

PIMA COUNTY LOCAL DROUGHT IMPACT GROUP
Wednesday, January 12, 2022
Via Microsoft TEAMS
RECAP

Attendance: Kathy Chavez and Colby Bowser (Pima County Office of Sustainability and Conservation), Némesis Ortiz-Declet and Nicholas Matthews (Arizona Department of Water Resources), Ian Murray and Amanda Web (Pima County Office of Sustainability and Conservation), Trevor Grout and Paul Miller (Colorado Basin River Forecasting Center), Erin Boyle (National Weather Service), Mitch Basefsky (Central Arizona Project), Dara Duffy (Green Valley Metropolitan Domestic Water Improvement District), Melodee Loyer (FICO), Arturo Gabaldón (Community Water Company of Green Valley), Wally Wilson (Metro Water), Cathy Keufler (Avra Valley Water Co-op), Scott Perkins (Flowing Wells Irrigation District), Vanessa Barchfield (Supervisor District 1), Mark Johnson (Tortolita Alliance), Catlow Shipek (Watershed Management Group), Justyn Dillingham (Pima County Communications Office), Mead Mier and Lee Comrie (Pima Association of Governments), Joseph Tabor (Pima County Health Department), Marie Light (Pima County Department of Environmental Quality)

1. Welcome & Introductions – Kathy Chavez, OSC, welcomed attendees and announced them.
2. Review November 10 LDIG meeting - Kathy Chavez, OSC
 - a. ADWR annual report, short term and long term status, recap of Nov 10 ICG meeting
 - b. PAG update on Cienega Creek and Davidson Canyon monitoring wet/dry stream mapping
3. Arizona Department of Water Resources Updates - Némesis Ortiz-Declet, ADWR
 - a. Short-term and long-term Drought status:
 - i. Short-term drought conditions have improved since July 2021 due to favorable monsoon precipitation. During the summer, Extreme drought only covered about 14% of state. December storms improved short-term drought conditions. Some counties have received over 150% of average precipitation. About 74% of the state is Abnormally Dry or in Moderate drought. Severe drought covers about 21% of the state and Extreme drought covers 5%, primarily in northeastern Arizona. Much improved over last year.
 - ii. Long-term drought shows little change. Southeast Arizona has received below-average precipitation. Temperatures above normal. Slight improvement after July 2021. La Niña conditions to persist through spring. Next long-term drought report will reflect January through March and will be published after April's Monitoring Technical Committee meeting.
 - b. January 5 Monitoring Technical Committee meeting recap
 - i. Short- and long-term updates, Mohave and Coconino counties reported on drought conditions.
 - ii. Agency updates include report from SRP which is at 70% of storage capacity. Lake Mead and Lakes Powell are at lowest levels ever.
 - iii. Update on drought index wells.
 - iv. Next MTC is April 6 (10am)
 - v. ADWR updates on upcoming meetings
 - c. Questions
 - i. How are quarterly long-term drought status maps produced? Using standardized precipitation and evapotranspiration data index averaged over 24, 36, 48 and 60 months. Averaged over longer term.

- ii. Which months does La Niña affect most? Typically felt in winter months. Hard to predict in fall. Typically brings dry and warmer than average weather to Arizona. Erin Boyle explained that overall we get drier winters. So far this winter precipitation is below average. We are seeing warmer than normal and drier weather and it is falling within the range of a typical La Niña winter.
- 4. Colorado River Basin Conditions, Trevor Grout and Paul Miller, Colorado Basin River Forecasting Center - Paul Miller introduced Trevor Grout who will represent the Lower Colorado
 - a. Background-review of forecast offices and products. Hydrologic models run daily
 - b. Looking back Water Year 2021 - shortage declaration on Colorado River and below normal snowpack. Poor spring runoff followed by wet monsoon season
 - c. Looking forward Water Year 2022 - La Niña pattern signaling above average temperature and below average precipitation for Southwest. Soil moisture is better this year than last, but there are many dry areas. This water year (Oct, Nov, Dec) so far has been favorable for Utah and Colorado, November was dry and there were several storms in December. Snowtel sites look better than last year.
 - d. Water supply forecast-use of probabilistic, volumetric forecasts, updated daily, used by Reclamation in reservoir operations models and other water managers.
 - i. Review of Powell forecast plot. Max, min, runoff. Range of traces and median of all traces. Expecting close to normal year.
 - ii. Expecting below average runoff in Gila River-suppressed due to la Nina weighting. Expecting below average volumes.
 - iii. Review of access to forecast maps [Conditions Map \(noaa.gov\)](#)
 - e. Questions
 - i. With normal flow this year, will Powell and Mead levels increase? Typically, Powell will raise, Lake Mead's level will depend on releases from Powell. Best to see 24-month study. See [Operation Plan for Colorado River Reservoirs \(usbr.gov\)](#) and [Lower Colorado River Operations | Lower Colorado Region | Bureau of Reclamation \(usbr.gov\)](#). Reclamation uses CBR forecast to generate 24-month study projecting level of Powell and Mead in December sets operating tier and shortage in lower basin.
 - ii. Additional factors affecting streamflow and water supply are temperature and wind which affect sublimation
- 5. Drought Impacts on Pima County Conservation Lands, Ian Murray. Office of Sustainability and Conservation
 - a. Pima County has 250,000 acres of conservation lands.
 - b. Ecological monitoring program is part of Multi Species Conservation Plan to comply with ESA incidental take permit. The ecological program monitors species, habitat, landscape pattern, threats and climate
 - c. Climate data is based on Prism temperature and precipitation data and uses vegetation and soil monitoring plots allocated to strata based on elevation. 100 plots across County lands that can be divided into five areas as well as summarized by their elevation strata. 2016 is the base year. Climate data shows no shift in monsoon precipitation trends from 1980 through 2016. Larger shift in winter precipitation across all regions (decline). Northeast region saw a decline of 4 mm per year. Temperature data in northeast region saw significant increase 0.05°C per year. Mean max temperature increase in northeast is 0.04°C per year, between 1980-2016. Standardized spei shows moderate/severe drought starting in year 2000.

