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January Southwest Climate Outlook

Drought: Moderate or more severe drought conditions cover about 58 and 80 percent of Arizona and New Mexico, respectively. Compared to this time last year, drought is less intense and widespread. However, dry weather in the last 30 days may worsen drought in coming weeks.

Precipitation: Rain and snow were scant in the last 30 days across Arizona and New Mexico due to the persistence of a high-pressure system over the region. With only one storm wafting into the region, precipitation generally was less than 50 percent of average.

Temperature: Maximum temperatures in the last 30 days in the Southwest generally were more than 2 degrees F warmer than average. Minimum temperatures, on the other hand, were either near average or below average across most of Arizona and New Mexico.

Snowpack: Snowpacks are mostly above average in Colorado but below average in Utah, New Mexico, and Arizona. Snowpacks measure about 78 percent of average in the upper Rio Grande basin.

Water Supply: Total reservoir storage in Arizona and New Mexico changed little in the past month. Storage stands at about 46 percent of capacity in Arizona and about 22 percent of capacity in New Mexico. The most substantial increase in New Mexico occurred in Elephant Butte in New Mexico, which gained about 42,000 acre-feet in December and is now 13 percent full.

ENSO: Sea surface temperatures (SSTs) in the tropical Pacific Ocean are near average, or ENSO-neutral. The majority of models forecast the persistence of ENSO-neutral conditions through the winter, with some hints for a developing El Niño in the summer.

Precipitation Forecasts: The NOAA-Climate Prediction Center (CPC) is calling for elevated chances for below-average precipitation across the Southwest through the winter.

Temperature Forecasts: The NOAA-Climate Prediction Center (CPC) forecasts high chances for above-average temperatures in the Southwest during the February–April period.

Streamflow Forecasts: The first spring-summer streamflow forecasts issued on January 1 call for near-average flows in the Colorado River. Streamflows are projected to be below average on the Rio Grande. Forecasts become progressively more accurate as the winter progresses.

Tweet January's SW Climate Snapshot

There is no La Niña, but last month felt like one in the SW where precip was mostly nil.

CLICK TO TWEET

Online Resources

Figure 1.
High Plains Regional Climate Center
www.hprcc.unl.edu/maps/current/

Figure 2.
Natural Resources Conservation Service
www.wcc.nrcs.usda.gov/gis/snow.html

Figure 3.
Natural Resources Conservation Service
http://www.wcc.nrcs.usda.gov/cgibin/sssf.pl

Climate Snapshot

It is not a La Niña winter, but it feels like one. A high-pressure system has parked over the Southwest for nearly a month, creating dry conditions and above-average maximum temperatures. With the exception of one storm, which sneaked into the region on December 20 and dropped as much as 0.5 inches of precipitation in parts of the Southwest, clear conditions have prevailed. Rain and snowfall have totaled less than 25 percent of average in many parts of Arizona and New Mexico (Figure 1), creating precipitation deficits of more than an inch and half-inch in Arizona and New Mexico, respectively.

Drought conditions, however, have not changed much in the past month, according to the U.S. Drought Monitor. About 57 and 80 percent of Arizona and New Mexico, respectively, are experiencing at least moderate drought. A "half-full" interpretation of these numbers would cite an improvement of drought compared to one year ago, when nearly all of both states were classified with at least moderate drought and about 32 percent of New Mexico was experiencing extreme drought. The "half-empty" view would argue that drought conditions likely will expand in coming weeks due to the dry conditions, and would point to below-average snowpacks in Arizona and New Mexico (Figure 2).

The snowpack conditions, however, also bring a mixed interpretation. Above-average snowpacks in Colorado watersheds are a welcome sign for people with an eye on the water stored in Lakes Mead and Powell. Early streamflow projections call for near-average spring and summer streamflows (Figure 3), which would help prevent water elevations from dipping below the 1,075-feet above sea level (asl) threshold that initiates reductions in Colorado River water allocations to some users. Lake Mead is projected to end the 2014 water year (September 30, 2014) at 1,085 feet asl. On the Rio Grande, spring-summer streamflows are projected to be about 60 percent of average—feeding a grim forecast based in part on below-average snowpacks currently in the river's Colorado headwaters. Moreover, there are signs that Colorado River water transfers to the Rio Chama, part of New Mexico's Colorado River allocation, could be reduced this year, which would impact Albuquerque water users. It is still early in the winter, however, and a few storms can dramatically improve the Rio Grande's outlook.

