



United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

# New Mexico Basin Outlook Report February 1, 2017



The track to Shuree SNOTEL site in the Upper Rio Grande Basin on 1/26/17, an amazing 382% of median!  
Photo courtesy of Logan Peterson, NRCS

# Basin Outlook Reports and Federal - State - Private Cooperative Snow Surveys

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## *How forecasts are made*

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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## Summary

During the first part of January a series of fast-moving Pacific storms moved eastward across New Mexico delivering light to moderate precipitation throughout the state. Basin average precipitation was above or much above normal for all of New Mexico with basin average snow water content also faring well. Moving into the second half of January the moisture was generally light or zero, and despite water year-to-date precipitation being above normal the snow water equivalent in southern New Mexico remains well below normal. Ultimately this led to a re-assessment of drought conditions across New Mexico. This dry pattern persisted into the last week of January with temperatures below normal and transitioning to above normal as we move into February. Streamflow conditions are running normal to above normal in most basins with snowpack values above or close to average for January. Conditions across the state are varied and constantly changing this water year. I encourage everyone to continue to monitor the weather and read future water supply reports to see how this water year unfolds.

## Snowpack

The month of January brought with it improvements for most basins across the state. The Rio Grande Basin's snowpack rose from 124 to 159 percent of median. The Canadian and San Juan Basins increased an additional 50 percent, and the Pecos by another 25. The Mimbres saw the greatest improvements, jumping from 20 to 135 percent of median, with the San Francisco-Upper Gila Basin not far behind with gains upward of 70 percent. The Zuni-Bluewater and Rio Hondo Basins made small gains however not enough to cause significant changes to runoff values. Winter blew through New Mexico during the month of January leaving in its wake a warming trend during the last week of the month. The state patiently awaits the return of colder temperatures which bring with them the promise of more snow. Water users and managers should continue to monitor conditions over the next months to determine the impacts of conditions.

| <b>NEW MEXICO STATEWIDE SNOWPACK</b> | Percent of Median | Last Year Percent of Median |
|--------------------------------------|-------------------|-----------------------------|
| CANADIAN RIVER BASIN                 | 148               | 122                         |
| PECOS RIVER BASIN                    | 102               | 134                         |
| RIO GRANDE BASIN                     | 159               | 123                         |
| MIMBRES RIVER BASIN                  | 135               | 157                         |
| SAN FRANCISCO-UPPER GILA RIVER BASIN | 102               | 112                         |
| ZUNI-BLUEWATER BASINS                | 88                | 92                          |
| SAN JUAN RIVER BASIN                 | 164               | 113                         |
| CHUSKA MOUNTAINS                     | 167               | 119                         |
| RIO HONDO BASIN                      | 64                | 158                         |
| <b>Statewide Snowpack Total</b>      | <b>141</b>        | <b>121</b>                  |
| # of sites                           | 36                | 36                          |

## Precipitation

January turned out to be a great month statewide for precipitation. Overall, 216 percent was the monthly average with some basins receiving as much as 241 percent of the average precipitation. This past month put the state 116 percent above the previous year's monthly average and at 128 percent of average for the water year-to-date. The Zuni-Bluewater Basins benefited the most from this past month, and in the end received 166 percent of the average moisture for the water year-to-date. Additionally, the Rio Grande and San Juan Basins measured in at 133 percent of the average for the water year-to-date.

## Reservoirs

Storage levels are still well below capacity at most reservoirs across the state. Navajo Reservoir is the closest to actual reservoir capacity at 77 percent. The average percent of capacity statewide is 44 percent. The current percent of the average storage statewide is 57 percent. Water-users should closely monitor streamflow forecasts as we move further into the water year.

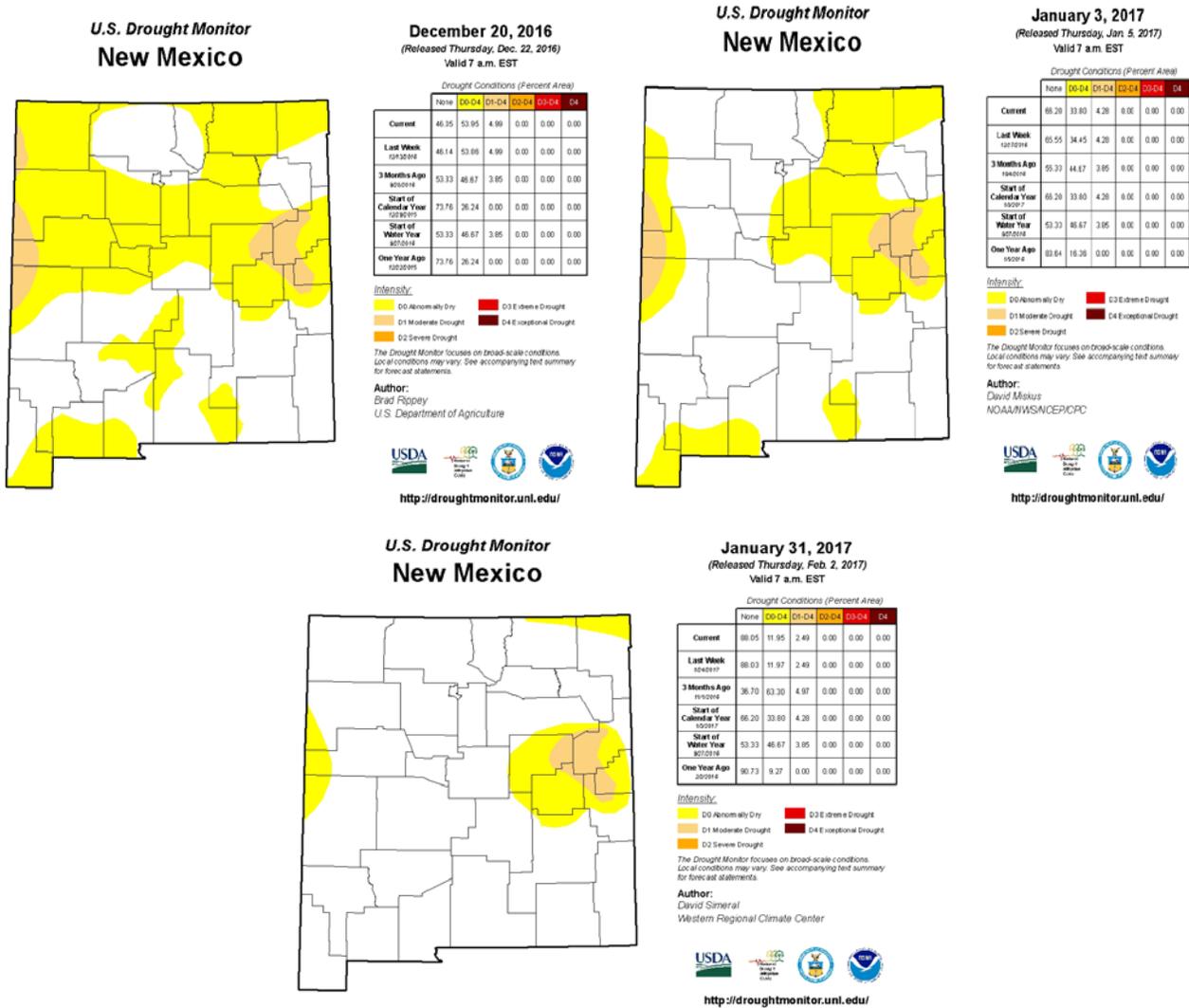
| NEW MEXICO STATEWIDE              | Current<br>(KAF) | Last Year<br>(KAF) | Average<br>(KAF) | Capacity<br>(KAF) | Current %<br>Capacity | Last Year %<br>Capacity | Average %<br>Capacity | Current %<br>Average | Last Year %<br>Average |
|-----------------------------------|------------------|--------------------|------------------|-------------------|-----------------------|-------------------------|-----------------------|----------------------|------------------------|
| Abiquiu Reservoir                 | 120.7            | 132.2              | 154.6            | 1192.8            | 10%                   | 11%                     | 13%                   | 78%                  | 86%                    |
| Bluewater Lake                    | 2.9              | 2.0                | 5.9              | 38.5              | 8%                    | 5%                      | 15%                   | 49%                  | 34%                    |
| Brantley Lake nr Carlsbad         | 36.9             | 33.1               | 19.8             | 1008.2            | 4%                    | 3%                      | 2%                    | 186%                 | 167%                   |
| Caballo Reservoir                 | 25.7             | 29.2               | 78.1             | 332.0             | 8%                    | 9%                      | 24%                   | 33%                  | 37%                    |
| Cochiti Lake                      | 44.7             | 47.2               | 60.9             | 491.0             | 9%                    | 10%                     | 12%                   | 73%                  | 78%                    |
| Conchas Lake                      | 72.1             | 138.2              | 199.9            | 254.2             | 28%                   | 54%                     | 79%                   | 36%                  | 69%                    |
| Costilla Reservoir                |                  | 9.8                | 6.5              | 16.0              |                       | 61%                     | 41%                   |                      | 151%                   |
| Eagle Nest Lake nr Eagle Nest, NM | 30.7             | 30.3               | 53.5             | 79.0              | 39%                   | 38%                     | 68%                   | 57%                  | 57%                    |
| El Vado Reservoir                 | 50.4             | 34.6               | 100.9            | 190.3             | 26%                   | 18%                     | 53%                   | 50%                  | 34%                    |
| Elephant Butte Reservoir          | 252.2            | 361.1              | 1299.0           | 2195.0            | 11%                   | 16%                     | 59%                   | 19%                  | 28%                    |
| Heron Reservoir                   | 65.4             | 67.5               | 303.0            | 400.0             | 16%                   | 17%                     | 76%                   | 22%                  | 22%                    |
| Lake Avalon                       | 2.9              | 4.9                | 2.3              | 4.0               | 73%                   | 123%                    | 58%                   | 126%                 | 213%                   |
| Lake Sumner                       | 29.6             | 46.2               | 30.8             | 102.0             | 29%                   | 45%                     | 30%                   | 96%                  | 150%                   |
| Navajo Reservoir                  | 1305.8           | 1396.5             | 1310.0           | 1696.0            | 77%                   | 82%                     | 77%                   | 100%                 | 107%                   |
| Santa Rosa Reservoir              | 51.5             | 96.7               | 54.7             | 438.3             | 12%                   | 22%                     | 12%                   | 94%                  | 177%                   |
| Basin-wide Total                  | 2091.5           | 2419.7             | 3673.4           | 8421.3            | 25%                   | 29%                     | 44%                   | 57%                  | 66%                    |
| # of reservoirs                   | 14               | 14                 | 14               | 14                | 14                    | 14                      | 14                    | 14                   | 14                     |

\* Due to weather conditions preventing measurement Costilla Reservoir data is unavailable at this time

## Streamflow

The February 1, 2017 forecast numbers from the NRCS show dramatic improvements over those from the previous month. All basins in the state with the exception of the Rio Hondo are currently showing figures at or in excess of 100 percent of the average. The Rio Hondo forecast is currently reflecting 70 percent of the average. In contrast the Mimbres River Basin's February through May forecast is now 275 percent of the average. This is an increase of over 175 percent! However, it is still very early in the season and weather conditions are always subject to change in New Mexico. Forecasts can vary based on changing conditions and there are several months remaining which could affect those figures. Please continue to monitor conditions and read follow-up water supply reports as New Mexico moves closer to spring conditions.

