

PIMA COUNTY LOCAL DROUGHT IMPACT GROUP  
Wednesday, May 12, 2021  
Via Microsoft TEAMS  
RECAP

Attendance: Kathy Chavez (Pima County Office of Sustainability and Conservation), Némesis Ortiz-Declat (Arizona Department of Water Resources), Erin Boyle (National Weather Service), Mitch Basefsky (Central Arizona Project), Kris LaFleur (Tucson Water), Jaime Galayda (Tucson Water), Kip Volpe (Vail Water Co.), Mark Johnson (Tortolita Alliance), Lee Comrie (Pima Association of Governments), Marie Light (Pima County Department of Environmental Quality), Amanda Webb (Pima County Office of Sustainability and Conservation), Asia Philbin (Marana Water), Melodee Loyer (FICO), State Senator Rosanna Gabaldón, Selso Vilegas (Tohono O'Odham Nation), Scott Perkins (Flowing Wells Irrigation District), Arturo Gabaldón (Community Water Company of Green Valley), Cathy Kuefler (Avra Valley Water Co-op )

1. Welcome & Introductions – Kathy Chavez, OSC, welcomed attendees and announced them.
2. Review March 10 LDIG meeting - Kathy Chavez, OSC
  - a. ADWR provided updates
  - b. NWS review of winter season and CAP update on Colorado River
3. Arizona Department of Water Resources Updates - Némesis Ortiz-Declat, ADWR
  - a. Short-Term and Long-Term Drought Status - Review of 5-month short term maps Nov 2020-March 2021. Non-existent monsoon, dry fall and dry winter has led to current degradation. Late Jan 2021 storms brought some relief to Flagstaff and Mogollon Rim area but Extreme drought (D3) increased in central Arizona. April was dry with most of the state receiving less than 25 percent of average precipitation. Exceptional drought (D4) spread through southeast. Spring will bring high winds and fire danger. Review of 12-month quarterly long term maps April 2020-March 2021. Good precipitation going into Spring 2020 filled reservoirs but no monsoon and record heat increased drought degradation across the state with Extreme drought in north and central Arizona. Snowpack did not last long and streamflow was low. Next long-term map will be published in July.
  - b. Review of Drought Interagency Coordinating Meeting. [See Meeting Recording](#)
  - c. May's short-term map will be published in June, Monitor Technical Committee meeting July 6<sup>th</sup>. Check ADWR's [website](#) for information on the Governor's Water Augmentation, Innovation and Conservation Council and ADWR Public Meetings for updates.
  - d. The Arizona Municipal Water Users Association (AMWUA) has a timely article on drought and shortage available at their [website](#) A link to the [Arizona Wildfire Map](#) was shared. It has useful information about new and emerging fires and has links to additional information
4. Colorado Basin and Water Supply Conditions, Michelle Stokes, Chief Hydrologist (CBRFC)
  - a. Colorado Basin River Forecast Center is one of 13 River Forecast Centers providing streamflow forecasts and flood warnings. Only in the West are probabilistic volumetric forecasts for snowmelt, water supply forecasts developed.
  - b. CBRFC connects with the Tucson NWS Weather Forecast Office with guidance and runs models of streamflow and water supply forecasts.
  - c. WY 2020 was dry throughout Colorado River Basin (CRB) including Arizona and combined with a dry Fall 2020, decreasing soil moisture and runoff. Precipitation and snowpack among lowest in CRB. Many SNOTEL locations, measuring snowpack, are below 15 percent of average. Peak snowpack was in bottom third of historical period.

