



REMOVING INVASIVE PHRAGMITES



BRINE SAMPLING ON THE NORTH ARM

# WHAT **DNR** IS DOING TO BENEFIT GREAT SALT LAKE

The **Division of Wildlife Resources** Great Salt Lake Ecosystem Program works to protect and conserve the aquatic and avian resources of the Great Salt Lake through ongoing research and active management.

- Released 40,000 acre-feet of water from adjacent waterfowl management areas into Great Salt Lake
- Completed a collaborative water rights transaction to deliver up to 21,000 acre-feet of water to GSL annually for the next 10 years
- Monitoring the sustainability of the brine shrimp population and developing an ecosystem model to predict changes to their population
- Managing 94,000 acres of wetland habitat around Great Salt Lake for birds
- Collaborating with GSL wetland managers (federal, non-profit and private) to share hydrology, weed control and water rights information
- Building informal and formal partnerships to tackle the phragmites invasion in GSL wetlands
- Collaborating with partners to accomplish migratory shorebird surveys that document the distribution and abundance of shorebirds at 50+ sites around GSL and its watershed for the next three years
- Carrying out long-term avian surveys to determine temporal and spatial patterns of migratory waterbirds and also monitoring breeding waterbirds (including secretive marsh birds and colonial nesters)
- Periodically assessing mercury and other contaminants in waterfowl, as well as monitoring and tracking avian disease
- Coordinating and managing an applied avian research program to answer specific questions important to the brine shrimp population and conservation of the ecosystem
- Monitoring and describing long-term trends in phytoplankton and the abiotic and biotic changes in the lake

The **Utah Geological Survey** provides timely scientific information about Utah’s geologic environment, resources, and hazards. In that spirit, the UGS is involved in several activities that enhance our understanding of Great Salt Lake:

- Monitoring the salinity and geochemistry of both the north and south arms of the lake since 1966; including researching how salt cycles in the lake system
- Studying and documenting groundwater contribution to the lake system
- Keeping a record of GSL mineral production and production value
- Researching microbialites, including details of their formation, composition and spatial distribution
- Conducting a pilot study of bathymetric lidar, which will increase our knowledge of the topography of the lake floor and microbialite distribution
- Compiling water quality data in support of establishing wetland water quality standards
- Conducting surface flow and groundwater measurements, vegetation mapping and health assessment, and water quality monitoring at GSL Shorelands Preserve to assess water supply, water needs and provide data for future management decisions
- Assessing current condition and stressors of mudflat/playa wetlands – the aerially most extensive yet least known type of GSL wetlands
- Collaborating with other lake researchers, within and outside of the DNR, on a variety of different topics



UTAH DEPARTMENT OF NATURAL RESOURCES





LOW LEVELS EXPOSE MICROBIALITES



RAISING THE CAUSEWAY BERM

The **Division of Forestry, Fire and State Lands** (FFSL) has direct management jurisdiction over lands below the meander line of GSL. FFSL coordinates with other state, federal, and local entities to ensure that the management of this resource will provide lasting benefit to the Public Trust.

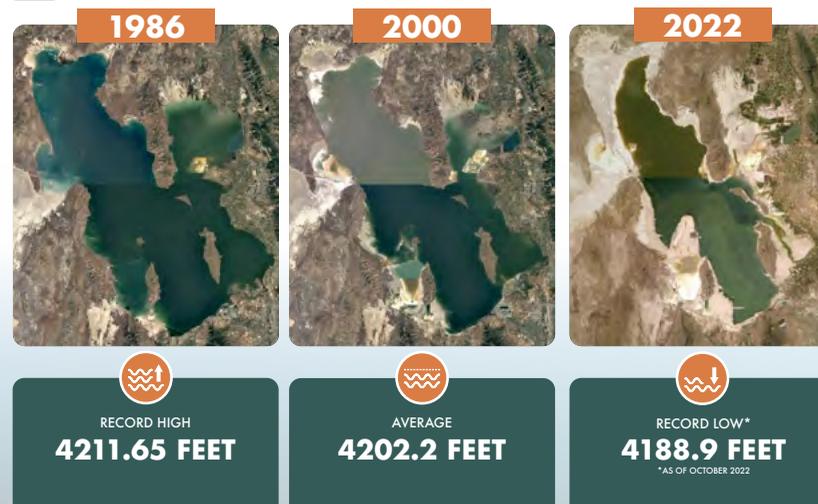
- Implementing the Great Salt Lake Watershed Enhancement Program, including a \$40 million water trust
- Updating the 2013 Great Salt Lake Comprehensive Management Plan and Mineral Leasing Plan
- Developing an education and outreach campaign to connect the public and decision makers to the lake
- Increasing internal and external coordination efforts with the utilization of a full-time Great Salt Lake Coordinator in addition to several staff members dedicated to Great Salt Lake
- Implemented management recommendations from the Salinity Advisory Committee to raise the Union Pacific Railroad Causeway berm to keep the saltier north arm water from flowing into the south arm
- Hiring a dedicated GSL law enforcement officer to reduce illegal activities with an emphasis on curtailing motorized travel on the exposed lakebed
- Ability to acquire and hold water rights for all sovereign lands, including GSL
- Encouraging innovation within the extractive industry to reduce water depletions

The **Division of Water Resources** models the lake and river systems that feed it, administers water conservation and education programs, and manage the state’s weather modification program.

- Conducting a Great Salt Lake Integrated Water Assessment
- Applying for a Bureau of Reclamation GSL basin study
- Awarding \$250 million to meter secondary water
- Awarding \$5 million for statewide grass removal program
- Partnering with water districts on conservation rebates for smart irrigation controllers, low-flow toilets and flip your strip rebates.
- Designed and oversaw the construction of a berm modification on the Union Pacific Railroad Causeway to prevent heavy brine from the north arm of the lake from flowing into the south arm



### GREAT SALT LAKE ELEVATION



The **Division of Water Rights** (i.e., Office of the State Engineer) has the responsibility for the general administrative supervision of the waters of the state and the corresponding appropriation, measurement, and distribution of those waters. Accordingly, the State Engineer has been engaged in the following lines of effort relating to the Great Salt Lake:

- Currently installing over 30 additional measurement devices with telemetry on tributaries within the Great Salt Lake basin to better facilitate and manage water deliveries
- Enhancing water distribution accounting models to provide accurate distribution accounting and enhanced transparency for all water users
- Providing additional levels of focussed effort on critical issues within the Great Salt Lake by creating new Deputy Director, Distribution Engineer, Enforcement Engineer positions with responsibility to tackle issues relating specifically to the Great Salt Lake and its tributaries
- Actively engaging the community and key stakeholders in the development of regional plans and policies that promote order and certainty in the beneficial use of water within the Great Salt Lake basin
- Collaborating with the Legislature to update key provisions of Utah water law to facilitate the use of water for the preservation or enhancement of natural aquatic environments

The **Utah Division of State Parks** continues to provide public access to premier outdoor recreation areas while also educating visitors on the lake, its history and ecosystem.

- Dredging Great Salt Lake State Park Marina in order to allow improved lake access to search and rescue boats and facilitate research
- Managing both Antelope Island State Park and Great Salt Lake State Park Marina. These parks receive a combined visitation of over 1 million each year. Visitors participate in a wide variety of different programs that help spread awareness and overall appreciation of the lake and the many wildlife, recreation amenities and ecosystems that rely on it.

Great Salt Lake is our #1 priority

– DNR Executive Director, Joel Ferry