December 20, 2010

Southwest Climate Outlook

Vol. 9 Issue 12

December Climate Summary

Drought– Nearly all of Arizona and New Mexico are classified with abnormally dry conditions or worse. In the last month, the percent of Arizona and New Mexico covered by drought ballooned from 49 and 31 percent, respectively, to about 95 percent in both states.

Temperature– Most of the Southwest has experienced temperatures between 0–4 degrees Fahrenheit above average in the last month. The Four Corners region and northeast New Mexico have experienced the largest temperature anomalies.

Precipitation– Precipitation in the last month has been scant across the Southwest. Most southern regions in Arizona and New Mexico have experienced less than 0.1 inches of rain, or less than 2 percent of average. Since the water year began on October 1, most of both states has received less than 50 percent of average precipitation.

ENSO– Below-average sea surface temperatures remain entrenched in the topical Pacific Ocean, and the moderate-to-strong La Niña event maintained its strength during the last month. There is an approximate 98 percent chance that La Niña conditions will continue during the December–February period although this is the time frame when La Niña events historically begin to wane.

Climate Forecasts– Nearly all of Arizona and New Mexico have elevated probabilities for warmer and drier conditions during the winter. Chances for drier conditions are highest—more than 50 percent—in southern parts of both states during the January–March and February–April periods.

The Bottom Line– The moderate-to-strong La Niña is helping to bring widespread abnormally dry conditions to most of the Southwest. La Niña events typically produce a more northerly winter jet stream pattern across the western U.S. which causes most storms to waft north of the southwest U.S. The most recent moderate La Niña event in 2007–08 produced a very dry January–March period in southern Arizona and southern and southeastern New Mexico. While La Niña has a strong drying effect in parts of the Southwest, the impact is not as strong in the Rocky Mountains in Colorado and Utah from which a large percentage of Colorado River water originates. Many monitoring sites in northern Colorado and Utah are currently reporting above-average snowpacks.

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Arizona Reservoir Levels

(through 11/30/10)

Data Source: USDA-NRCS, National Water and Climate Ctr.

During November combined storage in Lakes Mead and Powell decreased by about 462,000 acre-feet. Inflow into Lake Powell was 79 percent of average. As of November 1, combined storage in the lakes was at about 49 percent of capacity (Figure 1), which is 2.1 percent or 1.07 million acre-feet less than a year ago. Precipitation in the Upper Colorado River Basin during October was 135 percent of average while in November it was 90 percent of average. Reservoir storage in the Verde and Salt River systems also declined by 28,000 and 4,000 acre-feet, respectively.

In water-related news, important legislation that will help end the lengthy dispute over the White Mountain Apache Tribe's water rights and provide a much-needed drinking water supply for people across Arizona was recently pushed through Congress (wmicentral.com, December 5). Enactment of the bill will finalize a consensus among the White Mountain Apache Tribe and 20 other parties and will authorize water projects in the region, as well as clarify water rights.

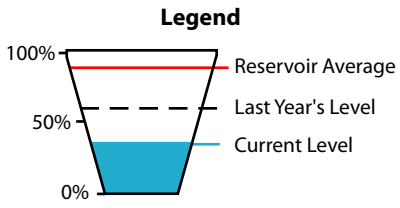
Notes:

The map gives a representation of current storage levels for reservoirs in Arizona. 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 level (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 level (dotted line) and the 1971–2000 reservoir average (red line).