- d. Yellow billed cuckoos – TE species monitored in Cienega Creek and Bingham Cienega. Attributed to loss of cottonwoods. Less detected in 2020 when below average monsoon occurred than in 2017 under average monsoon. Almost none observed in July/August 2020 compared to same time period in 2017 when they should be nesting. Measured wetted length of stream corroborates with poor monsoon. Subsequent loss of cottonwood canopy in the 2021 season in parts of CCNP could continue to bode poorly for the species. Next round of monitoring will take place in 2023.
 - e. Lowland leopard frogs and native fish (longfin dace) – Buehman Canyon is the largest riparian system of the county conservation lands on the east side of the Catalinas. 2020 wetted area was almost dry compared to previous years. Wet/dry mapping in Buehman Canyon is similar to Cienega Creek as described by PAG at November’s LDIG meeting. More flow follows wet winter. Bullock Canyon is tributary to Buehman Canyon. Dace were well distributed in 2011-2014. By 2016 dace were lost in upper Buehman. Area occupied by dace contracted significantly in 2020-21. Similar results for leopard frogs. None detected in 2020 in Buehman Canyon in June. Loss of dace in Bullock Canyon due to drying in 2020.
 - f. Concluding thoughts; 30-year monitoring program. Long term program, much uncertainty for aquatic species
 - g. Monitoring Sonoran Desert tortoises in Tucson Mountain Park. May be harder to detect in 2022 due to vegetation from 2021’s productive monsoon. They are more active during monsoons. Herbaceous production yields good foraging opportunities for growth. Monsoon (and resulting opportunities to feed and drink) affects weight, more than length since this species can balance its moisture and energy budgets over long periods of time. Younger tortoises are more vulnerable to dry and hot conditions.
 - h. Question: Does proposed listing for pygmy owl affect mscp? It is already included in mscp. Already monitored. 44 species are covered, of which 8 are protected. A possible federal listing will not change anything for the MSCP.
 - i.
6. Drought Updates
- a. Catlow Shipek, WMG—flow monitoring in Santa Cruz River. Tanque Verde Wash has been flowing since July 2021
 - b. Erin Boyle, NWS – rainfall is 1.59” below normal. Winter precipitation is close to average. La Niña conditions expected to continue. Reflected in 3-month outlook. During the last 20 episodes of La Niña conditions, three have had above average precipitation.
 - c. Joseph Tabor, Pima County Health Department monitoring West Nile virus-few mosquitos in 2020. More bird hosts in 2021. Maricopa has many cases of human West Nile virus infections. Pima County had 120 deaths due to West Nile. Positive correlation between high monsoon season and West Nile virus due to more rodents and valley fever.
 - d. Mark Johnson, Tortolita Alliance - Marana Parks and Recreation Department using inmate labor to remove invasive vegetation in Wild Burrow Wash and Alamos Canyon. Wild Burro Wash has had stream flow this winter
 - e. Mead Mier, PAG – processing data from December Cienega monitoring. Davidson Canyon has flow. PAG green infrastructure map is updated.
 - f. Mitch Basefsky, CAP – No change in Tier One shortage. Looking to stay at Tier One next year. April 24-month study unlikely to change operations. 500+ efforts to leave 500 kaf next five years. Signing agreements won’t affect 24-month study, only actual savings
 - g. Kathy Chavez, Pima County OSC –staff working on funding opportunities from infrastructure bill. Mostly transportation. Looking at wastewater infrastructure, recycling, invasive species. Shared soil moisture and precip data from Bill Schock and Kyl Center story map.

7. Adjournment and next meeting is March 9 Notes and presentation materials will be posted on the [LDIG Website](#).
8. Meetings 2022 dates: via Teams until further notice. March 9, May 11, July 13, September 14 and November 9