GREAT SALT LAKE DATA AND INSIGHTS SUMMARY

A synthesized resource document for the 2026 General Legislative Session

January 7, 2026
Version 2.0

In 2025, Utah continued to make progress on the health and long-term future of Great Salt Lake. The lake remains below healthy levels, but conditions have stabilized. A new signed charter of awareness and action, foundational legislative and state agency actions, an expanded tool box to secure new water for the lake, strengthened dust science, improved understanding of human water use, and updated 30-year projections will help return the lake to healthy levels. Actions to ensure a healthy Great Salt Lake remain necessary, urgent, and possible. This report synthesizes essential data and insights to guide Great Salt Lake's recovery.

Utah State University | The University of Utah | Utah DNR | UDAF | Utah Department of Environmental Quality | Great Salt Lake

Ecosystem of Organizations Working to Restore Great Salt Lake

Great Salt Lake recovery efforts span a diverse set of organizations across government, academia, conservation organizations, and the private sector. These groups address different components of the lake's recovery. While not a comprehensive list of organizations, this ecosystem of organizations illustrates the breadth of activity underway and the need for coordination.

Table of Contents

Glossary

Water Depletion vs. Diversion – Water diversion involves redirecting water from streams or rivers for beneficial uses, such as irrigation or municipal supply. While some diverted water eventually returns to the system, water that is consumed and does not re-enter the system is considered depleted.

GSL – Great Salt Lake

Municipal and Industrial (M&I) – Includes water diversion and depletion for commercial, industrial, institutional, and residential purposes.

Natural Flow – The amount of streamflow that would occur if there were no human depletions. It is estimated by adding calculations of depletions to measured streamflow.

Runoff Efficiency – The ratio of the annual runoff amount to annual precipitation amount in a given basin.

Thousand Acre-feet (KAF) – An acre-foot is the amount of water it takes to cover one acre of land one foot deep, typically expressed in this report as thousand acre-feet (KAF) and occasionally referred to by million acre-feet (MAF).

Water Year – A 12-month period that begins on October 1st of one calendar year and ends on September 30th of the following year. The period covering October 1, 2022 to September 30, 2023 is the 2023 water year.

Great Salt Lake Strike Team

The Great Salt Lake Strike Team, represented by committed research entities and state agencies, provides timely, high quality, and relevant data and research that helps decision-makers make informed decisions about Great Salt Lake.

The team focuses on the needs of the state, specifically the Office of the Great Salt Lake Commissioner and the Great Salt Lake Basin Integrated Plan. In doing so, we embrace a three-fold purpose supportive of state decision-makers:

1. **Common data** - Provide a common data set and serve as a primary source of information on Great Salt Lake elevation, salinity, reservoir storage, precipitation, air temperature, groundwater storage, headwater streamflow, river inflow, human water use, future water availability, mineral extraction, dust, and other metrics.
2. **Expert analysis** - Prepare impartial, data-informed, and solution-oriented synthesis and analysis on Great Salt Lake that helps improve water management, increase water deliveries, mitigate adverse impacts, and recover the lake to a healthy range. We focus on issues that are best answered by our interdisciplinary membership, focus on clear and simple visualizations, and quick-response structure.
3. **Objective and constructive** - Refrain from advocacy. We provide independent, non-partisan, and non-prescriptive data, analysis, context, and options that are responsive to policymakers' questions.

CO-CHAIRS

William Anderegg
Leadership Team, Wilkes Center for Climate Science and Policy, University of Utah
anderegg@utah.edu

Tim Davis
Executive Director, Utah Department of Environmental Quality
tim.davis@utah.gov

Joel Ferry
Executive Director, Utah Department of Natural Resources
joelferry@utah.gov

Natalie Gochnour
Director, Kem C. Gardner Policy Institute, University of Utah
natalie.gochnour@eccles.utah.edu

Anna McEntire
Managing Director, Janet Quinney Lawson Institute for Land, Water and Air, Utah State University
anna.mcentire@usu.edu

Bethany Neilson
Director, Utah Water Research Laboratory, Utah State University
bethany.neilson@usu.edu

Kelly Pehrson
Commissioner, Utah Department of Agriculture and Food
kwpehrson@utah.gov

Brian Steed
Great Salt Lake Commissioner, State of Utah
Executive Director, Janet Quinney Lawson Institute for Land, Water, and Air, Utah State University
brian.steed@usu.edu

TEAM MEMBERS

Leila Ahmadi
Water Resource Engineer, Utah Division of Water Resources
lahmadi@utah.gov

Eric Albers
Senior Natural Resources Policy Analyst, Kem C. Gardner Policy Institute, University of Utah
eric.albers@utah.edu

Cory Angeroth
Water Data Services Manager, Utah Division of Water Rights
cangeroth@utah.gov

Blake Bingham
Deputy State Engineer, Utah Division of Water Rights
blakebingham@utah.gov

Paul Brooks
Professor, Geology & Geophysics, University of Utah
paul.brooks@utah.edu

Eric Dixon
Senior Engineer, Utah Division of Water Resources
ericdixon@utah.gov

Joanna Endter-Wada
Professor, Natural Resource Policy and Social Science, Utah State University
joanna.endter-wada@usu.edu

Tage Flint
Executive Director, Utah Water Ways
tage.i.flint@icloud.com

Hannah Freeze
Deputy Great Salt Lake Commissioner, State of Utah
hjfreeze@utah.gov

Candice Hasenyager
Director, Utah Division of Water Resources
candicehasenyager@utah.gov

Timothy Hawkes
General Counsel, Great Salt Lake Brine Shrimp Cooperative
timothy.d.hawkes@gmail.com

William Johnson
Professor, Geology and Geophysics, University of Utah
william.johnson@utah.edu

John Lin
Scientific Director, Wilkes Center for Climate Science and Policy, University of Utah
john.lin@utah.edu

John Mackey
Director, Utah Division of Water Quality
jkmackey@utah.gov

Fielding Norton
Managing Director, Wilkes Center for Climate Science and Policy, University of Utah
fielding.norton@utah.edu

Sarah Null
Professor, Watershed Sciences, Utah State University
sarah.null@usu.edu

Kevin Perry
Professor, Atmospheric Sciences, University of Utah
kevin.perry@utah.edu

Ben Stireman
Sovereign Lands Program Administrator, Utah Division of Forestry, Fire and State Lands
bstireman@utah.gov

Angela Gong
Sovereign Lands Program Manager, Utah Division of Forestry, Fire and State Lands
agong@utah.gov

Courtenay Strong
Professor, Atmospheric Sciences, University of Utah
court.strong@utah.edu

David Tarboton
Professor, Civil and Environmental Engineering, Utah Water Research Laboratory, Utah State University
david.tarboton@usu.edu

Laura Vernon
Great Salt Lake Basin Planner, Utah Division of Water Resources
lauravernon@utah.gov

Marisa Weinberg
Program Manager, Great Salt Lake Sentinel Landscape
marisaweinberg@utah.gov

Matt Yost
Associate Professor and Agroclimate Extension Specialist, Utah State University
matt.yost@usu.edu

Dear friends,

The Great Salt Lake Strike Team provides timely, objective, and policy-relevant data and analysis to support Utah's efforts to stabilize and recover the Great Salt Lake. We do not advocate for specific outcomes, but rather ensure that decision-makers benefit from access to a shared, credible understanding of the lake's conditions, the effectiveness of ongoing actions, and the tradeoffs associated with potential management options.

The Strike Team aligns with the immediate needs of the Office of the Great Salt Lake Commissioner and the Legislature. We structure our work to respond directly to priority questions facing the Commissioner and state leaders—whether related to water availability, salinity management, dust mitigation, wetlands, mineral extraction, or long-term system resilience. By synthesizing data across disciplines and institutions, we reduce uncertainty, clarify implications, and support informed decisions as actions are implemented and refined.

We ground our efforts in the long-term framework established by the Great Salt Lake Basin Integrated Plan. That plan recognizes that restoring and sustaining the lake will require coordinated action across sectors, basins, and decades. The Strike Team supports this generational approach by helping translate complex modeling, monitoring, and research into accessible insights that inform adaptive management over time. We update our analyses as new data become available, reinforcing a learning-based approach to lake recovery.

This work builds on—and is made possible by—the sustained leadership of the Governor and the Utah Legislature, as well as the commitment of state agencies, local governments, academic institutions, nonprofits, industry partners, and water users across the basin. In recent years, Utah fundamentally reshaped how the Great Salt Lake is managed, creating new legal pathways, institutions, and tools to conserve, dedicate, and deliver water for the lake's benefit. The Strike Team exists to help ensure those tools are informed by the best available science and data.

That shared responsibility was further articulated through the Great Salt Lake Charter, which affirms the lake's ecological, economic, and cultural value and recognizes the urgency of collective action. The Charter reflects a broad, statewide commitment to stewardship—one that emphasizes collaboration, transparency, and long-term thinking. The Strike Team's work supports that commitment by providing a common factual foundation from which diverse partners can engage productively.

We offer this report in that spirit: as a resource to support ongoing leadership, inform next steps, and contribute to a durable path forward for the Great Salt Lake.

Sincerely,

The Great Salt Lake Strike Team

William Anderegg
Leadership Team, Wilkes Center for Climate Science and Policy, University of Utah

Tim Davis
Executive Director, Utah Department of Environmental Quality

Joel Ferry
Executive Director, Utah Department of Natural Resources

Natalie Gochnour
Director, Kem C. Gardner Policy Institute, University of Utah

Anna McEntire
Managing Director, Janet Quinney Lawson Institute for Land, Water and Air, Utah State University

Bethany Neilson
Director, Utah Water Research Laboratory, Utah State University

Kelly Pehrson
Commissioner, Utah Department of Agriculture and Food

Brian Steed
Great Salt Lake Commissioner, State of Utah
Executive Director, Janet Quinney Lawson Institute for Land, Water, and Air, Utah State University

Executive Summary

On September, 24, 2025, Utah leaders gathered at the Eccles Wildlife Education Center at Farmington Bay to sign the Great Salt Lake 2034 Charter. The Charter reflects an unprecedented, statewide commitment to restore and protect the lake. Gov. Spencer Cox commemorated the signing by saying, "Across the world, saline lakes are in decline. Utah will be the exception. The Great Salt Lake is our lake, our heritage, and our responsibility."

The Great Salt Lake Strike Team exists to support state leaders in their commitment to preserve the lake's economic, ecological, and cultural value. In 2025 the state of Utah built upon past efforts and once again made notable progress in five areas:

- **Changes to water management framework** – Since 2022 Utah fundamentally reshaped the water management framework to get more water to the lake. The state suspended appropriations in the basin, expanded instream flow pathways, and developed a distribution management plan that guides how to measure and deliver water within the lake boundary. Conservation programs, water optimization funding, wetland restoration investments, and the creation of the Watershed Enhancement Trust increased the capacity to conserve, lease, and dedicate water to the lake. New tools for salinity management, berm operations, and real-time monitoring provide the adaptive management infrastructure needed for long-term recovery.
- **Dust science and mitigation readiness** – As exposed lakebed continues to pose public-health risks, Utah dramatically expanded monitoring capacity through the Utah Dust Observation and Research Network (UDORN). Additional analysis of Farmington Bay impoundment and artesian-well pilot concepts provide new options for temporary crust restoration at priority dust hotspots while long-term lake-level solutions progress.
- **More water** – Utah expanded the toolbox for increasing inflows to the lake. Water leasing, agricultural and municipal conservation, and upstream water transactions continue to grow in scale and importance. Large-scale phragmites removal frees water for wetlands and improves delivery efficiency. Assessments of the Newfoundland Evaporation Basin indicate a modest but potentially reliable source of 20–50 thousand acre-feet per year in many years. Together, these approaches support a diversified strategy for increasing water available to the lake.
- **Improved understanding of human water use** – Revisions to Utah's water budget show the state previously underestimated municipal and industrial (M&I) depletions. New estimates show M&I accounts for approximately 26% of human-caused depletions, and a large share of total depletions in urbanized sub-basins. This shift underscores that all sectors—urban, agricultural, and industrial—play meaningful roles in restoring the lake.

Gov. Spencer Cox signing the Great Salt Lake 2034 Charter on September 24, 2025.

Speaker Mike Schultz, Senate President Stuart Adams, U.S. Congressman Blake Moore, Executive Director of the Utah Department of Natural Resources Joel Ferry, Great Salt Lake Commissioner Brian Steed, and dozens of other community leaders also signed the charter.

- **Long-term planning** – Updated 30-year projections show that sustained additional inflows—on the order of hundreds of thousands of acre feet per year—are required to shift the lake into healthier elevation ranges under contemporary climate conditions. These scenarios, while not prescriptive, clarify the scale of long-term commitment needed to secure recovery.

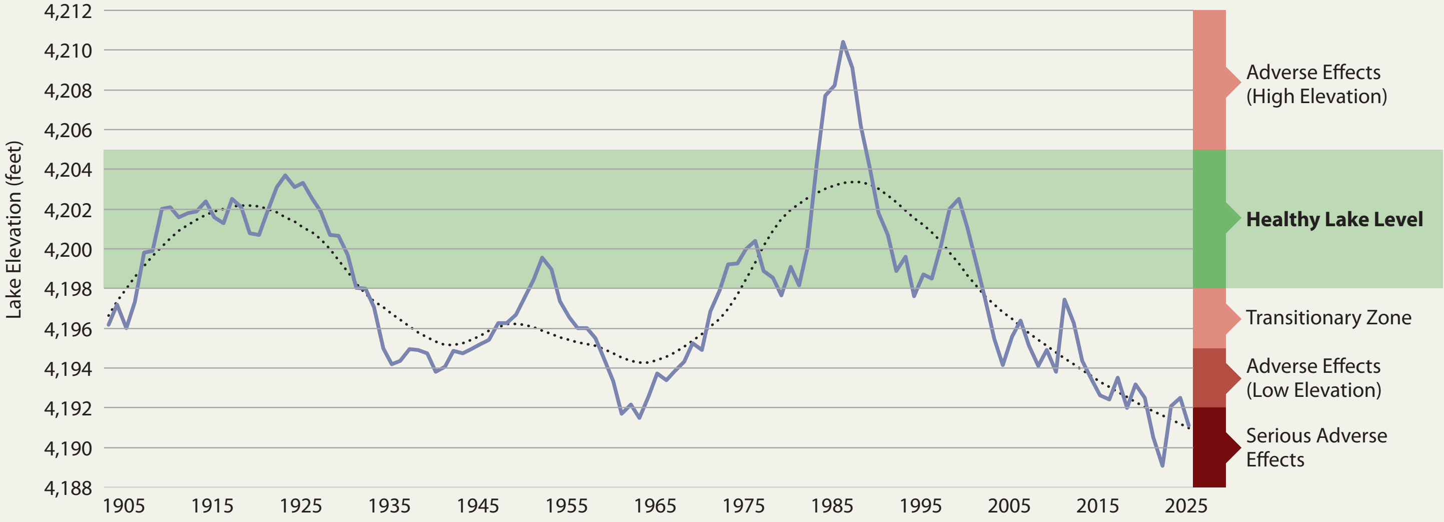
In addition to these progress areas, the Strike Team confirms over two dozen major indicators and milestones in 2025, summarized here:

- **Ecosystem conditions** – Both the north and south arms of the lake remain below healthy levels. Salinity levels in the south arm remain stabilized due to the adaptive management of the causeway berm. Contaminant levels in waterfowl increased prompting consumption advisories. Avian influenza caused significant waterbird mortality, underscoring ecosystem vulnerability under stressed lake conditions.
- **Funding** – The federal government released $50 million in frozen funds, Great Salt Lake Rising and Ducks Unlimited made major financial commitments to lake recovery, state wetland grants protected or restored thousands of acres of wetland habitat, and non-profit groups funded conveyance improvements to increase water delivery to Farmington Bay wetlands.
- **Water donations and releases** – The portfolio of voluntary water donations and leases benefiting the lake increased nearly nine-fold since 2021. Multi-agency agreements balanced upstream water needs while contributing measurable inflows to the lake.
- **Policy, programs, and strategies** – A variety of policies and programs, including mineral oversight, coordinated water distribution, water efficiency, groundwater quality, and more improved lake management. Efforts progressed toward meeting numeric salinity standards, and new stream gauges were installed.
- **Research** – Strike Team members and others conducted research on water shepherding, economic impacts, dust dynamics, invasive species mapping, and bird habitat.

