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Testimony of Candice Hasenyager
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Before the House Committee on Natural Resources,
Subcommittee on Water, Wildlife and Fisheries
On
H.R. 3857, the Snow Water Supply Forecasting Reauthorization Act of 2025
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Good morning, Chair Hageman, Ranking Member Hoyle, and Members of the Subcommittee. I am Candice Hasenyager, and I am the Director of the Utah Division of Water Resources. I appreciate the opportunity to testify before you today on the benefits of H.R. 3857, the Snow Water Supply Forecasting Reauthorization Act of 2025, and commend Congressman Hurd and Congressman Neguse for introducing this critical piece of legislation.

The Utah Division of Water Resources plays a central role in planning, developing, and managing the state's water resources to support long-term water reliability for Utah's growing population, agricultural needs, and natural ecosystems. As the state's water planning agency, it conducts comprehensive studies, administers conservation programs, and supports infrastructure development to optimize water use and storage. The Division also coordinates with federal, tribal, and local partners on drought resilience, water forecasting, and watershed protection. Its efforts ensure that Utah can proactively address future water challenges in the face of rapid growth and increasingly variable and extreme weather conditions.

Utah's water supply, like much of the western United States, is based on a snow-driven hydrology. Approximately 95% of our water supply comes from our snowpack. As the snow falls in the mountains, it builds throughout the winter. We know that spring brings warm weather, and the snow will start to melt. Our rivers will swell and fill the reservoirs designed to capture the spring runoff for later use. While this general process occurs every year, it is highly and increasingly variable in terms of snow accumulation and the volume and timing of runoff. Accurate and timely snowpack data are essential for forecasting water supplies that support agriculture, communities, and ecosystems.

Utah continues to grapple with significant water challenges, primarily driven by ongoing drought conditions and greater extremes in our water supply. In 2022, Utah experienced some of the worst water supply conditions in our lifetimes. Great Salt Lake reached record lows at that time. Great Salt Lake is Salt Lake City's namesake, contributes significantly to Utah's economy, supports the highest concentration of Utah's valuable wetlands and provides a stopover for 10 million birds annually to rest and refuel during migration each year. The lake also contributes to lake effect snow by approximately 5-10%. The declining levels of Great Salt Lake are a stark indicator of overall water stress, influenced by both reduced inflows due to diversions for municipal and agricultural use and increased demand and evaporation from rising temperatures.

In addition, Utah is a Colorado River Basin state and relies on this essential water source, which serves seven states, 40 million people, two countries and 29 tribes. For over 20 years, the river has been strained by prolonged drought, resulting in decreased reservoir volumes and increased water shortages. In recent years (2023 and 2022), Lakes Powell and Mead, the two reservoirs representing the bulk of storage on the Colorado River, reached record lows. Decreased reservoir volumes reduce power generation and cause significant uncertainty in water management. These circumstances have resulted in negative economic and environmental impacts. These challenges are not only felt at the larger interstate scale but also in Utah's local communities, where water availability is a persistent challenge and shortages are routine. Utah is working diligently to find solutions that enhance the management of the Colorado River and ensure a sustainable future for the region.

While recent good snow years have provided some relief, the state is still experiencing drought conditions across most of the state, particularly in southern Utah, where snowpack levels and soil moisture are critically low. In Utah, we are either in drought or preparing for the next one.

In our state, comprehensive snow monitoring and water supply management rely heavily on the combined efforts of the Natural Resources Conservation Service (NRCS) Snow Survey Program through their snowpack telemetry sites (SNOTEL), and the United States Geological Survey (USGS) stream gauge network that continuously tracks streamflow.

Snow Water Supply Forecasting Reauthorization Act of 2025

H.R. 3857 would reauthorize the Bureau of Reclamation's Snow Water Supply Forecasting Program (SNOFO). The SNOFO program provides critical funding to deploy and integrate novel snow-monitoring technologies, helping to make our water management decision-making more robust in the face of weather extremes, wildfires, and other challenges. For example, the program supports the use of NASA-developed Airborne Snow Observatories (ASO) technology to measure the snowpack everywhere, providing a full-watershed snowpack inventory at high resolution, which yields highly accurate water volume measurements of this crucial snowpack reservoir. This new measurement tool has been deployed via two pilot projects in Utah, aiding state, local, and regional partners in their efforts to improve runoff forecasting, add essential early warnings of drought and flood conditions, and optimize water resource management and use.

In one of the Utah projects, the Colorado River Authority of Utah partnered with Utah Division of Water Resources, the Central Utah Water Conservancy District, and Airborne Snow Observatories, Inc. to deploy ASO technology over key watersheds—the Uinta and Wasatch ranges—and produce accurate detailed maps of key snow characteristics (depth, albedo and water-equivalent measurements). Building upon the established NRCS SNOTEL snow measurements, the ASO technology emerges as a powerful and important tool in the snow measurement toolbox. These airborne surveys complement traditional SNOTEL stations,

providing full basin coverage that includes low-elevation and smaller tributary areas often overlooked in ground-based monitoring. This comprehensive picture of the snowpack enables local water managers to fine-tune their operations, making more efficient use of existing infrastructure. While this effort is focused on Utah specific tributaries, these improved forecasts and operations have the potential to benefit all stakeholders on the Colorado River.

The second Utah project, new this year, in the Weber River Basin, utilizes ASO technology in a similar approach to reduce forecast uncertainty and optimize local water management. The goal is to determine if we can improve the runoff forecast to increase flows into the Great Salt Lake. The innovative solutions, such as those enabled by the SNOFO program, are crucial to achieving the parallel goals of ensuring a stable water supply for agricultural producers and cities, while maintaining the Great Salt Lake's essential stability and its vital role in Utah's economy, environment, and history. In Utah, we always say, "You can't manage what you don't measure."

The Utah projects are emblematic of and indeed have benefited from the pathfinding of other ASO and SNOFO projects around the western United States. Programs in California and Colorado have both utilized this program and have seen dramatic benefits from the improved measurement and forecasting tool, which reduces uncertainty and enhances runoff for all parties.

These innovative data and forecasting resources enabled by collaborative participation leverage funding at all levels. Federal support via the SNOFO program has been an integral and enabling part of this effort. Reauthorization of this program will help meet an urgent need while drawing from the lessons learned during the program's initial term. The minor changes made to the SNOFO program by H.R. 3857 intends to ensure that the program can meet the needs of water managers who frequently deal with hydrologic extremes – whether that is water surplus or scarcity – through increased deployment of these technologies.

While I appreciate the challenging fiscal climate, we find ourselves in, the SNOFO program is a vital tool in western water management, enabling more accurate forecasting, planning, and decision-making. Interest in the program has greatly exceeded available funds in recent years, demonstrating both its operational value and the growing demand for Airborne Snow Observatory technology. Reauthorization of the program at a level that reflects demonstrated stakeholder need is critical to continuing its benefits for water supply reliability, flood control, and ecosystem management.