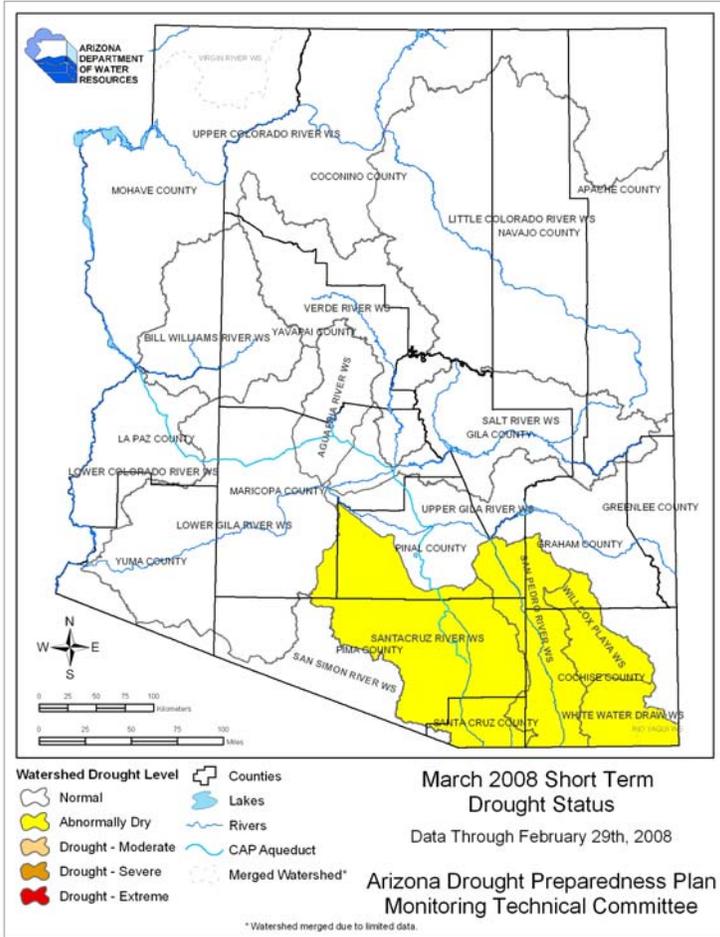


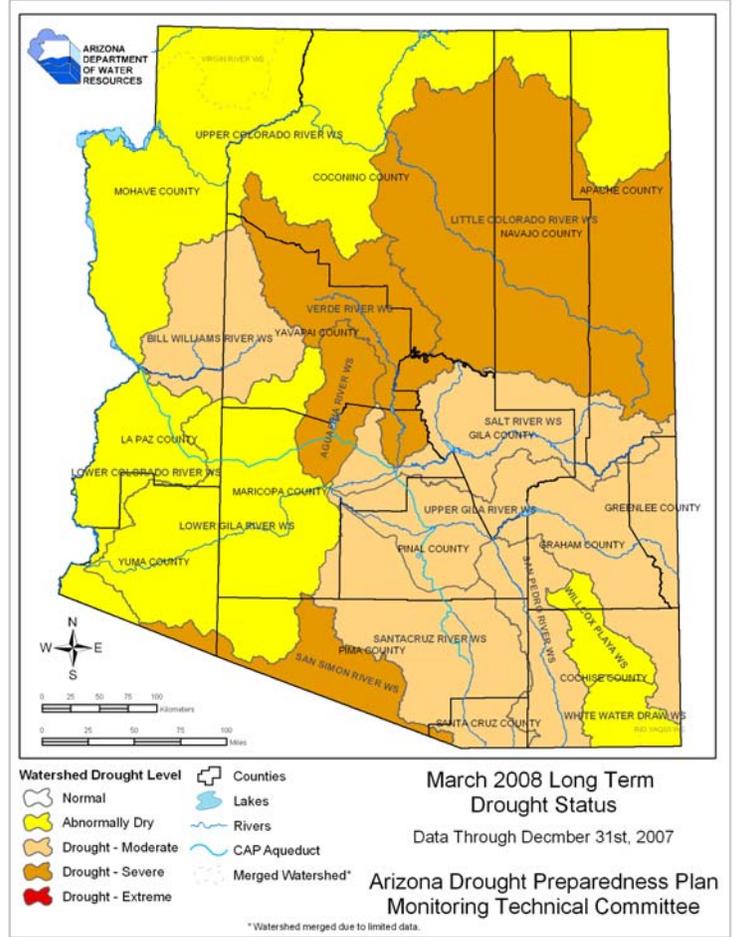
Arizona Drought Monitor Report

March 2008

Short-term Drought Status



Long-term Drought Status



Short-term Update

The short-term drought situation has again improved with eight watersheds moving from abnormally dry to normal, leaving the state with only four watersheds at abnormally dry. These watersheds are all located in southern Arizona, which has been by-passed by most of the January and February winter storms. Dry conditions in southern Arizona have resulted in poor range conditions, made worse by warmer than average temperatures. Orchards in the Tucson area report having to irrigate earlier than normal due to insufficient winter moisture. The current warm, dry conditions forecast by the Climate Prediction Center are expected to continue into the summer.

Long-term Update

The long-term drought status is analyzed quarterly to assess seasonal changes. The January update, using the October-December data, saw long-term drought improvement in the Lower Gila and Willcox Playa in southern Arizona, the Upper Colorado and Virgin watersheds in northern Arizona, and the Salt River watershed in east central Arizona. These watersheds benefited