

# FRIENDS of Great Salt Lake

150 South 600 East, Ste. 5D, Salt Lake City, UT 84102

www.fogsl.org

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Final Great Salt Lake Comprehensive Management Plan

**GSL LAKE LEVEL MATRIX**  
1-Mar-13

----- Zone boundary transition  
----- Zone boundary

Beneficial for resource transition Adverse for resource Gray scale is descriptive only to show differences in categories, etc. Blue scale represents value-neutral changes in lake characteristics Incomplete data or information gap

Elevation	ECOSYSTEM SUMMARY	WATER	WETLANDS	BIOL	RECREATION	ECONOMICS	SAFETY
4,213+	High Lake Level (High Lake Level)	High Lake Level					
4,212	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,211	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,210	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,209	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,208	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,207	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,206	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,205	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,204	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,203	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,202	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,201	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,200	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,199	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,198	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,197	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,196	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,195	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,194	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,193	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,192	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,191	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,190	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,189	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level
4,188	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level	High Lake Level

Reference

\* The lake level values associated with this resource are based on collective knowledge and judgment of the GSCMP Planning Team.  
\*\* Reference Confidential

## Great Salt Lake Elevation Matrix

The mission of FRIENDS of Great Salt Lake is to preserve and protect the Great Salt Lake ecosystem and to increase public awareness and appreciation of the lake through education, research, advocacy, and the arts.

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# EXECUTIVE DIRECTOR'S MESSAGE

LAKE ELEVATED: A \$40M GSL WATER TRUST IS A GREAT START BUT WATER IS STILL THE LIMITING FACTOR

“The Lake’s always been there, and, quite frankly, I thought it always would be. But I’m not sure that’s the case, I’m not sure the Lake will always be there unless we have some important and meaningful interventions.”

—House Speaker Brad Wilson, Utah State Legislature,  
*Feds Join Effort to Rescue the Great Salt Lake*, SL Tribune, 2/19/22 Leia Larsen

On Friday, February 18, 2022, at the Utah State Capitol Complex, Members of the House Natural Resources, Agriculture, and Environment Standing Committee met in Room 120 Senate Building to vote on 6 agenda items, 5 of which were water related. HB 410, *Great Salt Lake Watershed Enhancement*, was first up. Sponsored by House Speaker Brad Wilson, the proposed bill called for the establishment of a Great Salt Lake water trust “to implement projects, programs, or voluntary arrangements that will in summary, include the integration of water planning and management efforts that benefit the Great Salt Lake watershed, sustain Great Salt Lake and the Great Salt Lake’s wetlands, retain or enhance water flows to the Lake, conserve and restore upstream habitats that are key to protecting the hydrology and health of Great Salt Lake and the Great Salt Lake’s surrounding ecosystem, and enhance, preserve, or protect the Great Salt Lake.” Awesome!

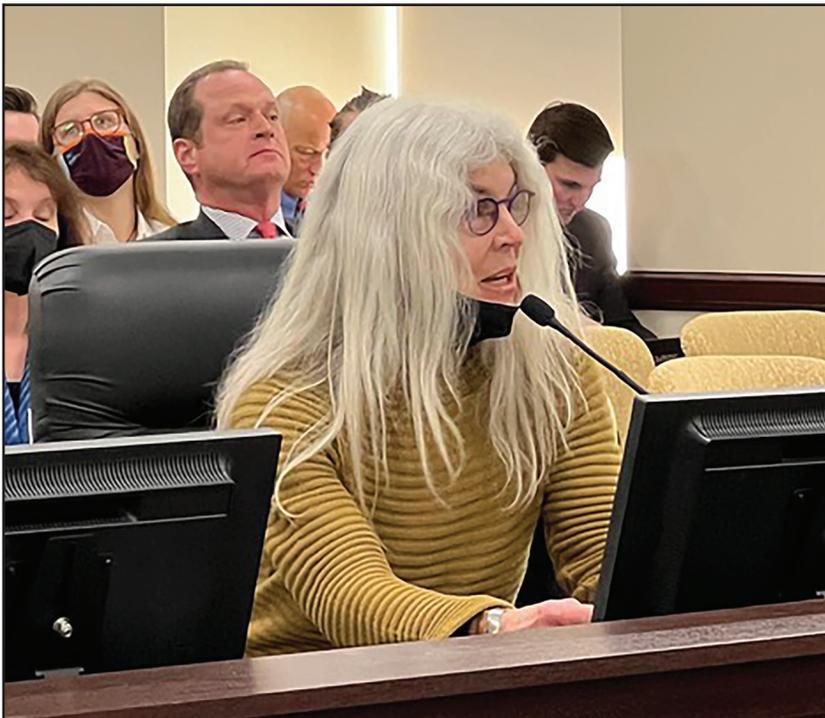
moment (thank you, RadioWest), Wilson convened a GSL Summit on January 5th. The summit was intended to bring state legislators together for a half-day session of GSL 101. It was a timely opportunity before the 2022 General Legislative Session kicked off on January 24th to instill a sense of understanding that “all Utahns should recognize the importance of Great Salt Lake to our health, economy, quality of life, and identity as a State.” It came along with a timely message about how declining water elevations would impact all of those values.

When the hearing was open for public comment, I was first up, introduced myself, and shared the following:

I’ve been involved in water issues impacting Great Salt Lake for over 20 years now, when it was becoming increasingly obvious that the Lake was in trouble. In 2009, I served on the first Great Salt Lake Advisory Council appointed by Gov. Huntsman, was a member of Gov. Herbert’s Water Strategy Advisory Team that put together the **2017 Recommended State Water Strategy**, and worked on the GSL Resolution (HCR-10) Steering Group that produced the *Dec. 2020 report, Recommendations to Ensure Adequate Water Flows to Great Salt Lake and Its Wetlands*. I’m a member of the Division of Forestry, Fire & State Lands’ Great Salt Lake Technical Team, and I’m actively engaged in planning processes and policy development that focus on Utah’s water resources, and the Great Salt Lake ecosystem.

Throughout all of those meetings, with all of that discussion, resulting in all of those recommendations, I have to admit that there were times I wondered whether what we were doing was an exercise in futility. And the lower the Lake got, the more I wondered. I thought it would take a seismic shift in thinking about the Lake for many of those thoughtful and practical recommendations to become reality. And here we are.

