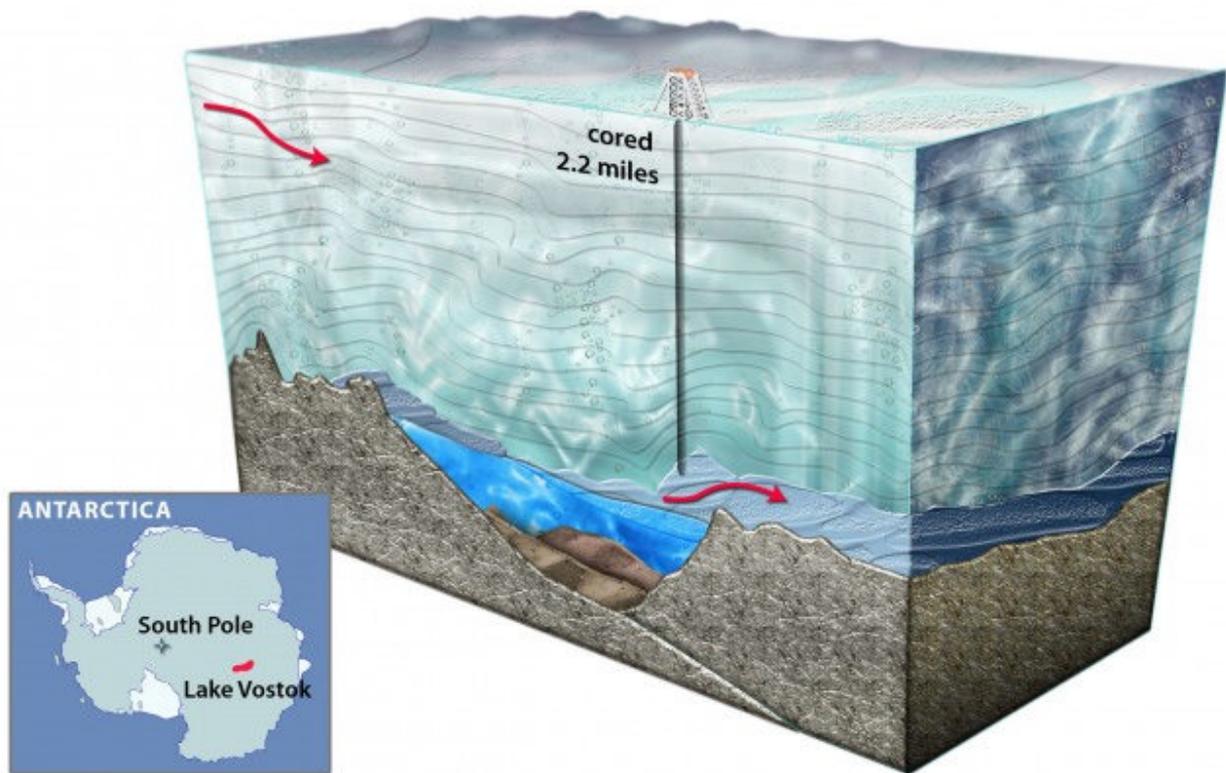


Russian Drill Penetrates 14-Million-Year-Old Antarctic Lake



Update: Russian news agency Ria Novosti has [reported](#) that the team penetrated Lake Vostok on Feb. 5, 2012. According to the report, the researchers stopped drilling at a depth of 3,768 meters as they reached the surface of the sub-glacial lake.

After 20 years of drilling, a team of Russian researchers is [close to breaching](#) the prehistoric Lake Vostok, which has been trapped deep beneath Antarctica for the last 14 million years.

Vostok is the largest in a sub-glacial web of more than 200 lakes that are hidden 4 kilometers beneath the ice. Some of the lakes formed when the continent was much warmer and still connected to Australia.

The lakes are rich in oxygen (making them [oligotrophic](#)), with levels of the element some 50 times higher than what would be found in your typical freshwater lake. The high gas concentration is thought to be because of the enormous weight and pressure of the continental ice cap.

If life exists in Vostok, it will have to be an [extremophile](#) — a life form that has adapted to survive in extreme environments. The organism would have to withstand high pressure, constant cold, low nutrient input, high oxygen concentration and an absence of sunlight.

The conditions in Lake Vostok are thought to be similar to the conditions on Jupiter's moon [Europa](#) and Saturn's tiny moon Enceladus. In June, NASA probe Cassini found the [best evidence yet](#) for a massive saltwater reservoir beneath the icy surface of Enceladus. This all means that finding life in the inhospitable depths of Vostok would strengthen the case for life in the outer solar system.

Back on planet Earth, the team at Vostok are running short on time. Antarctica's summer will soon end and the researchers need to leave their remote base while they still can. Temperatures will drop as low as -80 degrees Celsius, grounding planes and trapping the team.

They missed their chance last year. "Time is short, however. It's possible that the drillers won't be able to reach the water before the end of the current Antarctic summer, and they'll need to wait another year before the process can continue," we [wrote](#) in January 2011. The drill [halted](#) in February.

Meanwhile, Russian engineers are planning to venture into the lake itself, with swimming robots. In the Antarctic summer of 2012 to 2013, they plan to send a robot into the lake to collect water samples and sediments from the bottom. An environmental assessment of the plan will be submitted at the Antarctic Treaty's consultative meeting in May 2012.

Image: [NSF](#)

Source: [Wired.co.uk](#)