

Arizona Drought Preparedness

Intermountain West Drought Early Warning Systems Drought & Climate Outlook - Sep. 20, 2016

Einav Henenson

Drought Program Coordinator

Arizona Department of Water Resources



Overview:

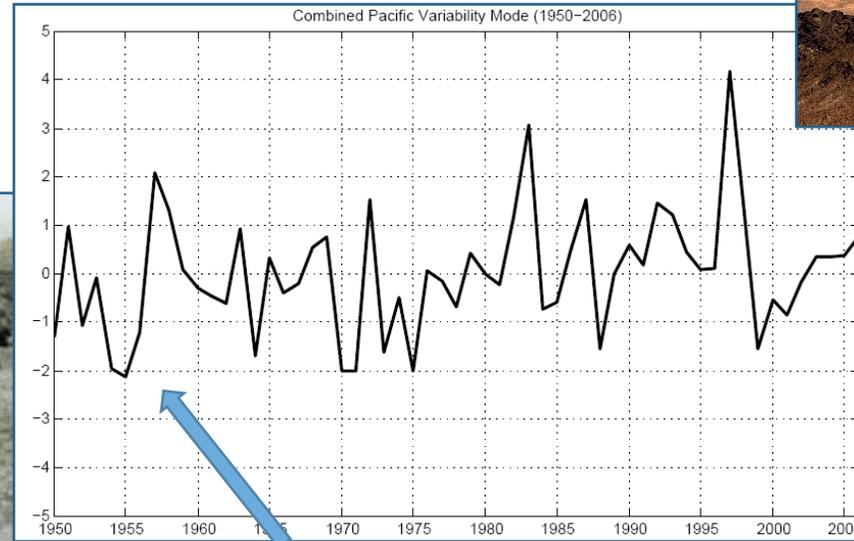
- 1. Drought History**
- 2. 2004 Drought Preparedness Plan**
- 3. Community Water Systems**
- 4. Drought Monitoring Technical Committee (MTC)**
- 5. Governor's Drought Interagency Coordinating Group (ICG)**
- 6. Local Drought Impact Groups (LDIG)**
- 7. Drought Preparedness Annual Report**

Drought History

3 Severe Droughts in the 20th Century!



**Current Drought
(from mid-late 1990s)**

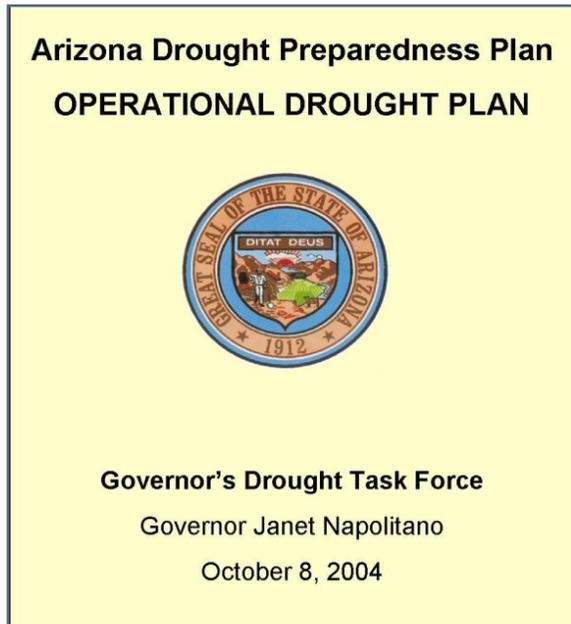


1950's Drought



Several miles east of Phoenix, formerly cultivated land has returned to desert. A lateral, visible in the foreground, lies useless because of a lack of water. Droughts, floods, and erratic river flows would plague Salt River Valley farmers until a dam was built to tame the river and some formal organization formed to promote equitable water management, 1902. (Reclamation photograph)

