



United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

# New Mexico

# Basin Outlook Report

# March 1, 2017



Winter isn't over yet! Heavy snow in the Zuni on the last day of February. - Photo courtesy of Arthur Ariaz, NRCS

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

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<http://www.nrcs.usda.gov/wps/portal/nrcs/main/nm/snow/>

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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

February weather wise was a relatively quiet month for New Mexico. Until the final days leading in to March a large portion of the state saw little precipitation nor had significant gains in snowpack. Most of the state remained somewhat dry with temperatures fluctuating between up to ten above and below average from week to week. During February below average precipitation totals dominated a majority of the state minus the west and southwest corner. However, despite a slow February statewide water year-to-date precipitation still remains above the average. Statewide snowpack totals also took a hit for most of the month being subjected to strong winds and above normal temperatures. Looking very reminiscent of last year's snowpack New Mexico's streamflow conditions still continue to be slightly above average to average across most forecast points in the state. Throughout the month of February the regions most affected by the lack of moisture and temperatures would be the east central and northeast portions of the state. This ultimately has led to the expansion of drought conditions in those areas. I encourage everyone to continue to monitor the weather and read future water supply reports to see how this water year develops throughout March.

## Snowpack

The month of February facilitated a decrease in snowpack values across all basins in the state. Since the beginning of February overall statewide snowpack has dropped by 39 percent to 102 percent of the median. The Rio Grande Basin's snowpack decreased from 159 to 119 percent of median. The Canadian also dropped by 51 percent to 97 percent of the median. The San Juan Basin decreased by 13 percent yet still remains at 151 percent of the median. Due to such warm weather in the southern portion of the state the Mimbres saw a significant decrease from 135 to 42 percent of the median. The San Francisco-Upper Gila Basin also saw large decreases in snowpack dropping from 102 to 60 percent of median. In addition the Zuni-Bluewater and Rio Hondo Basins saw marginal decreases of 5 percent of less, however already had below average snowpack the month prior. Water users and managers should continue to monitor conditions over the next month to determine the impacts of early spring like conditions.

<b>NEW MEXICO STATEWIDE SNOWPACK</b>	<b>Percent of Median</b>	<b>Last Year Percent of Median</b>
CANADIAN RIVER BASIN	97	88
PECOS RIVER BASIN	78	95
RIO GRANDE BASIN	119	88
MIMBRES RIVER BASIN	42	0
SAN FRANCISCO-UPPER GILA RIVER BASIN	60	29
ZUNI-BLUEWATER BASINS	85	39
SAN JUAN RIVER BASIN	151	95
CHUSKA MOUNTAINS	104	80
RIO HONDO BASIN	59	145
<b>Statewide Snowpack Total</b>	<b>102</b>	<b>81</b>
# of sites	36	36

## Precipitation

Following what turned out to be a very wet January, the month of February reached for other end of the spectrum. New Mexico statewide received 75 percent of the average precipitation for February as compared to 216 percent last month. Water year-to-date precipitation statewide is now at 117 percent of the average which is an 11 percent decrease from the previous month. In comparison, last year at this time water year-to-date precipitation was 111 percent of the average. With the forecast currently pointing towards warmer temperatures there is always the possibility of spring like precipitation. This has the potential to aid runoff and counteract a diminished snowpack. Water users and managers should pay close attention to how March unfolds.

## Reservoirs

Storage levels are still well below capacity at most reservoirs across the state. Statewide averages remain relatively stable, and have not changed significantly at all reservoirs. Navajo Reservoir remains the closest to actual reservoir capacity at 79 percent. The average percent of capacity statewide is still 44 percent. The current percent of the average storage statewide has only increased marginally to 60 percent. Water-users in the southern half of the state should closely monitor streamflow forecasts as we transition to spring and daily temperatures begin to rise in the north.

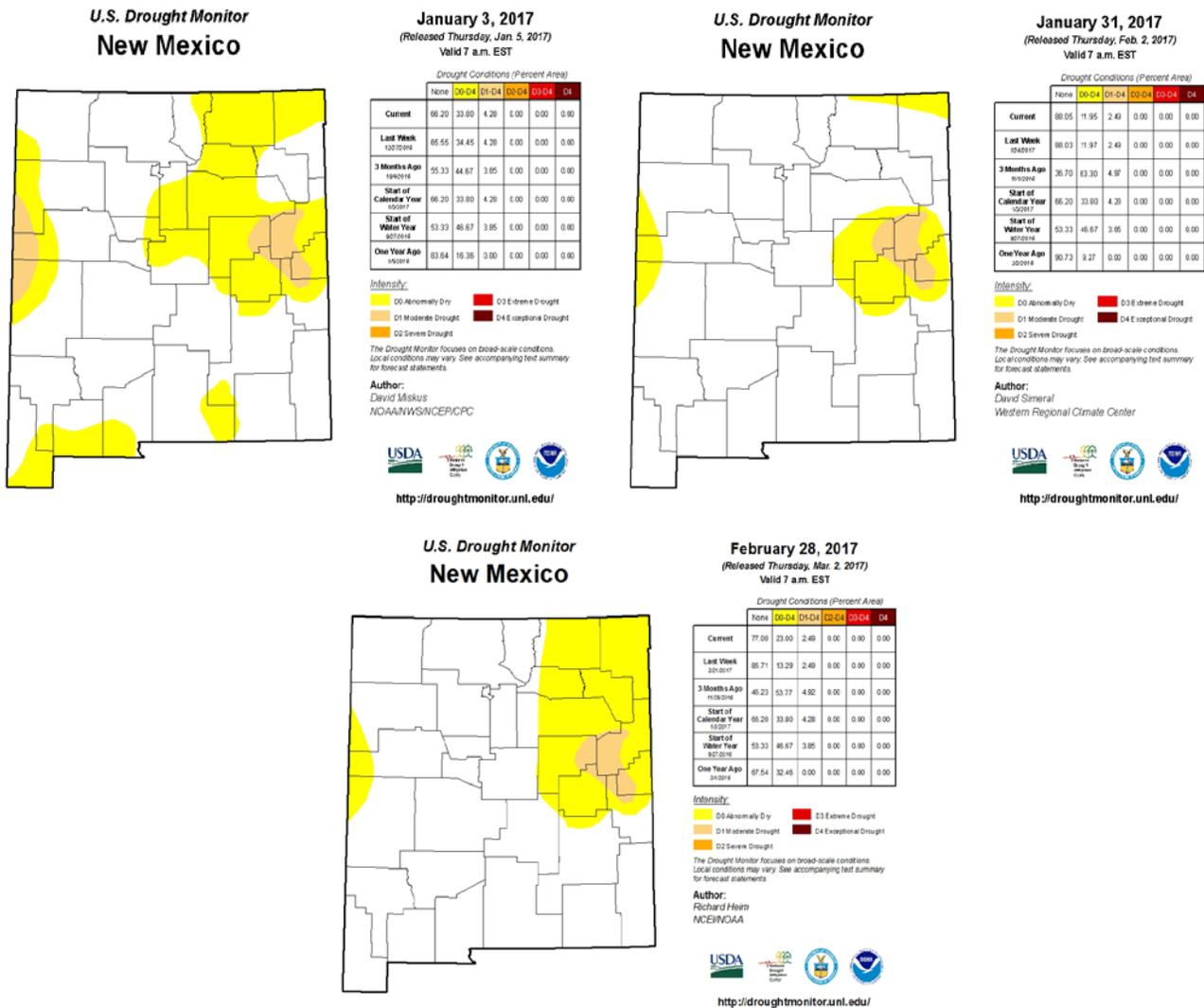
NEW MEXICO STATEWIDE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Abiquiu Reservoir	123.7	132.4	154.8	1192.8	10%	11%	13%	80%	86%
Bluewater Lake	7.8	2.1	6.6	38.5	20%	5%	17%	118%	32%
Brantley Lake nr Carlsbad	38.1	33.5	22.9	1008.2	4%	3%	2%	166%	146%
Caballo Reservoir	29.8	30.8	101.1	332.0	9%	9%	30%	29%	30%
Cochiti Lake	46.0	46.4	58.3	491.0	9%	9%	12%	79%	80%
Conchas Lake	73.6	139.1	202.0	254.2	29%	55%	79%	36%	69%
Costilla Reservoir		10.3	6.9	16.0		64%	43%		149%
Eagle Nest Lake nr Eagle Nest, NM	31.9	31.4	54.1	79.0	40%	40%	68%	59%	58%
El Vado Reservoir	53.9	35.2	100.8	190.3	28%	18%	53%	53%	35%
Elephant Butte Reservoir	295.1	400.8	1305.0	2195.0	13%	18%	59%	23%	31%
Heron Reservoir	67.1	71.1	297.8	400.0	17%	18%	74%	23%	24%
Lake Avalon	3.1	4.4	2.6	4.0	78%	110%	65%	119%	169%
Lake Sumner	31.9	46.1	33.1	102.0	31%	45%	32%	96%	139%
Navajo Reservoir	1339.7	1404.7	1292.0	1696.0	79%	83%	76%	104%	109%
Santa Rosa Reservoir	51.3	97.7	53.2	438.3	12%	22%	12%	96%	184%
Basin-wide Total	2193.0	2475.7	3684.3	8421.3	26%	29%	44%	60%	67%
# 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

February was a marginal month for New Mexico. Few basins saw substantial gains in either snowpack or precipitation. Late month storms in the Upper Rio Grande, San Juan, Pecos, and Canadian river basins contributed to an already decent early winter snowpack. These gains were reflected in streamflow forecasts remaining constant or only decreasing marginally in the north. The Zuni-Bluewater Basins also benefited from these late month storms with forecasts reaching over 200 percent of the average. The Mimbres Basin forecast declined by 135 percent despite receiving well above average precipitation for February. This is due to the above average temperatures in the southern portion of the state. The San Francisco-Upper Gila River Basin also saw decreases in excess of 50 percent due to similar conditions. In the east, little rain, and warm temperatures plagued the Rio Hondo Basin dropping the forecast by 25 percent of the average. Please continue to monitor conditions and read follow-up water supply reports as New Mexico moves toward spring.

