

Arizona Governor's Drought Inter-agency Coordinating Group (ICG)

November 16, 2017

Drought Declaration Agenda

- I. Welcome & Introduction
 - a. Opening Tom Buschatzke, ADWR Director & Co-chair
 - b. Anthony Cox (Az Div Emergency Management) representing Co-chair Ms. Smith-Reeve
- II. 2017 Drought Status & MTC Activity (Nancy Selover, State Climatologist)
 - a. Looking back to WY2012, Arizona and Upper Colorado Basin have had consecutive dry years. The recent improvement does not make up for the dry years.
 - b. The state in 2014 was extremely dry nearly everywhere; drought has improved from 2014 but now conditions are slipping back due to poor monsoon and continued dryness.
 - c. Half of the state is Abnormally Dry with the rest in Moderate drought and probably moving into more serious drought.
 - d. Winter 2017 was spotty, southern Arizona missed out and then had poor monsoon.
 - e. Long term mapping shows improvement from Severe 2014 but the same lack of solid improvement
 - f. Mapping is showing a "dry bias", as dry becomes normal maps do not reflect reality of impact on the ground. In addition, division by whole watersheds are not accurate, conditions not uniform across watershed.
 - g. Discussion of SPI & SPEI models; MTC is blending these together for accuracy, asking for feedback. SPI likely understates drought and SPEI overstates.
 - h. Lack of stations and long term historical data at sites a challenge for some basins.
 - i. In summary, northern Arizona basins wetter than southern but over trend of past decades is drier than average. Some upward trend in more recent precipitation but the long term SPI shows a long dry period going back to the 1980's.
- III. Winter 2017-18 Weather Outlook (Mark O'Malley, NWS)
 - a. Last winter, a weak La Nina collapsed going into spring when SST increased trending to El Nino but then fell and now there is a weak La Nina.
 - b. It may not have much of an impact for Arizona; a moderate one could affect the state but no indication current La Nina will strengthen.
 - c. Heading into a more classic La Nina scenario with peak in mid-winter (January, February), after that will move into ENSO Neutral.
 - d. Already seeing some impact, beginning in September northern Arizona precipitation pattern dried up.
 - e. Upper Colorado Basin is typically not as impacted as Arizona.
 - f. For Arizona the trend is continued warmth, winter is 50% likely to be warmer than average. The trend is recurrent warmth.
 - g. Arizona has warmed 0.5°F each decade.
 - h. The state is expected to be drier during a weak La Nina but there is no significant trend for precipitation. Slight odds in favor of dry, but for northern Arizona, it is highly variable. Problem is state is starting in deficit already.

