PIMA COUNTY LOCAL DROUGHT IMPACT GROUP

Wednesday, March 13, 2013
1:30 p.m.
University of Arizona
Laboratory of Tree-Ring Research
1215 E Lowell Street
Tucson, Arizona

Meeting Summary

Attendance:	Kathy Chavez	RWRD	Dave Meko	LTRR/UA
	Marie Light	PDEQ	Chris Smith	USGS
	Val Little	WaterCASA	Vicki France	Pima NRCO
	Mead Mier	PAG	John Brost	NWS
	Tom Arnold	Tucson Water	Ken Drozd	NWS
	Colby Bowser	RWRD	Glen Sampson	NWS
Speakers:	Erin Boyle	NWS		
	Mitch Basefsky	CAP		
	Tom Swetnam	LTRR/UA		

1. Welcome & Introduction – Kathy Chavez welcomed everyone and thanked Dr. Tom Swetnam for hosting the meeting. Introductions were made

2. Updates – K Chavez
   - ADWR's Drought Monitoring Technical Committee met in January 2013
     - Long-term drought conditions were discussed. Winter rains have improved drought conditions slightly
     - Discussion on the impacts of dirt on snow to the Colorado watershed basin. It is accelerating snowmelt
   - Drought Status Maps
     - Short Term – Most recent map dated March 5, 2013 shows improvement in northeastern Arizona and reflects winter storms that have moved across Arizona in February
     - Long Term – The long-term drought map for October, November and December was published in February 2013. It shows drought improvement in western Arizona and worsening drought conditions in eastern Arizona. The next long-term map will be published in April to reflect conditions of January, February and March

3. 2012-2013 Winter Season Review – Erin Boyle, National Weather Service
   The winter season was the 40th coldest and 39th wettest. Precipitation was 0.05 inches above average and the average monthly temperature was 1.8ºF below average
     - December 2012
       - December 1-9 were the 5th warmest days on record for those dates
       - First freeze on December 11
       - Average monthly temperature 53.4ºF (+1.5ºF)

  - Rainfall 1.18 inches (+0.25 inches)
  - Most of Pima County received average rainfall

- January 2013
  - 12 days with lows 32ºF or colder – most since 1964
  - Record low of 17ºF on January 22
  - 4 days with high temp below 50^0F – most since 1974
  - Average monthly temperature 49.8^0F (-2.8ºF)
  - Rainfall 0.81 inches (-0.13 inches)
  - Eastern Pima County had slightly less rainfall than average
  - Record rainfall on January 26 for that day

- February 2013
  - 3 winter storms and snow in the Tucson Valley
  - Average monthly temperature 50.8ºF (-4.5ºF)
  - Precipitation 0.79 inches (-0.07 inches)
  - Eastern Pima County had slightly less rainfall than average

- Three-month Weather Outlook
  - Above average chance for warmer than normal temperature
  - Equal chances that precipitation will be above or below average
  - Drought status to persist
  - The melting of Arctic ice slows amplification and causes excursions of colder air that penetrates farther south

- The trend is for more record high temperatures and less record low temperatures

- There were more impacts from the winter 2011/12 because of wind and record low highs. The impacts of that freeze were more pronounced than this winter's

- More information can be found at the National Weather Service Website: http://www.wrh.noaa.gov/twc/

4. Status of the Colorado River – Mitch Basefsky, Central Arizona Project

- Lakes Mead and Powell levels have been dropping as the snowmelt runoff has not yet begun
- Lake Powell is 48.5 percent full or 11.8 million acre-feet (maf)
- Lake Mead is 53 percent full or 13.71 maf
- The 2012/13 water year (October 2011 to September 2012) was the third driest year on record
- Snow accumulations for the entire Colorado River Basin is 83 percent of the 30-year average
- The Bureau of Reclamation recently completed the *Colorado River Basin Water Supply and Demand Study* which shows a projected 3.5 maf deficit in 2060 between supply and demand. Several options to decrease demand and increase supplies are being considered
- No Colorado River shortage declarations are projected for the next four to five years

- There are still concerns over proposed EPA air quality regulations impacting the Navajo Generating Station since is provides power for CAP water delivery. Impending air quality standards could increase costs and have economic impacts

5. Tales that Tree Rings Tell - Dr. Thomas Swetnam, Laboratory of Tree-Ring Research, University of Arizona
   - For trees growing in high elevations or northern latitudes, the width of tree rings is an affected by temperature.
   - In temperate, tropical or subtropical areas, the width of tree rings is affected by precipitation
   - Tree rings can also show signs of forest fires and indicate dates fires occurred
   - A.E. Douglas founded the Laboratory of Tree Ring Research at the University of Arizona in 1906 after working with Percival Lowell at the observatory in Flagstaff
   - Tree rings were used to cross date Native American ruins in the desert Southwest in an article published in the National Geographic Magazine in 1929
   - Tree rings have been used to correlate Carbon 14 (C_{14}) dating
   - The oldest trees are found in the White Mountains of California and are over 4,000 years old
   - More recently tree ring have used to reconstruct flows in the Colorado River and to identify periods of drought as far back as 800 A.D. Rain records only began in 1880. This data is being used to understand the extent, frequency, duration and severity of drought
   - Tree ring research has many applications including art history, archaeology, earthquakes, volcanoes, as well as climate change

6. Next LDIG Meeting – May 8, 2013

7. Adjournment and tour of the Laboratory of Tree-Ring Research by Dr. Tom Swetnam