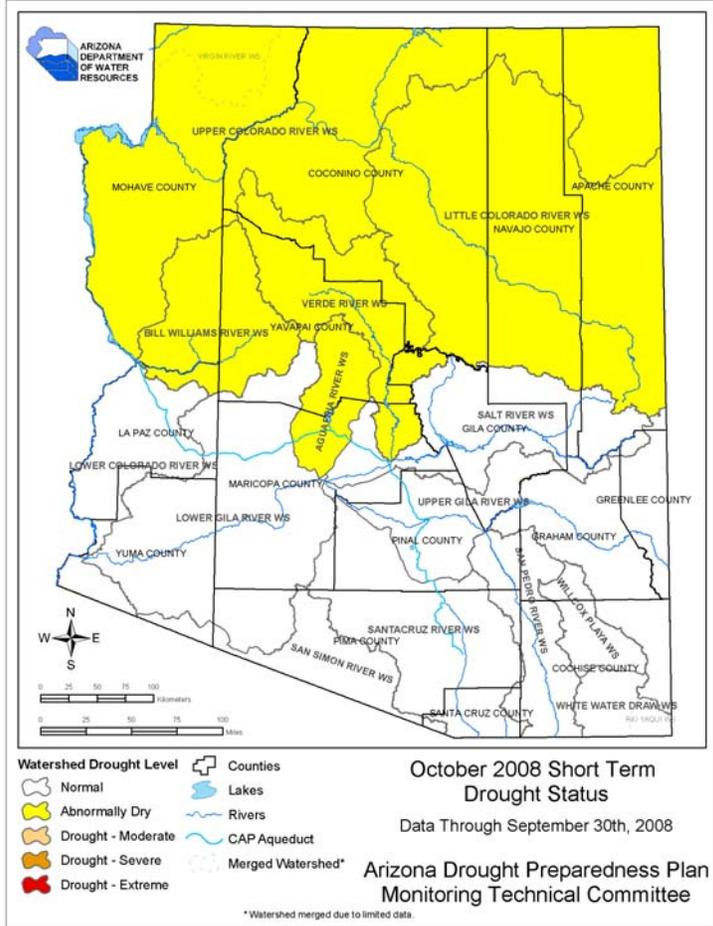
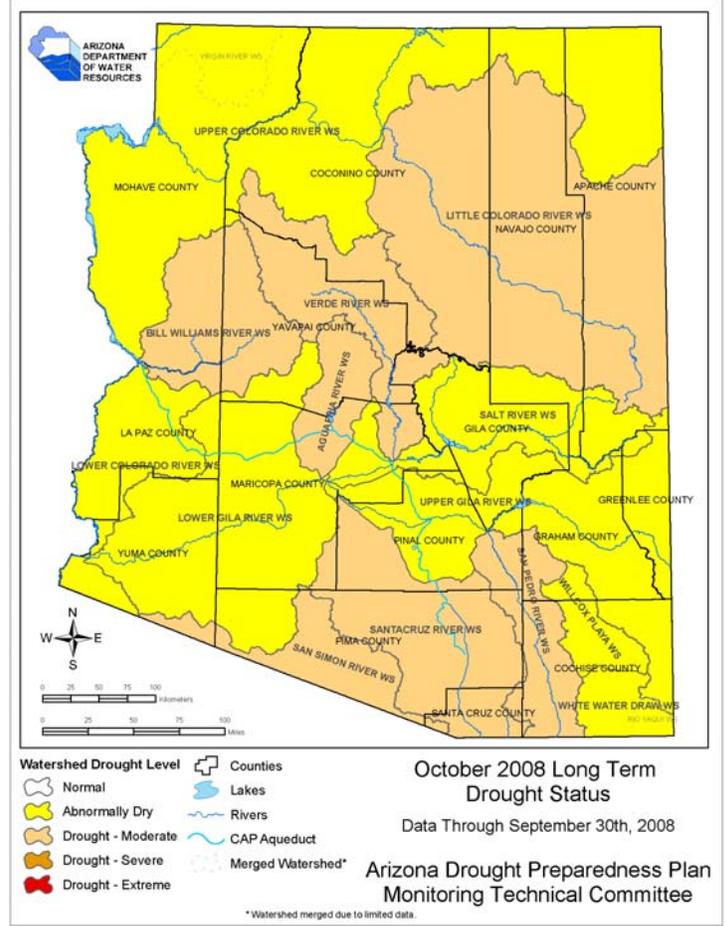