from a series of cold, wet, early winter storms that saturated the soil and initiated an early snowpack. The next update in April will include the January-March precipitation. January and early February have been wetter than average in northern and eastern Arizona, but March is shaping up to be drier than average, and warm temperatures may hasten the spring snowmelt.



Reservoir Storage



USDA NRCS Dr. Ken Dewey, High Plains Regional Climate Center

Vegetation Health



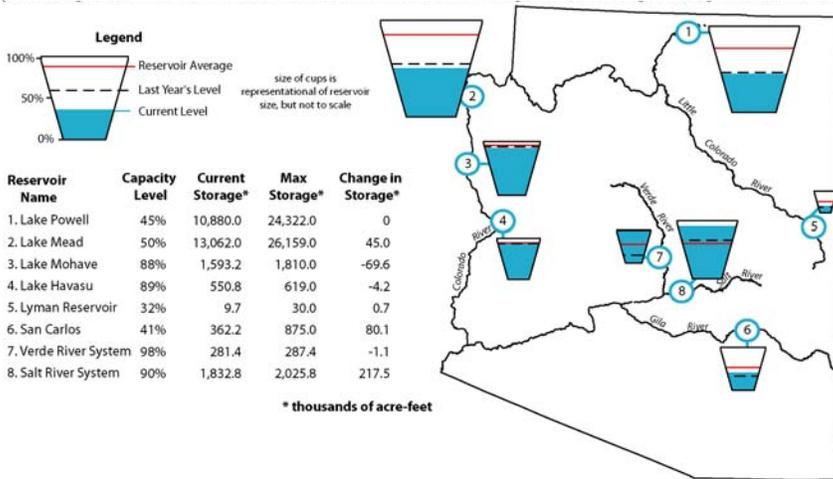
Jeff Severson

Arizona Reservoir Status

For a second straight month, storage increased substantially in reservoirs within Arizona's borders (see figure below). Storage in the Salt River reservoirs increased by more than 200,000 acre-feet during the last month; current levels in these reservoirs are well above last year's levels. Storage in San Carlos Reservoir increased substantially; this reservoir is now at a level higher than any time since 1996. Though storage in Lake Mead increased since last month, the combined storage in Lakes Powell and Mead is less than this time last year. Lake Powell storage is expected to increase substantially during the spring snowmelt runoff season, which will probably begin in mid-April.