1900's Drought



2004 Arizona Drought Preparedness Plan

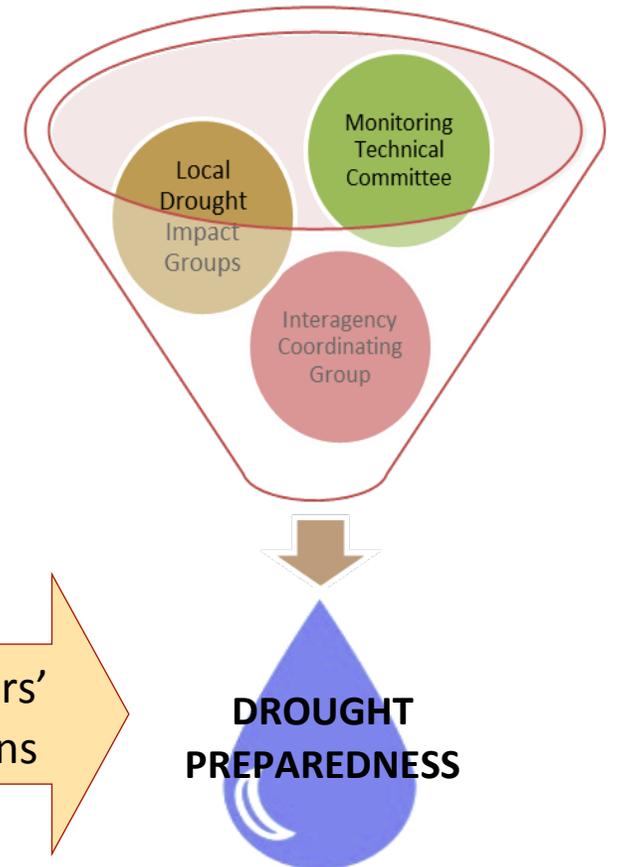
On March 2003 former Governor Napolitano issued an Executive Order to create the **Governor's Drought Task Force** to address drought facing Arizonans.

Drought Taskforce meant to:

- Establish a flexible framework to refine AZ's drought monitoring process
- Improve understanding of drought impacts
- Identify mechanisms for limiting future vulnerability

Drought Preparedness Plan resulted in:

- Working committees
 - Monitoring Technical Committee
 - Interagency Coordinating Group
 - Local Drought Impact Groups
- Water Use Reports & Drought Plan Requirements for all State's water providers



Drought Planning for Community Water Systems

Community Water System (CWS) = Any drinking water provider that serves water to at least 15 connections or 25 year-round residents (from RV Parks to large cities).

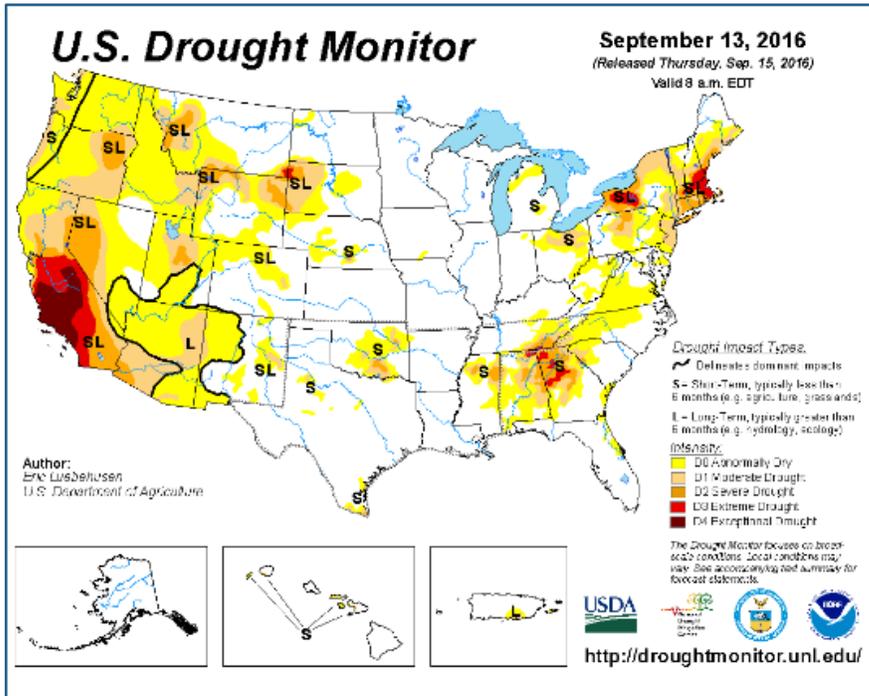
Requirements:

- Annual Water Use Report
- 5-year System Water Plan
 - Water Supply Plan
 - Drought Preparedness Plan
 - Conservation Plan

- Apply to all CWSs
 - ~200 large & ~600 small systems
- Help CWSs reduce vulnerability to drought and be prepared to respond to drought & water shortage
- Regulations established by the state legislature in 2005

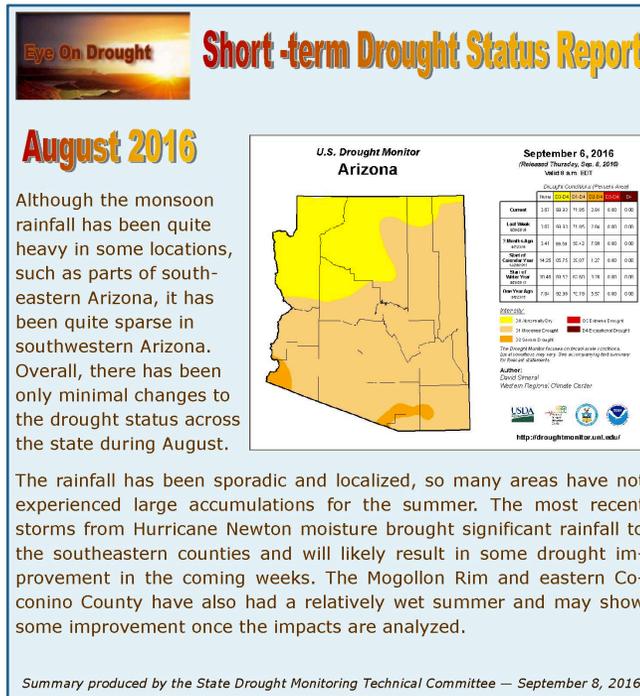
Monitoring Technical Committee (MTC)

- Gathers and evaluates drought, climate & weather data
- Distributes information to land managers, policy-makers & public
- Comprised of climate experts (State Climatologist, NWS, NOAA, NRCS, SRP, ADEM, USGS, County Officials, State Universities, and others)