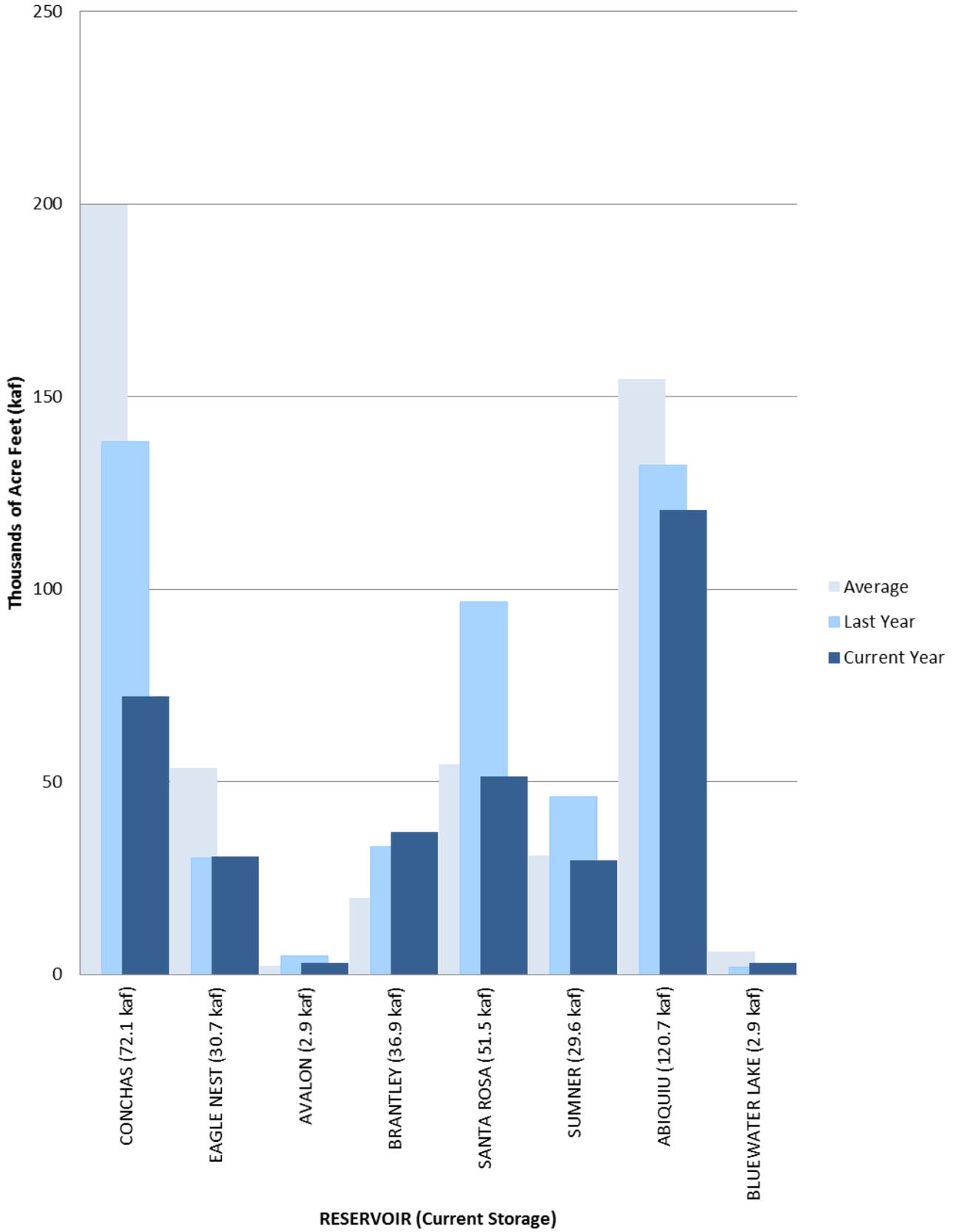
# New Mexico Drought Monitor, real versus perceived conditions?



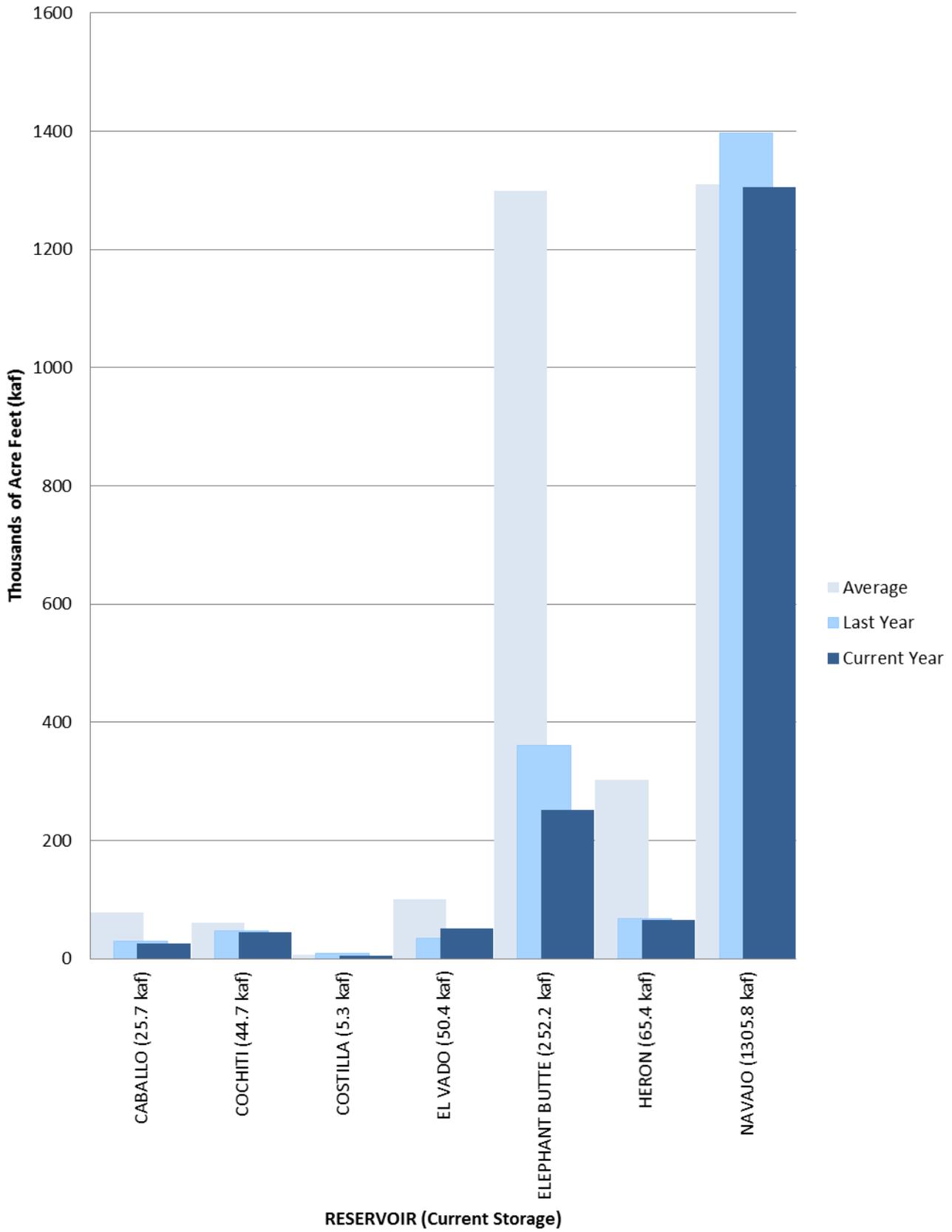
Every week, The U.S. Drought Monitor is produced in partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. This useful tool uses multiple inputs, including precipitation received, to give an indication of the extent and severity of drought conditions nationwide.

Storm systems throughout the first half of January brought significant precipitation amounts to New Mexico. From the end of December through January the state continued to see improvements in both D0 and D1 conditions. By the end of the month these areas of drought were mostly isolated to eastern New Mexico and isolated pockets in the far west and northeastern corner of the state. However, even with the copious precipitation, deep soil moisture over the eastern half of the state remains low. In addition, basin snow water equivalent values are near or above normal along the northern portion of the state and decrease in value to the south. Water users should closely monitor snowpack, precipitation, reservoir, and forecast values as we move through winter.

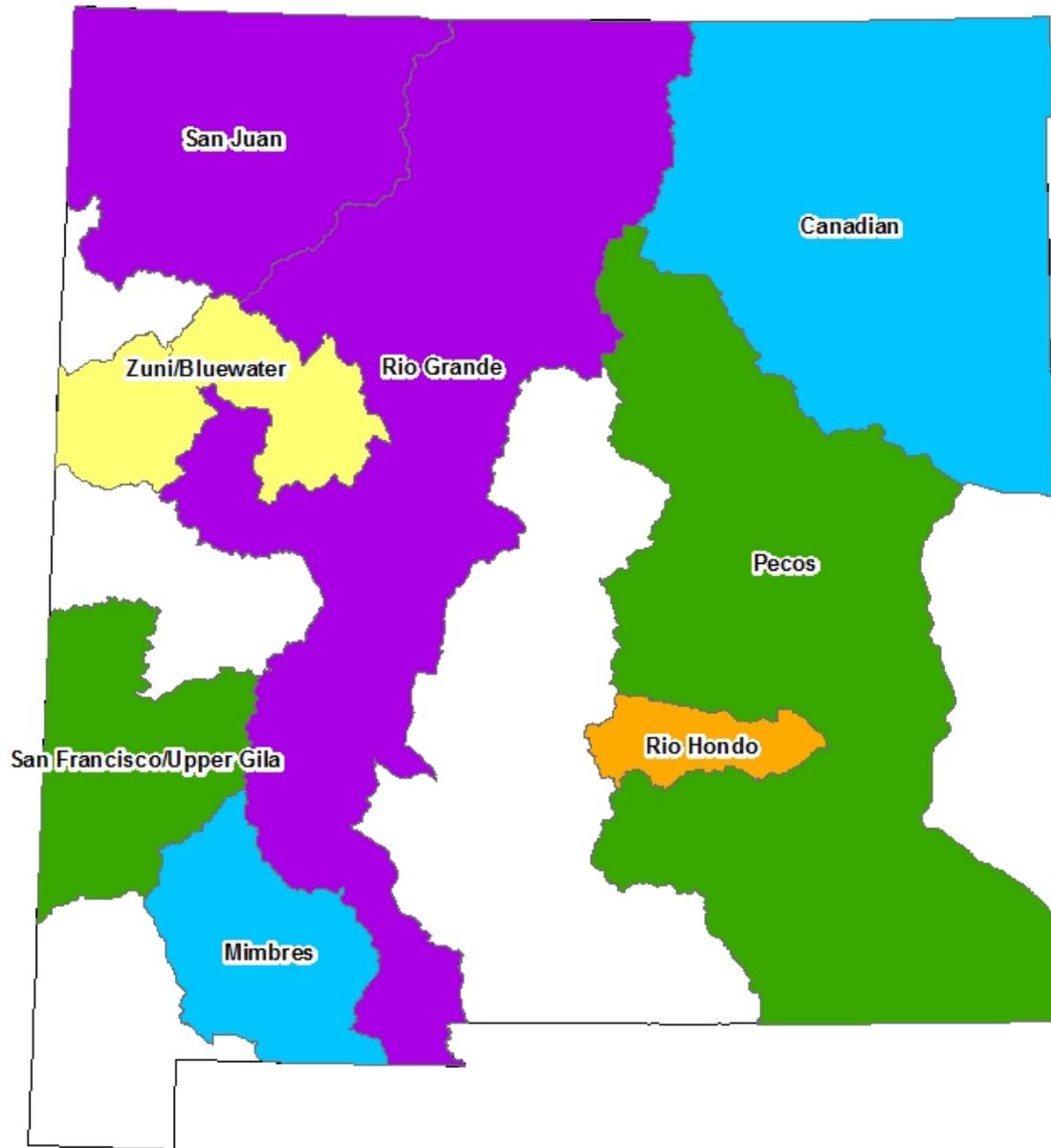
# Statewide Reservoir Storage



# Statewide Reservoir Storage



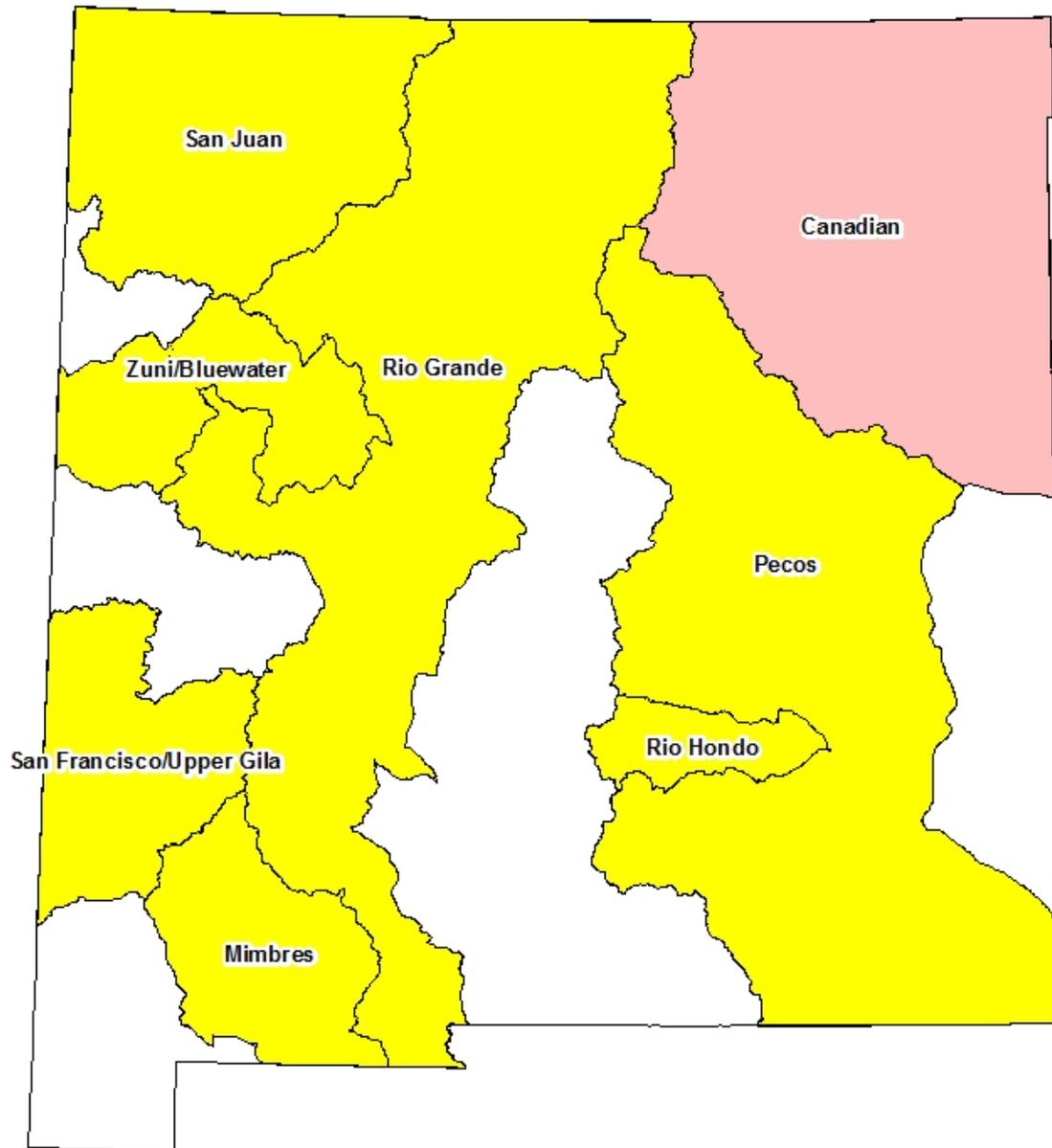
# New Mexico Percent of Median Snowpack as of February 1, 2017