Arizona Drought Monitor Report October 2008

Short-term Drought Status



Long-term Drought Status



Short-term Update

The short-term situation is unchanged from last month. September precipitation was near or slightly below average across the state, as the monsoon precipitation ended early this year. Over the past twelve months, precipitation was well above average in the southern half of Arizona, and slightly below average in northern Arizona. This leaves the six watersheds in northern Arizona abnormally dry, and the nine southern watersheds with no drought for the short term.

Long-term Update

Although the summer monsoon season improved short-term conditions in the southern half of the state, it did little to improve long-term drought status, which is based on rainfall and streamflow data over the past 48 months. The only improvement is in the San Simon watershed, which improved to moderate drought status, now that the dry summer of 2004 is no longer included in the 48-month evaluation period. In all other watersheds, precipitation is near or below average for the past 48 months, with the exception of the lower Gila, which is above average.



Reservoir Storage



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

Vegetation Health



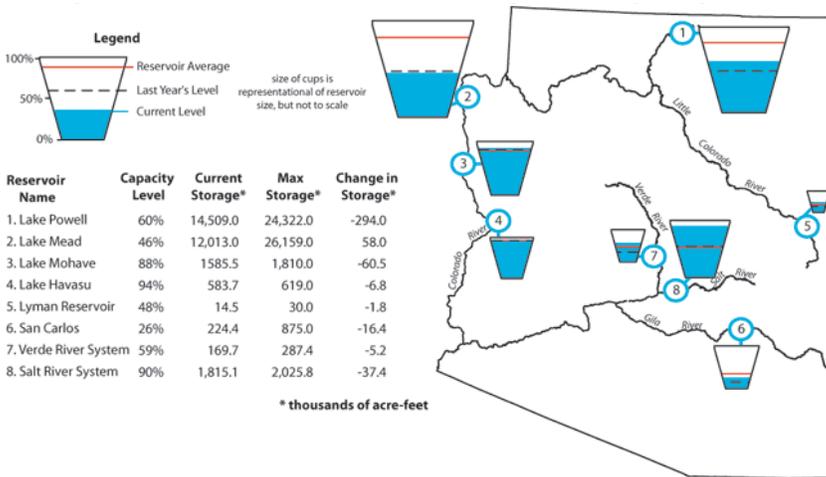
Jeff Severson

Arizona Reservoir Status

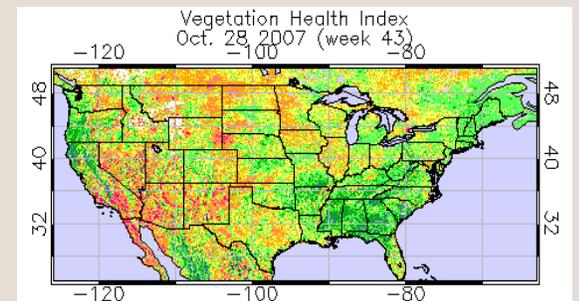
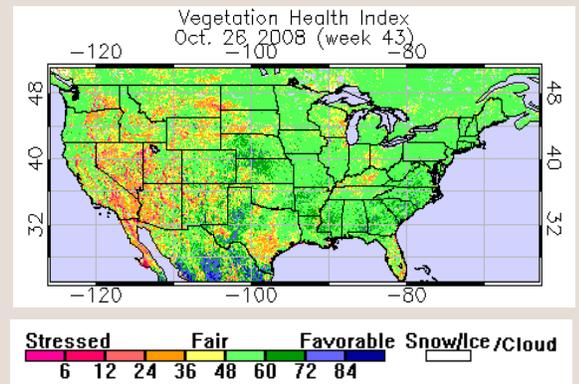
Combined reservoir storage in Lake Powell and Lake Mead declined by 236,000 acre-feet during September. Nevertheless, compared with last year, combined levels have risen significantly. During September, storage in the Salt and Verde River watersheds declined slightly, though levels are substantially higher than they were one year ago.