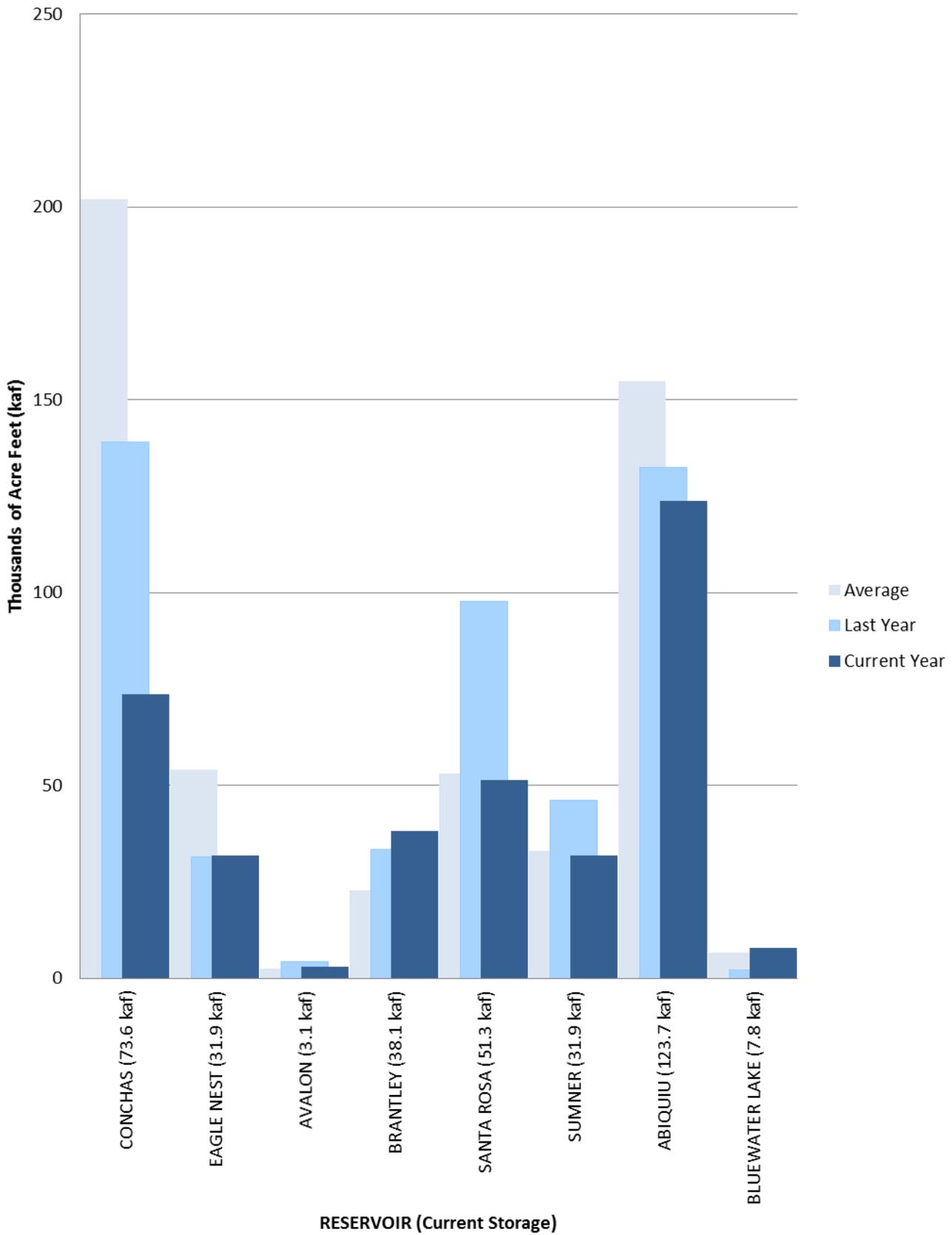
# New Mexico Drought Monitor, real versus perceived conditions?



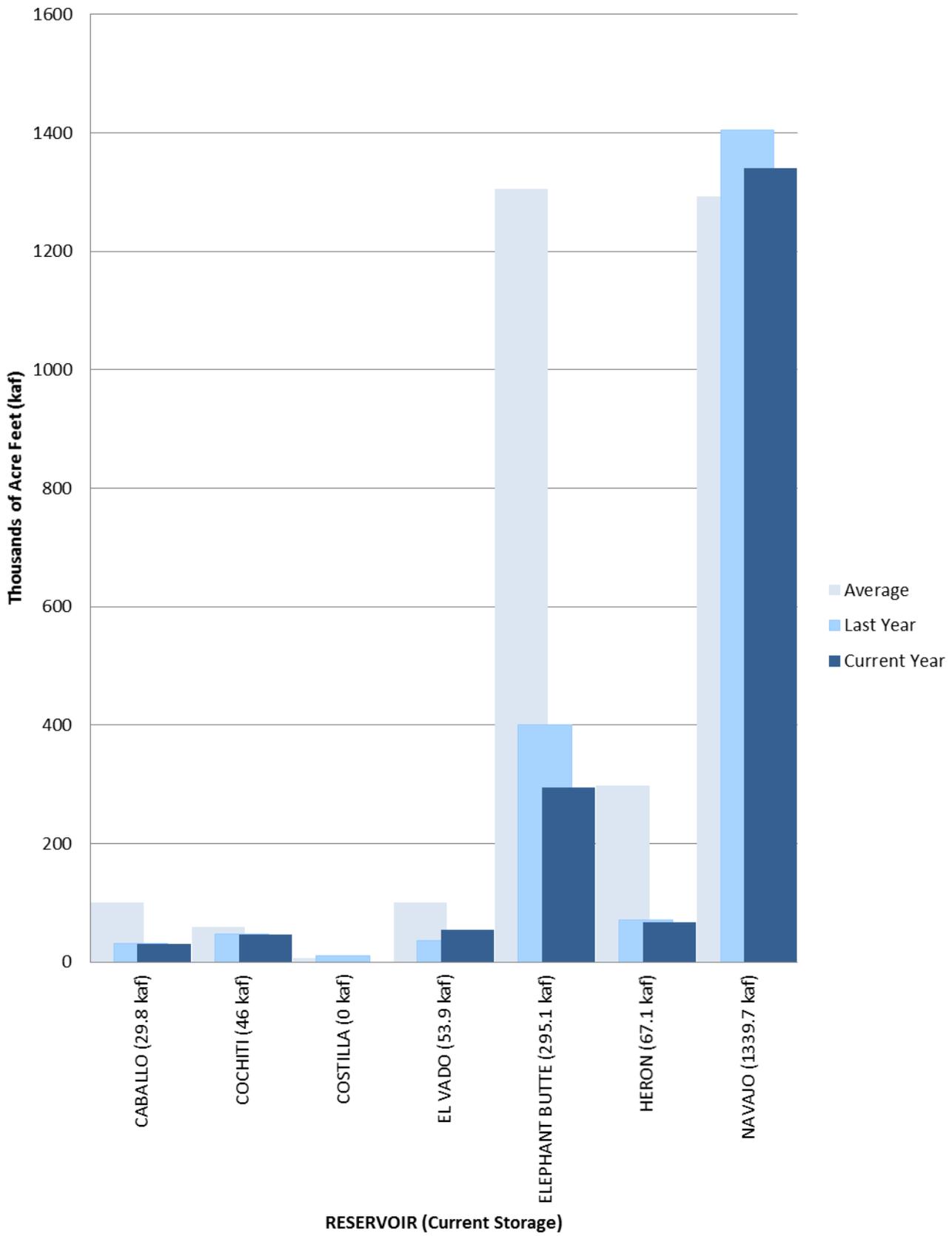
Every week, The U.S. Drought Monitor is produced in partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. This useful tool uses multiple inputs, including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

February had a wide range of precipitation totals depending on which region you observed. Amounts were above average for most basins located in western New Mexico, close to average across much of the interior, to well below normal in the northeast. Temperatures have been above normal across most of the state. The city of Clayton in the northeast reported its warmest February with complete data since records began in 1896. Several fast weather systems brought above-normal precipitation and cooler temperatures to parts of New Mexico during the last portion of the month. This resulted in a much needed refresh of the snowpack in the northern mountains and western New Mexico. However, these storms were isolated and did not deliver much precipitation or snow to regions east of the mountains. By the end of February D0 was expanded over northeast New Mexico to better reflect soil moisture and streamflow conditions. Water users should closely monitor snowpack, precipitation, reservoir, and forecast values as we move closer to spring.