- d. WY 2021 temperatures - a cool March helped hold snowpack but was followed by a warm April which led to widespread snowmelt of 1-4”.
  - e. Ensemble Streamflow Prediction (ESP) is a model run every day. It uses current conditions and applies precipitation and temperature from the historical record in model calibration. A forecast hydrograph is produced for each year. Weighted temperature is based on connection to El Niño Southern Oscillation (ENSO) signal. Monthly official forecasts are used by Reclamation for reservoir operations.
  - f. On the Water Supply Forecasts charts, blue line represents the most probable reservoir volume with the shaded area range of possible outcomes 10<sup>th</sup>-90<sup>th</sup> percentile. Lake Powell April-July inflow forecast is 28% of average, Gila River is forecast at lowest level ever.
  - g. Reclamation is largest the partner/stakeholder that uses this information, along with their own reservoir operation models to assess probability of different operating conditions and shortage. There is a 97% chance of shortage condition for 2022.
  - h. CBRFC provides decision support services incorporating trends in inflow by using weighted traces according to teleconnections, adding the next five years from 2015 to ensemble to improve forecast and looking for new sources of information for snowpack with different partners.
  - i. Does not make recommendations on drought conditions, but provides information to resource managers.
5. Drought Early Warning System (DEWS), Joel Lisonbee, Intermountain West DEWS
- a. Overview of National Integrated Drought Information System (NIDIS). Within NOAA but works across agencies. Drought is expected to last awhile and need resources to prepare and manage for the next one. NIDIS uses a proactive approach to managing drought risks and impacts. Authorized to partner with federal, tribal, state and local, private sector and academic partners.
  - b. DEWS is broader than a forecast model, a DEWS is data/products and people. Conducts effective communication with partners to connect drought information with those who need it. Five pillars or Drought Early Warning; (1) Observations and Monitoring, (2) Predictions and Forecasting, (3) Planning and Preparedness, (4) Communications and Outreach and (5) Interdisciplinary Research and Applications.
  - c. Review of NIDIS projects;
    - i. Drought Learning Network. Peer-to-peer learning and collaboration. Five teams, Sharing Management Experiences, Drought in Agriculture, Projections to People, Drought Impact Reporting and Response and Indigenous Collaboration.
    - ii. Supporting Citizen Science in Forests. Works with Colorado Climate Center to support and encourage condition monitoring in forests.
    - iii. See Drought, Say #Drought. Utah State University project using Twitter for observational gaps and predicting drought trends.
    - iv. Flash Drought workshop for drought that begins or intensifies rapidly
    - v. Drought and Wildland Fire. Strategic Plan 2018-2022.
    - vi. Drought and Human Health.
  - d. Anyone can provide drought conditions monitoring reports using [CoCoRaHS](#) or [CMOR drought](#) reporting platform. The current citizen science project in Colorado is limited in scope to Colorado forests that could be scaled up to region. A project focusing on desert ecosystems would be welcome and NIDIS would work with partners. As for Twitter project, location algorithm needs to be trained to report actual location.
6. NIDIS Drought Website, Kelsey Satalino, Digital Communications Coordinator (NOAA/NIDIS)
- a. Introduction and review of [Drought.gov](#) re-design.

- b. Portal to connect decision makers with resources. Content has been updated with new maps and impact reporting to the city level.
  - c. By Location. Browse by scale from international to local level, select state or enter zip code options. Also separated by regional DEWS.
  - d. Data and Maps. Maps and charts are interactive data brought in from federal, state and local partners. Current conditions, temperature, precipitation, evaporative demand as well as historical information by time scale can isolate specific drought conditions. Can email alerts for changing conditions. Browse by topic.
  - e. By Sector. Agriculture, Water Utilities, Ecosystem etc. Within sectors such as Public Health information includes Social Vulnerability Index as example.
  - f. Review of state level map. Curated links, links to Weather Field Offices and current conditions, outlooks and forecasts. NWS Drought Information Statement map.
  - g. Impact reports page and link to encourage reporting.
  - h. Maps can compare current drought to previous conditions, 3 data sets side by side (0-2017, 1895-present, 2000-present). Can share/embed maps.
  - i. Redesign pulls data from NIDIS partners to make it easy for decision makers to mitigate.
  - j. [www.drought.gov](http://www.drought.gov)
7. NWS Local Weather Forecast Office Drought Services and Input, Erin Boyle (NOAA/NWS)
- a. Discussion - NWS focus is short term weather, not a lot of drought services. Suggestions welcome during discussion or after meeting.
  - b. Review of drought information statement issued for D3 or higher to partners, media and public. It is hard to get impact data and LDIG could help with that.
  - c. Southeast Arizona Drought Page is on NWS website. Short and long term outlooks, fire weather impacts, temperature and precipitation outlooks. Input?
  - d. Discussion of adding resources. Drought email briefing is an idea similar to the monthly fire weather email briefing. It could expand upon the drought information statement.
  - e. Partner email list to build upon.
  - f. Another idea is a summary list of municipal drought plan actions or sector actions during drought. Drought plans have been modified to correspond with DCP.
  - g. New Climate Normals for 1991-2020 have been calculated. Tucson is 1.2 degrees F warmer, 0.98" drier. Monsoon is drier, 0.39".
  - h. Monsoon season outlook is increased chance for precipitation. Decrease in soil moisture may increase heating and help monsoon circulation. Only 3 years since 2000 has the Climate Prediction Center has issued an increased chance for precipitation during this period. In 2001 precipitation was 2.81", in 2006 precipitation was wetted ever at 10.60" and in 2015 precipitation was 6.63"
8. County Drought Stage Status Discussion
- a. Agreement to maintain current drought stage. LDIG can revisit the drought stage discussion after issuance of the Reclamation's August 24-Month Study, and results of the summer monsoon season when LDIG will then have a better idea of what other water providers are considering. No meeting in July.
9. Adjournment and next meeting is September 8. Notes and presentation materials will be posted on the [LDIG Website](#).
10. Meetings 2021: September 8, November 10