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Future of Great Salt Lake Survey

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FUTURE OF
Great Salt Lake
SURVEY

A 2023 USU Research Report by

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UtahStateUniversity®

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Executive Summary

The *Future of Great Salt Lake Survey* was conducted in fall 2022 when state and global attention on Great Salt Lake was ramping up, following record lows of the elevation of lake water levels. In the survey, we asked Utahns their opinions on securing water for Great Salt Lake and focused on strategies that individuals, local communities, and the state of Utah could pursue. When it comes to how water is used and managed in Utah, there are multiple actors and institutions who all make decisions and have authority or ability to take different actions. While the state of Utah can guide growth and development and manages the state's water resources, local county, city and town governments are primarily responsible for land use planning and delivering water to their residents. We also sought to understand what individuals would commit to do for Great Salt Lake and under what conditions. Understanding Utahns' support for strategies across the three scales of the state, local communities, and individual is helpful, because actions across all three scales are not always coordinated. With greater emphasis on coordination and cooperation to solve the problem of a drying Great Salt Lake, the results of our survey are intended to help policymakers better implement strategies across the three scales.

The survey gathered information and opinions from 1,112 Utahns throughout the state. This report summarizes overall findings from the survey. The key findings and conclusions of this report revolve around the following seven points:

1. Utahns are aware of the issues facing a drying Great Salt Lake, and they care about its future.
2. Utahns view their quality of life as linked to the health of the Great Salt Lake ecosystem.

3. Utahns express commitment to preserving Great Salt Lake.
4. People want to see state and community actions to save Great Salt Lake, and they are also willing to act individually.
5. People want to be more informed about how the government is responding to a drying Great Salt Lake.
6. People prioritize basic human and ecosystem uses of water over economic and "non-essential" water uses.
7. Utahns emphasized a collective responsibility for the lake and a sense of loss if we cannot protect it.

Introduction

Great Salt Lake is the largest saline lake in the Western Hemisphere (Wilsey et al. 2017) and plays an important role in Utah's economy, environment, and ecology (Baxter and Butler 2020; Great Salt Lake Advisory Committee 2021). It has a long history of commercial and recreational activities, including mineral production, brine shrimp harvesting, waterfowl hunting, boating, and sightseeing (Utah Department of Natural Resources 2013a, 2013b). The Great Salt Lake ecosystem supports over 10 million birds representing 338 species and acts as an important stopover for migratory birds between North and South America (Great Salt Lake Ecosystem Program; Wilsey et al. 2017). In 1991, Great Salt Lake was designated as a site of "hemispheric importance" by the Western Hemisphere Shorebird Reserve Network (Wilsey et al. 2017).

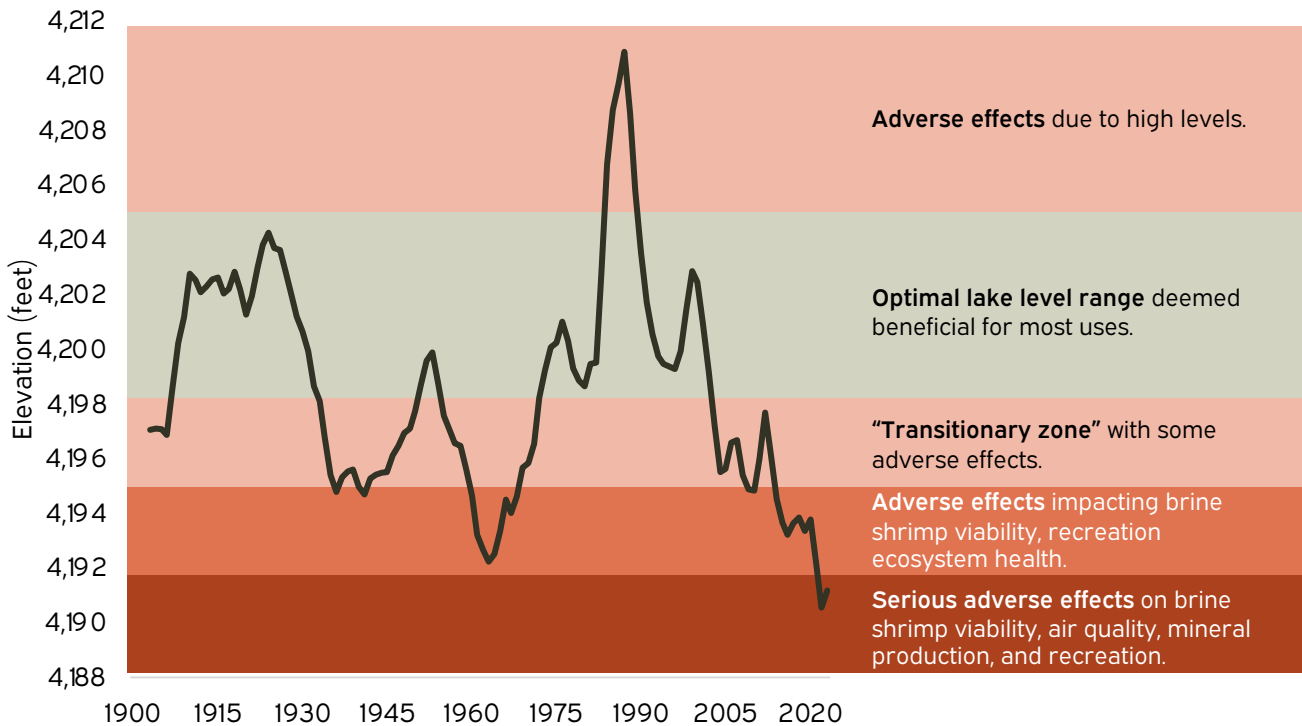
Great Salt Lake has been declining since its contemporary record high in 1987. In November 2022, the lake dropped to its lowest level on record and reached the zone identified in the

Great Salt Lake Level Matrix to have “serious adverse effects” on multiple resource values (Utah Department of Natural Resources 2013a, Figure 1). Studies have shown that Great Salt Lake’s decline is primarily due to human consumptive water use, with climate warming and natural variability as additional factors contributing to the drying lake (Null and Wurtsbaugh 2020; Great Salt Lake Strike Team 2023). A drying Great Salt Lake is cause for significant concern. Decreasing inflow into the lake is depriving critical wetlands of needed water, creating adaptive management challenges and conundrums (Downard and Endter-Wada 2013; Downard et al. 2104; Welsh et al. 2013). Decreasing lake elevation exposes the lakebed, which leads to toxic dust that poses human health risks and affects air quality and Utah’s “lake-effect” snow

(Perry et al. 2019; Great Salt Lake Strike Team 2023:29). As elevation levels in the lake decrease, salinity levels increase, causing threats to the viability of the lake’s ecosystem (Great Salt Lake Salinity Advisory Committee 2021; Great Salt Lake Hydro Mapper).

Because urgent action is needed to save Great Salt Lake, it is helpful for policymakers to understand the kinds of policy choices Utahns are likely to support and champion. The Utah State University *Future of Great Salt Lake Survey* was conducted to gather information from Utah residents about their connections to and opinions on Great Salt Lake, their concerns over the lake and its future, what they would be willing to do individually to help protect the lake, and what additional community and state strategies they

Figure 1: Average annual elevation of Great Salt Lake with elevation zones (1902–2022)



Source: Great Salt Lake Policy Assessment, Great Salt Lake Strike Team, 2023, p.4

would support that would help direct water into the lake. The goal of the survey was to understand how Utahns envision the future of Great Salt Lake and their role in helping to protect it.

Survey Methods

The *Future of Great Salt Lake Survey* was conducted between September 2022 and January 2023. The survey was designed to address issues under public discussion concerning Great Salt Lake. We pre-tested an online version of the survey with 46 Utahns who have been actively engaged in Utah water policymaking and/or affiliated with various management and interest groups linked to Great Salt Lake, including the Great Salt Lake Advisory Council, the Great Salt Lake Technical Team, and Utah House of Representatives Speaker Brad Willson's office. We revised the survey based on pre-testing feedback.

Questions included in the survey addressed residents' opinions on Great Salt Lake and various strategies to help secure water for it. We also asked respondents about their visions on the future of Great Salt Lake. The following topics were included in the survey:

- A. Your experiences and familiarity with Great Salt Lake
- B. Your views on Great Salt Lake
- C. Your opinions on securing water for Great Salt Lake
 - a. Individual strategies
 - b. Community strategies
 - c. State strategies
- D. Your visions on the future of Great Salt Lake
- E. Information about you and your neighborhood

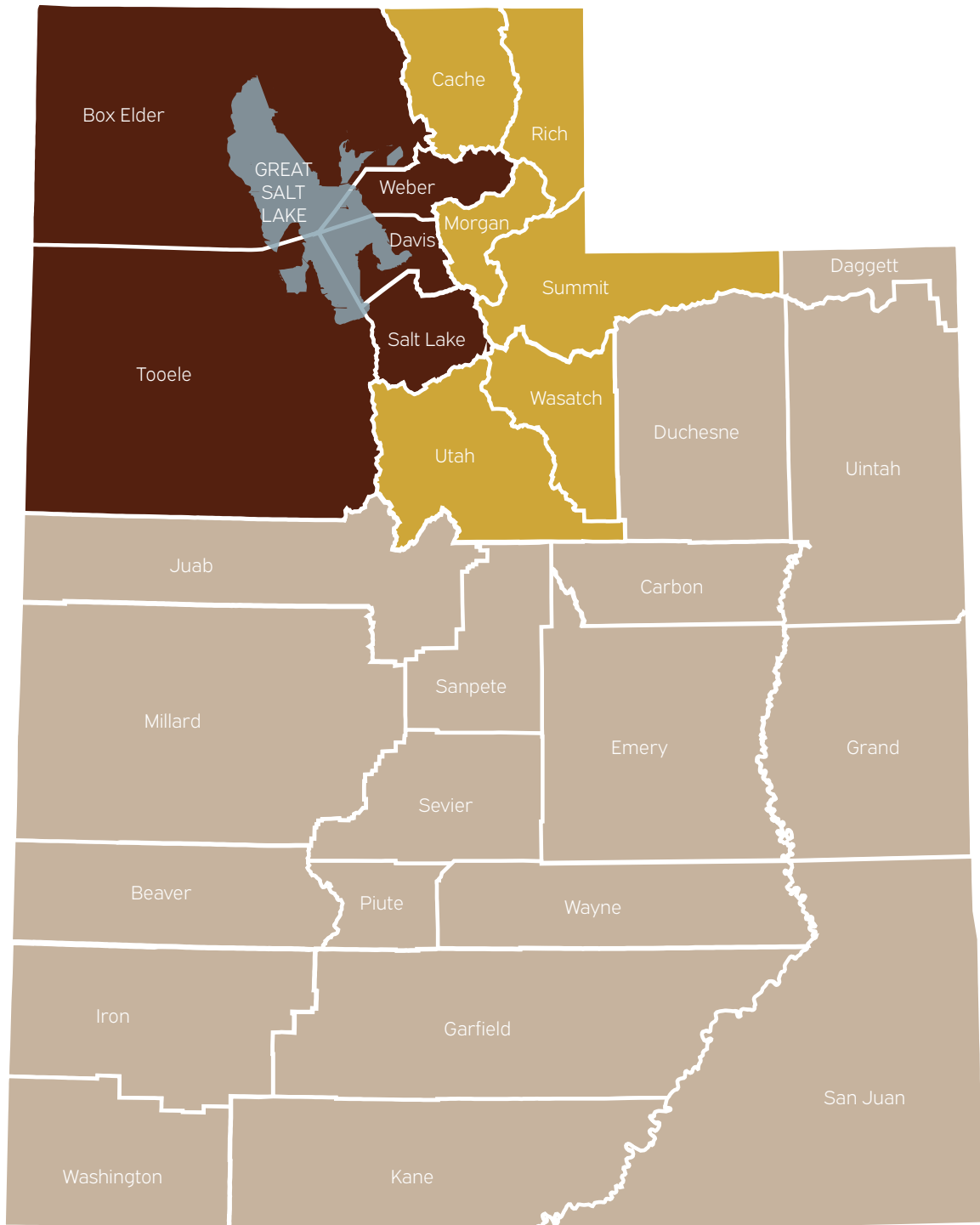
The survey was administered to randomly selected residential locations in Utah, using a list from the U.S. Postal Service. Our aim was to achieve a survey response that would yield a 95% confidence interval with a margin of error of $\pm 3\%$. We selected 7,750 addresses evenly distributed among three strata of Utah's 29 counties. The three strata were based on proximity to Great Salt Lake and designated as follows (Figure 2):

- **Great Salt Lake Counties** – the five counties Great Salt Lake lies within (Box Elder, Davis, Salt Lake, Tooele, and Weber counties);
- **Other Watershed Counties** – the six other counties primarily located in the Great Salt Lake Watershed (Cache, Morgan, Rich, Summit, Utah, and Wasatch counties); and,
- **Rest of Utah Counties** – the remaining 18 counties in Utah (Beaver, Carbon, Daggett, Duchesne, Emery, Garfield, Grand, Iron, Juab, Kane, Millard, Piute, San Juan, Sanpete, Sevier, Uintah, Washington, and Wayne counties).

Within each stratum, we divided the number of residential locations randomly chosen in proportion to each counties' population within that stratum. Surveys were sent in two rounds: the first round included 5,350 residential locations; the second round included 2,400 residential locations. Using survey methods recommended by Dillman et al. (2014), we contacted residents in each round up to four times in four mailings sent approximately two weeks apart. In the first mailing, we sent out an invitation letter with a shortened link and QR code to complete the survey online via Qualtrics. As an incentive, we offered a \$10 Amazon gift card to respondents who filled out an incentive form at the end of the survey. We mailed out reminder postcards in our second wave of mailings to residents who had not completed the survey. For the third mailing,

Figure 2: Map of county survey strata

■ Great Salt Lake counties ■ Other watershed counties ■ Rest of Utah counties



The Future of Great Salt Lake Survey was conducted between September 2022 and January 2023. The survey was designed to address issues under public discussion concerning Great Salt Lake.

we sent out a hard copy of the survey booklet with a stamped return envelope. We sent out a final reminder postcard in the fourth mailing. We entered the survey data from all of the returned hard copies into Qualtrics.

Surveys were sent to residential addresses requesting that an adult over 18 complete it. The overall response rate was 14.3% of our random sample, after deleting surveys where the respondent completed less than 17% of the survey (Table 1). This participation reflects a total of 1,112 usable surveys from a total sample frame of 7,750 households. Response rates varied

somewhat by stratum. Response rates ranged from 15.8% in the Great Salt Lake Counties to 16.0% in the Other Watershed Counties, and 11.2% in the Rest of Utah Counties. One returned survey was unable to be categorized in any of the strata. An analysis of the demographic characteristics of respondents suggests the survey had a fairly diverse sample set (Appendix A). In this report, we focus on combined results for the overall sample. Disaggregated results to highlight differences across the three strata can be found in Appendix C.

Table 1: Residential sample size, response rates and accuracy estimates for county strata and all counties

Random sample characteristics	County strata			All counties (pooled sample)
	Great Salt Lake counties	Other watershed counties	Rest of Utah counties	
Original sample size	2,584	2,583	2,583	7,750
Usable responses	407	414	290	1,112
Response rate	15.8%	16.0%	11.2%	14.3%
2020 census population (aged 18 and over)	1,410,041	607,667	325,935	2,343,643
Margin of error for 95% confidence	± 5%	± 5%	± 6%	± 3%

An aerial photograph of the Great Salt Lake, showing a large body of water in the upper half, reflecting the sky and the surrounding mountains. The lower half of the image shows a vast, flat, light-colored salt flat with some darker, irregular patches of water or mud. The mountains in the background are a mix of brown and blue tones under a clear blue sky.

Key finding #1

Utahns are aware

OF THE ISSUES FACING A DRYING
GREAT SALT LAKE, AND THEY CARE
ABOUT ITS FUTURE.

Approximately 90% of respondents have heard about the decline of Great Salt Lake (Figure 3).

Respondents have learned about Great Salt Lake through various outlets, mainly through television, news articles, and other traditional media stories (Figure 4). Personal experiences with the lake

were reported by over 60% of total respondents. Only 4.8% of total respondents said they were not familiar with Great Salt Lake.

Only 14% of total respondents do not feel personally connected to Great Salt Lake in some way (Figure 5). Interestingly, the most common

Figure 3: Respondents’ awareness of concerns over Great Salt Lake decline

Survey question: Prior to this survey, had you heard or read about concerns over the decline of Great Salt Lake?

