Statement of Tanya Trujillo
Assistant Secretary for Water and Science
U.S. Department of the Interior
before the
House Natural Resources Subcommittee on
Water, Oceans, and Wildlife
On
"Colorado River Drought Conditions and Response Measures"
October 15, 2021

Chairman Huffman, Ranking Member Bentz, thank you for the opportunity to testify about the drought situation in the western United States. I am Tanya Trujillo, Assistant Secretary for Water and Science at the Department of the Interior (Department). My statement today provides a status update of our responses to the severe drought conditions in the Colorado River Basin.

- First, I will review current reservoir and water storage conditions in key settings across the West.
- I will then describe the coordination taking place within the Federal Government and with our non-Federal partners to respond to the challenging conditions we are facing.

While I will present remarks today on the drought conditions facing the West, I want to reiterate something I and my colleagues across the Administration are focused on every day: climate change is real. We are seeing the impacts of climate change manifested in drought, wildfires, hurricanes, extreme heat, massive storm events and localized flooding. Climate change is impacting Americans across our nation.

2021 – Overview of Current Reservoir Conditions

According to the U.S. Drought Monitor, even now in October, a large majority of the western United States is experiencing above average temperatures and severe or extreme drought conditions. In California and in the Colorado River Basin, certain reservoirs have reached 30-year storage lows. Lake Powell and Lake Mead – the two largest reservoirs in the United States – are currently at historically low levels. Although the Rio Grande and Pecos basins and parts of Arizona received some monsoonal rainfall this summer, the temporary relief has not reversed the more than two-decade drought impacting the region. Collectively, a very challenging water supply situation exists in much of the West.

In the Colorado River Basin, the period from 2000 through 2021 has been the driest 22-year period recorded in more than 100 years of record-keeping. The reservoir system was 95 percent full in 2000, but as of September 28th, Colorado River system reservoirs sit at just 39 percent, the lowest levels since they began to fill. Over the 22-year drought period in the Colorado Basin, combined hydropower generation has declined 13 percent to an annual average of 10.5 million MWh. Declining storage levels due to ongoing drought have resulted in reduced hydropower generation efficiency and concerns about approaching minimum power pool at Glen Canyon Dam, below which no power can be produced.

On August 16th, the Bureau of Reclamation (Reclamation) issued the August 24 month study: given ongoing historic drought and low runoff conditions in the Colorado River Basin, downstream releases from Glen Canyon Dam and Hoover Dam will be reduced in 2022 due to declining reservoir levels. In the Lower Basin the reductions represent the first "shortage" declaration—demonstrating the severity of the drought and low reservoir conditions. At the same time, under an operational agreement with Mexico, Mexico will incur reduced delivery on the Colorado River in 2022. Again, these recent declarations demonstrate the severity of the drought and the need to continue to work actively with states, Tribes, and stakeholders, and to continue to work in a cooperative fashion with our neighbors and partners in Mexico.

Recent projections by Reclamation and the National Oceanic and Atmospheric Administration (NOAA) have provided further reason to continue our drought relief efforts. In late September, Reclamation released updated 5-year projections for the Colorado River, showing a continued elevated risk of Lake Powell and Lake Mead declining to critically-low elevations, including the potential of Lake Powell falling below minimum power pool as early as July 2022. Adding additional concerns, NOAA's Climate Prediction Center recently forecasted an increased likelihood of a La Nina Winter this year and the continuation of high temperatures and below-average precipitation reaching into December 2022.

Many of Reclamation's projects will begin the 2022 water year with below-average carryover water storage. We have had to make difficult choices this year, and together we will have to make more difficult decisions if it continues to remain dry next year.

Interagency Coordination

The Department participates in several points of coordination being established among federal agencies working to optimize federal drought response – including the National Climate Task Force, the Interagency Drought Relief Working Group, the National Drought Resilience Partnership, the Water Subcabinet, and works directly with federal entities including the Western Area Power Administration. Each of these groups provide important avenues for coordination, and collaboration, and encompass both immediate drought relief as well as long-term drought resilience efforts geared at responding to ongoing climate threats.

