

Arizona Drought Preparedness

Monitoring and Reporting Drought Workshop

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Credit: Dave Dilli
Photography

Overview

1. Drought History
2. 2004 Drought Preparedness Plan
3. Drought Preparedness Working Groups
 - Local Drought Impact Groups
 - Monitoring Technical Committee
 - Interagency Coordinating Group
4. Drought Preparedness Annual Report
5. New Reporting Requirements for Water Systems
6. Challenges & Successes

DROUGHT HISTORY

Three severe droughts in Arizona in the 20th Century

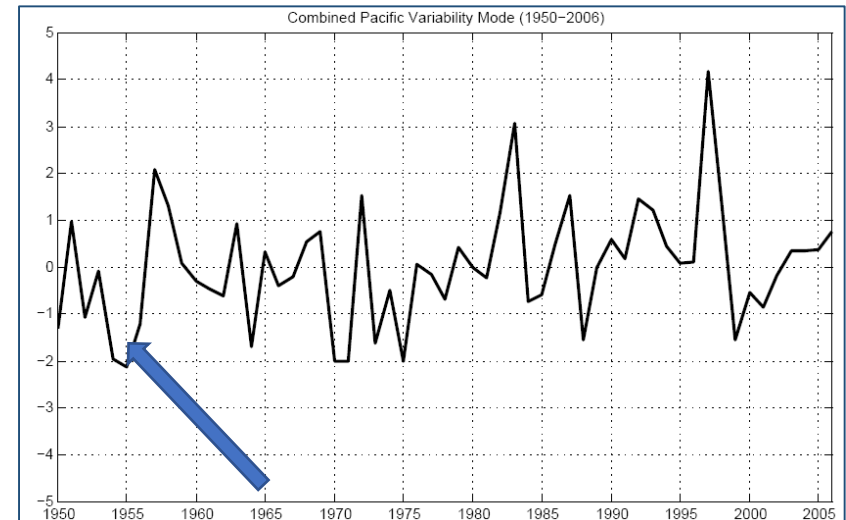


Current Drought
(from mid-late 1990s)



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)

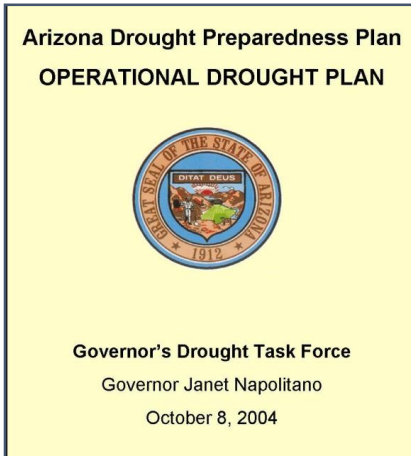
1900s Drought



1950s Drought



2004 ARIZONA DROUGHT PREPAREDNESS PLAN



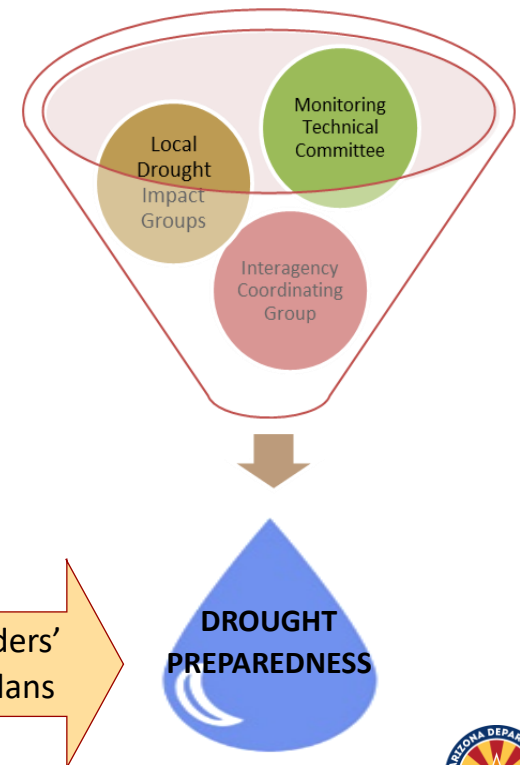
In March 2003 former Governor Napolitano issued an Executive Order to create the **Governor's Drought Task Force** to address drought impacts to Arizonans.