Returning the lake to health requires cooperation across sectors, sustained investment, and data-driven action. The Strike Team will continue to serve decision-makers in future years creating a treasure trove of research and analysis to guide state actions.

Although Great Salt Lake remains in a challenging condition, Utah is better equipped with the knowledge, tools, and partnerships necessary to slow its decline, halt its losses, and then support its long-term recovery.

Figure 1: Elevation of Great Salt Lake South Arm, 1903-2025 Water-year-end Elevation



Source: US Geological Survey Historical Elevation at Saltair Boat Harbor and Saline, UT.

Major Indicators and Milestones: 2025

Ecosystem conditions

- **Lake elevation:** Dry summer conditions and low groundwater storage resulting from years of drought limited hydrologic gains, leaving the south arm stable and the north arm modestly higher, but both are well below healthy levels.
- **Salinity levels:** Salinity levels in the south arm have stabilized since 2022 through use of the causeway berm, protecting biological integrity and improving flexibility for future conditions.
- **Contaminant levels:** Monitoring detected elevated PFOS and mercury concentrations in waterfowl, prompting updated consumption advisories.
- **Wildlife disease:** Avian influenza caused significant waterbird mortality, underscoring heightened ecosystem vulnerability due to stressed lake conditions.

Additional funding

- **Federal investments:** Previously frozen federal funds, totaling approximately $50 million, were released to support Great Salt Lake water and habitat projects.
- **Philanthropic support:** Private fundraising campaigns, including Great Salt Lake Rising and Ducks Unlimited, expanded investments in water acquisitions and habitat restoration.
- **State wetland grants:** The Great Salt Lake Watershed Enhancement Trust distributed funding to protect and restore thousands of acres of wetland habitat.
- **Habitat infrastructure:** Ducks Unlimited and partners funded conveyance improvements to increase Jordan River water deliveries into Farmington Bay wetlands.

Water donations and releases

- **Utah Lake releases:** Controlled releases of 80,000 acre-feet from Utah Lake delivered water to Great Salt Lake, partially offsetting lake-level declines during late summer.
- **Willard Bay releases:** Weber Basin Water Conservancy District discharged over 100 KAF through the Willard Spur into Bear River Bay.
- **Operational coordination:** Multi-agency agreements balanced upstream water needs while increasing inflows to the lake.
- **Water transactions:** The Watershed Enhancement Trust and Great Salt Lake Commissioner's Office expanded their portfolio of voluntary water donations and leases benefiting Great Salt Lake.
- **Institutional participation:** Agricultural, municipal, and institutional water-rights holders completed additional water transfers and contributions to the lake.

Policy and programs

- **Distribution planning:** The Utah Division of Water Rights advanced a Distribution Management Plan to coordinate conservation, industrial use, and inflows to Great Salt Lake.
- **State water policy:** H.B. 41 expanded Utah's water policy to emphasize groundwater quality, conservation, watershed monitoring, planning, and reuse.
- **Mineral oversight:** H.B. 446 refined severance tax provisions, mineral studies, berm governance, and commissioner oversight of lake leases.

- **Special session action:** Legislators authorized raising the adaptive management berm to address changing salinity and hydrologic conditions.
- **Water efficiency:** Tiered pricing and agriculture-focused conservation legislation advanced statewide water-use efficiency objectives.

Strategies

- **Salinity management:** Efforts progressed toward meeting numeric salinity standards that guide berm operations and protect lake ecosystem functions.
- **Flow monitoring**: New stream gauges were installed on tributaries to improve real-time measurement of inflows to Great Salt Lake.
- **Local coordination:** Salt Lake County adopted a resolution reaffirming commitments to protect Great Salt Lake wetlands and shorelines.

Research

- **Water shepherding:** A gap analysis identified measurement infrastructure, physical, and administrative barriers to moving dedicated water to Great Salt Lake.
- **Economic impacts:** Studies quantified growing public health and infrastructure costs associated with dust from an increasingly exposed Great Salt Lake lakebed.
- **Dust dynamics:** Scientists documented increased frequency and severity of dust storms originating from exposed lakebed sediments.
- **Invasive species mapping:** Researchers mapped invasive wetland grasses to guide restoration, dust control, and habitat management.
- **Bird habitat surveys:** Snowy Plover surveys documented nesting patterns and informed shoreline and island habitat decisions.
- **Long-term impacts of drought:** Research shows that drought years reduce catchment water storage, leading to multi-year reductions in streamflow, even after the drought is over.

Other actions

- **Great Salt Lake Charter:** State leaders and partners signed the Great Salt Lake Charter, formally affirming shared principles, roles, and long-term commitments to the lake's recovery and stewardship.
- **Industrial bankruptcy:** US Magnesium filed for Chapter 11 bankruptcy, complicating state efforts to restrict water withdrawals and address legacy impacts.
- **Marina access:** The Great Salt Lake Marina was dredged again to maintain boating access under persistently low water conditions.
- **Refuge management:** Infrastructure improvements at Bear River Migratory Bird Refuge and other duck clubs strengthened water-level control for migratory birds.

Five Lessons Learned in 2025

1 Partnerships and shared responsibility are expanding

More organizations and water users are engaging in Great Salt Lake recovery. New frameworks from the Great Salt Lake Strategic Plan, Basin Integrated Plan, and Distribution Management Plan provide shared structure for this multi-sector work. Updated water budget modeling shows that municipal and industrial depletions have been underestimated—while agriculture remains the largest single user but not overwhelmingly so. This reinforces that all sectors must contribute to conservation, and that partnership-based problem-solving is essential to raising lake levels.

2 We can now begin evaluating what works

After several years of sustained effort, Utah has enough information to start assessing the effects of policy, conservation programs, and management decisions. Decision-makers can analyze effects of irrigation optimization, mineral extraction agreements, water rights changes, targeted wetland hydrology improvements, dust-mitigation pilots, and adaptive berm management. This growing evidence base helps refine strategies and improves our ability to select actions with the greatest benefit to the lake.

3 Better data enable more targeted delivery of water to the lake

Investments in measurement, monitoring, and modeling are allowing decision-makers to understand when, where, and how water reaches Great Salt Lake. Stream gages, diversion measurement upgrades, groundwater work, mineral industry reporting, and dust monitoring network expansion are improving the ability to quantify shepherded water, evaluate return flows, and identify where conservation yields the greatest lake benefit. These insights support more precise approaches to conserving, leasing, and shepherding water.

4 Tradeoffs are clearer across ecological, financial, and social dimensions

As understanding grows, so does awareness of the lake's complex interactions—including dust, habitat, salinity, hydrology, and community impacts. Data continue to show that every option carries benefits and tradeoffs that must be weighed holistically.

5 Utah is building institutions for long-term stewardship

The state is shifting from crisis response to long-term stewardship. Developed tools—along with expanded monitoring networks, enhanced data systems, and cross-agency coordination—create continuity across years and leadership transitions, institutionalizing lake stewardship.

Getting Water to Great Salt Lake

What has been done?

Before 2022, Utah lacked the legal, infrastructural, and management tools needed to restore Great Salt Lake to healthy levels. After the lake's record low in November 2022, the Utah Legislature enacted dozens of bills to overhaul state water policy. State agencies, academic institutions, and private partners have since mobilized to conserve, dedicate, and deliver water for the lake's benefit. These changes resulted in nearly 400,000 acre-feet of water being dedicated and delivered to Great Salt Lake between 2021 and 2025.

While delivered water and lake elevation are key progress indicators, they do not capture the extensive groundwork underway to build durable systems, infrastructure, and adaptive management. Five major areas of effort contribute to the long-term recovery of Great Salt Lake:

1 Slowing the decline and creating a system to refill the lake

For decades, Great Salt Lake's elevation declined steadily, with few intentional water deliveries. Today, Utah has built the foundation to reverse that trend.

- **Suspended appropriations:** In 2022, Utah halted new large water-right appropriations in the majority of the Great Salt Lake Basin to stabilize inflows.
- **Instream flows:** H.B. 33 in the 2022 Utah General Legislative Session expanded pathways for leasing and shepherding water to the lake for beneficial use on sovereign lands.
- **Distribution Management Plan:** Adopted in 2025, the plan guides how water rights are measured and distributed within the lake's boundary, accounting for elevation, salinity, and dedicated water.

Other efforts include agreements with mineral extractors, berm management, and expanded real-time gaging of diversions and inflows.

2 Managing more than just water levels

Elevation alone doesn't define the lake's health; targeted management ensures ecological and human benefits.

- **Salinity:** Managing flows between the north and south arms allows optimal salinity for brine shrimp, brine flies, and migratory birds.
- **Dust:** Exposed lakebed dust can be addressed by covering dust "hot spots" with water, rewetting and crust regeneration strategies, and coordinated dust mitigation and monitoring efforts.
- **Wetlands:** Strategies account for water delivery to wetlands, sustaining habitats even when separated from the main lake.

Additional efforts target recreation access, water quality, and mineral extraction.

3 Expanding conservation and leasing capacity

Public and private investments help cities and farms use less water, freeing supply for the lake.

- **Agricultural optimization:** Grants modernize irrigation infrastructure to maintain productivity with less water.
- **Municipal conservation:** Incentives and ordinances promote urban water savings in residential, commercial, industrial, and institutional uses.
- **Leasing programs:** The Great Salt Lake Watershed Enhancement Trust secures conserved or leased water for lake inflows.

Other projects address phragmites management, water reuse, and water infrastructure.

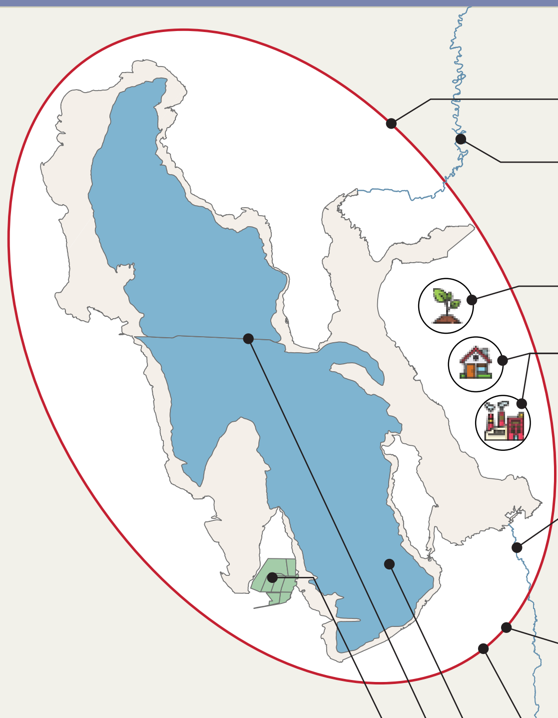
4 Creating local and national support for Great Salt Lake recovery

Utah leaders have built broad coalitions—locally and nationally—to secure the financial resources, partnerships, and public momentum needed to get more water to Great Salt Lake.

- **$50 million from the U.S. Bureau of Reclamation:** Supporting projects that improve water management, enhance measurement systems, and expand infrastructure.
- **$100 million commitment from Ducks Unlimited**: Fundraising effort to restore wetlands and secure inflows to habitat areas critical to millions of migratory birds.
- **$100 million commitment from Great Salt Lake Rising:** This philanthropic campaign is unifying support across statewide businesses and foundations. Funds will be used on a public awareness campaign and leasing agricultural water.

Other efforts include water donations from conservancy districts, Church of Jesus Christ of Latter-day Saints, and private water-rights holders.

Great Salt Lake Legislation



Slowing the decline and creating a system to refill the lake

- **Water Banking** – S.B. 26 (2020) - Establishes a legal framework for water banks to facilitate voluntary and temporary water transactions between water users.
- **Instream Water Flow Amendments** – H.B. 33 (2022) – Water rights holders can now dedicate water to Great Salt Lake without risking forfeiture.

Expanding conservation and leasing capacity

- **Agriculture Water Optimization Funding** – S.B. 277 (2023) - Allocated $200 million for agriculture water optimization and infrastructure improvements.
- **Municipal and Industrial Water Efficiency** – H.B. 130 (2020), H.B. 121 (2022), H.B. 242 (2022), S.B. 118 (2023), H.B. 11 (2024) - New policy aimed at water efficiency requires metering of secondary water, implements guidelines for water use efficiency, implements water conservation at state facilities, and prohibits certain entities from using overhead spray irrigation.
- **Great Salt Lake Watershed Enhancement Trust** – H.B. 410 (2022) - Created the trust and endowed it with $40 million to improve water flow, quality, and habitat conservation in the watershed.

Building an adaptive management framework

- **Great Salt Lake Commissioner** – H.B. 491 (2023) - Establishes the Great Salt Lake Commissioner's Office, and directs the commissioner to develop and implement a strategic plan, with the help of state agencies.
- **Basin Integrated Plan** – H.B. 429 (2022) - Directs the Division of Water Resources to develop the Great Salt Lake Basin Integrated Plan. The plan will integrate and expand modeling of water supply and use across the basin, simulate future conditions, and ultimately develop an actionable plan to ensure a resilient water supply.
- **Distribution Management Plan** – H.B. 453 (2024) - Directs the state engineer to develop the Great Salt Lake Distribution Management Plan to administer measurement, apportionment, and distribution of water rights within Great Salt Lake.

Managing more than just water levels

- **Berm Management** – H.B. 453 (2024), H.B. 1001 (2025) – The causeway berm can now be used to manage salinity and a variety of other objectives.
- **Mineral Extraction** – H.B. 513 (2023), H.B. 453 (2024), H.B. 478 (2025) - Mineral extraction policy changed significantly since 2022, with new royalties and severance taxes, agreements on reduced water use at low lake levels, and deep brine mining regulations.

Additional Legislation

H.B. 166 (2020), H.B. 41 (2020), H.B. 157 (2022), H.B. 349 (2023), H.B. 61 (2024), H.B. 62 (2024), H.B. 275 (2024), H.B. 280 (2024), H.B. 41 (2025), H.B. 446 (2025), H.B. 274 (2025), H.B. 311 (2025), H.B. 520 (2025) – Created state and local councils for water policy and management, added guidelines for water management and conservation, regulated water reuse projects, enhanced water measurement and reporting requirements, established partnerships to optimize water use through public education, prioritized planning and funding of water infrastructure projects, allowed conservation-based tiered rates, and funded water augmentation projects, among other provisions.

Source: Compiled by Great Salt Lake Strike Team. (2026). Great Salt Lake Data and Insights Summary.

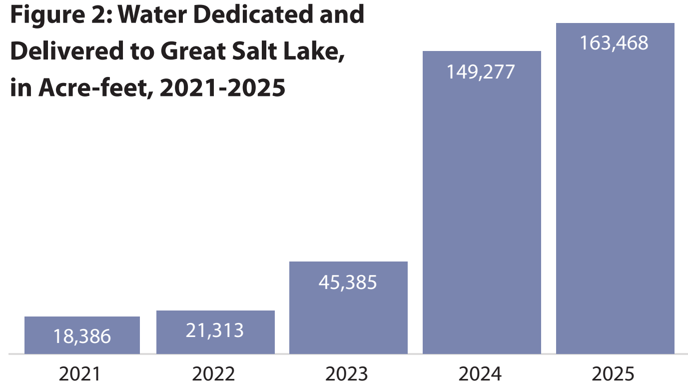
5 Building an adaptive management framework

Utah is creating systems to guide long-term lake recovery.

- **GSL Strategic Plan:** Defines near- and long-term actions to balance ecological, economic, and societal goals.
- **GSL Basin Integrated Plan**: A generational roadmap for water use, supply, and conservation across the basin.
- **Monitoring:** Increased gaging throughout Great Salt Lake sub-basins tracks diversions and river flow in real time.

Utah is also learning from other saline lakes, such as the Salton Sea, Mono Lake, and Owens Lake.

Figure 2: Water Dedicated and Delivered to Great Salt Lake, in Acre-feet, 2021-2025



Note: Dedications/deliveries for 2025 are preliminary and are expected to increase upon final calculation.
Source: Great Salt Lake Distribution Accounting Tool. (2025). Utah Division of Water Rights

Opportunities and Costs for Agricultural Water Optimization and Leasing

The Great Salt Lake Basin Integrated Plan evaluated a suite of agricultural water optimization strategies to identify opportunities for reducing consumptive water use while maintaining agricultural productivity and economic stability. Together, these approaches offer a diversified, voluntary, and regionally tailored pathway for agriculture to contribute meaningfully to Great Salt Lake recovery.

