KATIE M. HOBBS
Governor

THOMAS BUSCHATZKE
Director

ARIZONA DEPARTMENT of WATER RESOURCES
1110 W. Washington St. Ste. 310
Phoenix, Arizona 85012-2105
602.771.8500
azwater.gov

Governor's Drought Interagency Coordinating Group
Meeting Summary – November 4, 2024

Key Points

1. Drought Status Update & Monitoring Technical Committee Activities

Erinanne Saffell, State Climatologist & Drought Monitoring Technical Committee Co-chair

The 2024 Water Year (WY: October 1, 2023-September 20, 2024) ended the fifth hottest water year out of 129 years of record and ended as the 32nd driest on record, which impacts long-term drought in Arizona. Since WY1994, 68% or 2/3 of the WYs have been below average precipitation. The statewide WY2024 precipitation was 10.56," which is 86% of the long-term average which is now 12.25". Mohave county had its 11th dryest WY, and La Paz, Yavapai, Coconino, and Navajo counties ended with amounts in their lowest 33% of WY precipitation. Last October to December 2023 was exceptionally warm and started off WY2024 largely dry. Southern Arizona counties received a late starting monsoon but did receive near average precipitation from September 2023 through December 2023, in which Yuma County had its 15th wettest January. February 2024 was the 24th wettest February on record and by the end of April, precipitation ranged from 70% to 200% across the upper and lower Colorado Basins.

Tropical moisture brought early summer monsoon activity, and the state ended with a wet June 2024 that though it was not a lot of precipitation, it was above average for June. The heatwave in July slowed down thunderstorm activity, leaving July ending with about 69% of average precipitation for the state. June 2024-September 2024 was the 17th dryest and hottest June to September on record. By the end of WY2024, moderate and severe short-term drought returned to 40% of the state largely along western, central, and southeastern counties. Meteorological summer is June to August and this year was the hottest meteorological summer on record for Arizona, monsoon 2024 was mostly dry, and the heatwave beginning on September 24th, 2024-October 14th set the record for the longest record-breaking heat wave ever in the United States. September 2024 was the hottest September on record for Arizona. By the end of WY2024, extreme long-term drought had expanded across most counties and exceptional long-term drought had increased in central and southeastern counties.

2. Weather Outlook for Winter 2024-2025

Mark O'Malley, National Weather Service & Drought Monitoring Technical Committee Co-chair

There is potential for an emerging La Nina but there is a lot of uncertainty on how strong this will be and how long this La Nina's cycle will continue. There is a 70% chance of a weak La Nina developing over the winter in 2024. Probability outlooks illustrate a depiction of a weak La Nina but again, there in uncertainty in how long this will persist enough to influence the larger atmospheric flow pattern this winter. The temperature outlook for November 2024-April 2025 favors a warmer than average outcome during the heart of the winter season and this generally matches the La Nina composites observed in the past 30 years and the standardized temperature anomaly. Arizona has not seen any below normal summers in recent years because we are in a warming trend with the region warming 0.5 degrees Fahrenheit per decade, which has been a consistent trend for the last 40 years and there is no sign of this warming trend slowing. Monsoon rainfall seasons after El Nino and entering a La Nina phase show inconsistent historical precipitation trends and are highly variable with some monsoon seasons with below average precipitation and some with above average precipitation totals. The precipitation outlook for January, February, and March 2025 shows a slight tilt in odds for below average precipitation totals. Summer 2024 experienced exceptionally hot weather and has been declared as the hottest summer that the entire southwest region as seen on record. September 2024 was the hottest September on record for the entire region, and October 2024 was the hottest October for the entire region as well. Western Arizona and Southern Nevada experienced their driest monsoon on record. The upper basin and parts of Northeast Arizona did well for summer rainfall however, this was juxtaposed with the hottest summer on record. Unfortunately, limited summer rainfall and exceptionally hot temperatures over the past six months may affect soil moisture profiles which could detrimentally impact spring runoff – especially over central Arizona.

3. Colorado River Water Supply Update

James Heffner, Senior Hydrogeologist, Colorado River Management, Arizona Department of Water Resources