- i. While weak La Nina not a good indicator, confidence in average or above average precipitation is low. In past, 1-2 weeks or 1-2 storm events not expected can rack up large snow volumes.
- IV. Colorado River Water Supply Update (Jeff Inwood, ADWR)
- a. Review of Colorado River total system contents, 5% above last year (current content is 55%).
 - b. Upper basin reservoirs are full which is typical. Flaming Gorge inflow was over 200% of average.
 - c. Total WY2017 Lake Powell inflow was 11.9 MAF. Historic average is 10.7 MAF. 2000-2017 average is 8.6 MAF.
 - d. Powell inflow forecast was 2 MAF higher but snowpack declined. WY2018 forecast is 8.5 MAF but is very early not a reliable projection.
 - e. Most recent August BOR report forecast both 2017 & 2018 end of year Mead elevation above shortage (1,083.5' and 1,079.5' respectively).
 - f. August report also shows 15% probability of any shortage in 2019, increasing to 42% in 2020, 45% in 2021 and 52% in 2022.
 - g. BOR graphed system conservation, Mexico deferment, ICS to show efforts have kept Lake Mead above shortage since 2015.
 - h. Total sum of conservation by 2017, 1.5 MAF or 18' of elevation. Without this volume, Mead would be at 1,065'.
 - i. BOR also graphed the probability of reaching Tier 3 shortage at 1,025'. When using updated hydrology since 2007, there is a significant increase in risk. The 2007 assessment indicated a 7% probability of reaching a Tier 3 shortage by 2026. The newest assessment shows a 50% chance of same by 2026.
 - j. In summary, with good winter snowpack, a 2018 shortage is avoided though conservation played a large part. There is a 1:2 chance of reaching 1,025' in less than 10 years and same chance for any shortage in the next 5 years. Will need more conservation to avoid critical elevations.
- V. Salt & Verde River Watersheds Supply Update (Charlie Ester, SRP)
- a. Watersheds had a decent year with 21" of precipitation (112% of normal), better than 2016.
 - b. Surface flow was just above median for Salt, Tonto, and Verde – 1.1 MAF.
 - c. Gained 30% of system volume over the winter. CC Cragin reservoir filled and then spilled 17,000 AF. In Verde, lots of spillover but helps with incidental recharge.
 - d. Since monsoon dropoff, no rain since September 1, very unusual and getting dry.
 - e. Total system content is 62%, more full than in the past. No reduction in allocation in near future but if it stays dry, will have to increase groundwater pumping to meet allocations.
 - f. SRP perspective: in drought trending towards more severe. However, a 2016 weak La Nina was very wet for SRP.
- VI. 2017 Forest Health & Wildfire Update (Bill Boyd, Az Dept Forestry & Fire Management)
- a. Drought plays a factor in fire potential. Conversely, rain generates fine fuels. The change in relative humidity helps the most during fire season.
 - b. 2017 was a bad and costly year for wildfires-multiple fires every day, constant season.
 - c. \$4 mil was budgeted, spent \$15 mil. Sawmill fire was the most expensive and broke the budget before fire season even started.
 - d. Fire burn scars led to flooding, deaths. The Goodwin fire had potential to burn into Prescott, lot thrown at it, two Type I crews.
 - e. 2017 total burn was 418,000 acres. Have not had a massive Rodeo-Chediski sized fire in a while but overdue.

- f. Lots of work to be done in Ponderosa forest, trying to bring in timber industry to help treat. Invasives still decreasing forest health.
 - g. 2018 forecast is for another bad year. Fire season will start earlier in southern Arizona. All burnt fuel has regrown and cured out.
- VII. Wildlife Drought Impact (Ed Jahrke, Az Game & Fish Dept)
- a. AZGF has a department dedicated to watering wildlife with water developments in almost every Game Management Unit, 1,800 in total.
 - b. Perfected these projects with 10,000-gallon capacity to feed water guzzlers through to monsoon season. Increased capacity necessary due to drought. Last year added 33 systems.
 - c. In 2017, hauled 283,000 gallons, lacking monsoon and dry September is ramping up hauling especially to northern Arizona elk habitat. Will be hauling into December if weather pattern does not change. Northern Arizona is very dry.
 - d. Each specialized water truck costs \$250,000. Maintenance on systems is also expensive.
 - e. Trout hatchery facilities function on streamflow and production is down, cannot produce at same capacity. Drought induced.
 - f. AZGF is down about 40-50,000 fish and had to spend \$230,000 on outside services to compensate production loss.
- VIII. Governor Water Solution Conversation (Tom Buschatzke, ADWR)
- a. Governor has reached out statewide to stakeholders. Looking a generation ahead on water management.
 - b. Issues are Colorado River water, DCP, DCP+ and other issues linked to better management.
 - c. Expecting 2018 legislature to sign on to DCP and other issues.
 - d. Wilcox, La Paz and Mojave areas having groundwater issues, historic agricultural areas coming back in to production from California interests moving in following California drought.
 - e. Also addressing temporary water transport across basins.
 - f. Legislative package will be seen this session with 40 different groups working on language now. Governor is leading with ADWR.
- IX. Drought Declaration Recommendation
- a. Based on MTC, NWS data, increasing uncertainty, impending La Nina, drought mapping limitations, and continued dryness in the state ICG is recommending continuation of a declaration of drought (Tom Buschatzke, ADWR).
 - b. Motion: Forward to Governor a recommendation to continue the drought declaration.
 - c. Approved, Unanimous.
- X. Comments on 2017 Arizona Drought Annual Report
- a. No comments. Report will be finalized this week and forwarded to Governor with this recommendation.
- XI. Call to the Public & Closing
- a. No comments