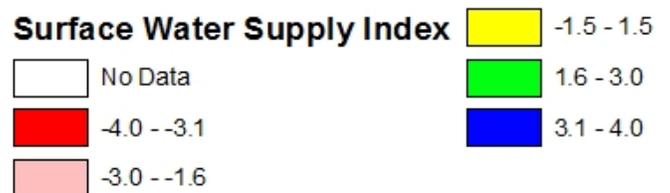
## Legend

|         |           |
|---------|-----------|
| No Data | 91 - 110  |
| < 50    | 111 - 130 |
| 50 - 70 | 131 - 150 |
| 71 - 90 | > 150     |

# New Mexico Surface Water Supply Index as of February 1, 2017



## Legend

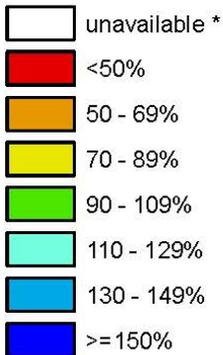


# New Mexico

## SNOTEL Current Snow Water Equivalent (SWE) % of Normal

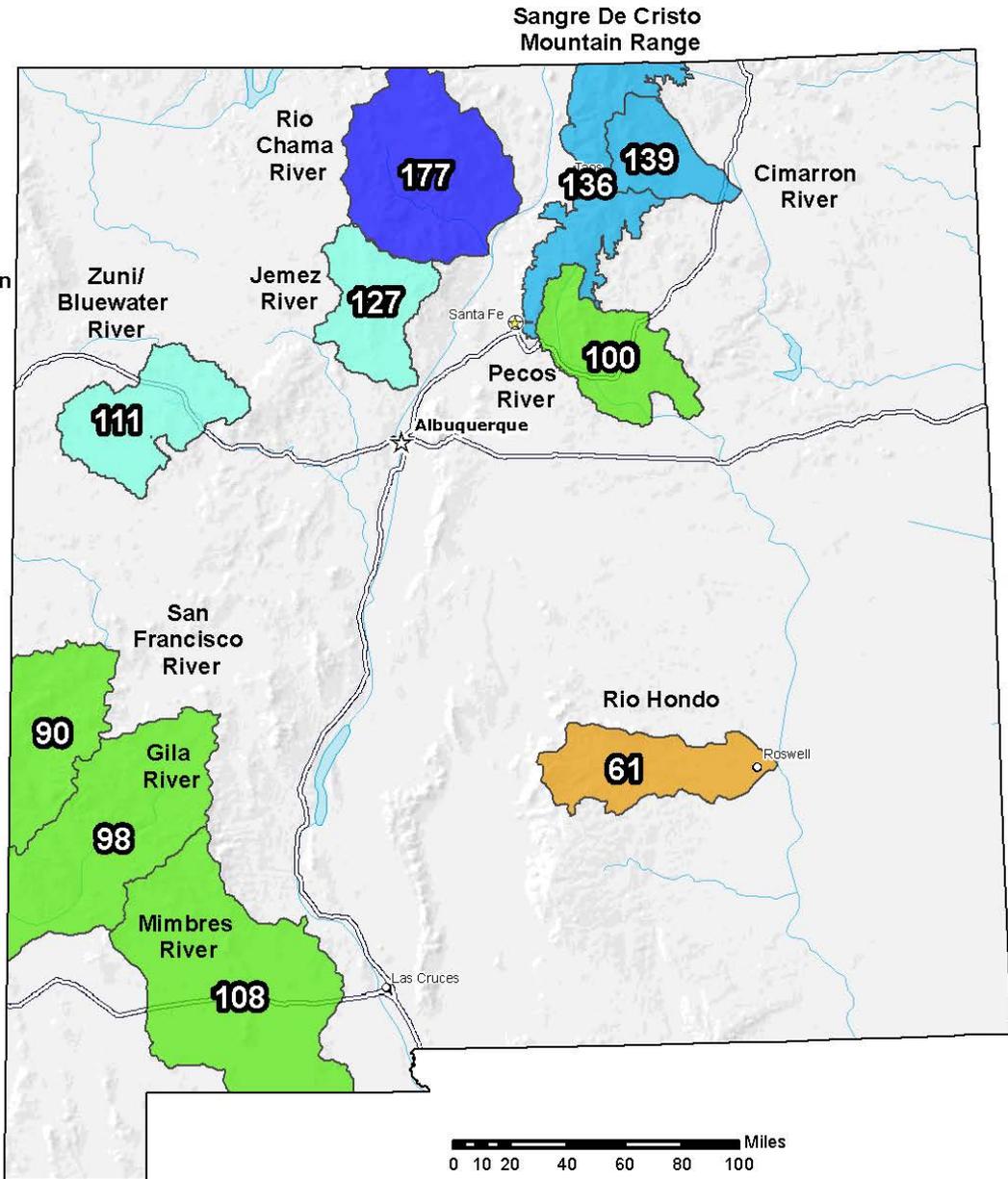
**Feb 06, 2017**

Current Snow Water Equivalent (SWE) Basin-wide Percent % of 1981-2010 Median



\* Data unavailable at time of posting or measurement is not representative at this time of year

**Provisional Data  
Subject to Revision**



The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

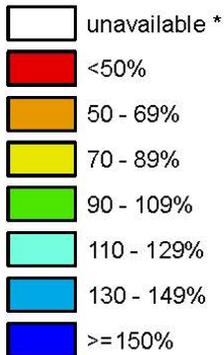
Prepared by:  
USDA/NRCS National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

# New Mexico

## SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

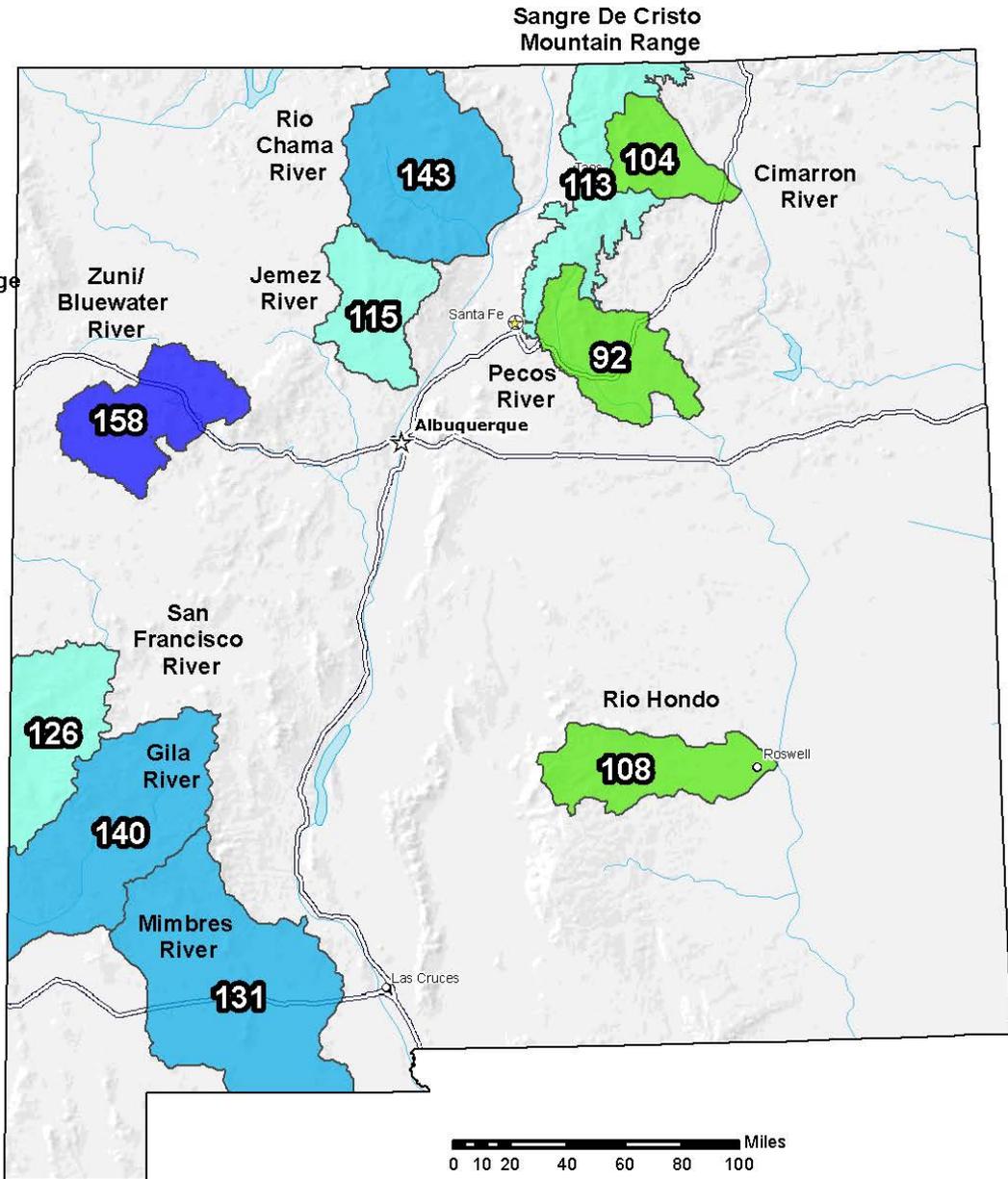
**Feb 06, 2017**

Water Year (Oct 1)  
to Date Precipitation  
Basin-wide Percent  
% of 1981-2010 Average



\* Data unavailable at time  
of posting or measurement  
is not representative at this  
time of year

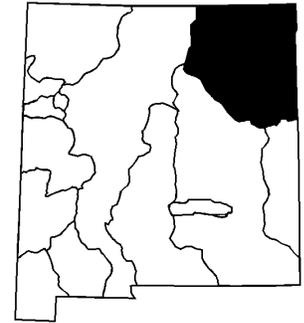
**Provisional Data  
Subject to Revision**