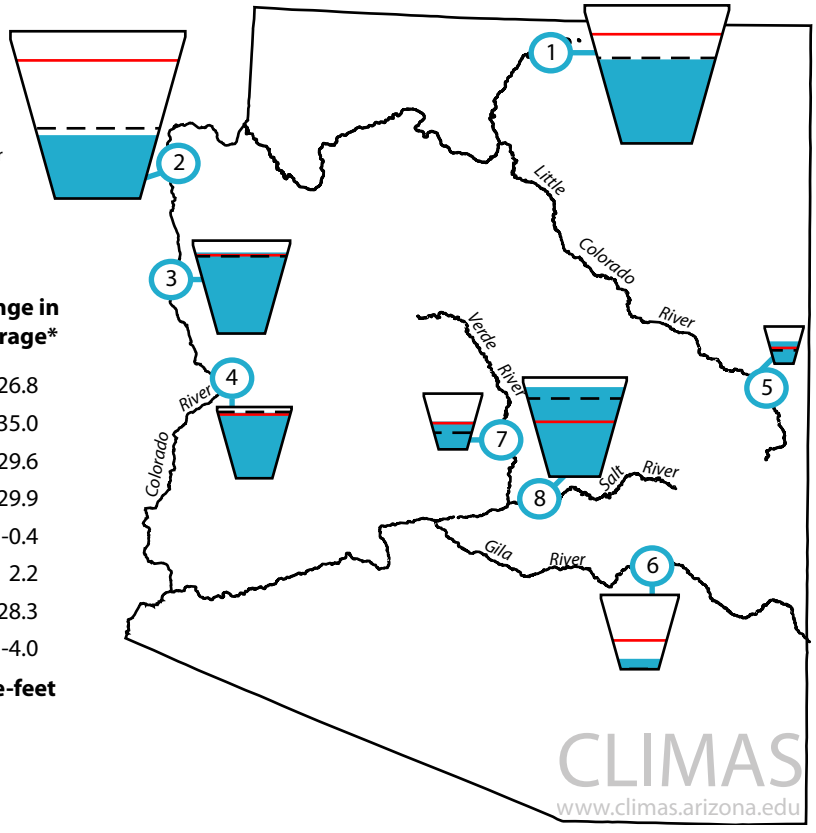
The table details more exactly the current capacity level (listed as a percent of maximum storage). Current and maximum storage levels are given in thousands of acre-feet for each reservoir. One acre-foot is the volume of water sufficient to cover an acre of land to a depth of 1 foot (approximately 325,851 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 Resource Conservation Service (NRCS). For additional information, contact Dino DeSimone, Dino.DeSimone@az.usda.gov.

Figure 1. Arizona reservoir levels for November as a percent of capacity. The map depicts the average level and last year's storage for each reservoir. The table also lists current and maximum storage levels, and change in storage since last month.



size of cups is representational of reservoir size, but not to scale



Reservoir Name	Capacity Level	Current Storage*	Max Storage*	Change in Storage*
1. Lake Powell	61%	14,888.0	24,322.0	-426.8
2. Lake Mead	38%	9,936.0	26,159.0	-35.0
3. Lake Mohave	87%	1,566.6	1,810.0	129.6
4. Lake Havasu	92%	572.3	619.0	-29.9
5. Lyman Reservoir	60%	17.9	30.0	-0.4
6. San Carlos	14%	122.1	875.0	2.2
7. Verde River System	50%	143.8	287.4	-28.3
8. Salt River System	90%	1,820.0	2,025.8	-4.0

*** thousands of acre-feet**

On the Web:

Portions of the information provided in this figure can be accessed at the NRCS website:
http://www.wcc.nrcs.usda.gov/wsf/reservoir/resv_rpt.html

New Mexico Reservoir Levels

(through 11/30/10)

Data Source: USDA-NRCS, National Water and Climate Ctr.

Total reservoir storage in New Mexico decreased by only 9,900 acre-feet in November (Figure 2). Storage in the Navajo reservoir—New Mexico's second largest reservoir—decreased by 18,300 acre-feet. Elephant Butte—New Mexico's largest reservoir—increased by 20,400 acre-feet.

In water-related news, Albuquerque's water utility is adopting new incentives in an attempt to meet the metro area's water conservation goals (ABQJournal.com, December 9). The water utility's new conservation efforts will include a $25 rebate for thermostats installed on swamp coolers. Adding a thermostat can save between 1,500 and 5,000 gallons per year. Other strategies include incentives for landscaping with less water demanding plants.