Drought Taskforce goals:

- 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 results:

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



LOCAL DROUGHT IMPACT GROUPS (LDIGs)

- 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 & facilitate efforts to mitigate impacts



Local drought preparedness &
reduced drought
vulnerabilities

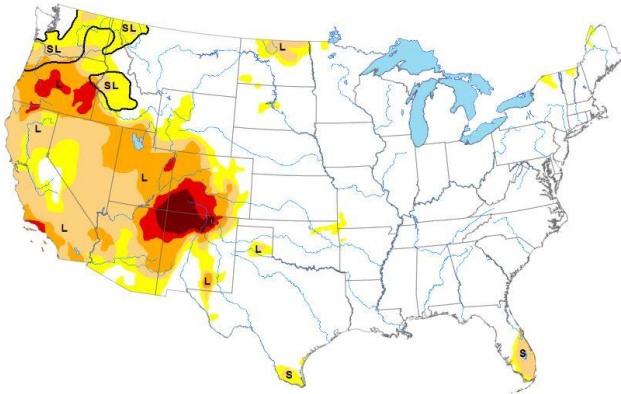


MONITORING TECHNICAL COMMITTEE (MTC)

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

Map released: January 3, 2019

Data valid: January 1, 2019 | Author: David Miskus, NOAA/NWS/NCEP/CPC



Weekly

U.S. Drought Monitor Input

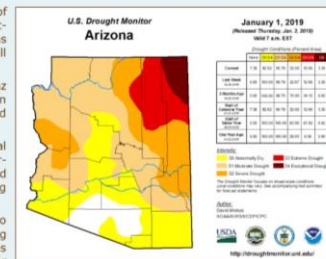
Arizona Short-term Drought Status Report December 2018

December was drier than average for most of the state, except south central and southeastern Arizona. Half a dozen storm systems moved through the state, but rain and snowfall totals were low.

Severe Drought (D2) eased in Western La Paz County while some areas within Pima, southern Maricopa and southern Pinal counties improved from Abnormally Dry (D0) to No Drought.

The Four Corners area remains in Exceptional Drought (D4) and Extreme Drought (D3). Further relief in drought conditions are anticipated next week as another winter storm is moving toward the state.

The weak to moderate El Niño is expected to continue through March, which should bring slightly wetter than average conditions this winter. The seasonal outlook also calls for warmer than normal temperatures, which may affect the snow levels.

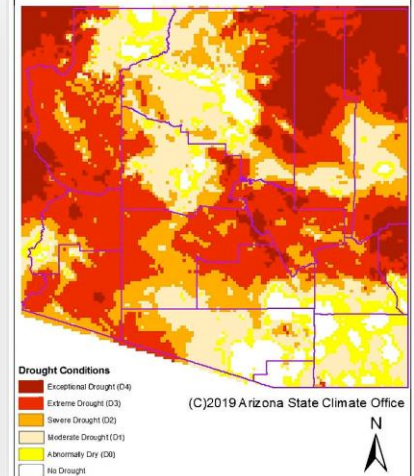


Summary produced by the State Drought Monitoring Technical Committee — January 4, 2019

Monthly

Short-term Drought Status Report

Oct - Dec 2018 Long-Term Drought



(C)2019 Arizona State Climate Office



Quarterly

Long-term Drought Status Report







INTERAGENCY COORDINATING GROUP (ICG)

- An advising body to the Governor on drought
- Comprised of state agencies, federal agencies and 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 Grazers Association	Cattle growers and ranchers	Provides drought-related information and resources; reports on drought impacts	Patrick Bray, Executive Vice President bray@arizona-cattle.com or 602-267-1129
 Arizona State Parks	Residents, government agencies	Reports on the impacts of drought.	Bob Rogers, Water Program Manager rogers@arizonestateparks.org or 602-542-4134
 Arizona Department of Water Resources	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.	Jane Olin, Director Utilities Division jolin@arizona.gov or 602-542-4251
 Arizona Department of Agriculture	Ranchers and farmers	Offers grants related to water development project under the livestock and crop conservation grant program. (No funding at current time.)	Lisa Jamin, Livestock and Crop Conservation Grant Program Manager ljamin@arizona.gov or 602-542-3222