When I was invited to attend Speaker Wilson’s Great Salt Lake Summit in January, I was hoping that *this time* help was on the way. But it wasn’t until I saw a draft of HB 410, that I really started to believe that. I cannot overstate the importance of this bill. For too long, the Lake has been at the literal end-of-the-line



Executive Director, Lynn de Freitas, during the HB 410 hearing, photo courtesy of Rep. Briscoe

It seems that the genesis of HB 410 was prompted by a “Great Salt Lake Ah-Ha” that House Speaker Wilson experienced one morning while listening to a RadioWest interview that focused on Great Salt Lake’s declining elevations. Prompted by this radio



when it comes to water rights. This bill will help change that. For too long, every drop of water in the Lake was considered wasted. This bill will turn that on its head, establishing a water trust to help sustain the Lake. Finally.

But none of this is possible without support from the legislature. And none of this is possible without significant funding support. As much as I love the Lake, it's been difficult to watch its decline while remembering how vibrant it was—not that many years ago. I do believe that it's not too late to save the Lake. If we work together, we can turn things around and keep our Lake GREAT. I urge you to support this bill. Thank you.

The day after the hearing, I received a text from a Great Salt Lake admirer who asked whether this bill was a good thing? I replied that indeed it was a good thing because it gives us money to work with to investigate water partnerships. It finally acknowledges that water for the Lake is necessary and that there can be ways to make that happen. And since water costs money, it creates an incentive that can be amplified by additional financial support. The bill also addresses Rep. Joel Ferry's point that although agricultural water use has the lion's share of water rights in Utah, it's necessary to provide incentives that allow those users to "participate" in the solution. That would be a key factor in changing those baby steps into giant steps. Giant steps into a belief system that confirms that this is "what we gotta do." So, yes, this is a good thing.

At last, the fever has broken. A fever that has unfortunately perpetuated for 126 years and which effectively dropped the elevation of Great Salt Lake by 11' since Utah became a state. A fever that in 1963, took the Lake down to a historic low of 4,191.3' asl, at a time when our population was much smaller and the momentum of population growth hadn't "kicked in" yet. At a time when many people found it difficult to even say "climate change." And at a time when we should have been thinking about where Great Salt Lake elevation trends could take us—notwithstanding the record high elevation of 4,211.6' asl in 1986-87. In July 2021, once again we hit the historic low only to be superseded on October 16, 2021 by a new historic low of 4,190.4' asl. And although the pause button has finally been pushed, there is no guarantee that Great Salt Lake won't continue to decline due to megadrought, climate change, and continued population growth. We know the values of the Lake that are linked to its elevations. But what are the values we place on the Lake that determine its future? We must take this opportunity and give the Lake our very best effort for its future and future generations of wildlife and people.

Briny kudos to the many Great Salt Lake champions within the watershed who have been working in a myriad of ways that helped prompt the development of HB 410 as well as the impressive list of water

related bills that we saw during this session. And the admirable cohort of legislators who took the initiative to support critical water related bills that can benefit the Lake should be commended. Among them are: Sen. Iwamoto, Rep. Ferry, Rep. Miles, Rep. Ward, Sen. Sandall, Rep. Ballard, Sen. Vickers, Rep. Bennion, Rep. Owens, and Rep. Hawkes, who has set a track record for determination and follow through for the Lake. And which is why FRIENDS will be awarding its 2022 Friend of the Lake Award to Rep. Hawkes at our 2022 Great Salt Lake Issues Forum, May 18-20th at the University of Utah Guest House & Conference Center. He gets the gold!

This is the first legislative session that I can remember that I didn't approach with a sense of dread. Yes, there are bills that we oppose—and for good reason. But the overall approach of the legislature with regard to the Lake is positive: support for secondary water metering, support for instream flow, support for water efficiency, support for a Great Salt Lake water trust. And that's a really positive sign. But an even better sign will be when we finally start acting like we live in a desert and admit to ourselves that when it comes to water, there are choices we're going to have to make. At the very top of that list should be the choice to do whatever is necessary to save Great Salt Lake. I'm more hopeful than I've been in a long time that that's the choice we'll make. But let's also recognize that we cannot save the Lake and move forward with developing the Bear River at the same time. That is simply a false choice.

Watching the support given to HB410, hearing legislators from southern Utah referring to Great Salt Lake as "our" Great Salt Lake, I was filled with hope for the first time in a long time. Finally. If only it were that simple, though. Much like the recent draft of the state water plan, the big "but" that hangs over it all is what about the Bear River development project? What about the 400,000 acre-feet application submitted by Utah and Idaho to divert water from Bear River? How do you reconcile setting aside tens of millions of dollars to lease water rights for the Lake at the same time you're setting aside hundreds of millions of dollars to permanently remove that water? And how do you reconcile the possibility of approving thousands of acre-feet of instream flow for the Lake with the possibility of removing hundreds of thousands of acre-feet from the same watershed? We simply can't have it both ways. And yet here we are.

*"We must govern for the benefit of future generations. Sustainably manage the resources that we have, and to leave an inheritance for those who are yet to come."*

—Darren Parry, Former Chairman of the Northwestern Band of the Shoshone Nation

In saline and working to keep the Lake GREAT,

Lynn



# FRIENDS' ORGANIZATIONAL STATEMENT

Founded in 1994, FRIENDS of Great Salt Lake is a membership-based nonprofit 501c3 with the mission to preserve and protect Great Salt Lake ecosystems and increase public awareness and appreciation of the Lake through education, research, advocacy, and the arts. The long-term vision of FRIENDS is to achieve comprehensive watershed-based restoration and protection for the Great Salt Lake ecosystem.

FRIENDS of Great Salt Lake sponsors programs related to our mission statement: Lakeside Learning, the Doyle W. Stephens Scholarship, the Great Salt Lake Issues Forum, and the Alfred Lambourne Prize.

Lakeside Learning Field facilitates 2.5 hour inquiry-based educational field trips for 4th grade students. The trips combine informal environmental education strategies while incorporating science, technology, engineering, art and math (STEAM) to reinforce the Utah Common Core State Science Standards. Lakeside Learning emphasizes learning through participation.

Within the research component of our mission, we sponsor the Doyle W. Stephens Scholarship for undergraduate or graduate research on Great Salt Lake ecosystems. Established in 2002, the scholarship supports students in new or on-going research focused within the Great Salt Lake watershed. Recent project winners span the effects of changing salinity on microbialites

to the impacts low water levels in Great Salt Lake have on Utah's air quality.