In Arizona water news, the Tucson City Council voted to require rainwater harvesting in commercial developments. The regulations go into effect in 2010 and require that 50 percent of a development's landscaping water come from rainfall (*Arizona Daily Star*, October 15). The Salt River Project, along with state and federal agencies, is appealing to Arizona boaters to help prevent the spread of quagga mussels and other aquatic organisms. Their public awareness campaign is called "Don't move a mussel" (*East Valley Tribune*, October 11). Quagga mussels can clog and damage infrastructure, costing tens of thousands of dollars.

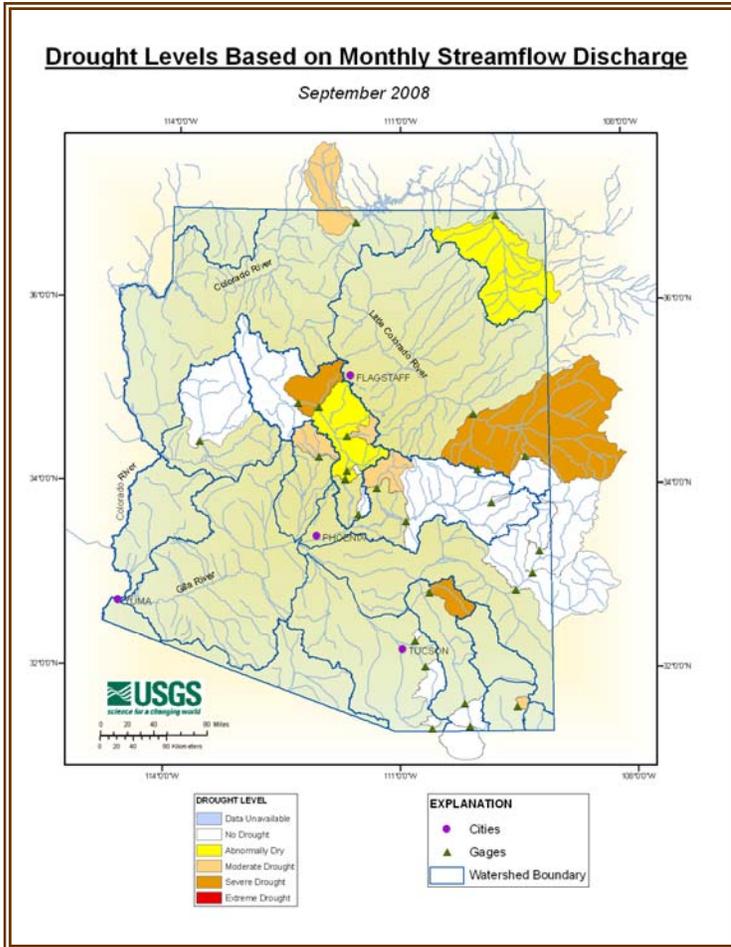
Arizona reservoir levels for September 2008 as a percent of capacity. The map depicts the average level and last year's storage for each reservoir, while the table also lists current and maximum storage levels.



Vegetation health index (VHI) data from the NOAA Center for Satellite Applications and Research (top figure) shows favorable vegetation conditions in the central and southeastern parts of Arizona. In contrast to one year ago (bottom figure), the current VHI shows more robust vegetation conditions in the eastern half of the state. Vegetation in large parts of New Mexico and northern Mexico is in more favorable conditions, due to monsoon and tropical storm precipitation. Relatively stressed VHI status in northwestern Arizona, the western Great Basin and southern California probably reflects the effects of lower than average during the last 6-12 months.