 Arizona State University	All residents of Arizona, government agencies	Provides and analyzes current weather conditions, weather warnings and forecasts	Mary Belove, State Climatologist and Research Professor belove@asu.edu or 480-963-9160
 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 individuals; reports on the impact of drought on wildland fuels.	Jeff Williams, Arizona State Forester jwilliams@azfd.gov or 602-771-1400
 Arizona State Trust Land Leases	Arizona State Trust Land leases	Provides information on drought-related impacts to water supply for leases of State Trust Land	John Johnson, Assistant Director, Natural Resources Division 602-506-2497 or johnjohn@land.gov
 CAP (Center of Arizona Programs)	Residents of central and southern Arizona, elected officials and community leaders, water stakeholders, teachers, students	Offers funding and programs in support of water education and the environment.	Cyril Thompson, Community Outreach Public Affairs cjohnson@cap-az.com or 602-689-3189
 CLIMAS (Climate Science Assessment for the Southwestern United States of Arizona)	Scientists, decision makers, resource users, educators, and others seeking information	Provides participatory, iterative research on the nature, trends, 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 Cronin, Assistant Professor Irrigation and Environmental Science mronin@arizona.edu or 520-625-0244

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.	Tosh Adams, Emergency Preparedness and Response adams.tosh@adeq.gov or 602-771-8911
 Arizona Department of Water Resources	Water providers and planners, all residents, water-related doctors	Coordinates drought inter-agency coordinating group and provides technical consultation; disseminates drought reports; requires drought preparedness plans of community water systems; provides drought planning assistance and conservation resources.	Ruth Overhouse, Conservation and Drought Planning overhouse@water.gov or 602-771-9808
 Arizona Division of Emergency Management	Emergency management community and fire government officials	Prepares and coordinates emergency services and the efforts of government agencies to reduce the impact of disasters on persons and property; website provides tips for communities, utilities and homes.	Anthony Cox, Assistant Director of Operations/Coordination cox@arizona.gov or 602-464-9392
 Arizona Firewise Communities	Communities, families, youth, educators	Coordinates the Arizona Firewise Communities program; provides classes, presentations and information on Firewise principles; for detailed publications, visit: http://cabs.arizona.edu/firewise/	Carrie Bennett, State Firewise Coordinator 602-399-3676 or CarrieBennett@azd.gov
 Arizona Game & Fish Department	Residents, government agencies	Provides water developments/water catchments to wildlife; reports on the impacts of drought.	Allynda, Habitat Program Manager ahabit@azgfd.gov or 602-842-3000 x 7901