FRIENDS is actively involved in advocating for Great Salt Lake. Every two years, FRIENDS hosts the Great Salt Lake Issues Forum to provide focused discussions about the Lake for a variety of stakeholders including policy makers, researchers, and industry leaders. Each Forum engages the community in constructive dialogue regarding the future of Great Salt Lake.

In 2014, FRIENDS established the annual Alfred Lambourne Prize for creative expressions of our Inland Sea in the categories of visual art, literary art, sound, and movement. FRIENDS celebrates the relationship between local artists and one of Utah's most precious natural resources, Great Salt Lake. Through artistic expressions, we enhance our capacity to build awareness about the Lake and our need to preserve and protect it for the future.

FRIENDS maintains a Board of Directors and Advisory Board composed of professionals within the scientific, academic, planning, legal, arts, and education communities. Staff members include, Lynn de Freitas, Executive Director; Rob Dubuc, General Counsel; Holly Simonsen, Membership & Programs Director; and Katie Newburn, Education & Outreach Director.

## *On The Cover*

### The Great Salt Lake Elevation Matrix

After extensive input from interagency cooperation and collaboration, and open public participation, the Division of Forestry, Fire & State Lands (DFFSL) completed the 2013 Great Salt Lake Comprehensive Management Plan (GSL CMP) <https://ffsl.utah.gov/state-lands/great-salt-lake/great-salt-lake-plans/> The purpose of the plan is to guide DFFSL, along with other local, state, and federal partners in managing allocating, and appropriately using GSL's sovereign land resources. A summary from the plan follows:

“The process through which the three zones were derived began with the development of the Great Salt Lake Elevation Matrix (Appendix A). The Matrix is a summary of elevation-specific GSL resource characteristics derived from available literature and input from at least three dozen stakeholders representing multiple resources and Lake characteristics. Most resources outlined in the GSL CMP are characterized by elevation in the matrix (those that do not vary with lake level were not included). When appropriate, specific elevations are labeled beneficial or adverse for the resource. Elevation-specific but value-neutral characteristics are also noted.”

“As illustrated by the GSL Lake Elevation Matrix, this GSL CMP revision intends to develop management strategies that consider lake level effects at a range of elevations and to offer prescriptive solutions to avoid adverse impacts to resources and mitigate competition among user groups.”





*Photobomb*, photograph  
by Gary Crandall

# CONGRATULATIONS, YOU'VE FAILED!

How pioneering fugitive dust controls at Owens Lake is a success story through failures and a bellwether for the future.

In 1913, California marked one of its greatest successes, and greatest failures. The City of Los Angeles Department of Water and Power (LADWP) completed construction

of the Los Angeles Aqueduct, diverting all tributary water destined to the terminal saline Owens Lake, 223 miles south to the sprawling metropolis of Los Angeles. A historic

achievement for Southern California, and a disaster for Owens Lake which mostly dried up, exposing extensive areas of relicted lakebed playa resulting in the largest source of particulate emissions in the nation. An ecological treasure, Owens Lake was a 110 square mile saline biological super producer [Image 1] transformed into an ecological and environmental wasteland [Image 2].

This photo, taken in 1891, from the eastern shore of Owens Lake near Keeler, shows the crest of the Sierra Nevada in the background.



(Collection of the Henry E. Huntington Library)

[Image 1], courtesy of Phillip Kiddoo

In 1987, the EPA designated the Owens Lake area as serious non-attainment for violations of the national air standards. The difficult task of enforcing those standards fell upon a local air district with two dozen employees, the Great Basin Unified Air Pollution Control District (Great Basin). After years of litigation, LADWP was required to undertake dust control measures to meet those standards.



[Image 2], courtesy of Phillip Kiddoo

The results have been extraordinary. As of January 2022, 47.8 square miles of dust control areas are completed, operating, and maintained at Owens Lake [Image 3]. On average, 75,000 tons per year of PM10 are control and no longer impacting public health. LADWP reports that the price tag to