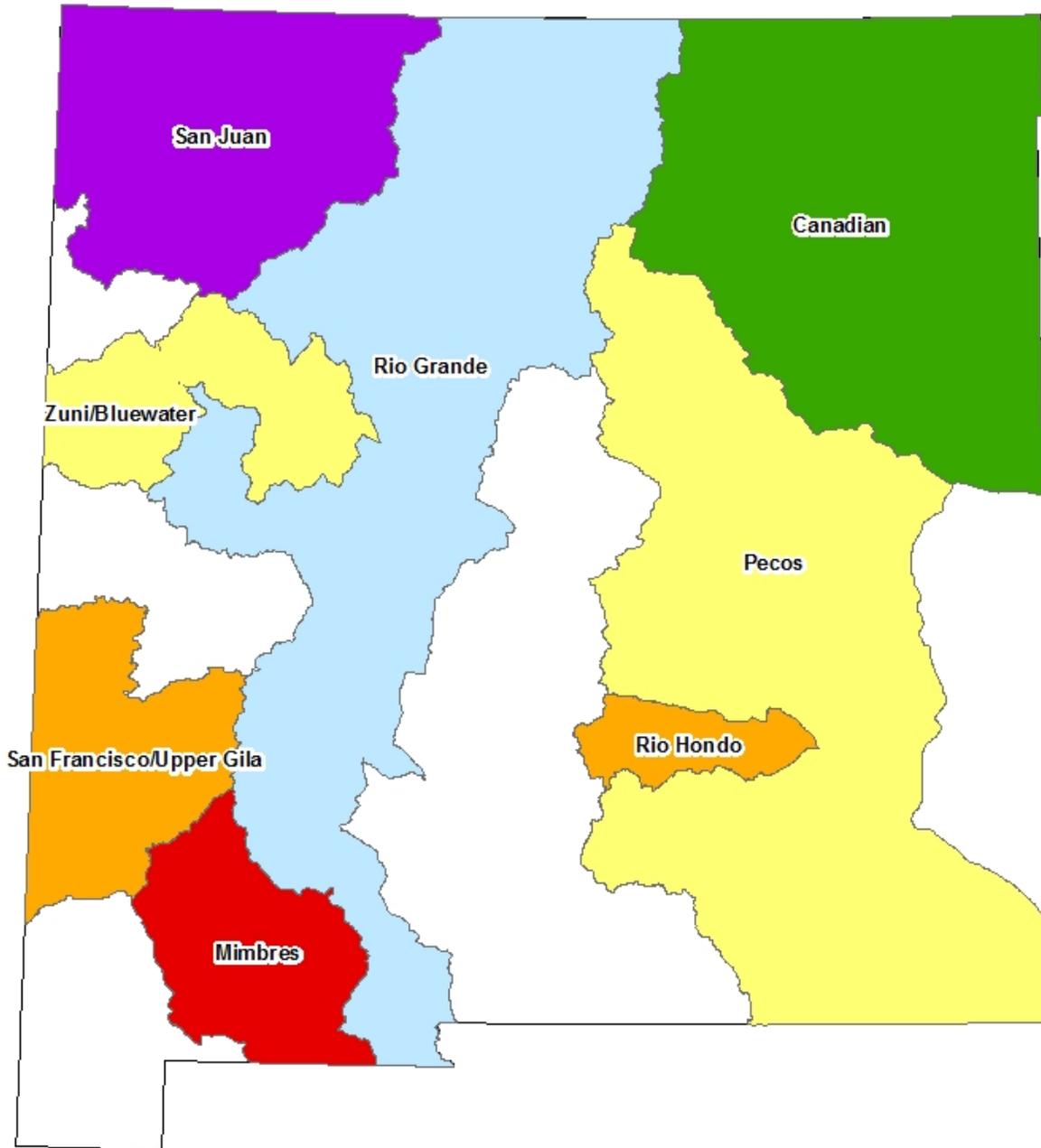
# Statewide Reservoir Storage



# Statewide Reservoir Storage



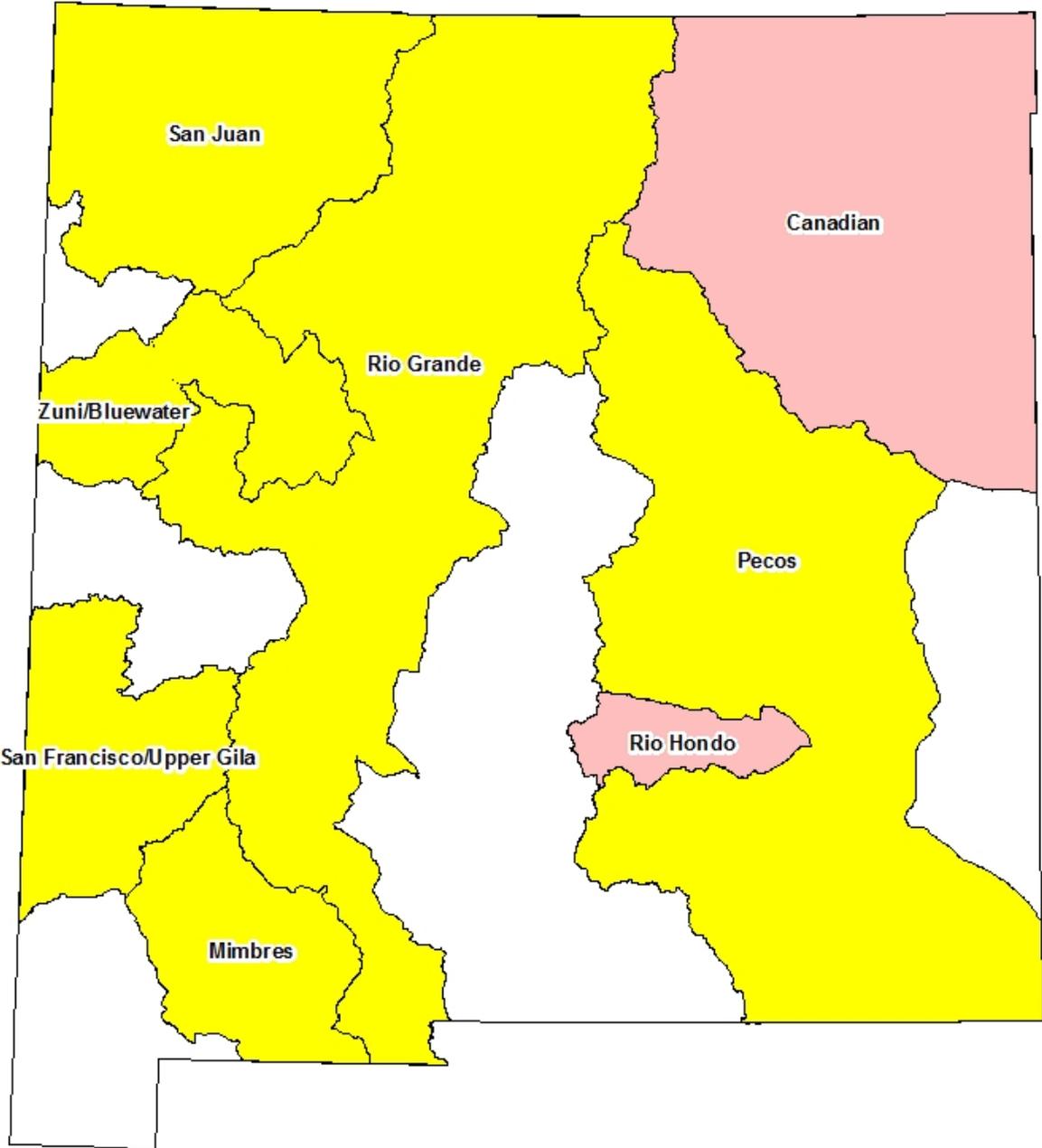
# New Mexico Percent of Median Snowpack as of March 1, 2017



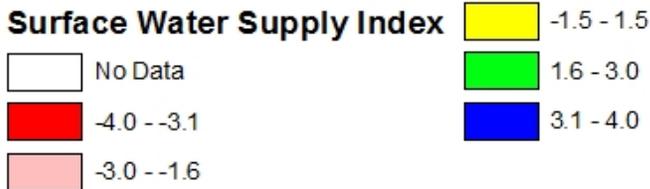
## Legend



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



### Legend

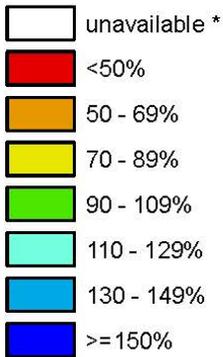


# New Mexico

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

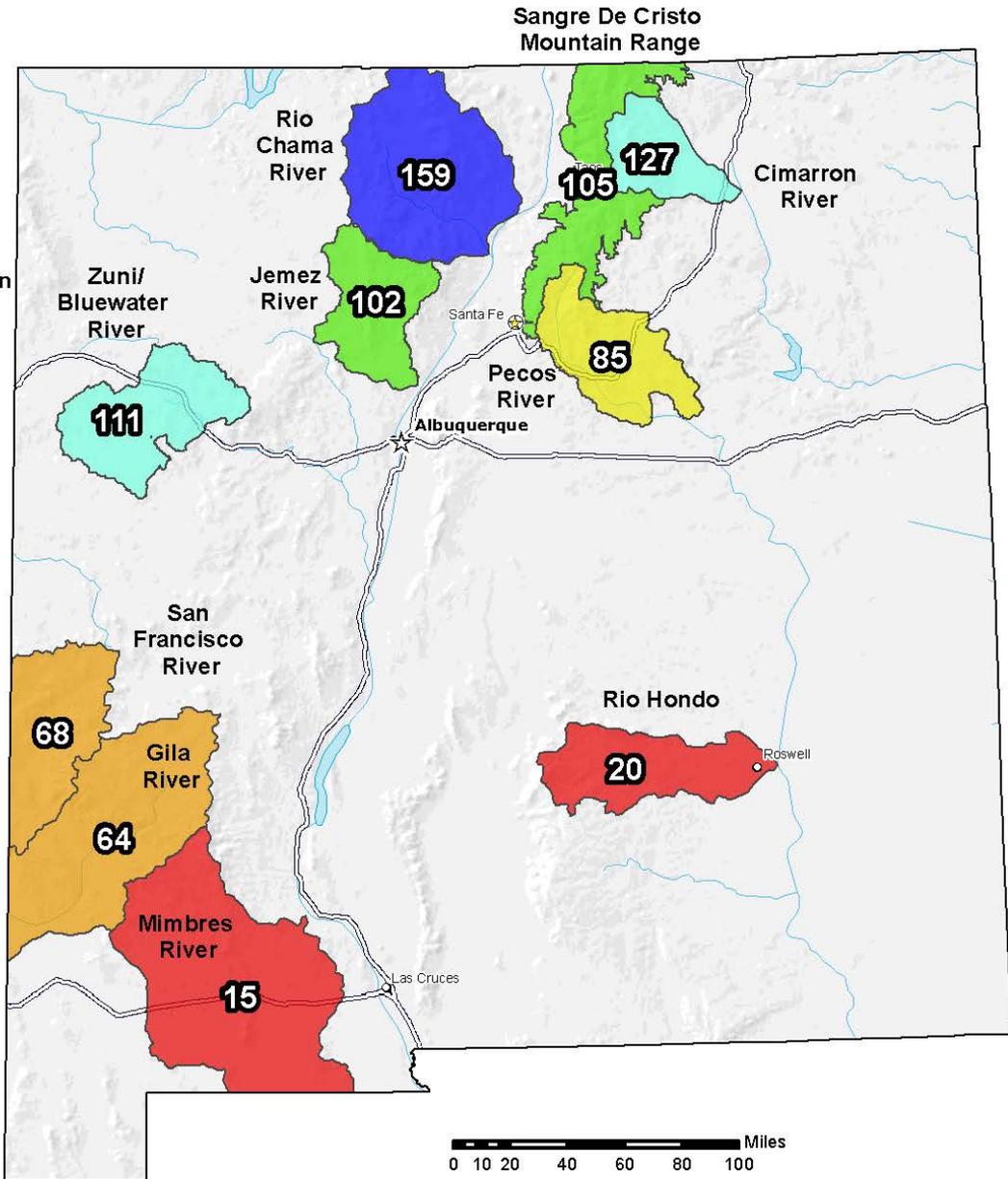
**Mar 07, 2017**

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).

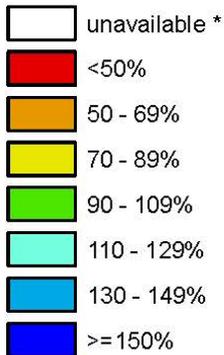
Prepared by:  
USDA/NRCS National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