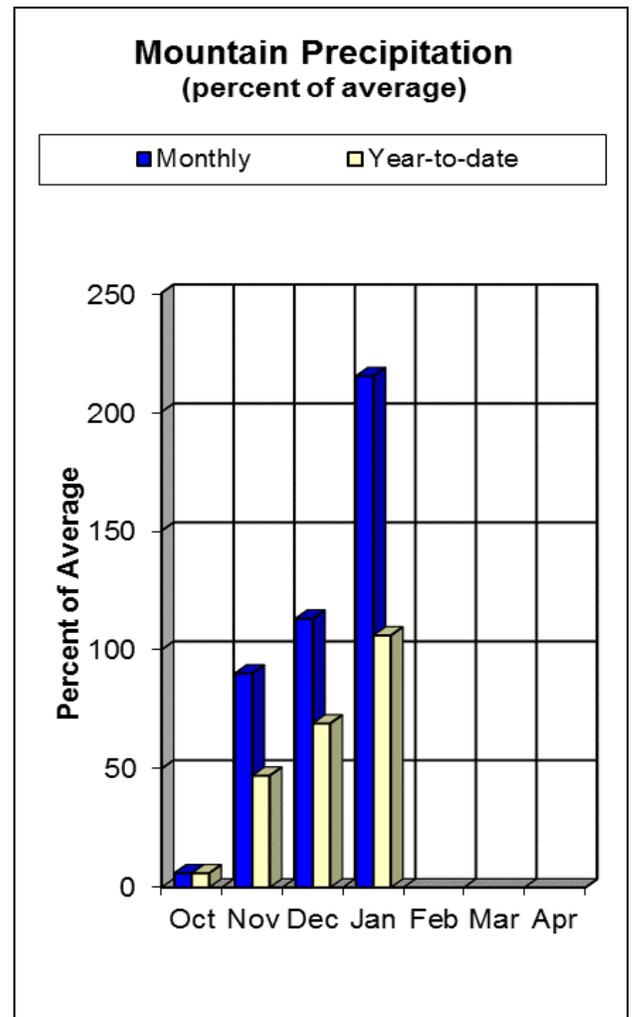
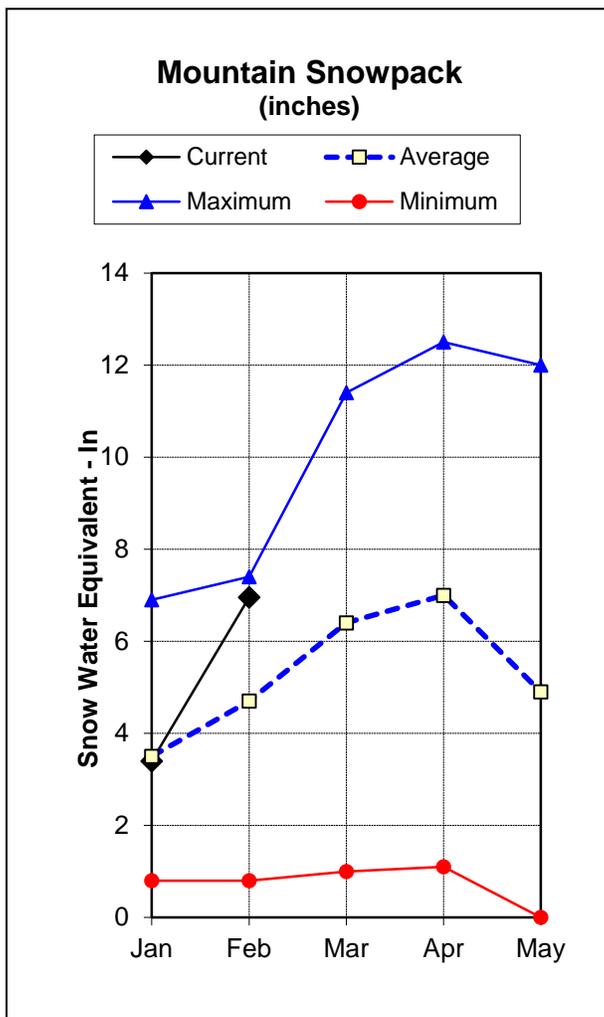
The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:  
USDA/NRCS National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

# Canadian River Basin Water Supply Outlook Report as of February 1, 2017



The Canadian River Basin forecasts for the March to June time period have all increased over the past month. The forecast for the Vermejo River near Dawson has increased by 74 percent to 136 percent of the average. The forecast for the Cimarron River near Cimarron has also increased 53 percent, and is now at 133 percent of the average. The Conchas Reservoir Inflow is also up by 60 percent to 133 percent of the average. Monthly precipitation for January in the basin was 215 percent of the average! Due to a wet January water year-to-date precipitation in the Canadian River Basin has increased to 106 percent of the average as compared to 126 percent at this time last year. Snowpack in the basin is currently 148 percent of the median. This is an increase of 51 percent from last month, and an increase of 26 percent from last February. Reservoirs are currently holding 102,800 acre-feet of storage which is a decrease of 65,700 acre feet from last year at this time. Reservoir storage in the Canadian River Basin is currently at 31 percent of capacity which reflects 76 percent of the average capacity.



## Canadian River Basin Streamflow Forecasts - February 1, 2017

Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

| CANADIAN RIVER BASIN                  | Forecast Period | 90% (KAF) | 70% (KAF) | 50% (KAF) | % Avg | 30% (KAF) | 10% (KAF) | 30yr Avg (KAF) |
|---------------------------------------|-----------------|-----------|-----------|-----------|-------|-----------|-----------|----------------|
| Vermejo R nr Dawson                   | MAR-JUN         | 5         | 8         | 10.6      | 136%  | 13.7      | 19.4      | 7.8            |
| Eagle Nest Reservoir Inflow           | MAR-JUN         | 9         | 12.3      | 15        | 134%  | 18        | 23        | 11.2           |
| Cimarron R nr Cimarron <sup>2</sup>   | MAR-JUN         | 7.4       | 15.5      | 21        | 133%  | 26        | 35        | 15.8           |
| Ponil Ck nr Cimarron                  | MAR-JUN         | 4.7       | 7.4       | 9.7       | 135%  | 12.4      | 17.3      | 7.2            |
| Rayado Ck nr Cimarron                 | MAR-JUN         | 3.3       | 6         | 8.5       | 121%  | 11.6      | 17.4      | 7              |
| Conchas Reservoir Inflow <sup>3</sup> | MAR-JUN         | 10.3      | 25        | 40        | 133%  | 60        | 102       | 30             |

1) 90% and 10% exceedance probabilities are actually 95% and 5%

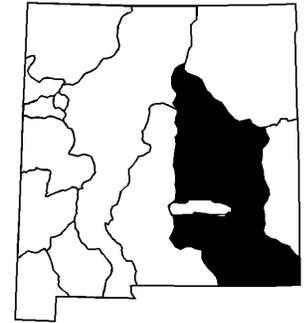
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

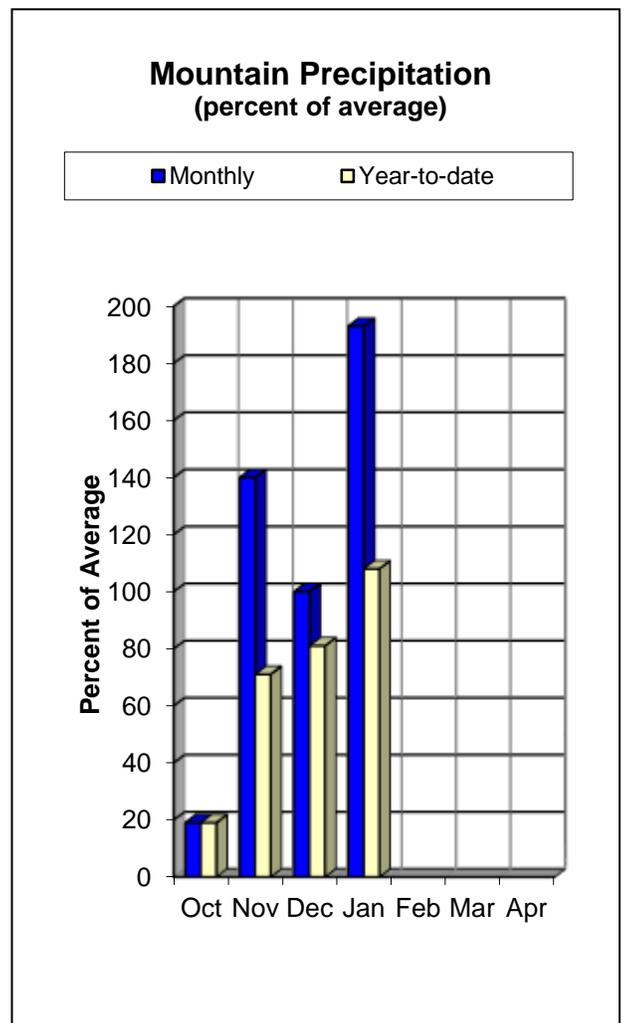
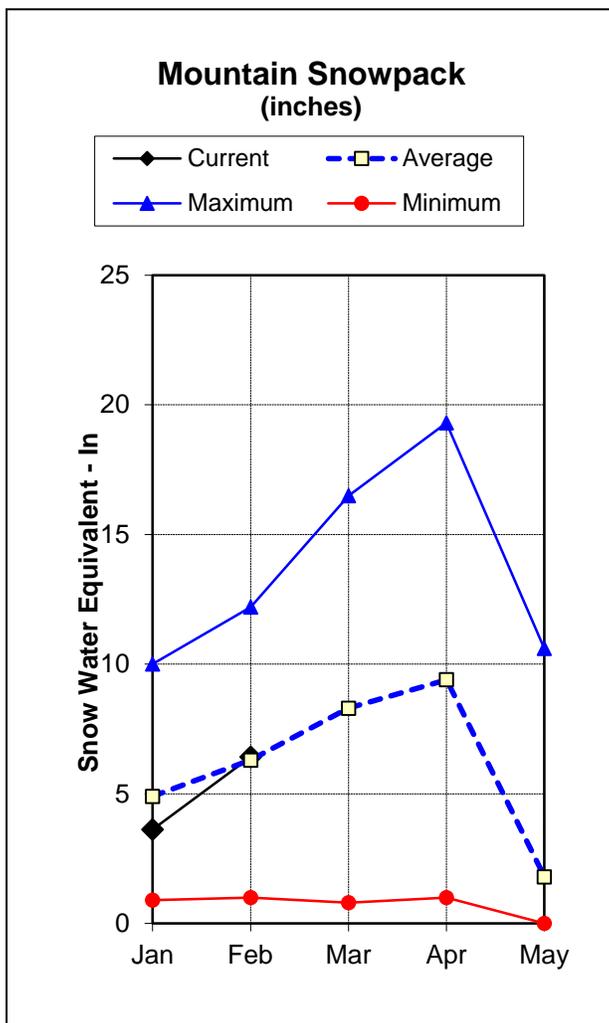
| Reservoir Storage<br>End of January, 2017 | Current (KAF) | Last Year (KAF) | Average (KAF) | Capacity (KAF) |
|---|---------------|-----------------|---------------|----------------|
| Conchas Lake                              | 72.1          | 138.2           | 199.9         | 254.2          |
| Eagle Nest Lake nr Eagle Nest, NM         | 30.7          | 30.3            | 53.5          | 79.0           |
| Basin-wide Total                          | 102.8         | 168.5           | 253.4         | 333.2          |
| # of reservoirs                           | 2             | 2               | 2             | 2              |

| Watershed Snowpack Analysis<br>February 1, 2017 | # of Sites | % Median | Last Year % Median |
|---|------------|----------|--------------------|
| CANADIAN RIVER BASIN                            | 9          | 148%     | 122%               |

# Pecos River Basin Water Supply Outlook Report as of February 1, 2017



Streamflow forecasts for the Pecos River Basin for the March to July timeframe have improved and are now all average to slightly above average. They range from 106 percent of average for the Pecos River near Anton Chico to 100 percent of average for Gallinas Creek near Montezuma. The Pecos River above Santa Rosa Lake is now 105 percent of the average. January received 193 percent of the average precipitation for the month which puts the Pecos at 108 percent of average for the water year-to-date. This is a 20 percent decrease from last year's 126 percent. Snowpack levels in the Pecos River Basin have increased slightly to 102 percent of the median. Last year at this time the basin received 134 percent of the median snowpack. As of February 1<sup>st</sup> reservoir storage in the basin is at 120,900 acre-feet, which equates to 7 percent of the average capacity and 8 percent of the actual capacity. This is 112 percent of the average as compared to 168 percent at this time last year.