With ENSO-neutral conditions expected to persist, the jet stream likely will break free of the high-pressure vice currently in place and deliver rain and snow. The quantity of precipitation, however, may fall below the February–April average, according to the latest NOAA-Climate Prediction Center seasonal precipitation forecast.

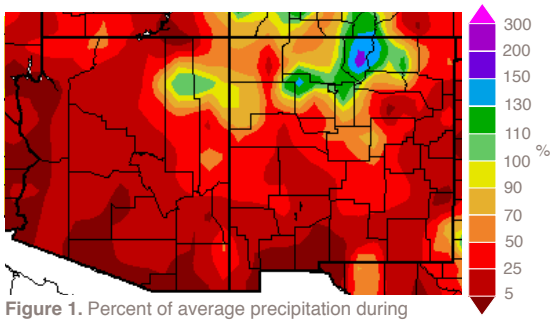


Figure 1. Percent of average precipitation during previous 60 days (Dec. 16–Jan. 14 ; interpolated).

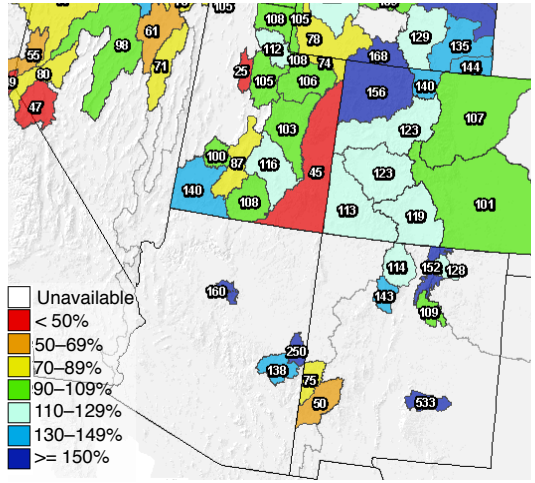


Figure 2. The percent of average snow water content contained in snowpacks on January 15, 2013.

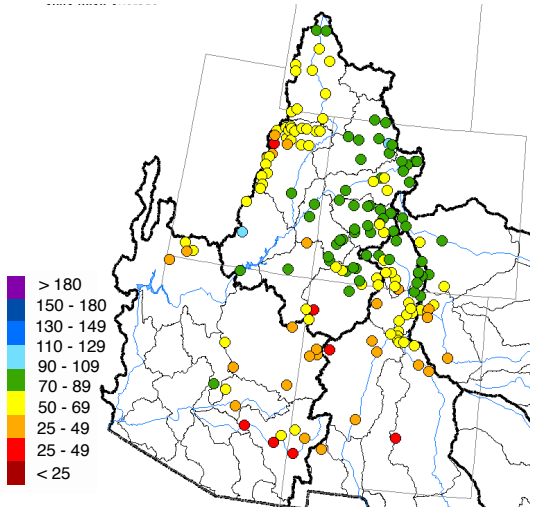


Figure 3. The Colorado, Rio Grande, and Arkansas river basins spring and summer streamflow forecast as of Jan. 1, 2014.

Online Resources

Portions of the information provided in this figure can be accessed at NRCS

Arizona: http://1.usa.gov/19e2BdJ

New Mexico: http://www.wcc.nrcs.usda.gov/cgibin/resv_rpt.pl?state=new_mexico

Notes

The map gives a representation of current storage for reservoirs in Arizona and New Mexico. Reservoir locations are numbered within the blue circles on the map, corresponding to the reservoirs listed in the table. The cup next to each reservoir shows the current storage (blue fill) as a percent of total capacity. Note that while the size of each cup varies with the size of the reservoir, these are representational and not to scale. Each cup also represents last year's storage (dotted line) and the 1971–2000 reservoir average (red line).

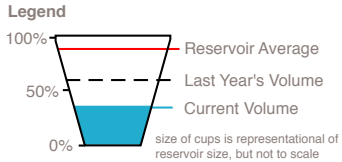
The table details more exactly the current capacity (listed as a percent of maximum storage). Current and maximum storage are given in thousands of acre-feet for each reservoir. One acre-foot is the volume of water sufficient to cover an acre of land to a depth of 1 foot (approximately 325,851 gallons). On average, 1 acre-foot of water is enough to meet the demands of 4 people for a year. The last column of the table list an increase or decrease in storage since last month. A line indicates no change.

