Statement of Elizabeth Klein, Senior Counselor,
Department of the Interior
On
"*The Status of Drought Conditions Throughout the Western United States"*
before the
Natural Resources Committee
Subcommittee on Water, Oceans, and Wildlife
U.S. House of Representatives
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Chairman Huffman, Ranking Member Bentz, and members of the Subcommittee, thank you for the opportunity to testify about the drought situation in the western United States, actions the Department of the Interior and its bureaus are taking both in the short term and long term, and finally the lessons learned from the drought in California experienced between 2012-2016. I am Elizabeth Klein, Senior Counselor to the Secretary at the Department of the Interior (Department). My statement today provides a summary of the impacts of drought across the West, particularly in the Central Valley of California, the Colorado River Basin, and the Klamath Basin. I will also highlight some of the actions the Department is taking to aid those affected.

Although drought is not new, many of you are experiencing the impacts of one of our driest water years on record. We have never seen drought at the scale and intensity that we see right now, and it is possible that this may be the baseline for the future. Drought analyses, combined with projections of future hydroclimate conditions suggest that, overall, drought severity and duration will increase across the West in the coming century. A growing risk to effective water management in the Western United States is climate change. We are working with our partners to ensure that we can get through this year, but we also need to be looking toward the future and determine how we support farmers, Tribal communities, and others to adapt to these changing conditions.

Not six years ago, the Department testified on this same issue before the Senate Committee on Energy and Natural Resources. Since that time, the Department and its bureaus have funded hundreds of locally led drought resiliency and water conservation projects across every western state, which I'll summarize today. We have also leveraged the federal sector's expertise to develop basin-level strategies in place today to optimize scarce water supplies. I also want to clarify that no amount of investment can fully compensate for profound shortfalls in the amount of precipitation needed to balance out demands in years like this. In these situations, active partnerships, careful management, and creative stewardship including the use of market mechanisms such as temporary leasing, water banks, and facilitating the use of Reclamation conveyance facilities, are the only way forward for the security of our farms, cities, and the environment.

California is currently experiencing its third driest year on record; the second two driest years on record, and the driest year since 1977. In the Central Valley of California, precipitation has been far below normal, at the bottom 10th percentile of historic levels, which equates to snow and rain precipitation of less than half of average for this date. Many contractors to the federal Central Valley Project will get little or no water from the project this year, and on May 10, California's Governor expanded an April drought declaration to a total of 41 of the state's 58 counties.

In the Colorado River Basin, the period from 2000 through 2021 has been the driest 22-year period in the Colorado River Basin in more than 100 years of record-keeping and one of the driest in the past 1,200 years based on paleohydrology data. Forecasted inflow to the two major reservoirs on the river, Lakes Powell and Mead, is about 34% of average in water year 2021, and each reservoir's current storage is already down to nearly one-third of capacity compounded from the previous dry conditions of 54% of average in water year 2020. 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. Stakeholders on the Lower Colorado River anticipate that shortage conditions will be implemented as early as calendar year 2022 and are working actively with the Bureau of Reclamation.

The Pecos and Rio Grande Basins in New Mexico are entering their second consecutive year of extreme drought conditions in a drought cycle that has lasted more than two decades. Elephant Butte Reservoir, which is the largest reservoir in New Mexico, is expected to hit its lowest storage level since 1954 this year at 1% capacity. Irrigation districts throughout the state are experiencing shortened irrigation seasons. Irrigators on the Pecos River are preparing for 10% of a full allotment this year, which is the second worst allocation in over 100 years.

And the Klamath Basin, as the Chairman and Ranking Member are aware, is experiencing one of the driest hydrologic years on record. Year-to-date precipitation is about 40% of average, and inflows to Upper Klamath Lake – the Klamath Project's main water storage – are about 35% of average, the lowest on record. Oregon's governor declared a drought emergency in the basin nearly two months ago. Each of these situations would be extremely difficult on its own, but they are coalescing together with severe drought conditions in several other basins like the Rio Grande and Pecos this year, and collectively, a very challenging water supply situation is unfolding in much of the west.

Recognizing how dire this year is across the western United States, on April 8, 2021, the Department released a joint statement with the U.S. Department of Agriculture recognizing the urgency of the drought and its impacts on farmers, Tribes, communities, and committed to working together. Following that joint statement, the White House, on April 21, 2021, announced the formation of a Drought Relief Working Group (Working Group) to address the urgency of the crisis in the west. The Working Group will work to identify immediate financial and technical assistance for impacted irrigators and Tribes. Development of longer-term measures to respond to climate change and build more resilient communities and protect the natural environment will also be a priority, including through President Biden's proposed American Jobs Plan and through a recommitment to strengthening the National Drought Resilience Partnership.

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. This month, Secretary Haaland and Secretary Vilsack released of a Joint Memo to Wildfire Leadership acknowledging the significant challenges our agencies expect to face this year, especially in light of historic drought conditions across the West.

In addition, 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 a given 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.