# New Mexico

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

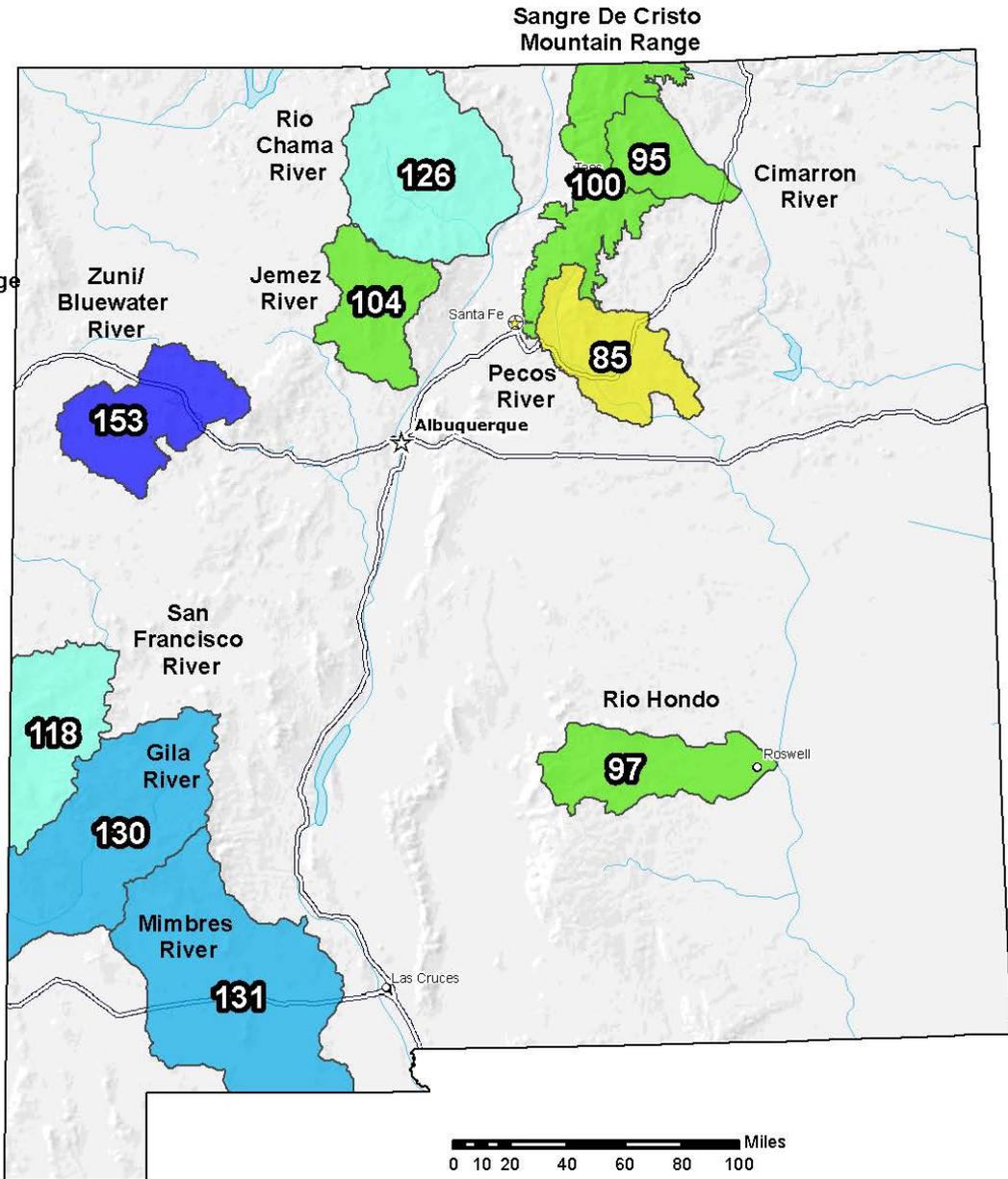
**Mar 07, 2017**

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

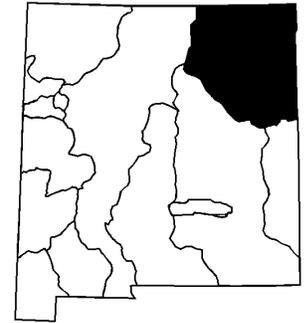
**Provisional Data  
Subject to Revision**



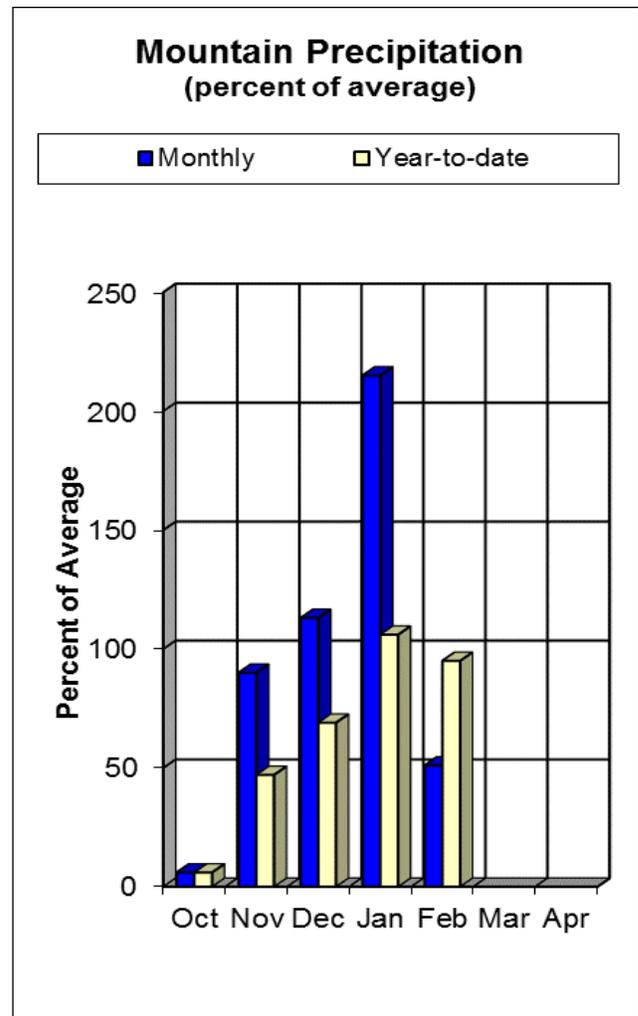
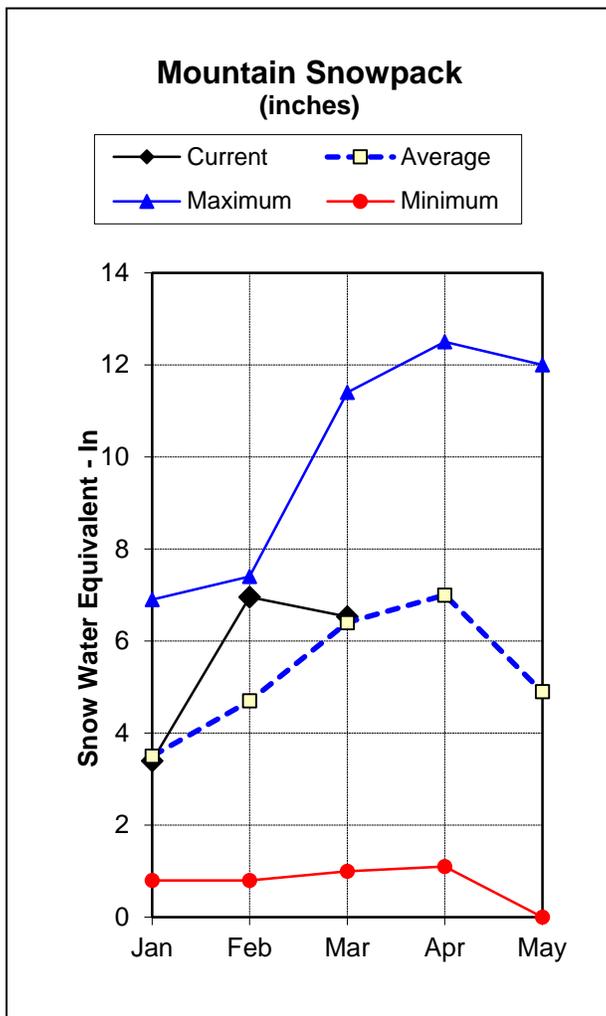
The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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 March 1, 2017



The Canadian River Basin forecasts for the March to June time period have all decreased over the past month. The forecast for the Vermejo River near Dawson has decreased by 33 percent to 103 percent of the average. Additionally the forecast for the Cimarron River near Cimarron decreased by 34 percent, and is now at 99 percent of the average. The Conchas Reservoir Inflow decreased by 26 percent to 107 percent of the median. Monthly precipitation for January in the basin was below normal at 51 percent of the average. Due to a wet January and February water year-to-date precipitation in the Canadian River Basin remains close to average at 99 percent. Snowpack in the basin is currently 97 percent of the median. This is a decrease of 51 percent from last month and an increase of 9 percent from last year at this time. Reservoirs are currently holding 105,500 acre-feet of storage which is a decrease of 65,000 acre feet from last year at this time. Reservoir storage in the Canadian River Basin is currently at 32 percent of capacity which reflects 77 percent of the average capacity.



## Canadian River Basin Streamflow Forecasts - March 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	3.4	5.8	8	103%	10.6	15.5	7.8
Eagle Nest Reservoir Inflow	MAR-JUN	5.6	8.6	11.2	100%	14.3	19.7	11.2
Cimarron R nr Cimarron <sup>2</sup>	MAR-JUN	0.6	9.6	15.7	99%	22	31	15.8
Ponil Ck nr Cimarron	MAR-JUN	3.6	5.6	7.4	103%	9.5	13.3	7.2
Rayado Ck nr Cimarron	MAR-JUN	2.9	4.9	6.7	96%	8.9	12.9	7
Conchas Reservoir Inflow <sup>3</sup>	MAR-JUN	7	18.9	32	107%	50	88	30

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

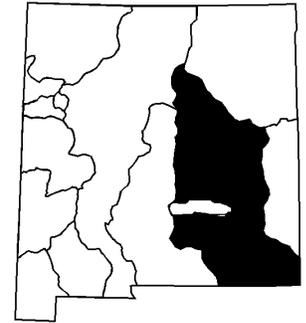
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

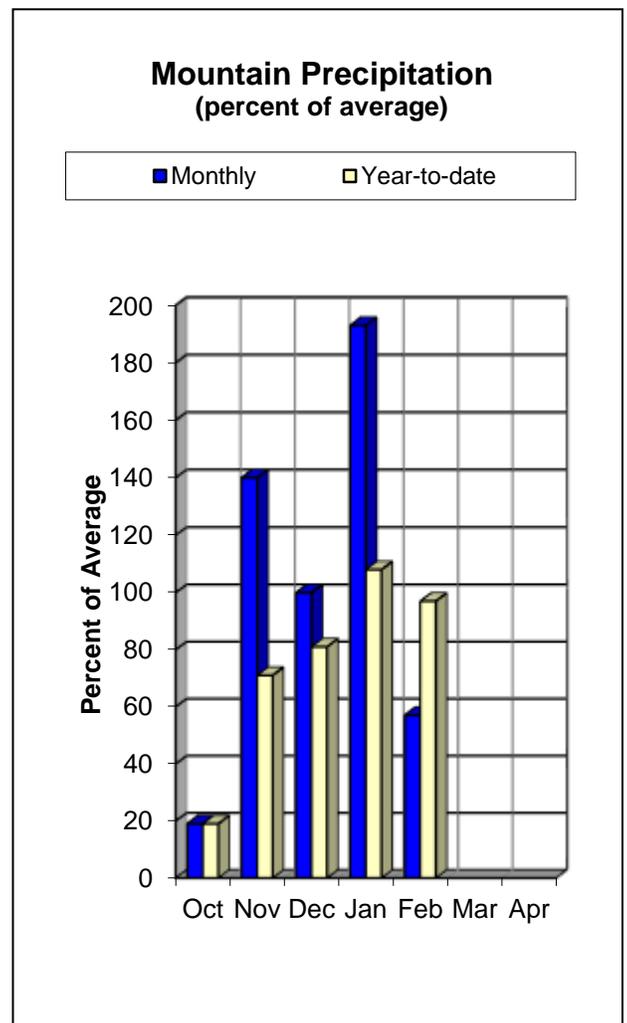
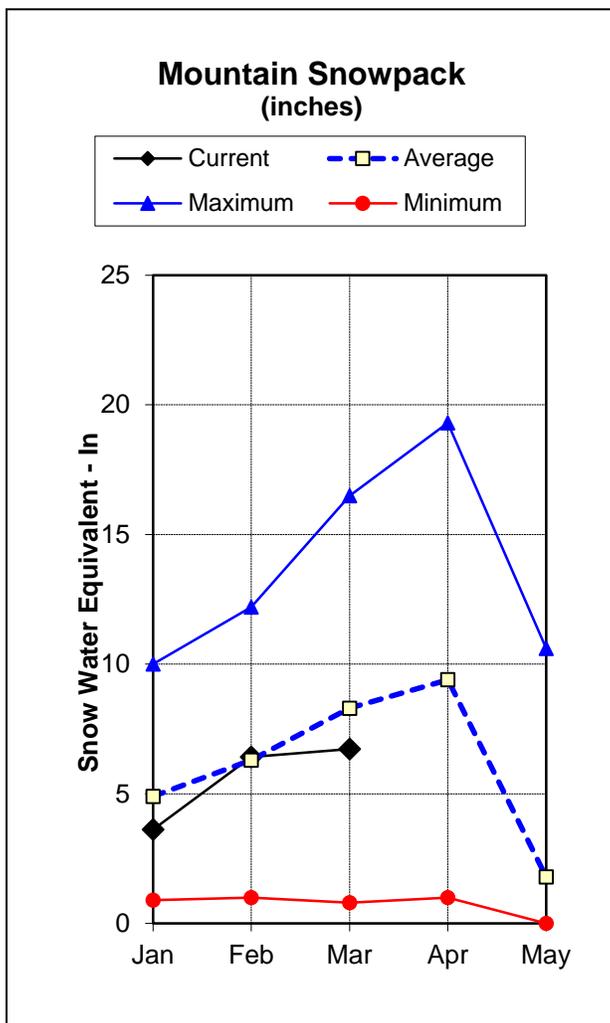
Reservoir Storage End of February, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Conchas Lake	73.6	139.1	202.0	254.2
Eagle Nest Lake nr Eagle Nest, NM	31.9	31.4	54.1	79.0
Basin-wide Total	105.5	170.5	256.1	333.2
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis March 1, 2017	# of Sites	% Median	Last Year % Median
CANADIAN RIVER BASIN	9	97%	88%