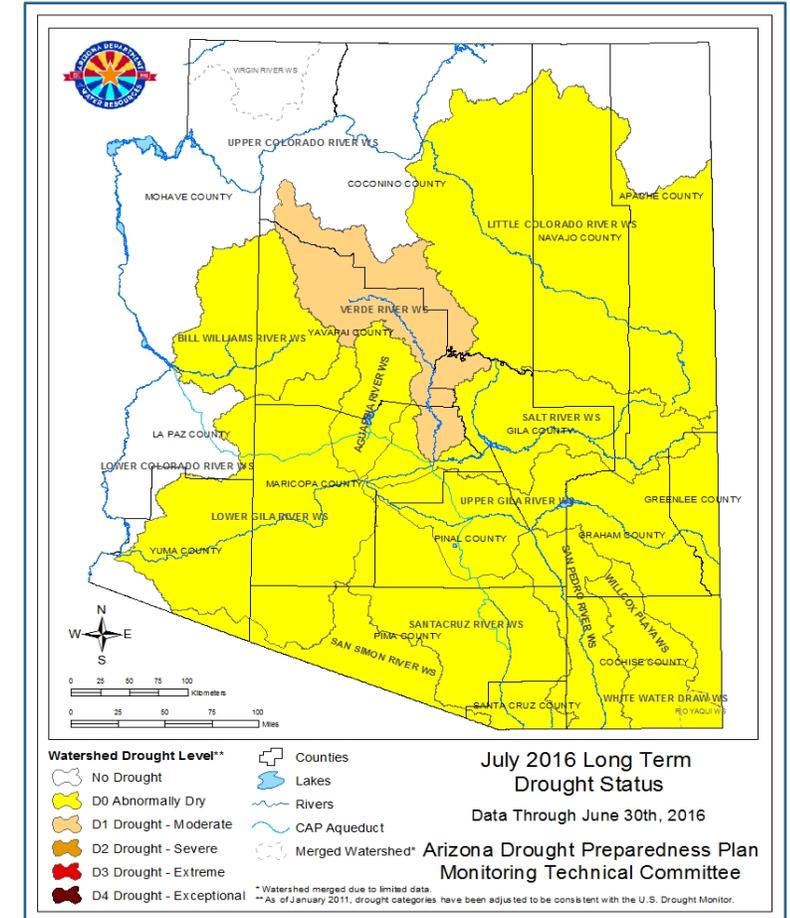
Weekly

Collaborate on U.S. Drought Monitor



Monthly

Short-term Drought Status Report



Quarterly

Long-term Drought Status Report

Interagency Coordinating Group (ICG)

- An advising body to the governor on drought
- Comprised of state & federal agencies, tribal Governments & non-governmental organizations

- Provides biannual updates on water supply & availability
- Advises the Governor of:
 - drought status
 - Drought impacts
 - Necessary preparedness and response actions
- Identifies pre-drought mitigation options
- Identifies needs for additional resources
- Reviews the Drought Preparedness Annual Report

Arizona Drought Assistance			
An Arizona drought emergency declaration has been in effect since 1999. In response to this, several state and federal agencies provide assistance for drought planning, mitigation and response as seen in the matrix below. The types of assistance include financial, technical and educational, as well as support of local level preparation and response.			
Agency and Website	Target Audiences	Assistance and Resources	Contact Person
 Arizona Cattle Growers Association	Cattle growers and ranchers	Provides drought-related information and resources; reports on drought impacts.	Patrick Bray, Executive Vice President; bray@arizonaag.org or 602-247-1125
 Arizona State Parks	Residents, government agencies	Reports on the impacts of drought.	Bob Sekora, Water Program Manager; rsekora@azstateparks.org or 602-542-4174
 Arizona Corporation Commission	400 individual water systems operated by nearly 350 companies	Regulates curtailment tariffs, which include descriptions of drought stages and corresponding requirements for measures and notification.	Steve Oles, Director Utilities Division; soles@arcc.gov or 602-542-4251
 Arizona Department of Forestry and Fire Management	Residents and businesses	Offers grants related to water development project (wildfire mitigation and crop conservation grant funding at current time.)	Lisa James, Livestock and Crop Conservation Grant Program Manager; ljames@azdfm.gov or 602-544-3252

 Arizona State University Arizona State Climate Office, Arizona State University	All residents of Arizona, government agencies	Provides and analyzes current weather conditions, watches, warnings and forecasts.	Nancy Selover, State Climatologist and Research Professor; selover@asu.edu or 480-965-0580
 Arizona State Forestry Division	Residents, communities and wildland areas	Manages and reduces wildfire risk; provides forest resource stewardship in cooperation with Federal, Tribal, state and local agencies, and private industries; reports on the impact of drought on wildland fuels.	Jeff Whitney, Arizona State Forester; jwhitney@azsf.gov or 602-771-1400
 Arizona State Land Department	Arizona State Trust Land lessees	Provides information on drought-related impacts to water supply for lessees of State Trust Land	John Schneeman, Assistant Director, Natural Resources Division; 602-586-2857 or jschneeman@atland.gov
 CAP (Central Arizona Project)	Residents of central and southern Arizona, elected officials and community leaders, water stakeholder, teachers, students	Offers funding and programs in support of water education and the environment.	Crystal Thompson, Community Outreach/Public Affairs; cthompson@cap-az.com or 623-669-2138
 CLIMAS Climate Assessment for the Southwest University of Arizona	Scientists, decision makers, resource users, educators, and others seeking information	Promotes participatory, iterative research on the nature, causes, and consequences of climate change and variability in the southwestern United States in order to: improve the region's ability to respond sufficiently and appropriately.	Michael Commins, Associate Professor Soil, Water and Environmental Science; commins@arizona.edu or 520-624-4244