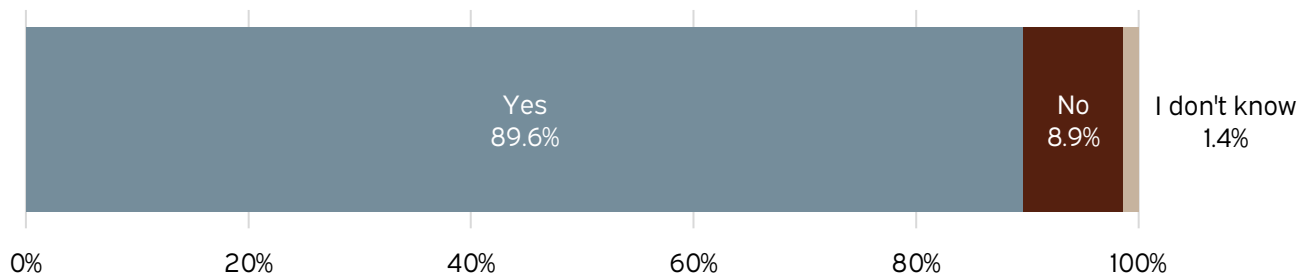
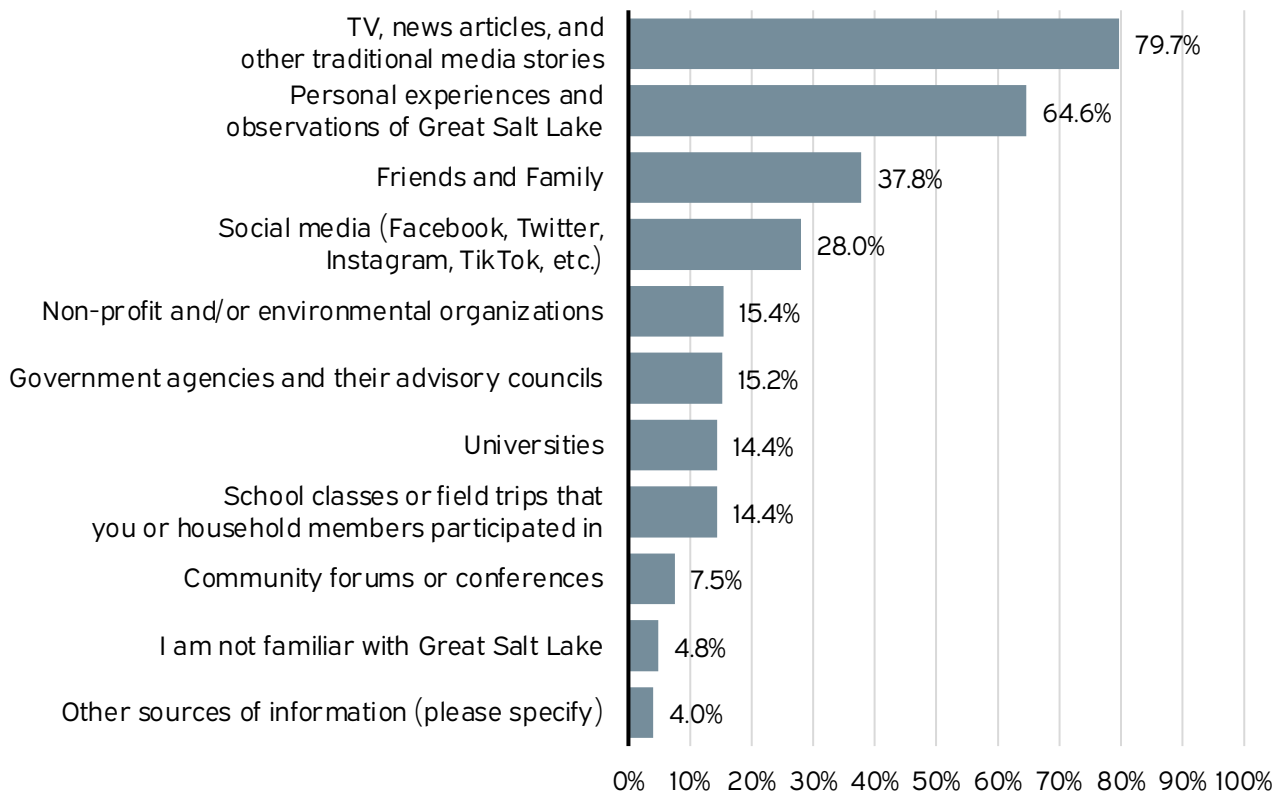


Figure 4: Respondents’ sources of information on Great Salt Lake issues

Survey question: Which of the following (if any) have informed you on Great Salt Lake issues?

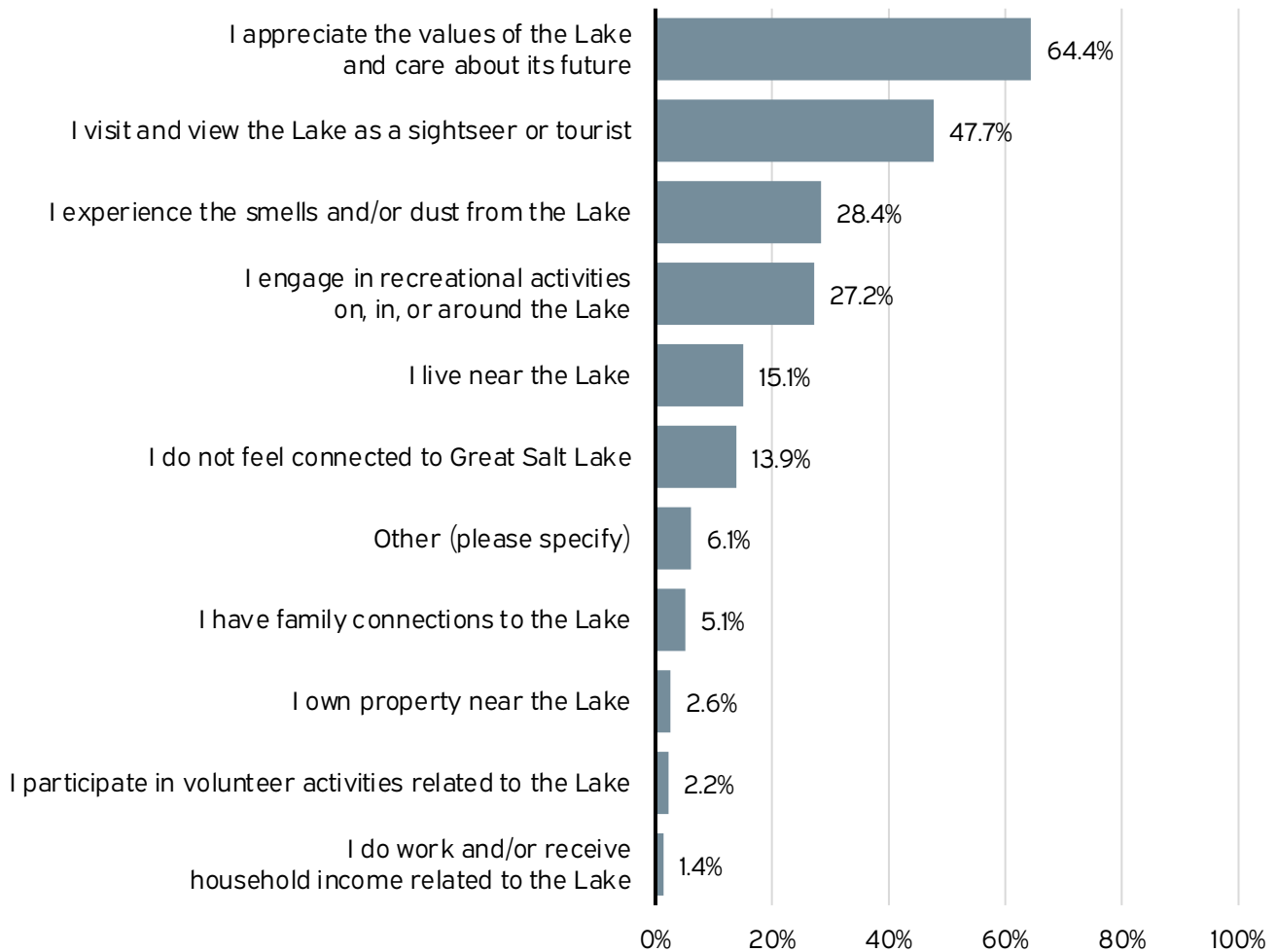


connection respondents have to the lake is a non-physical connection: appreciating the values of the lake and caring about its future. Overall, 64% of all respondents identified this connection to the

lake. In addition, 83% of respondents agreed that Great Salt Lake is important to them, even if they do not spend time there (Figure 6).

Figure 5: Primary ways respondents feel connected to Great Salt Lake

Survey question: What are the primary ways that you are personally connected to Great Salt Lake and its wetlands?



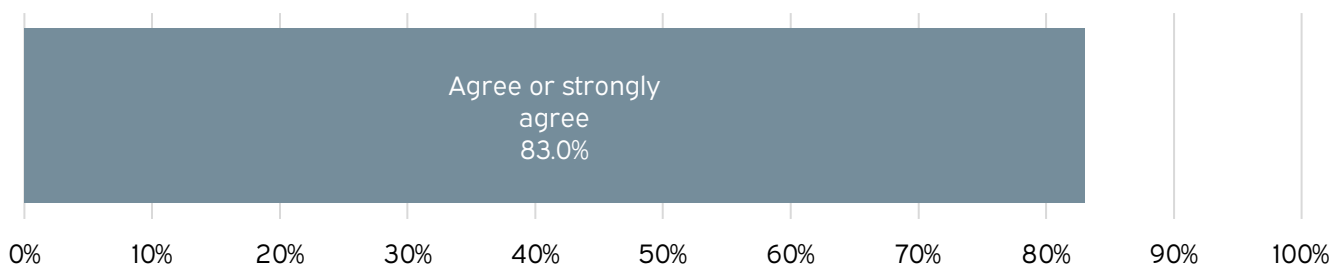
“Anyone who wants the Great Salt Lake returned to its original greatness should feel a connection.”

“Impacts to Great Salt Lake will affect me economically in southern Utah and my friends, family, and employer in northern Utah.”

Figure 6: Importance of Great Salt Lake to respondents

Prompt: Please rate how strongly you agree or disagree with each of the following statement: *“Great Salt Lake is important to me, even if I do not spend time there.”*

Percent of “agree” or “strongly agree” responses. The scale for response categories was, from left to right: Strongly disagree; Disagree; Neither agree or disagree; Agree; Strongly agree.



We allowed respondents to free-write other ways they feel connected to Great Salt Lake. People reflected on personal experiences at the lake, like:

- “enjoy[ing] the beautiful, extraordinary sunsets,”
- “mak[ing] special memories with my family out at the lake,” and
- “appreciat[ing] the historical significance as it is a remnant of Lake Bonneville.”

Some responses focused on the idea that everyone in Utah should feel a connection to Great Salt Lake:

- “Anyone who lives in the vicinity should care about the Lake,”

- “Its fate will impact everyone in the state,” and
- “Anyone who wants the Great Salt Lake returned to its original greatness should feel a connection.”

Finally, other responses focused on the negative impacts of a drying Great Salt Lake to their lives and what it means for them to have Great Salt Lake threatened:

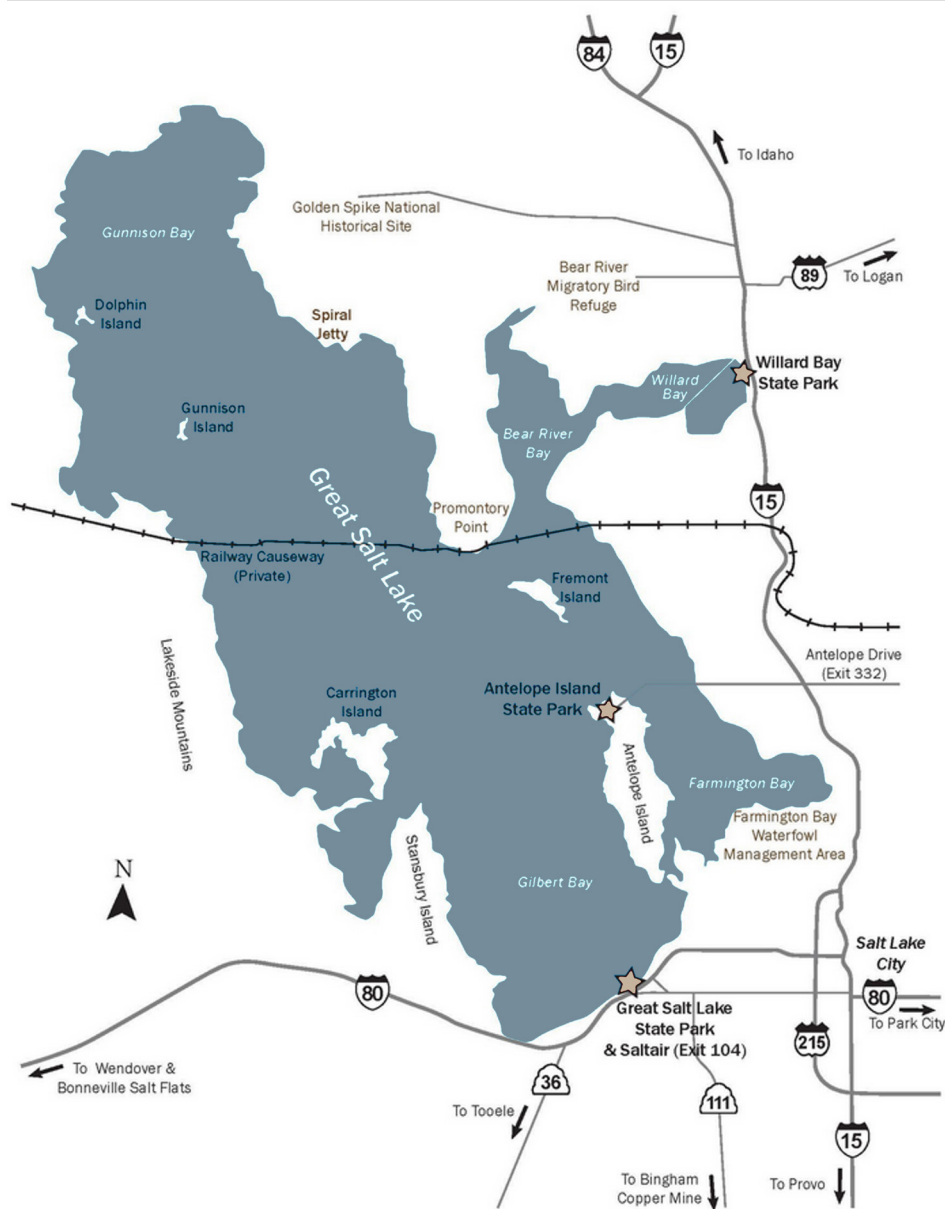
- “I’m extremely worried about heavy metal release as it dries up,”
- “quality of life,”
- “Impacts to the Great Salt Lake will affect me economically in southern Utah and my friends, family, and employer in northern Utah.”

We asked respondents to name up to three places in or around Great Salt Lake that mean the most to them (Figure 7). People most frequently identified the state parks (Antelope Island, Saltair and the marina located at Great Salt Lake State Park, and Willard Bay), Spiral Jetty, Bear River

Migratory Bird Refuge, Great Salt Lake Shoreline Preserve, Promontory Point, and Great Salt Lake Airport. People also named more general areas, like Farmington Bay, Bonneville Salt Flats, wetlands, bird refuges, beaches, and islands.

Figure 7: Great Salt Lake places with meaning

Prompt: Please name up to three places in or around Great Salt Lake that mean the most to you.



An aerial photograph of the Great Salt Lake, showing the deep blue water in the upper half and the cracked, light-colored salt flats in the lower half. In the distance, a range of brown mountains is visible under a clear blue sky.

Key finding #2

UTAHNS VIEW THEIR

Quality of life

AS LINKED TO THE HEALTH OF THE
GREAT SALT LAKE ECOSYSTEM.

Great Salt Lake’s wildlife habitat, significance for migratory birds, contribution to snowpack, geology, and ecology are of greater importance to Utahns than human economic and recreational uses of the Lake (Figure 9).

Human and economic uses of the lake that were considered less important included recreational

and leisure opportunities, mineral extraction, and brine shrimp harvesting.

The mean values of almost all the responses are above three, indicating that, on average, respondents do not think any use or value of the lake is of little or no importance. Only brine shrimp harvesting had a mean score below “of average importance.”

Figure 9: Meanings, values, and uses of Great Salt Lake

Survey question: Great Salt Lake, its islands, and surrounding wetlands have multiple meanings, values, and uses for Utahns. How much do each of the following aspects matter to you?

Mean scores. The scale for response categories was, from left to right: Not at all important (coded 1); Of little importance (2); Of average importance (3); Very important (4); Absolutely essential (5).