One of the most technically and economically viable strategies identified is temporary water leasing. Full-season and split-season leasing arrangements allow irrigators to temporarily reduce consumptive use in exchange for compensation, providing flexibility for producers while making conserved water available for Great Salt Lake when paired with effective water shepherding. The Basin Integrated Plan evaluated several leasing scenarios, including split-season arrangements in which irrigation ceases during part of the growing season. Three of these scenarios were capable of achieving up to a 10% reduction in agricultural depletions across the basin if widely adopted, placing leasing among the lowest-cost approaches evaluated. Leasing also enables voluntary participation and income generation for producers, while supporting ecological restoration goals. Successful implementation requires coordinated administration, clear legal mechanisms for temporary water-right transfers, and management plans to address potential impacts to forage availability, livestock operations, and soil health.

In addition to leasing, the Plan identified several complementary agricultural optimization pathways:

- **Irrigation system upgrades:** Converting older systems such as wheel-line or mid-elevation sprinklers to low-elevation precision application (LEPA), low-elevation spray application (LESA), or subsurface drip irrigation can significantly reduce evaporative and non-beneficial losses, making this one of the most immediately feasible and scalable options.
- **Crop substitution:** In select areas, particularly upper valleys, shifting from high-water-use crops to lower-consumptive alternatives can reduce overall depletions while preserving agricultural land use and supporting long-term resilience.
- **On-farm conveyance improvements:** Lining or piping on-farm ditches can reduce seepage and operational losses before water reaches the field, improving delivery efficiency and reducing total depletion.
- **Land-use transitions:** Over time, conversion of some agricultural lands to municipal and industrial uses may reduce agricultural depletions, though this pathway involves broader economic, social, and planning considerations beyond farm-scale optimization.

Taken together, these strategies demonstrate that agriculture can play a significant role in Great Salt Lake recovery through a flexible, scalable, and cost-effective portfolio of actions. Water leasing, in particular, stands out as a near-term opportunity that can be paired with longer-term infrastructure and management investments to balance agricultural viability with sustained inflows to the lake.

Agricultural water leasing in practice

Agricultural water leasing in the Great Salt Lake Basin depends on the cooperation of both individual farmers and irrigation companies. The majority of water diverted in the Great Salt Lake Basin is owned by irrigation companies, and each of these companies must deliver water to their shareholders. This makes a single lease in an irrigation company difficult, as a water lease will likely decrease the total flow in a company's canal, but the company must maintain a minimum flow to ensure water reaches the end of their system. Leasing becomes easier when an irrigation company is willing to file a change application on their total portfolio of water rights and find ways to deliver water past their diversion, while still maintaining enough flow to reach each of their shareholders. This can be done with partial season leases within an entire company's service area or fitting the release of leased water into their regular turn schedule, akin to making the Great Salt Lake a shareholder within the irrigation company, where the lake receives deliveries of water like any other shareholder.

Once the logistics of leasing are determined, whether it is with an irrigation company or an individual water-rights holder, further questions deal with how that water is sourced and how it has been used historically. Most leases for agricultural water are either surplus water or water associated with a conservation activity. Surplus water represents water that is in excess of what a farmer usually needs. This means a certain amount remains in an upstream reservoir and may be eligible to be leased and dedicated to the Great Salt Lake. This surplus water is usually priced at a lower amount.

Alternatively, a farmer may undergo a conservation activity that would lower the net total depletions in the Great Salt Lake Basin. This usually involves forgoing irrigation for all or part of a growing season, but could, in some cases, involve switching crops or employing an agricultural optimization project. In these leases, farmers are giving up a portion of their revenue to produce new water for the Great Salt Lake, and as such, are generally priced higher than surplus leases.

Source: Utah State University, Jacobs, M3. (2025) Opportunities and costs for argricultural water optimization

Phragmites Management

Phragmites presents ecological and hydrological challenges for the Great Salt Lake ecosystem. Recent findings and strategies can guide management of this invasive plant throughout the basin.

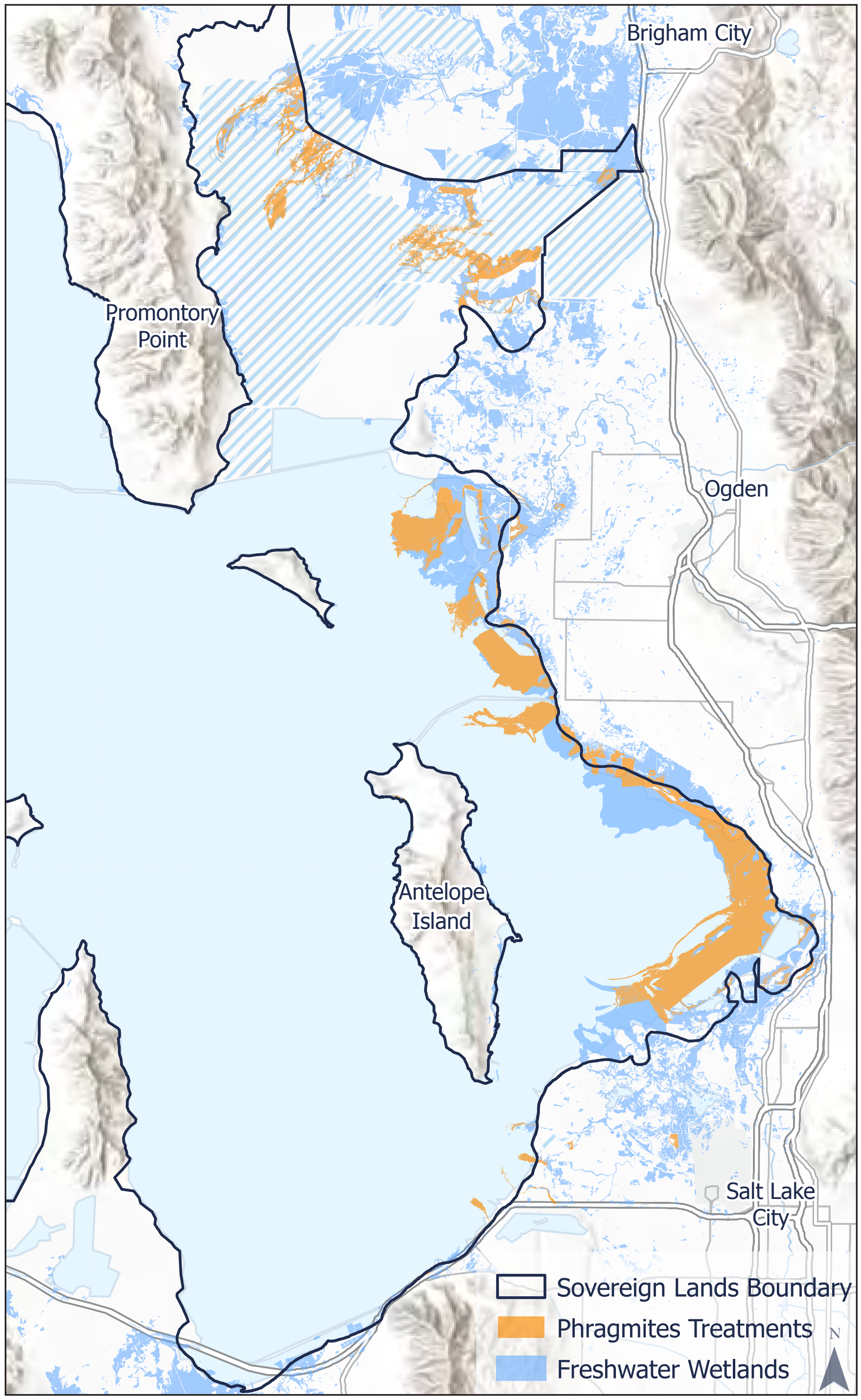
What's the problem with phragmites?

Phragmites patches inhibit water flow and reduce water availability to wetlands and their wildlife. **It is estimated to use twice as much water as native wetland plants.** *Phragmites australis* is a very tall grass with a large seed head. This invasive plant dominates many wetlands throughout Utah, including around Great Salt Lake. Dominating the region since the early 2000's, its aggressive growth crowds out native plants, leading to dense monocultures. Phragmites creates what appear to be lush stands of growth, but are, in reality, food and habitat deserts for many bird species that rely on Great Salt Lake.

Where is phragmites?

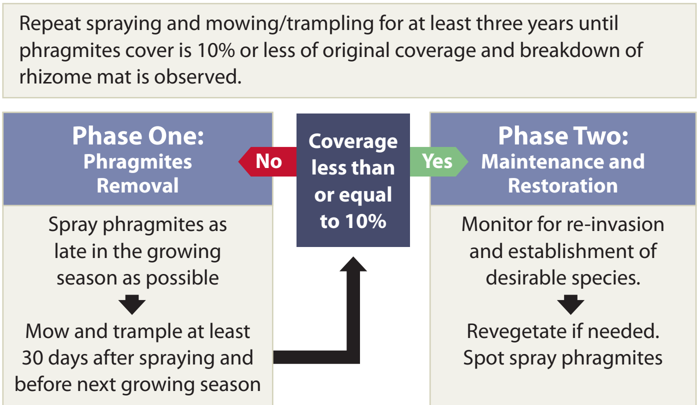
- **Extensive footprint:** Phragmites covers much of Great Salt Lake's wetlands, with historic estimates ranging from 21,000 to 55,000 acres. Phragmites also dominates wetlands upstream from the lake.
- **Challenges to mapping:** While protocols exist for mapping phragmites at small and medium scales, large-scale mapping remains a challenge due to the shifting landscape of treated areas and infestations, complex hydrology and seasonality, and the visual similarity to other plant communities.
- **Timely, accurate, large-scale mapping needed:** Novel methods based on satellite imagery (using machine learning and leveraging existing small-scale mapping methods using drones and field data) may soon be able to provide more accurate assessments of treatment success, detect new infestations, and improve restoration strategies.

Figure 3: Map of Phragmites Treatment around Great Salt Lake



Source: Utah Division of Forestry, Fire and State Lands. (2025). Phragmites Treatment Areas.

Figure 4: Phragmites Treatment Protocol



Source: Utah Division of Forestry, Fire and State Lands. (2025)

How are we doing against phragmites?

Given the multitude of phragmites' detrimental effects, removing it has been a priority for the State of Utah. Much of the work has been coordinated by the Division of Forestry, Fire and State Lands (FFSL) in partnership with other agencies and organizations, including the Division of Wildlife Resources, The Nature Conservancy, Audubon, and private duck clubs.

- **Phragmites treatment protocol:** Effective management of phragmites can be achieved in two phases (Figure 4). Herbicide treatment late in the growing season is most effective for phragmites eradication. Drought dramatically reduces the efficacy of the herbicide.
- **Environmental impacts:** Encouraging research shows the application of glyphosate to wetland vegetation has not produced soil concentrations that exceed EPA standards. Furthermore, phragmites monocultures suppress soil microbial communities, but treated sites demonstrate a recovery to native levels. This research is ongoing, and final data will be available in fall of 2026.
- **Successful treatment:** Phragmites treatment around Utah Lake resulted in 88% reduction in cover as of 2025. In 2024, FFSL treated 11,000 acres around Great Salt Lake and in many areas reduced coverage from 90% to less than 15%.
- **After phragmites, then what?:** Once phragmites cover is controlled, native vegetation must be reintroduced to ensure invasion resistance and habitat recovery. This process is complicated by high failure rates of reseeding, sensitivity to both under- and over-watering, and limited access to diverse and affordable native seeds.
- **Additional questions:** Additional research is needed to quantify water savings from phragmites treatment and refine revegetation strategies.

Source: Utah Division of Forestry, Fire and State Lands. (2025). Phragmites Management.

Policy Recommendations

Effective Funding Structures

Future progress in phragmites management requires a deliberate funding structure that capitalizes on the clear benefits of phragmites removal to lake ecology and hydrology, as well as well-researched management and restoration processes, while recognizing highly variable climate and weather patterns. The most effective funding model calls for:

- **Continued baseline funding:** Ongoing operational funding to maintain existing effective coordination and management practices.
- **Flexible, one-time funding:** Establishing a dedicated reserve fund that can be deployed specifically to scale phragmites management in wet years. Having ready funds allows managers to quickly seize these critical environmental windows for large-scale operations when conditions are right.
- **Upstream investment:** A broader, coordinated commitment to fund and support upstream phragmites control efforts, including on private land, to reduce the influx of seeds that continuously repopulate downstream management areas.

Management Coherence

Successful long-term phragmites control and restoration also requires policy action to address ecological and logistical barriers:

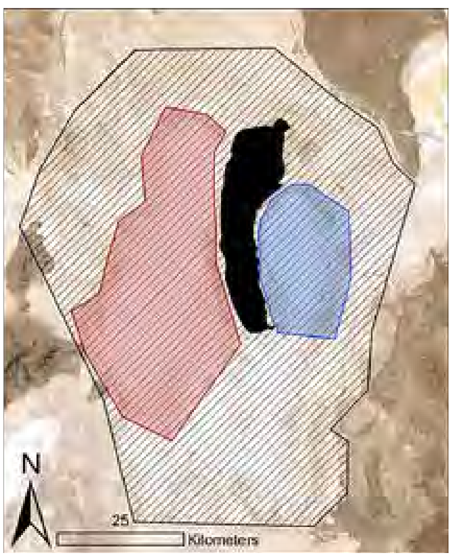
- **Prioritize sustained water management:** Water at the right times and in the right amounts is critical for both effectively treating phragmites and reestablishing native plants. Policies should ensure water availability is coordinated with restoration efforts.
- **Address native seed supply:** Policies or programs are needed to invest in and formalize the supply chain for diverse, affordable, native wetland seeds.

Newfoundland Evaporation Basin

Water Availability and Potential Contribution to Great Salt Lake

Shallow surface water periodically accumulates in Utah's Newfoundland Evaporation Basin—an internally drained landscape west of Great Salt Lake. Historically engineered to evaporate excess lake water in the 1980s, the basin now collects natural precipitation in variable amounts each year. This analysis presents a preliminary evaluation of the feasibility of supplementing Great Salt Lake water levels using seasonal water in the Newfoundland Evaporation Basin, and assesses the magnitude, frequency, and reliability of this water. This analysis does not constitute a policy recommendation and requires further evaluation.

Figure 5: Map of Newfoundland Evaporation Basin



Source: Radwin, M. (2025). Newfoundland Basin, Utah, Water Area Accumulation Report.

Key Findings

The basin accumulates water intermittently—in highly variable amounts

- Analysis of 174 Landsat images (2013–2025) shows water accumulation following a seasonal cycle: water accumulates in winter and spring, and nearly fully evaporates during summer.
- In wet years, total surface water can exceed 100 KAF; in dry years, zero.
- Median of the annual maximum storage is about 34 KAF for the basin, with the western sub-basin contributing the majority.

Maximum "potential water" does not equal "recoverable water"

- The basin has no natural outflow; all water ultimately evaporates.
- Evaporation calculations indicate that about 94 KAF/year evaporates on average from the region—an upper limit on what could theoretically be captured.
- Due to extreme year-to-year variability, the median annual maximum storage of 34 KAF is a more realistic representation of water that could be reliably collected and transferred to Great Salt Lake.

Realistic diversion potential is modest but meaningful

- Practical diversion potential is estimated at 20–50 KAF/year, depending on hydrologic conditions.
- Based on Strike Team lake level sensitivity analyses, sustained delivery of this volume could increase long-term lake elevation by 0.2–0.5 feet.

Considerations for Decision-Makers

Benefits

- Represents a locally available water source that, when delivered, could contribute to the recovery of Great Salt Lake.
- Adapts an existing engineered basin designed for water management.
- Offers what is likely a modest, steady contribution that complements other water-delivery strategies.

Trade-Offs

- High variability limits reliability.
- Water is shallow and geographically dispersed, increasing pumping and conveyance complexity.
- Engineering feasibility, energy needs, and environmental impacts require further analysis.
- There may be additional dust production, impact on salt flats, groundwater, and other environmental impacts that are unknown.

What Additional Evaluation Is Needed?

To move this option forward, several foundational analyses are needed. These include better on-the-ground data and mapping to understand how much water is available and how it changes over time; clearer understanding of where the water comes from and when it is available; and assessment of potential system-wide impacts, including effects on dust, salinity, groundwater, and environmental conditions.

Source: Utah State University, University of Utah. (2025). Newfoundland Evaporation Basin - Water Availability and Potential Contribution to Great Salt Lake.