Mountain Streamflow



September Streamflow

During September most streamflow into select reservoirs was still above normal. Two basins that were below normal were Tonto Creek above Gun Creek and the Verde River at Horseshoe Dam; however, infrequent fall storms brought significant moisture resulting in above normal conditions in the SRP reservoir system.

Water body	September Run-off in Acre Feet	% of Median
Salt River near Roosevelt	30,258	161%
Tonto Creek above Gun Creek near Roosevelt	455	47%
Verde River at Horseshoe Dam	9,878	73%
Combined Inflow to Salt River Project (SRP) reservoir system	40,591	118%
Little Colorado River above Lyman Lake	922	185%
Gila River to San Carlos Reservoir	11,782	169%

Streamflow Observed at USGS Gauging Stations

Mountain Precipitation

Monitoring stations show below normal precipitation amounts occurring throughout the mountains of Arizona during September, ranging from 32% of average in the Verde River Basin to 74% of average in the Upper Gila River Basin. Cumulative precipitation for the 2008 water year (Oct. 1 to September 30), however, ended up at or above average in all basins.

Watershed	Precipitation Oct 1-Sept 30 (% of 30-Year Average)
Salt River Basin	121%
Verde River Basin	109%
Little Colorado River Basin	124%
San Francisco-Upper Gila River Basin	104%
Other Points of Interest	
Central Mogollon Rim	123%
Grand Canyon	90%
San Francisco Peaks	88%

Temperature and Precipitation



September was much drier than average across northern and southeastern Arizona, and near average on the Gila, Santa Cruz and Lower Colorado watersheds. It was a very dry end to a wet monsoon. Temperatures were near average in the southeast, and above average elsewhere in the state.

The 3-month period shows how wet the monsoon season was, with the southern half of the state above the 75th percentile. The Little Colorado watershed was drier than average for the monsoon season, and the lower Colorado was near average. The wet conditions kept temperatures below average in southeastern Arizona, but the western half of the state was much warmer than average during the monsoon.

The 6-month period precipitation, from April through September, was also well above average in the southern half of the state and near or below average in the northern half of the state. Six month temperatures were only slightly above average across most of the state, but above the 88th percentile in Maricopa, Pinal, La Paz and Yuma counties.

The 12-month period precipitation was near or above average everywhere except the Virgin River watershed. Seven watersheds were near average, and seven were above the 62nd percentile. The 12 month period is the wettest period of the previous four years, due to the combination of a wet winter and a wet monsoon season.

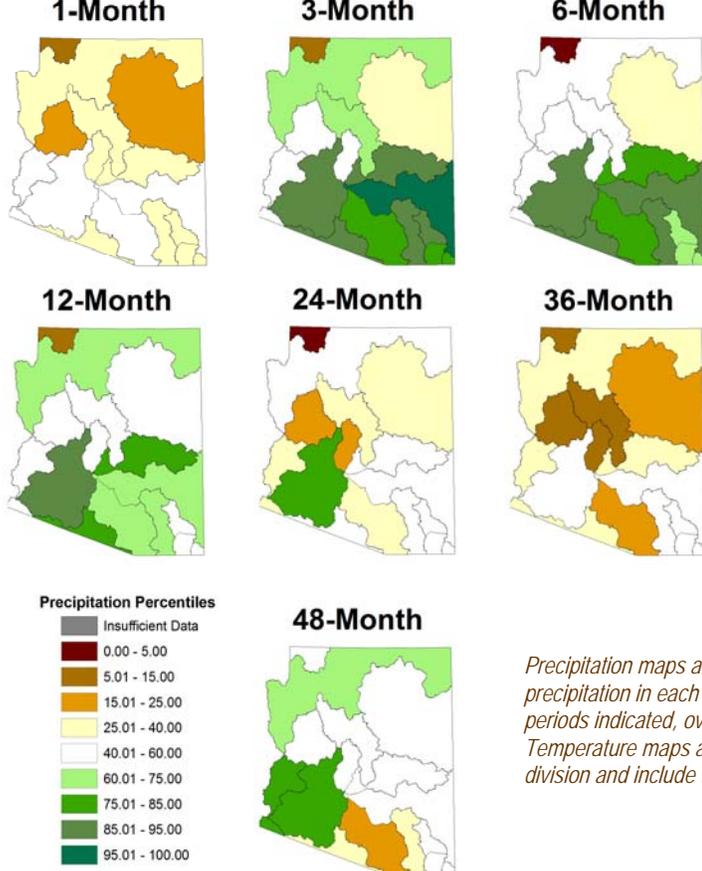
Temperatures remained warmer than average across the state, with the warmest conditions in the south.