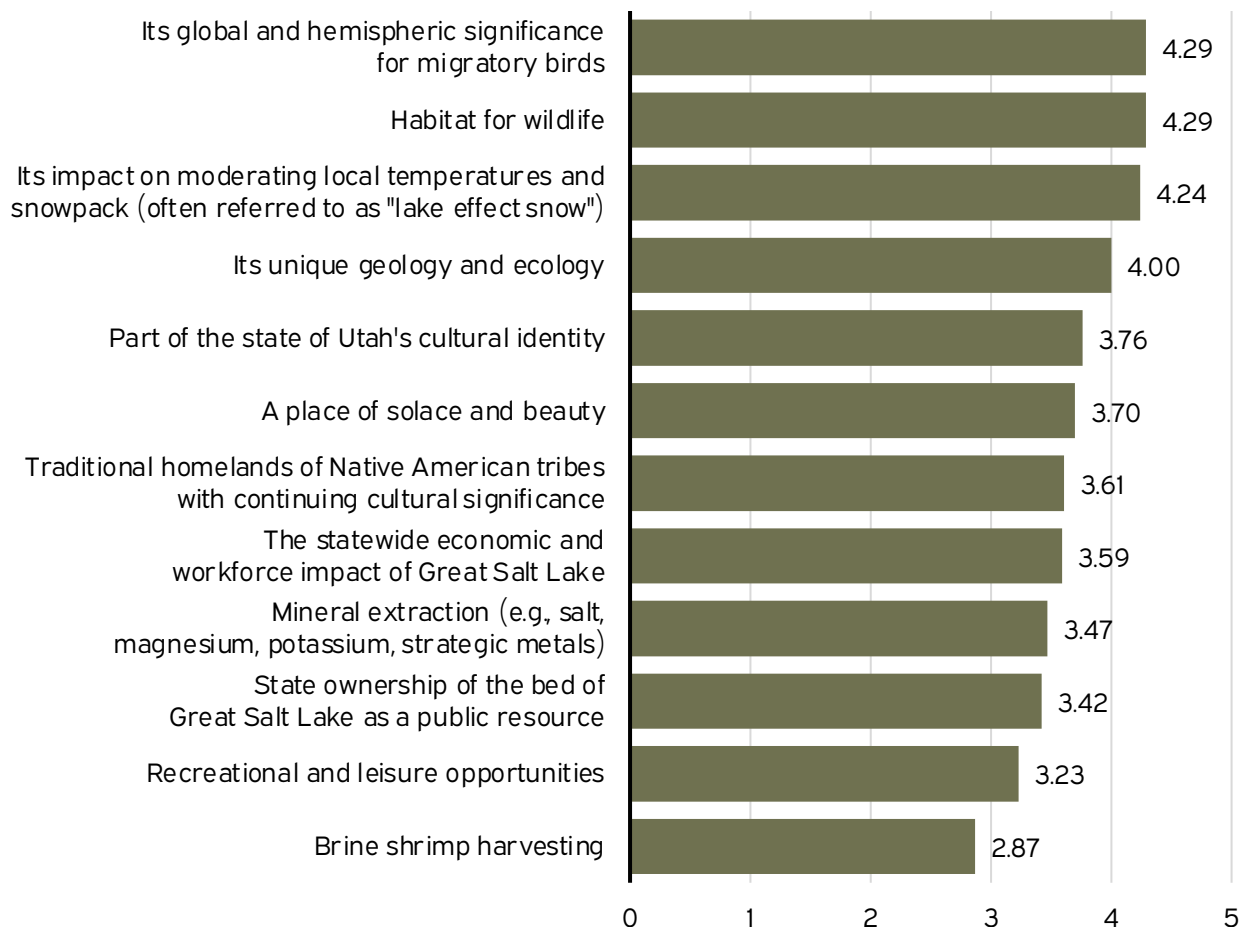
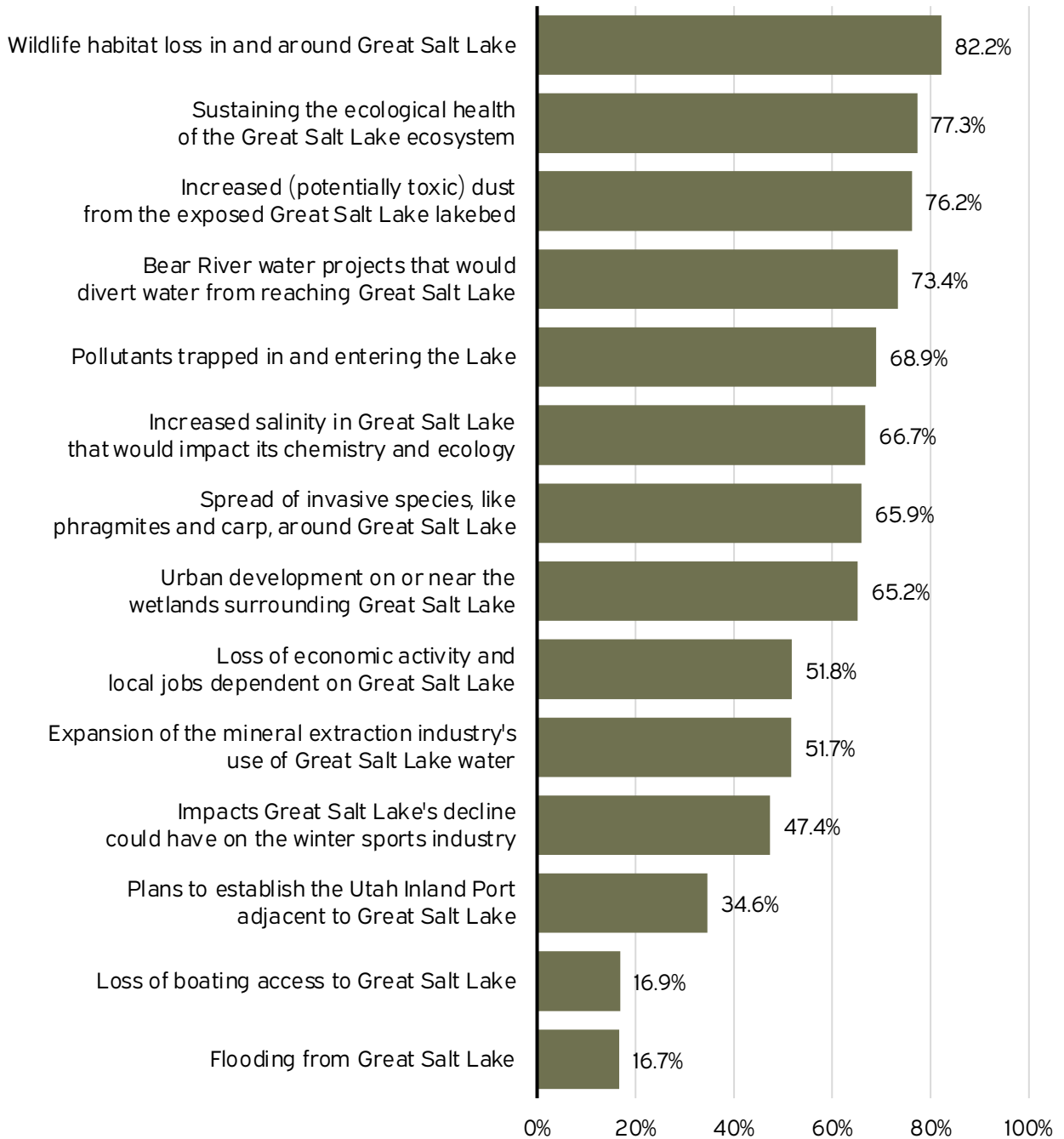


Figure 10: Concern about specific circumstances of Great Salt Lake

Survey question: How concerned, if at all, are you about each of these circumstances concerning Great Salt Lake?

Percentages of “moderately concerned” or “extremely concerned” responses. The scale for response categories was, from left to right: Not at all concerned; Slightly concerned; Somewhat concerned; Moderately concerned; Extremely concerned.



Utahns are most concerned about wildlife habitat loss in and around Great Salt Lake and worry about sustaining the ecological health of the Great Salt Lake ecosystem (Figure 10). Over three-quarters of Utahns are concerned about dust from an exposed Great Salt Lake lakebed. Utahns are also concerned about water development projects that would divert water from Great Salt Lake. Respondents are least concerned about flooding from Great Salt Lake and loss of boating access in the lake. Interestingly, only half of all respondents are concerned about the loss of economic activity and jobs that revolve around the lake. With the decline of Great Salt Lake reaching record lows in 2022, Utahns expressed greater concern about circumstances related to the health of Great Salt Lake than concerns about economic and recreational impacts of a declining lake.

Of total respondents, 75% report their own quality of life would be negatively affected if Great Salt Lake dried up (Figure 11). We asked respondents to briefly explain their response. Many people highlighted ecological and health impacts. For example, one respondent wrote,

“The Great Salt Lake is essential for many things environmentally and adds to Salt Lake City’s charm. I worry about the effects of air quality, and especially for my family, as a few of us suffer from respiratory health conditions.”

Another explained,

“If the dried up lakebed caused an increase in air pollution, my breathing problems would become much worse.”

Another respondent described,

“If GSL dries up we’d lose habitat for millions of migrating waterfowl and shorebirds. Many of these populations rely on the wetlands and GSL for their very existence. As humans [and] stewards of this planet, we owe it to these animals to do whatever is necessary to ensure their survival and ours.”

Another respondent explained,

“I am extremely concerned about the health effects from toxic dust as well as a lack of lake effect snow. I also care deeply about migratory birds and their habitat.”

Respondents also emphasized the significance of Great Salt Lake to the cultural identity of Utah and the importance of protecting Great Salt Lake for future generations: “This is a part of Utah history and a unique landmark in our state.” Another respondent wrote, “The Great Salt Lake is a natural gem in the state of Utah. I have many memories and experiences from my childhood that make this lake important to me and my family. I hope future generations will have the opportunity to experience the Great Salt Lake.”

Other respondents mentioned the importance of Great Salt Lake to the economy, including tourism and the ski industry: “I think it’ll affect tourism

“I am extremely concerned about the health effects from toxic dust as well as a lack of lake effect snow.”

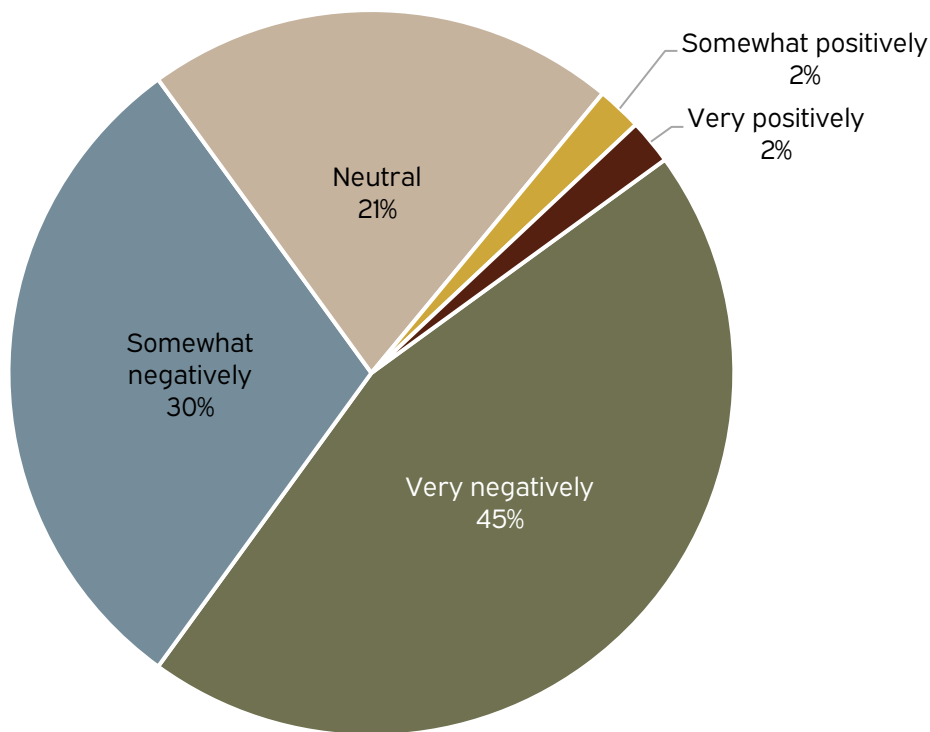
because lack of snow and rain and skiing and access to reservoirs.” Another respondent wrote,

“The Great Salt Lake has so much more importance than most people my age understand. The drying up of the Great Salt Lake would be catastrophic to local businesses and to the surrounding area.”

Over one-fifth of respondents from the total sample were neutral to the question on how their own quality of life would be affected if Great Salt Lake dried up. Most respondents who were neutral felt they live far enough away from the lake that they would not be directly impacted, though many indicated they still care about the future of Great Salt Lake. For example, one respondent said, “We live in St. George, so we’re not affected directly, but do

care about the ecological health of the lake and surrounding area.” Some respondents who were neutral expressed a lack of knowledge to really understand how their lives would be personally impacted. Other respondents felt the current state of the lake is part of an inevitable cycle: “It has been drying up over eons of time and my lifetime. Not sure that can be changed when the climate is dry.” Finally, some neutral respondents were against efforts to sustain the lake that would take water from other uses: “I am very opposed to water meant for irrigation being diverted to the lake. Farmers, ranchers, and home vegetable gardeners should have priority on water before boaters, environmentalists, birds, and brine shrimp. If the lake dries up let nature take its course. Irrigation water is more important than lake water.”

Figure 11: Overall, how do you think your own quality of life would be affected if Great Salt Lake dried up?



Key finding #5

Utahns express commitment

TO PRESERVING GREAT SALT LAKE.





Over 80% of Utahns recognize that preserving Great Salt Lake will require implementation of water-efficient growth strategies, and 75% think it will require major changes in how water is allocated and managed. Over 80% of respondents also agree that leadership from local and statewide leaders and elected officials is critical for protecting Great Salt Lake. About 77% agree that Utahns have a stewardship responsibility to help ensure water gets to Great Salt Lake, and 73% of respondents agree that Great Salt Lake is

a collective legacy Utahns should leave for future generations. A majority of Utahns (61%) agree that continued decline of Great Salt Lake will reduce Utah’s desirability as a place to live, conduct business, and visit.

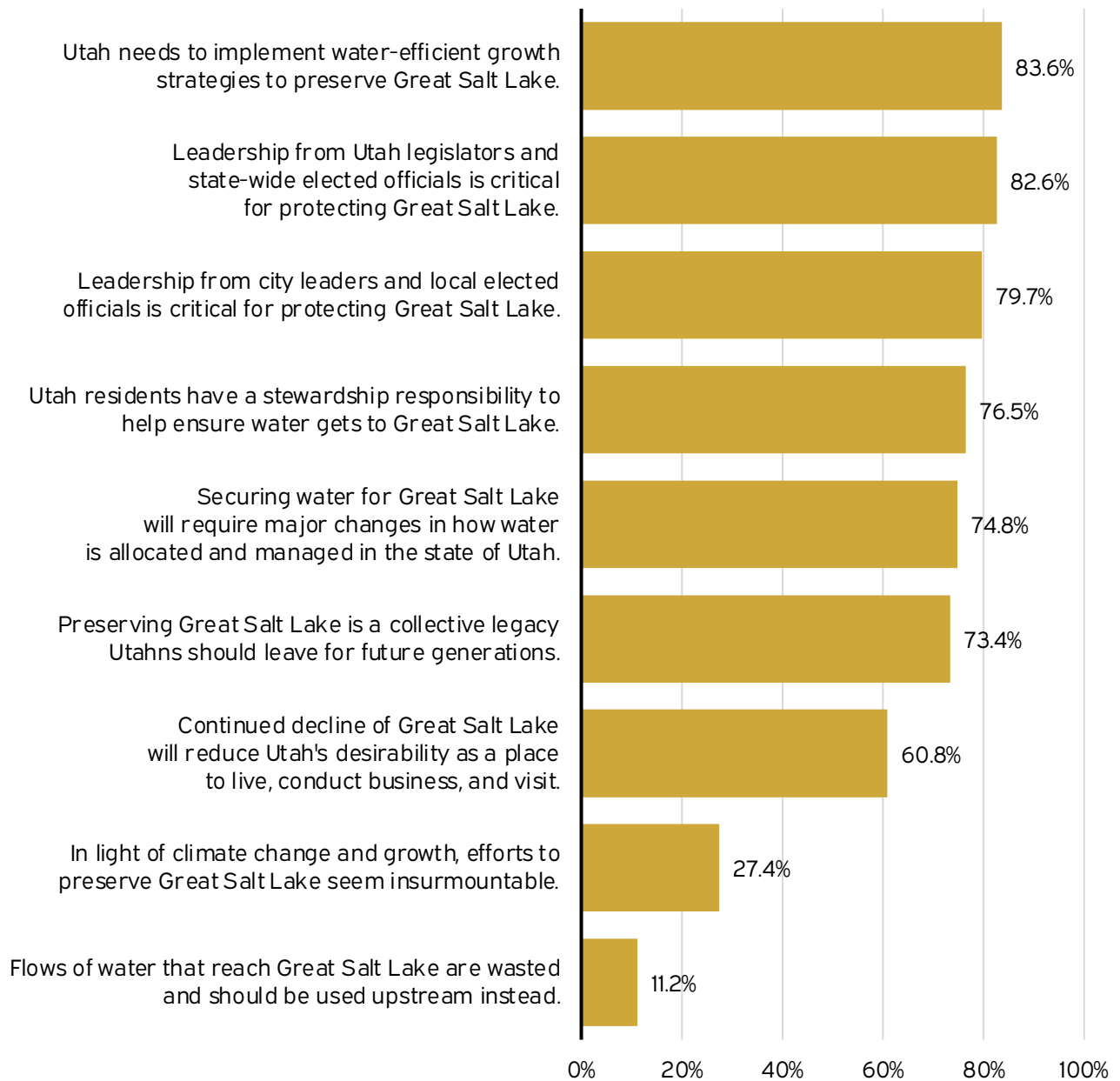
Even in light of changes due to climate change and growth, very few Utahns (27%) think that efforts to preserve Great Salt Lake seem insurmountable. Only 11% of all survey respondents agree with the long-held notion in Utah that water reaching Great Salt Lake is wasted (Figure 12).

Over 80% of Utahns recognize that preserving Great Salt Lake will require implementation of water-efficient growth strategies, and 75% think it will require major changes in how water is allocated and managed.

Figure 12: Public opinions on the decline of Great Salt Lake and efforts to save it

Prompt: Please rate how strongly you agree or disagree with each of the following statements.

Percent of “agree” or “strongly agree” responses. The scale for response categories was, from left to right: Strongly disagree; Disagree; Neither agree or disagree; Agree; Strongly agree.





Key finding #4

PEOPLE WANT TO SEE

State and community actions

TO SAVE GREAT SALT LAKE, AND THEY ARE
ALSO WILLING TO ACT INDIVIDUALLY.

We asked Utahns about a variety of actions the state of Utah could take to secure water for Great Salt Lake and had them rate their support for each action on a scale of 1 to 5, with 1 indicating “Do not support at all” and 5 indicating “Strongly support” (Figure 13). The mean score on support for each action is greater than 3, meaning that Utahns generally support each action.

The action with the highest mean value shows that Utahns want the state to require conservation and efficiency as a prerequisite to approval of water infrastructure projects. In 1991, the Utah Legislature passed the Bear River Development Act (Utah Code, Title 73, Chapter 26) to develop and distribute 220,000 acre-feet of Bear River water to three water districts and Cache County, which now has a water district. The Bear River is the main tributary into Great Salt Lake, making up approximately 58% of the total inflow. In 2021, the Division of Water Resources released a Water Resource Plan to guide planning and understanding of the state’s future water needs (Utah Division of Water Resources 2021). Bear River Development is included in the plan, although the plan explains Bear River Development will likely not be needed until after 2050, and development has also been deferred due to conservation efforts. State officials could find it helpful in their planning efforts to know that Utahns most approve of continued conservation efforts, as well as prioritizing water demand management over new water supply projects.

Utahns want to see the state thoughtfully plan for growth, particularly in light of climate change and drought. Utahns also think the state should be selective on its economic development strategies, assess the tradeoffs in committing water resources to various economic activities, and take water supplies into account before attracting water intensive industries. They also want the state to plan for drought and climate resilience, coordinate with the federal government, reduce Utah’s per capita water use, and appropriate money annually to help secure water for the lake. Though reduction of agricultural water consumption had the lowest mean score, Utahns still somewhat support that reduction in the Great Salt Lake watershed to increase water that goes to Great Salt Lake.

We asked Utahns about a variety of actions communities (local governments and water utilities) could do to secure water for Great Salt Lake (Figure 14). As with the state strategies, survey respondents were prompted to rank their level of support for each action on a scale of 1 to 5, with 1 indicating “Do not support at all” and 5 indicating “Strongly support”. The mean score for each community action is greater than 3, meaning that Utahns generally support each action.