Arizona Drought Assistance Matrix

 Arizona Department of Environmental Quality	All residents	Requires community water systems to compile an Emergency Response Plan based on their Emergency Operations Plan and Vulnerability Assessment.	Noah Adams, Emergency Preparedness and Response; adams.noah@adeq.gov or 602-771-4511
 Arizona Department of Water Resources	Water providers and planners, all residents, water-related sectors	Coordinates drought interagency coordinating group and monitoring technical committees; disseminates drought reports; requires drought preparedness plan of community water systems; provides drought planning assistance and conservation resources.	Ruth Greenhouse, Conservation and Drought Planning; rgreenhouse@azwater.gov or 602-771-8608
 Arizona Division of Emergency Management	Emergency management community and key government officials	Prepares and coordinates emergency services and the efforts of government agencies to reduce the impact of drought on persons and property; website provides tips for communities, utilities and homes.	Anthony Cox, Assistant Director of Operations and Coordination; anthony.cox@wadema.gov or 602-464-6352
 Arizona Firewise Communities	Communities, families, youth, educators	Coordinates the Arizona Firewise Communities program; provides classes, presentations and information on Firewise principles. To download publications, visit: http://rals.arizona.edu/firewise/ .	Carrie Dennett, State Firewise Coordinator; 602-396-8278 or CarrieDennett@azsf.gov
 Arizona Game & Fish Department	Residents, government agencies	Provides water developments/water catchments to wildlife; reports on the impacts of drought.	Ed Jahro, Habitat Program Manager; ejahro@azgfd.gov or 602-942-3000 X 7482

Local Drought Impact Groups

County based local drought groups,
Provide drought monitoring info to the MTC,
provide drought response and mitigation options at the local level.

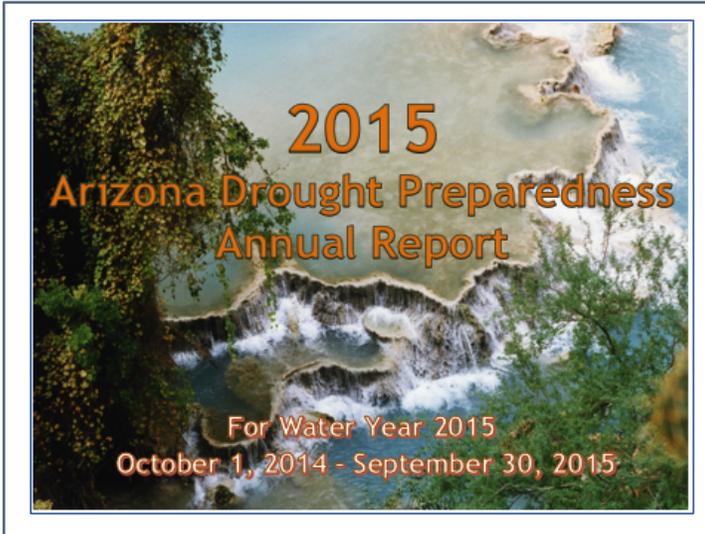
- Identify local drought-related impacts
- Define and assess Drought-
 - severity
 - societal impacts
 - loss and costs
- Identify response options & needs
- Identify and facilitate efforts to mitigate impacts