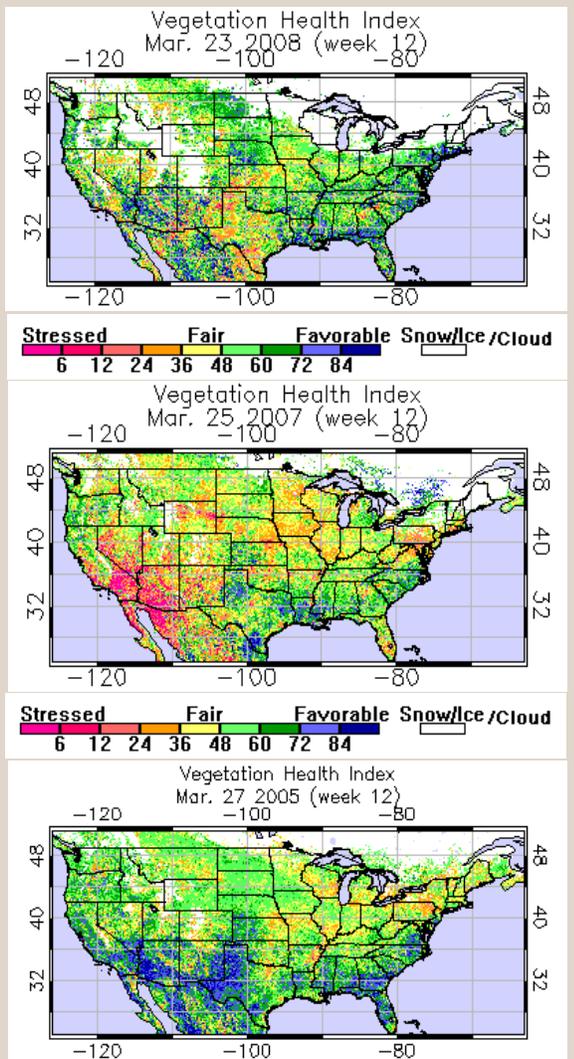
For 60 hours, an artificial flood coursed through the Colorado River, in order to bolster sandbars that shelter endangered fish (*Salt Lake Tribune*, March 17, 2008). The experimental flood, which mimicked pre-Glen Canyon Dam spring floods that redistribute sediment from tributaries, came at the expense of cheap hydropower produced by the dam's turbines.

Arizona reservoir levels for February 2008 as a percent of capacity. The map depicts the average level and last year's storage for each reservoir, while the table also lists current and maximum storage levels.