Dust Management Updates

Dust Mitigation Options and Costs

A new report, commissioned by the Great Salt Lake Basin Integrated Plan, evaluates a suite of dust-mitigation strategies for exposed Great Salt Lake playa. As declining lake levels have left hundreds of square miles of lakebed vulnerable to wind erosion, dust emissions now pose growing public-health, ecological, and economic risks to communities along the Wasatch Front. The report's purpose is not to recommend a single solution, but to provide decision-makers with a consistent, side-by-side assessment of available mitigation options, including their effectiveness, scalability, costs, water requirements, and trade-offs. The analysis emphasizes that dust mitigation is a complementary strategy—intended to reduce near-term risks, while longer-term efforts to restore lake levels continue.

Costs, Trade-Offs, and Decision Considerations

No single dust-mitigation option is sufficient or universally applicable. Highly effective methods—such as surface flooding or impoundment—tend to require substantial water volumes and may conflict with the overarching objective of raising Great Salt Lake levels. Lower-water or water-free approaches, while attractive from a conservation standpoint, are generally limited in scale, durability, or effectiveness.

Options have widely varying costs, including capital infrastructure, maintenance, and monitoring. Importantly, financial cost alone is not the primary constraint; water availability, timing, governance, and unintended ecological impacts often dominate feasibility. The report underscores the value of targeted, adaptive, and phased implementation, focusing first on the most emissive dust hotspots near population centers.

Overall, the findings support a portfolio approach: pairing near-term, site-specific dust mitigation with sustained investment in lake-level recovery. Continued monitoring, pilot projects, and integration with basin-wide water-management strategies are essential to ensure that dust-control efforts reduce risk without undermining long-term restoration goals.

Table 1: Evaluated Dust-Mitigation Options

Mitigation Option	Key Benefits	Key Limitations & Trade-Offs	Relative Cost & Scale
Surface Wetting / Flooding	Rapid dust suppression; effective crust re-formation; well-documented performance	Requires ongoing water inputs; evaporative losses; may compete with lake-level restoration goals	High water cost; moderate–high capital depending on delivery
Temporary or Seasonal Impoundment	Covers large dust-emitting areas; can be timed to reduce evaporation; adaptable	Reduces water reaching the main lake; engineering and operational complexity	Moderate–high cost; larger spatial scale
Groundwater-based Rewetting (e.g., artesian wells)	Targets high-priority hotspots; low energy use if artesian; minimal surface infrastructure	Uncertain sustainability; potential aquifer impacts; limited spatial coverage	Moderate cost; localized scale
Soil Amendments / Crusting Agents	Low water demand; rapid deployment; useful for hotspots	Variable longevity; repeated application needed; uncertain long-term performance	Moderate cost at small scale; higher costs at large scale
Vegetation Establishment	Long-term stabilization; co-benefits for habitat	Slow establishment; high water needs initially; uncertain survival on saline playa	Moderate cost; limited suitable areas
Gravel, Mulch, or Surface Armoring	Durable dust suppression; no water required	High material and transport costs; ecological disturbance	High cost; very limited scale
Hybrid Approaches	Combines strengths of multiple tools; adaptable	Increased planning and coordination needs	Variable cost; scalable with design

Note: Cost excludes the price of water
Source: Great Salt Lake Strike Team

DUST MANAGEMENT UPDATES

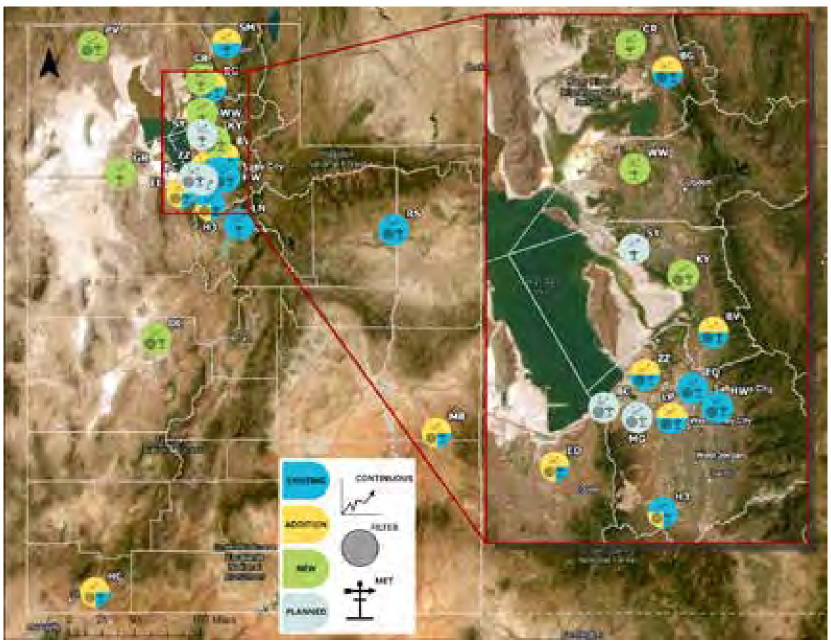
Utah Dust Observation and Research Network (UDORN)

The Utah Department of Environmental Quality's Division of Air Quality (UDAQ), in partnership with the Office of the Great Salt Lake Commissioner and Utah's research universities, is launching the Utah Dust Observation and Research Network (UDORN). This long-term monitoring and research effort will help identify dust sources, understand their impacts on public health, and provide actionable information to protect Utah communities—especially those near Great Salt Lake.

Why It Matters

As Great Salt Lake's water levels have declined, new dust "hot spots" have been exposed. During dust events, levels of PM_{10} in communities along the Wasatch Front occasionally approach the federal air-quality standard. Dust from exposed lakebeds can contain metals and other elements that pose potential health concerns, especially for sensitive populations such as children, the elderly, and those with respiratory conditions.

Figure 6: Map of the proposed Utah Dust Observation and Research Network (UDORN)



Circles represent the stations: existing UDAQ stations measuring PM_{10} with filter and/or continuous instrumentation (blue circles), existing UDAQ stations to be upgraded with additional instruments (blue and yellow circles), additional stations proposed for the UDORN monitoring effort (green circles), and other planned UDAQ stations (gray circles) that will be co-located dust monitoring sites. The overlay icons in the circles indicate the type of dust measurement (continuous dust evaluation), dust mass and potentially composition on filter, and/or meteorological instrumentation.

Total Stations
22 statewide (13 existing + 9 new)

Locations
Great Salt Lake, Sevier Dry Lake, West Desert and other dust sources

Real-Time Data
Available soon via Utah Air app

Source: Utah Department of Environmental Quality. (2025). Utah Dust Observation and Research Network

What UDORN Will Do

UDORN expands Utah's air-quality network by adding nine new dust-monitoring stations and upgrading 13 existing stations to track dust from Great Salt Lake and other major playas across the state.

UDORN will:

- **Identify** major dust sources.
- **Measure** dust composition, including heavy metals and other particulates.
- **Assess** potential health risks to Utah communities.
- **Inform** the public through near real-time data on the Utah Air app and UDAQ website.
- **Support** mitigation planning by helping land and water managers identify dust "hot spots."

Expected Outcomes

- **Improved public health protection** through better understanding of dust events and their composition.
- **Enhanced forecasting and communication** tools to inform Utahns about local dust conditions.
- **Science-based mitigation strategies** to reduce dust emissions from exposed Great Salt Lake sediments and other key sources.
- **Collaborative solutions** supported by state agencies, research partners, and local governments.

Farmington Bay Dust-Mitigation Opportunities

As Great Salt Lake receded, more than 120 square miles of the Farmington Bay lakebed became exposed, including 21 square miles of known dust "hotspots." These hotspots present public-health risks to communities along the Wasatch Front.

This assessment evaluates opportunities that have been considered by various stakeholders for short-term dust mitigation, while other long-term solutions focused on increasing lake levels continue. Two complementary mitigation strategies could be considered:

1. **Impoundment** - Temporary or permanent impoundment of water at the Antelope Island Causeway could reduce dust emissions in Farmington Bay by reestablishing surface crusts up to elevations of 4,199 feet. This includes examining the hydrologic and lake level trade-offs associated with increased evaporation and reduced inflows to the lake.
2. **Groundwater** - For hotspots above 4,199 feet, local groundwater could be used to reestablish surface crusts to minimize dust generation.

   A preliminary analysis focused on determining whether impounding water at the Antelope Island Causeway could be a hydrologically viable method for inundating dust hot spots below 4,199 feet, either long term or periodically. The volume of water required to meet target elevations was calculated and compared against 21 years of Jordan River annual inflow volumes to assess feasibility. A water balance model simulated Farmington Bay water levels under various impoundment scenarios, incorporating inflows, precipitation, evaporation, and outflows to the south arm of the Great Salt Lake.

Impoundment Key Findings

1. Impoundment is hydrologically feasible

- Based on 21 years of inflow data, there is generally sufficient water to raise Farmington Bay to elevations between 4,195–4,199 feet, depending on annual variability.
- Filling the bay to 4,199 feet requires roughly 210 KAF, volumes commonly exceeded by historical inflows.
- These estimates consider evaporative losses, but do not consider the water required to saturate the lakebed soils, nor the fraction retained by soils and subsequently evaporated after the bay is allowed to drain.

2. Dust mitigation potential is promising

- Raising Farmington Bay permanently to 4,199 feet would submerge about 58% of mapped dust hotspots, eliminating their emissions.
- Raising Farmington Bay temporarily would provide sufficient water to crust over and mitigate dust emissions for months following the release of impounded water.
- Lower target elevations (4,195–4,198 feet) provide proportionally smaller mitigation benefits.
- For hotspot locations above 4,199 feet, relatively shallow groundwater may be used to inundate critical areas.

3. Water costs vary widely by strategy

- Temporary impoundment—filling seasonally and releasing water once targets are reached—reduces flows from Farmington Bay to the main body of the lake by 50–100 KAF/year, depending on timing of inflow/runoff. Significant uncertainties exist in the water consumed in sediment wetting and whether this water evaporates (and is lost) or drains to the lake once the impoundment is drained.
- Permanent impoundment creates a year-round freshwater body and results in about 200 KAF/year of evaporative loss—reducing Great Salt Lake inflows and potentially lowering the long-term lake level by about 2 feet.
- Strategies targeting lower maximum water elevations produce smaller hydrologic impacts and warrant additional investigation, in combination with potential use of artesian groundwater wells at higher elevations.

4. Timing matters for temporary impoundment

- Evaporation losses are highest in the summer (May-August), therefore temporary impoundment should focus on other times of the year.
- To minimize evaporative losses, inflows from October-March can be impounded and generally provide enough water to form crust over and mitigate dust hotspots at elevations below 4,199 feet. Water can then be released during March-April.
- Delivery of water to Farmington Bay could possibly be managed through coordinated upstream reservoir releases.

Source: Utah State University, University of Utah. (2025). Farmington Bay Dust-Mitigation Opportunities.

Photo: Kelly Hannah

Considerations for Decision-Makers

These findings are based on a limited preliminary study. Additional efforts are required to better understand associated uncertainties.

Benefits

- Substantial reduction in dust emissions affecting population centers.
- Reduced evaporation and impact to Great Salt Lake under temporary impoundment.
- Temporary berm could be managed adaptively and does not require long-term infrastructure.
- Groundwater inundation approaches may also require limited infrastructure investments.

Trade-Offs

Temporary approaches may reduce inflow to Great Salt Lake and may affect long term lake elevation and impact salinity. Timing of impoundments may mitigate or reduce this impact but may also limit the efficacy of dust suppression. The combination of temporary impoundments, combined with strategic use of local groundwater, could provide temporary dust mitigation, but will result in evaporative losses.

What Additional Evaluation is Needed?

Before moving forward with any large-scale impoundment, additional analysis is needed to understand ecological and water-quality impacts, engineering design and costs, governance and permitting requirements, and how this option would integrate with broader dust-mitigation efforts. Further work is also required to assess groundwater availability, quantify effects on Great Salt Lake levels and salinity, and determine the additional water needed to saturate lakebed sediments when water levels are raised.

Farmington Bay impoundment shows clear potential to reduce dust emissions from the exposed lakebed, but the hydrologic costs vary significantly by strategy. Temporary, seasonal impoundment offers meaningful dust suppression with substantially lower evaporation losses than a permanent structure. Any consideration of this approach must be weighed against resulting reductions in water delivered to the main body of Great Salt Lake and other ecological and engineering considerations.

Data and Insights Summary

The Great Salt Lake Strike Team monitors key metrics related to the health of Great Salt Lake and provides important insights to contextualize trends in the data.

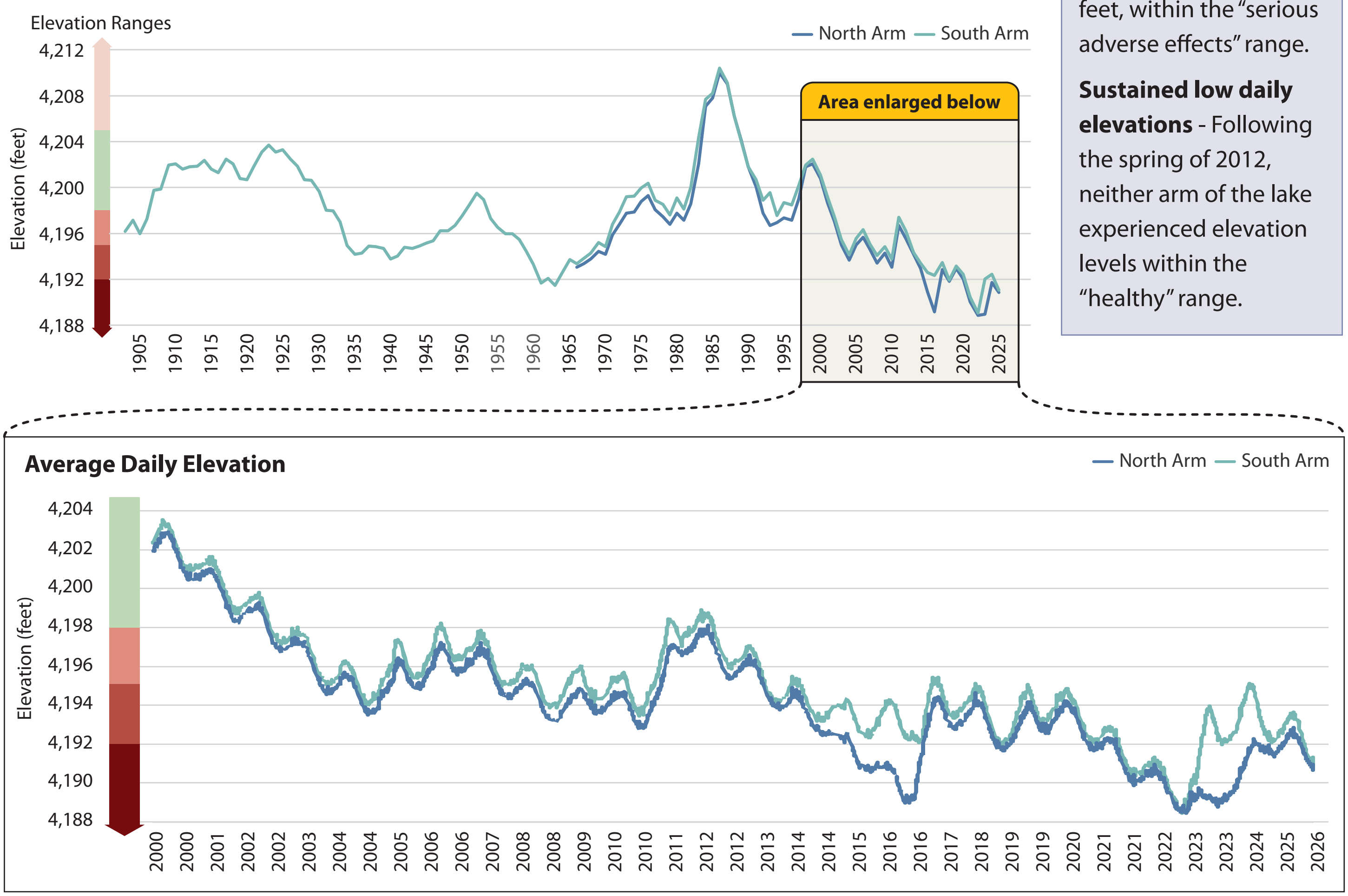
Great Salt Lake Elevation, Reservoir Storage, and Salinity

Great Salt Lake's south arm finished the 2025 water year at 4,191.1 feet, the third-lowest recorded elevation since 1903. Despite significant efforts by the State of Utah and other stakeholders, trends in temperature, precipitation, and streamflow continue to hamper efforts to restore the lake to healthy elevations.