As of October 20, 2024, Lake Powell was at 3,576.81 feet (ft) with 9.042 million acre-feet (MAF) in storage or 39% full and Lake Mead was at 1,063.17 ft and 8.665 MAF or 33% full. Total System Storage in the Colorado River Basin was 24.845 million acre-feet (MAF) or 42% full. Total System Storage at this time last year was 25.074 MAF or 43% full. Snowpack peaked in early April at 111% of median peak. The most probable Lake Powell unregulated inflow for Water Year (WY) 2025 (as of October 1) was 8.45 MAF (88% of normal, the 1991-2020 average is 9.60 MAF), the minimum probable is 5.08 MAF (53% of normal), and the maximum probable is 16.20 MAF (169% of normal). The projected end of Calendar Year (CY) 2024 elevation for Lake Powell is 3,571.79 ft under the most probable scenario and 3,571.63 under the most probable minimum scenario. The projected end of CY2025 elevation for Lake Powell is 3,579.08 under the most probable scenario and 3,538.42 under the probable minimum scenario. The projected end of CY2024 elevation for Lake Mead is 1,064.13 ft under the most probable scenario and 1,063.96 under the probable minimum scenario. The projected end of CY2025 elevation for Lake Mead is 1,060.04 ft under the most probable scenario and 1,054.59 ft under the probable minimum scenario. The U.S. Seasonal Drought Outlook from October 17, 2024 – January 21, 2025, shows that there is persistence of existing drought and likely development of drought.

4. Salt River & Verde River Watersheds Water Supply Update

Stephen Flora, Senior Hydrologist, Salt River Project (SRP)

The cumulative watershed precipitation of Water Year (October 1, 2023-September 29,2024) was 15.75 inches or 95% of normal. Monsoon season 2024 was slightly below normal at about 4.9 inches on average (82% of normal) from June 15-September 30, 2024. The SRP Reservoir Inflow for Water Year 2024 (October 1-September 30) was 589,137 AF (84% of median) and during the monsoon season (July-September 2024) there was 46,600 AF inflow (50% of median) which was the third lowest on record behind 2020 and 2023. Streamflow has remained below median in summer/fall 2024. The current reservoir and watershed status shows that the current SRP storage is at 1,710,960 (75% full) in comparison to last year (83% full). The Salt River/Tonto Creek is at 77% full and the Verde River is at 61% full. To see more efficient runoff, winter 2024 will need to see several significant precipitation events or well above precipitation throughout the winter. The reservoir storage decreased from 93% to 75% between May 1-October 21 and SRP total groundwater use for 2025 is expected to slightly increase to 100,000 AF/yr.

5. 2024 Wildfire Season Update

Tiffany Davila, Public Affairs Officer, Arizona Department of Forestry & Fire Management

The 2024 Wildfire Outlook and Seasonal Factors show that drought condition persist with impacts to fine fuel vegetation (grasses and brush don't hold a lot of moisture so they dry out quickly as temperatures rise). There is potential for higher-than-normal fire activity south of the Mogollon Rim, across the Tonto National Forest, within Sonoran Desert landscapes, in the Central part of the state, and down into Cochise County because fuel loading in those areas is more than double of what it is in other parts of the state. Moving into this year's fire season, the forecast was warm and dry with a typical summer pattern in place by the end of May and beginning of June. June 2024's forecast was expected to have 'normal' temperatures unlike last year's cooler June temperatures that delayed fire season by about a month. Delayed monsoons season this year extended fire season but was also caused by the fluctuations of weather seen throughout the monsoon months where the state would see some precipitation and then dry out due to high temperatures and continue going back and forth. 2024 fire activity showed that southwest Pinal County was very active with 85 wildfires since 1/1/2024 for a total of 51,362 acres burned primarily due to high fuel loading. Of those 85 fires, 79 were human caused. The Freeman Fire, sparked by a lightning strike, was the largest fire in Pinal and the state which burned 32,568 acres. Year to date (YTD), there has been 2034 fires, and 277,133 acres burned (all jurisdictions). The top causes of state fires were from debris burning, equipment usage, target shooting and roadside fires. There was also very active fire behavior in June and well into July due to dry conditions and low relative humidity levels. September and October's hot and dry weather extended fire season, and the state could see another push with fire activity if the state does not get enough moisture combined with warm temperatures.

On May 17, 2024, Governor Katie Hobbs signed HB 2751 allowing the Arizona Department of Forestry and Fire Management to enter into the Great Plains Interstate Compact for state-to-state sharing of resources for fire season in order to maintain adequate resources. With the compact, states can coordinate between each other, without the involvement of the federal government.

6. Impacts of Drought on Wildlife

Brittany Kearney, Marketing Project Manager, Arizona Game & Fish Department

The longer a drought lasts, the more physical stress it can place on wildlife. Fewer water sources cause wildlife to congregate in singular locations which increases risk of predation and spread of disease. In addition, when there are fewer water sources, urban and agricultural environments may attract wildlife as well. Drought has created immense pressure on the endangered Sonoran Desert tortoise which is a native species in Arizona. Lack of vegetation and plant moisture content caused by drought has led to less water intake and scarcity of water/nutrients has resulted in weakened immune systems for this species. With diminishing food/water sources, this can lead to more frequent encounters with human-developed areas which increases the risk of road mortality and other human-related hazards. Drought is also taking a toll on reproductive outcomes when it comes to egg count and survival rates of the hatchlings, compounded by the species' long term viability challenges. Because of harsh conditions, these tortoises may also alter their behavior in which they retreat more often to conserve energy and moisture, leading to less movement and limiting their ability to find mates from not venturing out as normal.

