

Officials preparing risk assessment for alpine lake tsunami in Switzerland

September 4 2014, by Bob Yirka



Lake Lucerne. Credit: Ttrainer/Wikipedia/CC BY-SA 3.0

Officials in Nidwalden Canton in Switzerland have announced that they have commissioned a study to look into the threat posed by a tsunami in Lake Lucerne—a first for a European alpine region. The study, to be conducted by University of Bern geologist Flavio Anselmetti and his team, will focus on the likelihood of a tsunami occurring in the lake and an assessment of the impact on the region (home to approximately 13

million people) if one should occur.

A [tsunami](#) occurring in an alpine [lake](#) is not unheard of, large bodies of water in any location can give rise to the unusual waves—all it takes is a sudden jolt, such as an earthquake stirring things up, a landslide, or a piece of shoreline dropping into the water. And while the European Alps aren't really known for earthquakes, those large enough to cause problems (magnitude 6 and above) do occur approximately every thousand years or so.

The seemingly sudden interest in the threat posed by tsunamis in alpine lakes, has come about as a result of a study done by University of Geneva limnogeologist Katrina Kremer and her team two years ago—they found evidence of a serious tsunami wiping out communities in Lake Geneva AD 563. More recent work by the team has found more evidence of tsunamis in the lake—as many as five big ones over the past 4000 years.

Prior to the commissioned study, Anselmetti's team was already studying Lake Lucerne and its history—they'd found sediment evidence of two tsunamis that occurred in the 17th century, which would have, they believe, led to five meter high tsunamis. The team has also found [evidence](#) of unstable sloped sediment sections in the lake that if disrupted by an earthquake, could lead to a large tsunami.

Going forward, the team will look at all likely tsunami catalysts, from landslides, to earthquakes to normal erosion (presumably also asteroid and comet strikes) assessing the likelihood of each. They will also attempt to forecast what impact a tsunami might have on the region. In addition to conducting sediment studies, the [team](#) will also use data from a variety of sources to build computer models that are capable of graphically demonstrating the path of tsunami flooding that would occur in different parts of the [region](#) under different sized [tsunami waves](#).

More information: via [Nature](#)

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