The 24-month period had one watershed (lower Gila) with above average precipitation, seven watersheds near average, and seven watersheds below average. Temperatures for the 24-month period continue to be above the 75th percentile across the state, and above the 85th percentile in the southern half of Arizona.

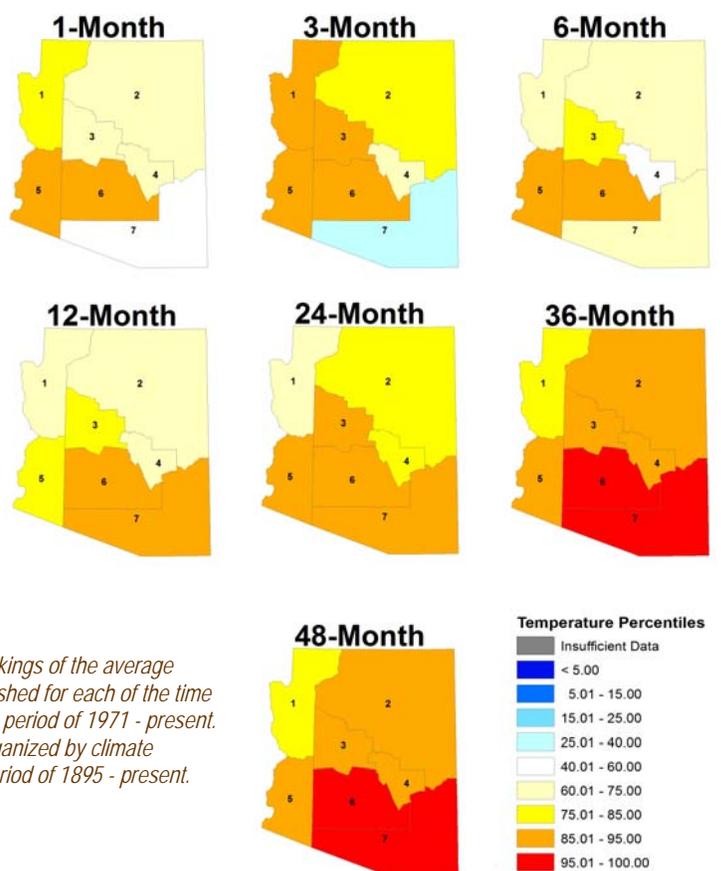
The 36-month period is still the driest period statewide, with the southeast watersheds near average, and the northern half of the state well below average for precipitation. Ten watersheds are below the 40th percentile, and six are below the 25th percentile. Temperatures for the three year period were very warm, with six of the seven climate divisions above the 87th percentile. The southeast climate division continues to be the warmest in 112 years.