Through these collaborative agencies, we can marshal existing resources and work in partnership with state, local, and Tribal governments to address the needs of communities suffering from drought-related impacts; identify and disburse immediate financial and technical assistance, and develop longer-term measures to respond to climate change, including building more resilient communities and protecting the natural environment. On September 15, the Climate Task Force Director sent a letter outlining federal drought relief efforts in response to an August 15 inquiry from 10 western governors.

Drought – Selected Responsive Actions

Across the West, Reclamation has continued working on using the best available science to improve water supply forecasting and operations planning and modeling to help inform decision-

making and meet competing demands.

Investments in Drought Response Actions

During 2021, the Department has completed a steady stream of drought-related or water conservation-related funding awards across the West as part of existing programs to help make local communities more resilient or diversify local water supplies, selecting 227 projects to be funded with $73.2 million in WaterSMART funding across the western states. We want to take this opportunity to highlight a few important examples:

- February 2021: Drought Resiliency Projects selected, $15.4 million for 18 projects in 7 western states.
- March 2021: Water and Energy Efficiency Grants selected, $42.4 million for 55 projects in 13 western states.
- March 2021: Cooperative Watershed Management Program – Phase II Grants selected, $2.1 million for 11 projects in 7 western states.
- April 2021: Drought Response Program – Drought Contingency Planning Grants selected, $809,000 for 5 contingency plans in 3 western states.
- June 2021: Basin Study Program - Water Management Options Pilots selected, $219,496 for 2 projects in central Oregon.
- June 2021: Cooperative Watershed Management Program – Phase I Grants selected, $2.6 million for 27 projects in 12 western states.
- July 2021: Water Marketing Strategy Grants selected, $1.14 million for 7 projects in 4 western states.
- August 2021: Small Scale Water Efficiency Grants selected, $5.5 million to 82 water improvement projects in 16 western states.
- September 2021: Applied Science Grants selected, $3.1 million for 20 projects in 11 western states.
- September 2021: FY 2022 Science and Technology Program investments selected, $4.92 in 46 new research projects and $3.4 million to 134 research projects.

In addition to the above-mentioned awards, on August 5, Reclamation announced three WaterSMART grant opportunities — Drought Resiliency Projects, which closed last week on October 5, Water and Energy Efficiency Grants and the new Environmental Water Resources Projects, as part of an overall plan to implement amendments to the SECURE Water Act. These programs will help communities throughout the West by increasing water supply sustainability and drought resiliency. Applications for the Water and Energy Efficiency Grants and the new Environmental Water Resources Projects are due November and December respectively.

Over the course of this past summer, the Department and the U.S. Department of Agriculture (USDA) made several investments to help mitigate effects of the west-wide drought on the ground. Examples include:

- On July 15, Reclamation executed a cooperative agreement for $15 million in immediate aid to the Klamath Project through the Klamath Project Drought Response Agency (KPDRA), with an additional $3 million in technical assistance to Tribes for ecosystem activities, and funding for groundwater monitoring in the basin. These efforts

supplement additional funding provided by Reclamation and other Department bureaus in 2021. On October 4, an additional $5 million was provided for drought relief to Klamath Project contractors as part of the Department's reprogramming, for a total of $20 million for KPDRA to distribute.

- On July 23, the Department provided to Congress notice of its intent to reprogram $100 million into drought-related programs and projects and Reclamation and is in the process of allocating that funding to various actions around the West. The purpose of the reprogramming is for both rapid emergency response to address current conditions and drought resilience actions that will result in drought preparedness beyond 2021. This request includes funding for Rapid Response Mitigation ($32,000,000), for Drought Resiliency (over $42,000,000), and more than $25,000,000 for other activities including Wildland Fire Mitigation and Prevention, Native American Affairs, and water recycling projects.