Figure 7: Elevation of Great Salt Lake North and South Arms, 1903-2025 Water-year-end Elevation

Elevation Ranges

- **Adverse effects** due to high levels.
- **Healthy lake level range** deemed beneficial for most uses.
- **Transitionary zone** with some adverse effects.
- **Adverse effects** impacting brine shrimp viability, recreation, and ecosystem health.
- **Serious adverse effects** on brine shrimp viability, air quality, mineral production, and recreation.



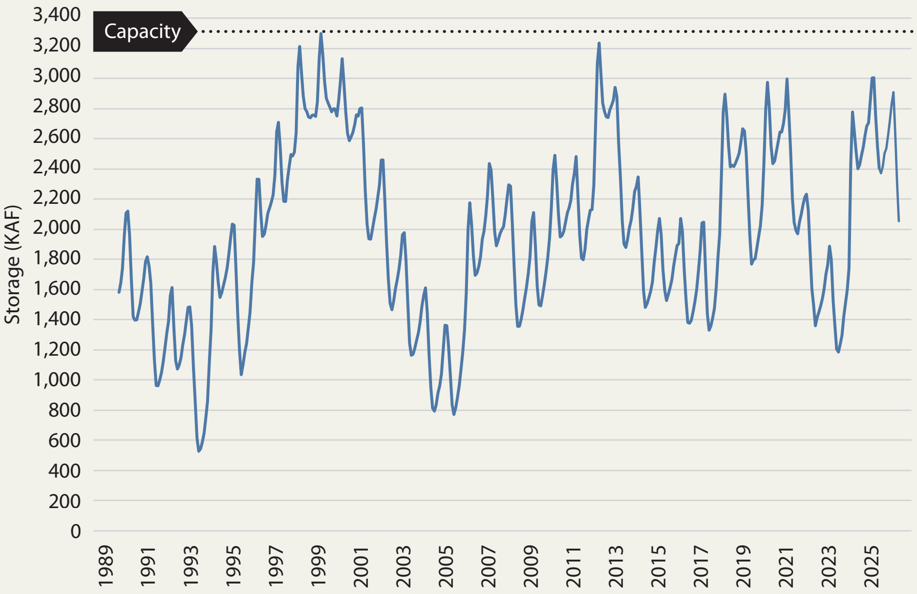
Note: From 1903-1959, elevation was collected once a month. In 1960, the elevation was collected twice monthly. Starting in 1990, the data were collected daily.
Source: US Geological Survey Historical Elevation at Saltair Boat Harbor and Saline, UT.

Insights

Third-lowest water-year-end elevation - Great Salt Lake's south arm ended the 2025 water year at 4,191.1 feet, within the "serious adverse effects" range.

Sustained low daily elevations - Following the spring of 2012, neither arm of the lake experienced elevation levels within the "healthy" range.

Figure 8: Reservoir Storage in the Great Salt Lake Basin, 20 Largest Reservoirs, 1989-2025



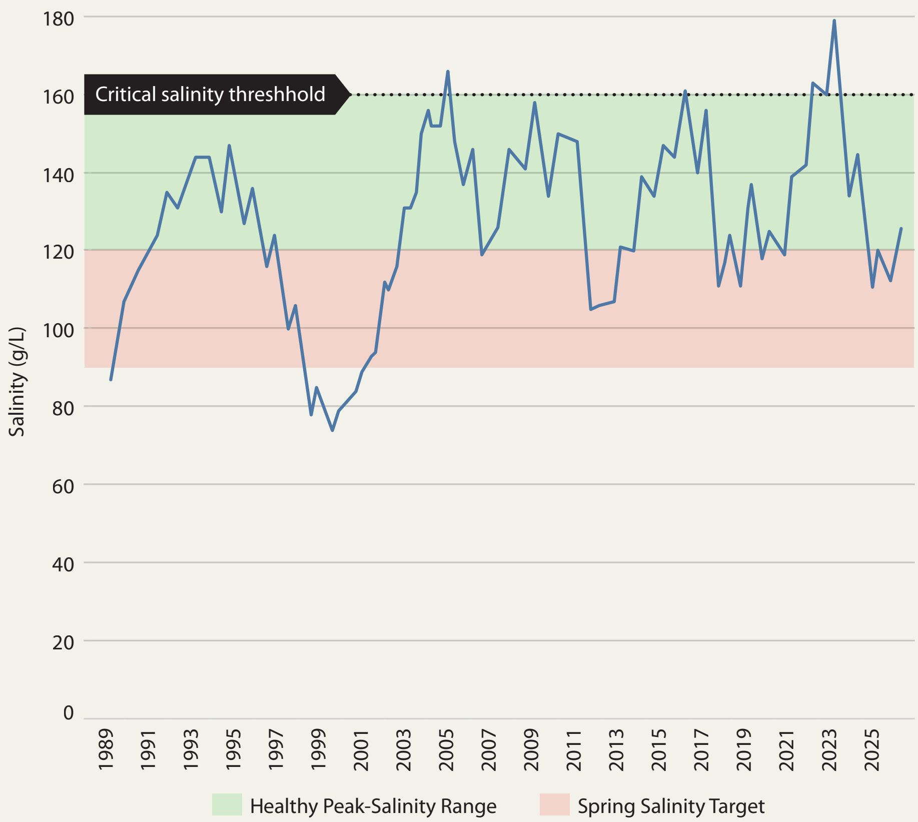
Note: Both Bear Lake and Utah Lake are included as reservoirs.
Sources: US Department of Agriculture, National Water and Climate Center. (2025). Air & Water Database Report Generator; US Bureau of Reclamation (2025). Reservoir Data Site Map; Bear River Commission. (2025). Teacup Diagram of Reservoirs; Utah Division of Water Resources. (2025). Reservoir Levels.

Insights

Stable reservoir storage - Reservoir storage fell 36.3% in November 2022, the lowest level since 2005. However, reservoir storage stabilized around 60% of capacity with wetter years in 2023 and 2024 but dropped towards the end of 2025.

Lower runoff continues to impact reservoir storage - Although reservoir storage increased since 2022, reduced snowmelt runoff combined with consumptive use in 2025 left September 2025 storage 19.4% below September 2024 levels.

Figure 9: Salinity of Great Salt Lake South Arm, 1989-2025



Source: Utah Geological Survey. (2024). EOS Salinity at site AS2, 10-foot depth.

Insights

Salinity management developments - The Division of Forestry, Fire and State Lands began using the causeway berm as an adaptive management tool for controlling salinity in 2022. This helped control salinity levels that threatened the biological integrity of the south arm in 2022 and provides additional flexibility for future salinity management.

Seasonal salinity targets - The salinity of Great Salt Lake's south arm peaks in October or November each year when the lake level and volume are at the lowest point of the annual cycle. Salinity is considered healthy in the range between 120-160 g/L. To account for summer evaporation, the spring salinity target is set between 90-120 g/L.

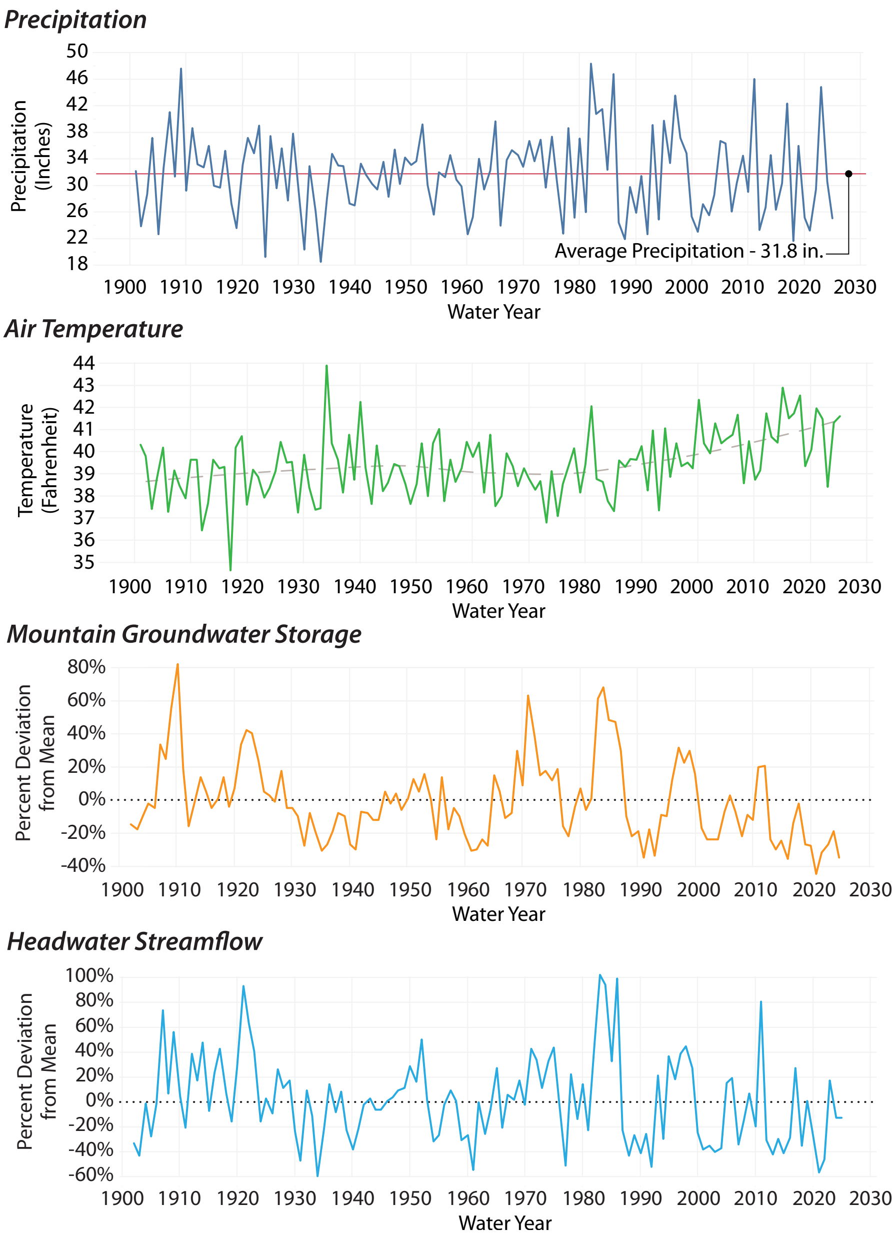
DATA INSIGHTS SUMMARY

Precipitation, Air Temperature, Groundwater Storage, and Headwater Streamflow

Approximately 95% of the water available for all uses in the Great Salt Lake basin originates in the mountains of northern Utah. Mountain precipitation (rain and snow) and snowmelt, feed streamflow and recharge groundwater that sustains stream baseflow. Interannual variability and longer-term changes in mountain water supply constrain downstream management.

In northern Utah, mountain precipitation shows no long-term trend, but air temperature increased significantly since the mid-1980s. Warmer temperatures increase evapotranspiration and sublimation from snow, which, combined with dry years, reduce mountain groundwater storage. Groundwater storage reached record lows in 2021-2022. Lower mountain groundwater storage in turn reduces runoff efficiency (or the fraction of precipitation that becomes streamflow), reducing water availability for all uses.

Figure 10: Historical Precipitation, Temperature, Mountain Groundwater Storage, and Streamflow in Great Salt Lake Headwaters, 1901-2025



Source: Brooks, P, Wolf M., and Olds, B. (2025). Department of Geology and Geophysics, University of Utah.

Insights

Lower than average precipitation in 2025 - The 2025 water year delivered 79.3% of the basin's average annual precipitation.

Rising temperature - Temperature in the basin headwaters averaged 39.2 °F between 1901-1999. Since 2000, only five years have been at or below this 20th-century average. Additionally, four of the ten warmest years in the long-term measurement record (125 years) have been observed in the last ten years.

Sustained low mountain groundwater storage - Relatively few wet years and sustained warmer temperatures have reduced mountain groundwater storage, which has remained below average since 2012, and declined to 34.0% below average in 2025. When storage is low, snowmelt preferentially fills groundwater storage, and streamflow and runoff efficiency are reduced.

Reduced headwater streamflow - Since 2000, headwater streamflow fell below average in 19 out of 26 years.

Definitions:

- ***Evapotranspiration*** - The combined loss of water to the atmosphere from evaporation (from soil and open water) and transpiration (water released by vegetation).
- ***Sublimation*** - Water loss directly from snow surfaces.

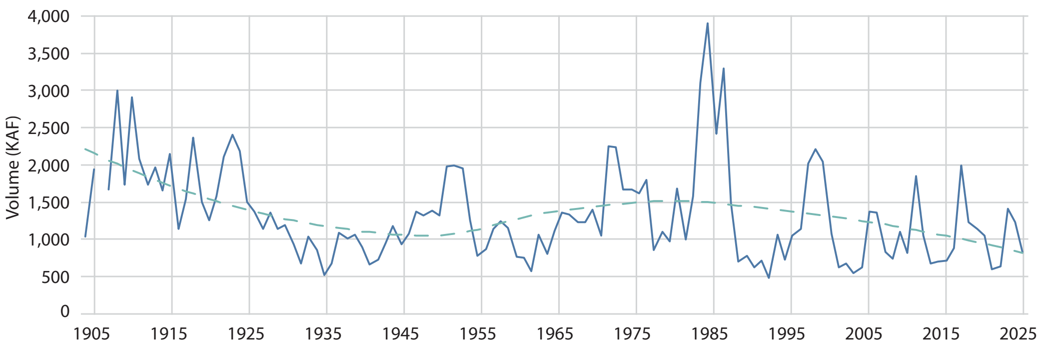
River Inflow to Great Salt Lake

River inflow to Great Salt Lake represents the actual amount of water that reaches the lake and results from total water supply minus depletions.

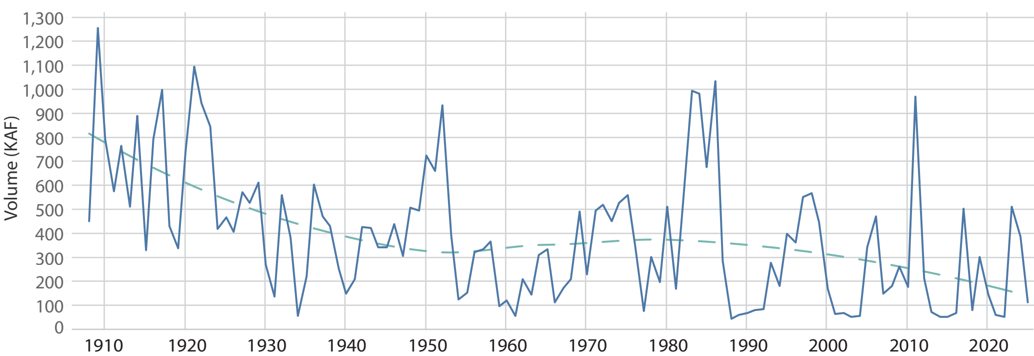
Total streamflow from the Bear, Weber, and Jordan rivers dropped below 1,000 KAF in 2021 and 2022—the lowest levels since 2004. Inflows rebounded above 2,000 KAF in 2023 and 2024 but declined to 1,281 KAF in 2025.

Figure 11: Bear, Weber, and Jordan River Streamflow

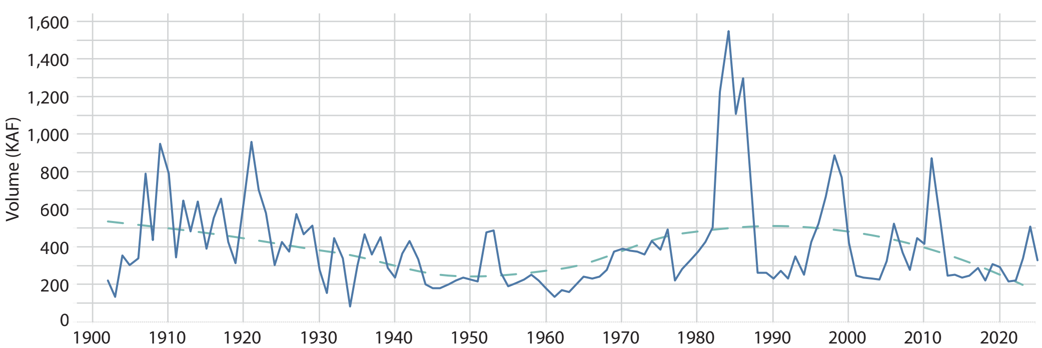
Bear River, 1903-2025



Weber River, 1908-2025



Jordan River, 1902-2025



Sources: US Geological Survey. (2025). Bear River outflow (Gage 10127110 near Corinne, UT), Weber River outflow (Gage 10141000 near Plain City, UT), Jordan River outflow (Gage 10170490 with 1902-1943 modeled by Margaret Wolf, University of Utah).