# Owens Lake PM10 Dust Control Areas

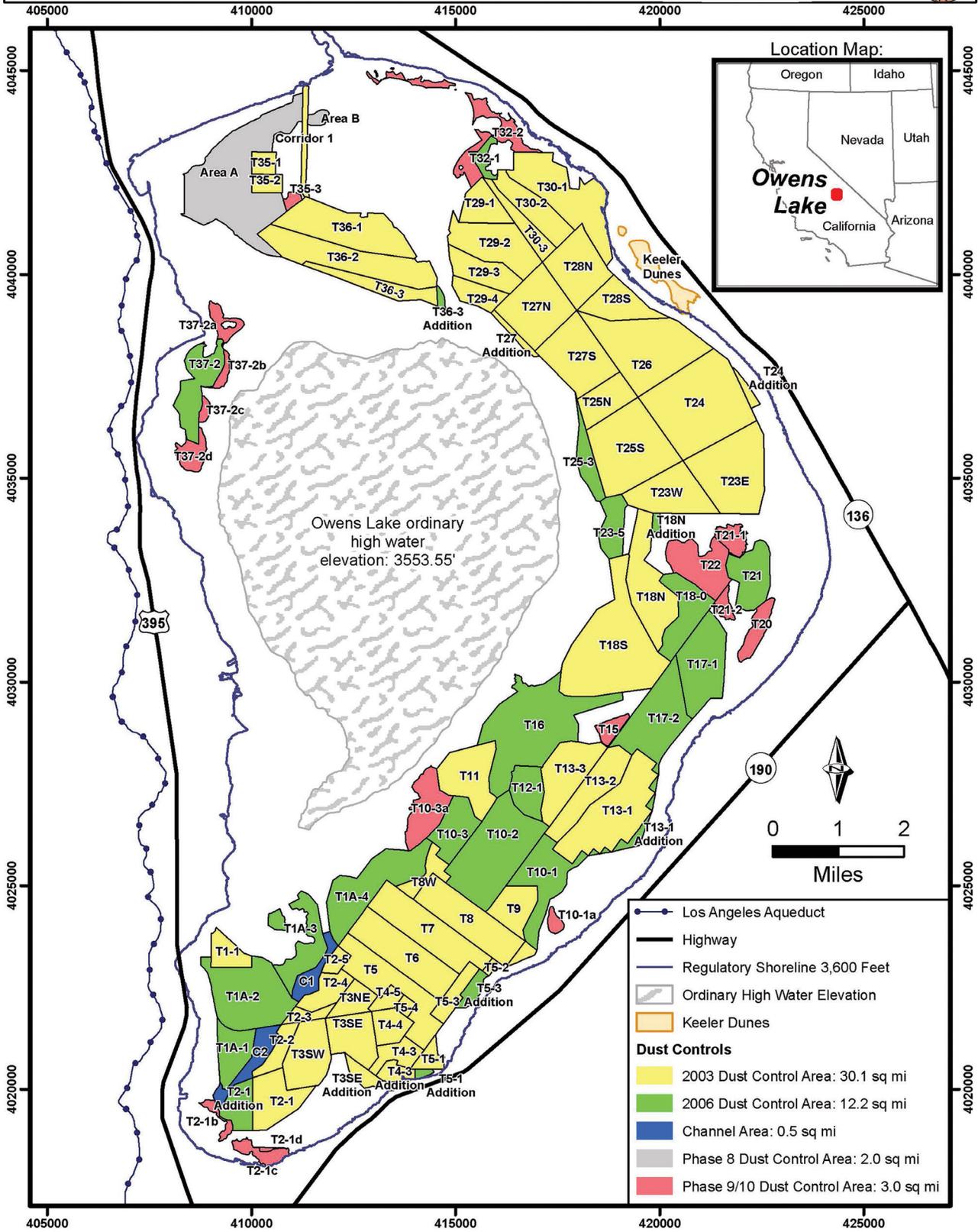


Figure 1.

[Image 3], courtesy of Phillip Kiddoo



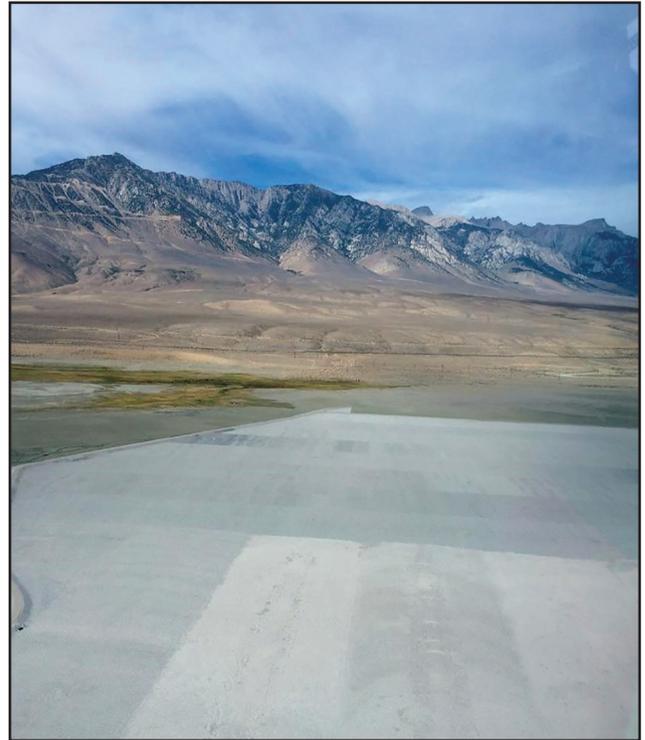
# CONGRATULATIONS, YOU'VE FAILED! (CONT.)



[Image 4], courtesy of Phillip Kiddoo

date is approximately 2.5 billion dollars, and approximately 23 million per year of on-going costs.

Great Basin developed innovative testing, monitoring and control technology that have potential application to other terminal lakes facing uncertain futures due to drought and competing demands for water drought affected areas. Those control methods include 1) Gravel Blanket [Image 4], 2) Managed Vegetation



[Image 5], courtesy of Phillip Kiddoo

[Image 5], and 3) Shallow Flooding [Image 6]. All of these measures mimic natural systems of dust control, 1) desert pavement, 2) wetland meadows and shrublands and 3) lakes, seeps, and springs. All also have their own unique mandated set of enforceable performance criteria. To define these critical elements, all performance criteria required testing, subsequent testing, and retesting for refinement.

This story of dust control at Owens Lake is about success through retrospective stories of failure.

Phillip L. Kiddoo  
Air Pollution Control Officer  
Great Basin Unified Air  
Pollution Control District



[Image 6], courtesy of Phillip Kiddoo



# COMPASS POINTS: GREAT SALT LAKE

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Above my writing desk,  
propped between antlers,  
fossils and stones,  
hang two small watercolors  
of Antelope Island.

Across a blue horizon,  
inadequate in miniature,  
clouds surge eastward,  
climbing encrusted shores.  
Salmon pink playas nuzzle  
the sky's trembling veil.

\*

## SOUTH

My horse pricks her way  
though bitterbrush and boulders  
to the rim of Stansbury Island.  
She grabs at rattlegrass,  
her bit dripping green foam,  
as the cumulus parade rolls in  
its untethered Great Basin floats:  
hoary mammoth, pastel turtle,  
carousel pony, plump trout  
mushrooming into mermaid,  
snow white andirons  
ascending the dome.  
Dark shadow islands  
mottle the silver lake,  
whisper stories from Nevada.

## WEST

Our sailboat tips—  
we are a pelican wing  
skimming the turquoise  
cabochon of Utah sky.  
Cub, Hat, Badger,  
Egg, Rock, Mud—  
simple appellations  
for low-water islands—  
give way to Gunnison,  
where Alfred Lambourne  
slept a year in the company  
of one-fifth of Earth's  
white pelicans—and all  
of the Great Basin's stars.  
Awake, he painted  
the pastel glimmer  
of the saltiest lake  
in our hemisphere,  
faced the crash  
of electric storms,  
rode the crimson cusp  
of the planet.

## NORTH

Along the Promontories,  
a band of range mares,  
udders nudged by foals  
knowing no barn, holds  
the gravel road with horse  
majority, then drifts off,  
permitting us to downshift  
and rumble toward Rozel.  
At the Lake's edge, we shield  
our eyes, scan bright islands  
perched on the seam of sky,  
enter the pewter mirage  
at the great spiraling mandala.  
Suspended in time with crystal  
and basalt, we follow  
its silence into ourselves.

## NORTHEAST

In the refuge, swallows—  
mad tailors—dart  
under bridges, press  
beaks full of mud  
into teacup nests.  
Like appaloosa spots,  
snowy egrets punctuate  
the maze of dark channels.  
In the shallows, herons,  
still as reeds, eye fish  
before beak-strike.  
Mud flats crack  
into drought's clay tablets—  
stilt, avocet, phalarope  
caught in cuneiform.  
Wind rattles through bullrushes,  
Paiute shelters unbundled.

