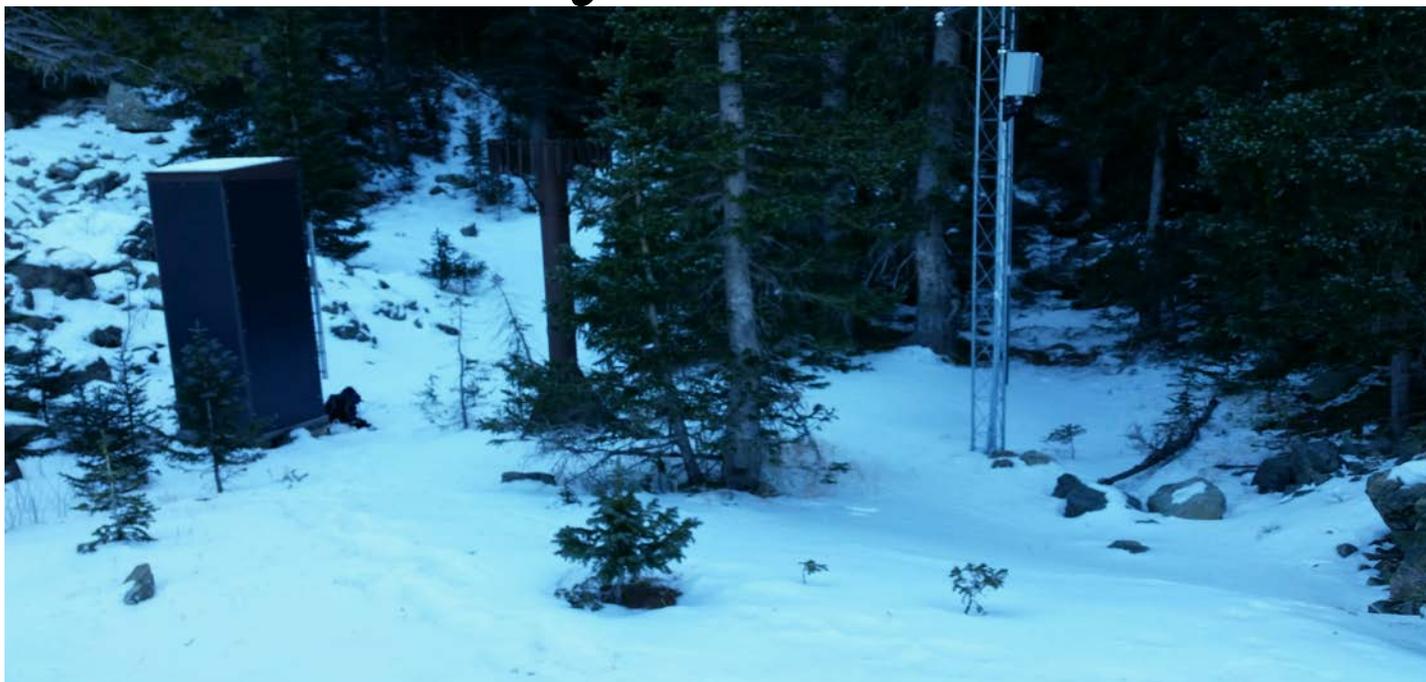




United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

# New Mexico Basin Outlook Report January 1, 2018



Low snowpack at the Taos Powderhorn SNOTEL site on 12/27/17 exposing boulders usually covered by this time of year  
Photo courtesy of Logan Peterson, 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

The 2018 water year is off to a very disappointing start across New Mexico. To compare this water year to the last several makes the preceding years look great by comparison. With statewide snowpack as of January 1<sup>st</sup> totaling in at just 4 percent of the median, New Mexican's are holding out that late winter snows will help the state catch up. Although possible, as we move further into January without measurable precipitation let alone snow the percentages of making up for lost time dwindle exponentially. Albuquerque's 90+ day dry spell (October 6<sup>th</sup> – January 4<sup>th</sup>) without measurable precipitation is the longest streak in that location since 1956. This has been felt across the state with precipitation totals only 12 percent of the average, and just 22 percent for the water year-to-date. Across the board, streamflow forecasts are extremely low. With averages on the high end just above 50 percent, and as low as single digits in some basins water users and managers should anticipate shortfalls even this early in the water year. Forecast models continue to support a warmer-than-normal winter with a drier-than-normal precipitation outlook. With every basin in the state either without snow or having extremely below average amounts New Mexico's snowpack for 2018 is in dire straits. As always, I remain positive yet encourage everyone to continue to monitor the weather this winter and read future water supply reports to see how this water year unfolds.

## Snowpack

January 1<sup>st</sup> snowpack ranged from 28 to 0 percent of median across the northern mountains and southern portions of New Mexico. Current conditions have set records for low snowpack which have not been seen in 20-30 years if ever. A quick look to the north from my office shows bare peaks which are normally shrouded with snow. With spotty trace amounts of snow even above 10,000 feet in the northern mountains it is unlike anything I have seen here before, and could easily put 2018 in the record books as one of the worst winters ever. As January moves forward New Mexico is in desperate need of the storm track to shift further south. Across the border in Colorado conditions are similar in the southern San Juan's and Sangre De Cristo mountains. With each dry week that passes our chances for a recovery continue to diminish. 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	7	95
PECOS RIVER BASIN	0	74
RIO GRANDE BASIN	9	124
MIMBRES RIVER BASIN	0	20
SAN FRANCISCO-UPPER GILA RIVER BASIN	7	30
ZUNI-BLUEWATER BASINS	0	43
SAN JUAN RIVER BASIN	28	114
CHUSKA MOUNTAINS	2	125
RIO HONDO BASIN	6	53
<b>Statewide Snowpack Total</b>	<b>4</b>	<b>98</b>
# of sites	28	28

## Precipitation

New Mexico is off to a rough start for the 2018 water year. For December statewide precipitation was only 12 percent of normal which is just 22 percent of average for the water year-to-date. With dry conditions for over 90 days across western New Mexico conditions have deteriorated in line with D1 drought indices. In central and eastern New Mexico wet weather in September has kept this region out of D1, however expansion is possible as very little precipitation has fallen over the past 90 days. Future degradation is highly possible based on the long range forecasts and such a poor water year-to-date. Based on the current forecasts water users and managers should expect shortfalls in water supply this spring.

## Reservoirs

Many of the state's reservoirs have near to slightly above average storage for January 1<sup>st</sup>. Statewide reservoir storage is currently 70 percent of the average as compared to 55 percent last January. This is largely due to the decent snowpack, wet spring, and late summer precipitation from 2017. Based on New Mexico's current snowpack conditions and the long range forecast for winter 2018, I would expect these values to drop to below average by the end of the water year. Water-users should closely monitor streamflow forecasts as the water year progresses.

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	117.7	118.4	152.7	1198.5	10%	10%	13%	77%	78%
Bluewater Lake	6.5	1.6	5.7	38.5	17%	4%	15%	114%	28%
Brantley Lake nr Carlsbad	40.4	35.3	17.1	1008.2	4%	3%	2%	237%	206%
Caballo Reservoir	37.1	21.0	68.0	332.0	11%	6%	20%	55%	31%
Cochiti Lake	46.9	44.4	63.1	491.0	10%	9%	13%	74%	70%
Conchas Lake	211.5	71.3	197.9	254.4	83%	28%	78%	107%	36%
Costilla Reservoir	10.6	5.3	6.0	16.0	66%	33%	38%	177%	88%
Eagle Nest Lake nr Eagle Nest, NM	42.4	29.8	53.0	79.0	54%	38%	67%	80%	56%
El Vado Reservoir	72.2	50.8	102.8	184.8	39%	27%	56%	70%	49%
Elephant Butte Reservoir	422.4	202.5	1267.0	2195.0	19%	9%	58%	33%	16%
Heron Reservoir	146.7	65.7	308.0	400.0	37%	16%	77%	48%	21%
Lake Avalon		2.3	2.0	4.0		58%	50%		115%
Lake Sumner	39.1	27.2	26.7	102.0	38%	27%	26%	147%	102%
Navajo Reservoir	1269.6	1296.8	1341.0	1696.0	75%	76%	79%	95%	97%
Santa Rosa Reservoir	94.7	56.3	54.4	432.2	22%	13%	13%	174%	103%
Basin-wide Total	2557.8	2026.3	3663.4	8427.6	30%	24%	43%	70%	55%
# of reservoirs	14	14	14	14	14	14	14	14	14

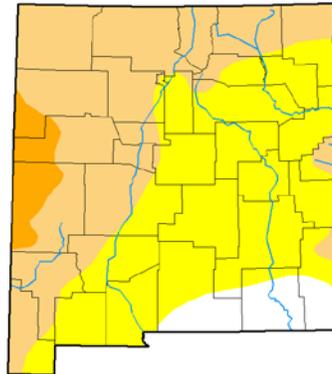
## Streamflow

The January 1, 2018 forecast numbers from the NRCS show that all of New Mexico is well below average for all forecast points across the state. In the Rio Grande Basin snowpack and precipitation are at or near record lows for the near 40 year SNOTEL network period of record. In southern Colorado and the San Juan Basin most forecast points have a high probability of below normal spring and summer streamflow volumes. Additionally, the lower Canadian River Basin is experiencing record low snowpack resulting in the lowest January forecasts produced. Forecasts can vary based on changing conditions and there are several months remaining which could affect those figures. As a state we can hope for snow, but should plan for shortages. Please continue to monitor conditions and read follow-up water supply reports as the water year progresses.