Insights

Inflows needed to reach healthy lake elevations - To reach the minimum healthy lake elevation (4,198 feet) by 2055, mean annual inflows would likely need to be ~2,465 KAF. Between 2000 and 2025, inflows averaged 1,665 KAF per year.

Shares of inflow - On average, the Bear River provides the bulk of inflows (64.4%) to Great Salt Lake, followed by the Jordan River (20.7%), and Weber River (16.7%).

Factors affecting inflow - Inflow into Great Salt Lake is highly variable and depends on water supply (driven by temperature, precipitation, and groundwater storage) and human water depletions.

Declining inflow despite constant depletions - Beginning in the late 1980s, inflow from the lake's major tributaries continues to decline, even with no notable increase in human water depletions (Figure 12).

Updated Great Salt Lake Basin Water Budget: What Changed and What It Means for the Lake

The Utah Division of Water Resources recently updated the Great Salt Lake Basin Water Budget, producing the most accurate accounting to date of human water depletions across agriculture, municipal and industrial (M&I) uses, mineral extraction, reservoirs, and incidental losses. These refinements—reflecting updated datasets, improved assumptions, and new modeling methods—produced substantial shifts in depletion estimates, particularly for residential outdoor water use.

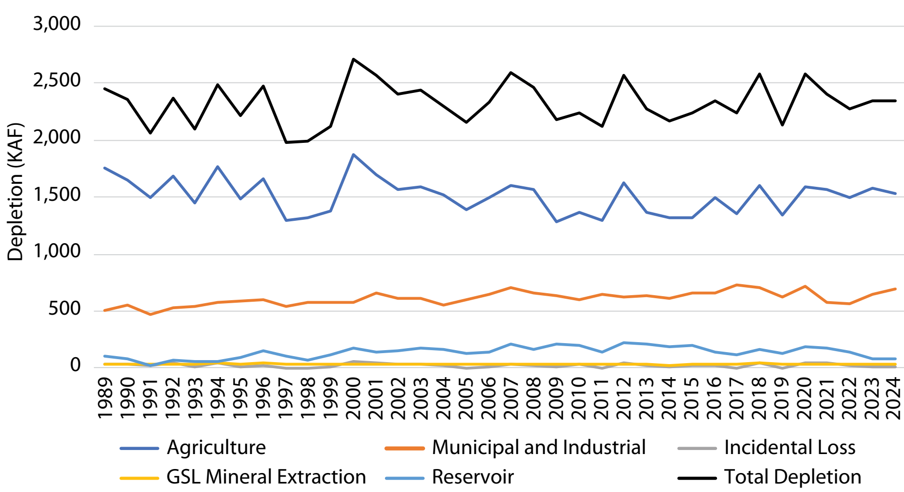
The updated model underscores that all sectors contribute to depletions in the basin and no single sector can bear the full responsibility for restoring the lake.

Why the Water Budget Changed:

The Utah Division of Water Resources implemented several key improvements that incorporate new research, make methodological changes, and refine calculations. These updates include:*

1. **Municipal indoor and outdoor water use** – Additional data on indoor versus outdoor water use provides a more accurate estimate of what portion of residential water is used outdoors.
2. **Updated outdoor depletion** – New research shows that 91% of outdoor water use is depleted. Previously, it was assumed that 40% of outdoor water use was depleted.

Figure 12: Human Water Depletion by Type, 1989-2024



Average Depletion (KAF/year)

Depletion Type	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019	2020-2024
Agriculture - Includes all agricultural water depletions.	1,607	1,425	1,647	1,465	1,395	1,426	1,551
Reservoir - Represents evaporation from reservoirs (does not include Bear or Utah Lakes).	32	9	37	18	23	20	27
Agricultural Incidental Losses - Riparian vegetation adjacent to canals and adjacent to flood irrigated fields, but not adjacent to natural water bodies.	36	35	35	34	32	36	33
Municipal and Industrial - Covers urban water depletions from commercial, industrial, institutional, and residential uses.	535	575	603	650	625	674	640
Lake Mineral Extraction - Incorporates lake depletions from all mineral extraction companies operating on GSL.	61	111	161	173	195	150	136
Total Depletion	**2,271**	**2,155**	**2,483**	**2,341**	**2,270**	**2,306**	**2,387**

Source: Utah Division of Water Resources. (2025). Great Salt Lake Water Budget.

* For more information on updates to the Utah Water Budget see: https://water.utah.gov/wp-content/uploads/2025/12/Utah-Water-Budget-Handout.pdf

Insights

Total depletions – Total depletions have not increased between 1989-2024, though significant variability exists year-to-year.

Shares of depletion – Between 2020-2024, agriculture (65.0%) and M&I (26.8%) accounted for the bulk of depletions. Lake mineral extraction (5.7%), agricultural incidental loss (1.4%), and reservoir evaporation (1.1%) contributed smaller shares.

Comparing updated and previous versions of the Water Budget

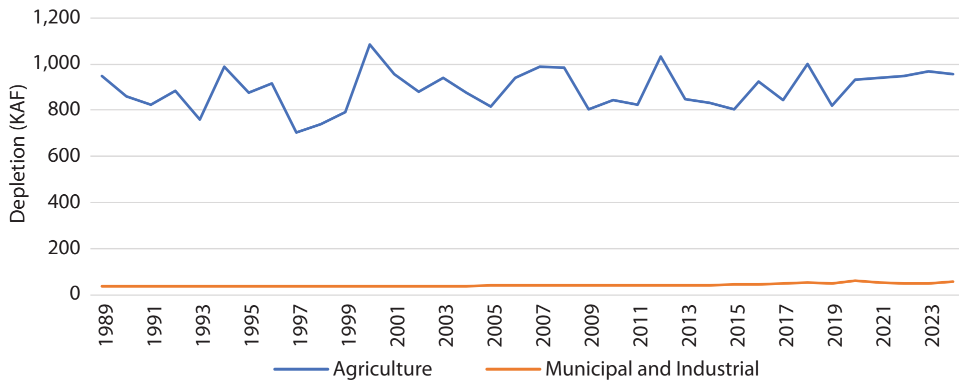
The updated Great Salt Lake Basin Water Budget differs from the previous version in several important ways. When depletions by sector are averaged from 1989-2023, the updated model shows:

- **Total depletions rise** by 13.7%.
- **Agriculture** drops from 73.8% of human-caused depletions to 65.1% in the Great Salt Lake basin.
- **M&I** rises from 16.4% to 26.3% of total depletions.
- These shifts reflect improved measurement—not increased use in a single year—and demonstrate that **urban outdoor water use has historically been substantially underestimated.**

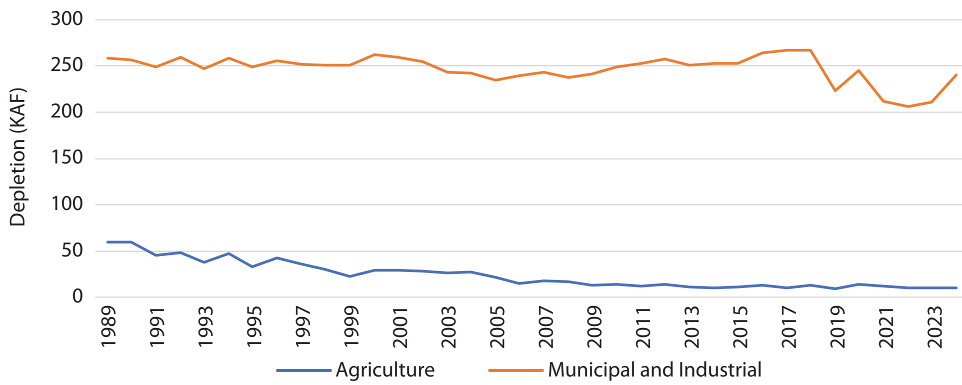
Great Salt Lake Data and Insights Summary 23

Figure 13: Agriculture and M&I Depletion by Basin, 1989-2024

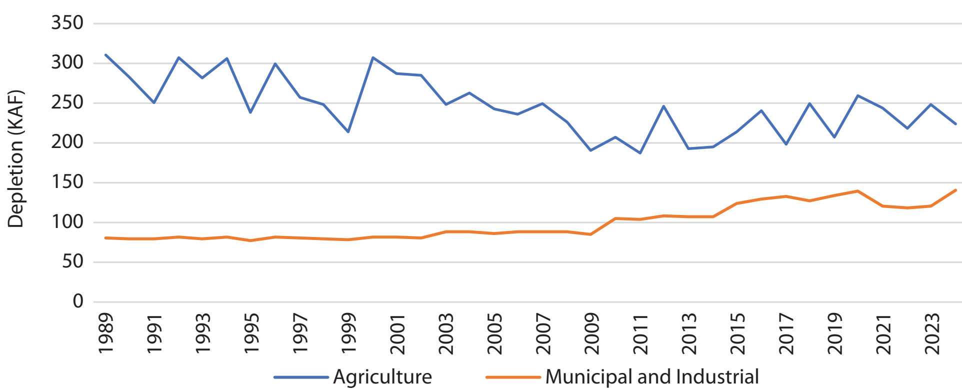
Bear River Basin



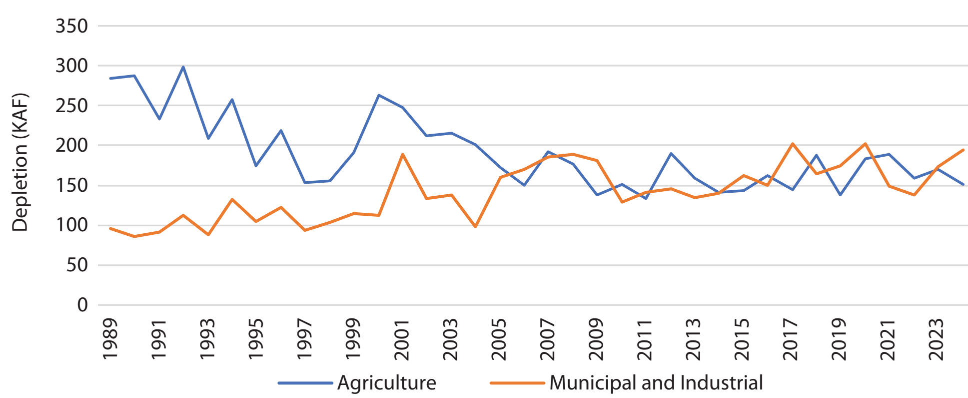
Jordan River Basin



Utah Lake Basin



Weber River Basin



Insights

Bear River basin - The Bear River supplies the basin's most productive agricultural areas, with relatively low M&I depletions. Agricultural depletions in the Bear River basin accounted for 40.8% of all depletions in the Great Salt Lake basin in 2024.

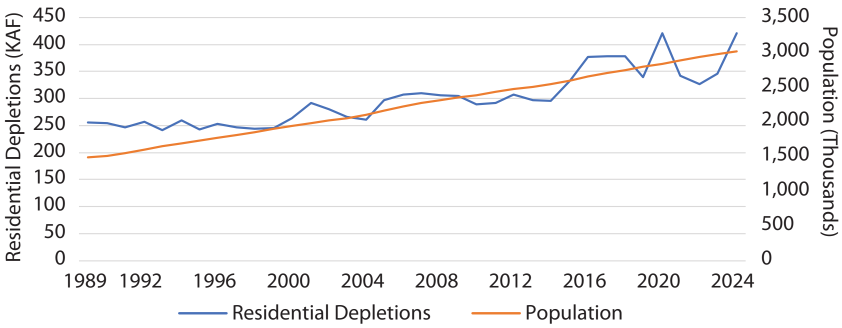
Jordan River basin - M&I depletions dominate the basin, accounting for 95.0% of depletions in 2024. Agricultural depletions steadily declined as residential development displaced agricultural areas.

Utah Lake basin - Total depletions in the Utah Lake basin remained relatively stable between 1989-2024, despite being home to the highest concentration of farms in the state and six of the state's ten fastest growing cities. However, the share of depletions shifted between 1989-2024, with agricultural depletions declining from 77.3% to 60.4% of total depletions, while M&I depletions rose from 20.0% to 38.1%

Weber River basin - The Weber River basin experienced a dramatic shift between 1989-2024 as agricultural depletions declined by 46.8% and M&I depletions increased by 103.4%. Since 2005, agricultural and M&I depletions in this sub-basin have remained approximately equal.

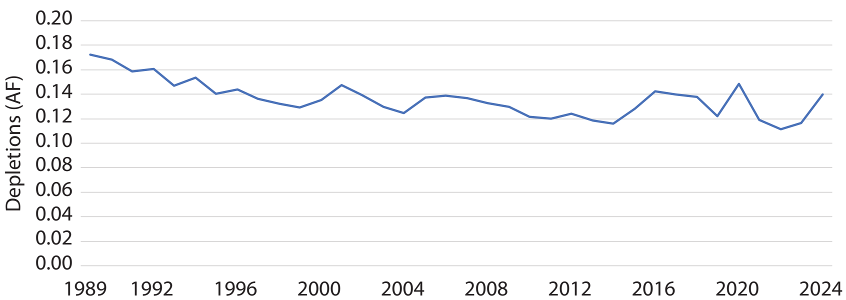
Figure 14: Residential Depletions and Population, 1989-2024

Great Salt Lake Basin



Residential Water Depletions Per Capita, 1989-2024

Great Salt Lake Basin



Sources: Utah Population Committee. (2025). State and County Estimates for Utah; Utah Division of Water Resources. (2025). Great Salt Lake Water Budget.

Figure 15: Residential Indoor and Outdoor Depletions

Great Salt Lake Basin

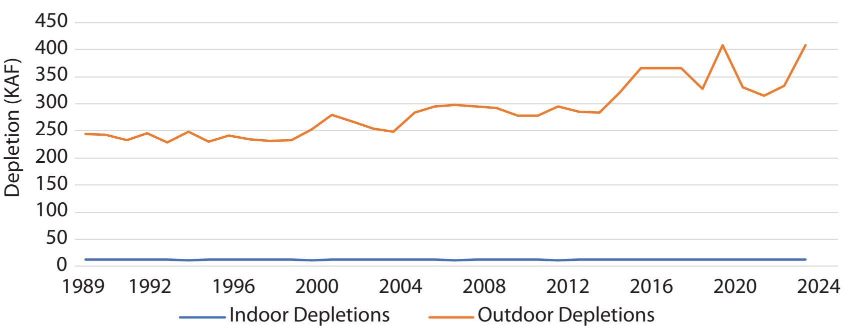
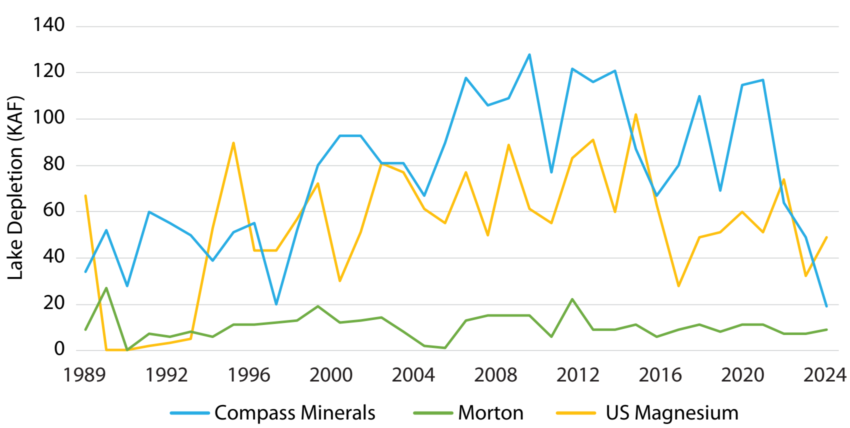


Figure 16: Mineral Extraction Water Depletions on Great Salt Lake, 1989-2024



Source: Utah Division of Water Rights. (2025). Utah Water Use Program Database.

