition. They'll be able to see what the climate was like 365,250 years ago, for instance, or determine the year of a catastrophic earthquake.

This is by far the largest Earth sciences study of its kind in Israel. The evidence will help the world's climatologists calibrate what they know about climate change from other geological samples -- and may lead to better predictions of what's in store for Middle East weather. For example, are currently increasing dry and hot periods in the region something new, or are they part of some larger cyclical pattern? What they find should also shed light on earthquake patterns -- important information for Israelis, Jordanians and Palestinians who live on or around the fault line that passes through the Dead Sea region.

Slicing through a geological cake

"The sediments provide an 'archive' of the environmental conditions that existed in the area in its geological past," Prof. Ben-Avraham says. While the sample being collected isn't as deep as oil explorers drill to look for oil, the core will be something special: it will be kept in an unbroken piece so that records can be traced more accurately.

The study is being supported by the Israel Sciences Academy and includes dozens of scientists from America, Germany, Switzerland, Norway, Japan, and Israel. Scientists from Jordan and the Palestinian

Authority are also cooperating on this unique event. The researchers come from a variety of disciplines, from environmental science to chemistry, and each will get different parts of the core to analyze.

Prof. Ben-Avraham himself is particularly interested in chemical changes to the sediment in the Dead Sea over the last half million years. The study, he adds, will shed light on human migration patterns through the region.

At 423 meters, or a quarter of a mile, below sea level, the Dead Sea is the lowest place on earth. Today it draws millions of tourists from around the world to enjoy its legendarily healing properties.

Provided by Tel Aviv University