Utahns particularly want their communities to be thoughtful in how they grow and to think about water when planning, with a mean response score of 4.57, which lies between “moderately support”

The action with the highest mean value shows that Utahns want the state to require conservation and efficiency as a prerequisite to approval of water infrastructure projects.

Figure 15: Support for various state government actions to secure water for Great Salt Lake.

Prompt: Utah’s state government has authority to manage water, which is a public resource, and direct state-wide planning efforts. Please rate your level of support for the state of Utah to take the following actions to contribute to efforts to secure water for Great Salt Lake.

Mean scores. The scale for response categories was, from left to right: Do not support at all (coded 1); Slightly support (2); Somewhat support (3), Moderately support (4); Strongly support (5)

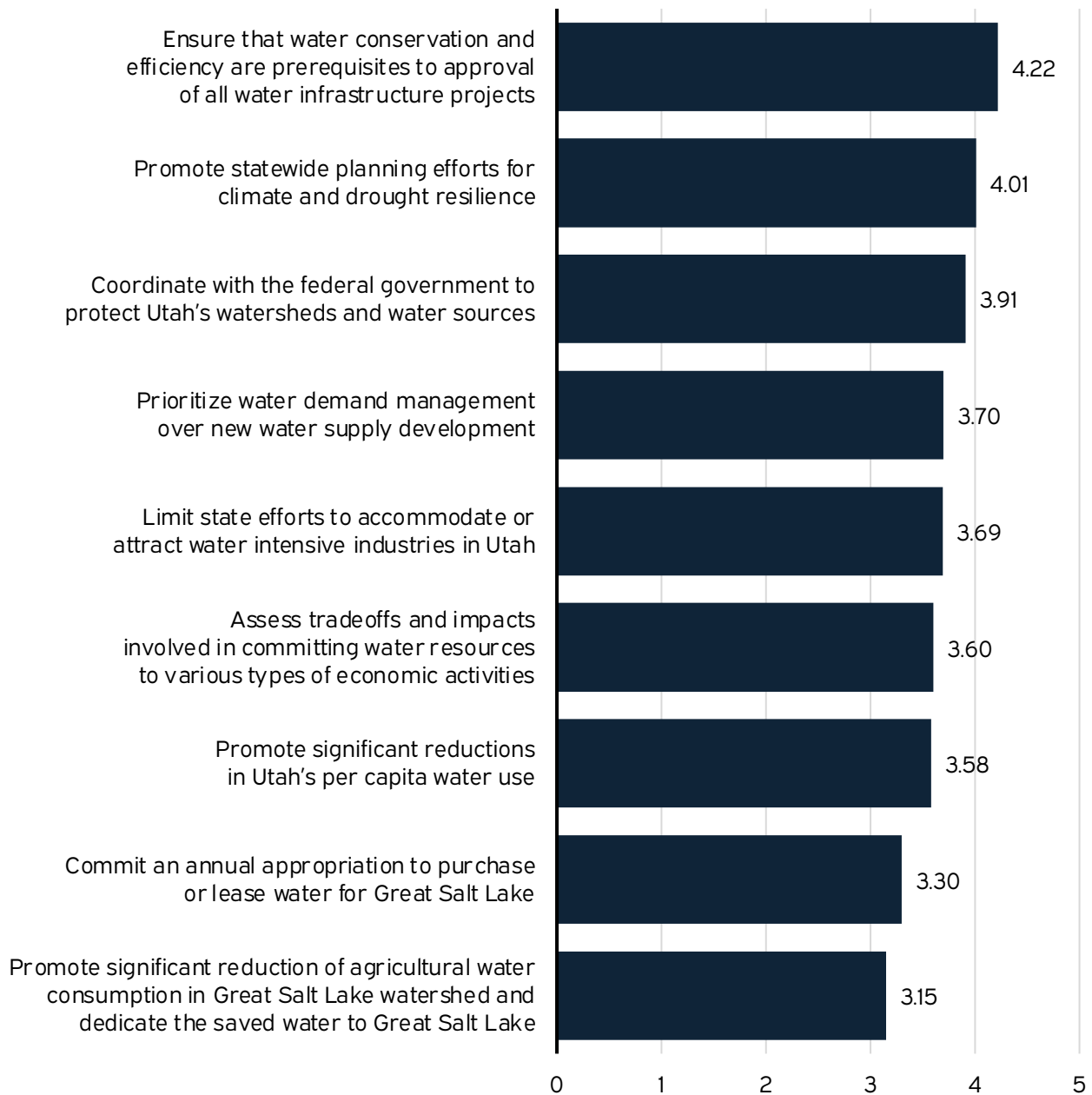
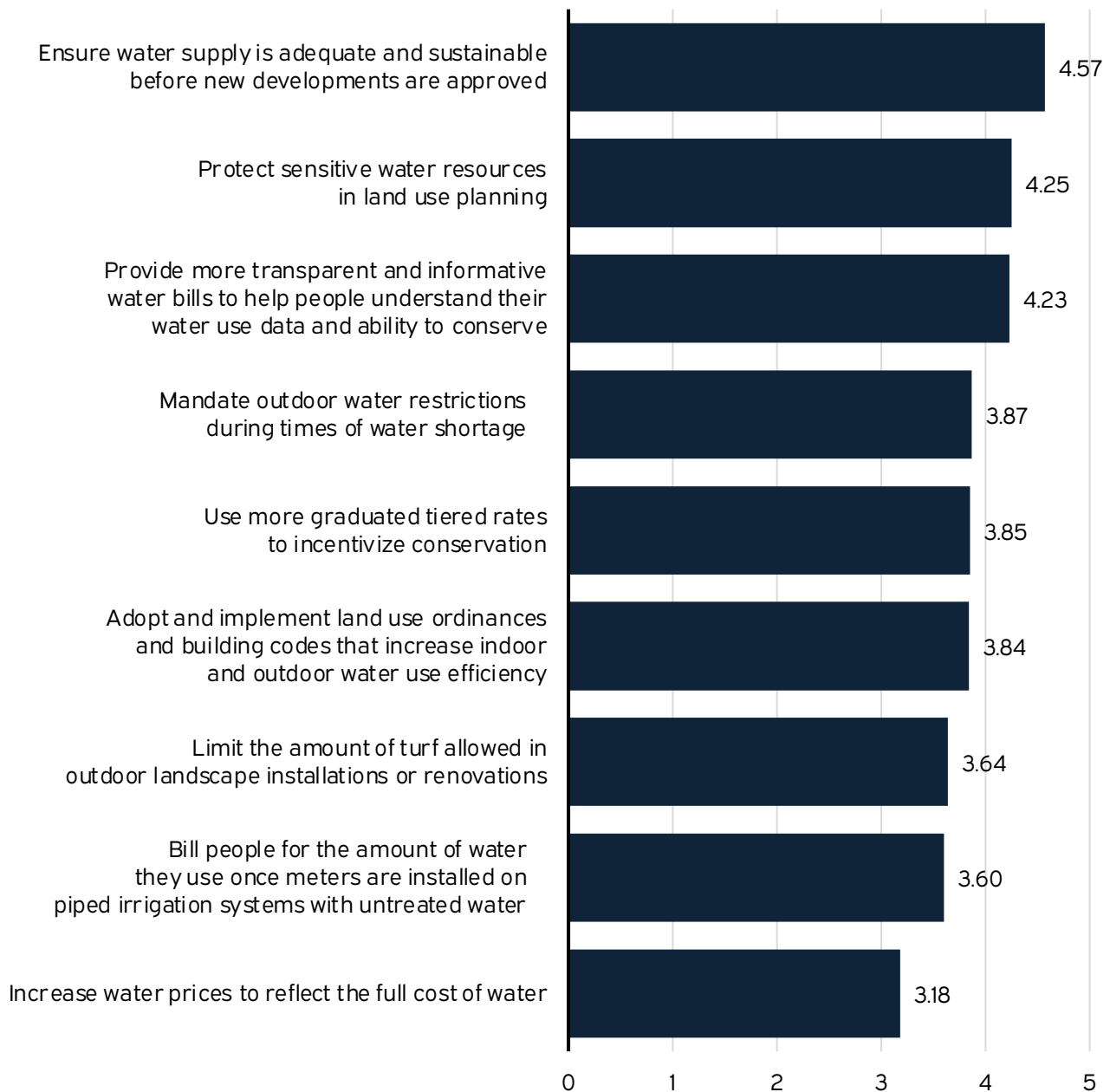


Figure 14: Support for various local government and water utility actions to secure water for Great Salt Lake.

Prompt: Local governments and water utilities have authority to regulate land use and water delivery. Please rate your level of support for your community to take the following actions to contribute to efforts to secure water for Great Salt Lake.

Mean scores. The scale for response categories was, from left to right: Do not support at all (coded 1); Slightly support (2); Somewhat support (3), Moderately support (4); Strongly support (5)



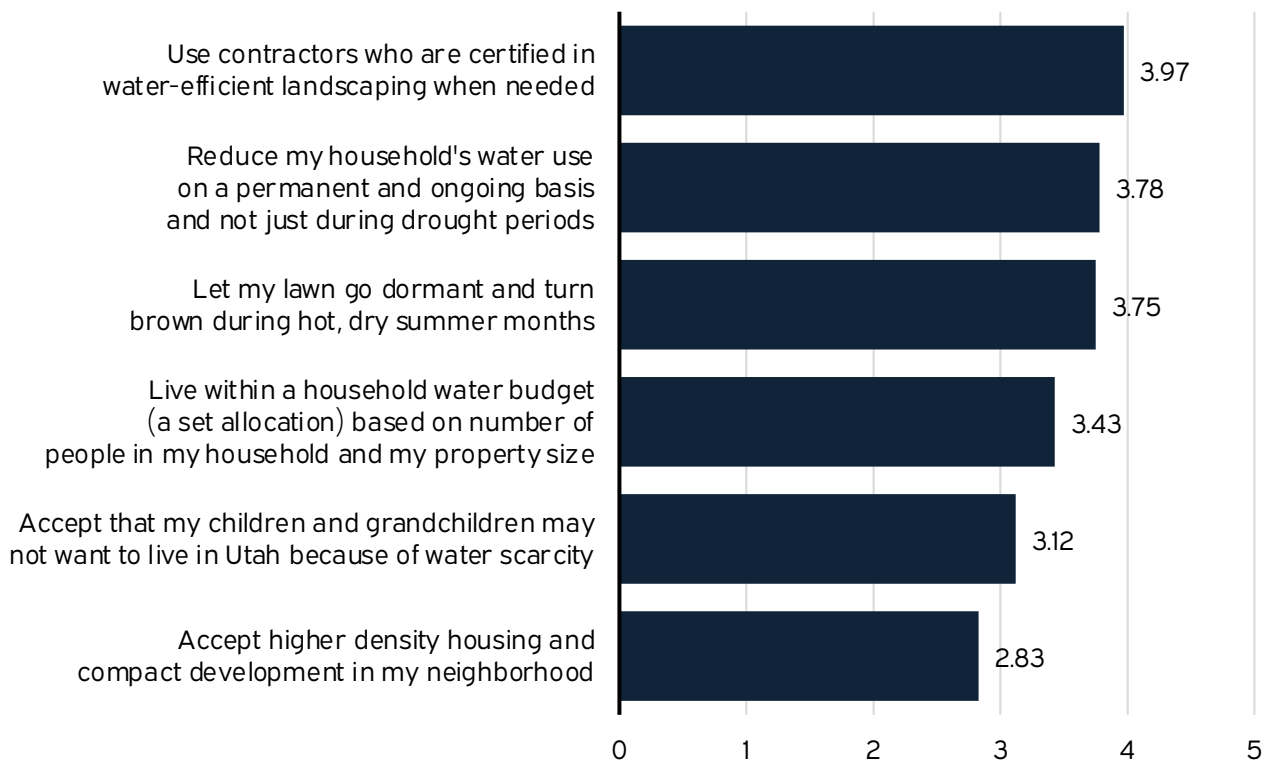
and “strongly support” on the 5-point scale. Utahns also want communities to protect sensitive water resources in land use planning, prioritizing ecosystem health in the face of growth. Furthermore, Utahns support community actions to mandate and regulate water conservation and efficiency when needed. They generally support education, like more transparent water bills, over water price increases. But there is support (means over 3) for various water pricing strategies such as graduated tiered rates, charging for secondary water based on amounts used, and charging for the full cost of water.

We asked survey respondents how willing they would be to take a variety of actions, assuming those actions would contribute to efforts to secure water for Great Salt Lake (Figure 15). Survey respondents were prompted to rank their level of willingness for each action on a scale of 1 to 5, with 1 indicating “Not at all willing” and 5 indicating “Very willing”. Utahns are neutral to slightly willing to take a variety of actions with the mean score for each action greater than 3, except for accepting higher density developments in their neighborhoods. Of all the individual actions listed, respondents are most willing to use water-

Figure 15: Mean scores on willingness scale to take individual actions to secure water for Great Salt Lake

Survey question: As an individual, how willing are you to take the following actions, assuming these actions would contribute to efforts to secure water for Great Salt Lake?

Mean scores. The scale for response categories was, from left to right: “Not at all willing” (coded 1); “Somewhat unwilling” (coded 2); “Neutral” (coded 3); “Slightly willing” (coded 4); and “Very willing” (coded 5).



efficient landscapers, reduce their households' water use on a permanent basis, not just during droughts, and to let their lawns go dormant in the summer. Respondents are also neutral to slightly willing to live within a household water budget (set allocation) based on household and property size. Utah has often been criticized for its higher per capita water use and outdoor watering, so the state of Utah and fellow residents might be encouraged to see that Utahns are generally willing to engage in such water conservation efforts. However, Utahns are somewhat unwilling to accept higher density developments in their

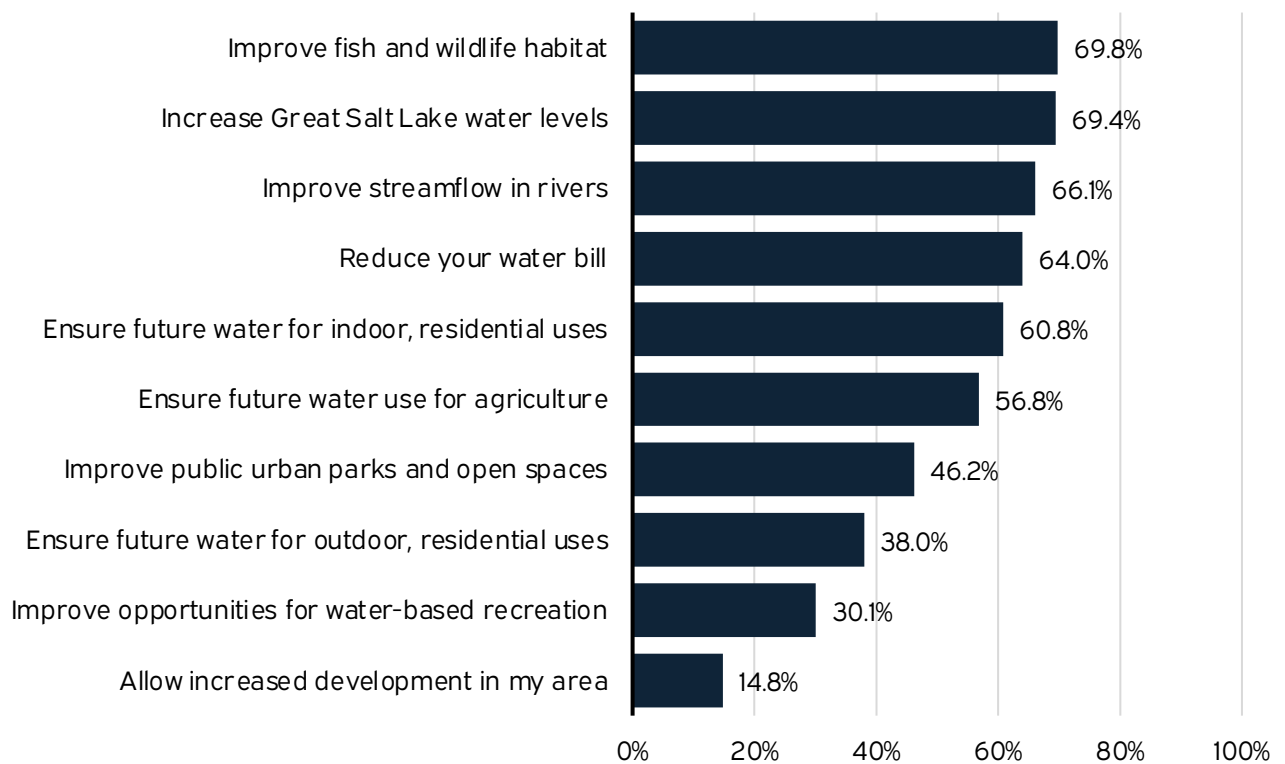
neighborhoods, which speaks to water-related dilemmas related to the state's rapid growth.

Utahns are most motivated to reduce their water use for environmental purposes and to ensure water for future uses (Figure 16). Almost 70% of Utahns are moderately or very motivated to reduce their water use to improve fish and wildlife habitat, increase Great Salt Lake water levels, and improve streamflow in rivers. The potential to reduce their water bills also motivates 64% of Utahns to conserve water. Environmental motivations outweigh almost all human uses,

Figure 16: Motivations to reduce household water use depending on use of conserved water

Survey question: How motivated would you be to reduce your own household's water use if you knew the water you conserved would be put toward the following uses?

Percentages of respondents who marked "moderately motivated" or "very motivated." The response categories were, from left to right: "Not at all motivated," "Slightly motivated," "Somewhat motivated," "Moderately motivated," and "Very motivated"



including basic indoor culinary water and agricultural use. Utahns are not very motivated to reduce their water use for recreational purposes or residential outdoor water use. They are least motivated to conserve water in order to allow increased development in their area (only 15% of Utahns).