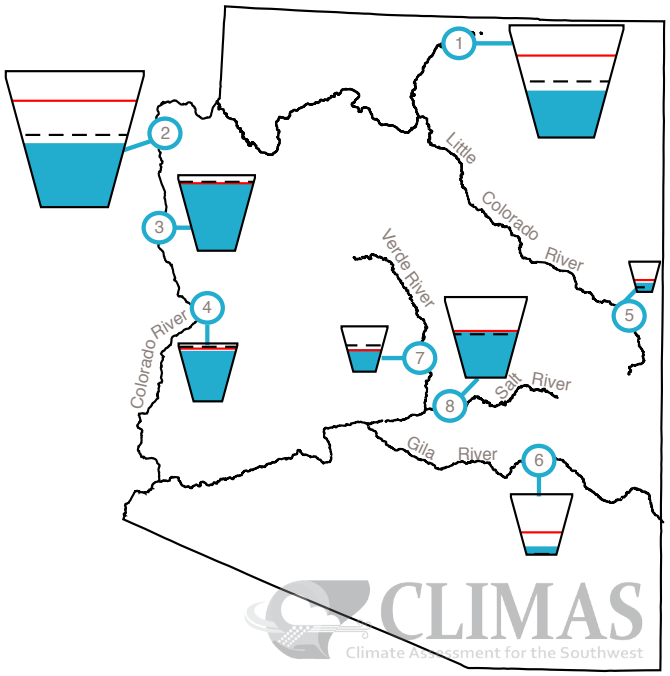
These data are based on reservoir reports updated monthly by the National Water and Climate Center of the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS).

Reservoir Volumes

DATA THROUGH JANUARY 15, 2014

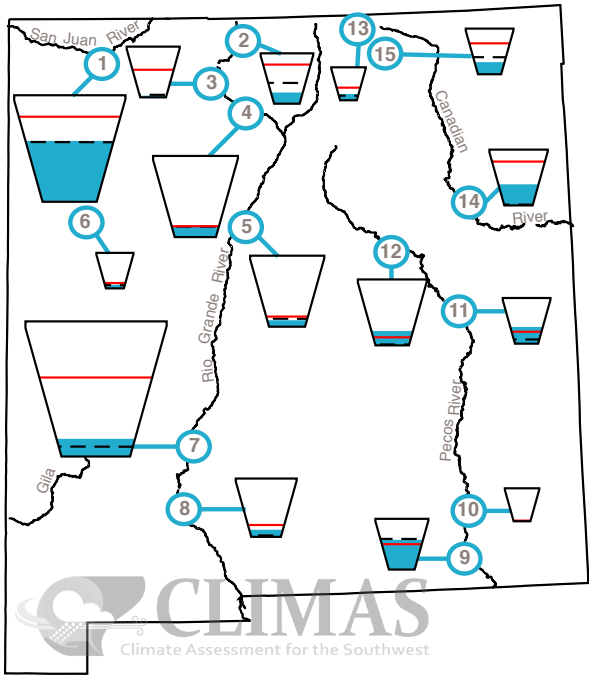
Data Source: National Water and Climate Center, National Resources Conservation Service





Reservoir Name	Capacity	Current Storage*	Max Storage*	One-Month Change in Storage*
1. Lake Powell	42%	10,307.0	24,322.0	-316.0
2. Lake Mead	47%	12,349.0	26,159.0	35.0
3. Lake Mohave	89%	1,604.9	1,810.0	70.4
4. Lake Havasu	87%	536.8	619.0	-49.3
5. Lyman	30%	8.9	30.0	0.4
6. San Carlos	14%	126.0	875.0	2.8
7. Verde River System	50%	142.6	287.4	0.8
8. Salt River System	56%	1,130.3	2,025.8	11.2

*thousands of acre-feet



Reservoir Name	Capacity	Current Storage*	Max Storage*	One-Month Change in Storage*
1. Navajo	57%	965.0	1,696.0	4.7
2. Heron	22%	86.9	400.0	-4.3
3. El Vado	3%	4.8	190.3	-10.8
4. Abiquiu	13%	154.6	1,192.8	10.6
5. Cochiti	9%	46.6	491.0	0.0
6. Bluewater	10%	3.9	38.5	-0.1
7. Elephant Butte	13%	277.7	2,195.0	41.5
8. Caballo	12%	39.7	332.0	0.7
9. Lake Avalon	58%	2.3	4.0	0.3
10. Brantley	3%	31.9	1,008.2	2.9
11. Sumner	36%	37.2	102.0	3.2
12. Santa Rosa	22%	98.6	438.3	-0.4
13. Costilla	19%	3.0	16.0	0.3
14. Conchas	37%	95.0	254.2	-1.0
15. Eagle Nest	26%	20.3	79.0	-0.7

N/A–value not available

* thousands of acre-feet