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



Streamflow forecasts for the Pecos River Basin for the March to July timeframe have decreased throughout February and are now all slightly below average. They range from 76 percent of average for the Pecos River near Anton Chico to 85 percent of average for Gallinas Creek near Montezuma. The Pecos River above Santa Rosa Lake is now 77 percent of the average. February received only 57 percent of the average precipitation for the month which now puts the Pecos at 97 percent of average for the water year-to-date. This is a 34 percent decrease from last year's 131 percent. Snowpack levels in the Pecos River Basin have decreased by 24 percent to 78 percent of the median. Last year at this time the basin had received 95 percent of the median snowpack. As of March 1<sup>st</sup> reservoir storage in the basin is at 124,400 acre-feet, which remains 7 percent of the average capacity and 8 percent of the actual capacity. This is 111 percent of the average as compared to 163 percent at this time last year.



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

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

PECOS RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Pecos R nr Pecos	MAR-JUL	25	37	46	81%	56	73	57
Pecos R nr Anton Chico	MAR-JUL	17.4	34	48	76%	65	94	63
Gallinas Ck nr Montezuma	MAR-JUL	2.7	5.7	8.3	85%	11.5	17	9.8
Pecos R ab Santa Rosa Lk	MAR-JUL	15.2	30	43	77%	58	85	56

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

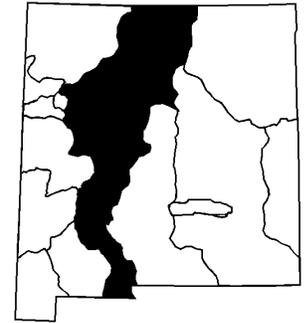
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

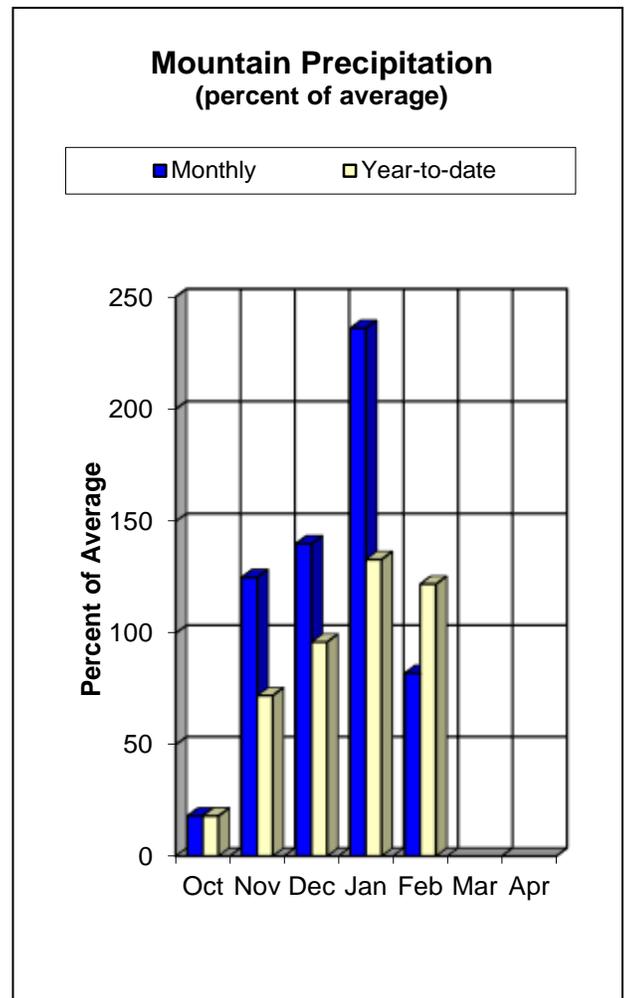
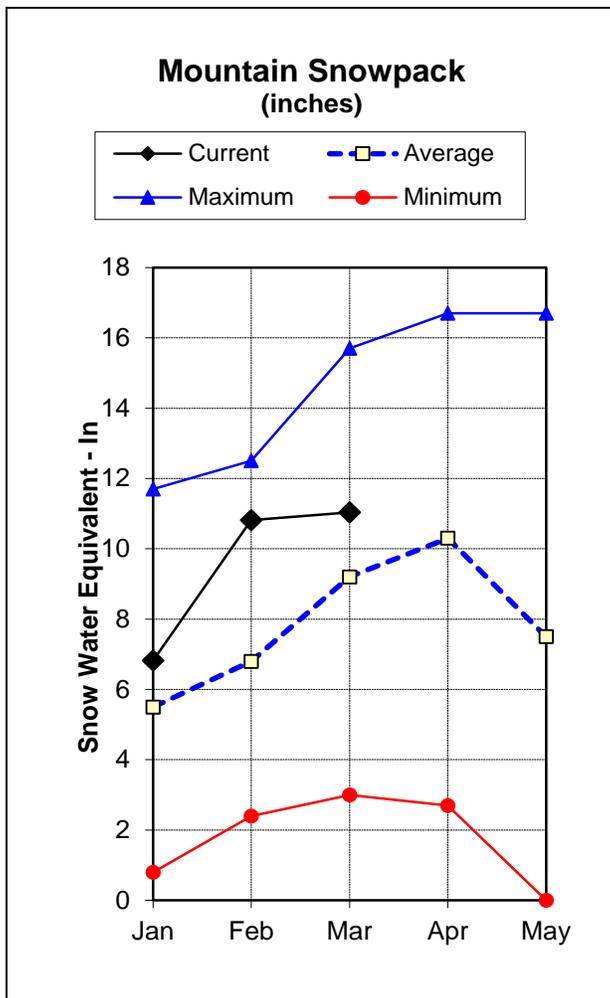
Reservoir Storage End of February, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Avalon	3.1	4.4	2.6	4.0
Brantley Lake nr Carlsbad	38.1	33.5	22.9	1008.2
Santa Rosa Reservoir	51.3	97.7	53.2	438.3
Lake Sumner	31.9	46.1	33.1	102.0
Basin-wide Total	124.4	181.7	111.8	1552.5
# of reservoirs	4	4	4	4

Watershed Snowpack Analysis March 1, 2017	# of Sites	% Median	Last Year % Median
PECOS RIVER BASIN	5	78%	95%

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



Streamflow forecasts for the Rio Grande Basin have decreased between 25 and 50 percent for most forecast points. The Rio Grande near Del Norte has remained constant at 118 percent of the average. The El Vado Reservoir inflow has also remained constant between 169 and 171 percent. Additionally, forecasts for the Jemez River below Jemez Canyon Dam have decreased and are now at 88 percent of the average. The Rio Grande at San Marcial has decreased and is now 136 percent of the average. Year-to-date precipitation is down 10 percent to 122 of average which is 14 percent above last year's total at this time. February saw a marked decrease of moisture in the basin having only received 82 versus the 236 percent of the average precipitation the previous month. Snowpack in the basin remains above average at 119 percent of median which is 31 percent above last year's median at this time. Snowpack in southern Colorado affecting the Rio Grande is still strong at 138 percent of average which is an increase of 41 percent from last year at this time. Current reservoir storage in the basin is 623,400 acre-feet which is a decrease of 95,400 acre-feet from last year at this time. This equates to 31 percent of the average water storage. Currently the basin is at 42 percent of the average capacity which is 13 percent of actual reservoir capacity. Costilla Reservoir's totals were not obtainable this month due to weather so please keep that in mind. The last reading of 5300 acre-feet for Costilla Reservoir was at the beginning of January.



## Rio Grande Basin Streamflow Forecasts - March 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	410	525	610	118%	700	850	515
Platoro Reservoir Inflow	APR-JUL	48	58	65	116%	72	84	56
	APR-SEP	52	64	72	116%	81	95	62
Conejos R nr Mogote <sup>2</sup>	APR-SEP	180	220	250	129%	280	330	194
Costilla Reservoir Inflow	MAR-JUL	8.9	11.7	13.9	125%	16.2	19.9	11.1
Costilla Ck nr Costilla <sup>2</sup>	MAR-JUL	19.3	27	33	127%	40	51	26
Red R bl Fish Hatchery nr Questa	MAR-JUL	20	28	34	100%	40	50	34
Rio Hondo nr Valdez	MAR-JUL	11.6	16.2	19.8	108%	24	30	18.4
Rio Pueblo de Taos nr Taos	MAR-JUL	9	13.6	17.3	102%	21	28	17
Rio Lucero nr Arroyo Seco	MAR-JUL	6.4	9.2	11.4	105%	13.9	17.9	10.9
Rio Pueblo de Taos bl Los Cordovas	MAR-JUL	15.3	27	36	100%	47	65	36
Embudo Ck at Dixon	MAR-JUL	16	29	40	83%	53	75	48
El Vado Reservoir Inflow <sup>2</sup>	MAR-JUL	260	330	380	169%	435	525	225
	APR-JUL	235	300	350	171%	405	485	205
Santa Cruz R at Cundiyo	MAR-JUL	8.2	11.6	14.2	78%	17.1	22	18.3
Nambe Falls Reservoir Inflow	MAR-JUL	2.9	4.1	5	77%	6	7.7	6.5
Tesuque Ck ab diversions	MAR-JUL	0.42	0.74	1.01	75%	1.32	1.86	1.34
Rio Grande at Otowi Bridge <sup>2</sup>	MAR-JUL	615	810	960	133%	1120	1380	720
Santa Fe R nr Santa Fe <sup>2</sup>	MAR-JUL	1.91	2.6	3.2	74%	3.8	4.8	4.3
Jemez R nr Jemez	MAR-JUL	23	31	38	90%	45	56	42
Jemez R bl Jemez Canyon Dam	MAR-JUL	16.4	24	30	88%	36	47	34
Rio Grande at San Marcial <sup>2</sup>	MAR-JUL	370	565	695	136%	825	1020	510