The U.S. Fish and Wildlife Service (Service) is coordinating with federal, Tribal, state and community partners to protect Service trust resources while ensuring water supplies remain available to communities, farms, cities, and tribes. Contingency planning is underway in many western regions and every effort is being made to find creative, cooperative solutions. Additionally, our regions are addressing drought impacts by producing water inventories and assessments for national wildlife refuges and facilitating research on drought effects on species with partners agencies. Even in the face of extended drought, we have seen success in species management and recovery through partnership-driven initiatives, including the Lower Clear Creek Floodway Rehabilitation Project near Redding, California and through the Upper Colorado River Endangered Fish Recovery Program. The Service continues to work closely with partners and stakeholders across the West to ensure that any decisions balance the needs of both people and species. This year's water conditions underscore the urgent need to find consensus-based solutions to Western water challenges while supporting our national wildlife refuges and protecting imperiled fish and wildlife.

The Department's WaterSMART Program helps local water suppliers to increase their systems' resilience to the impacts of drought and climate change and provides multiple avenues for implementing adaptation strategies at the basin level. In February, Reclamation announced the selection of 18 WaterSMART drought resiliency grants, investing over $15 million in federal funds for infrastructure improvements and water management tools to increase water supply reliability and build drought resilience in communities throughout the West.

Last month, Reclamation announced a total of more than $800,000 in grants to five entities in California, Nebraska, and Utah to develop or update drought contingency plans. In March, Reclamation announced $42.4 million in grants to 55 projects throughout 13 states through its WaterSMART Water and Energy Efficiency Grant (WEEG) program. The selected projects are in Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming, and will improve water reliability for these communities by using water more efficiently. The 2021 projects are anticipated to conserve more than 98,000 acre-feet of water per year. Collectively, WEEG projects funded by Reclamation since 2010 are expected to save over 900,000 acre-

feet of water each year, once completed. In 2020, water reuse projects funded through Reclamation's Title XVI Program (i.e., funding since 1992) delivered over 420,000 acre-feet of recycled water, helping to provide flexibility to water managers and diversifying the water supply.

To help mitigate the impacts of this year's historic low water supply in the Klamath Basin, Reclamation committed $15 million in immediate aid to project water users through the Klamath Project Drought Response Agency. An additional $3 million in technical assistance will be available to tribes for ecosystem activities in the Klamath Basin. These efforts supplement additional funding provided by Reclamation and other Department bureaus. The distribution of drought relief funds is expected to begin next month. The Department recognizes that new water storage is also an important part of the water supply portfolio. We are continuing to implement Section 4007 of the Water Infrastructure Improvements for the Nation (WIIN) Act using funding provided to date and will transmit recommendations for FY 2022 allocation of WIIN storage monies in the near future.

As productive as these investments have been, we know that there is always more that can be done when facing conditions as persistent as drought. In the longer term, the Department is fully engaged with our fellow resource management agencies at the U.S. Department of Agriculture, the Army Corps of Engineers, the Environmental Protection Agency, the Department of Energy and the Department of Commerce through forums such as the Water Subcabinet to improve water resource management nationwide. For example, the Department is partnering with agencies like the National Oceanic and Atmospheric Administration and the Army Corps of Engineers to develop a new national, interagency capacity for water prediction. Through this partnership, Interior bureaus like the USGS will be focused on developing the capacity to forecast water availability in support of the National Water Census – an ambitious objective authorized by Congress in the SECURE Water Act. As part of the National Water Census, the USGS is working on a prototype early warning capability that forecasts drought earlier and with greater precision than currently available. The prototype will be focused in the Upper Colorado River Basin and will use artificial intelligence and machine learning to advance our ability to predict drought onset, duration, and severity and its potential impacts on water availability. Additionally, while the President's budget for fiscal year 2022 has not yet been released, we assure you that investments are being made to address the unprecedented drought in much of the western U.S. and combat climate change through increases in the WaterSMART program, funding to secure water supply to our refuges, and proactive efforts through providing sound climate science, research and development, and clean energy.

Early this year, the Department published the SECURE Water Act report, which discusses projected risks to water supplies in the West using the best available science and highlights collaborative mitigation efforts. The report provides a West-wide assessment of expected changes to water supplies, uses, and demands; highlights progress; and describes actions taken to increase water supply reliability since the 2016 SECURE Water Act Report. It was accompanied by release of several final technical reports supporting the Report. Reclamation's 2021 West-Wide Climate and Hydrology Assessment and seven individual basin reports provide detailed information on climate change impacts and adaptation strategies to increase water supply reliability in the West. The West-Wide Assessment includes a drought-specific analysis using paleohydrology, combined with projections of future climate conditions, that shows that in the Western United States, the duration and severity of drought will increase in the future, and the variability of these drought characteristics is also likely to increase. Reclamation also

held a series of eight webinars on the report during April and May with special focus on the Missouri, Columbia, Colorado, Truckee, Klamath, Sacramento, and San Joaquin river basins. We took these steps because we believe that knowing more about the occurrence of drought events will help farmers, ranchers, municipalities, businesses, and other decision-makers prepare for and adapt to changing conditions.

As I said at the beginning of this statement, no amount of funding can offset the severe shortfalls in precipitation being experienced this year. We will experience unavoidable reductions in farm water supplies and hydropower generation, ecosystem degradation, and urban areas will need to conserve water. However, this is not our first drought; we have new tools and new investments that will enable us to manage through it. The Department and state and local partners have planned for this by being proactive and fully using the tools we have. 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.