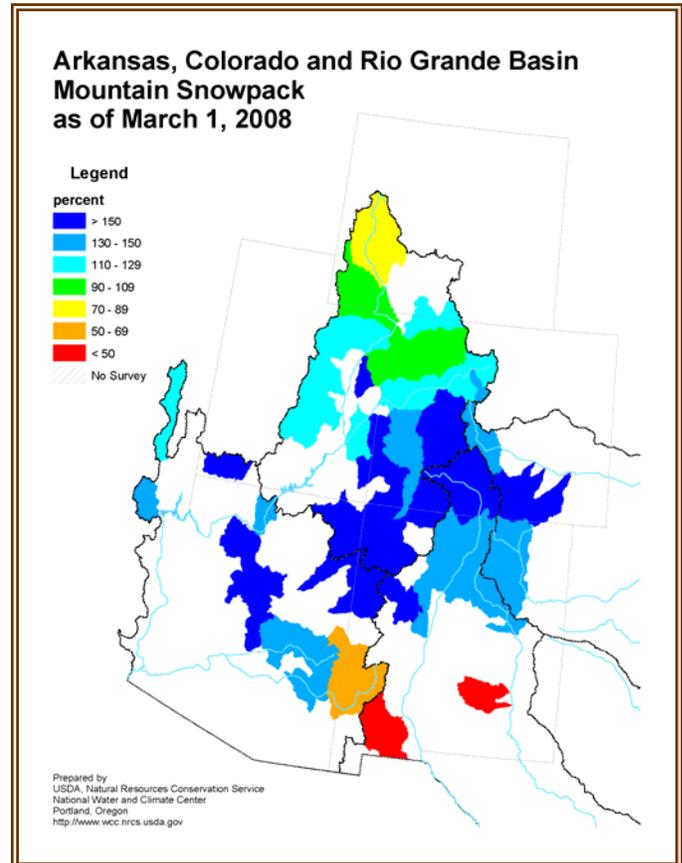
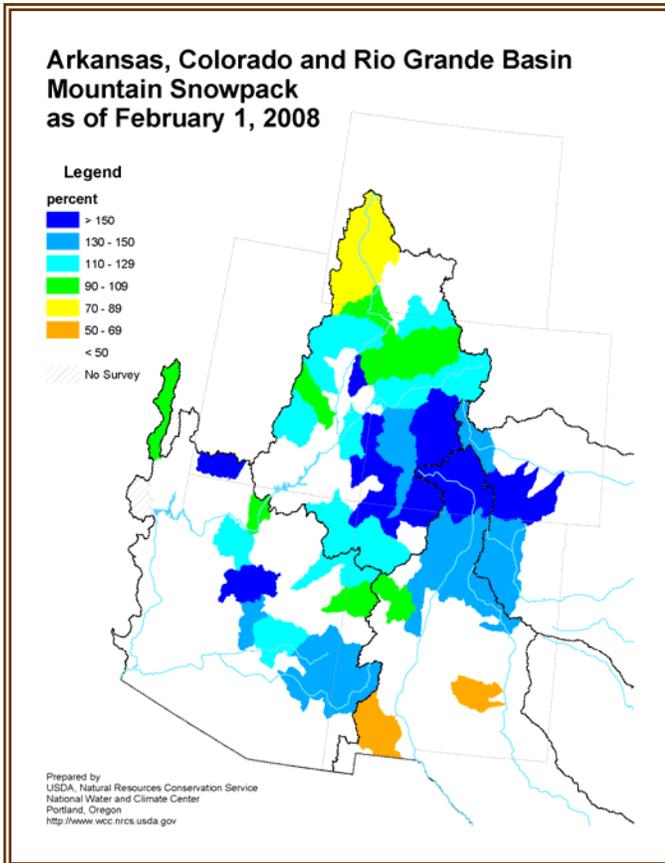
Photos by the National Park Service

Recent vegetation health index data from the NOAA Center for Satellite Applications and Research (top figure) continue to show improvement in contrast to one year ago (middle figure), with a notable exception in southeastern Arizona. Lower than average winter moisture in southeastern Arizona and across Southern and eastern New Mexico has led to stressed to fair vegetation conditions in non-irrigated areas. Note that this winter's unexpected bounty of moisture and vegetation response is less than during the winter of 2004-05 (bottom figure). The Southwest Coordination Center's March outlook for fire potential in June and July suggests normal potential across Arizona, with potential increasing as new grasses and shrub growth cure during the typically dry and windy months of April-June. (White areas indicate substantial cloud cover.)



Images are obtained from the NOAA National Environmental Satellite, Data and Information Service (NESDIS).

Mountain Precipitation



Snowpack conditions remained above average during February in the mountains of northern and eastern Arizona. For the water year to date, cumulative precipitation is above average in all basins, ranging from 117 to 162 percent of average (see table below).