## Pecos River Basin Streamflow Forecasts - February 1, 2017

Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

| PECOS RIVER BASIN        | Forecast Period | 90%<br>(KAF) | 70%<br>(KAF) | 50%<br>(KAF) | % Avg | 30%<br>(KAF) | 10%<br>(KAF) | 30yr Avg<br>(KAF) |
|--------------------------|-----------------|--------------|--------------|--------------|-------|--------------|--------------|-------------------|
| Pecos R nr Pecos         | MAR-JUL         | 35           | 49           | 60           | 105%  | 72           | 92           | 57                |
| Pecos R nr Anton Chico   | MAR-JUL         | 25           | 48           | 67           | 106%  | 90           | 129          | 63                |
| Gallinas Ck nr Montezuma | MAR-JUL         | 3            | 6.5          | 9.8          | 100%  | 13.6         | 20           | 9.8               |
| Pecos R ab Santa Rosa Lk | MAR-JUL         | 23           | 42           | 59           | 105%  | 79           | 113          | 56                |

1) 90% and 10% exceedance probabilities are actually 95% and 5%

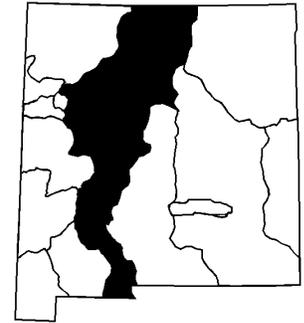
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

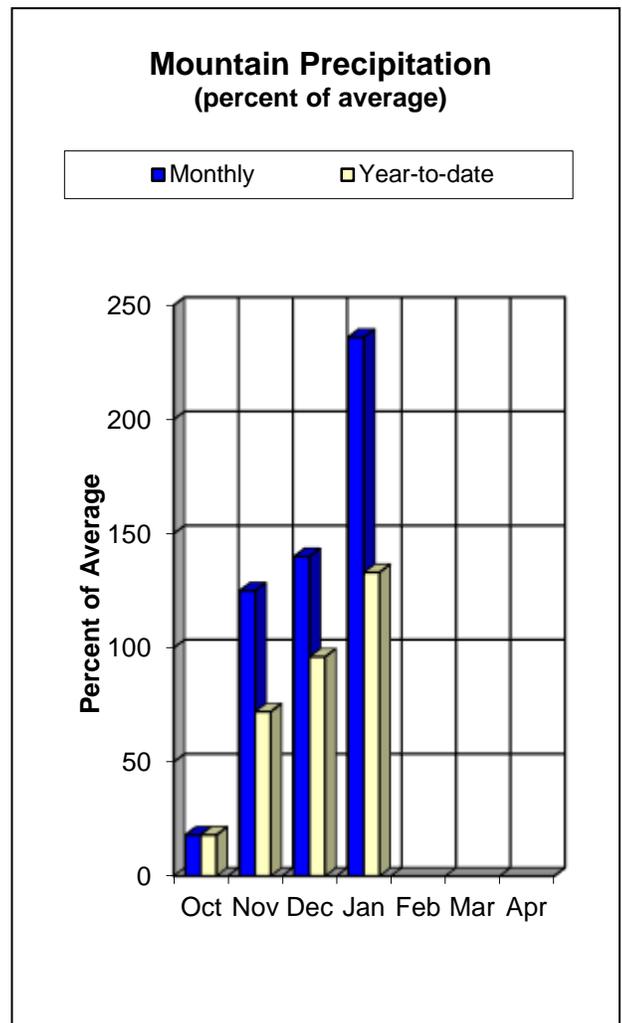
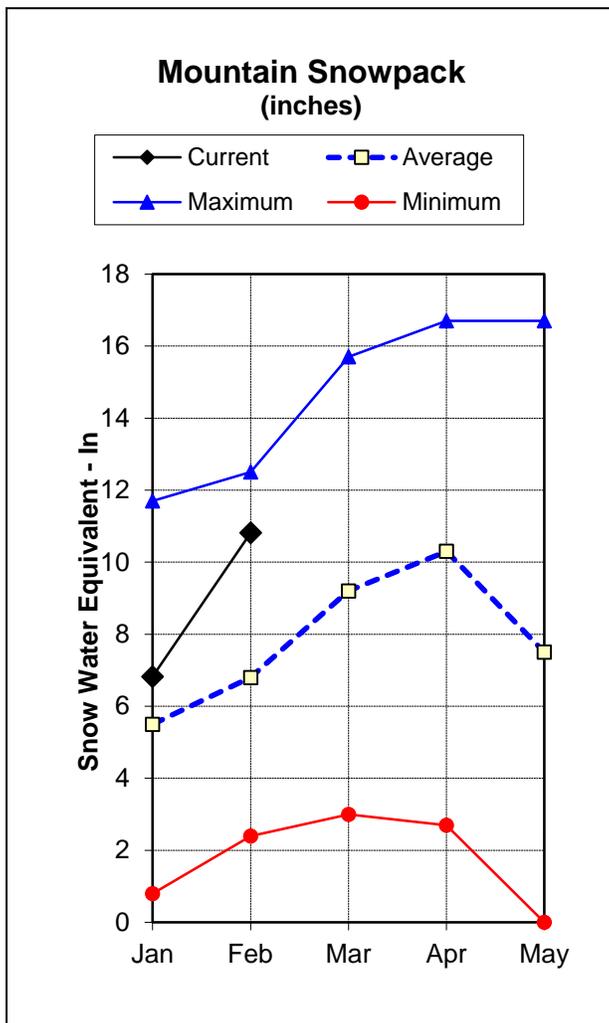
| Reservoir Storage<br>End of January, 2017 | Current<br>(KAF) | Last Year<br>(KAF) | Average<br>(KAF) | Capacity<br>(KAF) |
|---|------------------|--------------------|------------------|-------------------|
| Lake Avalon                               | 2.9              | 4.9                | 2.3              | 4.0               |
| Brantley Lake nr Carlsbad                 | 36.9             | 33.1               | 19.8             | 1008.2            |
| Santa Rosa Reservoir                      | 51.5             | 96.7               | 54.7             | 438.3             |
| Lake Sumner                               | 29.6             | 46.2               | 30.8             | 102.0             |
| Basin-wide Total                          | 120.9            | 180.9              | 107.6            | 1552.5            |
| # of reservoirs                           | 4                | 4                  | 4                | 4                 |

| Watershed Snowpack Analysis<br>February 1, 2017 | # of Sites | % Median | Last Year<br>% Median |
|---|------------|----------|-----------------------|
| PECOS RIVER BASIN                               | 5          | 102%     | 134%                  |

# Rio Grande Basin Water Supply Outlook Report as of February 1, 2017



Streamflow forecasts for the Rio Grande Basin have improved across the board at all forecast points. Costilla Creek near Costilla has increased by 77 percent and is now 177 percent of average for the March to July timeframe. Additionally, for the March to July forecasts the Jemez River below Jemez Canyon Dam has also increased and is now at 118 percent of average. The Rio Grande at San Marcial has increased by 62 percent and is now 161 percent of the average! Year-to-date precipitation is at 133 percent of average which is 9 percent above last year's total at this time. January saw an increase of moisture in the basin receiving 236 percent of the average precipitation! This is 131 percent above last year's monthly amount. Snowpack in the basin continues to look promising at 159 percent of median. This is just 36 percent above last year's median. Snowpack in southern Colorado affecting the Rio Grande is at 154 percent of average which is also an increase of 47 percent from last year at this time. Current reservoir storage in the basin is 562,000 acre-feet which is a decrease of 111,800 acre-feet from last year at this time. This is 28 percent of the average. Currently the basin is at 41 percent of the average capacity which is 12 percent of total reservoir capacity. Costilla Reservoir's totals were not obtainable this month due to weather so please keep that in mind. Last month Costilla Reservoir had 5300 acre-feet.



## Rio Grande Basin Streamflow Forecasts - February 1, 2017

Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

| RIO GRANDE BASIN                        | Forecast Period | 90% (KAF) | 70% (KAF) | 50% (KAF) | % Avg | 30% (KAF) | 10% (KAF) | 30yr Avg (KAF) |
|---|-----------------|-----------|-----------|-----------|-------|-----------|-----------|----------------|
| Rio Grande nr Del Norte <sup>2</sup>    | APR-SEP         | 395       | 515       | 600       | 117%  | 695       | 845       | 515            |
| Platoro Reservoir Inflow                | APR-JUL         | 48        | 58        | 65        | 116%  | 73        | 85        | 56             |
|   | APR-SEP         | 53        | 64        | 72        | 116%  | 81        | 95        | 62             |
| Conejos R nr Mogote <sup>2</sup>        | APR-SEP         | 179       | 220       | 250       | 129%  | 280       | 330       | 194            |
| Costilla Reservoir Inflow               | MAR-JUL         | 12.4      | 15.5      | 17.8      | 160%  | 20        | 24        | 11.1           |
| Costilla Ck nr Costilla <sup>2</sup>    | MAR-JUL         | 31        | 40        | 46        | 177%  | 53        | 65        | 26             |
| Red R bl Fish Hatchery nr Questa        | MAR-JUL         | 33        | 41        | 47        | 138%  | 53        | 64        | 34             |
| Rio Hondo nr Valdez                     | MAR-JUL         | 17.5      | 23        | 28        | 152%  | 32        | 40        | 18.4           |
| Rio Pueblo de Taos nr Taos              | MAR-JUL         | 14.4      | 20        | 25        | 147%  | 30        | 38        | 17             |
| Rio Lucero nr Arroyo Seco               | MAR-JUL         | 9.4       | 12.8      | 15.3      | 140%  | 18.1      | 23        | 10.9           |
| Rio Pueblo de Taos bl Los Cordovas      | MAR-JUL         | 25        | 41        | 55        | 153%  | 71        | 97        | 36             |
| Embudo Ck at Dixon                      | MAR-JUL         | 24        | 40        | 53        | 110%  | 67        | 92        | 48             |
| El Vado Reservoir Inflow <sup>2</sup>   | MAR-JUL         | 240       | 320       | 380       | 169%  | 445       | 550       | 225            |
|   | APR-JUL         | 220       | 295       | 350       | 171%  | 410       | 510       | 205            |
| Santa Cruz R at Cundiyo                 | MAR-JUL         | 12.4      | 16.4      | 19.4      | 106%  | 23        | 28        | 18.3           |
| Nambe Falls Reservoir Inflow            | MAR-JUL         | 4.1       | 5.5       | 6.5       | 100%  | 7.6       | 9.4       | 6.5            |
| Tesuque Ck ab diversions                | MAR-JUL         | 0.68      | 1.08      | 1.4       | 104%  | 1.76      | 2.4       | 1.34           |
| Rio Grande at Otowi Bridge <sup>2</sup> | MAR-JUL         | 735       | 935       | 1080      | 150%  | 1240      | 1490      | 720            |
| Santa Fe R nr Santa Fe <sup>2</sup>     | MAR-JUL         | 2.5       | 3.6       | 4.4       | 102%  | 5.3       | 6.8       | 4.3            |
| Jemez R nr Jemez                        | MAR-JUL         | 30        | 41        | 49        | 117%  | 58        | 72        | 42             |
| Jemez R bl Jemez Canyon Dam             | MAR-JUL         | 22        | 32        | 40        | 118%  | 49        | 63        | 34             |
| Rio Grande at San Marcial <sup>2</sup>  | MAR-JUL         | 520       | 700       | 820       | 161%  | 940       | 1120      | 510            |

1) 90% and 10% exceedance probabilities are actually 95% and 5%

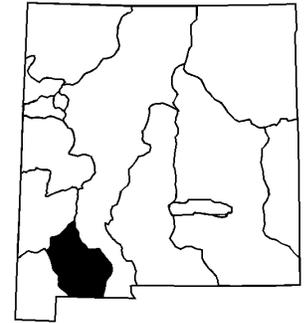
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

| Reservoir Storage<br>End of January, 2017 | Current (KAF) | Last Year (KAF) | Average (KAF) | Capacity (KAF) |
|---|---------------|-----------------|---------------|----------------|
| Abiquiu Reservoir                         | 120.7         | 132.2           | 154.6         | 1192.8         |
| Bluewater Lake                            | 2.9           | 2.0             | 5.9           | 38.5           |
| Caballo Reservoir                         | 25.7          | 29.2            | 78.1          | 332.0          |
| Cochiti Lake                              | 44.7          | 47.2            | 60.9          | 491.0          |
| Costilla Reservoir                        |               | 9.8             | 6.5           | 16.0           |
| El Vado Reservoir                         | 50.4          | 34.6            | 100.9         | 190.3          |
| Elephant Butte Reservoir                  | 252.2         | 361.1           | 1299.0        | 2195.0         |
| Heron Reservoir                           | 65.4          | 67.5            | 303.0         | 400.0          |
| Basin-wide Total                          | 562.0         | 673.8           | 2002.4        | 4839.6         |
| # of reservoirs                           | 7             | 7               | 7             | 7              |