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

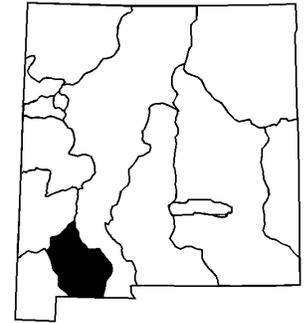
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

Reservoir Storage End of February, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Abiquiu Reservoir	123.7	132.4	154.8	1192.8
Bluewater Lake	7.8	2.1	6.6	38.5
Caballo Reservoir	29.8	30.8	101.1	332.0
Cochiti Lake	46.0	46.4	58.3	491.0
Costilla Reservoir		10.3	6.9	16.0
El Vado Reservoir	53.9	35.2	100.8	190.3
Elephant Butte Reservoir	295.1	400.8	1305.0	2195.0
Heron Reservoir	67.1	71.1	297.8	400.0
Basin-wide Total	623.4	718.8	2024.4	4839.6
# of reservoirs	7	7	7	7

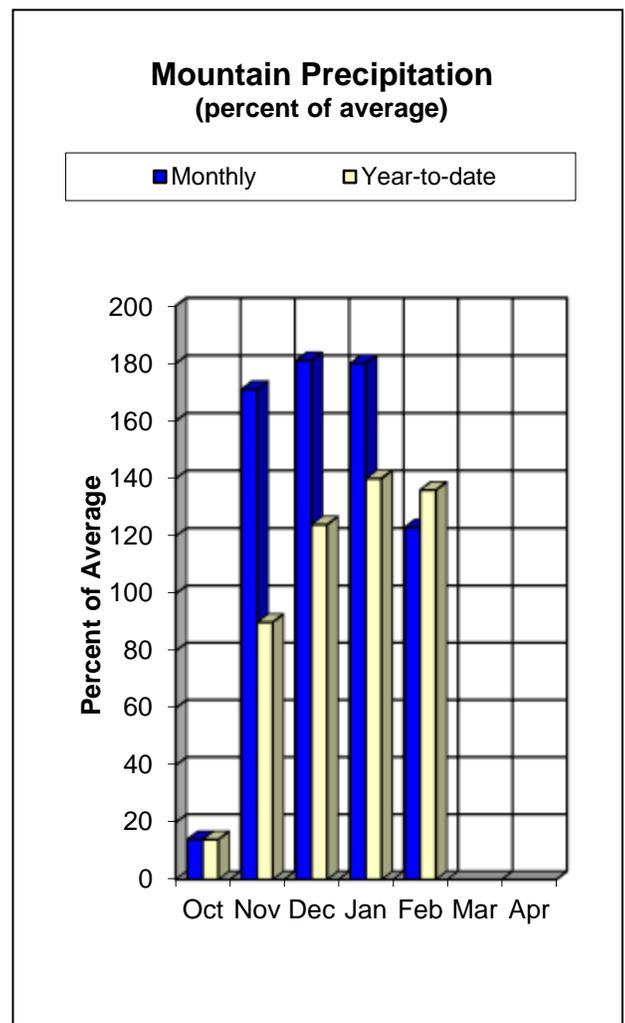
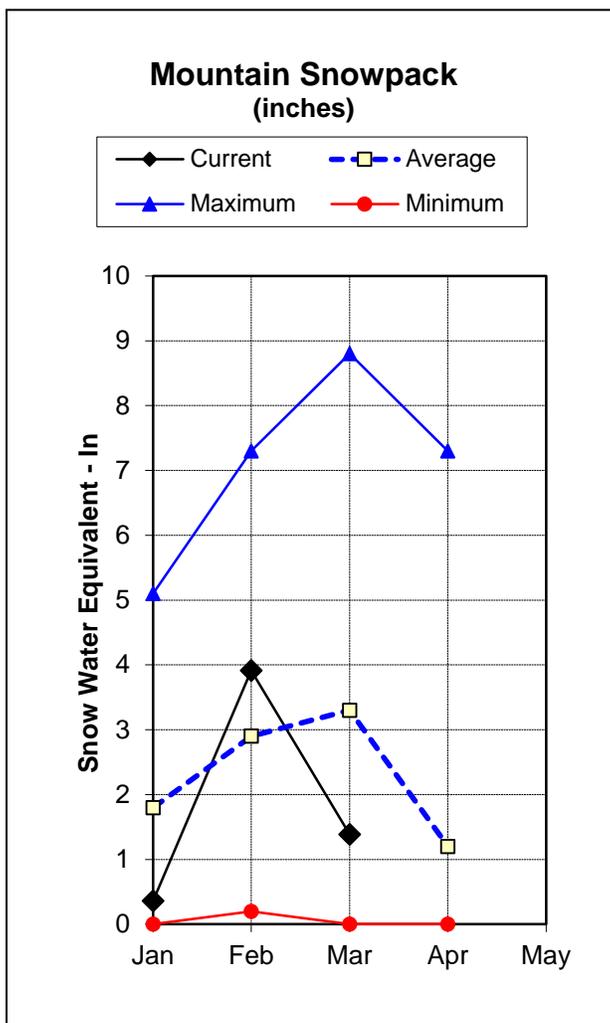
Watershed Snowpack Analysis March 1, 2017	# of Sites	% Median	Last Year % Median
RIO GRANDE BASIN	19	119%	88%

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



The March through May forecast for the Mimbres River at Mimbres has decreased substantially from the previous month. It is now 140 percent of the average which is a decrease of 135 percent. Water year-to-date precipitation is 136 percent of the average, as compared to 103 percent at this time last year. The month of February for the Mimbres was better than most receiving 123 percent of the average rainfall for the month. With above average February temperatures the snowpack has decreased by 93 percent to 42 percent of the median. Last year at this time there was bare ground in the Mimbres.

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 - March 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>	MAR-MAY	0.67	1.41	2.1	140%	3.1	4.9	1.5

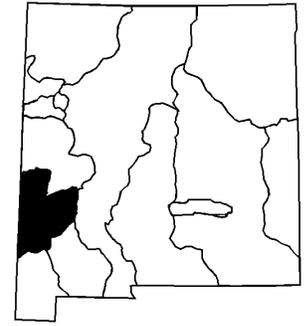
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

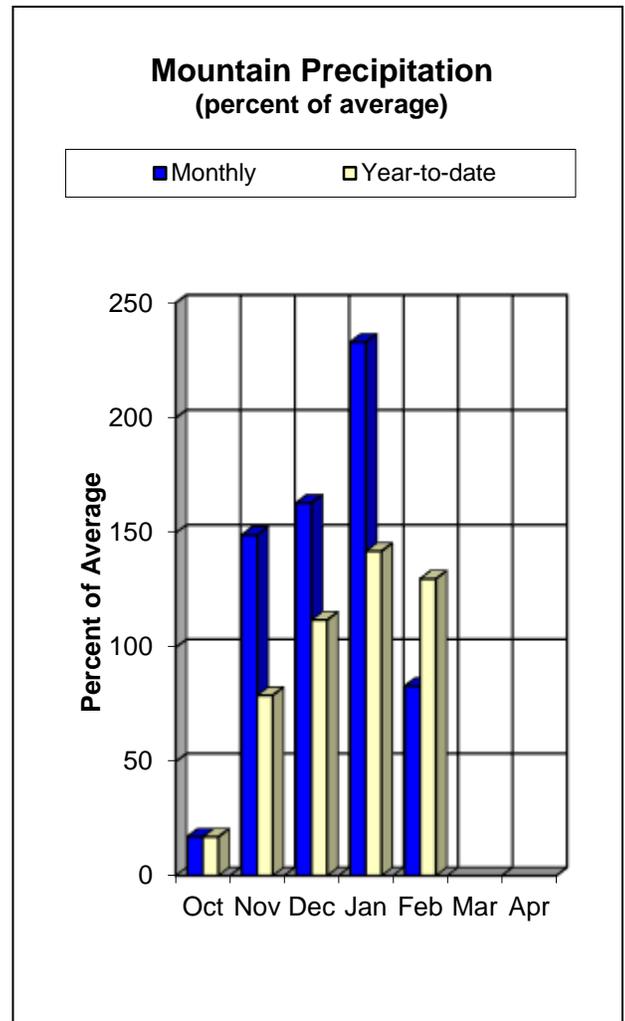
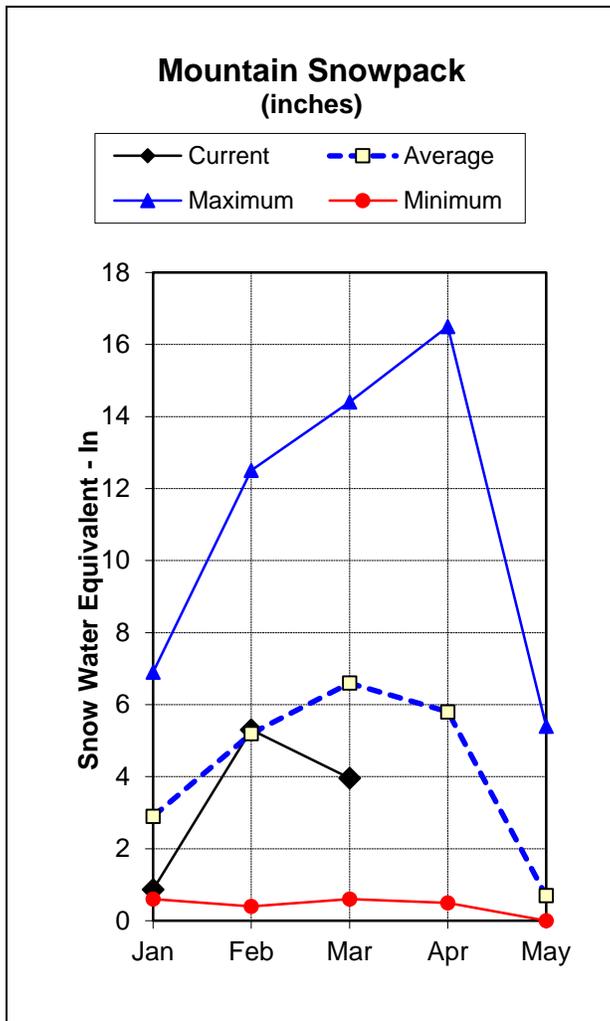
Watershed Snowpack Analysis March 1, 2017	# of Sites	% Median	Last Year % Median
MIMBRES RIVER BASIN	2	42%	0%

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



Streamflow forecasts for the San Francisco/Upper Gila River Basin have dropped from 20 to 50 percent from last month. For the March through May forecast the Gila River at Gila is now at 106 percent of the average. For the same time period the San Francisco River at Clifton is forecasting 111 percent of the average. Total water year-to-date precipitation through February is 130 percent of the average. The month of February received 83 percent of the average precipitation. With the onset of warmer temperatures and the lack of precipitation snowpack in the basin has decreased by 42 percent to 60 percent of the median. This remains 31 percent above the March 1st snowpack totals from last year at this time.