Insights

Residential depletions - Residential water depletions remained relatively stable until 1999, but have increased by 60.1% since 2000, and accounted for 61% of all M&I depletions in 2024.

Residential depletions and population growth - Between 1989 and 2015, residential depletions increased roughly 30% while the population in the Great Salt Lake basin grew by 75%. Since 2015, residential depletions grew by 26.7%, while the population increased by 16.3%.

Residential depletions per capita - Between 1989 and 2014, residential depletions per capita fell. Since 2015, depletions per capita have been variable, rising 20% between 2023 and 2024.

Outdoor water use drives residential depletion - Outdoor water use accounts for the majority of residential water depletions and has been increasing over time. In 2024, outdoor depletions accounted for 96.9% of all M&I depletions.

Residential lawn watering - In 2024, the watering of residential lawns depleted 408.5 KAF, equivalent to one quarter of all agricultural depletions in the basin.

Indoor depletions constant as population doubles - Indoor water depletions are small and remained nearly constant between 1989 and 2024, while the population in the basin doubled.

Mineral depletions declining - Total mineral depletions have been generally declining from a high in 2012. Since 2020, depletions from the three mineral companies declined from 186 KAF in 2020 to 77 KAF in 2024.

Mineral company conservation - Reductions in mineral depletions have largely been voluntary. Future depletions will be capped when Great Salt Lake elevations are low based on the Division of Water Rights Distribution Management Plan and voluntary agreements between the Division of Forestry, Fire and State lands and several operators.

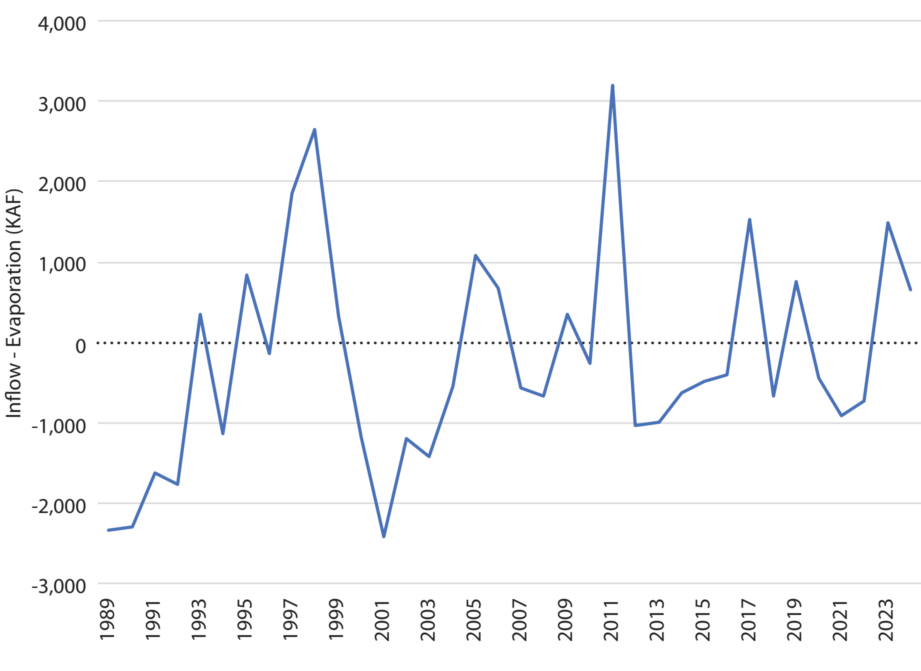
Benefits to Great Salt Lake Remain Uncertain

The impacts of municipal and industrial (M&I) water conservation on Great Salt Lake are complex. Each sub-basin is unique, with a different mix of pumped groundwater and surface water used to supply M&I needs. Some basins rely on a higher share of pumped groundwater compared to other basins that rely more on surface water. However, the majority of water sources used for M&I demands are from surface sources across the Great Salt Lake basin.

Groundwater-reliant areas - Reducing M&I depletions in groundwater-reliant areas will result in lower effluent releases from wastewater treatment plants, and less water reaching Great Salt Lake in the short term. However, reduced groundwater pumping could benefit the lake in the long term, as this water slowly makes its way to the lake over years, decades, or centuries. These benefits and the speed at which they occur depend on the characteristics of each aquifer and its proximity to the lake.

Surface water-reliant areas - In areas with direct surface water diversions or surface water storage (reservoirs), M&I conservation would only benefit Great Salt Lake if conserved water is dedicated to the lake. Without filing a change application dedicating the conserved water to the lake, reservoir managers will likely hold this water until it is needed downstream. However, higher reservoir storage rates increase the likelihood that reservoirs will reach their maximum capacity and spill in wet years. Similarly, in systems without storage, conserved flows are likely to be diverted or consumed by intervening water users before reaching the lake without a change application that dedicates the flows to Great Salt Lake.

Figure 17: Great Salt Lake Water Balance, Inflow Minus Evaporation, 1989-2024



Note: Inflows include direct precipitation on Great Salt Lake.
Source: Utah Division of Water Resources. (2025). Great Salt Lake Water Budget.

Insights

Great Salt Lake water balance - When inflows to Great Salt Lake exceed evaporation in a given year, the elevation of the lake rises. When evaporation exceeds inflow, lake elevation falls. The amount of rise or fall depends on the initial lake level.

Evaporation from Great Salt Lake - A variety of factors influence the volume of evaporation including temperature, humidity, salinity, and lake water surface area. Lake evaporation averaged 2,733 KAF per year between 1989-2024, greater than the average annual human depletions over this period (2,320 KAF). Notably, annual evaporation from the lake declines when the elevation and surface area of open water decline.

Future Water Availability

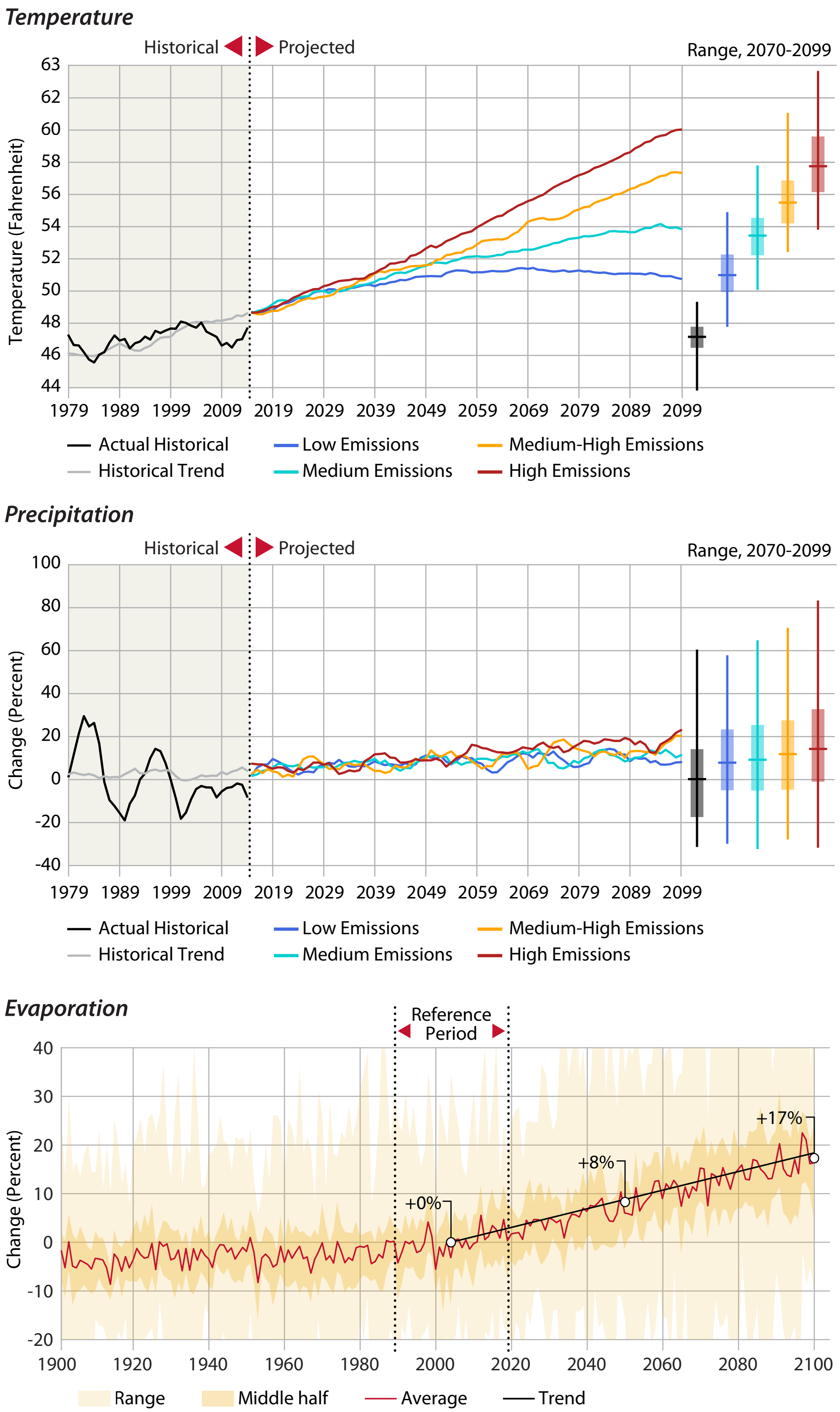
New research details the expected temperature and precipitation that the Great Salt Lake basin will likely experience in the future.* This research includes multiple scenarios based on different assumptions for greenhouse gas emissions. All scenarios project increasing temperatures and generally higher precipitation with variability between simulations within each scenario. While not modeled in this research, basin-wide evaporation is expected to increase as temperatures rise.

Modeling details:

- **Historical series** - The analysis uses two historical series for temperature and precipitation: Historical – Actual Historical and Historical Trend.
- **Future scenarios** - Future temperature and precipitation scenarios include four warming scenarios based on the Shared Socioeconomic Pathway (SSP) framework developed for these purposes for future climate projections by the Intergovernmental Panel on Climate Change. Scenarios include: Low emissions, Medium emissions, Medium-high emissions, and High emissions.
- **Simulations** - Each scenario contains 19 to 24 simulations from 27 different climate models.
- **Scenario ranges** - Figure 18 plots the mean across all simulations for each scenario. Box plots summarize the distribution of simulations between 2070-2099 within each scenario (minimum, 25th percentile, median, 75th percentile, and maximum).
- **Area of analysis** - Projections of precipitation and temperature for the Great Salt Lake basin cover both higher elevations (water source areas) and lower elevations (water consumption areas).

*Source: Wolvin, S., et al. (2025). Statistically Downscaled CMIP6 Multi-Model Ensemble for the Great Salt Lake Basin. Retrieved from https://www.inscc.utah.edu/~strong/gslbip/maca/.

Figure 18: Projected Trends in Temperature, Precipitation, and Evaporation in the Great Salt Lake Basin



Notes:

1) The Shared Socioeconomic Pathway scenarios corresponding to each future scenario are as follows: Low emissions (SSP1-2.6), Medium emissions (SSP2-4.5), Medium-high emissions (SSP3-7.0), High emissions (SSP5-8.5).
2) Projections of annual mean temperature reflect the entire basin, which is dominated by lower-elevation areas.
3) For projections of annual mean precipitation, the percent change is relative to the Historical - Actual series, averaged from 1979-2014.

Sources: Wolvin, S., et al. (2025). Statistically Downscaled CMIP6 Multi-Model Ensemble for the Great Salt Lake Basin; Strong, C. (2022). Department of Atmospheric Sciences, University of Utah.

Insights

Increased temperatures – All scenarios project warmer temperatures across the basin, which leads to increased lake evaporation and greater human water needs.

Temperature variability – The medium, medium-high, and high emissions scenarios project that on average from 2070-2099, the lowest mean annual temperature will be warmer than the warmest mean annual temperature recorded between 1979-2014.

Increased precipitation - Projections show that precipitation in the basin on average is expected to increase slightly, because of more water vapor in a warmer atmosphere.

Precipitation variability - The variability in projections for precipitation is far greater than for temperature, and the ranges for all scenarios overlap. This variability underscores the need to capitalize on wet years and manage dry years for the benefit of Great Salt Lake.

Evaporation could overwhelm increased precipitation - While the analysis does not calculate basin-wide evaporation, evaporation is expected to increase as temperatures rise and prior research suggests that increased evaporative loss could overwhelm any additional gains in precipitation.

Planning for an Uncertain Future

Future precipitation, inflows, and evaporation for Great Salt Lake are uncertain. Modeling efforts account for this uncertainty to assess the likelihood of different outcomes.

Key takeaways

- **Variability** - Levels of Great Salt Lake inherently fluctuate because of variability in precipitation, inflows, and evaporation.
- **Conservation needed** - Great Salt Lake needs additional water to shift the level of fluctuations to a healthy range.
- **Recovery is possible** - Refilling and maintaining the lake at healthy levels is possible. The mean lake level is determined primarily by inflows reaching the lake.
- **What is needed** - Reaching a healthy lake level range requires two actions:
  1) protection and dedication of flows currently reaching the lake; and
  2) identifying new water sources that can be committed and delivered to the lake.

Summary of analysis

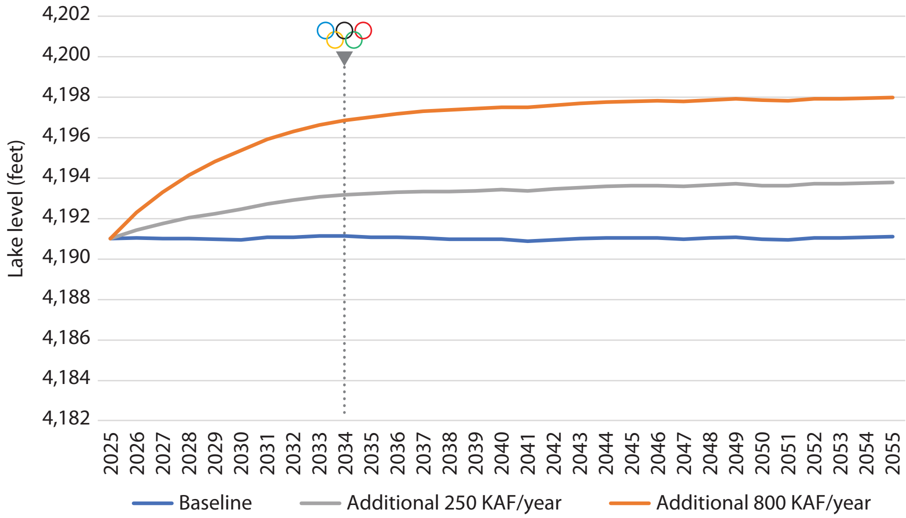
This analysis provides 30-year projections for the distribution of Great Salt Lake levels under three inflow and conservation scenarios. None of these scenarios represent policy recommendations—they are intended to provide clarity on the long-term outcomes of three courses of action.

- **Scenarios** -
  - **Baseline** scenario that assumes no additional inflows to Great Salt Lake from conservation.
  - **Additional 250 KAF/year inflow** to the lake from water conservation or other sources.
  - **Additional 800 KAF/year inflow** to the lake from water conservation or other sources. This scenario represents the additional inflow needed to fill Great Salt Lake to the minimum healthy lake level (4,198 feet) by 2055.
- **1,000 simulations** – Each scenario results from 1,000 simulations to show the uncertainty associated with each course of action.
- **Historical inputs** – Each simulation randomly selects annual inflow, precipitation, and evaporation values from the 2000-2025 observations. These past 26 years were selected to represent the contemporary period with elevated temperatures and decreased inflow into Great Salt Lake.
- **Inflow assumptions** – The analysis assumes that water that has historically made it to the lake, including reservoir spill and surplus water, continues to make it to the lake. It is also assumes all conserved water reaches the lake.
- **Starting lake level** – At the end of the 2025 water year (October 1, 2025), the natural equivalent level of Great Salt Lake (combining both north and south arms) was 4,191 feet.
- **2034 Winter Olympic Games** - The Olympics serve as a catalyzing force for host communities to improve. Each scenario highlights the projected elevation of Great Salt Lake in 2034.
- **Long-term lake level** - If additional inflows to Great Salt Lake are sustained at a constant level, they result, following a filling period, in a stable range of lake levels. This stable lake level range also assumes no increase in temperature and its impact on evaporation over time. This analysis uses "long-term" to refer to stable lake level ranges in 2055.

