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and
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**Testimony before the
United States House of Representatives
Committee on Natural Resources
Subcommittee on Water, Oceans and Wildlife**

**Oversight Hearing on
*“Colorado River Drought Conditions and Response Measures”***

October 20, 2021

Chairman Huffman, Ranking Member Bentz and Members of the Subcommittee:

Across the Western U.S., farms and communities are experiencing the impacts of severe drought conditions in 2021. For us in the Colorado River Basin (Basin), the extremely dry conditions this year are especially troubling as they come on the heels of over two decades of below average hydrology. As you know, the Colorado River supplies water and power to over 40 million people and 5.5 million acres of agricultural lands. We appreciate the Subcommittee holding this hearing today and for the opportunity to highlight the importance of the Colorado River in providing drinking water to homes and businesses across seven states and a major component of the secure food supply for our Nation as a whole. This hearing also serves to highlight the immediate steps and long-term principles that are needed to best manage our scarce water resources in the Basin.

The Agribusiness & Water Council of Arizona (ABWC) represents the agricultural community from "ditch bank to dinner plate," in Arizona. Its members include growers, agribusinesses, irrigation and electrical districts, universities and other entities associated with Arizona's agriculture economy.

The Yuma County Agriculture Water Coalition (Coalition)¹ represents irrigated agriculture in the County on policy and budget issues related to the Colorado River Basin and the impacts of those issues on County agriculture. These issues include water supply, aging federal water infrastructure, and other irrigation water related issues of concern with respect to actions and decisions of the federal government.

I also serve as a member of the Advisory Board for the Family Farm Alliance, which advocates for the protection and enhancement of irrigated agriculture in the 17 Western states.

After 21 years of drought, including three of the driest years on record, nearly every storage reservoir in the Colorado River system is experiencing historically low water levels. In addition, Lake Mead levels have led to a shortage declaration for the first time in the Lower Colorado River Basin (Lower Basin), triggering reduced water deliveries to Central Arizona farmers.

¹ Yuma County Agriculture Water Coalition includes the Yuma Irrigation District, Yuma County Water Users Association, Yuma Mesa Irrigation and Drainage District, North Gila Irrigation and Drainage District, Unit B Irrigation and Drainage District, and Wellton-Mohawk Irrigation and Drainage District.

While the current drought and future hydrologic conditions - which are expected to be warmer, with more volatility and less snowpack - are daunting, thoughtful water management and infrastructure investments can result in a Colorado River system that works better for everyone and protects U.S. food security. This type of fact-based conversation is especially important now, as recent media coverage is pushing a narrative that seems to suggest Colorado River conditions warrant a reflexive reduction to agricultural water use in order to reserve more water for cities and the environment. That is the wrong approach and the wrong solution.

The willingness by some to dismiss the importance of Western irrigated agriculture is especially troublesome at this moment, just as our country is seeing the vulnerability of our supply chains and facing shortages of goods they want or need. It is unimaginable to think about a time in the future where our food supply could also risk distribution from a pandemic, natural disaster, or at the whim of a foreign country. Yet removing water from farms in the Colorado River Basin and elsewhere in the West will be a step down that exact path. Instead, the urgent situation we currently face elevates the importance of water users coming together to get through the immediate crisis and reject the kind of zero-sum solutions that will come if we allow agriculture to be pitted against other water users over the longer-term.

Agriculture and Water Use in Yuma County and Central Arizona

Arizona agriculture is important to our Nation, providing seasonal availability of produce and significant economic contributions. Additionally, farmers throughout the state continue to improve irrigation practices and equipment. Both these factors provide important context as water users in the Basin work together to manage drought, especially as some continue to rely on old and/or discredited data regarding agricultural water use as the basis to suggest water should be reallocated away from farms.