- On August 2, USDA announced its investment of $15 million for a new drought pilot to assist agricultural producers impacted by worsening drought conditions to provide relief to impacted California and Oregon producers in the Klamath River Basin. The announcement comes as the Secretary of Agriculture will travel to the State for events focused on drought and wildfire resiliency on Tuesday.

- On September 29, USDA announced the availability of $500 million to support drought recovery and encourage the adoption of water-smart management practices. From rising temperatures and heat waves, to early snow melt and low rainfall, record-breaking drought has affected producers across the country. This assistance will target these challenges and enable USDA's Farm Production and Conservation agencies to deliver much needed relief and design drought resilience efforts responsive to the magnitude of this crisis.

Responding to Drought in California

Throughout this difficult water year, Reclamation has worked closely with the California Department of Water Resources to accommodate the voluntary transfer of non-project water. These transfers provide important flexibility, particularly in dry years, to allow irrigation districts to adjust to changing conditions. In 2021, Reclamation has responded to a record-high number of requests for the transfer of nearly 350,000 acre-feet of transfers through state and Federal facilities.

Demonstrating its ability to be flexible, Reclamation adjusted spring-time operations at Shasta Dam to benefit endangered winter-run Chinook Salmon. The adjustment involved the bypass of Shasta Dam's powerplant and temperature control device in favor of releasing water from higher, warmer layers of Shasta reservoir through river outlets. The power bypass began on April 18, 2021, and concluded on May 24, preserving approximately 300,000 acre-feet of colder water for later in the summer with no increase in overall release volume.

In California, Reclamation has:

- Deployed facility features to preserve cold water for fish and enhance hatchery capabilities.
- Deployed monitoring programs to collect data, including the Enhanced Delta Smelt Monitoring Program and the Enhanced Acoustic Tagging of Salmon.
- Implemented an emergency pulse flow on Clear Creek to benefit spring-run Chinook salmon.
- Released stored water from New Melones Reservoir for Delta outflow requirements.
- Facilitated groundwater pumping programs in the Upper Sacramento River Valley to meet irrigation demands and preserve storage in the Shasta reservoir.

Building on its long history of working closely with federal, state, and local partners in California, the U.S. Geological Survey (USGS) conducts monitoring, modeling, and assessments that its partners need to address drought challenges. USGS operates a stream gage network of over 500 gages, a "superstation" monitoring network in the Bay-Delta that provides real-time data for federal and State water projects, and a statewide groundwater well network. USGS also conducts extensive monitoring of land subsidence in the San Joaquin Valley. USGS has developed integrated surface-water/groundwater models to evaluate drought impacts on water availability, use, and quality throughout the State.

This year, USGS is working with the State Climatologist to apply novel modeling tools and a USGS-developed drought metric to quantify impacts of the "disappearing snowpack." USGS is also conducting assessments of ecological drought impacts and of wildfire effects on water resources and aquatic ecosystems in California. These severe impacts of drought clearly affect our wildlands and communities, including vegetation mortality and increased risk of large, high severity wildfire.

Responding to Drought in the Colorado River Basin

Historic drought and low-runoff conditions have impacted the Colorado River Basin since 2000. Most of the flow of the Colorado River originates in the upper portions of the Colorado River Basin in the Rocky Mountains. The Upper Basin experienced an exceptionally dry spring in 2021, with April to July runoff into Lake Powell totaling just 26 percent of average despite near-average snowfall last winter. The water year 2021 unregulated inflow into Lake Powell—the amount that would have flowed to Lake Mead without the benefit of storage behind Glen Canyon Dam—was 33 percent of average. Total Colorado River system storage as of just last week (Sept. 28, 2021) is only 39 percent of capacity, down from 49 percent at this time last year.