Mountain Snowpack

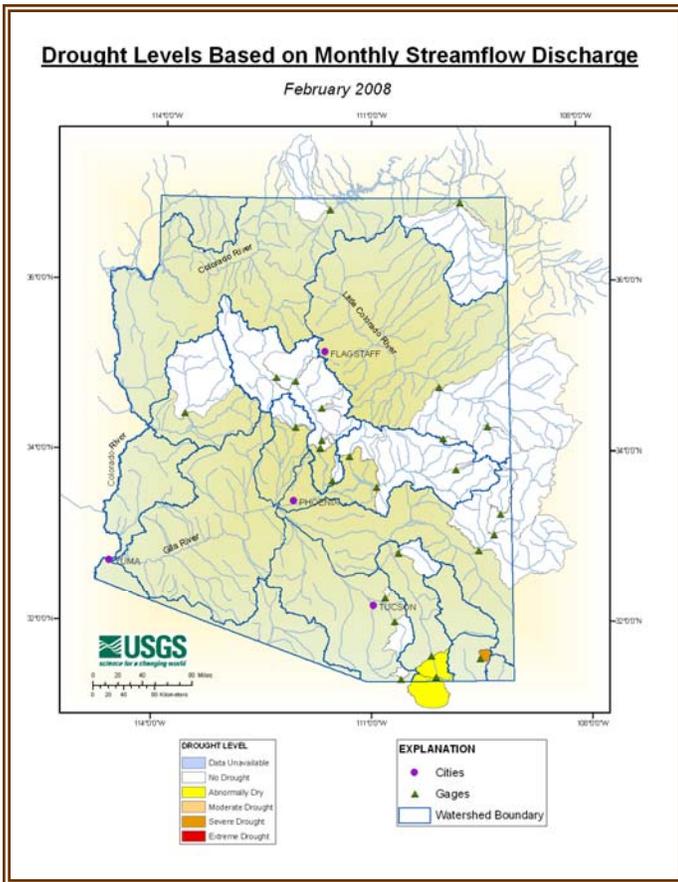
Watershed	Snowpack Levels (% of 30-Year Average)	
	Feb. 1	Mar. 1
Salt River Basin	133%	144%
Verde River Basin	151%	172%
Little Colorado River Basin	125%	144%
San Francisco-Upper Gila River Basin	138%	115%
Other Points of Interest		
Chuska Mountains	123%	153%
Central Mogollon Rim	122%	145%
Grand Canyon	105%	138%
San Francisco Peaks	204%	188%
Arizona Statewide	138%	154%

Water Year Precipitation

Watershed	Precipitation Oct 1-Feb 29 (% of 30-Year Average)
Salt River Basin	149%
Verde River Basin	152%
Little Colorado River Basin	162%
San Francisco-Upper Gila River Basin	117%
Other Points of Interest	
Chuska Mountains	--
Central Mogollon Rim	--
Grand Canyon	114%
San Francisco Peaks	--
Arizona Statewide	--

Source USDA-NRCS

Mountain Streamflow



February Streamflow

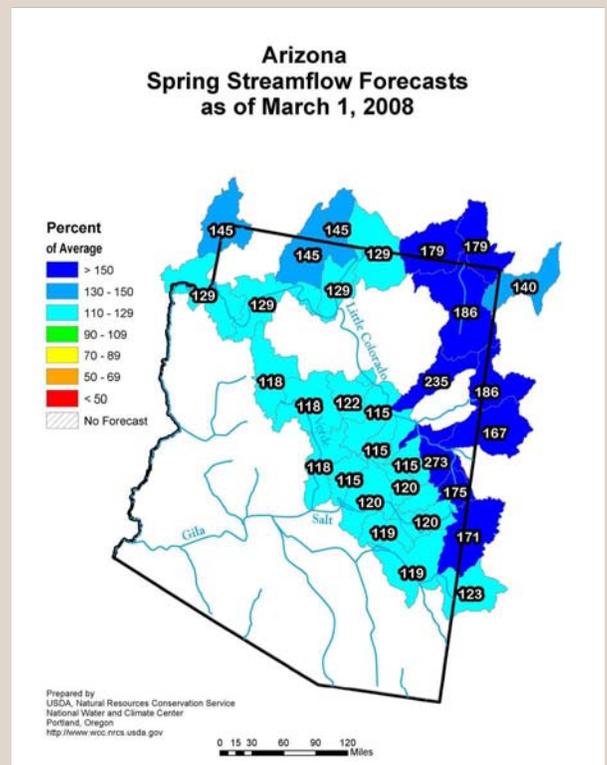
Water body	February Runoff in Acre Feet	% of Median
Salt River near Roosevelt	163,934	343%
Tonto Creek above Gun Creek near Roosevelt	47,455	363%
Verde River at Horseshoe Dam	111,015	305%
Combined Inflow to Salt River Project (SRP) reservoir system	322,404	332%
Little Colorado River above Lyman Lake	1,323	272%
Gila River to San Carlos Reservoir	61,547	275%

Streamflow Observed at USGS Gauging Stations

Streamflow Forecasts

As of the end of the month, the combined Salt River Project system is at 93 percent of capacity with 2,149,427 acre-feet in storage. As a result of these conditions, the forecast calls for above normal streamflows in all basins during the spring snowmelt season.