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 - March 1, 2017

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

SAN FRANCISCO-UPPER GILA RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Gila R at Gila <sup>3</sup>	MAR-MAY	20	29	36	106%	45	59	34
Gila R bl Blue Ck nr Virden <sup>3</sup>	MAR-MAY	21	36	48	112%	63	87	43
San Francisco R at Glenwood <sup>3</sup>	MAR-MAY	8.2	14.2	19.7	130%	26	39	15.2
San Francisco R at Clifton <sup>3</sup>	MAR-MAY	16.4	30	42	111%	56	81	38

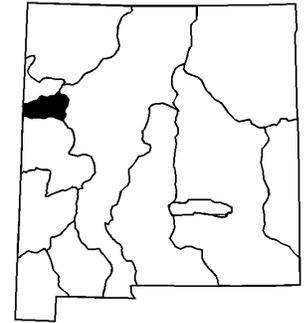
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

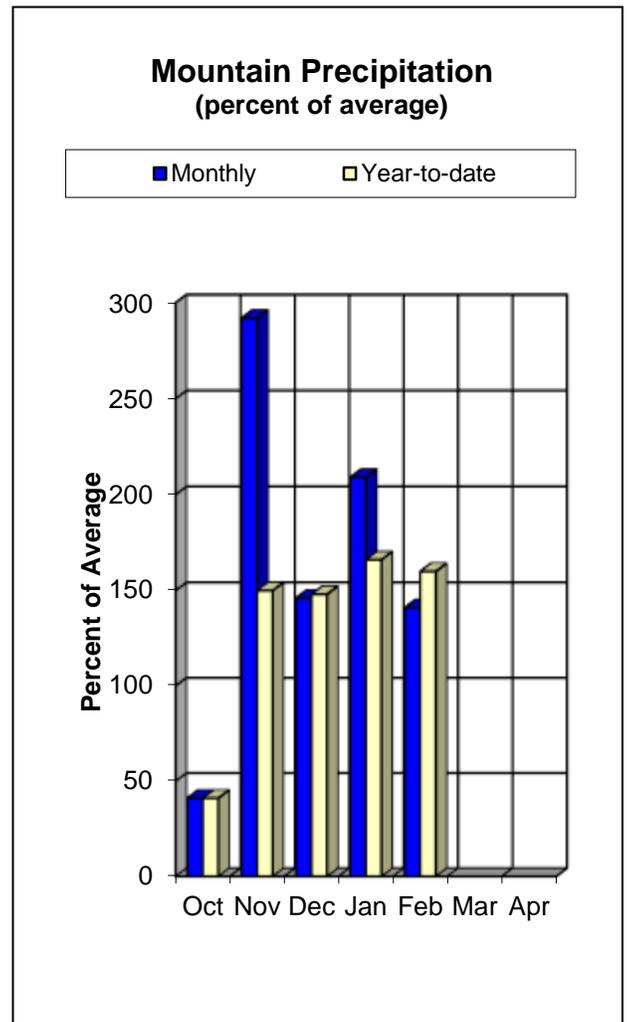
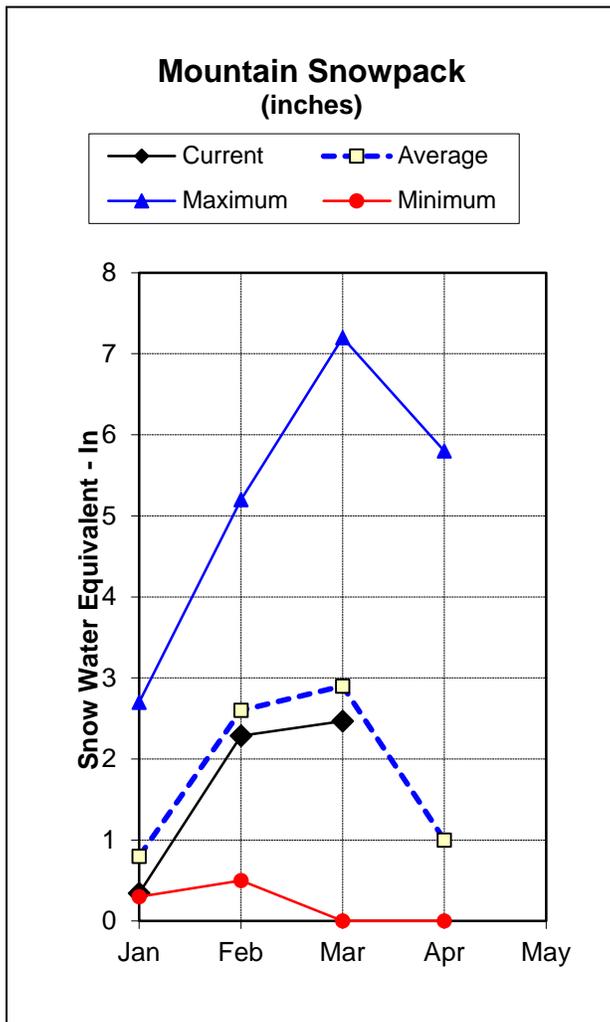
3) Median value used in place of average

Watershed Snowpack Analysis March 1, 2017	# of Sites	% Median	Last Year % Median
SAN FRANCISCO-UPPER GILA RIVER BASIN	7	60%	29%

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



Both the Zuni and Bluewater Basins continue to benefit from both precipitation and late February snow fall. The Rio Nutria near Ramah has increased by 35 percent to 214 percent of the average for the March to May forecast. Additionally, the Zuni River above Black Rock increased by 20 percent to 204 percent of the average. The Zuni-Bluewater Basins received 160 percent of the average precipitation for the water year-to-date, and 141 percent of the average for the month of February. One of the few basins to not decline drastically the snow in the basin is at 85 percent of the median, as compared to 88 percent the previous month. This is an increase of 46 percent from last year at this time. Benefiting from the moisture Bluewater Lake is now at 7,800 acre feet versus 2,100 at this time last year! This is 118 percent of the average, and 20 percent of the actual capacity.



## Zuni-Bluewater Basins Streamflow Forecasts - March 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>	MAR-MAY	0.48	1.38	2.4	214%	3.8	6.8	1.12
Zuni R ab Black Rock Reservoir <sup>3</sup>	MAR-MAY	0	0.08	0.47	204%	1.43	4.4	0.23

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

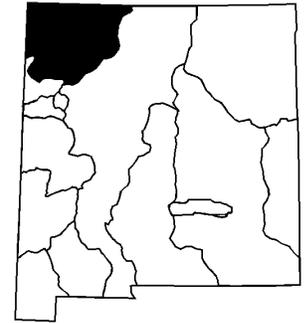
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

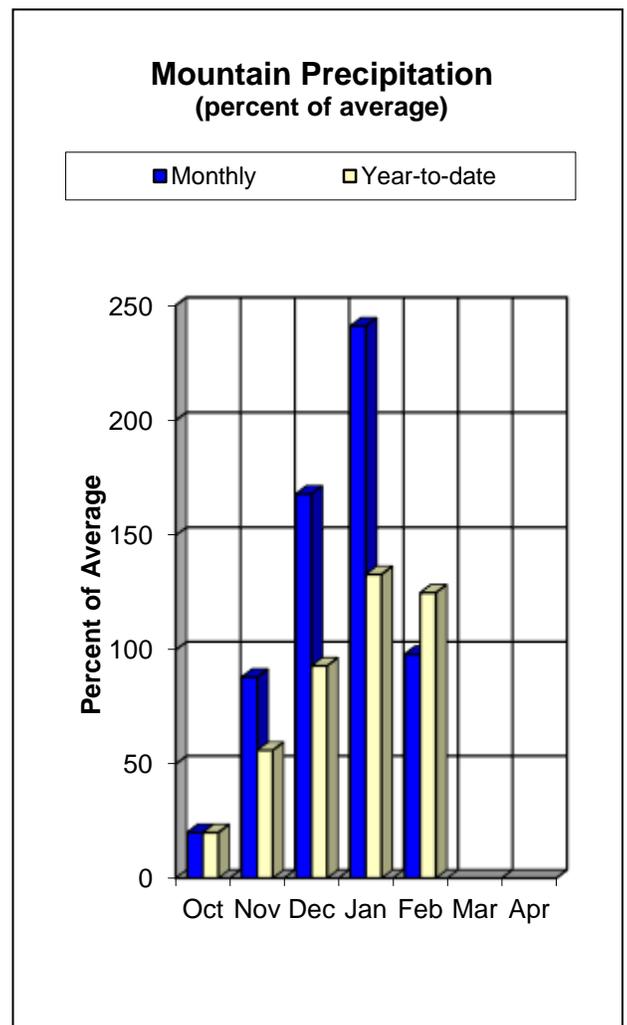
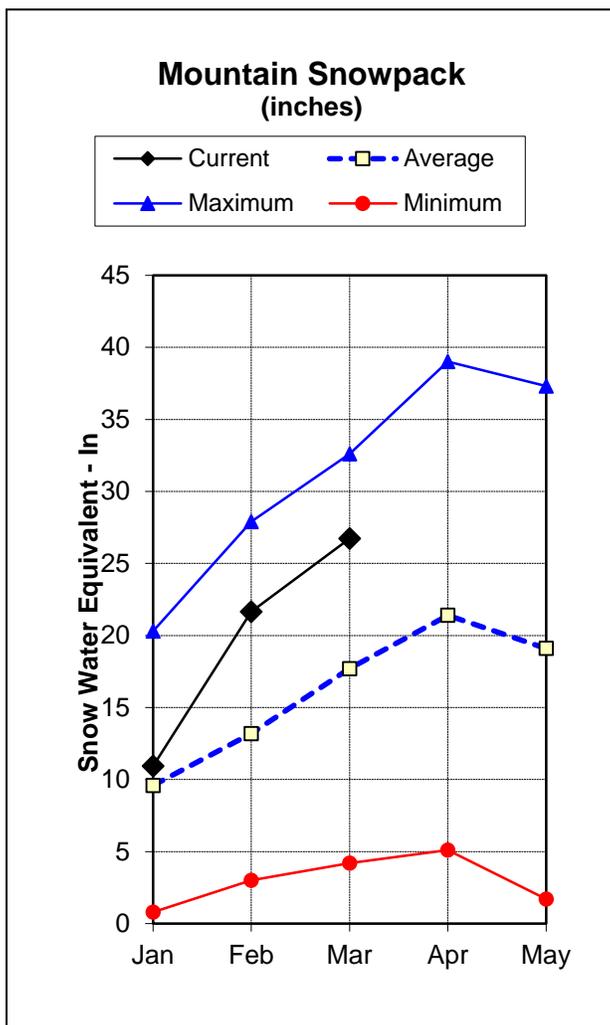
Reservoir Storage End of February, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bluewater Lake	7.8	2.1	6.6	38.5
Basin-wide Total	7.8	2.1	6.6	38.5
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis March 1, 2017	# of Sites	% Median	Last Year % Median
ZUNI-BLUEWATER BASINS	5	85%	39%

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



The April to July forecasts continue to be above the average ranging from 120 to 138 percent. The Rio Blanco is forecast to be 137 percent of the average with the La Plata at Hesperus also above average at 130 percent. Additionally, the Animas River at Durango has only dropped by 5 percent to 120 percent of the average. Year-to-date precipitation is at 125 percent of the average, which remains a 25 percent increase from last year at this time. February was an average month for rainfall receiving 98 percent of the average precipitation for the month. Snowpack in the basin is above average at 151 percent of median. This is an increase of 56 percent from last year! Navajo reservoir storage increased slightly to 1,339,700 acre-feet which is 104 percent of the average. This remains down from last year's 1,404,700 acre-feet at the end of February and equates to 76 percent of the average capacity for the reservoir.