\*

In pigment and paper,  
I carry hom each day  
the huges of Great Salt Lake,  
tucked with sage-scented fingers  
among a quiver of sable brushes,  
tufts of bison hair, a jackrabbit  
tail, and butter-bright feathers  
of a fallen lark. I had walked  
again on the brittle grey floor  
of our own Dead Sea.

—Margaret Pettis  
2020 Alfred Lambourne Prize Finalist



# HOW WATER-WISE LANDSCAPING CAN LEAD TO PROMISING OUTCOMES

An invitation to submit an article for the FRIENDS of Great Salt Lake newsletter is flattering, both because of its readership and the organization's critical mission. It has given us pause to consider what the Center for Water Efficient Landscaping (CWEL) has in common with FRIENDS' mission to preserve and protect the Great Salt Lake ecosystem. The short answer is water. The broader answer is a common appreciation of both natural and constructed landscapes, and wise natural resource stewardship.

The Utah State Legislature created CWEL at Utah State University in 1999. Its mission is to promote water conservation through environmentally, socially, and economically sound landscape management practices. Creating CWEL was prescient, as the State's increasing population and growing economy has led to rapid urbanization and transfers of water to meet growing residential, commercial, industrial, and institutional uses. This growth is concentrated on the Wasatch Front and competes with the critical need for water to sustain in-stream flows, wetlands, and Great Salt Lake.

Managing water is not easy, especially when trying to do more with less. Landscape water use is being prioritized for municipal water conservation

because landscaping uses a majority of culinary water, is directly served by pressurized secondary irrigation systems, and is often not seen as essential. Our mission acknowledges the potential for water conservation in landscapes while also recognizing the multiple environmental benefits that constructed landscapes contribute to urban areas. The industries supporting these landscapes are as critical to the State's economy as data centers or cattle farms. The Center conducts research on plants, soils, irrigation technologies, and water use behaviors and policies to help Utah save water while maintaining landscapes, gardens, and parks in urban areas that are aesthetically pleasing and functionally appropriate. Through programs such as Water Check, WaterMAPS™, and Qualified Water Efficient Landscaper Certification, CWEL collaborates with critical partners across the State to advance urban water conservation.

It may not seem that much progress has been made toward water conservation in the State, but it is worth remembering that 35 years ago Utah was installing pumps to lower the level of Great Salt Lake. It was hard to worry about conservation when excess water was flooding properties and threatening the transportation and mineral industries. As then Governor

Matheson said, it was a "hell of a way to run a desert." The only thing we didn't have to worry about while draining the swamp was alligators. Water purveyors were offering decreasing block rates (the more water you used the



Water-wise landscaping example, photograph courtesy of Center for Water Efficient Landscaping



cheaper it was) and public sentiment was not in favor of waterwise landscapes—naively perceived as ‘sagebrush, cacti, and buffalo skulls.’ Today, attitudes and policies about landscape water conservation are changing in response to longer-term climatic and social trends affecting water availability and demands, and conservation progress is being made.



Water-wise landscaping example, photograph courtesy of Center for Water Efficient Landscaping

Unfortunately, with climate change rolling the dice on the west desert playas, we do not have 35 years to wait for attitudes and policies regarding Great Salt Lake to keep pace with its decline and record low water levels. One of CWEL's activities has been defining how much water can be conserved without permanently damaging a landscape. No one wants to see an heirloom tree die, but at least trees are somewhat replaceable. We can plant a new one and be more careful in the future. With Great Salt Lake, we also find ourselves wondering how far we can reduce its water supply but the stakes are so much higher. If we allocate too little water to the Lake, we risk crossing a tipping point where the entire lake ecology collapses. If that happens, we likely will not have the skill or opportunity to restore it and, unlike with trees, there are not replacements for sale at your local nursery. Merely mitigating the environmental, economic, and health consequences of losing the Lake would consume large portions of the State's budget and reduce spending to meet other pressing needs.

Large-scale water development has always been a collaborative effort. The scale and costs of the dams and distribution systems now serving Utah were simply too great to be done individually, and we now drink from the wells others have dug. Large-scale water conservation must also be a collaborative effort and can be the well we dig for the future. Cooperation is needed on two levels. First, no one entity can save enough landscape water to make a difference, but combined, we have an opportunity for every resident and business to contribute to a common cause that can save

significant amounts of water. Unfortunately, as large as that water savings may be, it is insufficient to meet the needs of Great Salt Lake since it only represents a portion of the roughly 20% of the State's water used in the municipal and industrial sectors. The second level of cooperation will require conservation efforts by every water user and in every sector, both in current water uses and in the strategic choices we need to make on the water use efficiency of how Utah's economy grows and how land use change occurs, particularly in urbanizing areas.

Landscape water conservation is important, but it is not enough. All water users and sectors must help to carry the burden of climate change and drought and work to ensure wise and responsible use of our limited water in this arid environment. If the conservation effort made in landscaping is matched in all other uses of water and coupled with wise policies, we will have the tools we need to help ensure Great Salt Lake is sustained. Only then can we continue to enjoy the full benefits of our yards and gardens, sunsets reflecting on the Lake, shorebirds and waterfowl, powder days in the canyons, and the pride of stewardship for one of the Great Basin's greatest wonders.

Larry A. Rupp, PhD  
Joanna Endter-Wada, PhD  
Kelly Kopp, PhD  
Center for Water Efficient Landscaping  
Utah State University



# THE GREAT SALT LAKE COORDINATOR

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## HAS LOTS TO DO

July 1, 2020—that is the day I began my adventure as the Great Salt Lake Coordinator with the Department of Natural Resources, Division of Forestry, Fire and State Lands. While I have spent the last decade wading in and out of Great Salt Lake issues, I have spent the last year and half fully immersed in the briny waters of the Lake, and my head has not stopped spinning since. The more you know about an issue, the more you realize you don't know. The more you do for a resource, the more you realize there is to be done.

As northern Utah settled into the extreme drought and our parched soils sucked up the meager spring runoff of 2021, my head continued to spin and a sinking feeling developed in my stomach. The Lake would certainly reach the historic low of 1963, but how far beyond that would it go? The media inquires rolled in and Great Salt Lake was making worldwide headlines. More and more people were starting to pay attention. They began asking questions. Why is Great Salt Lake important? How will I be impacted if the Lake dries up?