Yuma County

Yuma County agriculture, made possible by irrigation water from the Colorado River, is important to Arizona's economy and the food supply of the United States. Agriculture contributes nearly \$3.4 billion in annual economic activity to Yuma County, which is the third largest vegetable producing county in the nation.² During the winter months – from November through March – 90% of the leafy vegetables produced in the United States is grown in the Yuma area. Nine processing facilities prepare two million pounds of lettuce per day for market during these peak seasons. In addition to lettuce and other leafy vegetables, the Yuma area produces over 175 different crops, and is blessed with the favorable conditions that make it a world class location for seed production and other specialty crops.

Even as agricultural production in Yuma County has increased, our farmers have also improved efficiency of their water use. In fact, the rate of water diverted to farms has decreased 15 percent since 1990 and nearly 18 percent since 1975. This increased efficiency has been accomplished through improved water management and infrastructure, and a deliberate shift from perennial and summer-centric crops to winter-centric, multi-crop systems that reduce irrigation during the hottest summer months. For example, farmers and water managers have reduced water use by investing in construction of concrete lined irrigation ditches and high flow turnouts, shortening irrigation runs and installing sprinkler and drip irrigation systems. Additionally, most fields are laser leveled annually and growers utilize press wheels and other management operations to improve water flow across fields. Overall, Yuma growers' average irrigation application efficiencies in the 80-85 percent range.³

² <https://www.yumacountyaz.gov/government/county-administrator/economic-development-plans>

³ <https://www.agwateryuma.com/wp-content/uploads/2018/02/ACaseStudyInEfficiency.pdf>

Central Arizona

Central Arizona has a long history of agricultural production, dating back to the 400's A.D. when the Hohokam civilization used hundreds of miles of irrigation canals to produce in the desert environment. Today, the region is among the top national producers of vegetables, melons, milk, cattle, and cotton, among others. It is also home to important nursery, greenhouse, floriculture, and sod production.⁴⁵

Just as when the Hohokam civilization farmed thousands of years ago, irrigation is essential to agriculture in Central Arizona. The need for a reliable water supply for farms and cities in Central Arizona led to the development of several large-scale water projects in the region. The Central Arizona Project (CAP) was built to deliver Arizona's entitlement of Colorado River water to the interior of the state, with the preservation of irrigated farms as one of the primary goals of the project.⁶

The use of irrigation technology continues to grow in this region. For example, the use of sprinkler and microirrigation in Pinal County increased by over 26,000 acres between 2010 and 2015.⁷ Additionally, some farmers are experimenting with a change cropping patterns to some less water intensive crops. Similar trends are present in other Central Arizona Counties.

Status and Impacts of Ongoing Drought

As mentioned above, the poor hydrology in the Basin and falling reservoir levels led the Bureau of Reclamation (Reclamation) to declare a shortage in the Lower Basin for the first time in history. Currently (as of September 30), water stored across the entire Colorado River system stood at 41% of total capacity. Reclamation modeling also shows an increasing likelihood that Lakes Powell and Mead will continue to drop, elevating the potential that they could reach critical levels within the next five years. This modeling includes a 66% chance that the Lower Basin could reach a Tier 2 shortage (Lake Mead elevation 1050) by 2023 and a 41% chance of a tier 3 shortage by 2025. Tier 3 shortage is triggered when Lake Mead reaches elevation 1025, leaving less than one year of water supply allocation in storage and the point where control and management of the system is lost. Likewise, projections show Lake Powell having a 34% chance of falling to minimum power pool by 2023.

While water cutbacks from the Tier 1 shortage will not hit Yuma County water users' senior rights in the Basin, they will result in the significant cutbacks for farmers in Central Arizona. Under the 2007 Colorado River Interim Guidelines and the 1944 Water Treaty with Mexico, Lake Mead will operate under shortage status for the entirety of calendar year 2022. This includes required reductions and contributions for each individual state forming the lower basin. These requirements include about 18 percent of Arizona's annual apportionment, 7 percent of Nevada's annual apportionment and 5 percent of Mexico's annual apportionment. The cuts will be the largest to date on the River, and will hardest hit farmers who receive water from the Central Arizona Project (CAP), who are further preparing for their supplies to be entirely shut off in 2023.