# New Mexico Drought Monitor, real versus perceived conditions?

## U.S. Drought Monitor New Mexico

January 2, 2018  
(Released Thursday, Jan. 4, 2018)  
Valid 7 a.m. EST



	Drought Conditions (Percent Area)					
	None	D0-D1	D1-D2	D2-D3	D3-D4	D4
Current	7.91	82.99	45.97	4.75	0.00	0.00
Last Week 12-29-2017	7.14	82.85	30.16	0.00	0.00	0.00
3 Months Ago 10-02-2017	85.10	14.84	0.00	0.00	0.00	0.00
Start of Calendar Year 01-01-2018	7.91	82.99	45.97	4.75	0.00	0.00
Start of Water Year 09-26-2017	85.16	14.84	0.00	0.00	0.00	0.00
One Year Ago 01-02-2017	85.20	33.80	4.28	0.00	0.00	0.00

**Intensity:**  
■ D0 Abnormally Dry    ■ D3 Extreme Drought  
■ D1 Moderate Drought    ■ D4 Exceptional Drought  
■ D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

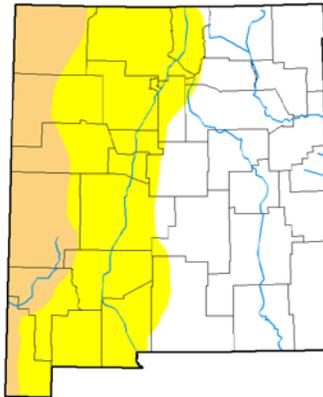
Author:  
Eric Luedtkehusen  
U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>

## U.S. Drought Monitor New Mexico

December 5, 2017  
(Released Thursday, Dec. 7, 2017)  
Valid 7 a.m. EST



	Drought Conditions (Percent Area)					
	None	D0-D1	D1-D2	D2-D3	D3-D4	D4
Current	49.99	53.01	19.22	0.00	0.00	0.00
Last Week 12-01-2017	49.91	51.09	18.22	0.00	0.00	0.00
3 Months Ago 09-02-2017	150.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year 01-01-2018	86.20	33.80	4.28	0.00	0.00	0.00
Start of Water Year 09-26-2017	85.16	14.84	0.00	0.00	0.00	0.00
One Year Ago 12-04-2016	48.23	53.77	4.96	0.00	0.00	0.00

**Intensity:**  
■ D0 Abnormally Dry    ■ D3 Extreme Drought  
■ D1 Moderate Drought    ■ D4 Exceptional Drought  
■ D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

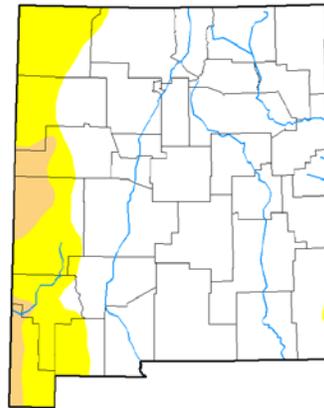
Author:  
Clavio Simeral  
Western Regional Climate Center



<http://droughtmonitor.unl.edu/>

## U.S. Drought Monitor New Mexico

November 7, 2017  
(Released Thursday, Nov. 9, 2017)  
Valid 7 a.m. EST



	Drought Conditions (Percent Area)					
	None	D0-D1	D1-D2	D2-D3	D3-D4	D4
Current	78.64	21.36	4.00	0.00	0.00	0.00
Last Week 11-01-2017	82.45	15.55	1.88	0.00	0.00	0.00
3 Months Ago 08-02-2017	86.65	1.34	0.00	0.00	0.00	0.00
Start of Calendar Year 01-01-2018	86.20	33.80	4.28	0.00	0.00	0.00
Start of Water Year 09-26-2017	85.16	14.84	0.00	0.00	0.00	0.00
One Year Ago 11-04-2016	38.54	60.46	4.02	0.00	0.00	0.00

**Intensity:**  
■ D0 Abnormally Dry    ■ D3 Extreme Drought  
■ D1 Moderate Drought    ■ D4 Exceptional Drought  
■ D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:  
David Minkus  
NOAA/NWS/NCEP/CPD

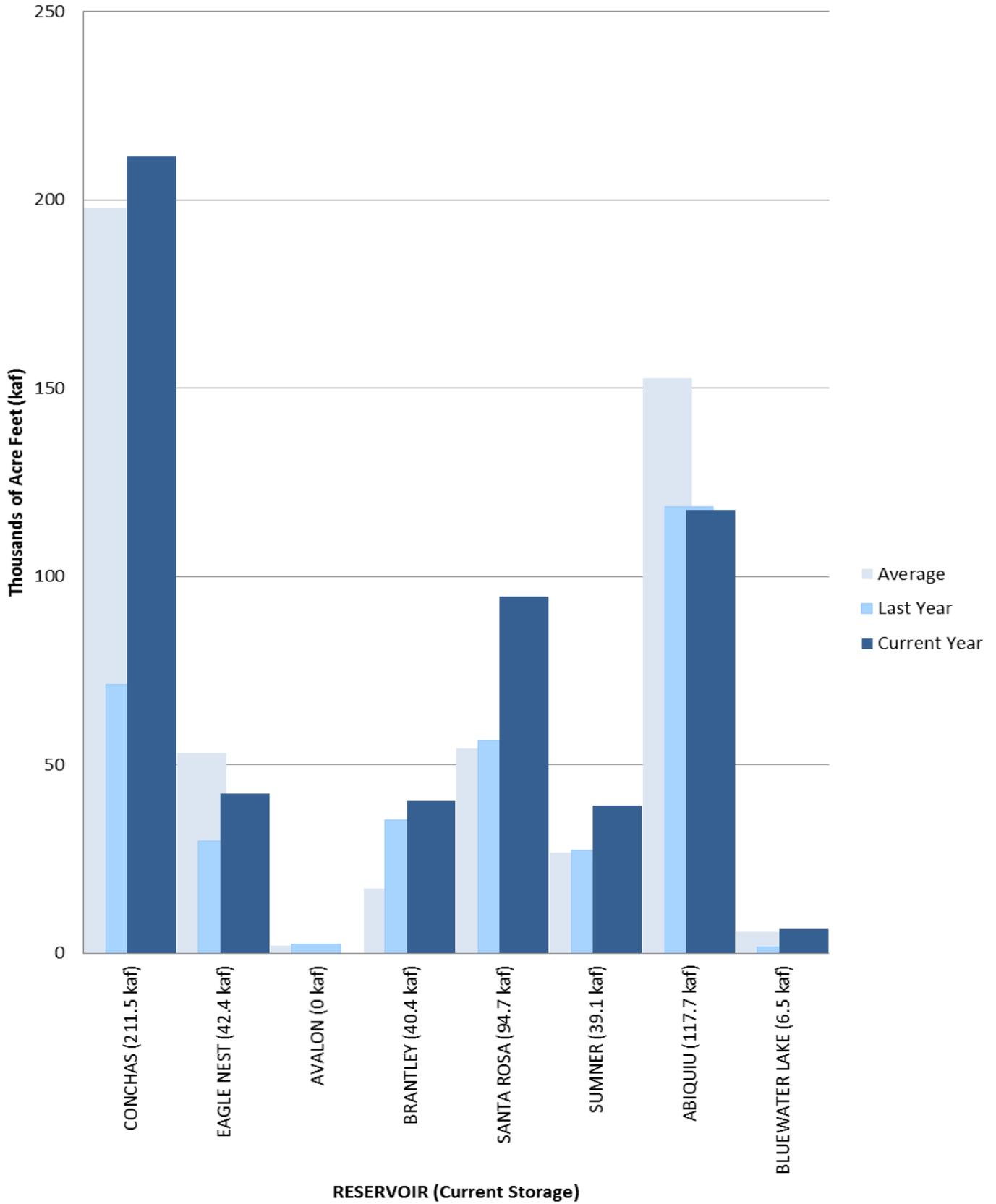


<http://droughtmonitor.unl.edu/>

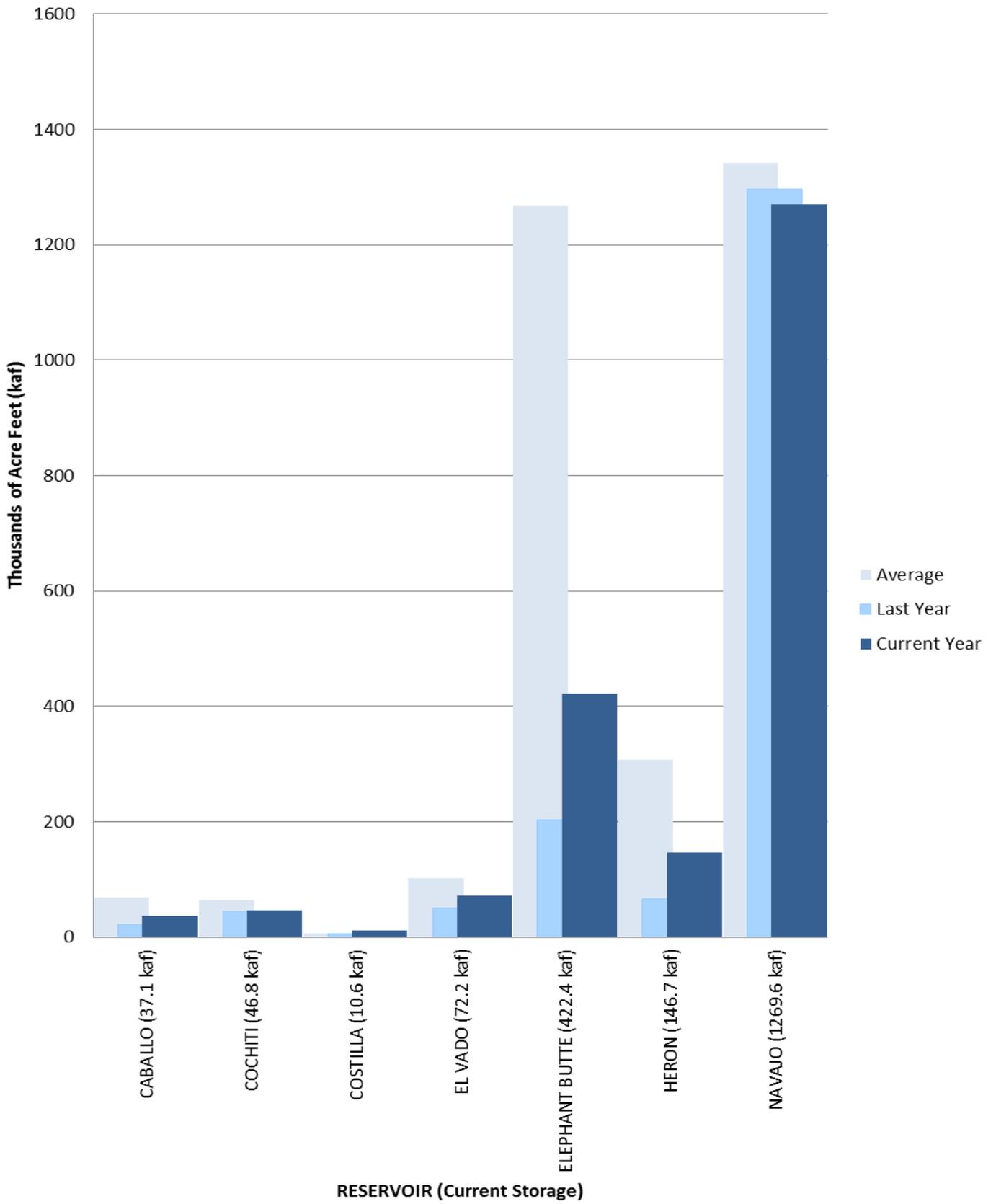
Every week, The U.S. Drought Monitor is produced in partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. This useful tool uses multiple inputs, including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