Fortunately, researchers have been working on answering these questions over the last decade and we have many of the answers to these fundamental questions. We just need to ramp up our education and outreach efforts. We also need to come up with meaningful solutions to bring water to Great Salt Lake. Again, my head spins and my stomach sinks. The tasks at hand are daunting. Luckily for me, I have some guidance to navigate through this crucial point in Great Salt Lake health. The documents completed in late-2020 entitled *Water Strategies for Great Salt Lake: Legal Analysis and Review of Select Water Strategies and Recommendations to Ensure Adequate Water Flows to Great Salt Lake and its Wetlands* provide Great Salt Lake policy makers, stakeholders, and myself the necessary tools to enact substantive changes to Great Salt Lake water delivery.

The lists are long and the tasks are challenging in the above-mentioned reports. Despite this, effectively addressing these challenges feels more and more possible every day. This is because of the concerted efforts of the Great Salt Lake community and the groundswell of support we are seeing for the Lake.

One of the most fascinating things about Great Salt Lake has nothing to do with the Lake itself. It has to do with how the Lake is “managed.” There is

no one entity in charge of Great Salt Lake. Each of the government agencies in Figure 1 have a unique mission and different management responsibilities with regard to the Lake. But, I believe, today more than ever, each of these groups understands the importance of Great Salt Lake and they are committed to ensuring its sustainability. It is my pleasure to be able to work with all of these agencies, as well as local municipalities, universities, industries, and advocacy groups to enact meaningful solutions to protect the Lake. We all have a unique role to play in protecting the Lake and it will undoubtedly take each of us to get the job done.

When my adventure as the first-ever, full-time Great Salt Lake Coordinator began, I was intrigued and motivated by the passion of the Great Salt Lake community. Over the years I have been continually impressed by how individuals and groups with a range of interests can sit down together at the same table to work towards a common goal: saving Great Salt Lake. Within the past six months I have been astounded by the level of support and promise for the Lake. The inquires, attention, and commitment from family and friends, media, legislators, the Governor of Utah, and members of the United States Congress have been remarkable! It turns out that, for better or worse, reaching a new historic low lake level elevation of 4,190.2 in October of 2021 was just what the Lake needed to gain the attention it has deserved since it began overtopping I-80 in the mid-1980s.

Thankfully, the hard work of researchers and policy leaders throughout the past decade has paid off and we are well equipped to articulate why Great Salt Lake is essential to our State and what we can do to protect it. The economic and ecological contributions of the Lake are outstanding. An array of solutions are available and need be implemented immediately to bring water to the Lake. Of course, these solutions will take continued collaboration, time and of course, money. My head spins and my stomach sinks a little less when I think about today's outpouring of support for Great Salt Lake. The actions taken to protect the Lake over the next few years will be crucial for the Lake's sustainability. I'm just glad there are so many people willing to join me on the adventure.

Laura Vernon is the Great Salt Lake Coordinator with the Utah Department of Natural Resources Division of Forestry, Fire and State Lands.



# GREAT SALT LAKE MAP



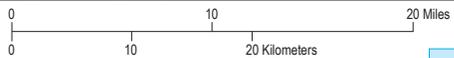
113°00'

112°00'



Cartography by Joe Gardner

Base from U.S. Geological Survey digital data, 1:100,000, 1978, 1979, 1980, 1984  
 Universal Transverse Mercator projection, zone 12



## EXPLANATION

- Great Salt Lake, altitude 4,200 feet
- Intermittent water body
- Utah State Park or National Monument
- Waterfowl Management Area (WMA) or other wildlife reserve

USGS has measured lake altitude at or near Boat Harbor gage since 1875, and at Saline gage since 1966  
 Great Salt Lake historic maximum altitude 4,211.60 feet, June 3, 1986, and April 1 and 15, 1987  
 Great Salt Lake historic minimum altitude 4,191.35 feet, October 15 and November 1, 1963



# THE IMPORTANT WORK OF THE UTAH RECLAMATION MITIGATION & CONSERVATION COMMISSION ON BEHALF OF GREAT SALT LAKE

What do Great Salt Lake (GSL) Shorelands Preserve, Gillmor Wildlife Sanctuary, and Hasenyager GSL Nature Center all have in common? Much of the land for these important conservation areas was purchased by the Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission).

The Mitigation Commission is a Federal agency with a narrowly focused mission. It was established by Congress in 1992 through the Central Utah Project Completion Act (CUPCA) to plan, coordinate, and fund programs to mitigate for adverse ecological effects resulting from construction and operation of Federal water projects in Utah. The Mitigation Commission is composed of a five-member Commission, all Utah residents appointed by the President of the United States, and a staff of ten with an office in Salt Lake City and a field office in Midway.

The Mitigation Commission partners with public natural resource agencies, Federal, State and local governments, Indian tribes, universities, and non-profit organizations, to carry out its projects in a collaborative manner. It has expended more than \$300 million planning and implementing projects on the ground to fulfill fish and wildlife mitigation requirements and other conservation objectives. Of that amount, the agency has expended more than \$19 million for “planning and implementation of projects to preserve, rehabilitate, and enhance wetland areas around the Great Salt Lake...”

The Commission’s first five-year Mitigation and Conservation Plan identified a vision for Great Salt Lake:

“A wetland and upland corridor ... along the shoreline of Great Salt Lake has been preserved that allows dynamic fluctuations of lake level. A commitment to preserve the ecological function and values of GSL and associated wetlands exists among state and local governments, private landowners, and private industry. Diverse educational opportunities are available that promote general understanding of the complexity and value of the Great Salt Lake wetland ecosystem as well as public and political support for Great Salt Lake’s wetlands, wildlife, and intrinsic values.”

With that Vision in hand, the Mitigation Commission began developing partnerships and implementing projects within the Great Salt Lake Watershed. It identified acquisition of land along GSL’s eastern and southern shores as one of its highest priorities, with the following results:



Mitigation Commission Property Acquisitions on Great Salt Lake

## Great Salt Lake Shorelands Preserve

From 1995 to 2007, the Mitigation Commission acquired approximately 1,297 acres of land that were intermixed with 2,896 acres acquired by The Nature Conservancy. Together these properties make up the GSL Shorelands Preserve. In December 2020, the Mitigation Commission transferred permanent ownership of its properties to The Nature Conservancy, which manages the Preserve as a single ecological unit.