As the state's wildlife agency, Arizona Game & Fish Department (AZGFD) has used best available science to manage species successfully for 100+ years – including planning for drought and its impacts – and works year-round to mitigate the impact of drought on Arizona's wildlife. The agency has created a Drought Response Team that focuses on biology, infrastructure, and outreach. The Biology Team within the Drought Response Team created the Drought Management Actions Plan which provides an overview of existing management strategies to enhance wildlife and habitat resilience to drought and identifies management/monitoring protocols needed to create that resilience. When it comes to infrastructure, AZGFD maintains and delivers water to 3,000+ wildlife waters statewide and in Fiscal Year (FY) 2024 660,000+ gallons of water were hauled. A challenge being faced by the department is that rebounding populations take time; it would take wildlife time to recover/rebound to pre-drought conditions and resolve effects of Arizona's long-term drought. The Outreach Team works to promote public-participation opportunities like donations and volunteers which contribute to the sustainability of water hauling efforts. AZGFD has a mix of paid, earned, shared, and owned channels utilized statewide to increase public awareness of drought impacts on wildlife, mitigation strategies, and promote/expand donor and volunteer opportunities.

7. Impacts of Drought and Extreme Heat on Public Health

Niki Lajevardi-Khosh, Epidemiology Program Manager and Mounika Kudary, Epidemiologist, Arizona Department of Health Services

In 2017, the Climate and Health Adaptation Plan was developed and thoroughly explains how drought, heat waves, wildfires, dust storms, and water scarcity, poses risks to human health. These events can worsen conditions like cardiovascular diseases, asthma, may lead to injuries or death and could also result in some areas becoming more suitable for disease-carrying organisms as well as affect soil health. The goal of the plan is to promote, protect, and improve the health and wellness of individuals of communities in Arizona in addition to strengthening public health preparedness for climate hazards. The climate and health work are conducted through the CDC Climate-Ready States and Cities Initiative as Arizona was one of nine states and three other jurisdictions selected for the BRACE (Build Resilience Against Climate Effects) Grant. The program funds efforts to implement the CDC's Brace Framework which aims to address climate-related health impacts in Arizona. Interventions include collecting and analyzing climate-related health impact data, raising awareness through outreach, health education, promoting sustainability practices and health equity, and monitoring/assessing the effectiveness of those interventions.

The EPHT (Environmental Public Health Tracking) Grant aims to enhance the ability to monitor and surveillance on environmental health such as climate-related issues. Data is collected and analyzed from climate-related health impact data from hospitalization and emergency department visits and surveillance includes tracking historical and projected drought impacts. The Arizona Department of Health Services (ADHS) addresses issues across several programs including EPHT, BRACE, Drinking Water, Food Safety, and Emergency Preparedness and participates in the Drought Interagency Coordinating Group. High temperatures and reduced rainfall lead to water scarcity (drought) and heat stress that influences atmospheric changes (increased dust, worsened air quality, etc.), individual factors (such as for those with chronic health conditions, those who work outdoors, the elderly, and children), and societal factors that consider how increasing population stresses water supplies in addition to key vulnerabilities disproportionately impacting those facing poverty, individuals over 65, low education levels, and those living alone. In 2023, Arizona faced unprecedented heat which led to a notable increase in heat related illness (4,298 emergency department visits were heat-related in 2023). ADHS has developed a heat-related surveillance dashboard which provides real time information associated with response activities for each county based on the national weather service, heat warning and data collected from dispatchers. ADHS has also opened various cooling centers, issued heat alerts, and distributed heat-related resources. Regarding wildfires and dust storms, ADHS tracks wildfire activity by county and implements several interventions that include forecasting,

warning systems, public service announcements, evacuation procedures, and air filtration. In 2024, there have been 113 consecutive days with temperatures above 100°F, contributing to a total of 648 heat-related deaths and counting.

Recommendation

While there have been drought condition improvements, there are impacts that have accumulated through time. Arizona remains in a short- and long-term drought with most of the state experiencing some level of drought condition from abnormally dry to extreme drought. The Drought Interagency Coordinating Group unanimously recommends that both drought declarations (PCA 99006) and (Executive Order 2007-10) be kept in place. The meeting summary and presentations are posted on the ADWR ICG webpage.