To begin discussing the current drought conditions in New Mexico we must look back to the spring of 2017. The end of April delivered precipitation improving conditions from moderate drought to abnormally dry conditions across all but western New Mexico. In fact, since the beginning of May most of western New Mexico has not seen any measurable precipitation in 70-80 days. In addition temperatures have continued to rise towards the end of May and were generally 4-8 degrees above normal. This mostly dry pattern persisted until mid-July with monsoonal rains delivering 1-2 inches of precipitation across the state. However, pasture and rangeland conditions continued to deteriorate in spite of the rain, with poor to very poor classifications increasing from 36% to 45% in New Mexico. August did however bring abundant rainfall to the state which ultimately led to the removal of many of the abnormally dry conditions statewide. The second half of monsoon season however delivered sub-par shower activity beginning the march toward drought conditions for New Mexico once again. December saw the continued intensification and expansion of drought conditions following a fall which ended up being the 6<sup>th</sup> driest and 2<sup>nd</sup> warmest October-November on record. The state's drought conditions have continued to intensify leaving portions of the Four Corners in severe drought status and expanding moderate drought conditions across the northern portions of New Mexico.

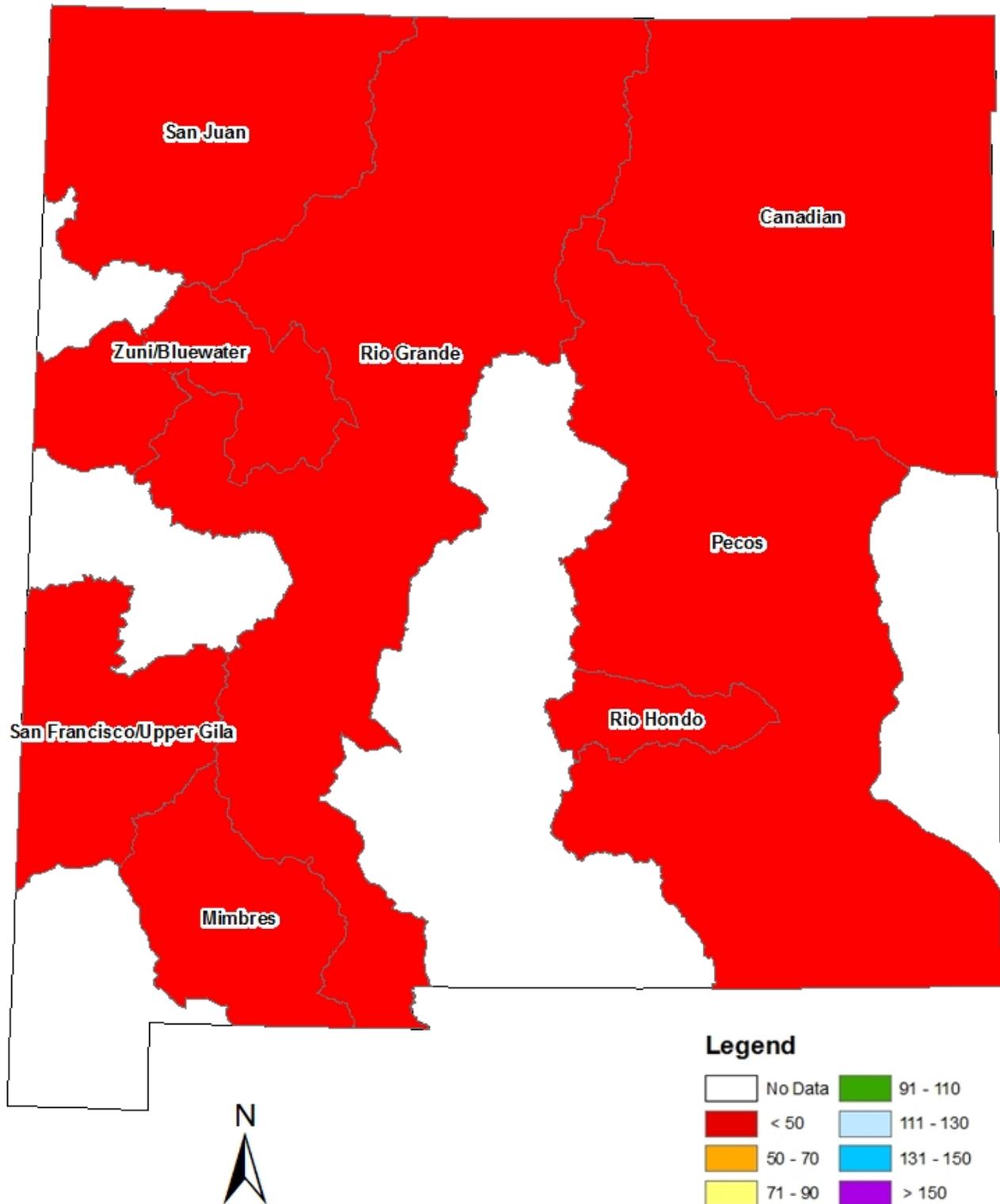
# Statewide Reservoir Storage



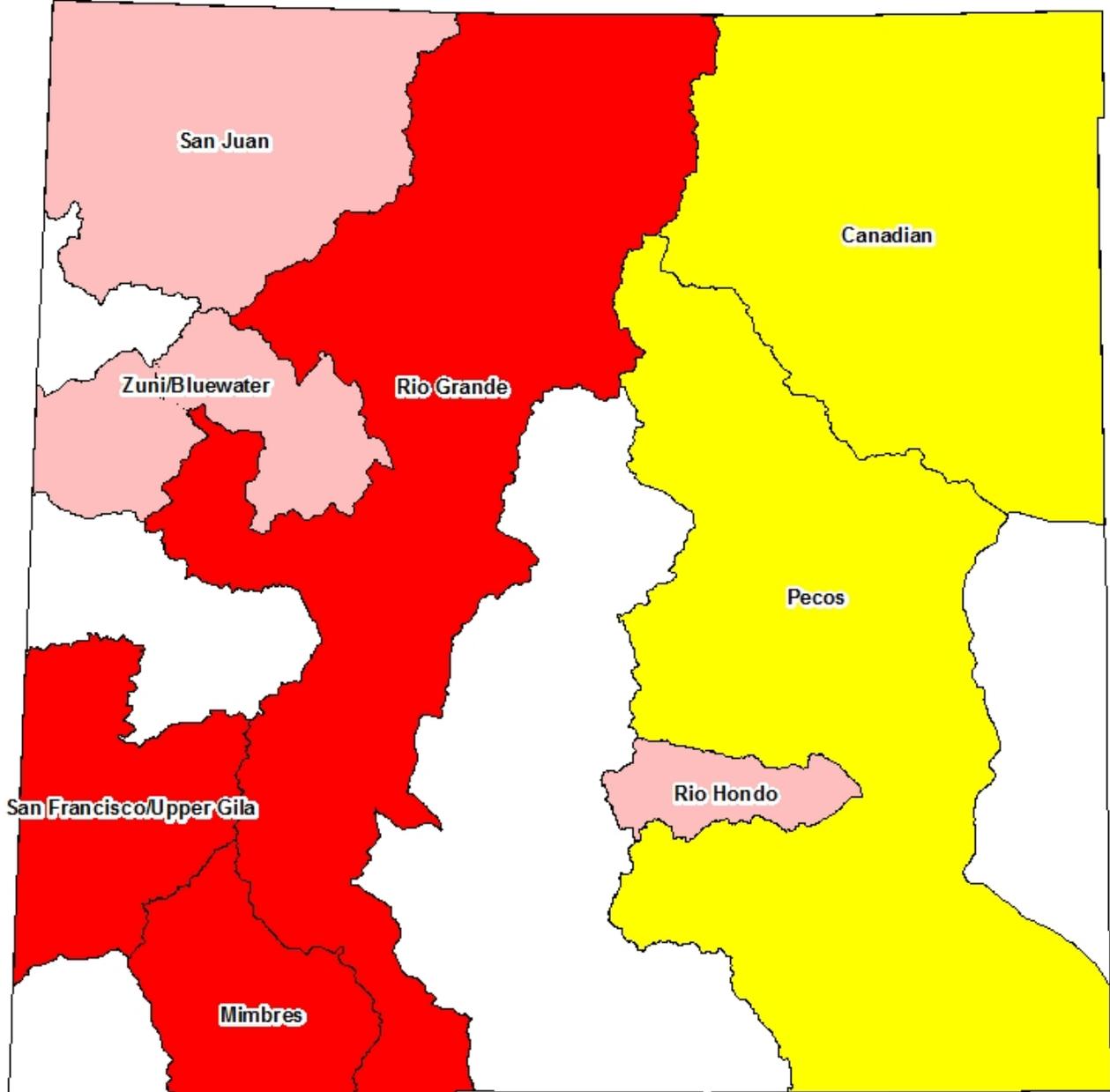
# Statewide Reservoir Storage



# New Mexico Percent of Median Snowpack as of January 1, 2018



# New Mexico Surface Water Supply Index as of January 1, 2018



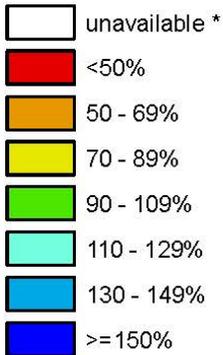
### Legend

Surface Water Supply Index	
	No Data
	-4.0 -- -3.1
	-3.0 -- -1.6
	-1.5 - 1.5
	1.6 - 3.0
	3.1 - 4.0