Though Utahns are willing to take individual actions to help Great Salt Lake, there is stronger support for state (Figure 13) and local community (Figure 14) actions than individual actions (Figure 15). Our results suggest Utahns want to see action taken at all scales. They want to see conservation savings from all water use sectors, and they do not want new development to exacerbate existing water challenges. Some respondents explained in free-form response areas in the survey:

"We are constantly asked to conserve water. Yet every few days more housing brings more water users. The key to preserving water resources is to limit growth and stop unlimited growth and buildings."

Another respondent wrote,

"From my limited education on these issues, all I can say is that from my perspective, I think we should be stopping the alfalfa growing if it is for export. We would have plenty of water for all our projects if we weren't exporting it in alfalfa. So I'm not really interested in letting my lawn go brown or taking 2 minute showers if water guzzling export crops are being produced."

An additional survey participant stated,

"It is ridiculous to be telling the public that they have to cut back on water use when the public officials keep approving and accommodating more and more residential buildings."

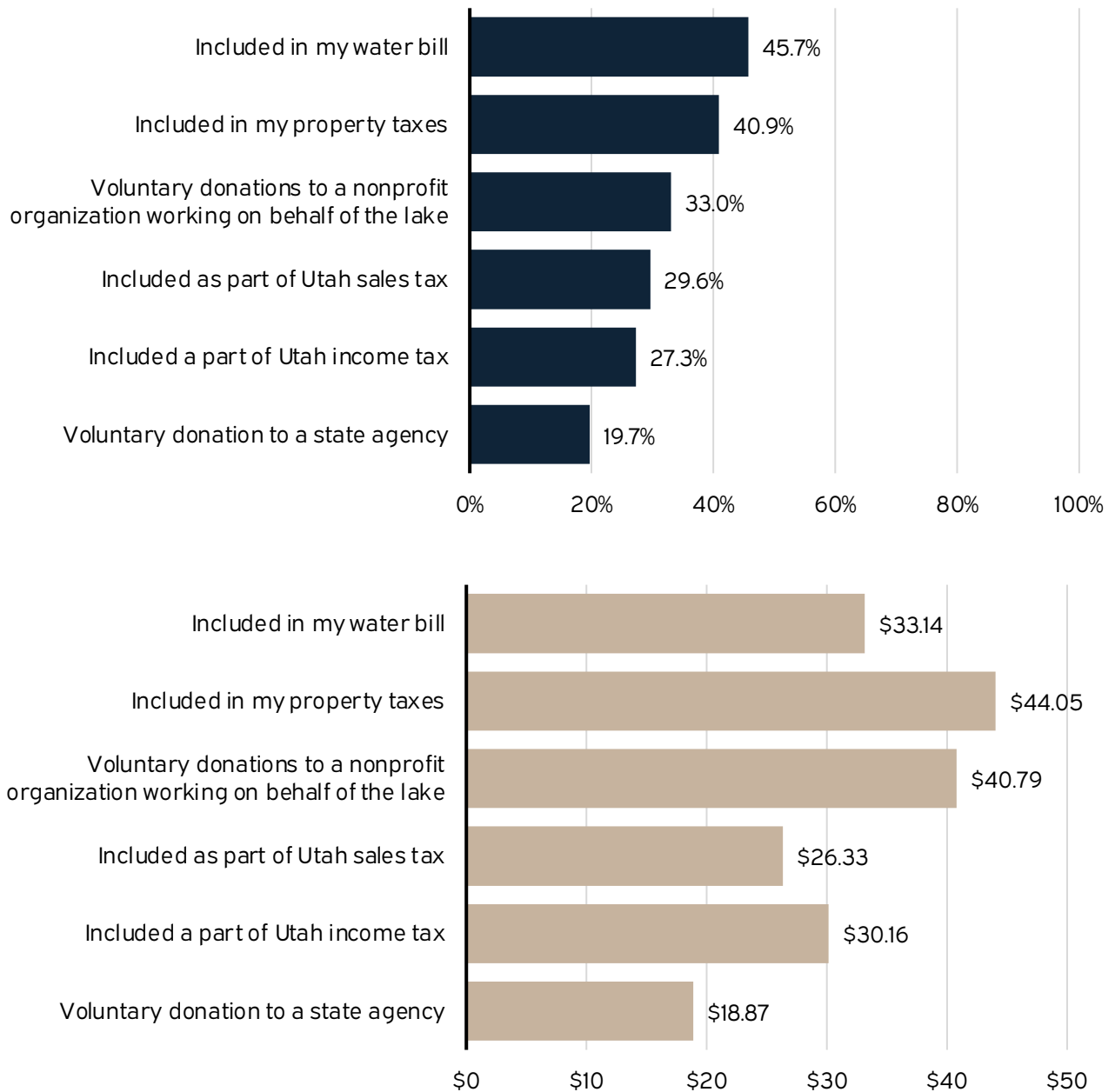
Utahns want to see the state and their local communities taking the initiative to save water for Great Salt Lake before asking individuals to make personal sacrifices.

Because strategies to secure water for Great Salt Lake will require funding, we asked respondents how much money, if any, they would be willing to pay each year if they knew it would help secure water for Great Salt Lake (Figure 17). We also wanted to know how they would be willing to pay it and gave respondents options of six different methods. Utahns are most willing to pay extra in their water bills and property taxes, with some willing to pay through sales tax and income tax. These results indicate Utahns believe funding to secure water for Great Salt Lake should be a shared responsibility of water users, property owners, and state residents. More Utahns are willing to make voluntary financial donations to a nonprofit organization working on behalf of the lake than to state agencies in order to help secure water for Great Salt Lake. By averaging the amount respondents indicated they would be willing to contribute across all of the categories, results indicate respondents are willing to pay an average total amount of \$213.50 each year for water for Great Salt Lake.

Figure 17: Stated willingness to pay yearly by different methods to help secure water for Great Salt Lake

Survey question: How much money, if any, would you be willing to pay each year if you knew it would help secure water for Great Salt Lake, and how would you be willing to pay it?

Potential ways to pay money to help secure water for Great Salt Lake



Key finding #5

People want to be more informed

ABOUT HOW GOVERNMENT IS RESPONDING
TO A DRYING GREAT SALT LAKE.

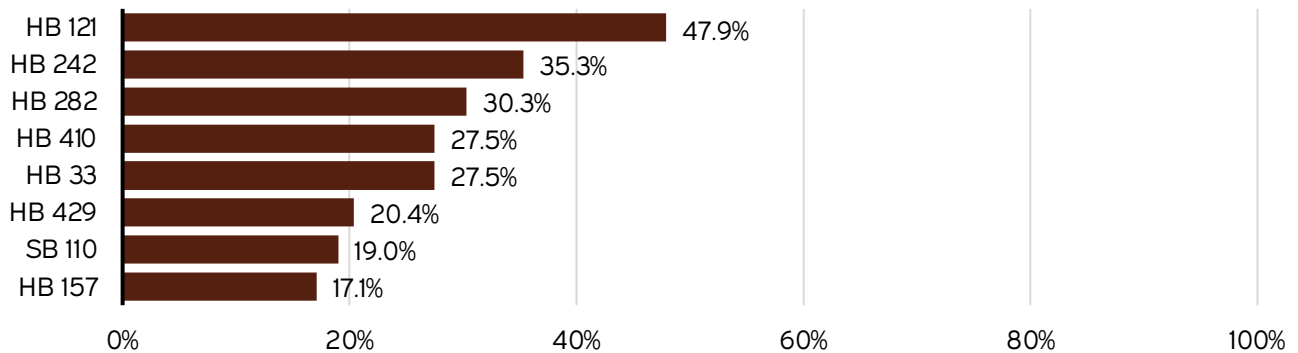
Utahns are largely unfamiliar with legislative action. Specifically, we asked Utahns about their level of familiarity with several water-related bills that passed in the 2022 Utah legislative session, dubbed the “Year of Water” (Figure 18).

Approximately six months after the bills were passed, the majority of Utahns were not familiar with the bills, shown by the low percentage of respondents who chose the “Somewhat familiar” or “Extremely familiar” response category

Figure 18: Familiarity with 2022 state legislation on conservation and sustainable use of water

Survey question: During this past 2022 legislative session, the Utah Legislature passed numerous bills focused on the conservation and sustainable use of water. How familiar are you with each of the following bills?

Percent of “somewhat familiar” or “extremely familiar” responses. Response categories were: “Not familiar”; “Somewhat familiar”, and “Extremely familiar”



<p>HB 121 - Promotes water conservation by requiring all state government buildings to implement water-wise landscaping (e.g., no more than 20% lawn or turf) and not water between 10:00 am and 6:00 pm. Provides state financial incentives to replace lawn or turf with drought resistant landscaping.</p>	<p>HB 410 - Creates the Great Salt Lake Watershed Enhancements Program and provides \$40 million for preservation and conservation of Great Salt Lake and its wetlands to be managed by a Great Salt Lake Water Trust.</p>
<p>HB 242 - Requires water meters to be installed by 2030 on all new and existing pressurized secondary water systems (which can reduce water consumption by 30-40%) and provides funding for that metering.</p>	<p>HB 429 - Requires Division of Water Resources to develop a Great Salt Lake Watershed integrated water assessment for Great Salt Lake, gather data to measure total water flows needed to maintain different Lake levels, and establish a lake water budget.</p>
<p>HB 282 - Prohibits municipalities, counties, or associations from prohibiting water wise landscaping and authorizes certain landscaping requirements</p>	<p>SB 110 - Requires a water use and preservation element to be part of a municipal or county general plan and outlines what steps to take in developing and acting upon a water use and preservation element.</p>
<p>HB 33 - Amends Utah's instream flow law, allowing farmers to lease water to benefit Great Salt Lake and other sovereign lands for up to ten years and avoid the "use it or lose it" rule in Utah water law.</p>	<p>HB 157 - Requires all royalties on minerals extracted from Great Salt Lake to be put back into conservation and environmental projects around the lake.</p>

for each of the bills. Respondents were most familiar with HB 121 (a little less than half of respondents indicated familiarity with this bill), a bill that focuses on water conservation at state government buildings and facilities. The bill also provides incentives for landowners to replace lawn or turf with drought resistant landscaping, and perhaps more respondents were interested in the incentives to replace their lawns, leading to a higher percentage of familiarity with the bill.

Interestingly, less than 30% of Utahns were somewhat or extremely familiar with HB 410, the legislation responsible for the creation of a \$40 million Great Salt Lake Water Trust to fund projects and agreements that would help obtain water flows to the lake and protect and restore Great Salt Lake wetlands. Utahns were also widely unfamiliar with HB 33, which would allow farmers to avoid the “use it or lose it” provision in water law if they are leasing that water to environmental benefits. Less than 20% of respondents were somewhat or extremely familiar with SB 110, which requires municipalities and counties to integrate water considerations into their general plans and show how they will reduce water use in existing and future developments. These are all strategies and policies that Utahns indicated they support in principle (Figures 13 and 14).

The state of Utah has the opportunity to improve how they inform and gain more participation with citizens throughout the legislative process.

We also asked Utahns to rate their satisfaction with the Utah Legislature and state of Utah’s response to a shrinking Great Salt Lake with the response categories being “Very dissatisfied”, “Dissatisfied”, “Unsure”, “Satisfied”, and “Very satisfied” (Figure 19).

Utahns are unsure to dissatisfied with the state response to the shrinking Great Salt Lake. Over half of respondents were unsure, suggesting Utahns are not always aware of what is being

done. This result is also emphasized by the low percentage of respondents somewhat or extremely familiar with the water legislation passed in 2022. However, the survey was encouraging to some survey respondents as they were able to read through the water bills that passed, which they expressed in optional free-form response sections after this question and at the end of the survey. Many respondents indicated that although they were glad to see that some action has been taken, they felt the situation is urgent and more needs to be done. One respondent wrote,

“The above efforts are commendable and necessary. However, none of these efforts increase water flow to the lake NOW. None of these take immediate action and actually cause actual change in 2022 to the lake, meaning we will end this year in yet another loss.”

Another respondent explained,

“I knew that saving the Great Salt Lake had (very recently) become a political priority for the Utah Legislature and was familiar with some of the bills mentioned above but was honestly surprised by how many of these had passed. That being said, I feel like the situation is very drastic and requires a lot more work.”

An additional respondent expressed,

“I actually am happy to see all the bills listed above, but I think we need to be doing more as Utahns to conserve water! This includes our legislative leaders.”

We also asked Utahns to rate their satisfaction with local city and county officials in their response to a shrinking Great Salt Lake with the response categories being “Very dissatisfied”, “Dissatisfied”, “Unsure”, “Satisfied”, and “Very satisfied” (Figure 20).

Figure 19: Satisfaction with efforts of the Utah Legislature and state of Utah in responding to the shrinking Great Salt Lake

Survey question: How would you rate your satisfaction with efforts of the Utah Legislature and state of Utah in responding to the shrinking Great Salt Lake?

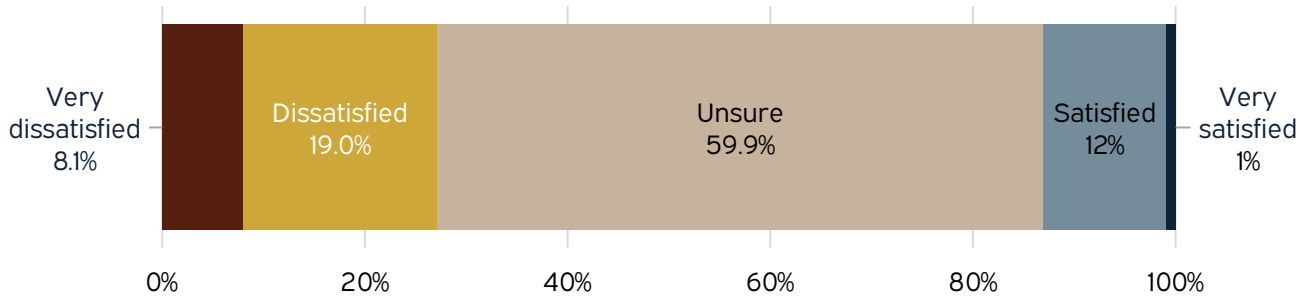
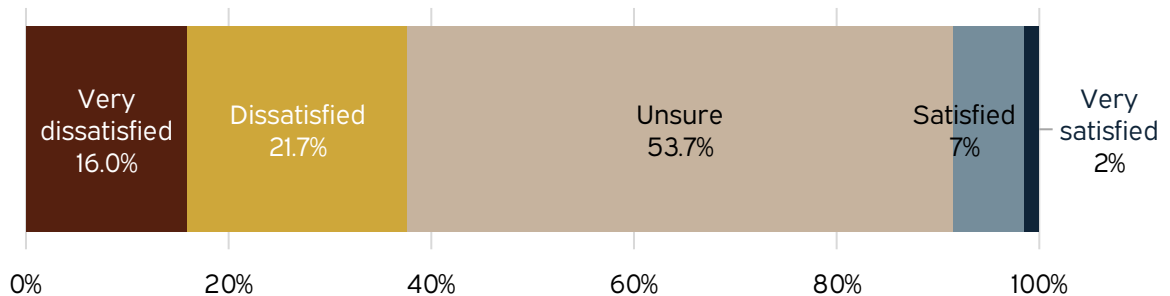


Figure 20: Satisfaction with efforts of local city and county officials to respond to the shrinking Great Salt Lake

Survey question: How would you rate your satisfaction with efforts of local city and county officials in responding to the shrinking Great Salt Lake?



Respondents generally are less satisfied with the responses from their local communities than in the state response. Less than 10% of respondents were satisfied or very satisfied in the local response. Utahns are generally unsure to dissatisfied with local officials’ response, with over half of respondents being unsure. In a free-response section, respondents emphasized the lack of conservation they see in their communities. One respondent wrote,

“Seems they [local officials] are unwilling to impose restrictions or prices on water usage. We live in a desert where water is scarce already, but I see no initiatives to reduce water or promote conservation other than public messages everyone seems to ignore anyways. I see developments popping up with seemingly no regard for our water supply, covered in useless lawns to look pretty.”

Key finding #6

People prioritize

BASIC HUMAN AND ECOSYSTEM USES OF WATER
OVER ECONOMIC AND "NON-ESSENTIAL" USES.



When asked to rank goals for managing Utah’s water resources, respondents prioritized water for basic human needs the highest (drinking water supply, water quality, and water for agriculture), followed by goals to protect ecosystem needs, like Great Salt Lake and wetlands and wildlife

habitat (Table 2). Other economic and amenity uses of water, such as water for recreation or residential landscaping, were less of a priority for respondents. Interestingly, respondents ranked “saving taxpayer money” lower on the priority scale.

Table 2: Ranking of goals for managing Utah’s water resources

Prompt: Rank the following goals for managing Utah’s water resources, with 1 being the highest priority, 2 being the next highest priority, and so forth until you have put all of these goals in priority order from 1 through 9 (with 9 being the lowest priority).

Mean Priority Rank Score (1 = highest priority, 9 = lowest priority)

Goals for managing Utah’s water resources	Priority Rank Score
Ensuring supply of drinking water	1.59
Protecting water quality	2.99
Ensuring supply of water for agriculture	3.85
Protecting Great Salt Lake	4.61
Protecting wetlands and wildlife habitat	4.79
Ensuring supply of water for economic development	6.13
Saving taxpayer money	6.49
Ensuring supply of water for residential landscaping	7.03
Providing recreational opportunities	7.53

When asked to rank goals for managing Utah’s water resources, respondents prioritized water for basic human needs the highest.



Key finding #7

UTAHNS EMPHASIZED A

collective responsibility

FOR THE LAKE AND A SENSE OF LOSS
IF WE CANNOT PROTECT IT.



Respondents completed two sentences at the end of the survey:

"The future of Great Salt Lake..."

and

"I think protecting Great Salt Lake as a public trust resource means..."

Their written responses reveal a range of concerns and emotions about what is at stake with the lake and the consequences, risks, and costs if it continues to shrink. Most respondents expressed a desire to save the lake and

emphasized the urgency to act before it is too late. Some respondents expressed doubt that the lake could be saved. A minority of respondents felt Great Salt Lake does not need saving and could be left for nature to decide. Most interestingly, the language respondents used often expressed a sense of collective responsibility to help save the lake and a sense of collective loss if we fail. Many respondents emphasized the importance of sustaining the lake for future generations and evoked the idea of thinking and planning with a long-term vision in mind. The following quotes provide some examples.