Hydropower production efficiency continues to be impacted at both the Glen Canyon Dam and Hoover Dam powerplants as poor hydrology persists throughout the Colorado River Basin. If the reservoirs at Glen Canyon or Hoover Dams (Lake Powell and Lake Mead, respectively) on the Colorado River, drop below the level where power can be generated, it will result in the loss of millions of dollars in revenue that currently are used to fund multiple federal programs, such as endangered species and salinity control programs. One recent response action was taken under the Drought Response Operations Agreement (DROA), an important element of the 2019

Colorado River Drought Contingency Plan Authorization Act. After consultation with - and acknowledgement from - all seven Basin States and other partners, under the emergency provisions of DROA, Reclamation started supplemental water deliveries in July 2021 to Lake Powell from the upper reservoirs of Flaming Gorge, Blue Mesa, and Navajo. Those supplemental deliveries will provide up to an additional 181 thousand acre-feet of water to Lake Powell by the end of the 2021 in order to protect hydropower production and reduce the risk and duration of Lake Powell falling below the target elevation of 3,525 feet.

Recent projections of risk that Lake Powell could decline below this target elevation in 2022 are the subject of ongoing analyses by Reclamation and the Upper Basin States of Colorado, New Mexico, Utah, and Wyoming, and Reclamation is actively working to ensure that Tribes and other partners are informed and engaged as further drought response releases are considered for implementation. Important decisions on the potential need for additional releases will be required in the months ahead. As Reclamation and its partners continue to assess drought response actions, we will continue to use the best available scientific information and continue to coordinate closely with our federal, state, tribal and non-governmental partners, and stakeholders in the Basin.

In 2020, consistent with the Colorado River Drought Contingency Plan Authorization Act, Reclamation conducted outreach meetings with its partners and stakeholders, including the Lower Basin states, water agencies, Tribes, non-governmental organizations, and the U.S. Section of the International Boundary and Water Commission (USIBWC), to provide an update on Reclamation's efforts to create or conserve 100,000 acre-feet or more of system water annually under the Drought Contingency Plan (DCP). Reclamation's strategy is focused on projects that will generate water savings annually over a longer period. We recognize, however, that these longer-term projects will take some time to develop and become operational. Shorter-term projects and agreements that generate system water over the term of the DCP are being explored to help bridge this gap.

In addition, Reclamation has entered into agreements for with the Fort McDowell Yavapai Nation to create system conservation water in 2020, 2021, and 2022, with the Mohave Valley Irrigation and Drainage District to create system conservation water in 2020 and 2021, with the option for a third year in 2022, with the Gila River Indian Community to create system conservation water in 2021, and a funding agreement with Maricopa Water District, the Central Arizona Water Conservation District, and the Southern Nevada Water Authority for the creation of system conservation water at the Palo Verde Irrigation District from August 2021 through July 2024. The 242 Wellfield Expansion Project and agreements listed above will generate approximately 60,000 to 80,000 acre-feet of system water each year in 2021, 2022, and 2023 towards Reclamation's efforts. Potential future projects or agreements to create or conserve additional system water are being developed, subject to applicable law including availability of appropriations, in coordination with our partners and stakeholders.

The USGS is modernizing its observational capabilities by implementing the Next Generation Water Observing System, or NGWOS. When fully implemented, the NGWOS will provide high-resolution data on streamflow, evapotranspiration, snowpack, soil moisture, water quality, groundwater/surface-water connections, stream velocity distribution, sediment transport, and

water use. These data are intended to be coupled with advanced modeling to provide flood and drought forecasts with greater certainty and address a variety of other water-resource questions in each region. Thus far, the USGS has selected three Integrated Water Science basins and NGWOS implementation is ongoing in all three. One of those basins is the Upper Colorado River Basin, where drought is a primary focus.

Conclusion

The only way to address these challenges and climate change is to utilize the best available science to develop innovative solutions and to work cooperatively across the landscapes and communities that rely on our western rivers. This Administration is working every day to collaborate with states, Tribes, farmers, and communities impacted by drought and climate change to build and enhance regional resilience by being proactive and fully using the tools we have available. We appreciate Congress' attention to the severity of drought and welcome your input on new tools and approaches to help the communities we all serve. I look forward to our continued work together and to answering your questions.