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

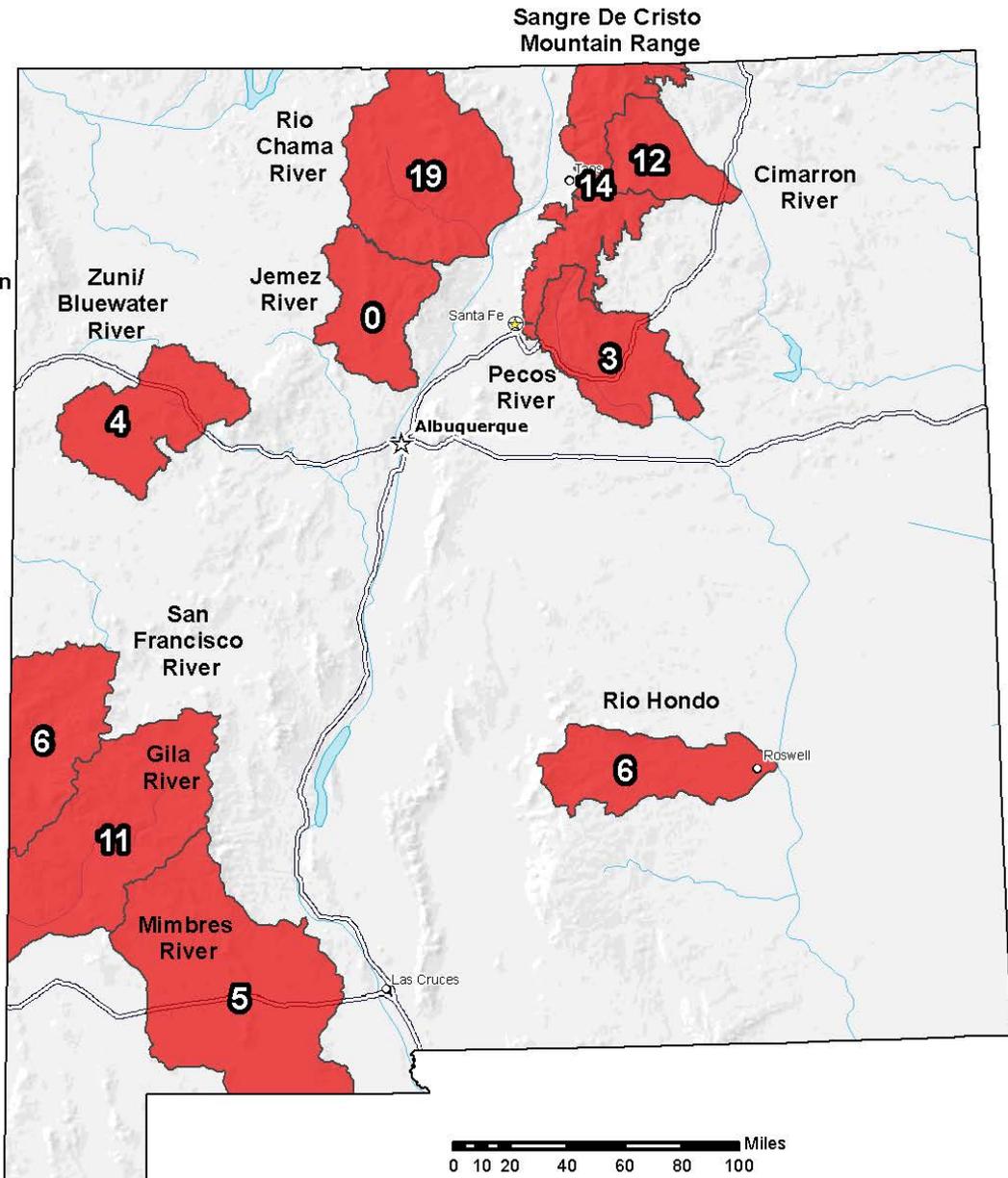
**Jan 04, 2018**

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).

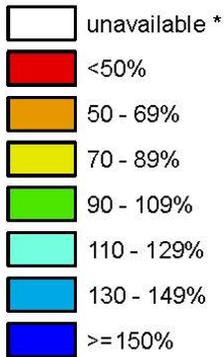
Prepared by:  
USDA/NRCS National Water and Climate Center  
Portland, Oregon  
<http://www.wcc.nrcs.usda.gov>

# New Mexico

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

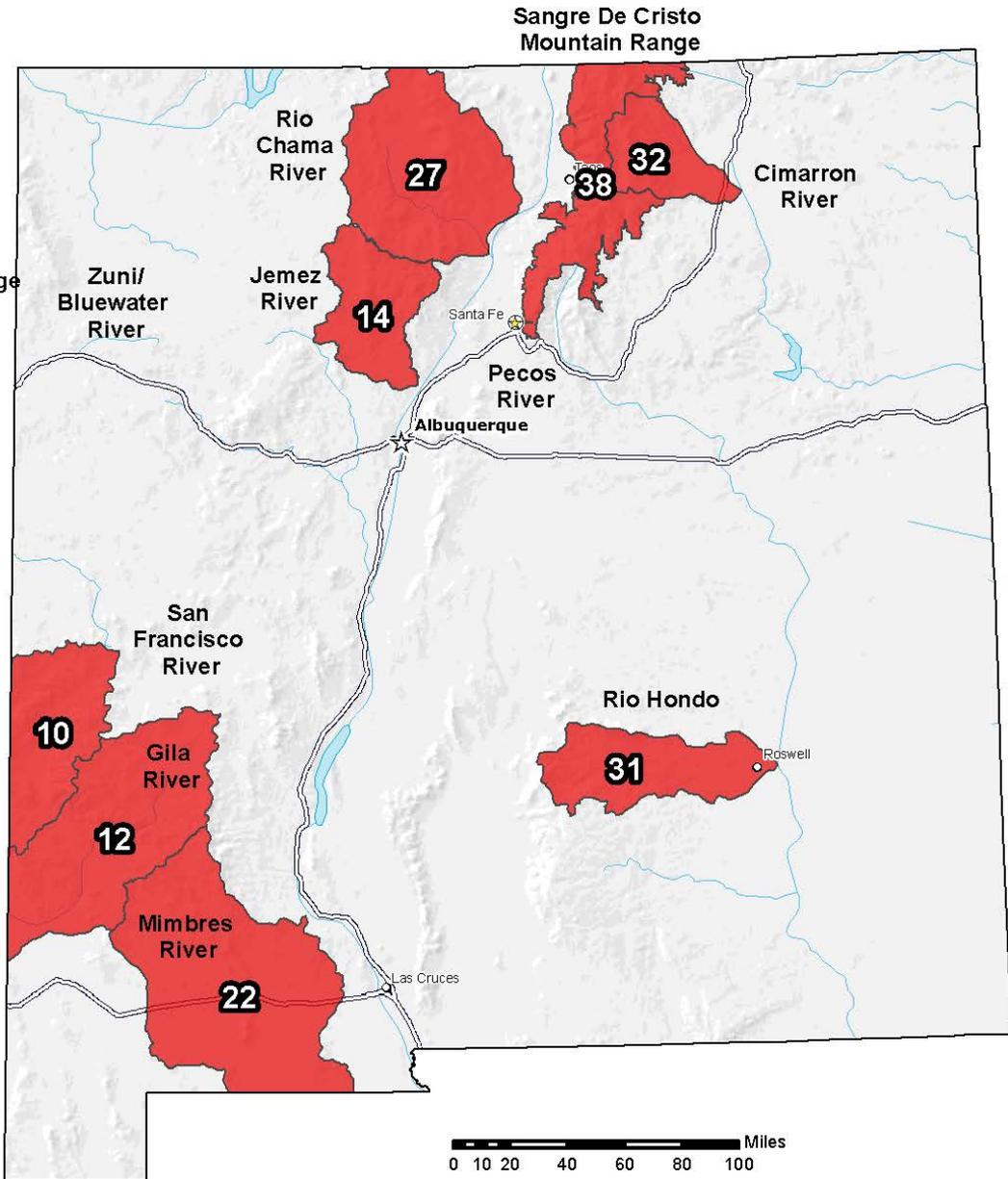
**Jan 04, 2018**

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

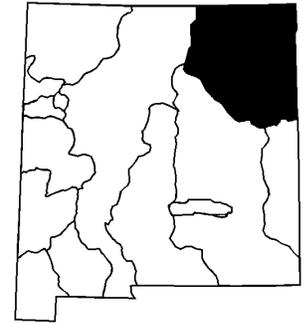
**Provisional Data  
Subject to Revision**