2018 Arizona Drought Preparedness Annual Report

For Water Year 2018: October 1, 2017 - September 30, 2018

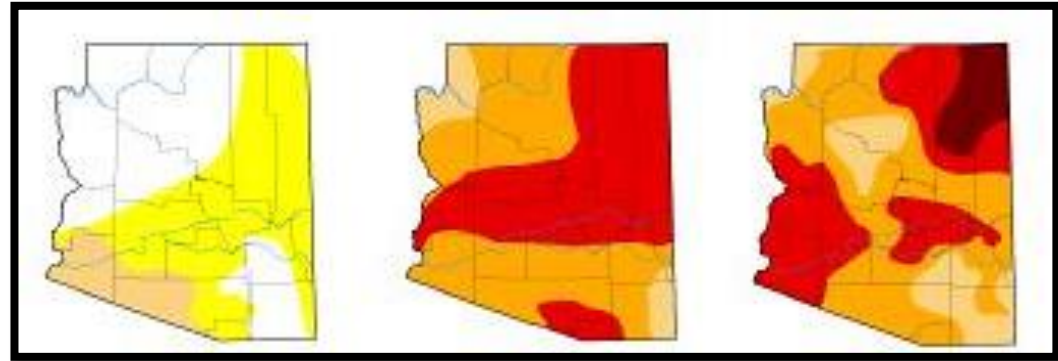


Oak Creek Canyon

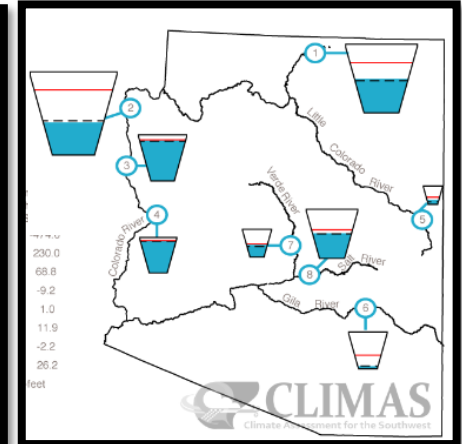
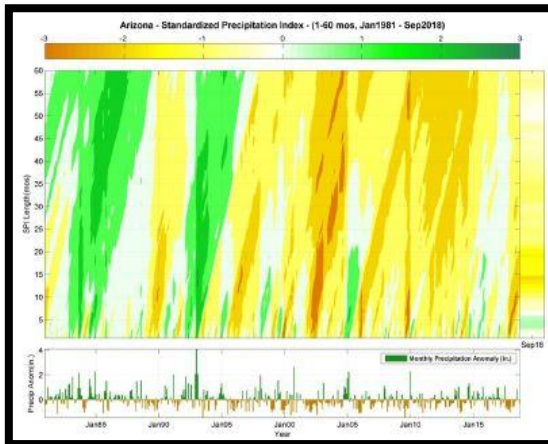
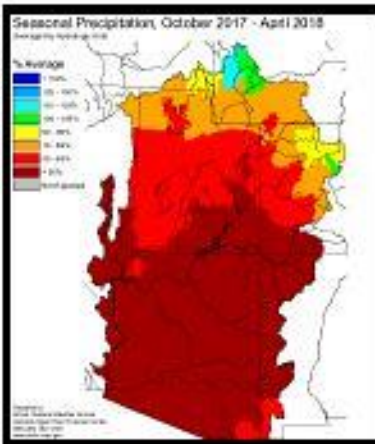
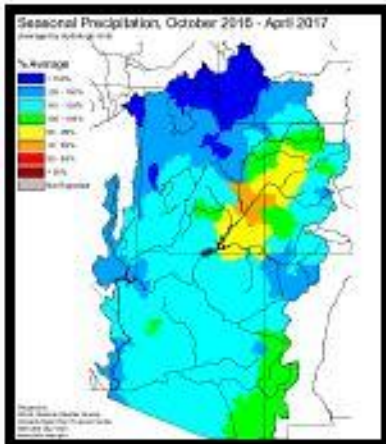


PROTECTING
ARIZONA'S WATER SUPPLIES
for ITS NEXT CENTURY

DROUGHT PREPAREDNESS ANNUAL REPORT



Drought Status Changes



Drought Status Summary

Climate & Precip. Data

Water Supply Status



NEW REQUIREMENTS FOR ALL 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).

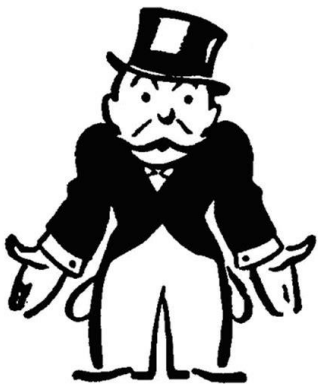
Reporting Requirements:

- 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



DROUGHT PLAN & PROGRAM CHALLENGES

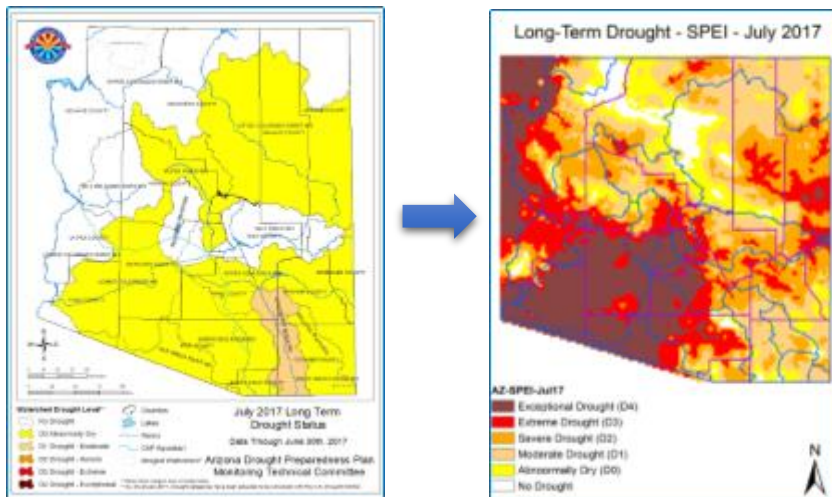
- Decreasing LDIG participation from Arizona county representatives
- Lack of drought impact reports
- No statutory requirements for revisions or updates of Plan
- Lack of resources to:



- Support the establishment & facilitation of more LDIGs
- Improve program data collection
- Increase the number of drought index wells
- Increase outreach opportunities

DROUGHT PLAN & PROGRAM SUCCESSSES

- MTC & ICG consistently active in the past 12 years
- ~ 700 community water systems have created and submitted drought and conservation plans
- Statewide drought information sought and received by growing numbers (approx. 370 email recipients)
- New Long-term drought map (from a watershed-based to a 4km grid-based map)



- New & improved Drought website (from 38 to 8 easy-to-navigate pages)

new.azwater.gov/drought



Thank you!

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for ITS NEXT CENTURY

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