

The Great Salt Lake seemed like it was dying. But there's been a 'miraculous' shift.

A record snowy winter has jump-started a recovery for the lake's water level, which set at a record low in the fall



By [Dan Stillman](#)

April 9, 2023 at 7:00 a.m. EDT



Snow and water pool on a stretch of exposed lakebed on the southern end of the Great Salt Lake in Magna, Utah on Thursday. (James Roh for The Washington Post)

Listen 5 min

Share

Comment 945

Save

Just three months ago, scientists issued a report with a [dire warning](#):

Utah's Great Salt Lake, after decades of drying that had only accelerated in recent years, was on track to disappear in five years. Now a record snowpack, fueled by more than 800 inches of snow during the season in some locations, offers a glimmer of hope for the Western Hemisphere's largest saltwater lake and an important economic driver for the state.

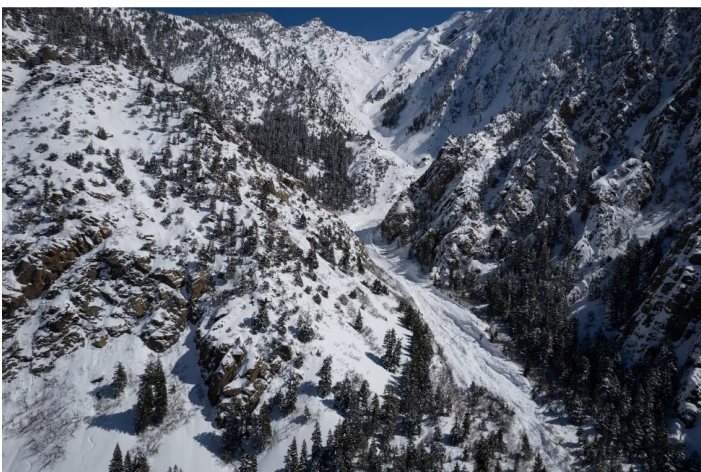
The Great Salt Lake reached its record low in November when it dipped to 4,188.6 feet above sea level, having lost more than 70 percent of its water since 1850, according to the report published in January by researchers at Brigham Young University. As of Wednesday, however, the lake had risen three feet in a little more than five months, primarily because of snow and rain dumped directly into the lake by a season-long series of water-loaded storms. Salt Lake City has seen its seventh-snowiest season on record and among the most snow of any major U.S. city, with 87.3 inches.

Story continues below advertisement

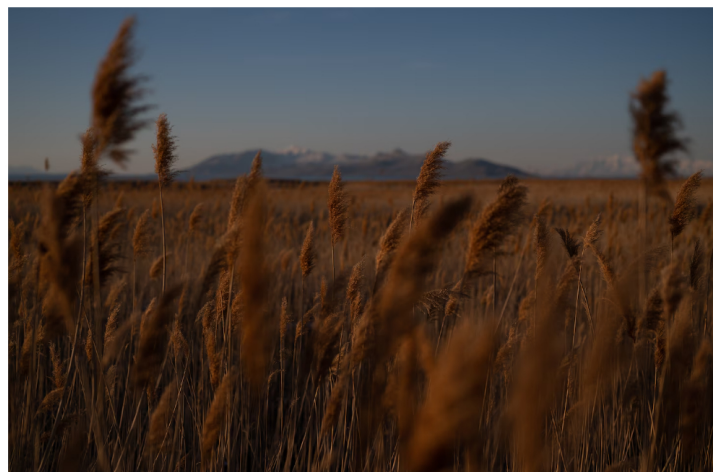
Advertisement

The rising lake level is cause for both celebration and caution.

“While we celebrate our progress, we must continue to prioritize water conservation efforts and make sustainable water management decisions for the future of this vital ecosystem and for water users throughout the basin,” said Candice Hasenyager, director of the Utah Division of Water Resources, in an email.



Evidence of a large avalanche following a strong late-season snowstorm in



Phragmites on the southern end of the Great Salt Lake in Magna, Utah on

the Stairs Gulch drainage of Big Cottonwood Canyon on Thursday outside of Salt Lake City. (James Roh for The Washington Post)

Thursday. Low lake levels provide more opportunity for the invasive species to spread. (James Roh for The Washington Post)



Snow and water pool on a stretch of exposed lake bed on the southern end of the Great Salt Lake on Thursday. (James Roh for The Washington Post)

This season’s record snowpack promises to push water levels even higher in the coming weeks as warmer temperatures melt the snow and runoff enters the lake. The statewide average snowpack, which is measured by calculating the amount of water contained in the snow, reached 30 inches on Thursday, beating the previous record of 28.8 inches in 1952.