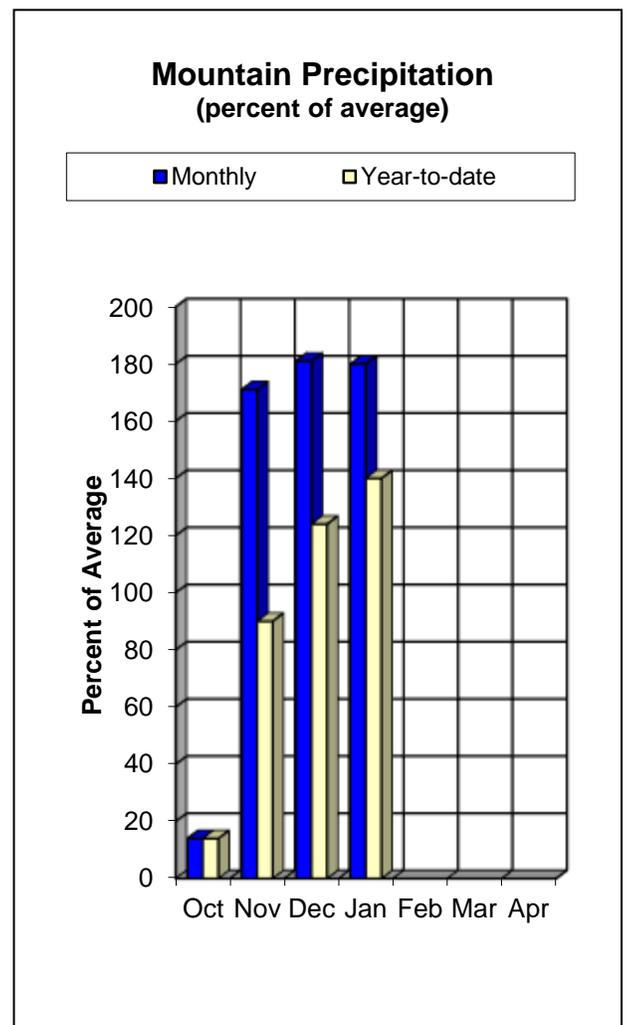
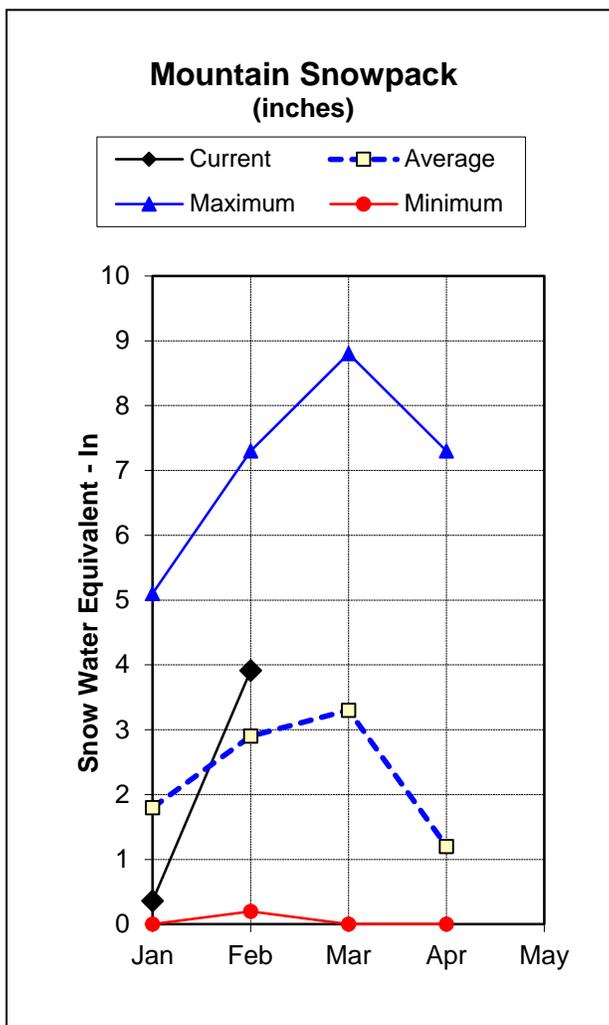
| Watershed Snowpack Analysis<br>February 1, 2017 | # of Sites | % Median | Last Year % Median |
|---|------------|----------|--------------------|
| RIO GRANDE BASIN                                | 19         | 159%     | 123%               |

# Mimbres River Basin Water Supply Outlook Report as of February 1, 2017



The February through May forecast for the Mimbres River at Mimbres has increased dramatically from the previous month. It is now 275 percent of the average! This is an increase of 185 percent. Water year-to-date precipitation is 140 percent of the average, as compared to 121 percent at this time last year. The month of January continued to receive precipitation taking in 180 percent of the average rainfall for the month. With temperatures cooperating throughout January the snowpack in the Mimbres basin increased by 115 percent to 135 percent of the median.

Users of NRCS Snow Survey data should be aware, due to reduced budget allocations; the manual snow courses at McKnight Cabin and Emory Pass #2 have been discontinued. Data is still being recorded at the automated SNOTEL sites in the Basin.



## Mimbres River Basin Streamflow Forecasts - February 1, 2017

Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

| MIMBRES RIVER BASIN               | Forecast Period | 90% (KAF) | 70% (KAF) | 50% (KAF) | % Avg | 30% (KAF) | 10% (KAF) | 30yr Avg (KAF) |
|-----------------------------------|-----------------|-----------|-----------|-----------|-------|-----------|-----------|----------------|
| Mimbres R at Mimbres <sup>3</sup> | FEB-MAY         | 2.1       | 3.6       | 5         | 275%  | 6.7       | 9.9       | 1.82           |

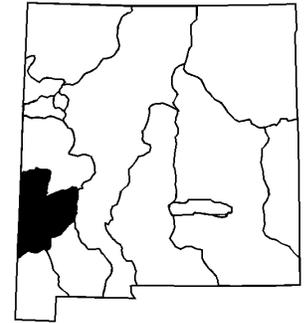
1) 90% and 10% exceedance probabilities are actually 95% and 5%

2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

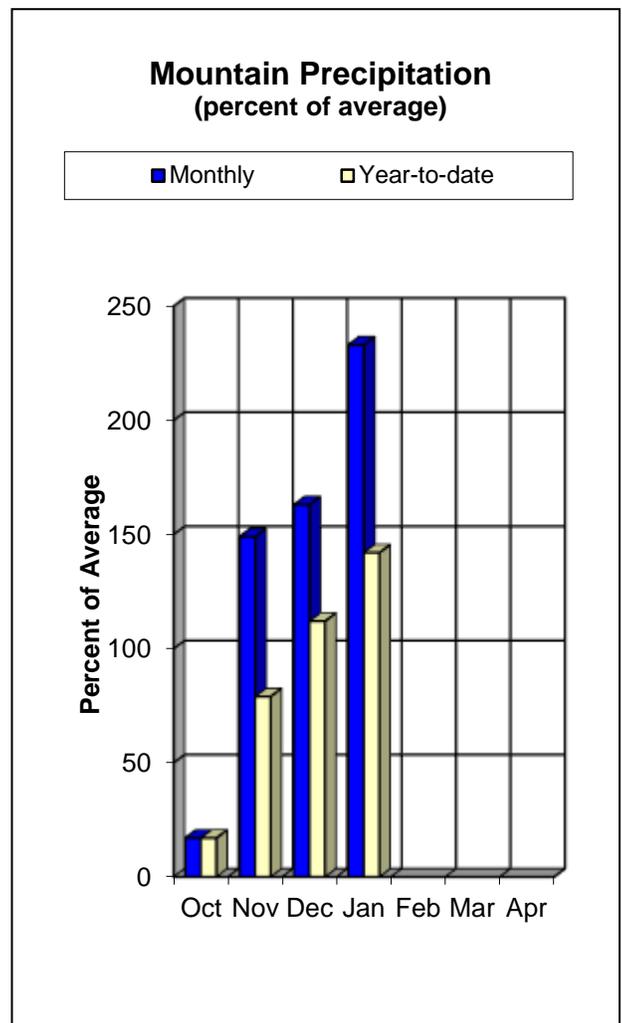
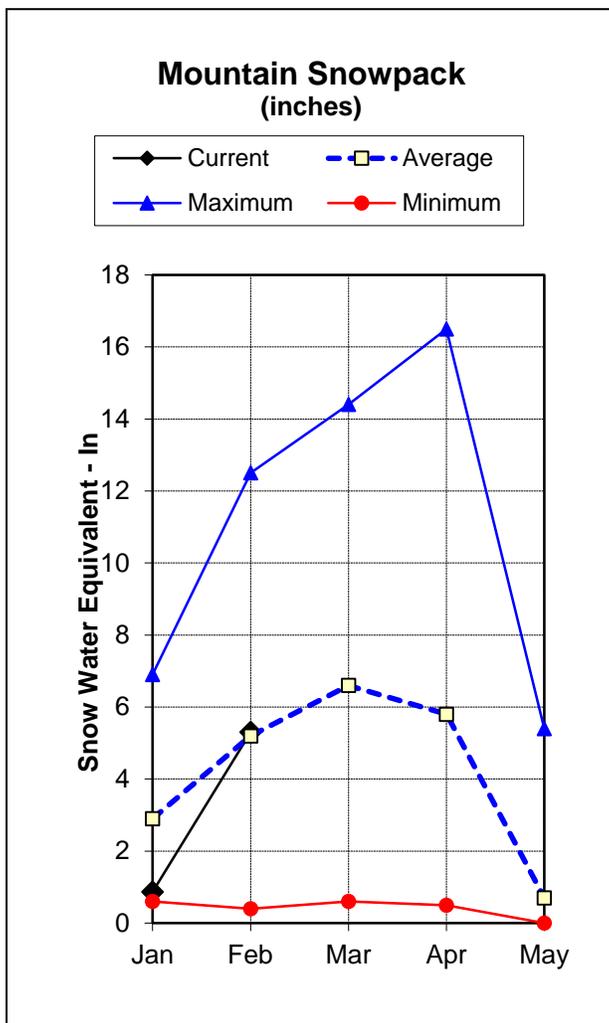
| Watershed Snowpack Analysis<br>February 1, 2017 | # of Sites | % Median | Last Year<br>% Median |
|---|------------|----------|-----------------------|
| MIMBRES RIVER BASIN                             | 2          | 135%     | 157%                  |

# San Francisco / Upper Gila River Basin Water Supply Outlook Report as of February 1, 2017



Streamflow forecasts for the San Francisco/Upper Gila River Basin have almost doubled since last month! For the February through May forecast the Gila River at Gila is now at 144 percent of the average. For the same time period the San Francisco River at Clifton is forecasting 141 percent of the average. Total water year-to-date precipitation is currently 140 percent of the average. The month of January alone received 233 percent of the average precipitation! This has positively impacted the snowpack in the basin which has increased by 72 percent to 102 percent of the median. This is 10 percent below last year's total.

Due to budget and contracting issues, the aerial markers at Hummingbird Saddle and Whitewater Baldy are not currently being measured. Plans are in effect to automate these sites with depth sensors which will transmit out data daily as soon as possible.



## San Francisco-Upper Gila River Basin Streamflow Forecasts - February 1, 2017

Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

| SAN FRANCISCO-UPPER GILA RIVER BASIN     | Forecast<br>Period | 90%<br>(KAF) | 70%<br>(KAF) | 50%<br>(KAF) | % Avg | 30%<br>(KAF) | 10%<br>(KAF) | 30yr Avg<br>(KAF) |
|--|--------------------|--------------|--------------|--------------|-------|--------------|--------------|-------------------|
| Gila R at Gila <sup>3</sup>              | FEB-MAY            | 38           | 57           | 72           | 144%  | 90           | 122          | 50                |
| Gila R bl Blue Ck nr Virden <sup>3</sup> | FEB-MAY            | 47           | 79           | 105          | 167%  | 135          | 186          | 63                |
| San Francisco R at Glenwood <sup>3</sup> | FEB-MAY            | 14.2         | 24           | 33           | 181%  | 44           | 64           | 18.2              |
| San Francisco R at Clifton <sup>3</sup>  | FEB-MAY            | 30           | 53           | 72           | 141%  | 94           | 133          | 51                |

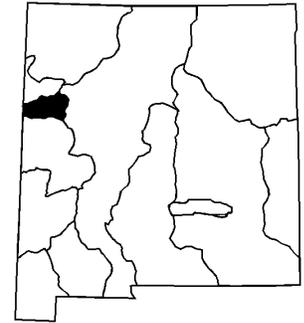
1) 90% and 10% exceedance probabilities are actually 95% and 5%

