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Drought Update

SALT LAKE CITY (Nov. 17, 2021) – We are roughly five weeks into the new water year, which began Oct. 1. This year is off to a good start with above-average soil moisture and precipitation. The following measurements and information provide context to Utah’s current drought conditions, water storage and stream flows.

“While this is exciting, we have a long way to go,” said Brian Steed, executive director of the Department of Natural Resources. “Snowpack typically peaks around the first week of April, which means we have five months to collect as much snowpack as possible. While we wait on our snowpack, we will continue to plan for all scenarios if the snowpack doesn’t replenish our water storage.”

At-a-glance highlights:

- Thirty-seven of Utah’s largest 45 reservoirs are below 55% of available capacity. Overall statewide storage is 49% of capacity. This time last year, reservoirs were about 62% of capacity.
- Soil moisture is 16% above median for this time of year. Wet soils are critical in the fall as the state begins to accumulate its winter snowpack. Frequent storms are needed to keep moisture in the soil as we head into winter.
- Of the 97 measured streams, 48 are flowing below normal.
- Harmful algal bloom (HAB) monitoring by the Department of Environmental Quality has ended for the season, but HABs may still be present in Utah’s water bodies during the fall, winter and spring. Recreators are advised to avoid areas of scum, avoid ingesting water and rinse off after coming into contact with water.

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Precipitation and soil moisture

- Precipitation accumulation (as measured at NRCS SNOTEL sites) total so far this water year is 4.8 inches. This is a good start to the water year. However, we have a long way to go to reach the 29.2 inches needed for this year to reach average. Since we started the year essentially in debt water-wise, a better-than-average water year is needed.

- Soil moisture remains high at 65.6%, 16% above median for this time of year. Median is what is typical for any particular time of year. A fairly consistent series of storms has helped to keep the soil wet. Wet soils are critical in the fall as the state begins to accumulate its winter snowpack.
Consistent storms have resulted in a significant increase in soil moisture in the state soil moisture sensors (found at mountain SnoTel sites). Healthy soil moisture levels allow snowpack runoff to enter the streams and reservoirs rather than get absorbed by dry soils. Monsoonal patterns never occurred in 2019 or 2020, leading to record-dry soils in October 2020 and throughout the winter, creating a new record low (red line October thru April) reflected in the chart above.

**Temperature and Evaporation**

- Temperature has been 3.2 degrees above average for the last seven days. Most of the state has had noticeably above-average temperatures for the last month, which can prevent ski resorts from making snow.

- Evaporative demand has been mostly average for this time of year. The northwest corner of the state has had slightly less evaporative demand than average and the southeast corner has had slightly higher evaporative demand than average.
Streamflows

- Forty-eight of Utah’s 97 streams reporting data are flowing below normal. This is an indicator of the long-term nature of drought recovery. Streamflows are still low in much of the state even though we have had beneficial precipitation. It typically takes as long to recover from drought as it took to get into drought.

- Three streams are flowing at their lowest levels ever recorded.

- Cumulative flow of 28 headwater streams is 0.07 million acre-feet, the median for this time of year.

- Daily flow from 28 headwater streams is flowing at approximately the median for this time of year.
Flows for 28 headwater streams were added together to show how Utah’s water supply is being affected. This chart shows the Water Year (WY) from October to September as compared to the median and minimum values (1990-2021). Flows are currently equal to median however above average flow is needed to make up for stored water used in summer of 2021.

Reservoir and Lake Levels

- The capacity of major reservoirs statewide is 49% of storage capacity.Withdrawals from reservoirs generally decrease over the fall and winter months. Snowpack is needed to refill the reservoirs in the spring prior to the higher use summer months.

- Thirty-seven of the 45 Utah’s reservoirs that collect fill information on a regular basis are below 55% of available capacity.

- After dropping to 4190.3 in mid-October, the Great Salt Lake’s elevation is on the rise at 4190.6, about 9.6 inches below the historic record low of 4191.4. Levels are expected to continue to rise now that irrigation season has concluded and fall/winter storms have moved in. (Data is provisional, and a new low will officially be declared at a later date.)