Most respondents expressed a desire to save the lake and emphasized the urgency to act before it is too late.

The future of Great Salt Lake...

"should be a **priority** to Utahns."

"will be based on the **public's willingness to conserve** and our government's ability to **balance development.**"

"is **largely in our hands.** Efforts to preserve and protect it will require a **concerted group effort.**"

"is bleak unless major changes are made to **reducing agricultural water use,** in particular alfalfa."

"is dire. It's loss will have serious **financial and health impact** on all Utahns. We have little time to act."

"is the **responsibility of Utah's citizens.** It concerns me that the legislation in process is not enough."

"whatever happens, happens. Just **don't raise my taxes** or regulate us to death to pursue your agenda!"

"is very important to everyone in Utah. It affects more than most people realize. **Wildlife habitats** that only exist because of the Great Salt Lake are threatened."

"is up to us and **will require everyone** to play a part."

"will **determine the future success** of the State of Utah in many ways."

"is essential for the health and well-being of **people and wildlife.**"

"is important to Utah as an **identifier of Utah** and impacts all who live in Utah."



I think protecting Great Salt Lake as a public trust resource means...

"preserving this natural resource for **future generations**."

"putting the lake **before the short term wants** of the people."

"protecting the **health** of our citizens and the economy of Utah."

"being willing to make **sacrifices** for the common good."

"that we need to decide what is best for the lake but **also our community**."

"a future for my **children and grandchildren** where there is a lake they can enjoy and visit and not just read about in the history books."

"allowing for **future generations** to live and thrive here. It allows for proper ecological systems to be restored and for Utah as a

frontrunner of economic development that does not impinge on water resources."

"preserving the lake in a **sustainable** way so that future generations can appreciate and enjoy the lake."

"taking personal **responsibility** (each resident, property owner) for what happens to the lake."

"**preserving** history and protecting our future."

"that the leaders and people of Utah have a responsibility to **take action**."

"that Utah is **looking toward the future**."

"a substantial **coalition** of agriculture, industry, and government have worked together."





conclusion

As the threats of a drying Great Salt Lake have increased and become highly publicized throughout the Western United States and worldwide (e.g., Great Salt Lake Collaborative; Flavelle 2022; Abbott et al. 2023; Milman 2023), the state of Utah has recognized a need for more coordinated efforts to address the magnitude of the problem. There has been progress to address the importance of Great Salt Lake to the state and its urgent conservation needs through the creation of numerous entities and bills passed such as the Great Salt Lake Advisory Council (2010), the Great Salt Lake Comprehensive Plan (2013), a recommended State Water Strategy (2017), HCR-10 (Concurrent Resolution to Address Declining Water Levels of Great Salt Lake), the Great Salt Lake Strike Team (2022), Utah's Coordinated Action Plan for Water (2022), and a new position of Great Salt Lake Commissioner (2023).

Through these collaborative discussions and studies, various strategies to help Great Salt Lake have been proposed (Great Salt Lake Resolution (HCR-10) Steering Group 2020; Great Salt Lake Strike Team 2023). These strategies include:

- agricultural water optimization,
- development of models to understand water depletion in the Great Salt Lake watershed,
- water banking and leasing to facilitate the transfer of water,
- engineered solutions to control lake salinity and dust hotspots in the dried Great Salt Lake lakebed,
- conservation measures on urban and suburban landscapes, and
- planning for and guiding future municipal and industrial growth to be more sustainable.

The efforts that have been made so far are an encouraging start. But many observers agree it will take enormous change in how water and growth is managed in the state of Utah to solve the problem of a drying Great Salt Lake, and allocating and distributing scarce water resources can be controversial. The overall findings from our survey show that Utahns want a healthy Great Salt Lake and believe the lake is important to Utahns' quality of life. Utahns recognize the connections between Great Salt Lake, ecosystem health, human health, and the economic well-being of the state. Utahns expect a continued decline of the lake would negatively affect them and the future of the state. However, Utahns also believe it is not too late to save the lake, and they support action by the state of Utah and their local communities to enact public policies that would help secure water for the lake. The findings of the survey imply that Utahns understand that managing Utah's water resources often involves challenging tradeoffs between immediate needs and long-term preservation of the lake. The survey shows strong support to increase efforts to conserve water and thoughtfully plan for growth, including limiting plans for water-intensive industries in the state.

While many Utahns recognize the large amount of water agriculture uses in the state, Utahns generally prioritize ensuring enough water to maintain agricultural viability. The findings suggest that policies that would dedicate saved water from agricultural water optimization projects to Great Salt Lake would be widely supported by Utahns. The survey findings show that Utahns are willing to take individual actions to conserve water, but they want assurances that the water they conserve would help Great Salt Lake and other environmental needs. It will be important to the public that strategies to protect Great Salt Lake account for and ensure conserved water reaches the lake. State officials and local water managers should find

encouragement in the public's willingness to support and participate in coordinated efforts to secure water for Great Salt Lake.

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appendix A

DEMOGRAPHIC CHARACTERISTICS
OF RESPONDENTS

The survey respondents represent a wide range of ages and diverse employment sectors (Tables A-1 and A-2). The survey is under representative for residents under age 24, and the age distribution of respondents tended to be older than the overall state population. Most of the survey respondents identified as White and participated in close approximation to their proportion of the population (approximately 80%). People identifying as Black/African American or Native Hawaiian/Pacific Islander participated at lower rates, with the most under representation of Hispanic residents (Table A-3). Some people preferred not to identify their race or ethnicity.

We asked respondents how long they have lived in Utah, because this could influence

how familiar respondents are with Great Salt Lake and water issues in Utah (Table A-4). The majority of respondents have lived in Utah more than 10 years. We also asked about the type of neighborhood respondents live in, as this could also influence their water use behavior and attitudes. More than half of all respondents live in suburban areas of Utah. Most respondents own their homes. Finally, we asked respondents if they own water rights or water shares and if they have water shares attached to their property (Figure A-1). Approximately 15% of respondents own water rights or have water shares attached to their property, and these data show that the sample includes people with connections to water ownership.

Table A-1: Age of respondents

Age of Respondent	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties	U.S. Census State-level Estimate
Percent of respondents					
18 to 24 years old	2.2	6.9	3.1	4.1	12.0
25 to 34 years old	14.8	20.3	13.5	16.5	14.6
35 to 44 years old	16.7	16.8	13.9	16.0	13.6
45 to 54 years old	15.1	17.6	15.1	16.0	11.0
55 to 64 years old	21.0	13.5	14.7	16.6	9.2
65 to 74 years old	20.5	15.4	24.7	19.7	7.2
75 years or older	7.3	8.5	13.5	9.4	4.6
Prefer not to say	2.4	1.1	1.5	1.7	

Table A-2: Respondent occupation sectors

Survey question: Which of the following industries most closely match the ones in which you and other members of your household are employed? (mark all that apply)

Occupation Sector	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
Educational services, and health care and social assistance	28.7	32.4	29	30.1
Other	18.9	20.5	24.8	21
Construction	14	9.2	14.1	12.2
Retired (most common "other" write-in)	8.6	8.5	15.2	10.5
Professional, scientific, and management, and administrative and waste management services	11.3	11.8	6.2	10.2
Information	9.1	11.8	5.5	9.2
Finance and insurance, and real estate and rental and leasing	11.3	8	6.9	8.9
Manufacturing	10.3	7.5	6.6	8.3
Agriculture, aquaculture, forestry, fishing and hunting, and mining	4.7	7	13.1	7.7
Retail trade	8.6	6.3	8.6	7.7
Arts, entertainment, and recreation, and accommodation and food services	7.4	7.2	6.9	7.2
Transportation and warehousing, and utilities	6.4	4.6	5.9	5.6
Public administration	6.4	2.9	3.1	4.2
Other services, except public administration	2.7	4.3	5.9	4.1
Prefer not to say	4.7	2.2	3.4	3.4
Wholesale trade	2.2	1.9	2.8	2.2

Table A-5: Respondent race or ethnicity

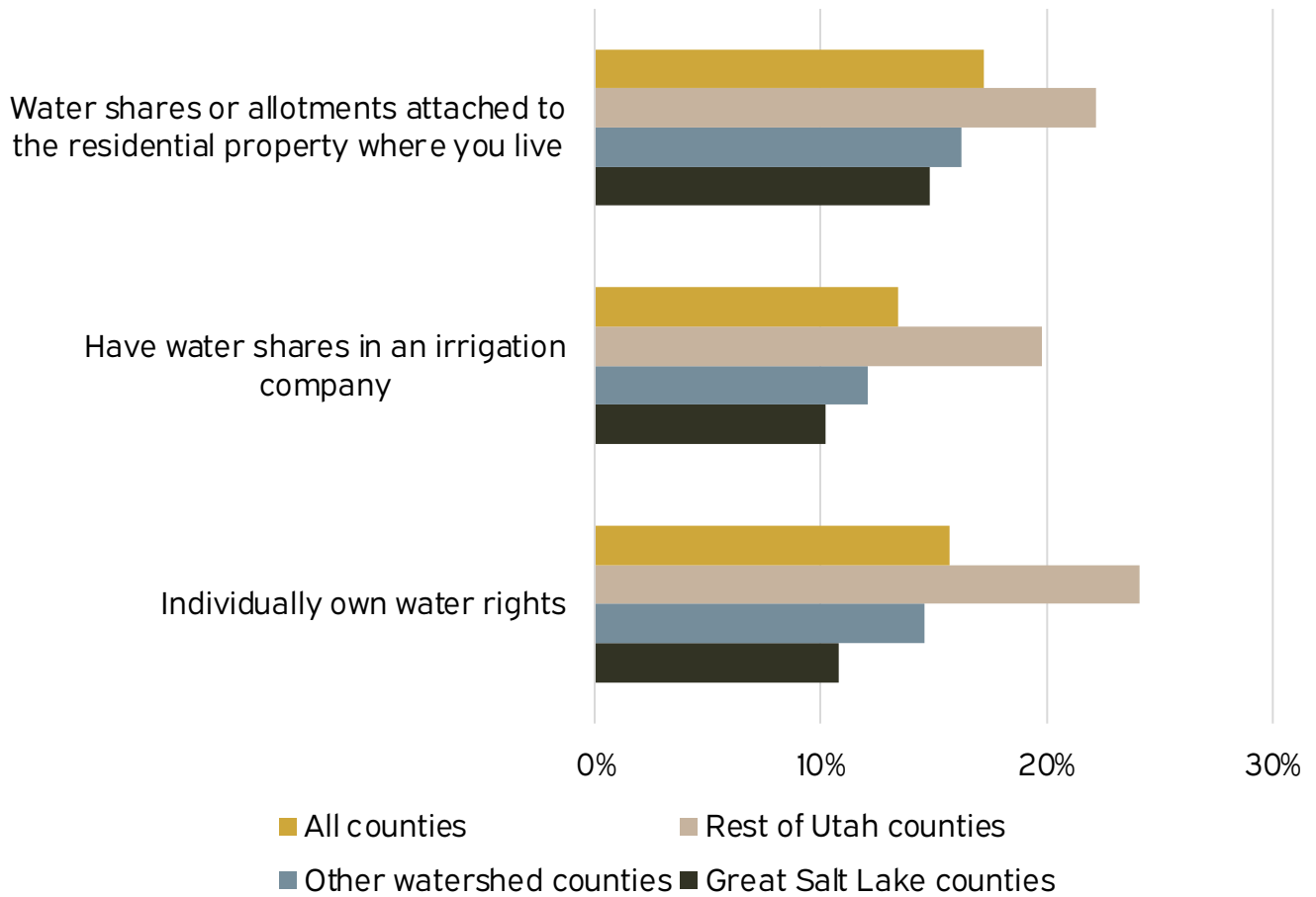
Survey question: Choose one or more races that you consider yourself to be.

Choose or more races that you consider yourself to be.	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties	U.S. Census State-level Estimate
	Percent of respondents				
American Indian/Native American or Alaska Native	1.7	2.4	2.1	2.1	1.0
Asian or Asian American	2.9	1.7	2.4	2.3	2.5
Black or African American	1.0	0.5	0.3	0.6	1.1
Native Hawaiian or Other Pacific Islander	0.5	1.4	0.3	0.8	1.1
Hispanic or Latino	3.8	3.1	3.9	3.6	15.1
White or Caucasian	79.6	81.6	79.7	80.3	79.2
Other	2.7	2.4	3.4	2.8	6.2
Prefer not to say	4.9	3.4	5.2	4.4	

Table A-4: Respondent residential profile

	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
Percent of respondents				
Years lived in Utah				
Less than 1 year	1.1	1.1	2.3	1.4
1 to 3 years	2.4	5.2	5.0	4.1
3 to 5 years	2.2	5.2	3.4	3.6
6 to 10 years	5.1	9.6	6.1	7.0
More than 10 years	8.9	15.3	8.0	11.0
More than 20 years	12.7	16.4	14.5	14.5
More than 30 years	19.7	18.1	12.6	17.2
More than 40 years	17.3	11.2	16.0	14.7
More than 50 years	30.7	17.8	32.1	26.4
Where respondent currently lives				
On a farm	1.3	2.5	3.5	2.3
Rural area or small town	9.1	21.1	60.7	26.9
Suburban area	70.7	67.4	29.6	58.9
Urban area	18.8	9.0	6.2	12.0
Relation to residence				
% Homeowner	84.6	83.2	86.0	84.5

Figure A-1: Respondents’ access to water rights and water shares





appendix B

SURVEY INSTRUMENT

Future of Great Salt Lake

Public Views on Water Strategies for Protecting Great Salt Lake and Its Wetlands



Landsat-8 image courtesy of the U.S. Geological Survey



UtahStateUniversity

INTRODUCTION & BACKGROUND

As described in the enclosed Letter of Information, Great Salt Lake is managed as a public trust resource for the people of Utah. Avoiding negative impacts from shrinkage and potential loss of the Lake is currently a high-profile public policy issue in Utah. The purpose of this survey is learn your opinions on the future of Great Salt Lake and how to secure water for the Lake and its surrounding wetlands.

The survey should take approximately 20-30 minutes to complete. We sincerely appreciate your time and effort to complete this important survey! People who complete the survey will receive a \$10 Amazon gift card. Please fill out the enclosed form detailing how you would like your gift card sent and return it with the survey in the postage-paid envelope.

INSTRUCTIONS

Who should fill out the survey? We ask that an adult (18 years of age or older) in each selected household fill out the survey.

How do I return the survey? Please return this survey in the provided stamped envelope, or you may complete this survey online if you prefer at: <http://bit.ly/GreatSaltLakeFuture>

How do I record my answers? Most questions in this survey will ask you to check a circle or box to indicate your answer. We ask that you use a dark pen or pencil to place a “✓” or “X” in the space provided (see example below). Some questions provide a space to write in more details. You can always write notes on the survey to clarify your answers where you think it would be helpful to us.

EXAMPLE QUESTION: How much do you like living in Utah? *Select the answer that best applies to you.*

*I strongly dislike
living in Utah*

*I am not fond of
living in Utah*

Neutral

*I like living
in Utah*

*I love living
in Utah*

If I have questions, who can I contact? This study is being coordinated by researchers at Utah State University. If you have any questions about the study or specific items in the survey, please contact either:

- **Dr. Lisa Welsh, Utah State University:** 435-797-0922 or lisa.welsh@usu.edu
- **Dr. Joanna Endter-Wada, Utah State University:** 435-797-2487 or joanna.endter-wada@usu.edu

AGREEMENT TO PARTICIPATE. This survey has been approved by the Institutional Review Board at Utah State University (IRB #12869). If you have questions about your rights as a research participant or would simply like to speak with someone *other* than the research team about questions or concerns, please contact the IRB Director at (435) 797-0567 or irb@usu.edu. Please click “Yes” below to indicate you are over 18 years of age, understand this survey’s purpose and its benefits and possible risks, and agree to participate voluntarily. **You must check “Yes” for your survey responses to be included in this research.**

Yes

No

Your survey ID: _____

A. YOUR EXPERIENCES AND FAMILIARITY WITH GREAT SALT LAKE

To begin, we would like to know about your personal experiences with Great Salt Lake and its wetlands.

A1. Which of the following (if any) have informed you on Great Salt Lake issues?

(please mark all responses that apply)

- ₁ Your personal experiences and observations of Great Salt Lake
- ₂ School classes or field trips that you or household members participated in
- ₃ Community forums or conferences
- ₄ TV, news articles, and other traditional media stories
- ₅ Social media (Facebook, Twitter, Instagram, TikTok, etc.)
- ₆ Friends and family
- ₇ Government agencies and their advisory councils
- ₈ Universities
- ₉ Non-profit and/or environmental organizations
- _x Other sources of information (please specify): _____
- ₀ I am not familiar with Great Salt Lake

A2. What are the primary ways that **you** are personally connected to Great Salt Lake and its wetlands (referred to as “the Lake”)? (please mark all responses that apply)

- ₁ I do work and/or receive household income related to the Lake
- ₂ I engage in recreational activities on, in, or around the Lake
- ₃ I participate in volunteer activities related to the Lake
- ₄ I visit and view the Lake as a sightseer or tourist
- ₅ I own property near the Lake
- ₆ I live near the Lake
- ₇ I appreciate the values of the Lake and care about its future
- ₈ I experience the smells and/or dust from the Lake
- ₉ I have family connections to the Lake
- _x Other (please specify): _____
- ₀ I do not feel connected to Great Salt Lake

A3. Please name up to three places in or around Great Salt Lake that mean the most to you.

- 1) _____
- 2) _____
- 3) _____

A4. Prior to this survey, had you heard or read about concerns over the decline of Great Salt Lake?

- Yes
 No
 I don't know

B. YOUR VIEWS ON GREAT SALT LAKE

Now we want to ask about your opinions on the role of Great Salt Lake and its wetlands in Utah.

B1. Great Salt Lake, its islands, and surrounding wetlands have multiple meanings, values, and uses for Utahns. How much do each of the following aspects matter to you?