Water body	Forecasted Runoff (March-May unless noted) in Acre Feet	% of Median
Salt River near Roosevelt	325,000	120%
Tonto Creek	30,000	115%
Verde River at Horseshoe Dam	170,000	118%
San Francisco River at Clifton	72,000	171%
Gila River near Soloman	125,000	119%
San Carlos reservoir inflow	100,000	158%
Little Colorado River above Lyman Lake	Mar-June - 11,000	175%
Little Colorado River at Woodruff	6,000	273%
Colorado River inflow to Lake Powell	Apr-July - 10.2 million	129% of 30-yr. avg.
Virgin River at Littlefield	Apr-July - 106,000	143% of 30-yr. avg.



Temperature and Precipitation



February precipitation was near average for the southern half of the state, with slightly below-average precipitation in the southeast and southwest. The northern half of the state received well above-average precipitation for the month. The regular cycle of storms brought seasonable temperatures to the state, with all climate divisions reporting temperatures between the 45th and 58th percentiles.

The 3-month winter period of December through February has been very wet across most of the state, averaging between the 81st and 95th percentile. The driest watersheds are in the southeast, but they are still wetter than average. The relatively cold weather in January and seasonal temperatures of February dropped the 3-month temperatures to near or below average.

The 6-month period precipitation, from September through February, continues to remain near- or slightly below-average in the southeast, with Willcox and Whitewater Draw around the 35th percentile. The cold winter temperatures in the north have brought the three northern climate divisions below the 67th percentile, while the southeast remains above the 85th percentile for temperature.

The 12-month period has again improved across all watersheds except the Upper Gila. Only the Virgin watershed is below average, below the 9th percentile. Temperatures remained high for all climate divisions, except the northwest, which finally dropped below the 85th percentile.