“This year’s snowpack is nothing short of miraculous. After so many years of drought, this definitely feels like an answer to prayers,” Brigham Young University ecologist Ben Abbott said in an email. Abbott was the lead author for the January report, which warned of “widespread air and water pollution, numerous Endangered Species Act listings, and declines in agriculture, industry, and overall quality of life” if the lake were to vanish.

Advertisement

Despite its recent rise, the lake is still six feet below what is considered “the minimum acceptable elevation for the lake’s ecological and economic health,” according to Abbott. The snowpack, and what happens to its runoff, holds the key to whether the lake can make relatively quick progress toward that six-foot level. With an above-average snowpack, the lake level can increase 3 to 4 feet, according to Utah’s Division of Water Resources.



The Great Salt Lake at dusk. A record-breaking amount of precipitation this winter in Utah has already risen the lake around 3 feet since its record low in November and the season’s runoff has yet to start in earnest. (James Roh for The Washington Post)

Even if the water level recovers to an “acceptable” level, the longer-term sustainability of the lake will depend on water management decisions and conservation efforts.

“Impressive winter precipitation and record-breaking snowpack have undoubtedly improved the situation of Great Salt Lake,” Hasenyager said. “However, it’s important to note that it will take much more than one above-average winter to fully replenish the lake’s water levels and address our long-term challenges.”

Historically, management of the Great Salt Lake watershed has prioritized human water usage over the health of the lake, with most of the river and stream water flowing toward the lake diverted for home, business and agricultural use. A February [assessment](#) by a team of Utah researchers and state officials found that 67 to 73 percent of the decline in water levels is due to natural and human water use.

Story continues below advertisement

Advertisement

Water levels have been further diminished in recent years by an intense drought, [made more likely by climate change](#), which has only finally started to ease with this winter’s record snowfall. In March 2021, the federal drought monitor showed most of the state in extreme or exceptional drought, the two driest out of five drought categories. In the latest report, [released Thursday](#), extreme and exceptional drought have disappeared, with most of the state classified under the two least severe drought categories.





An icy snowbank melts in the sun on Thursday in Brighton, Utah. (James Roh for The Washington Post)



The Great Salt Lake in Magna, Utah. (James Roh for The Washington Post)



Utah residents visited the Salt Lake County Public Works building to fill bags with sand in Midvale, Utah on Thursday. A record-breaking snowfall this winter in Utah has residents concerned about the potential for flooding in the valley once the snow begins to melt. (James Roh for The Washington Post)

Reduced inflow of fresh water into the lake results in high salinity levels that have far-reaching consequences including the release of toxic dust, poor air quality, the collapse of food webs and loss of brine shrimp that feed fish and shrimp sold worldwide. A 2019 assessment found that a further decline in lake levels could result in economic damage up to \$1.69 billion to \$2.17 billion per year, adding up to as much as \$25.4 billion to \$32.6 billion over 20 years.

More controlled water releases, such as the one coordinated by city and county officials in early March, could not only reduce flood risks this spring but also help restore the lake closer to a healthy water level. Yet regardless of how much improvement comes from spring runoff, Abbott stands by the cuts in water consumption he and his co-authors recommended in their report earlier this year.

“We’ve got to keep our eye on the conservation ball,” Abbott said. “To replenish Great Salt Lake, we need to reduce our consumptive water use by 30 to 50 percent.”



A sign warns boaters of low lake levels at the Great Salt Lake State Park's marina in Magna, Utah on Thursday. All boats were required to be pulled from the marina last year due to the Great Salt Lake's low levels. (James Roh for The Washington Post)

[Share](#)

[945 Comments](#)



By [Dan Stillman](#)

Dan Stillman is a meteorologist and editor for the Capital Weather Gang. He earned an M.S. in Meteorology from Texas A&M University, and a B.S. in Atmospheric, Oceanic and Space Sciences from the University of Michigan. [Twitter](#)

https://www.washingtonpost.com/weather/2023/04/09/great-salt-lake-snowpack-water-level/?pwapi_token=eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdWJpZCI6IjZlNTEwNDA5IiwicmVhc29uljoiZ2lmdCI6IjZlNTEwNDA5IiwiaWF0IjoiYmEzZjY5YXNoaW5ndG9ucG9zdC5jb20vd2VhdGhlcj8yMDIzLzA0LzA5L2dyZWZGE4ZWNiN2NhZmMiLCJ1cmwiOiJodHRwczovL3d3dy53YXNoaW5ndG9ucG9zdC5jb20vd2VhdGhlcj8yMDIzLzA0LzA5L2dyZWZ0LXNhbHQtbGFrc251bm93cGFjay13YXRici1sZXZlbnC8ifQ.AjCrAUhpXncE9FfOuyxVsiHKlzdTfrGhQsnjuqmJSHY