## South Shore of the Great Salt Lake

The Mitigation Commission developed a similar partnership with National Audubon Society and acquired approximately 667 acres of land and 561 acres of easement along the southeastern shoreline of Great Salt Lake. The properties are intermixed with those owned or controlled by Audubon and together the 2,738 acres are managed as the Gillmor Wildlife Sanctuary. The Mitigation Commission also acquired the 290-acre Lee Creek parcel, which is connected to the Gillmor Wildlife Sanctuary by Rio Tinto-Kennecott Inland Sea Shorebird Reserve. Through the reserve, Audubon and partners restore and protect one of the last remaining un-diked delta systems along Great Salt Lake.

## Robert N. Hasenyager Great Salt Lake Nature Center

The Mitigation Commission purchased 234 acres of land adjacent to the Farmington Bay Waterfowl Management Area and donated it to Utah Division of Wildlife Resources (UDWR) to provide space needed to construct an environmental education center. The parcel was developed into the Robert N. Hasenyager GSL Nature Center and became the site for the George S. and Dolores Doré Eccles Wildlife Education Center at Farmington Bay and the L.S. Skaggs Wetland Discovery Classroom.

The vision prompting acquisition and protection of Great Salt Lake's unique resources was prophetic. With unprecedented growth and pressures on the Lake, we are fortunate to have these large tracts of land in protected ownership.

In addition to land acquisition, the Mitigation Commission has been involved in GSL conservation efforts:

## Post-Flood Restoration of Agency Management Areas

Record Great Salt Lake levels in the 1980s caused extensive damage to water control facilities, dikes and berms, and user facilities at several State and Federal management areas adjacent to and near Great Salt Lake. Together with partners, the Mitigation Commission funded improvements at nine management areas.

## Water Donation to GSL

The Mitigation Commission participated in a recent effort spearheaded by National Audubon Society

with Rio Tinto Kennecott, Central Utah Water Conservancy District, UDWR, and The Nature Conservancy to help address GSL's declining water levels. Through two fixed-time water rights donations, up to approximately 21,000 acre-feet of water could be delivered annually to Farmington Bay over the next ten years, subject to seasonal water availability and priority of water rights. This innovative partnership lays groundwork to voluntarily share water to meet crucial needs of people, birds, and other wildlife.

## Utah State University's Utah Botanical Center

Starting in 2005, the Mitigation Commission funded construction of portions of Utah Botanical Center wetlands education facilities and provided supplemental funding for Wetland Discovery Point facilities and riparian areas.

## Special Area Management Plans (SAMPs)

The Mitigation Commission participated in and provided partial funding for completion of several SAMPs within the GSL watershed, including Box Elder County, Davis County, Salt Lake County, and Tooele County. Through the SAMP process, local officials, agencies, non-profit organizations, and the public identified areas most important for wetlands protection, and those more suitable for development.

## In the Future

According to Mitigation Commission Executive Director, Mark Holden, authorized funding under CUPCA for Great Salt Lake work has been fully expended, but the agency has a small source of discretionary funding it may be able to apply in the future, if Congressional appropriations adequately fund its other ongoing commitments.



You can learn more about the Mitigation Commission and its projects beyond the GSL watershed, such as Jordan River acquired wetlands management, Utah Lake Wetlands Preserve, Provo River Delta Restoration and middle Provo River Restoration at [www.mitigationcommission.gov](http://www.mitigationcommission.gov).



## PERSPECTIVES FROM REPRESENTATIVES

Forgive the pun, but 2022 was a watershed year for legislative activity benefiting Great Salt Lake in particular, and water conservation in general.

Discussion of the love shown to Great Salt Lake by the Utah Legislature this year should start with HB 410, Great Salt Lake Watershed Enhancement, sponsored by Speaker Brad Wilson. HB 410 appropriates \$40 million to create a water trust to enhance water flows to Great Salt Lake and its wetlands and protect its upstream habitats.

It's hard to overstate the importance of HB 33, Instream Water Flow Amendments, by Rep. Joel Ferry. For the first time HB 33 allows private water right holders to dedicate water to instream flows explicitly for the benefit of waters that cover sovereign lands like Great Salt Lake. The Utah Department of Forest, Fire, and State Lands (FFSL) is authorized to acquire and hold instream flow rights.

HB 429, Great Salt Lake Amendments, Rep. Kelly Miles, requires the Utah Division of Water Resources to create an integrated water assessment for the Great Salt Lake watershed, which means the watersheds of the Jordan, Bear and Weber Rivers, Utah Lake, Great Salt Lake, and the West Desert. The assessment must be completed in 2026 with a final report before the end of 2027.

Reading HB 157, Sovereign Lands Revenue Amendments, by Rep. Tim Hawkes, you might say that it's a no brainer, but it didn't get created until this year. HB 157 creates a new state account, the Great Salt Lake Account, and directs money in the account to be used to manage the water levels of Great Salt Lake.

Rep. Hawkes also sponsored HB 334, State Engineer Modifications, which allows the state engineer to employ more than one deputy and appropriates money for the state engineer to hire a deputy director responsible for Great Salt Lake.

Passing these five forward-looking bills to benefit Great Salt Lake in one session was a heavy lift. But we didn't stop there.

HB 242, Secondary Water Metering Amendments, by Rep. Val Peterson, extends the requirement for

all Utah suppliers of pressurized secondary water to have each connection metered by 2030. Salt Lake City residents who use their metered culinary water on their outdoor landscapes are often shocked to learn that hundreds of thousands of residents and businesses in Weber, Davis, and Morgan counties use secondary water on their landscapes and get no readout of the amount of water they use.

They can't, because there is no meter on their secondary connection. They pay an annual fee based on lot size for their secondary water, which means there is no incentive to conserve. An experiment by the USU Water Research Lab some years ago in two small communities in Weber and Morgan counties installed meters on all secondary water in the towns and sent a mailer every month to those users showing them how their secondary water use compared to others with similar lot sizes. Without charging them any more money for use, the households and businesses in those two towns reduced their secondary water use by 20%.

Utah media talked about HB 282, Water Wise Landscaping Amendments (Rep. Wilcox) and HB 121, Water Conservation Modifications (Rep. Spendlove). HB 282 will prevent cities, counties, and HOAs from prohibiting xeriscaping and forbid them from requiring complete coverage of parking strips with turf. They can still require property owners to maintain their yards and can create minimum and maximum percentages for coverage using grass. HB 121 will require new state facilities to limit the use of grass to no more than 20% of outdoor space. All state facilities will now be required to reduce their outdoor water use by 5% by 2023, and 25% by 2026. It also establishes a turf buyback program to help Utahns rip their strips.