Local drought preparedness &
reduced drought vulnerabilities



Arizona Drought Preparedness Annual Report



Climate & Precipitation Data

Drought status changes

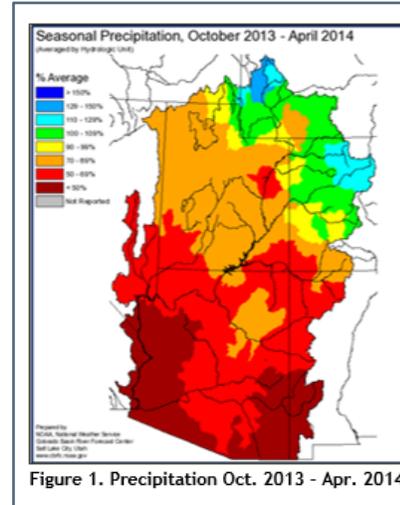
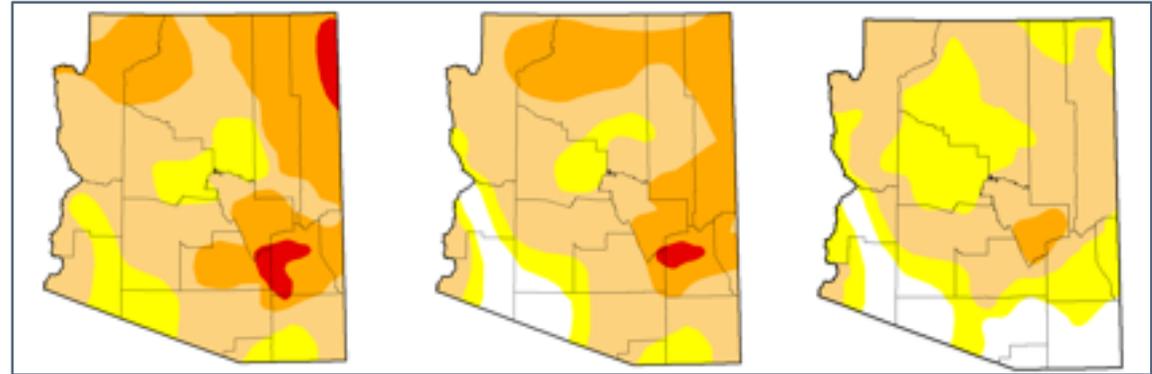


Figure 1. Precipitation Oct. 2013 - Apr. 2014.

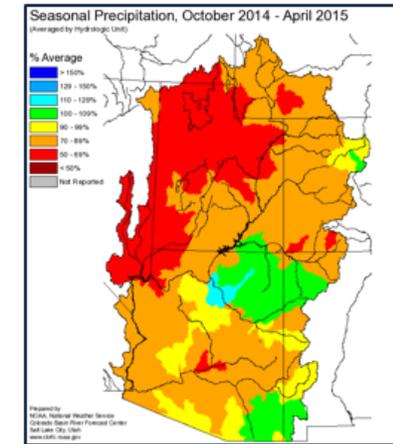
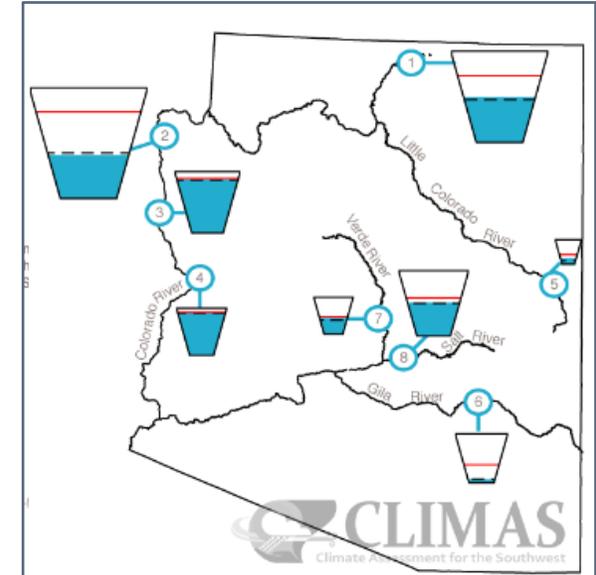


Figure 2. Precipitation Oct. 2014 - Apr. 2015.

Drought Status Summary



Water Supply Status

Thank you!

Einav Henenson

ehenenson@azwater.gov

(602) 771-8607



PROTECTING
ARIZONA'S WATER SUPPLIES
for ITS NEXT CENTURY