2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

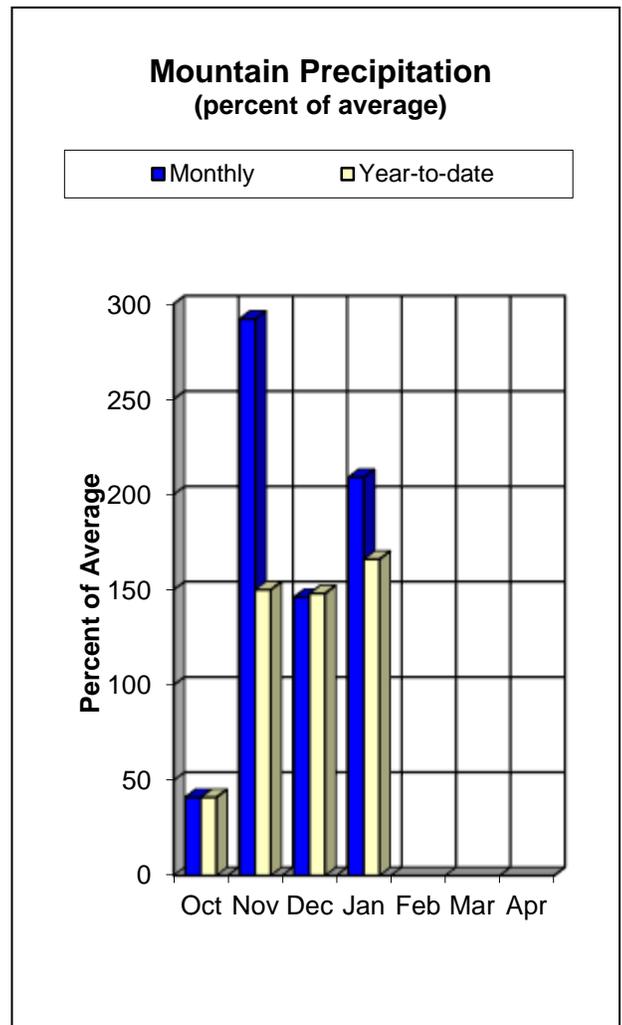
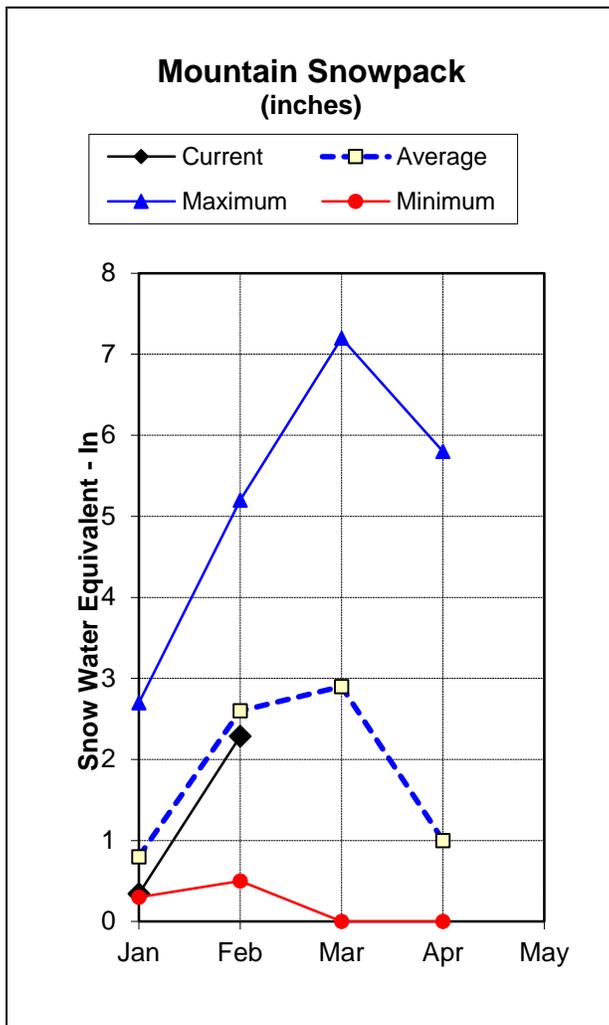
3) Median value used in place of average

| Watershed Snowpack Analysis<br>February 1, 2017 | # of Sites | % Median | Last Year<br>% Median |
|---|------------|----------|-----------------------|
| SAN FRANCISCO-UPPER GILA RIVER BASIN            | 7          | 102%     | 112%                  |

# Zuni / Bluewater Basins Water Supply Outlook Report as of February 1, 2017



Both the Zuni and Bluewater Basins benefitted from the January snows. The Rio Nutria near Ramah increased another 17 percent to 179 percent of the average. Additionally, the Zuni River above Black Rock increased an additional 30 percent to 184 percent of the average. The Zuni-Bluewater Basins received 166 percent of the average precipitation for the water year-to-date, and a much needed 209 percent of the average for the month of January. The snow finally arrived to the basin and is now at 88 percent of the median, as compared to 92 percent at this time last year. Bluewater Lake is now higher than last January at 2,900 acre feet versus 2,000. This is 49 percent of the average, and only 15 percent of the average capacity.



## Zuni-Bluewater Basins Streamflow Forecasts - February 1, 2017

Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

| ZUNI-BLUEWATER BASINS                       | Forecast Period | 90% (KAF) | 70% (KAF) | 50% (KAF) | % Avg | 30% (KAF) | 10% (KAF) | 30yr Avg (KAF) |
|---|-----------------|-----------|-----------|-----------|-------|-----------|-----------|----------------|
| Rio Nutria nr Ramah <sup>3</sup>            | FEB-MAY         | 0.48      | 1.43      | 2.5       | 179%  | 4         | 7.2       | 1.4            |
| Zuni R ab Black Rock Reservoir <sup>3</sup> | FEB-MAY         | 0         | 0.16      | 0.7       | 184%  | 1.87      | 5.3       | 0.38           |

1) 90% and 10% exceedance probabilities are actually 95% and 5%

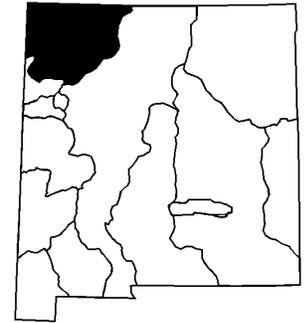
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

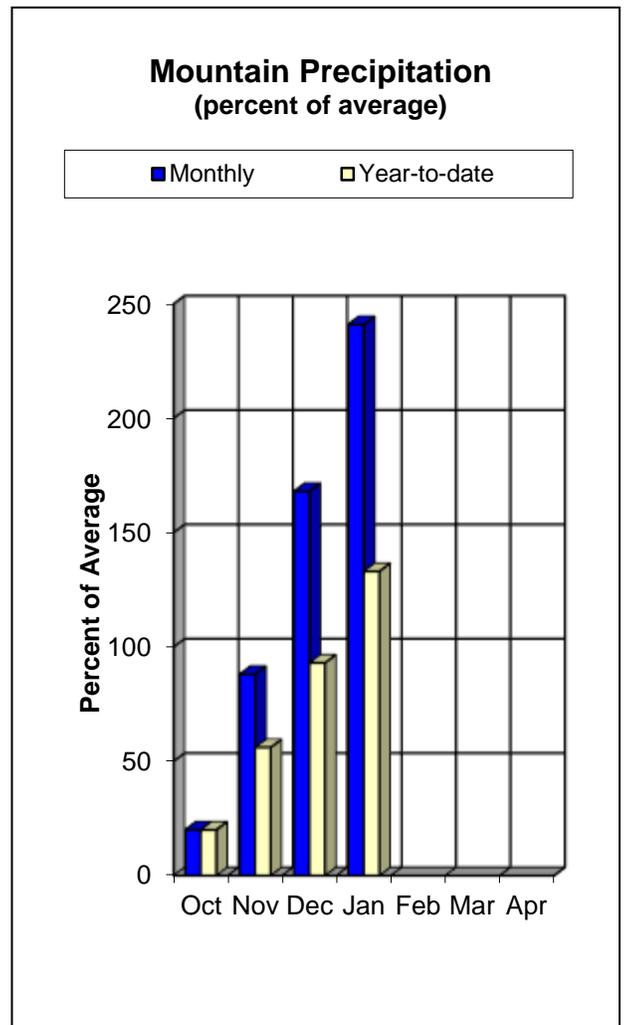
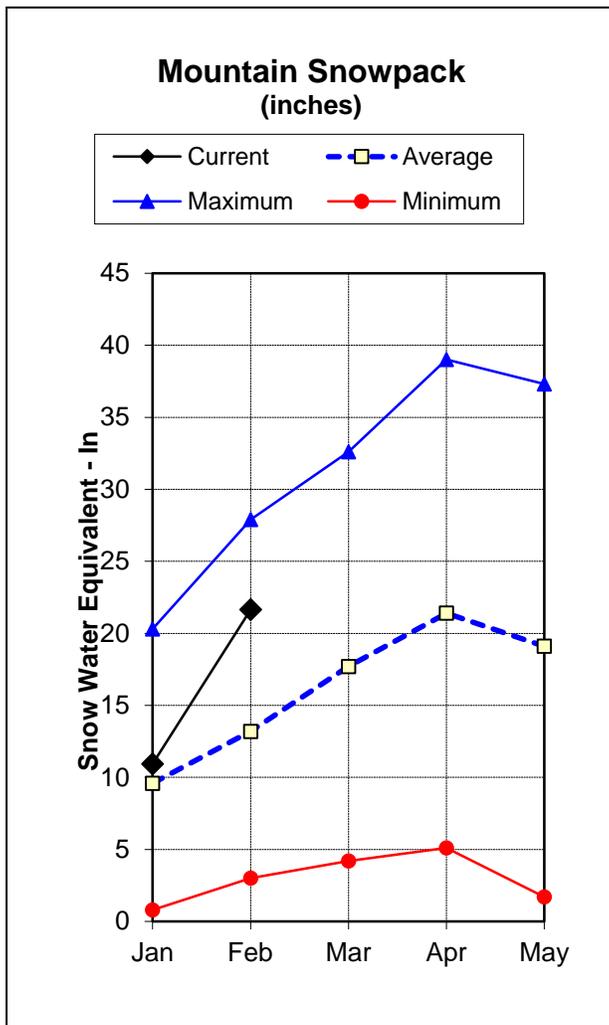
| Reservoir Storage<br>End of January, 2017 | Current (KAF) | Last Year (KAF) | Average (KAF) | Capacity (KAF) |
|---|---------------|-----------------|---------------|----------------|
| Bluewater Lake                            | 2.9           | 2.0             | 5.9           | 38.5           |
| Basin-wide Total                          | 2.9           | 2.0             | 5.9           | 38.5           |
| # of reservoirs                           | 1             | 1               | 1             | 1              |

| Watershed Snowpack Analysis<br>February 1, 2017 | # of Sites | % Median | Last Year % Median |
|---|------------|----------|--------------------|
| ZUNI-BLUEWATER BASINS                           | 4          | 88%      | 92%                |

# San Juan River Basin Water Supply Outlook Report as of February 1, 2017



The April to July forecasts are all above average, ranging from 125 to 139 percent. Additionally, the Animas River at Durango has increased by 33 percent to 215 percent of the average. Year-to-date precipitation is at 133 percent of the average, which is a 16 percent increase from last year at this time. January added to December's plentiful rainfall receiving 241 percent of the average precipitation for the month. Snowpack in the basin is currently at 164 percent of median. This is an increase of 51 percent from last year! Navajo reservoir storage contains 1,305,800 acre-feet or 100 percent of the average! This is however down from last year's 1,396,500 acre-feet at the end of January. This equates to 77 percent of the average capacity for the reservoir.



## San Juan River Basin Streamflow Forecasts - February 1, 2017

Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

| SAN JUAN RIVER BASIN                        | Forecast Period | 90% (KAF) | 70% (KAF) | 50% (KAF) | % Avg | 30% (KAF) | 10% (KAF) | 30yr Avg (KAF) |
|---|-----------------|-----------|-----------|-----------|-------|-----------|-----------|----------------|
| Rio Blanco at Blanco Diversion <sup>2</sup> | APR-JUL         | 51        | 65        | 75        | 139%  | 86        | 104       | 54             |
| Navajo R at Oso Diversion <sup>2</sup>      | APR-JUL         | 61        | 78        | 90        | 138%  | 103       | 125       | 65             |
| Navajo Reservoir Inflow <sup>2</sup>        | APR-JUL         | 650       | 815       | 940       | 128%  | 1070      | 1290      | 735            |
| Animas R at Durango                         | APR-JUL         | 375       | 460       | 520       | 125%  | 585       | 690       | 415            |
| La Plata R at Hesperus                      | APR-JUL         | 22        | 27        | 31        | 135%  | 35        | 42        | 23             |

1) 90% and 10% exceedance probabilities are actually 95% and 5%

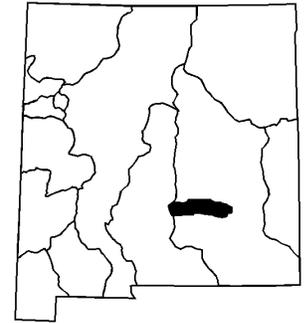
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

| Reservoir Storage<br>End of January, 2017 | Current (KAF) | Last Year (KAF) | Average (KAF) | Capacity (KAF) |
|---|---------------|-----------------|---------------|----------------|
| Navajo Reservoir                          | 1305.8        | 1396.5          | 1310.0        | 1696.0         |
| Basin-wide Total                          | 1305.8        | 1396.5          | 1310.0        | 1696.0         |
| # of reservoirs                           | 1             | 1               | 1             | 1              |