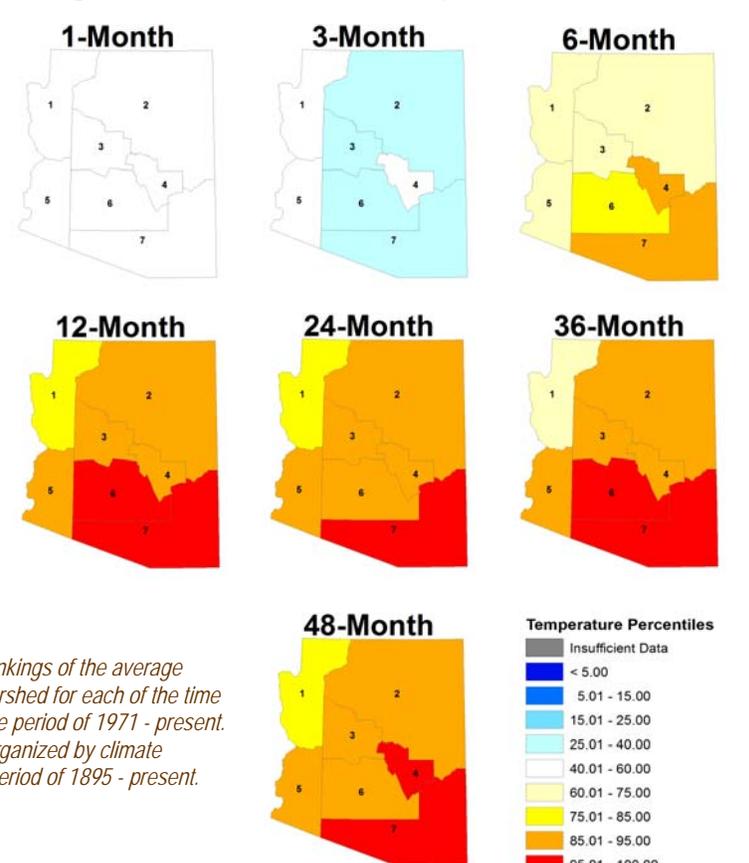
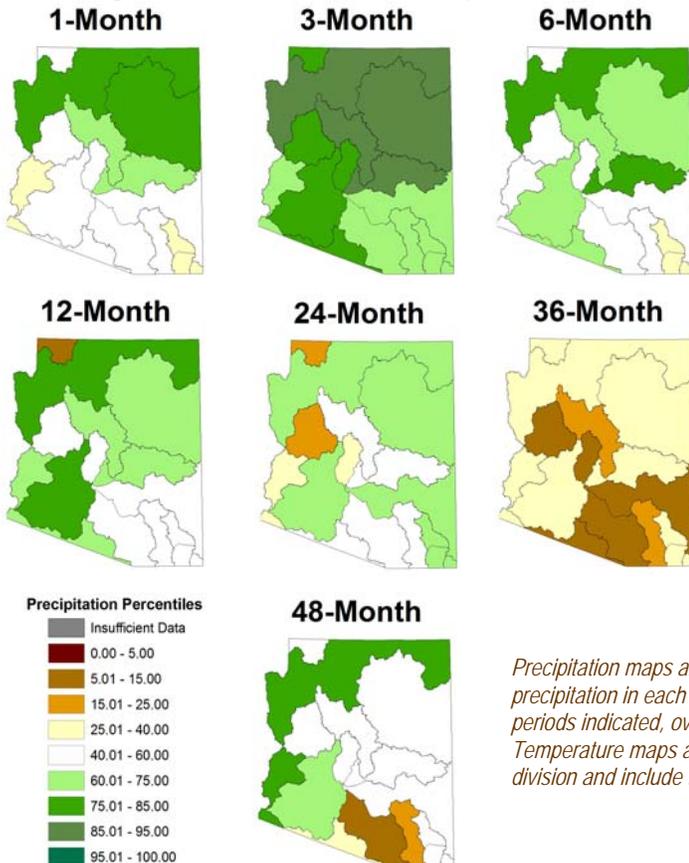
The 24-month period shows drier watersheds in the west and south central region, and wetter than average watersheds in the southeast. This is the opposite of the shorter-term precipitation conditions, which show the southeast as the driest region. The 24-month period picks up the past two monsoons which were very wet in the southeast. Temperatures for this period continue to be above the 86th percentile everywhere but the northwest, where they dropped just below the 79th percentile.

The 36-month period is again the driest period with all watersheds below the 38th percentile. The Bill Williams and Agua Fria in west central Arizona, the San Simon, Santa Cruz, and San Pedro in the south remain extremely dry in the long-term, and the upper Gila has now fallen below the 15th percentile. Temperatures over the three-year period are above the 87th percentile in all climate divisions except the northwest, which has fallen below the 75th percentile.

The 48-month period is still split with above-average precipitation in the western watersheds, below-average in the southeastern watersheds, and near-average in the central and eastern watersheds. Santa Cruz, San Pedro and San Simon continue to be the driest long-term watersheds, while the upper and lower Colorado are the wettest. For temperature, only the northwest climate division of Mohave County remains below the 90th percentile.

Precipitation Percentiles by Watershed

Temperature Percentiles by Climate Division



Precipitation maps are rankings of the average precipitation in each watershed for each of the time periods indicated, over the period of 1971 - present. Temperature maps are organized by climate division and include the period of 1895 - present.