	<i>Not at all important</i>	<i>Of little importance</i>	<i>Of average importance</i>	<i>Very important</i>	<i>Absolutely essential</i>
A place of solace and beauty	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
Brine shrimp harvesting	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
Habitat for wildlife	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
Its global and hemispheric significance for migratory birds	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
Its impact on moderating local temperatures and snowpack (often referred to as "lake effect snow")	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
Its unique geology and ecology	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
Mineral extraction (e.g., salt, magnesium, potassium, strategic metals)	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
Part of the State of Utah's cultural identity	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
Recreational and leisure opportunities	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
State ownership of the bed of Great Salt Lake as a public resource	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
The statewide economic and workforce impact of Great Salt Lake	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
Traditional homelands of Native American tribes with continuing cultural significance	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
Other meanings (<i>please specify and rate</i>):					
_____	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
_____	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅
_____	<input type="radio"/> ₁	<input type="radio"/> ₂	<input type="radio"/> ₃	<input type="radio"/> ₄	<input type="radio"/> ₅

B2. What three (3) words or phrases would you use to describe Great Salt Lake?

- 1) _____
 2) _____
 3) _____

B3. How concerned, if at all, are you about each of these circumstances concerning Great Salt Lake?

	<i>Not at all concerned</i>	<i>Slightly concerned</i>	<i>Somewhat concerned</i>	<i>Moderately concerned</i>	<i>Extremely concerned</i>
Additional shrinkage of Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bear River water projects that would divert water from reaching Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expansion of the mineral extraction industry's use of Great Salt Lake water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flooding from Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impacts Great Salt Lake's decline could have on the winter sports industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased (potentially toxic) dust from the exposed Great Salt Lake lakebed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased salinity in Great Salt Lake that would impact its chemistry and ecology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loss of boating access to Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loss of economic activity and local jobs dependent on Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plans to establish the Utah Inland Port adjacent to Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pollutants trapped in and entering the lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spread of invasive species, like <i>Phragmites</i> and carp, around Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustaining the ecological health of the Great Salt Lake ecosystem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Urban development on or near the wetlands surrounding Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife habitat loss in and around Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other concerns (<i>please specify and rate</i>):					
_____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B4. Overall, how do you think your own quality of life would be affected if Great Salt Lake dried up?

- ₁ Very negatively
- ₂ Somewhat negatively
- ₃ Neutral
- ₄ Somewhat positively
- ₅ Very positively

Please use this space to briefly explain your response. _____

B5. Please rate how strongly you agree or disagree with each of the following statements.

	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Continued decline of Great Salt Lake will reduce Utah's desirability as a place to live, conduct business, and visit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flows of water that reach Great Salt Lake are wasted and should be used upstream instead.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Future costs to restore a dry Great Salt Lake would far exceed the current benefits of diverting water from Great Salt Lake.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Great Salt Lake is important to me, even if I do not spend time there.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In light of climate change and growth, efforts to preserve Great Salt Lake seem insurmountable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership from city leaders and local elected officials is critical for protecting Great Salt Lake.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership from Utah legislators and state-wide elected officials is critical for protecting Great Salt Lake.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preserving Great Salt Lake is a collective legacy Utahns should leave for future generations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Securing water for Great Salt Lake will require major changes in how water is allocated and managed in the state of Utah.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utah residents have a stewardship responsibility to help ensure water gets to Great Salt Lake.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utah needs to implement water-efficient growth strategies to preserve Great Salt Lake.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C. YOUR OPINIONS ON SECURING WATER FOR GREAT SALT LAKE

Available water is becoming increasingly limited and uncertain as Utah experiences rapid growth, severe and prolonged drought, and the effects of climate change. Protecting Great Salt Lake, as well as other water bodies in the state, will require strategies to change ways Utahns use water. In this section, we would like to get your opinions on strategies that individuals, local communities, and the State of Utah could pursue or prioritize to secure more water for Great Salt Lake.

INDIVIDUAL STRATEGIES

C1. As an individual, how willing are you to take the following actions, assuming these actions would contribute to efforts to secure water for Great Salt Lake?

	<i>Not at all willing</i>	<i>Somewhat unwilling</i>	<i>Neutral</i>	<i>Slightly willing</i>	<i>Very willing</i>
Accept higher density housing and compact development (i.e., smaller lots and more multi-unit housing) in my neighborhood	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Accept that my children and grandchildren may not want to live in Utah because of water scarcity	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Let my lawn go dormant and turn brown during hot, dry summer months	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Live within a household water budget (a set allocation) based on number of people in my household and my property size	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Reduce my household's water use on a permanent and ongoing basis and not just during drought periods	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Use contractors who are certified in water-efficient landscaping to design, install, or maintain my landscape and irrigation system when needed	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5

C2. How motivated would you be to reduce your own household's water use if you knew the water you conserved would be put toward the following uses?

	<i>Not at all motivated</i>	<i>Slightly motivated</i>	<i>Somewhat motivated</i>	<i>Moderately motivated</i>	<i>Very motivated</i>
Allow increased development in my area	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Ensure future water use for agriculture	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Ensure future water for indoor, residential uses	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Ensure future water for outdoor, residential uses	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Improve fish and wildlife habitat	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Increase Great Salt Lake water levels	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Improve opportunities for water-based recreation	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Improve public urban parks and open spaces	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Improve streamflow in rivers	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
Reduce your water bill	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5

C3. Strategies to secure more water for Great Salt Lake will require funding. That funding can be raised in a variety of ways. How much money, if any, would you be willing to pay each year if you knew it would help to secure water for Great Salt Lake, and how would you be willing to pay it?

<i>Potential ways to pay money to help secure water for Great Salt Lake:</i>	<i>Amount you would be willing to pay each year:</i>
a. Included in my property taxes	\$ _____
b. Included in my water bill	\$ _____
c. Included as part of Utah sales tax	\$ _____
d. Included as part of Utah income tax	\$ _____
e. Voluntary donations to a nonprofit organization working on behalf of the Lake	\$ _____
f. Voluntary donation to a state agency	\$ _____
g. Other ways to pay (<i>please specify</i>):	
_____	\$ _____
_____	\$ _____
_____	\$ _____
<i>Total amount you are willing to pay each year:</i>	\$ _____

COMMUNITY STRATEGIES

C4. Local governments and water utilities have authority to regulate land use and water delivery.

Please rate your level of support for your community to take the following actions to contribute to efforts to secure water for Great Salt Lake.

	<i>Do not at all support</i>	<i>Slightly support</i>	<i>Somewhat support</i>	<i>Moderately support</i>	<i>Strongly support</i>
Adopt and implement land use ordinances and building codes that increase indoor and outdoor water use efficiency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bill people for the amount of water they use once meters are installed on piped irrigation systems with untreated water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ensure water supply is adequate and sustainable before new developments are approved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase water prices to reflect the full cost of water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Limit the amount of turf allowed in outdoor landscape installations or renovations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mandate outdoor water restrictions during times of water shortage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Protect sensitive water resources in land use planning (e.g., groundwater recharge zones, natural habitat along rivers and streams, wetlands)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide more transparent and informative water bills to help people understand their water use data and ability to conserve	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use more graduated tiered rates (where users pay increasingly higher rates as their use increases) to incentivize conservation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C5. How would you rate your satisfaction with efforts of local city and county officials in responding to the shrinking Great Salt Lake?

- ₁ Very dissatisfied
- ₂ Dissatisfied
- ₃ Unsure
- ₄ Satisfied
- ₅ Very satisfied

Optional space to explain your response:

STATE STRATEGIES

C6. Utah's state government has authority to manage water, which is a public resource, and direct state-wide planning efforts. Please rate your level of support for the state of Utah to take the following actions to contribute to efforts to secure water for Great Salt Lake.

	<i>Do not at all support</i>	<i>Slightly support</i>	<i>Somewhat support</i>	<i>Moderately support</i>	<i>Strongly support</i>
Assess tradeoffs and impacts involved in committing water resources to various types of economic activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Commit an annual appropriation of money earmarked to purchase or lease water for Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coordinate with the federal government to protect Utah's watersheds and water sources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ensure that water conservation and efficiency are prerequisites to approval of all water infrastructure projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Limit state efforts to accommodate or attract water intensive industries in Utah, such as data centers or bottling plants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prioritize water demand management (conservation, efficiency, reuse) over new water supply development (building water storage and distribution projects)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promote significant reductions in Utah's per capita water use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promote statewide planning efforts for climate and drought resilience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promote significant reduction of agricultural water consumption in Great Salt Lake watershed and dedicate the saved water to Great Salt Lake	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C7. Rank the following goals for managing Utah’s water resources, with 1 being the highest priority, 2 being the next highest priority, and so forth until you have put all of these goals in priority order from 1 through 9 (with 9 being the lowest priority. (Assign each number between 1 and 9 to only one goal).

<i>Goals for managing Utah’s water resources</i>	<i>Priority Rank</i>
Ensuring supply of drinking water	
Ensuring supply of water for agriculture	
Ensuring supply of water for economic development	
Ensuring supply of water for residential landscaping	
Protecting Great Salt Lake	
Protecting water quality	
Protecting wetlands and wildlife habitat	
Providing recreational opportunities	
Saving taxpayer money	

C8. During this past 2022 legislative session, the Utah Legislature passed numerous bills focused on the conservation and sustainable use of water. How familiar are you with each of the following bills?

Note: HB means House Bill; SB means Senate Bill

	<i>Not familiar</i>	<i>Somewhat familiar</i>	<i>Extremely familiar</i>
HB 33 – Amends Utah’s instream flow law, allowing farmers to lease water to benefit Great Salt Lake and other sovereign lands for up to ten years and avoid the “use it or lose it” rule in Utah water law.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HB 121 – Promotes water conservation by requiring all state government buildings to implement water-wise landscaping (e.g., no more than 20% lawn or turf) and not water between 10:00 am and 6:00 p.m. Provides state financial incentives to replace lawn or turf with drought resistant landscaping.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HB 157 – Requires all royalties on minerals extracted from Great Salt Lake to be put back into conservation and environmental projects around the Lake.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HB 242 – Requires water meters to be installed by 2030 on all new and existing pressurized secondary water systems (which can reduce water consumption by 30-40%) and provides funding for that metering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C8. (continued)

Note: HB means House Bill; SB means Senate Bill

Not familiar Somewhat familiar Extremely familiar

HB 282 - Prohibits municipalities, counties, or associations from prohibiting water wise landscaping and authorizes certain landscaping requirements.

HB 410 – Creates the Great Salt Lake Watershed Enhancement Program and provides \$40 million for preservation and conservation of Great Salt Lake and its wetlands to be managed by a Great Salt Lake Water Trust.

HB 429 – Requires the Division of Water Resources to develop a Great Salt Lake Watershed integrated water assessment for Great Salt Lake, gather data to measure total water flows needed to maintain different Lake levels, and establish a Lake water budget.

SB 110 - Requires a water use and preservation element to be part of a municipal or county general plan and outlines what steps to take in developing and acting upon a water use and preservation element.

C9. How would you rate your satisfaction with efforts of the Utah Legislature and State of Utah in responding to the shrinking Great Salt Lake?

- ₁ Very dissatisfied
- ₂ Dissatisfied
- ₃ Unsure
- ₄ Satisfied
- ₅ Very satisfied

Optional space to explain your response:

D. YOUR VISIONS ON THE FUTURE OF GREAT SALT LAKE.

We would like to give you an opportunity to express your thoughts on the future of Great Salt Lake in your own words. Please complete the following sentences:

D1. The future of Great Salt Lake ... *(write your thoughts on the following lines)*

D2. I think protecting Great Salt Lake as a public trust resource means ... *(write your thoughts on the following lines)*

E. INFORMATION ABOUT YOU AND YOUR NEIGHBORHOOD

Finally, we have some questions that allow us to know more about you and the place you live. These questions help us make sense of the differences we might observe across Utah counties.

E1. How many years have you lived in Utah?

- ₁ Less than 1 year
- ₂ 1 to 3 years
- ₃ 3 to 5 years
- ₄ 6 to 10 years
- ₅ More than 10 years
- ₆ More than 20 years
- ₇ More than 30 years
- ₈ More than 40 years
- ₉ More than 50 years

E2. How would you describe the place you currently live?

- ₁ A farm
- ₂ Rural area or small town
- ₃ Suburban area
- ₄ Urban area

E3. Do you own the residential property you live in?

- ₀ No
- ₁ Yes

E4. Do you individually own water rights?

- ₀ No
- ₁ Yes

E5. Do you have water shares in an irrigation company?

- ₀ No
- ₁ Yes

E6. Are there water shares or allotments attached to the residential property where you live?

- ₀ No
- ₁ Yes
- ₂ I don't know

E7. Which of the following industries most closely match the ones in which you and other members of your household are employed? (mark all that apply)

- ₀₁ Agriculture, aquaculture, forestry, fishing and hunting, and mining
- ₀₂ Construction
- ₀₃ Manufacturing
- ₀₄ Wholesale trade
- ₀₅ Retail trade
- ₀₆ Transportation and warehousing, and utilities
- ₀₇ Information
- ₀₈ Finance and insurance, and real estate and rental and leasing
- ₀₉ Professional, scientific, and management, and administrative and waste management services
- ₁₀ Educational services, and health care and social assistance
- ₁₁ Arts, entertainment, and recreation, and accommodation and food services
- ₁₂ Other services, except public administration
- ₁₃ Public administration
- ₁₄ Other: _____
- ₁₅ Prefer not to say

E8. The following questions help us to be sure we have heard from a diverse range of people who may have different perspectives. As with the rest of the survey, your answers are completely confidential.

What is your age?

- ₁ 18-24 years old
- ₂ 25-34 years old
- ₃ 35-44 years old
- ₄ 45-54 years old
- ₅ 55-64 years old
- ₆ 65-74 years old
- ₇ 75 years or older
- ₉ Prefer not to say

What gender do you identify with? _____

Are you of Spanish, Hispanic, or Latino origin?

- ₀ No
- ₁ Yes

Choose one or more races that you consider yourself to be.

- ₁ White or Caucasian
- ₂ Black or African American
- ₃ Asian or Asian American
- ₄ American Indian/Native American or Alaska Native
- ₅ Native Hawaiian or Other Pacific Islander
- ₆ Other: _____
- ₉ Prefer not to say

THANK YOU for taking the time to complete this survey! Your answers will provide important insights to local and state water policymakers in Utah. If you would like to expand on any answers – or address issues we may have failed to ask about – feel free to comment in the space provided below and on the back of the survey.



appendix C

ADDITIONAL DATA TABLES
WITH COUNTY STRATA

The tables in this appendix present the data across the three sample strata (Great Salt Lake Counties, Other Watershed Counties, and Rest of Utah Counties) for the figures in the report.

Table C-1: Respondents’ awareness of concerns over Great Salt Lake decline (Data for Figure 3, page 9)

Survey question: Prior to this survey, had you heard or read about concerns over the decline of Great Salt Lake?

	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
Percent of Respondents				
Yes	92.9	87.4	88.2	89.6
No	6.7	11.1	9.1	8.9
I don’t know	0.5	1.4	2.8	1.4

Table C-2: Respondents’ sources of information on Great Salt Lake issues (Data for Figure 4, page 9)

Survey question: Which of the following (if any) have informed you on Great Salt Lake issues?

	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
Percent of Respondents				
TV, news articles, and other traditional media stories	82.6	75.8	81.0	79.7
Personal experiences and observations of Great Salt Lake	79.4	61.8	47.6	64.6
Friends and family	41.3	39.4	30.3	37.8
Social media (Facebook, Twitter, Instagram, TikTok, etc.)	27.8	59.0	26.6	28.0
Non-profit and/or environmental organizations	17.7	15.2	12.1	15.4
Government agencies and their advisory councils	17.0	15.2	12.8	15.2
School classes or field trips that you or household members participated in	16.5	13.5	12.4	14.4
Universities	16.7	14.3	11.4	14.4
Community forums or conferences	9.8	6.5	5.5	7.5
I am not familiar with Great Salt Lake	2.0	7.2	5.2	4.8

Table C-3: Primary ways respondents feel connected to Great Salt Lake (Data for Figure 5, page 10)

Survey question: What are the primary ways that you are personally connected to Great Salt Lake and its wetlands (referred to as “the Lake”)?

	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
Percent of Respondents				
I appreciate the values of the Lake and care about its future	70.3	61.1	60.7	64.4
I visit and view the Lake as a sightseer or tourist	53.8	47.6	39.0	47.7
I experience the smells and/or dust from the Lake	50.1	18.6	11.7	28.4
I engage in recreational activities on, in, or around the Lake	36.4	23.7	19.3	27.2
I live near the Lake	32.4	7.2	2.1	15.1
I have family connections to the Lake	3.7	5.1	7.2	5.1
I own property near the Lake	5.9	0.7	0.7	2.6
I participate in volunteer activities related to the Lake	3.2	2.4	0.3	2.2
I do work and/or receive household income related to the Lake	1.0	1.7	1.7	1.4
I do not feel connected to Great Salt Lake	7.1	16.2	20.3	13.9

Table C-4: Importance of Great Salt Lake to respondents (Data for Figure 6, page 11)

Prompt: Please rate how strongly you agree or disagree with each of the following statements.

	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All counties
Percent of “agree” or “strongly agree” responses				
Great Salt Lake is important to me, even if I do not spend time there.	88.3	80.2	79.3	83.0

The scale for response categories was, from left to right: Strongly disagree; Disagree; Neither agree or disagree; Agree; Strongly agree.

Table C-5: Meanings, values, and uses of Great Salt Lake (Data for Figure 9, page 15)

Survey question: Great Salt Lake, its islands, and surrounding wetlands have multiple meanings, values, and uses for Utahns. How much do each of the following aspects matter to you?

