

Is drought to blame for drop in Utah's Great Salt Lake? Not likely

THURSDAY , OCTOBER 01, 2015 - 11:46 AM



BENJAMIN ZACK/STANDARD-EXAMINER

Salt and mineral deposits build up in small pools off the former shore of Antelope Island State Park as the Great Salt Lake levels drop. As the lake decreases in size, the water becomes more highly concentrated with minerals.

The Great Salt Lake is notoriously capricious. Since 2010, it's elevation has been on a steady downward trend. It's now flirting with a record low.

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While it's easy to point to the state's recent drought as the reason, some lake and water experts have assembled the evidence and found it's not entirely the cause. It's mostly caused by people.

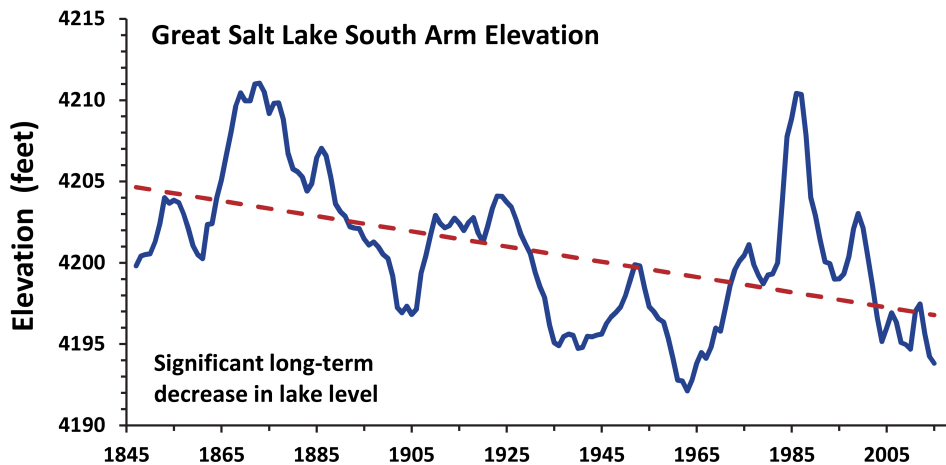
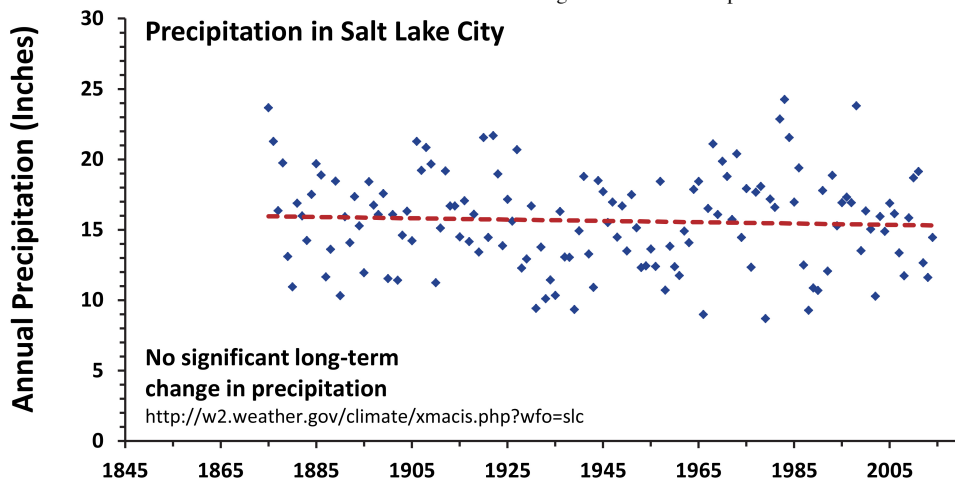
Wayne Wurtsbaugh, a limnologist at Utah State University (http://works.bepress.com/wayne_wurtsbaugh/), is wrapping up a study he conducted with a few other USU scientists and the Utah Division of Water Resources. It compares trends in precipitation to levels of the Great Salt Lake.



(<http://www.standard.net/Great-Salt-Lake>)

"It's not like droughts don't have an effect," Wurtsbaugh said. "But ... roughly, the lake would be about 10 feet higher right now if we hadn't been diverting water."

Since people began taking measurements in the Salt Lake Valley around the 1850s, there have been wet years and dry years. Lake levels respond accordingly. As Wurtsbaugh eliminated the noise and looked at the long-term trend, he found the amount of precipitation over time remained steady. But the lake keeps dropping. He's concluded it's because of diversions along most of the lake's main tributaries — specifically, the Weber, Ogden and Jordan rivers — funneling water away from the lake for human use.



A forthcoming study conducted by scientists at Utah State University and the Utah Division of Water Resources found that while annual precipitation in Salt Lake City has roughly stayed the same, the Great Salt Lake's elevation has steadily dropped. Even with recent drought, the lake would be roughly 10 feet higher today, instead of approaching record lows, if its tributary rivers didn't have diversions. (Wayne Wurtsbaugh/Utah State University)

If those diversions were out of the picture, an extra 10 feet at the Great Salt Lake would closer to 2000 levels. The lake's Islands would be islands. Antelope Island would only have a thin sliver of sandy beaches at its crescent-shaped bays. Boats would be able to dock right at the edge of the Great Saltair. Farmington Bay would be covered by several feet of water — even with the past five years of drought.

Looking to the future, the lake could face more diversions and lower levels. With Utah's population set to double by 2050, state officials are looking to one of the lake's largest and last untapped sources of water, the Bear River. The proposed Bear River Project will dam and divert 220,000 acre-feet. Conservative estimates say it will also drop the lake by another six inches.

That might not sound like a lot, but as Wurtsbaugh points out, the lake covers a long, flat bowl. In some areas, dropping the lake by one foot moves the shoreline back by a mile (http://learn.genetics.utah.edu/content/gsl/physical_char/).

"Because of the shape of the basin, the farther down we go, the more we're getting down to flatter and flatter sections," Wurtsbaugh said. "A little drop exposes a lot more."

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Explore the project (<http://www.standard.net/Great-Salt-Lake>)

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