These reductions will hit growers in Pinal County especially hard. Pinal County irrigation districts will face up to 70% reductions in surface water supplies in 2022 and 100% reductions in 2023. Initially, excess water available in the CAP system was going to provide a lifeline until 2030, but the Tier 1 shortage declaration has accelerated the impacts which will now hit next year. The districts are intensely planning how best to deliver their remaining groundwater supplies but face challenges due to lack of adequate infrastructure and resistance from those who oppose increased groundwater pumping in the

⁴ <https://economics.arizona.edu/file/1817/download?token=Qw1qWZ6A>

⁵ <https://economics.arizona.edu/file/1821/download?token=GCidVv9V>

⁶ https://library.cap-az.com/documents/departments/finance/Agriculture_2016-10.pdf

⁷ <https://economics.arizona.edu/file/1821/download?token=GCidVv9V>

County. Significant amounts of farmland will need to be fallowed resulting in reduced farm revenues, jobs, equipment and seed purchases, and food and fiber production. This is the face of drought in the Lower Colorado River Basin.

Beyond the curtailments in 2022, the troubling projections for Lake Mead levels may accelerate actions to protect lake levels. The ABWC and Coalition are open to constructive solutions designed to protect the Colorado River system and comply with the 2019 Drought Contingency Plan (DCP) requirement for elevation 1030 consultations that were triggered by this recent modeling. Instead of looking to irrigated agriculture in the Basin as a reservoir for future municipal, industrial and environmental water supplies, we must ensure long term equitable success in these discussions by including agricultural water users at the negotiating table from the beginning.

Drought Related Power Impacts

In addition to significant water supply concerns, decreased hydropower generation and the resulting increased replacement electricity costs are compounding the impact of the ongoing and historic drought in the Basin. Depleted storage and reduced water releases continue to reduce the amount of hydropower produced at the Hoover Dam, Colorado River Storage Project (CRSP), and Parker-Davis projects, along with the revenue available to support significant non-power costs assigned to power users.

The impact of this reduced generation to our members is two-fold and will translate into sudden, double-digit percentage electricity rate increases. First, because federal hydropower customers are responsible for paying all capital and operational costs associated with generation and transmission of energy at these facilities, along with environmental and non-power expenses that have been assigned by federal statute, decreased generation means those costs are spread over fewer megawatt hours resulting in higher rates per kilowatt hour. Second, replacement power must be secured to make up for reduced hydropower generation, an impact compounded by the current high price of electricity on the open market driven by persistent heat waves, the loss of generation facilities in the region, and other factors.

The Western Area Power Administration (WAPA) has communicated that Hoover, CRSP and Parker-Davis customers should expect the cost of replacement power alone to exceed over \$130 million in 2022. Colorado River project customers now will face unprecedented volatility and uncertainty that erodes the benefits of recently signed long-term power contracts (40-50 year) and threatens the economic viability of these projects.

One option to mitigate drought related hydro impacts is to temporarily provide drought relief appropriations or other funds to be used in lieu of hydropower revenues to cover non-power costs on a non-reimbursable basis. Over many years, Hoover, Parker-Davis, and CRSP hydropower ratepayers have contributed significant revenues to the Lower Colorado River Basin Development Fund and Upper Colorado River Basin Fund to cover important non-power Reclamation programs and costs. The programs funded by these revenues are fundamentally federal responsibilities and requirements, and include aid to irrigation, environmental and endangered species recovery programs, the Colorado River Salinity Control Program, and others. While these annual expenses can be absorbed in normal water years, requiring hydropower customers to pay for these federal programs while confronting the massive additional costs expected due to the extreme drought conditions and difficult power market conditions is a significant financial hardship.

Colorado River Reconsultation

At the same time we are responding to the water and power impacts of our existing drought conditions, the Basin States, irrigation managers, water agencies, Native American tribes, nongovernmental

organizations, and other stakeholders are beginning the hard work of replacing the 2007 “Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead” that expire in 2026. This new set of Guidelines will largely govern how Colorado River water is managed over the coming decades and negotiations will involve many difficult decisions and creative solutions.