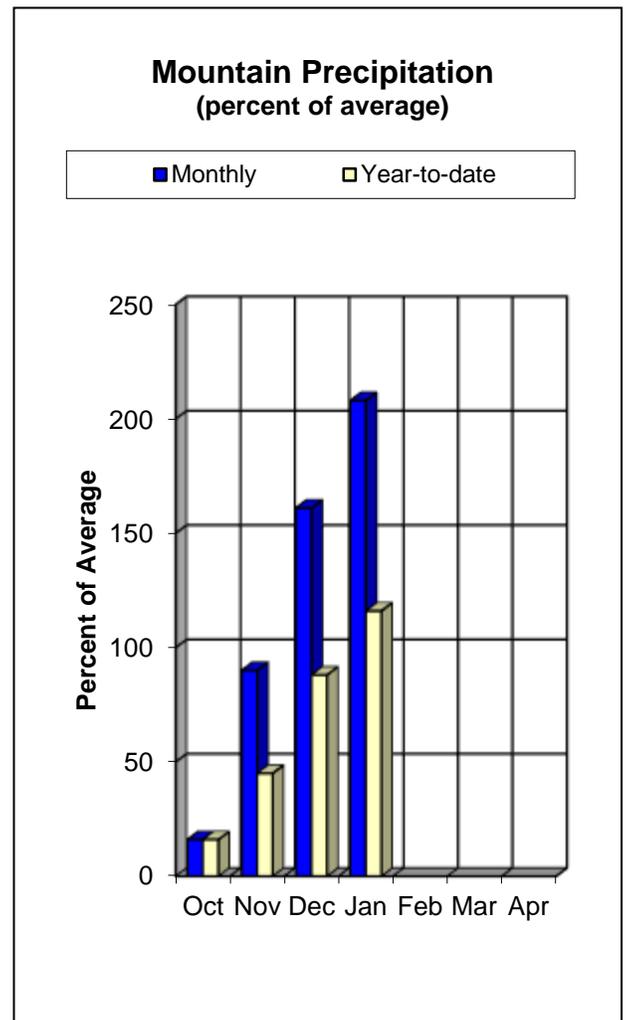
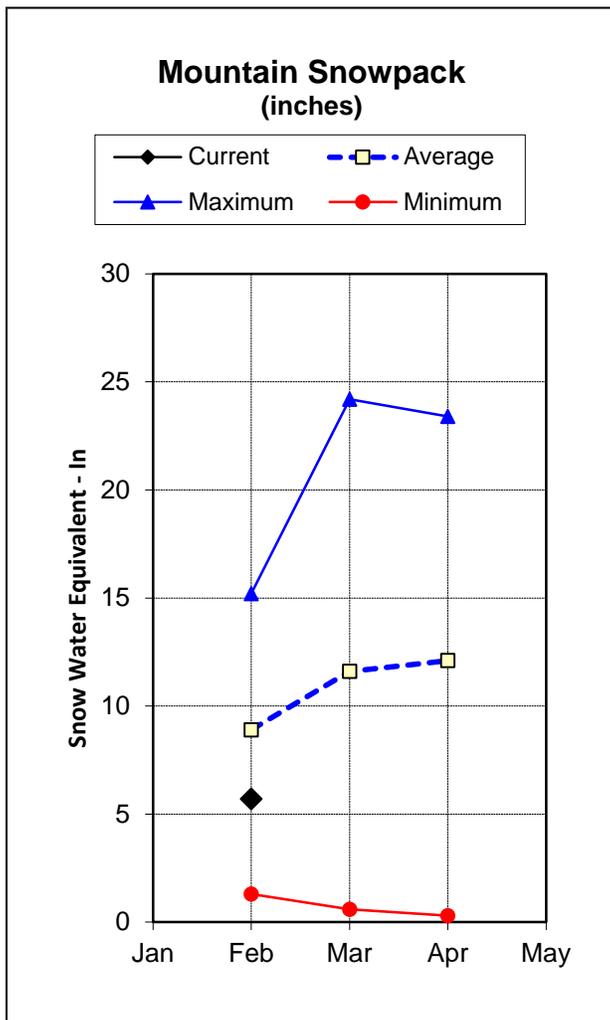
| Watershed Snowpack Analysis<br>February 1, 2017 | # of Sites | % Median | Last Year % Median |
|---|------------|----------|--------------------|
| SAN JUAN RIVER BASIN                            | 13         | 164%     | 113%               |

# Rio Hondo Basin Water Supply Outlook Report as of February 1, 2017



The streamflow forecast for the March to June time period for the Rio Hondo Basin has increased by 10 percent to 70 percent of average for the Rio Ruidoso at Hollywood. Year-to-date precipitation is at 116 percent of average, and the Rio Hondo Basin received 208 percent of the average rainfall for January. Currently snowpack has only increased slightly to 64 percent of the median. This is less than half of what the basin had received by this time last year. This measurement however should be used with caution as the Sierra Blanca SNOTEL site was impacted by the Little Bear Fire three years ago.

It should be noted that the switch to using median snowpack values three years ago has had a significant influence on the “average” calculations for the Rio Hondo Basin. Using the old system of computing averages based on the 1971-2000 period, 6.7 inches of SWE was considered normal for January 1. Using the new median calculations based on the 1981-2010 period, 3.2 inches of SWE is now normal. For this reason, comparisons of “percent of average” from year to year will be limited in this basin to minimize confusion.



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## Rio Hondo Basin Streamflow Forecasts - February 1, 2017

Forecast Exceedance Probabilities for Risk Assessment  
Chance that actual volume will exceed forecast

| RIO HONDO BASIN          | Forecast<br>Period | 90%<br>(KAF) | 70%<br>(KAF) | 50%<br>(KAF) | % Avg | 30%<br>(KAF) | 10%<br>(KAF) | 30yr Avg<br>(KAF) |
|--------------------------|--------------------|--------------|--------------|--------------|-------|--------------|--------------|-------------------|
| Rio Ruidoso at Hollywood | MAR-JUN            | 1.78         | 3.3          | 4.7          | 70%   | 6.2          | 8.9          | 6.7               |

- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

| Watershed Snowpack Analysis<br>February 1, 2017 | # of Sites | % Median | Last Year<br>% Median |
|---|------------|----------|-----------------------|
| RIO HONDO BASIN                                 | 1          | 64%      | 158%                  |

| <b>NEW MEXICO STATEWIDE</b>          | Network | Elevation<br>(ft) | Depth<br>(in) | SWE<br>(in) | Median<br>(in) | %<br>Median | Last Year<br>SWE (in) | Last Year<br>% Median |
|--------------------------------------|---------|-------------------|---------------|-------------|----------------|-------------|-----------------------|-----------------------|
| Alamitos                             | SC      | 9320              | 20            | 4.8         | 4.4            | 109%        | 5.6                   | 127%                  |
| Aztec #2                             | SC      | 9880              | 23            | 6.6         | 2.3            | 287%        | 3.0                   | 130%                  |
| Bateman                              | SNOTEL  | 9300              | 46            | 13.6        | 6.9            | 197%        | 8.0                   | 116%                  |
| Boon                                 | SC      | 8140              | 16            | 3.3         | 4.6            | 72%         | 3.5                   | 76%                   |
| Bowl Canyon                          | SC      | 8980              | 44            | 11.2        | 5.8            | 193%        | 7.6                   | 131%                  |
| Chamita                              | SNOTEL  | 8400              | 46            | 13.4        | 6.5            | 206%        | 7.7                   | 118%                  |
| Dan Valley                           | SC      | 7640              | 13            | 2.0         | 3.1            | 65%         | 3.1                   | 100%                  |
| Elk Cabin                            | SNOTEL  | 8210              | 4             | 2.4         | 3.8            | 63%         | 3.5                   | 92%                   |
| Emory Pass #2                        | SC      | 7800              |               |             | 0.9            |             |                       |                       |
| Frisco Divide                        | SNOTEL  | 8000              | 8             | 2.0         | 2.5            | 80%         | 2.2                   | 88%                   |
| Gallegos Peak                        | SNOTEL  | 9800              | 35            | 8.5         | 6.1            | 139%        | 9.5                   | 156%                  |
| Hematite Park                        | SC      | 9500              | 35            | 8.1         | 3.4            | 238%        | 4.0                   | 118%                  |
| Hidden Valley                        | SC      | 8480              | 29            | 9.1         |                |             | 6.6                   |                       |
| Hopewell                             | SNOTEL  | 10000             | 67            | 19.0        | 11.0           | 173%        | 10.9                  | 99%                   |
| Hummingbird - Aerial And Snow Course | SC      | 10550             |               |             | 8.9            |             |                       |                       |
| Lookout Mountain                     | SNOTEL  | 8500              | 11            | 2.6         | 2.3            | 113%        | 2.5                   | 109%                  |
| Mcgaffey                             | SC      | 8120              | 8             | 2.0         | 2.7            | 74%         | 2.5                   | 93%                   |
| Mcknight Cabin                       | SNOTEL  | 9240              | 17            | 5.0         | 2.4            | 208%        | 4.9                   | 204%                  |
| Mcknight Cabin Aerial Marker         | SC      | 9300              |               |             |                |             |                       |                       |
| Mcknight Cabin Snow Course           | SC      | 9300              |               |             | 2.1            |             |                       |                       |
| Missionary Spring                    | SC      | 7940              | 14            | 3.2         | 3.6            | 89%         | 2.4                   | 67%                   |
| Navajo Whiskey Ck                    | SNOTEL  | 9050              | 38            | 11.9        |                |             | 8.7                   |                       |
| North Costilla                       | SNOTEL  | 10600             | 27            | 6.9         | 3.6            | 192%        | 4.7                   | 131%                  |
| Ojo Redondo                          | SC      | 8200              | 14            | 2.5         | 3.4            | 74%         |                       |                       |
| Palo                                 | SNOTEL  | 9350              | 24            | 6.5         |                |             | 4.9                   |                       |
| Palo                                 | SC      | 9300              | 32            | 5.4         | 4.6            | 117%        | 4.8                   | 104%                  |
| PanchueLa                            | SC      | 8400              | 16            | 0.7         |                |             | 5.2                   |                       |
| Post Office Flats                    | SC      | 8400              |               |             | 2.7            |             |                       |                       |
| Quemazon                             | SNOTEL  | 9500              | 30            | 8.3         | 6.7            | 124%        | 6.4                   | 96%                   |
| Red River Pass #2                    | SNOTEL  | 9850              | 33            | 8.0         | 5.0            | 160%        | 5.6                   | 112%                  |
| Rice Park                            | SNOTEL  | 8460              | 25            | 6.3         | 5.0            | 126%        | 5.0                   | 100%                  |
| Rice Park                            | SC      | 8460              |               |             | 4.3            |             |                       |                       |
| Rio En Medio                         | SC      | 10300             | 28            | 6.4         | 6.2            | 103%        | 8.1                   | 131%                  |
| Rio Santa Barbara                    | SNOTEL  | 10664             | 40            | 10.2        |                |             | 13.3                  |                       |
| San Antonio Sink                     | SNOTEL  | 9100              | 42            | 12.7        |                |             | 7.7                   |                       |
| San Antonio Sink                     | SC      | 9200              | 43            | 11.8        | 5.2            | 227%        | 5.6                   | 108%                  |
| Santa Fe                             | SNOTEL  | 11445             | 41            | 10.9        | 9.5            | 115%        | 14.8                  | 156%                  |
| Senorita Divide #2                   | SNOTEL  | 8600              | 31            | 7.9         | 5.6            | 141%        | 7.2                   | 129%                  |
| Shuree                               | SNOTEL  | 10100             | 35            | 9.0         |                |             | 5.3                   |                       |
| Shuree                               | SC      | 10097             | 37            | 8.4         | 2.2            | 382%        |                       |                       |
| Sierra Blanca                        | SNOTEL  | 10280             | 22            | 5.7         | 8.9            | 64%         | 14.1                  | 158%                  |
| Signal Peak                          | SNOTEL  | 8360              | 12            | 3.5         | 3.9            | 90%         | 5.0                   | 128%                  |
| Silver Creek Divide                  | SNOTEL  | 9000              | 29            | 7.5         | 6.1            | 123%        | 6.2                   | 102%                  |
| State Line                           | SC      | 8000              | 8             | 1.9         | 1.8            | 106%        | 2.2                   | 122%                  |
| Taos Canyon                          | SC      | 9100              | 28            | 5.3         | 4.0            | 133%        | 4.5                   | 113%                  |
| Taos Powderhorn                      | SNOTEL  | 11057             | 62            | 18.3        |                |             | 13.9                  |                       |
| Taos Powderhorn                      | SC      | 11250             | 81            | 23.3        | 14.2           | 164%        | 16.7                  | 118%                  |
| Tolby                                | SNOTEL  | 10180             | 32            | 7.8         | 5.5            | 142%        | 6.3                   | 115%                  |
| Tolby                                | SC      | 10180             |               |             | 5.7            |             |                       |                       |
| Tres Ritos                           | SNOTEL  | 8600              | 11            | 3.7         |                |             | 3.8                   |                       |
| Tres Ritos                           | SC      | 8600              | 21            | 5.3         | 4.0            | 133%        | 6.5                   | 163%                  |
| Vacas Locas                          | SNOTEL  | 9306              | 41            | 11.6        | 7.9            | 147%        | 9.9                   | 125%                  |
| Wesner Springs                       | SNOTEL  | 11120             | 36            | 9.7         | 9.5            | 102%        | 12.9                  | 136%                  |
| Whiskey Creek                        | SC      | 9050              | 44            | 13.6        | 6.3            | 216%        | 8.9                   | 141%                  |
| Whitewater - Aerial And Snow Course  | SC      | 10750             |               |             | 17.8           |             |                       |                       |
| <b>Basin Index</b>                   |         |                   |               |             |                | <b>141%</b> |                       | <b>121%</b>           |
| # of sites                           |         |                   |               |             |                | 36          |                       | 36                    |

*Issued by*

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