Figure 21 shows projected lake levels based on the three scenarios. Each scenario shows the mean simulation value with shading to represent the variability in the projections. A bar chart for each scenario presents the frequency among simulations of the long-term level being within Great Salt Lake level zones established by the state for impact effects.*

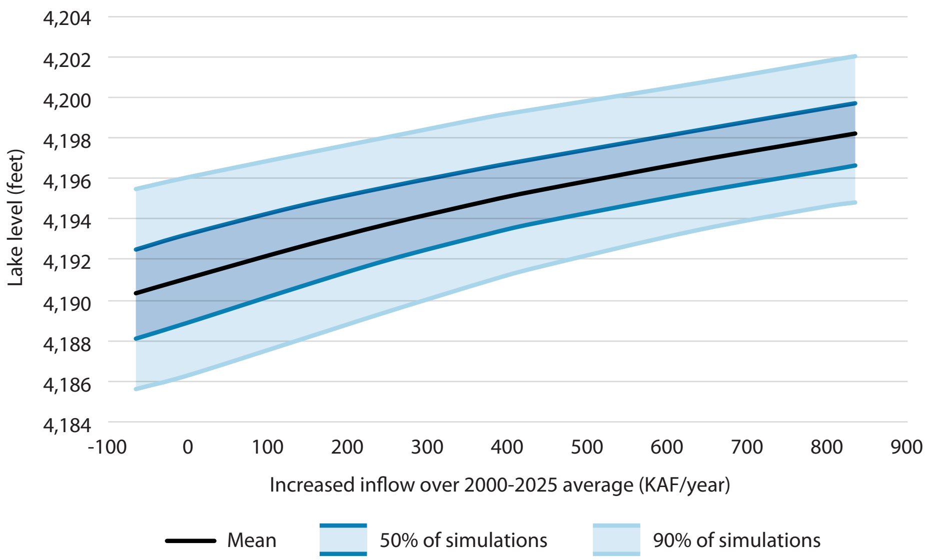
* GSL Lake Level Matrix, Great Salt Lake Comprehensive Management Plan. (2013). Utah Division of Forestry, Fire and State Lands

Figure 19: Projected Mean Lake Level Under Sustained Additional Inflows



Source: Tarboton, D. (2025). Utah State University.

Figure 20: Long-term Lake Level Ranges Under Sustained Additional Inflow



Source: Tarboton, D. (2025). Utah State University.

Insights

Baseline - The Baseline scenario shows no change in the long-term mean.

Additional 250 KAF/year - An additional 250 KAF/year of inflow results in a 2034 mean elevation of 4,193.2 feet and a long-term mean elevation of 4,193.8 feet.

Additional 800 KAF/year - An additional 800 KAF/year of inflow results in a 2034 mean elevation of 4,196.9 feet and a long-term mean elevation of 4,198.0 feet.

Insights

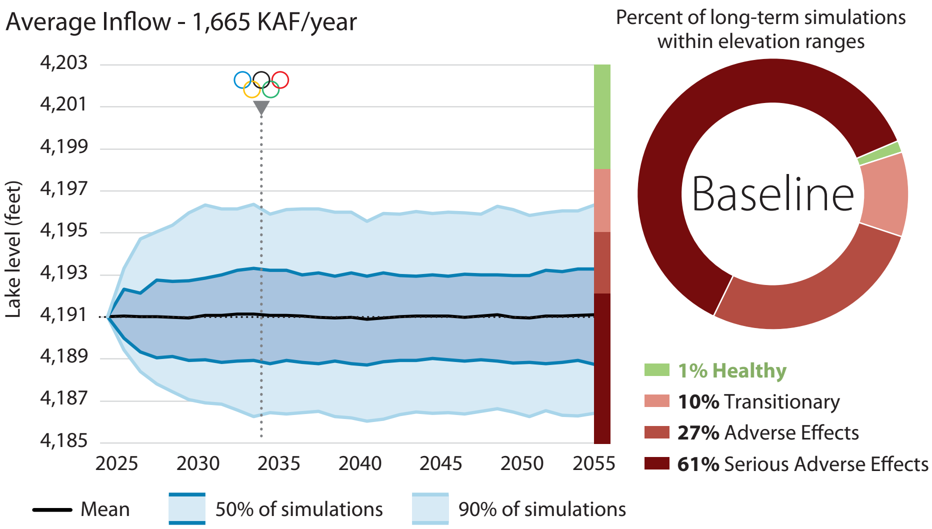
Increased inflow from conservation - Between 2000-2025, inflow to Great Salt Lake averaged 1,665 KAF/year. Figure 20 displays additional inflow from conservation over this average on the x-axis.

Average long-term lake level of scenarios - No additional inflows from conservation results in a long-term mean lake level of 4,191.1 feet (serious adverse effects range). An additional 250 KAF/year results in a long-term mean lake level of 4,193.7 feet (adverse effects range). An additional 800 KAF/year results in a long-term mean lake level of 4,198.0 (healthy lake elevation range).

Figure 21: Projected Lake Level Ranges Under Sustained Additional Inflow

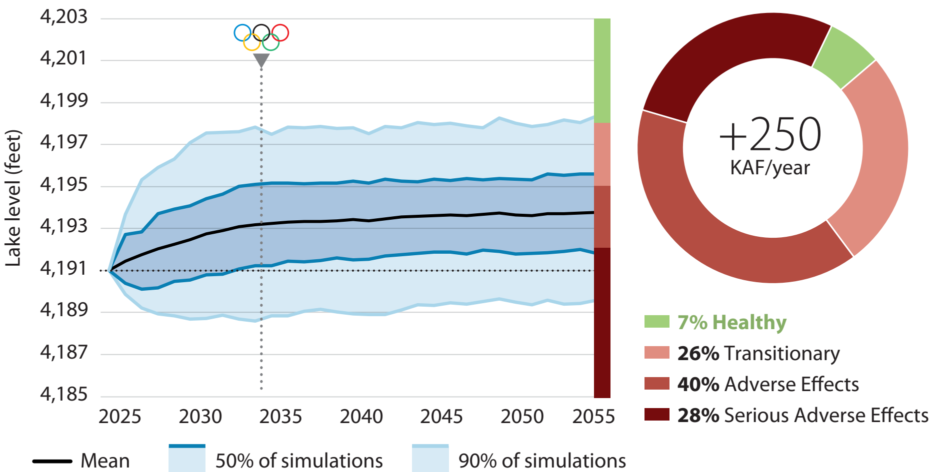
Baseline Scenario

Average Inflow - 1,665 KAF/year



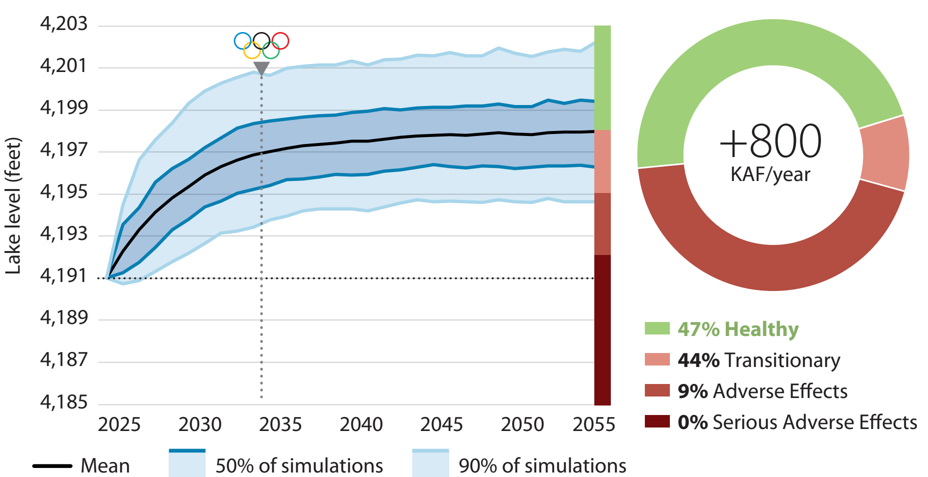
Additional 250 KAF/year

Average Inflow - 1,915 KAF/year



Additional 800 KAF/Year

Average Inflow - 2,465 KAF/year



Source: Tarboton, D. (2025). Utah State University.

Insights

Sustained additional inflows improve lake outcomes - Lake elevation ranges associated with inherent long-term fluctuations can be shifted upwards, increasing the frequency of healthy lake levels.

Baseline

- **Serious adverse effects** - 61% of long-term simulations fall into elevations with "serious adverse effects."

Additional 250 KAF/year scenario

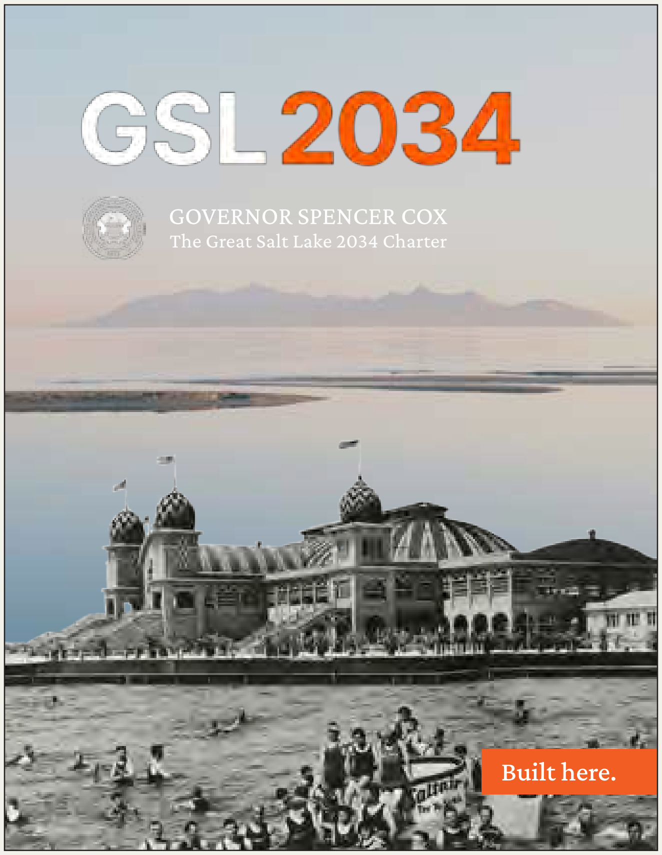
- **Lake level reaches long-term mean level of 4,193.8 feet** - The simulations show a mean long-term lake level rise of 2.8 feet, within the "adverse effects" range.
- **Decreased likelihood of "serious adverse effects"** - With an additional 250 KAF/year of inflows to the lake, the likelihood of the 2055 elevation falling in the "serious adverse effects" range falls from 61% to 28%.

Additional 800 KAF/year scenario

- **Healthy long-term lake level** - The simulations show a mean lake level rise of 7.0 feet, resulting in a long-term elevation of 4,198 feet.
- **2034 lake level** - By the 2034 Winter Olympic Games, the mean simulation shows a lake level of 4,196.9 feet, at the high end of the "transitionary" zone, and only 1.1 feet from the "healthy" range.
- **Other long-term outcomes** - Given an additional 800 KAF/year of inflows, the likelihood of the lake elevation remaining in the "serious adverse effects" range falls to 0%. In 44% of simulations, the long-term elevation reaches the "transitionary" zone, and 9% result in the "adverse effects" range.

Appendix

Appendix 1: Great Salt Lake Charter



THE GREAT SALT LAKE 2034 CHARTER

A Declaration of Awareness and Action

We, the signers of the Great Salt Lake Charter, affirm the economic, ecological, and cultural value of Utah's inland sea. We recognize a direct connection between a healthy lake, our well-being, and the future prosperity of our state.

Our great lake stands as a defining physical characteristic of Utah. It frames the geography of northern Utah, serves as the namesake of our capital city, and provides substantial economic, ecological, and cultural benefits to our state, nation, and world.

The Great Salt Lake is a critical part of Utah, and we are its stewards.

We affirm that low lake levels at the Great Salt Lake imperil human, economic, and ecological health. We must protect the economic contributions of the lake and preserve its vital functions that increase our snowpack, enhance our watershed, provide habitat for more than 10 million migratory birds, and support the highest quality of life in the nation.

We commit to, and invite other Utahns to commit to, these Great Salt Lake principles of awareness and action.

COMMITMENTS

1. **We are all in this together.** Restoring the lake to healthier levels demands that all Utahns — individuals, families, business and community leaders, ranchers, farmers, researchers, elected officials, conservationists, the media, and more — work together for our shared prosperity.
2. **We acknowledge that lake stewardship is Utah stewardship.** As stewards, we will protect, conserve, innovate, and act.
3. **We recognize the interconnectedness of our economy, ecology, and culture.** Too often, we solve one problem while creating others. By balancing competing priorities and tradeoffs and following data-informed research, we accelerate progress.
4. **We understand the need for further action.** Lake restoration requires an ongoing, multi-decade commitment to invest, reprioritize, change behaviors, and find new and better ways to support the Lake. We are committed to saving the Great Salt Lake.
5. **We realize the urgency of the moment.** We envision a future where Utahns rally to restore the Great Salt Lake to improved health in time for the 2034 Olympic and Paralympic Winter Games. Our progress will be a rare international success story for saline lakes and demonstrate the pioneer spirit of all Utahns. In doing so, we will further Utah's standing as a healthy, beautiful, and prosperous state and share our light with the world.

Appendix 2: Great Salt Lake Strike Team Purpose, Representation, and Principles

A cross-sector partnership to help decision-makers make informed decisions

We, the chairs of the **Great Salt Lake Strike Team**, join as committed research entities and state agencies to provide timely, high quality, and relevant data and research that helps decision-makers make informed decisions about Great Salt Lake. This Charter guides our work, including our focus, purpose, representation, guiding principles, and commitment.

Purpose

The Great Salt Lake Strike Team focuses on the needs of the state, specifically the Office of the Great Salt Lake Commissioner and the Great Salt Lake Basin Integrated Plan. In doing so, we embrace a three-fold purpose supportive of state decision-makers:

1. **Common data** – Provide a common data set and serve as a primary source of information on Great Salt Lake elevation, salinity, reservoir storage, precipitation, air temperature, groundwater storage, headwater streamflow, river inflow, human water use, future water availability, mineral extraction, dust, and other metrics.
2. **Expert analysis** – Prepare impartial, data-informed, and solution-oriented synthesis and analysis on Great Salt Lake that helps improve water management, increase water deliveries, mitigate adverse impacts, and recover the lake to a healthy range. We focus on issues that are best answered by our interdisciplinary membership, focus on clear and simple visualizations, and quick-response structure.
3. **Objective and constructive** – Refrain from advocacy. We provide independent, non-partisan, and non-prescriptive data, analysis, context, and options that are responsive to policymakers' questions.

Representation

The Strike Team consists of representatives from the state's research institutions and state entities with expertise regarding, and, in many cases, statutory responsibility for, the health of Great Salt Lake.

Eight co-chairs lead the Strike Team and are the only individuals who speak on behalf of the Strike Team. The co-chairs include two representatives from each public research university, one from each pertinent state agency (Utah Department of Natural Resources, Utah Department of Food and Agriculture, and Utah Department of Environmental Quality), and the Great Salt Lake Commissioner.

Members freely engage in research and policy discussions outside of their engagement with the Strike Team but do so without the endorsement of the partnership.

Guiding Principles

The Strike Team follows guiding principles that commit us to the collaborative service mission of our institutions and compel a focus and synthesis on relevant and timely information, balanced solutions, and inherent uncertainty. We listen to and respect others and refrain from advocacy under the banner of the Strike Team.

Great Salt Lake confers substantial economic and environmental benefits to Utah, the nation, and the world. Low lake elevations put at risk the benefits created by the lake and threaten Utah's long-term economic, ecological, and human health. Actions to ensure a healthy Great Salt Lake are necessary, urgent, and possible. The Great Salt Lake Strike Team commits our expertise to serve Utah decision-makers.

"*It will take* ALL OF US *working* TOGETHER *to* PROTECT *and* SUSTAIN *the* LAKE."

-Brian Steed, Great Salt Lake Commissioner

UtahState University | THE UNIVERSITY of UTAH | UTAH DNR | UDAF | UTAH DEPARTMENT of ENVIRONMENTAL QUALITY | Great Salt Lake