## San Juan River Basin Streamflow Forecasts - March 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	50	64	74	137%	85	102	54
Navajo R at Oso Diversion <sup>2</sup>	APR-JUL	62	78	90	138%	104	125	65
Navajo Reservoir Inflow <sup>2</sup>	APR-JUL	655	815	935	127%	1060	1270	735
Animas R at Durango	APR-JUL	365	440	500	120%	560	655	415
La Plata R at Hesperus	APR-JUL	22	27	30	130%	34	40	23

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

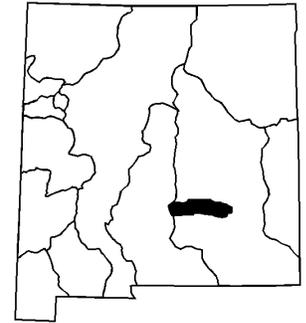
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

Reservoir Storage End of February, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Navajo Reservoir	1339.7	1404.7	1292.0	1696.0
Basin-wide Total	1339.7	1404.7	1292.0	1696.0
# of reservoirs	1	1	1	1

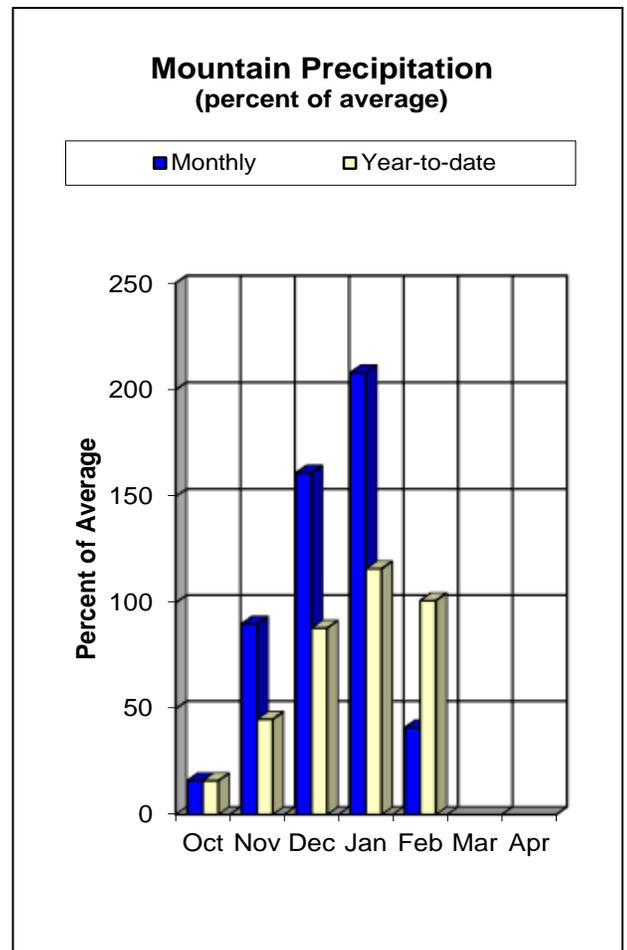
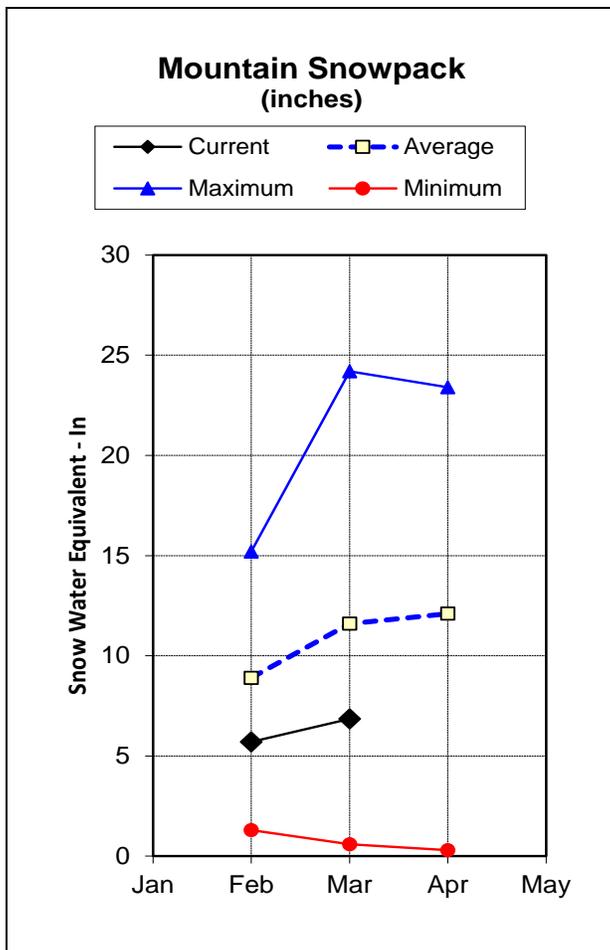
Watershed Snowpack Analysis March 1, 2017	# of Sites	% Median	Last Year % Median
SAN JUAN RIVER BASIN	13	151%	95%

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



The streamflow forecast for the March to June time period for the Rio Hondo Basin have decreased by 24 percent to 46 percent of average for the Rio Ruidoso at Hollywood. Year-to-date precipitation is at 101 percent of the average. Similar to last water year this is largely due to moisture being front loaded in December and January because February received only 41 percent of the monthly average precipitation. Snowpack has decreased another 5 percent to 59 percent of the median. This is 86 percent below what the basin had at this time last year. This is largely due to warm temperatures preventing precipitation to fall as snow. 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.



Data Current as of: 3/6/2017 3:59:36 PM

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

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

RIO HONDO BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rio Ruidoso at Hollywood	MAR-JUN	0.89	2	3.1	46%	4.4	6.7	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 March 1, 2017	# of Sites	% Median	Last Year % Median
RIO HONDO BASIN	1	59%	145%

NEW MEXICO STATEWIDE	Network	Elevation (ft)	Depth (in)	SWE (in)	Median (in)	% Median	Last Year SWE (in)	Last Year % Median
Alamitos	SC	9320	11	3.9	6.4	61%	4.2	66%
Aztec #2	SC	9880	12	3.6	3.5	103%	3.8	109%
Bateman	SNOTEL	9300	54	15.9	10.9	146%	9.1	83%
Boon	SC	8140	19	5.1	4.5	113%	2.1	47%
Bowl Canyon	SC	8980			8.7		8.4	97%
Chamita	SNOTEL	8400	54	17.3	9.5	182%	7.9	83%
Dan Valley	SC	7640	4	1.5	3.5	43%	2.5	71%
Elk Cabin	SNOTEL	8210	4	0.6	4.8	13%	0.0	0%
Emory Pass #2	SC	7800			0.2			
Frisco Divide	SNOTEL	8000	3	1.2	2.4	50%	0.0	0%
Gallegos Peak	SNOTEL	9800	40	9.7	9.8	99%	10.5	107%
Hematite Park	SC	9500	22	6.9	5.0	138%	4.4	88%
Hidden Valley	SC	8480	21	8.2			5.6	
Hopewell	SNOTEL	10000	85	24.2	16.2	149%	13.0	80%
Hummingbird - Aerial And Snow Course	SC	10550			11.9			
Lookout Mountain	SNOTEL	8500	0	0.0	0.6	0%	0.0	0%
McGaffey	SC	8120	10	1.2	1.4	86%	0.0	0%
Mcknight Cabin	SNOTEL	9240	9	3.1	3.1	100%	0.0	0%
Mcknight Cabin Aerial Marker	SC	9300			3.0			
Mcknight Cabin Snow Course	SC	9300						
Missionary Spring	SC	7940	0	0.0	4.1	0%	0.4	10%
Navajo Whiskey Ck	SNOTEL	9050	41	13.2			4.2	
North Costilla	SNOTEL	10600	23	6.6	5.9	112%	5.0	85%
Ojo Redondo	SC	8200	10	1.4	3.6	39%	0.6	17%
Palo	SNOTEL	9350	22	5.8			3.9	
Palo	SC	9300	18	5.8	6.8	85%	4.8	71%
PanchueLa	SC	8400	7	1.9			2.0	
Post Office Flats	SC	8400			3.1		0.0	0%
Quemazon	SNOTEL	9500	25	8.2	8.4	98%	5.1	61%
Red River Pass #2	SNOTEL	9850	38	8.8	6.8	129%	5.4	79%
Rice Park	SNOTEL	8460	29	8.4	7.6	111%	2.8	37%
Rice Park	SC	8460			4.8			
Rio En Medio	SC	10300	23	7.0	8.4	83%	7.4	88%
Rio Santa Barbara	SNOTEL	10664	47	12.1			14.6	
San Antonio Sink	SNOTEL	9100	58	16.1			9.2	
San Antonio Sink	SC	9200	50	14.0	7.1	197%	7.0	99%
Santa Fe	SNOTEL	11445	46	12.6	13.4	94%	16.7	125%
Senorita Divide #2	SNOTEL	8600	30	8.2	8.7	94%	7.2	83%
Shuree	SNOTEL	10100	36	9.4			5.6	
Shuree	SC	10097			2.7		4.2	156%
Sierra Blanca	SNOTEL	10280	19	5.4	9.1	59%	13.2	145%
Signal Peak	SNOTEL	8360	0	0.0	4.3	0%	0.0	0%
Silver Creek Divide	SNOTEL	9000	25	8.7	8.3	105%	5.7	69%
State Line	SC	8000	2	0.8	1.4	57%	0.0	0%
Taos Canyon	SC	9100	7	2.7	5.6	48%	3.7	66%
Taos Powderhorn	SNOTEL	11057	80	22.9			15.2	
Taos Powderhorn	SC	11250	64	22.2	20.3	109%	20.6	101%
Tolby	SNOTEL	10180	34	8.5	7.2	118%	6.4	89%
Tolby	SC	10180			8.5			
Tres Ritos	SNOTEL	8600	6	0.8			0.0	
Tres Ritos	SC	8600	8	2.8	5.8	48%	4.7	81%
Vacas Locas	SNOTEL	9306	43	13.4	11.7	115%	10.6	91%
Wesner Springs	SNOTEL	11120	40	11.0	12.1	91%	14.7	121%
Whiskey Creek	SC	9050	32	11.0	9.3	118%	8.2	88%
Whitewater - Aerial And Snow Course	SC	10750			18.6			
<b>Basin Index</b>						<b>102%</b>		<b>81%</b>
# of sites						36		36

*Issued by*

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**New Mexico**  
**Basin Outlook Report**  
Natural Resources Conservation Service  
Albuquerque, NM