As these efforts get underway, members of the ABWC and Yuma County Agricultural Water Coalition are working with agricultural water users throughout the Upper and Lower Basins to ensure that farming and ranching is properly considered in negotiations. There will inevitably be disagreements between stakeholders as reconsultation negotiations progress. However, we are working together to present fundamental expectations of the reconsultation and are nearing agreement on the following set of outcomes that we believe Colorado Compact decision makers must achieve in the next set of produce operating guidelines:

1. *Recognize that Western irrigated agriculture is a strategic and irreplaceable national resource.*
2. *Provide certainty to all users and interests with equitable apportionment decisions made from a foundation of state water law, common sense and fairness.*
3. *Address critical data gaps to facilitate the trust needed to make fair operational and legal decisions related to the next set of Interim Guidelines.*
4. *Manage Lake Mead to provide the Lower Basin’s share of the Colorado River Compact water to Lower Basin users. Manage Lake Powell to meet both the Colorado Compact obligations to the Lower Basin and protect the Upper Colorado River Compact obligations to the four Upper Basin states.*
5. *Expand supply augmentation opportunities as options for meeting growing water demands, at a time when Colorado River supplies appear to be diminishing.*
6. *Emphasize that future urban growth cannot be encouraged without locking in sustainable and diverse water supplies.*

These outcome expectations build off the policy principles developed by Basin agriculture interests in the Family Farm Alliance’s 2015 publication entitled “Colorado River Basin Water Management: Principles and Recommendation.” These principles include:

1. *State water laws, compacts and decrees must be the foundation for dealing with shortages.*
2. *Water use and related beneficial use data must be accurately measured and portrayed.*
3. *Benefits of water use must reflect all economic / societal / environmental impacts.*
4. *True costs of transferring water away from irrigated farms in a managed system like the Colorado River through land fallowing must be accurately accounted for, including unintended consequences and third-party impacts. Understanding these costs will assist in determining the fair value of any land fallowing proposal.*
5. *Agricultural water conservation can help stretch water supplies, but has its limits.*
6. *Public sentiment supports water remaining with irrigated agriculture, and developing strategic water storage opportunities as insurance against shortages.*
7. *Technologies for water reuse and recycling are proven effective in stretching existing supplies for urban, environmental and other uses.*
8. *Urban growth should not be permitted in the future without locking in sustainable and diverse water supplies, and using irrigated agriculture as the reservoir of water for municipal growth is not sustainable in the long run.*

Making strategic decisions based on these outcome expectations and policy principles will prevent any systemic and permanent reallocation of irrigation water to urban or environmental use. Such a reallocation would not only harm U.S. food security and reduce the employment, cultural, and environmental values of agricultural lands and rural communities in the Basin, it would also reduce drought resilience for urban water users in the Basin. By reducing the agricultural water supply that could be made available to urban use on a temporary and voluntary basis to respond to emergency shortages and incorporating it into base supplies that are relied upon annually by growing urban populations, we will essentially harden urban demand to the point that there will be no flexibility during years of shortage. This outcome would create tensions between urban and agricultural water users ending up in a zero-sum game of urban versus rural in the Basin.

Conclusion

Thank you for holding this important hearing and for the opportunity to testify on behalf of ABWC and the Coalition. The path out of the current drought and long-term management challenges on the Colorado River will be a long one and will be successful if a transparent and collaborative process is undertaken. To accomplish this, Arizona agriculture – along with agricultural producers throughout the Basin – must have a place at the table from day one and the full value of irrigated agriculture for food production, responsible water management, rural economies, and the environment must be considered. The Coalition understands the growing water needs in the Basin and supports augmenting existing supplies in a strategic way that avoids targeting reallocation of low-cost sources including transfer of agricultural water without consideration of the true costs and consequences of such a reallocation.

Agricultural water users have always stepped up to work constructively with other stakeholders to find lasting solutions. We look forward to working with the Basin States and this Subcommittee to do so again in the future.