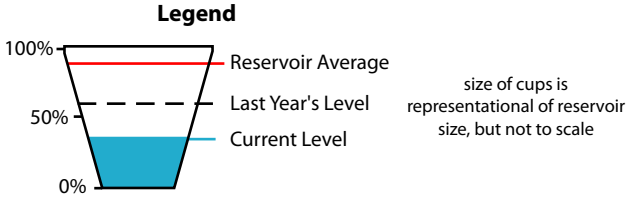
Notes:

The map gives a representation of current storage levels for reservoirs in 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 level (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 level (dotted line) and the 1971–2000 reservoir average (red line).

The table details more exactly the current capacity level (listed as a percent of maximum storage). Current and maximum storage levels 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.

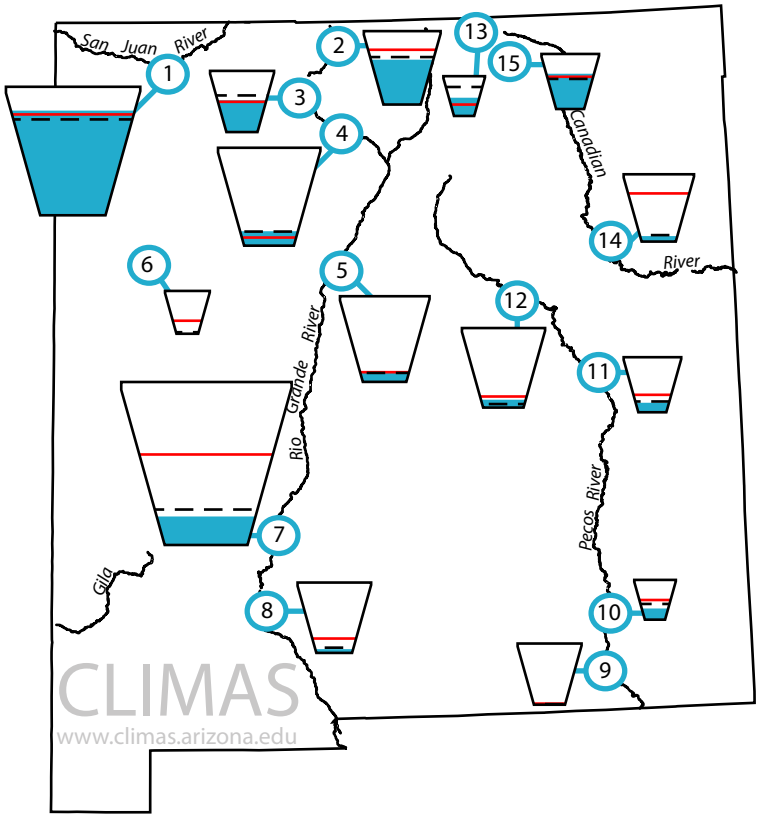
These data are based on reservoir reports updated monthly by the National Water and Climate Center of the U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS). For additional information, contact Wayne Sleep, wayne.sleep@nm.usda.gov.

Figure 2. New Mexico reservoir levels for November as a percent of capacity. The map depicts the average level and last year's storage for each reservoir. The table also lists current and maximum storage levels, and change in storage since last month.



Reservoir Name	Capacity Level	Current Storage*	Max Storage*	Change in Storage*
1. Navajo	81%	1,374.5	1,696.0	-18.3
2. Heron	61%	245.6	400.0	-10.2
3. El Vado	52%	98.1	190.3	4.0
4. Abiquiu	15%	183.3	1,192.8	2.2
5. Cochiti	11%	51.9	491.0	-0.1
6. Bluewater	N/A	N/A	38.5	N/A
7. Elephant Butte	18%	392.9	2,195.0	20.4
8. Caballo	6%	20.0	332.0	1.6
9. Brantley	1%	8.9	1,008.2	-9.3
10. Lake Avalon	28%	1.1	4.0	-1.2
11. Sumner	17%	17.4	102.0	2.5
12. Santa Rosa	10%	42.7	438.3	-0.3
13. Costilla	46%	7.3	16.0	0.4
14. Conchas	8%	21.4	254.2	-1.2
15. Eagle Nest	64%	50.7	79.0	-0.4

*** thousands of acre-feet**



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