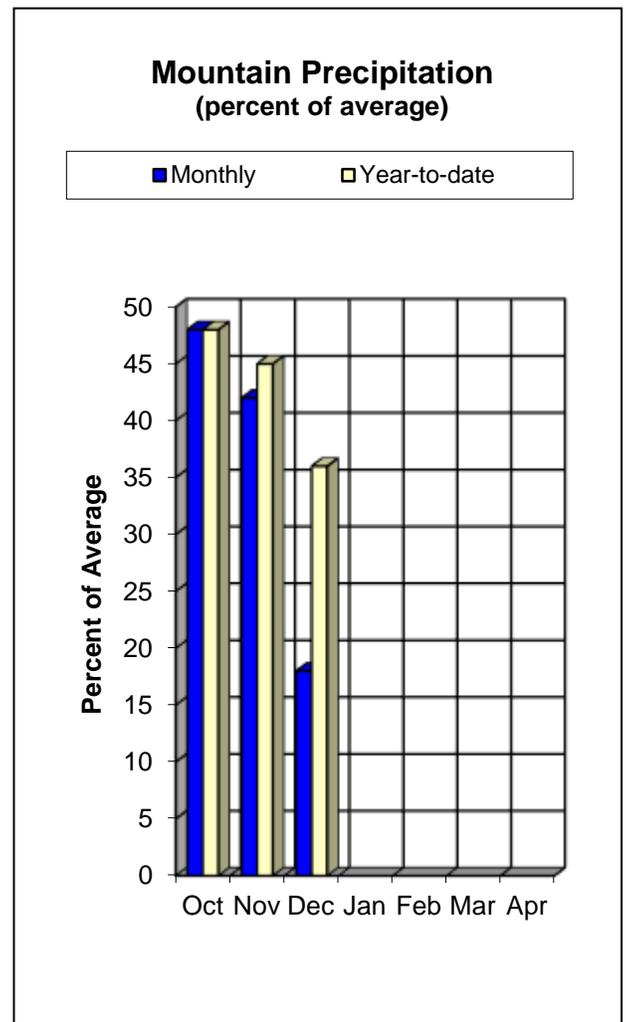
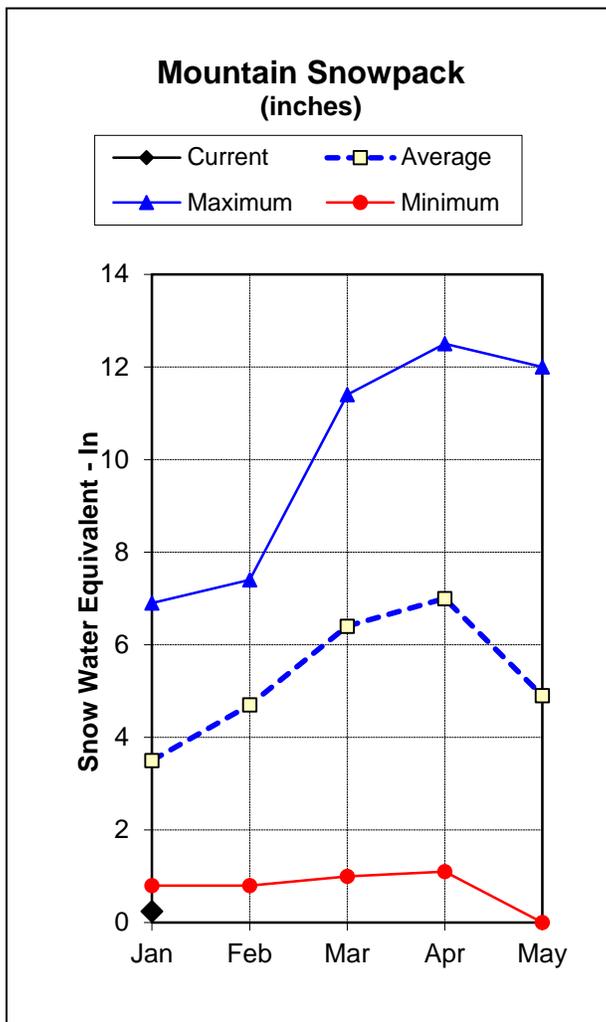
The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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 January 1, 2018



The Canadian River Basin forecasts for the March to June time period are all well below average for this time of year. They range from 24 percent of average for the Vermejo River near Dawson, to 21 percent of average at the Rayado Creek near Cimarron. The Conchas Reservoir inflow is forecast to be 30 percent of the average for the same time period. Water year-to-date precipitation in the Canadian River Basin is also well below the average at 36 percent, as compared to 73 percent last year at this time. Monthly precipitation for December in the basin was a low 18 percent of the average. Snowpack in the basin is extremely low at 7 percent of the median! This is a decrease of 88 percent from last January. Reservoirs are currently holding 253,900 acre-feet of storage which is an increase of 152,800 acre feet from last year at this time. Reservoir storage in the Canadian River Basin is currently at 76 percent of capacity which reflects 101 percent of the average stored water in January.



## Canadian River Basin Streamflow Forecasts - January 1, 2018

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	0.29	1.02	1.9	24%	3.2	6	7.8
Eagle Nest Reservoir Inflow	MAR-JUN	0.45	1.23	2.1	19%	3.3	5.8	11.2
Cimarron R nr Cimarron <sup>2</sup>	MAR-JUN	0.16	1.58	3.3	21%	4.7	8.7	15.8
Ponil Ck nr Cimarron	MAR-JUN	0.22	0.78	1.46	20%	2.4	4.6	7.2
Rayado Ck nr Cimarron	MAR-JUN	0.15	0.7	1.45	21%	2.6	5.2	7
Conchas Reservoir Inflow <sup>3</sup>	MAR-JUN	0.25	3.4	9.1	30%	19.2	44	30

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

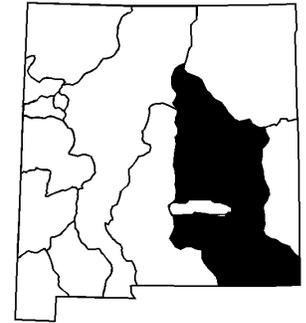
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

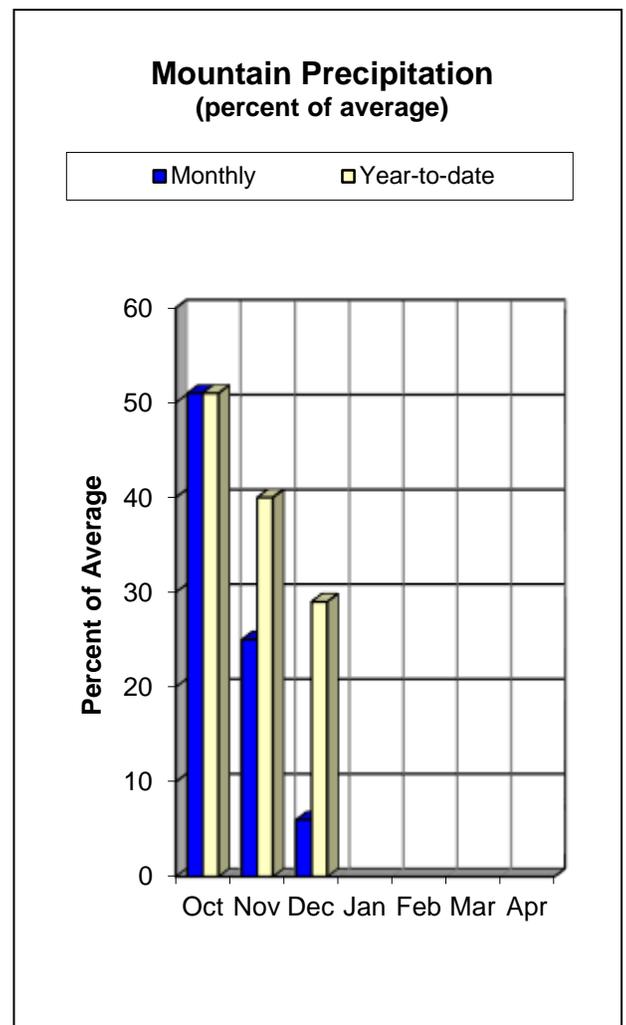
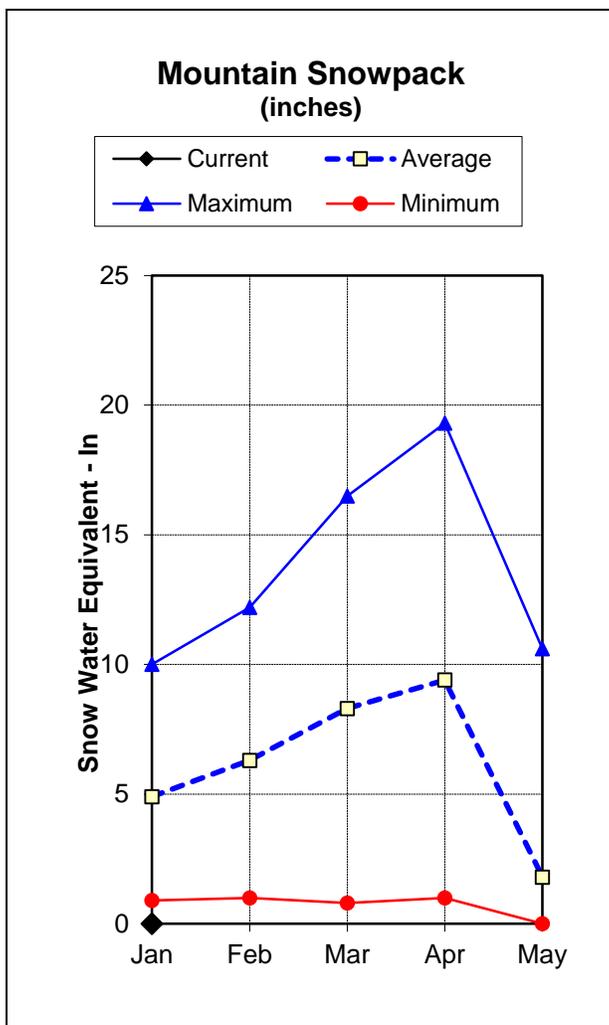
Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Conchas Lake	211.5	71.3	197.9	254.4
Eagle Nest Lake nr Eagle Nest, NM	42.4	29.8	53.0	79.0
Basin-wide Total	253.9	101.1	250.9	333.4
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
CANADIAN RIVER BASIN	4	7%	95%

# Pecos River Basin Water Supply Outlook Report as of January 1, 2018



Streamflow forecasts in the Pecos River Basin for the March to July timeframe are well below average. They range from 30 percent of average for the Pecos River near Pecos, to 18 percent of average for the Pecos River above Santa Rosa Lake. December received only 6 percent of the average precipitation which puts the basin at 29 percent of average for the water year-to-date. This is 52 percent below last year's average of 81 percent. Snowpack levels in the Pecos River Basin are at zero percent of median. Last year at this time the basin had received 74 percent of the median snowpack. As of January 1<sup>st</sup> reservoir storage in the basin is at 174,300 acre-feet, which is just 6 percent of the average capacity.