It's good to know that we're on the right track with our recognition of improving our water uses, water conservation measures, and water recognition for Great Salt Lake. Now, let's see how this translates into elevating the Lake's surface.

Rep. Joel Briscoe, Democrat in District 25, Salt Lake City, Utah. Rep. Briscoe is a former history and debate teacher at Bountiful High School.



# FROM THE 2022 LEGISLATIVE SESSION'S WORK ON WATER BILLS:

## JOEL BRISCOE AND RAYMOND WARD

During the summer of 2021, road construction in front of the Big-O Tires store in West Valley City required a tear-out of the park strip. Rather than replanting the grass that had been there, the store owner decided to landscape the area with xeriscaping—utilizing a combination of stones, shrubs and other drought-resistant vegetation to make his property look nice and make a long-term reduction in his water use. Unfortunately, shortly after installing the new landscaping, he was surprised when West Valley City required him to reinstall grass to comply with City ordinance.

Utah is one of the driest states in the country. From the time the Pioneers first settled here, there has always been the worry as to whether the winter snowpack would provide enough runoff to sustain the crops through the next summer. We have always regarded water as a valuable resource and have put careful laws in place regarding water. We build reservoirs to store water and put in place a complex system of laws to delineate who has rights to water; we set out rules for how and when water rights can change ownership.

Now that we have a better realization of the consequences of water diversion, it has become clear that some of our laws are counterproductive—in particular, our law that an owner of an agricultural water right who chooses to let that water flow downstream into Great Salt Lake (historically considered as wasting that water) will eventually lose that water right. It has taken several years of below average precipitation (capped this last year by our worst drought in many years), but finally a much broader segment of our society, including the legislature, is coming to a clear understanding that we need to plan and conserve if we are going to have enough water for population growth and still have enough river inputs to retain Great Salt Lake.

This year's legislative focus on improving our water use policies started with Speaker Brad Wilson hosting a summit on Great Salt Lake. The summit brought together leaders from all around Utah, including elected officials, scientists, and policy makers. Moving forward from the conference into the legislative session, there were several bills being considered that will hopefully be good improvements to our water policy, including:

Rep. Ferry's bill (HB 33) would allow a water right holder for specified time periods to have their water flow downstream to the Lake without losing their future water rights and will allow them to change back and forth in different years between using their water some years and letting it flow to the Lake in other years. In particular, for farmers who have a more junior water right, this will be important because in high water years they can still farm, but in low water years, in which their amount of water might be curtailed to a level that is too low to successfully farm, they would still be able to get some value from the water right by being paid to allow the water to flow to the Lake.

Rep. Spendlove's bill (HB 121) would require State agencies to move away from surrounding State buildings with lawn and instead move to other forms of landscaping. Having the State set a good example is important as we try to model and encourage careful water use to our population as a whole. Additionally, his bill will provide funding for incentives to replace park strips with more waterwise landscaping and direct the Legislative Water Development Commission to study additional ways of conserving water.

Rep. Sagers is working on a bill (which will be considered over the interim this summer) to put a plan in place for restrictions and costs that will automatically come into play if Great Salt Lake levels continue to drop.

The bill I ran during this session (HB 95) will change the ways that cities and Home Owners Associations interact with individual property owners so they will not be able to force a property owner to plant lawn. They can still make landscaping requirements for different zones of the city or for the HOA, but in each case the zoning requirements need to allow for at least one additional option other than lawn.

Taken together, I think things in the legislature are moving our water policy in a good direction and I hope that those who care about the future of Great Salt Lake will remain engaged in the process. And I also hope that in a couple of years you will be able to go to the Big-O Tires store in West Valley City and see some nice xeriscaping in their park strip.

Rep. Raymond Ward, Republican in District 19, Bountiful, Utah





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Sept. 16 (Fall)  
Dec. 16 (Winter)  
Mar. 16 (Spring)  
June 16 (Summer)  
Submit articles and images for consideration to Lynn de Freitas at [ldfreitas@xmission.com](mailto:ldfreitas@xmission.com) or call 801-583-5593

**LAKE FACT:**

Q: On what date in 2021 did Great Salt Lake reach a new historic low elevation?

A: October 16, 2021

**THANKS FOR MAKING A DIFFERENCE**

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September 1, 2021-January 25, 2022

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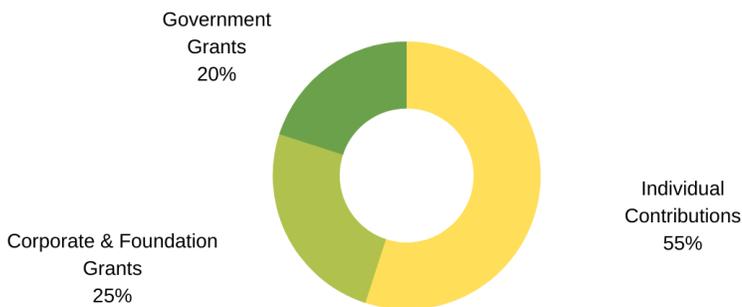
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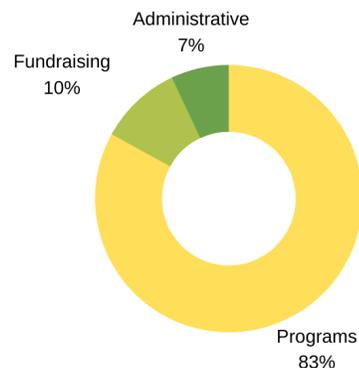
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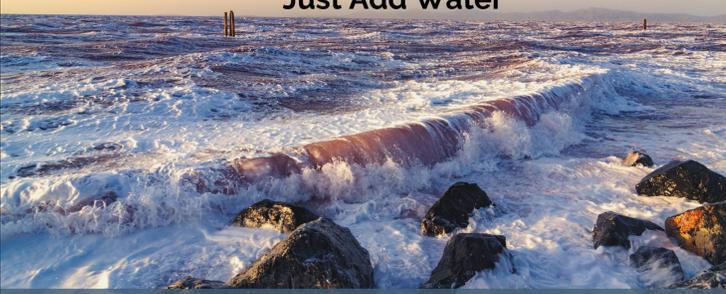
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*Ironic Rope: Unraveling the House Committee meeting on HB232:  
Utah Lake Authority on 2/16/22 while Zooming at Great Salt Lake  
photograph by Kelly Hannah*