	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
Mean scores on this 1–5 scale: 1 = Not at all important, 2 = Of little importance, 3 = Of average importance, 4 = Very important, and 5 = Absolutely essential				
Habitat for wildlife	4.41	4.23	4.21	4.29
Its global and hemispheric significance for migratory birds	4.42	4.19	4.22	4.29
Its impact on moderating local temperatures and snowpack (often referred to as “lake effect snow”)	4.44	4.15	4.09	4.24
Its unique geology and ecology	4.07	3.90	4.01	4.00
Part of the state of Utah’s cultural identity	3.78	3.68	3.83	3.76
A place of solace and beauty	3.85	3.56	3.67	3.70
Traditional homelands of Native American tribes with continuing cultural significance	3.67	3.52	3.65	3.61
The statewide economic and workforce impact of Great Salt Lake	3.74	3.48	3.52	3.59
Mineral extraction (e.g., salt, magnesium, potassium, strategic metals)	3.44	3.44	3.53	3.47
State ownership of the bed of Great Salt Lake as a public resource	3.53	3.30	3.41	3.42
Recreational and leisure opportunities	3.35	3.10	3.25	3.23
Brine shrimp harvesting	3.02	2.72	2.88	2.87

Table C-6: Concern about specific circumstances of Great Salt Lake (Data for Figure 10, page 16)

Survey question: How concerned, if at all, are you about each of these circumstances concerning Great Salt Lake?

	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
	Percent of “moderately concerned” or “extremely concerned” responses			
Wildlife habitat loss in and around Great Salt Lake	83.9	80.1	82.4	82.2
Sustaining the ecological health of the Great Salt Lake ecosystem	81.4	74.8	74.8	77.3
Increased (potentially toxic) dust from the exposed Great Salt Lake lakebed	82.9	76.0	66.7	76.2
Bear River water projects that would divert water from reaching Great Salt Lake	82.0	67.5	69.6	73.4
Pollutants trapped in and entering the Lake	73.4	68.8	62.1	68.9
Increased salinity in Great Salt Lake that would impact its chemistry and ecology	73.4	64.8	59.5	66.7
Spread of invasive species, like phragmites and carp, around Great Salt Lake	67.5	66.4	62.5	65.9
Urban development on or near the wetlands surrounding Great Salt Lake	69.8	62.2	62.7	65.2
Loss of economic activity and local jobs dependent on Great Salt Lake	56.3	46.0	53.6	51.8
Expansion of the mineral extraction industry’s use of Great Salt Lake water	55.5	49.2	49.8	51.7
Impacts Great Salt Lake’s decline could have on the winter sports industry	57.3	42.6	39.9	47.4
Plans to establish the Utah Inland Port adjacent to Great Salt Lake	41.1	29.1	32.6	34.6
Loss of boating access to Great Salt Lake	17.5	13.6	20.7	16.9
Flooding from Great Salt Lake	16.3	16.6	17.2	16.7

The response categories for actions to rate were, from left to right: “Not at all concerned” (coded 1); “Slightly concerned” (coded 2); “Somewhat concerned” (coded 3), “Moderately concerned” (coded 4); and “Extremely concerned” (coded 5)

Table C-7: (Data for Figure 11, page 18)

Survey question: Overall, how do you think your own quality of life would be affected if Great Salt Lake dried up?

	Very negatively (1)	Somewhat negatively (2)	Neutral (3)	Somewhat positively (4)	Very positively (5)	Mean score
	Percent of respondents					1-5 scale
Great Salt Lake Counties	61.1	23.5	10.6	2.7	2.0	1.61
Other Watershed Counties	42.1	33.1	21.6	2.0	1.3	1.87
Rest of Utah Counties	23.8	36.5	35.1	1.1	3.5	2.24
Overall sample	44.5	30.4	21.0	2.0	2.1	1.87

The scale for response categories was, from left to right: Strongly disagree; Disagree; Neither agree or disagree; Agree; Strongly agree.

Table C-8: Public opinions on the decline of Great Salt Lake and efforts to save it (Data for Figure 12, page 21)

Prompt: Please rate how strongly you agree or disagree with each of the following statements.

	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
	Percent of "agree" or "strongly agree" responses			
Utah needs to implement water-efficient growth strategies to preserve Great Salt Lake.	88.3	80.7	80.8	83.6
Leadership from Utah legislators and state-wide elected officials is critical for protecting Great Salt Lake.	84.7	81.0	81.9	82.6
Leadership from city leaders and local elected officials is critical for protecting Great Salt Lake.	82.3	79.2	76.9	79.7
Utah residents have a stewardship responsibility to help ensure water gets to Great Salt Lake.	82.8	73.8	71.1	76.5
Securing water for Great Salt Lake will require major changes in how water is allocated and managed in the state of Utah.	80.5	72.2	70.0	74.8
Preserving Great Salt Lake is a collective legacy Utahns should leave for future generations.	75.3	70.3	75.1	73.4
Continued decline of Great Salt Lake will reduce Utah's desirability as a place to live, conduct business, and visit.	68.1	59.0	52.9	60.8
In light of climate change and growth, efforts to preserve Great Salt Lake seem insurmountable.	30.4	24.1	27.5	27.4
Flows of water that reach Great Salt Lake are wasted and should be used upstream instead.	8.4	13.1	12.8	11.2

Table C-9: Support for various state government actions to secure water for Great Salt Lake (Data for Figure 15, page 24)

Prompt: Utah's state government has authority to manage water, which is a public resource, and direct state-wide planning efforts. Please rate your level of support for the state of Utah to take the following actions to contribute to efforts to secure water for Great Salt Lake.

Actions to rate*	County Strata			
	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
	Mean scores on a scale of 1 to 5 **			
Ensure that water conservation and efficiency are prerequisites to approval of all water infrastructure projects ⁽⁴⁾	4.30	4.22	4.09	4.22
Promote statewide planning efforts for climate and drought resilience ⁽⁸⁾	4.16	3.93	3.91	4.01
Coordinate with the federal government to protect Utah's watersheds and water sources ⁽³⁾	4.10	3.85	3.70	3.91
Prioritize water demand management (conservation, efficiency, reuse) over new water supply development (building water storage and distribution projects) ⁽⁶⁾	3.84	3.61	3.61	3.70
Limit state efforts to accommodate or attract water intensive industries in Utah, such as data centers or bottling plants ⁽⁵⁾	3.82	3.67	3.52	3.69
Assess tradeoffs and impacts involved in committing water resources to various types of economic activities ⁽¹⁾	3.67	3.61	3.47	3.60
Promote significant reductions in Utah's per capita water use ⁽⁷⁾	3.74	3.52	3.43	3.58
Commit an annual appropriation of money earmarked to purchase or lease water for Great Salt Lake ⁽²⁾	3.53	3.22	3.08	3.30
Promote significant reduction of agricultural water consumption in Great Salt Lake watershed and dedicate the saved water to Great Salt Lake ⁽⁹⁾	3.38	3.00	3.01	3.15

* Actions appeared in the survey in the order indicated by subscript numbers.

** The response categories for actions to rate were, from left to right: "Do not support at all" (coded 1); "Slightly support" (coded 2); "Somewhat support" (coded 3), "Moderately support" (coded 4); and "Strongly support" (coded 5)

Table C-10: Support for various local government and water utility actions to secure water for Great Salt Lake (Data for Figure 14, page 25)

Prompt: Local governments and water utilities have authority to regulate land use and water delivery. Please rate your level of support for your community to take the following actions to contribute to efforts to secure water for Great Salt Lake.

Actions to rate*	County Strata			
	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
	Mean scores on a support scale of 1 to 5 **			
Ensure water supply is adequate and sustainable before new developments are approved	4.63	4.56	4.48	4.57
Protect sensitive water resources in land use planning (e.g., groundwater recharge zones, natural habitat along rivers and streams, wetlands)	4.32	4.23	4.17	4.25
Provide more transparent and informative water bills to help people understand their water use data and ability to conserve	4.29	4.22	4.18	4.23
Mandate outdoor water restrictions during times of water shortage	4.02	3.81	3.74	3.87
Use more graduated tiered rates (where users pay increasingly higher rates as their use increases) to incentivize conservation	4.01	3.76	3.76	3.85
Adopt and implement land use ordinances and building codes that increase indoor and outdoor water use efficiency	4.04	3.80	3.61	3.84
Limit the amount of turf allowed in outdoor landscape installations or renovations	3.80	3.54	3.56	3.64
Bill people for the amount of water they use once meters are installed on piped irrigation systems with untreated water	3.76	3.59	3.36	3.60
Increase water prices to reflect the full cost of water	3.26	3.13	3.13	3.18

* Actions appeared in the survey in the order indicated by subscript numbers.

** The response categories for actions to rate were, from left to right: "Do not support at all" (coded 1); "Slightly support" (coded 2); "Somewhat support" (coded 3); "Moderately support" (coded 4); and "Strongly support" (coded 5)

Table C-11: Mean scores on willingness scale to take individual actions to secure water for Great Salt Lake (Data for Figure 15, page 26)

Survey question: As an individual, how willing are you to take the following actions, assuming these actions would contribute to efforts to secure water for Great Salt Lake?

	County Strata			All Counties
	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	
Responses to rate on scale of 1-5*	Mean scores on scale of 1-5			
Use contractors who are certified in water-efficient landscaping to design, install, or maintain my landscape and irrigation system when needed ⁽⁶⁾	4.05	3.95	3.87	3.97
Reduce my household’s water use on a permanent and ongoing basis and not just during drought periods ⁽⁵⁾	3.92	3.69	3.68	3.78
Let my lawn go dormant and turn brown during hot, dry summer months ⁽³⁾	3.89	3.66	3.66	3.75
Live within a household water budget (a set allocation) based on number of people in my household and my property size ⁽⁴⁾	3.58	3.27	3.42	3.43
Accept that my children and grandchildren may not want to live in Utah because of water scarcity ⁽²⁾	3.07	3.16	3.14	3.12
Accept higher density housing and compact development (i.e., smaller lots and more multi-unit housing) in my neighborhood ⁽¹⁾	2.94	2.82	2.70	2.83

* Responses appeared in the survey in the order indicated in the subscript numbers. The scale for response categories were, from left to right: “Not at all willing” (coded 1); “Somewhat unwilling” (coded 2); “Neutral” (coded 3); “Slightly willing” (coded 4); and “Very willing” (coded 5).

Table C-12: Motivations to reduce household water use depending on use of conserved water (Data for Figure 16, page 27)

Survey question: How motivated would you be to reduce your own household's water use if you knew the water you conserved would be put toward the following uses?

Responses to rate on scale of 1-5*	County Strata			All Counties
	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	
	Percentages of respondents who marked "moderately motivated" or "very motivated"			
Improve fish and wildlife habitat ⁽⁵⁾	77.2	63.1	68.2	69.8
Increase Great Salt Lake water levels ⁽⁶⁾	77.9	62.1	67.4	69.4
Improve streamflow in rivers ⁽⁹⁾	70.0	63.9	63.6	66.1
Reduce your water bill ⁽¹⁰⁾	66.8	62.7	61.8	64.0
Ensure future water for indoor, residential uses ⁽³⁾	62.2	60.1	59.8	60.8
Ensure future water use for agriculture ⁽²⁾	54.0	57.9	58.8	56.8
Improve public urban parks and open spaces ⁽⁸⁾	50.1	47.9	38.0	46.2
Ensure future water for outdoor, residential uses ⁽⁴⁾	38.5	41.2	32.4	38.0
Improve opportunities for water-based recreation ⁽⁷⁾	34.3	27.2	28.1	30.1
Allow increased development in my area ⁽¹⁾	13.9	15.9	14.4	14.8

* Responses appeared in the survey in the order indicated by subscript numbers. The 1-5 scale for response categories were, from left to right: "Not at all motivated" (coded 1); "Slightly motivated" (coded 2); "Somewhat motivated" (coded 3); "Moderately motivated" (coded 4); and "Very motivated" (coded 5)

Table C-13: Stated willingness to pay yearly by different methods to help secure water for Great Salt Lake (Data for Figure 17, page 29)

Survey question: How much money, if any, would you be willing to pay each year if you knew it would help secure water for Great Salt Lake, and how would you be willing to pay it?

	County Strata				% willing to pay using each method
	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	Overall Sample Mean	
Potential ways to pay money to help secure water for Great Salt Lake (GSL)*	Mean amount of money each year **				%
Included in my water bill ⁽²⁾	\$48.48	\$28.87	\$18.19	\$33.14	45.7
Included in my property taxes ⁽¹⁾	\$64.72	\$35.60	\$25.55	\$44.05	40.9
Voluntary donations to a nonprofit organization working on behalf of the lake ⁽⁵⁾	\$42.68	\$51.84	\$23.26	\$40.79	33.0
Included as part of Utah sales tax ⁽³⁾	\$32.92	\$22.90	\$22.24	\$26.33	29.6
Included as part of Utah income tax ⁽⁴⁾	\$40.43	\$22.79	\$26.53	\$30.16	27.3
Voluntary donation to a state agency ⁽⁶⁾	\$21.06	\$28.87	\$ 8.01	\$18.87	19.7
Total average amount respondents are willing to pay each year	\$251.95	\$197.95	\$133.60	\$213.50	

* Ways to pay appeared in the survey in the order indicated by subscript numbers.

** Participants could free write their own amount in provided spaces: \$_____

Table C-14: Familiarity with 2022 state legislation on conservation and sustainable use of water (Data for Figure 18, page 31)

Survey question: During this past 2022 legislative session, the Utah Legislature passed numerous bills focused on the conservation and sustainable use of water. How familiar are you with each of the following bills?

Legislative bills*	County Strata			
	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	All Counties
	Percent of "somewhat familiar" and "extremely familiar" responses**			
HB 121 - Promotes water conservation by requiring all state government buildings to implement water-wise landscaping (e.g., no more than 20% lawn or turf) and not water between 10:00 am and 6:00 pm. Provides state financial incentives to replace lawn or turf with drought resistant landscaping. ⁽²⁾	52.7	42.3	49.0	47.9
HB 242 - Requires water meters to be installed by 2030 on all new and existing pressurized secondary water systems (which can reduce water consumption by 30-40%) and provides funding for that metering. ⁽⁴⁾	40.4	33.3	30.9	35.3
HB 282 - Prohibits municipalities, counties, or associations from prohibiting water wise landscaping and authorizes certain landscaping requirements. ⁽⁵⁾	33.2	26.8	31.3	30.3
HB 33 - Amends Utah’s instream flow law, allowing farmers to lease water to benefit Great Salt Lake and other sovereign lands for up to ten years and avoid the “use it or lose it” rule in Utah water law. ⁽¹⁾	33.2	22.8	26.0	27.5
HB 410 - Creates the Great Salt Lake Watershed Enhancements Program and provides \$40 million for preservation and conservation of Great Salt Lake and its wetlands to be managed by a Great Salt Lake Water Trust ⁽⁶⁾	33.5	24.3	23.5	27.5
HB 429 - Requires Division of Water Resources to develop a Great Salt Lake Watershed integrated water assessment for Great Salt Lake, gather data to measure total water flows needed to maintain different Lake levels, and establish a lake water budget. ⁽⁷⁾	23.2	17.3	20.8	20.4
SB 110 - Requires a water use and preservation element to be part of a municipal or county general plan and outlines what steps to take in developing and acting upon a water use and preservation element. ⁽⁸⁾	20.8	14.6	22.7	19.0
HB 157 - Requires all royalties on minerals extracted from Great Salt Lake to be put back into conservation and environmental projects around the lake. ⁽³⁾	18.6	13.2	20.8	17.2

* Bills appeared in the survey in the order indicated by the subscript numbers.

** Response categories were: “Not familiar”, “Somewhat familiar”, and “Extremely familiar”

Table C-15: Satisfaction with efforts of the Utah Legislature and state of Utah in responding to the shrinking Great Salt Lake (Data for Figure 19, page 35)

Survey question: How would you rate your satisfaction with efforts of the Utah Legislature and state of Utah in responding to the shrinking Great Salt Lake?

	Very dis-satisfied (1)	Dis-satisfied (2)	Unsure (3)	Satisfied (4)	Very satisfied (5)	Mean score
Percent of respondents						1-5 scale
Great Salt Lake Counties	12.1	21.3	55.0	10.5	1.1	2.67
Other Watershed Counties	5.5	18.6	63.1	12.3	0.5	2.84
Rest of Utah Counties	6.2	16.3	62.4	13.6	1.6	2.88
Overall Sample	8.1	19.0	59.9	12.0	1.0	2.79

Table C-16: Satisfaction with efforts of local city and county officials to respond to the shrinking Great Salt Lake (Data for Figure 20, page 35)

Survey question: How would you rate your satisfaction with efforts of local city and county officials in responding to the shrinking Great Salt Lake?


	Very dis-satisfied (1)	Dis-satisfied (2)	Unsure (3)	Satisfied (4)	Very satisfied (5)	Mean score
Percent of respondents						1-5 scale
Great Salt Lake Counties	20.8	25.3	44.2	8.2	1.6	2.44
Other Watershed Counties	12.8	20.9	57.9	6.8	1.6	2.64
Rest of Utah Counties	13.7	17.6	61.7	5.9	1.2	2.63
Overall Sample	16.0	21.7	53.7	7.1	1.5	2.56

Table C-17: Ranking of goals for managing Utah's water resources (Data for Table 2, page 55)

Prompt: Rank the following goals for managing Utah's water resources, with 1 being the highest priority, 2 being the next highest priority, and so forth until you have put all of these goals in priority order from 1 through 9 (with 9 being the lowest priority).

Goals for managing Utah's water resources*	County Strata			All Counties
	Great Salt Lake Counties	Other Watershed Counties	Rest of Utah Counties	
	Mean Priority Rank Score (1 = highest priority, 9 = lowest priority)			
Ensuring supply of drinking water ⁽¹⁾	1.63	1.53	1.61	1.59
Protecting water quality ⁽⁶⁾	3.07	2.88	3.04	2.99
Ensuring supply of water for agriculture ⁽²⁾	4.10	3.67	3.72	3.85
Protecting Great Salt Lake ⁽⁵⁾	4.21	4.92	4.74	4.61
Protecting wetlands and wildlife habitat ⁽⁷⁾	4.70	4.95	4.68	4.79
Ensuring supply of water for economic development ⁽³⁾	6.30	5.99	6.07	6.13
Saving taxpayer money ⁽⁹⁾	6.50	6.50	6.47	6.49
Ensuring supply of water for residential landscaping ⁽⁴⁾	7.04	6.98	7.07	7.03
Providing recreational opportunities ⁽⁸⁾	7.44	7.57	7.59	7.53

* The goals appeared in the survey in the order indicated by subscript numbers.



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