## Pecos River Basin Streamflow Forecasts - January 1, 2018

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	3.3	10.2	17	30%	26	41	57
Pecos R nr Anton Chico	MAR-JUL	0	2.5	10	16%	23	50	63
Gallinas Ck nr Montezuma	MAR-JUL	0	0.91	2.6	27%	5.1	10.2	9.8
Pecos R ab Santa Rosa Lk	MAR-JUL	0	2.9	10	18%	21	46	56

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

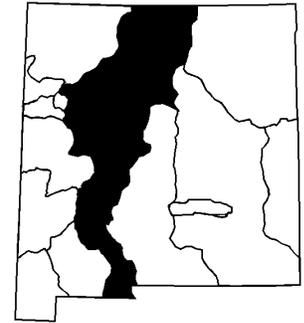
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

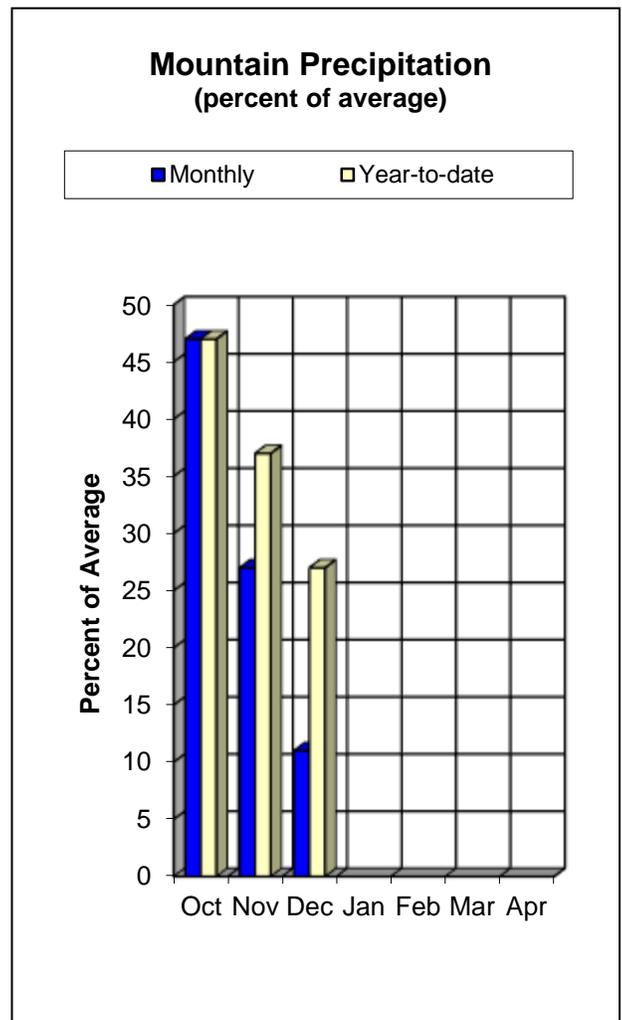
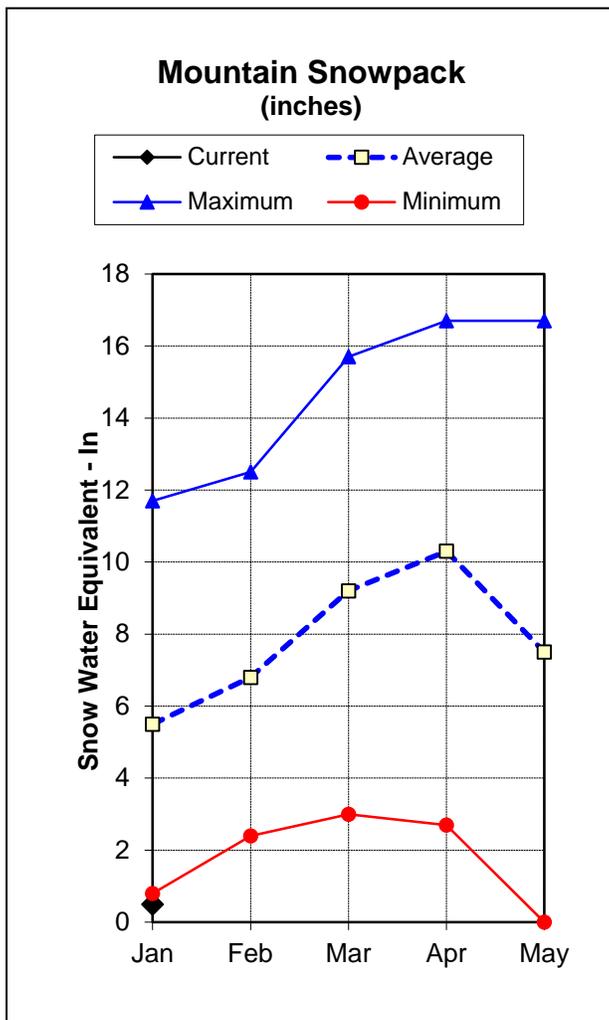
Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Avalon		2.3	2.0	4.0
Brantley Lake nr Carlsbad	40.4	35.3	17.1	1008.2
Santa Rosa Reservoir	94.7	56.3	54.4	432.2
Lake Sumner	39.1	27.2	26.7	102.0
Basin-wide Total	174.3	118.7	98.2	1542.4
# of reservoirs	3	3	3	3

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
PECOS RIVER BASIN	3	0%	74%

# Rio Grande Basin Water Supply Outlook Report as of January 1, 2018



Streamflow forecasts for the Rio Grande Basin are well below average ranging from 60 percent in the north to as low as 20 to 30 percent in southern portions of the basin. For the April to September forecasts, the Rio Grande near Del Norte is 50 percent of the average. Further south at Costilla Creek near Costilla the forecasts show only 34 percent of average for the March to July time period. Additionally, for the March to July forecasts the Jemez River near Jemez is at only 17 percent of the average! The Rio Grande at Otowi Bridge is at 24 percent of average. Water year-to-date precipitation is at only 27 percent of average which is 71 percent below last year's total at this time. This is partially due to the fact that December only received 11 percent of the average precipitation for the month. This is 134 percent less than last year at this time! Snowpack in the basin does not look promising at only 9 percent of median. This is 115 percent below last year's median! Snowpack in southern Colorado affecting the Rio Grande is only slightly improved at 29 percent of average which is a decrease of 76 percent from last year. Current reservoir storage in the basin is 860,000 acre-feet. This is almost double what we had this time last year and close to 45 percent of the average and 44 percent of capacity.



## Rio Grande Basin Streamflow Forecasts - January 1, 2018

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	132	200	255	50%	315	415	515
Platoro Reservoir Inflow	APR-JUL	20	27	33	59%	39	48	56
	APR-SEP	22	30	36	58%	42	53	62
Conejos R nr Mogote <sup>2</sup>	APR-SEP	58	84	104	54%	126	162	194
Costilla Reservoir Inflow	MAR-JUL	2.4	3.9	5.2	47%	6.6	9	11.1
Costilla Ck nr Costilla <sup>2</sup>	MAR-JUL	2.8	6	8.8	34%	12.1	18	26
Red R bl Fish Hatchery nr Questa	MAR-JUL	3.5	6.6	9.3	27%	12.5	18	34
Rio Hondo nr Valdez	MAR-JUL	0.87	2.6	4.3	23%	6.5	10.4	18.4
Rio Pueblo de Taos nr Taos	MAR-JUL	0.24	1.66	3.4	20%	5.7	10.1	17
Rio Lucero nr Arroyo Seco	MAR-JUL	0.74	1.88	2.9	27%	4.3	6.6	10.9
Rio Pueblo de Taos bl Los Cordovas	MAR-JUL	0	0.48	2.4	7%	5.7	13.1	36
Embudo Ck at Dixon	MAR-JUL	0.05	2.6	6.5	14%	12.2	24	48
El Vado Reservoir Inflow <sup>2</sup>	MAR-JUL	17.9	48	77	34%	112	176	225
	APR-JUL	15.3	43	69	34%	102	161	205
Santa Cruz R at Cundiyo	MAR-JUL	0.47	2	3.6	20%	5.7	9.7	18.3
Nambe Falls Reservoir Inflow	MAR-JUL	0.17	0.7	1.26	19%	1.98	3.3	6.5
Tesuque Ck ab diversions	MAR-JUL	0.01	0.13	0.3	22%	0.53	1	1.34
Rio Grande at Otowi Bridge <sup>2</sup>	MAR-JUL	47	114	175	24%	250	385	720
Santa Fe R nr Santa Fe <sup>2</sup>	MAR-JUL	0.06	0.48	1	23%	1.7	3.1	4.3
Jemez R nr Jemez	MAR-JUL	0.83	3.9	7.2	17%	11.6	19.9	42
Jemez R bl Jemez Canyon Dam	MAR-JUL	0	1.43	4	12%	7.9	15.9	34
Rio Grande at San Marcial <sup>2</sup>	MAR-JUL	-160	-90	-11.6	-2%	123	320	510

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

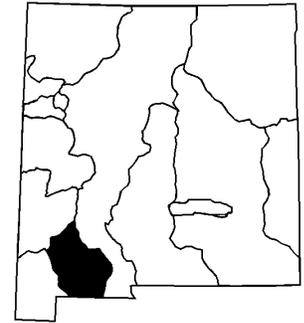
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Abiquiu Reservoir	117.7	118.4	152.7	1198.5
Bluewater Lake	6.5	1.6	5.7	38.5
Caballo Reservoir	37.1	21.0	68.0	332.0
Cochiti Lake	46.9	44.4	63.1	491.0
Costilla Reservoir	10.6	5.3	6.0	16.0
El Vado Reservoir	72.2	50.8	102.8	184.8
Elephant Butte Reservoir	422.4	202.5	1267.0	2195.0
Heron Reservoir	146.7	65.7	308.0	400.0
Basin-wide Total	860.1	509.7	1973.3	4855.8
# of reservoirs	8	8	8	8