Weather Outlook



Arizona Drought Monitor Report -
Produced by the Arizona State Drought
Monitoring Technical Committee

Co-chairs:
Gregg Garfin, University of Arizona –
Institute for the Study of Planet Earth

Tony Haffer, National Weather Service

Mike Crimmins, Extension Specialist,
University of Arizona Cooperative
Extension

Dino DeSimone, Natural Resources
Conservation Service

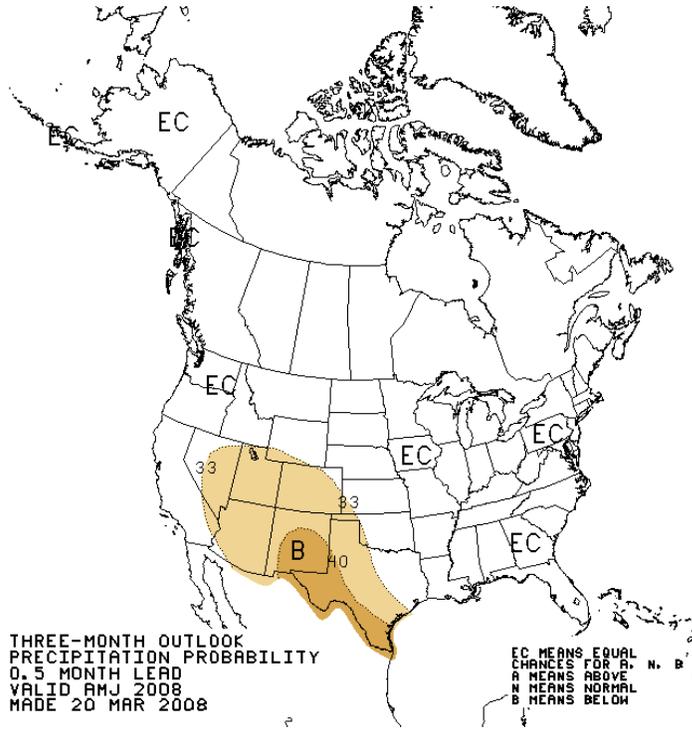
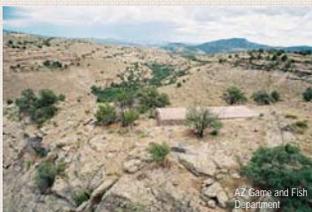
Charlie Ester, Salt River Project

Ron Ridgway, Arizona Division of Emer-
gency Management

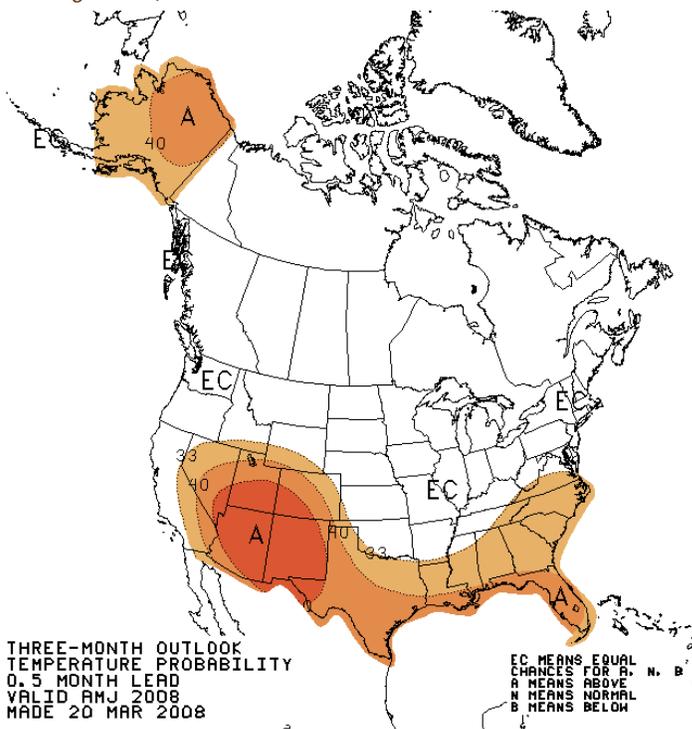
Nancy Selover, State Climatologist
Arizona State University

Chris Smith, U.S. Geological Survey

Coordinator: Susan Craig, Arizona
Department of Water Resources
Computer Support: Andy Fisher, Arizona
Department of Water Resources



Some confidence precipitation will be below average across the state during the 90-day period (April through June)



High level of confidence temperatures will be above average across the entire state (April through June)