



PIMA COUNTY LOCAL DROUGHT IMPACT GROUP

**Wednesday, May 8, 2013
2:30 p.m.
3rd Floor Conference Room
Public Works Building
201 N Stone Ave
Tucson, Arizona**

Meeting Summary

Attendance: Kathy Chavez RWRD Erin Boyle NWS
Karen Wilson RWRD Dan Hartley T.O. Nation

Speakers: Marie Light PCDEQ
Kelly Mott Lacroix WRRC/UA

1. Welcome & Introduction – Kathy Chavez welcomed everyone. Introductions were made
2. Updates – K Chavez
 - ADWR's Drought Monitoring Technical Committee (MTC) met on April 23, 2013
 - Long-term drought conditions were discussed. The Upper Gila and Santa Cruz watersheds will remain at Stage D2-Severe Drought. The San Pedro watershed worsened by one drought level from D2-Severe Drought to D3-Extreme Drought and the Sam Simon watershed also worsened by one level from D1-Moderate Drought to D2-Severe Drought. The final Long Term map will be posted to the ADWR website in the near future
 - Agency Updates included:
 - Office of Emergency Management is preparing for the fire season
 - National Weather Service is dealing with budget sequestration issues. The fire season outlook is not favorable for Southeastern Arizona
 - The Salt River Project reports the reservoir storage is at 63% compared to 60% at the same time last year indicating it has not worsened
 - SNO-TEL averages have been changed to reflect the 30-year average from 1980 to 2010. The averages have decreased over the previous 30-year average. Twenty new weather stations in the Four Corners area will produce more data
 - An Interagency Coordinating Group meeting will be held at ADWR on May 20 to discuss drought status, impacts and to make a recommendation to the Governor regarding the Emergency Drought Declaration that is in place
 - Drought Status Maps
 - Short Term – Most recent map dated April 30, 2013 shows all of Arizona in some stage of drought. Central Arizona (Gila County) dropped from no drought to abnormally dry
 - Long Term – The long-term drought map for January, February and March will be published in the near future and was the topic of discussion at the April 23 MTC meeting.

3. Droughts Impacts on Desert Rivers and Riparian Areas – Kelly Mott Lacroix, Water Resources Research Center, University of Arizona

Five photos of the Gila River at Calva taken at various times show how flow and vegetation change in response to drought. Changes to riparian areas, water availability and flood disturbance can be observed. During periods of drought proliferation of invasive tamarisk trees can be seen. Low shrubs and emergence of willow can be seen following flood events

Using an environmental flows database, K Mott Lacroix explored the relationship between biological elements, such as abundance of species, diversity, health and reproduction, and natural flow regimes including magnitude, frequency, duration, time and rate of flow. The database may help researchers understand how riparian species respond to drought. For example, observed drought responses have included:

- More invasive species like Bermuda grass and tamarisk
- Less birds, Gila Topminnows and aerial arthropods
- Decreased stream flow
- Sometimes impacts can be counter intuitive

Drought can cause an increase in water demand, both groundwater and surface water, from many sectors. Riparian health, streamflow, groundwater and human use are all interrelated.

K Mott Lacroix conclusions on drought were:

- It can be counterintuitive
- Differs by species; more species decline than benefit
- Requires understanding of both ecological and social change

4. Low Impact Development Practices Addressing Drought – Marie Light, PC Department of Environmental Quality

- a. Reviewed the benefits of collecting rainwater
 - Supports trees that shade and cool areas
 - Beneficial use of a scarce resource
 - Cools the environment
- b. Provided examples of rainwater harvesting practices
 - Gather runoff from roads into chicanes
 - Concentrate flow behind earthen structures
 - Filter runoff through check dams
 - Settle sediments in low areas
- c. Cooling Benefits include
 - Canopy shade reduces temperature on walls, roofs, vines and parked cars
 - Plant evaporation reduces air temperature
- d. Residential rainwater harvesting practices
 - Below ground treatment and storage
 - Above ground storage
- e. Case Study #1
 - Parking lot was modified with impervious soil
 - Runoff reduced by 89%
 - Pollutants reduced by 95%
- f. Case Study #2
 - Creation of urban forests in five cities

- Evaluated benefits and costs
 - Benefits include aesthetics, air quality, energy, carbon dioxide reduction
 - Cost include litter and green waste removal, pruning, planting
- g. Summary
- Climate change will bring new weather patterns
 - Established a positive image
 - Many benefits
5. Next LDIG Meeting – July 10, 2013
- Improved Precipitation Estimates Using Cloud to Ground Lightning – Dr. Chris Castro, UA
 - Phenology and the Drought – Dr. LoriAnne Barnett, UA
6. Adjournment