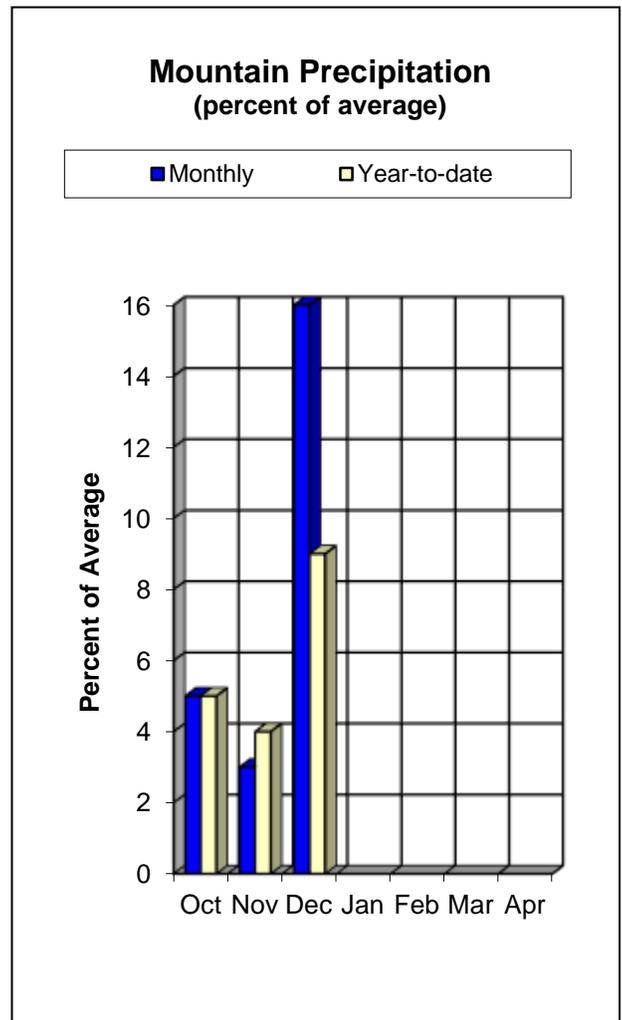
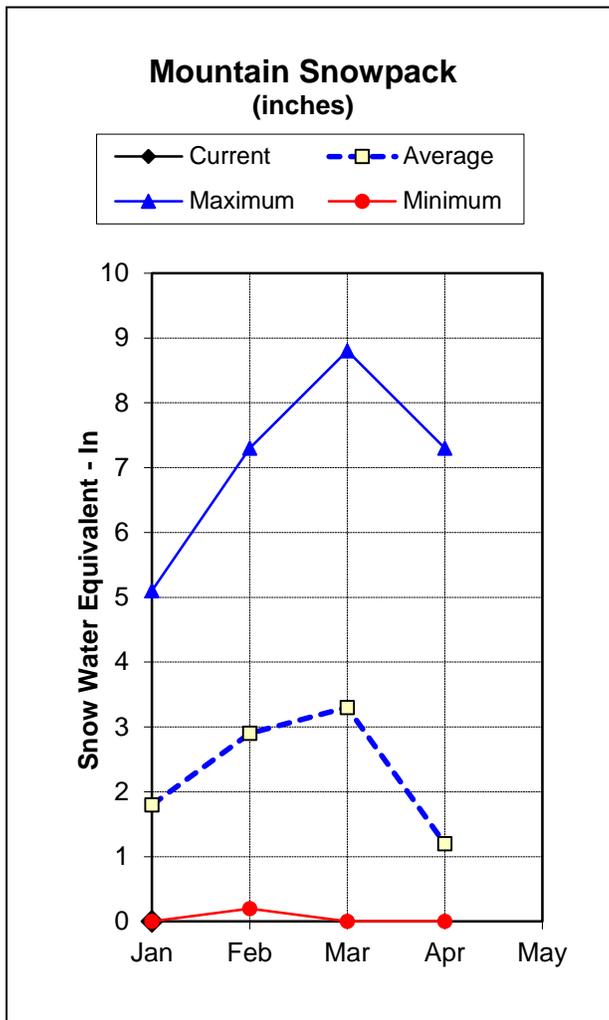
Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
RIO GRANDE BASIN	12	9%	124%

# Mimbres River Basin Water Supply Outlook Report as of January 1, 2018



The January through May forecast for the Mimbres River at Mimbres is currently at 42 percent of the average. Water year-to-date precipitation is a mere 9 percent of average as compared to 124 percent last year at this time. The month of December saw little precipitation having only received 18 percent of the average rainfall. With so little precipitation and the warm temperatures the snowpack in the Mimbres basin is non-existent at zero 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 - January 1, 2018

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>	JAN-MAY	0.11	0.49	1	42%	1.78	3.5	2.4

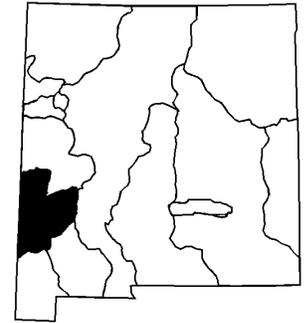
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

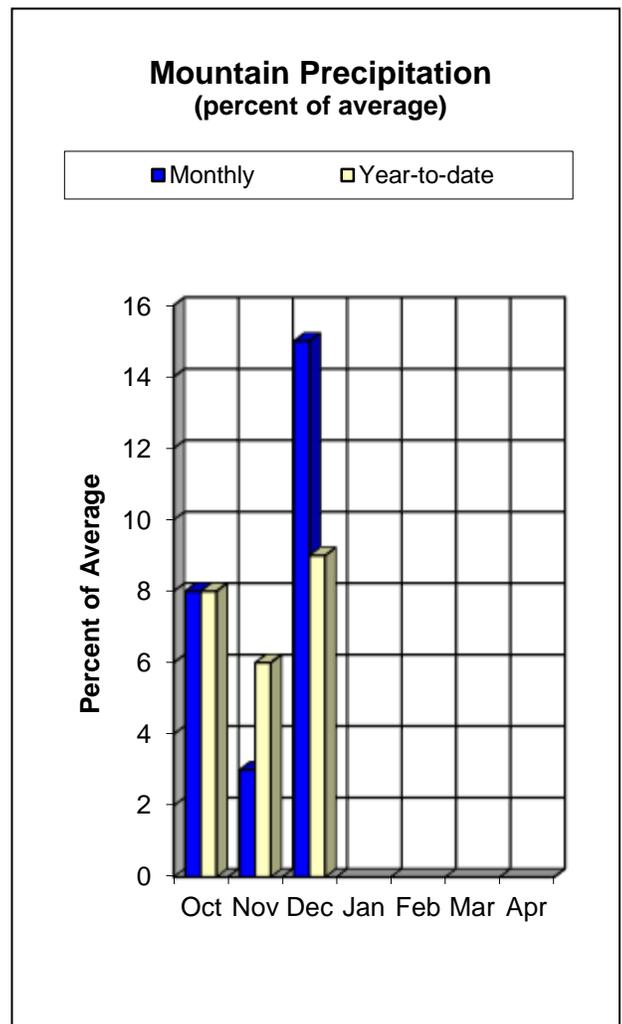
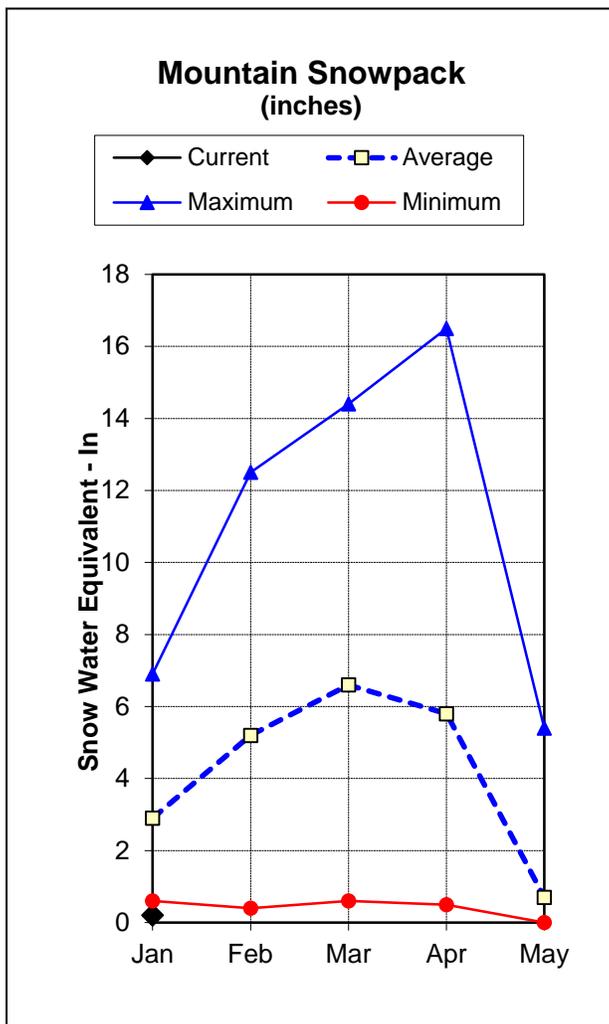
Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
MIMBRES RIVER BASIN	2	0%	20%

# San Francisco / Upper Gila River Basin Water Supply Outlook Report as of January 1, 2018



Streamflow forecasts for the San Francisco/Upper Gila River Basin are well below average this water year. For the January through May forecast the Gila River at Gila is at only 26 percent of the average. For the same time period the San Francisco River at Clifton is currently forecasted to be 20 percent of the average. The water year-to-date precipitation is extremely low at only 9 percent of the average with December only receiving 15 percent of the average precipitation. There is currently little to no snow in the Mimbres Basin.