The 48-month period has nine watersheds with near average, three watersheds (San Simon, Santa Cruz, and San Pedro) with below average precipitation, and three watersheds (upper and lower Colorado and lower Gila) with above average precipitation. The driest areas are in southern Arizona, with the Santa Cruz the driest, below the 24th percentile. The 48-month temperatures continue to be well above average, with all climate divisions above the 75th 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
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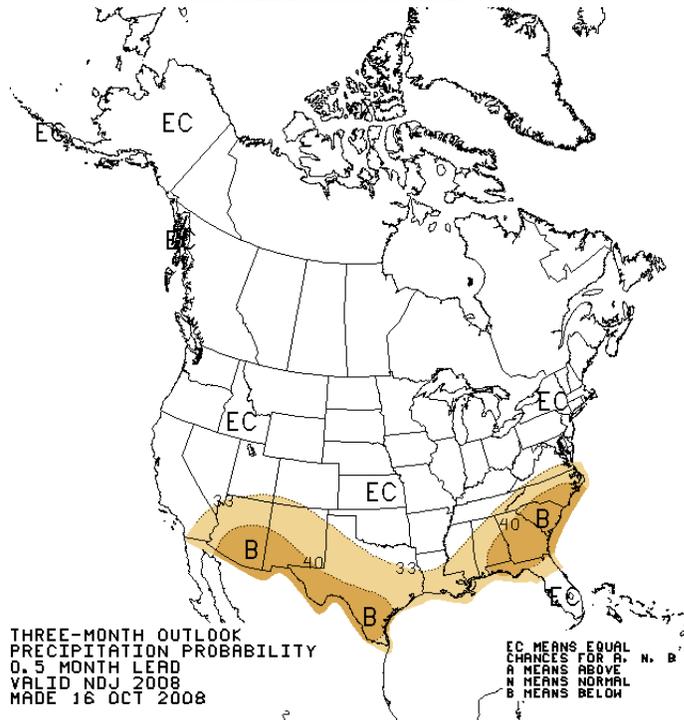
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Conservation Service

Charlie Ester, Salt River Project

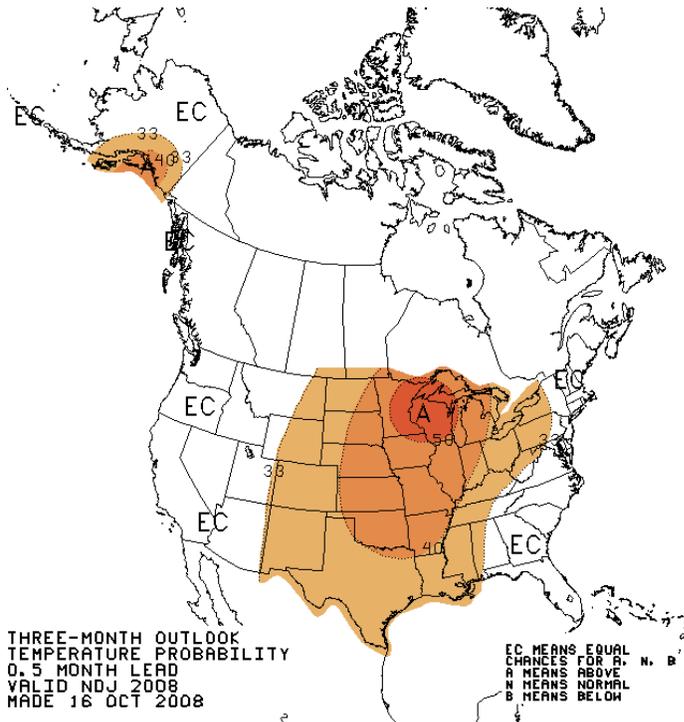
Ron Ridgway, Arizona Division of Emer-
gency Management

Chris Smith, U.S. Geological Survey

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



The CPC Precipitation Outlook indicates there is a modest level of confidence precipitation will be below-average across the southeast half of state, and some confidence precipitation will be below normal in the northwest half of the state from November through January.



The CPC Temperature Outlook indicates there is an equal likelihood of above-average, average, or below-average temperatures across the state from November through January.