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 - January 1, 2018

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>	JAN-MAY	3.5	8.8	14.4	26%	22	37	56
Gila R bl Blue Ck nr Virden <sup>3</sup>	JAN-MAY	0	2.9	10.5	14%	23	49	76
San Francisco R at Glenwood <sup>3</sup>	JAN-MAY	0.35	1.94	4.2	20%	7.7	15.9	21
San Francisco R at Clifton <sup>3</sup>	JAN-MAY	0	3.8	12	20%	25	52	61

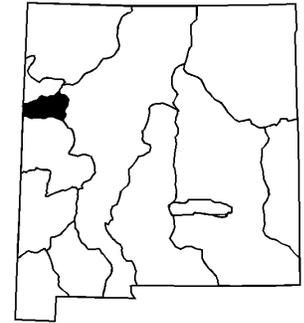
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

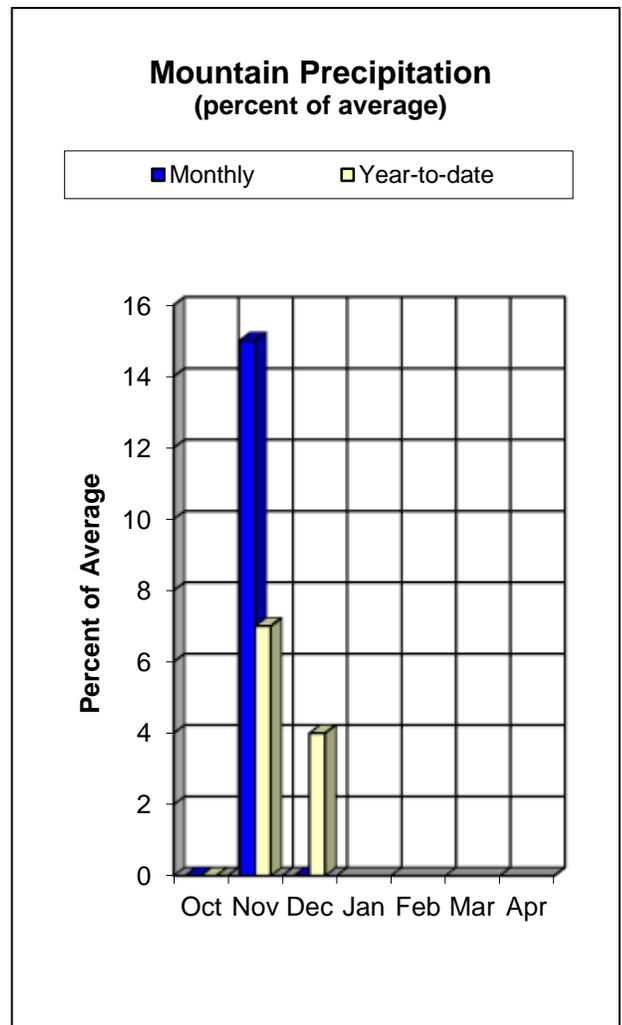
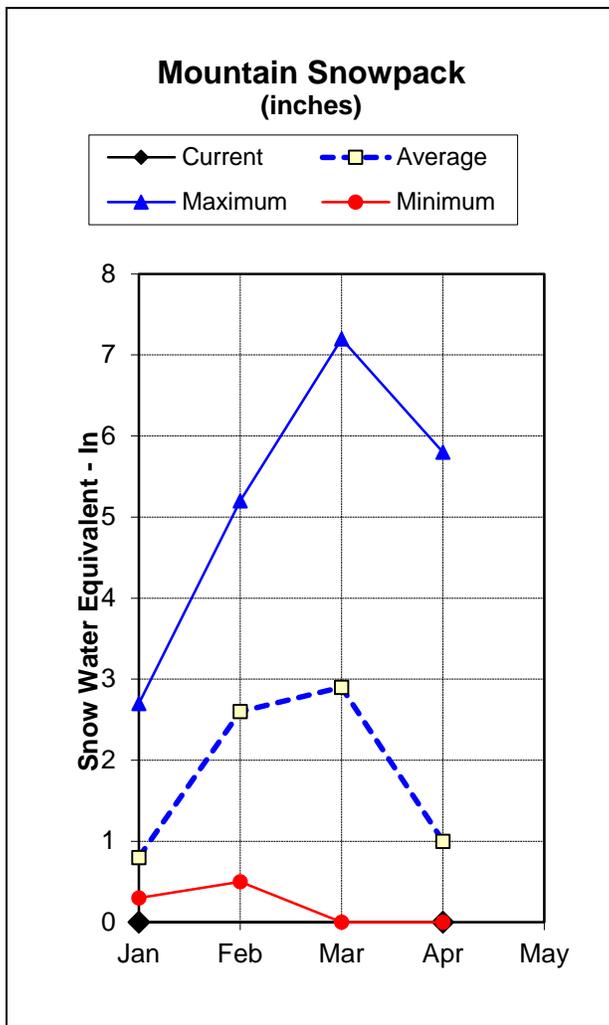
3) Median value used in place of average

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
SAN FRANCISCO-UPPER GILA RIVER BASIN	7	7%	30%

# Zuni / Bluewater Basins Water Supply Outlook Report as of January 1, 2018



Both the Zuni/Bluewater Basins are off to a rough start for the water year. The Rio Nutria near Ramah is currently forecast at only 7 percent of the average. Additionally, the Zuni River above Black Rock is forecast at 34 percent of the average for the January to May timeframe. The Zuni-Bluewater Basins have received just 4 percent of the average precipitation for the water year-to-date, and zero precipitation for December. There is currently no measurable snow in the basins. Bluewater Lake is much higher than last January at 6,500 acre feet versus 1,600. This is 114 percent of the average, yet only 15 percent of the average capacity.



## Zuni-Bluewater Basins Streamflow Forecasts - January 1, 2018

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>	JAN-MAY	0	0.01	0.1	7%	0.4	1.49	1.42
Zuni R ab Black Rock Reservoir <sup>3</sup>	JAN-MAY	0	0.01	0.16	34%	0.74	3	0.47

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

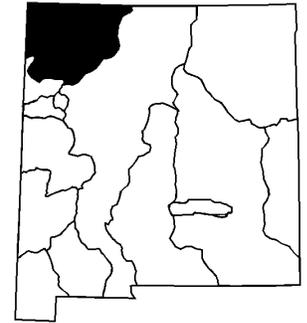
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

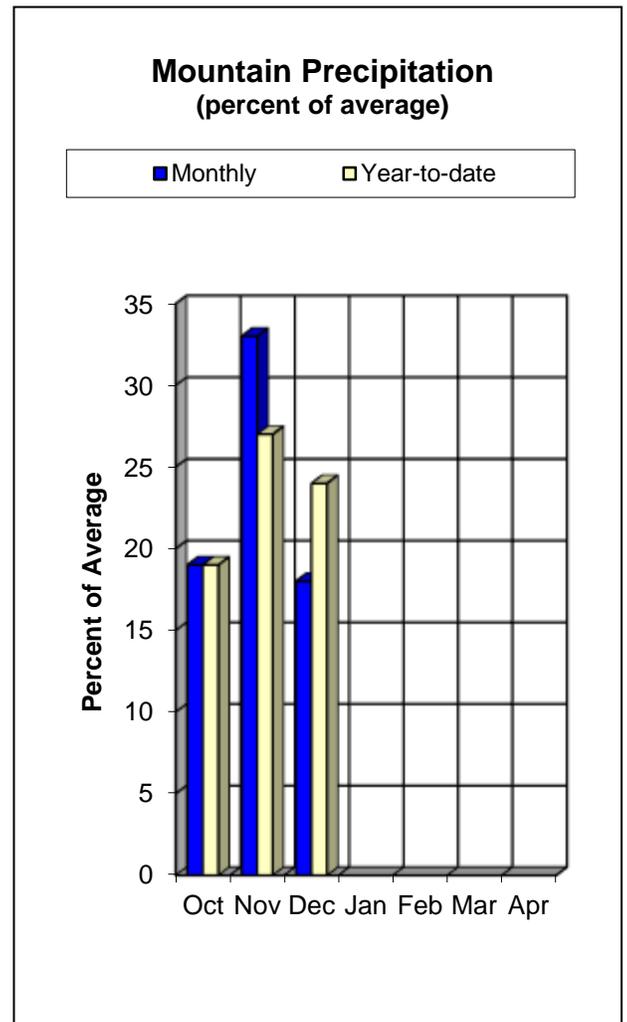
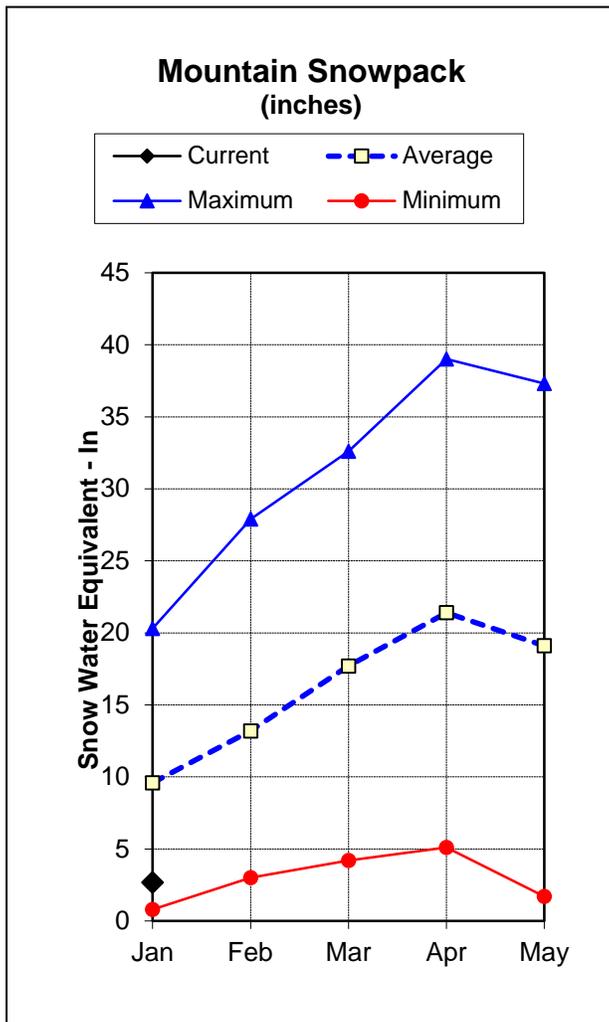
Reservoir Storage End of December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bluewater Lake	6.5	1.6	5.7	38.5
Basin-wide Total	6.5	1.6	5.7	38.5
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
ZUNI-BLUEWATER BASINS	4	0%	43%

# San Juan River Basin Water Supply Outlook Report as of January 1, 2018



The April to July forecasts are well below average for this time of year. Ranging from 54 percent of average for the Navajo River at Oso Diversion to just 37 percent for the La Plata River near Hesperus. Additionally, the Animas River at Durango is at only 48 percent of the average. Water year-to-date precipitation is just 24 percent of the average, which is a 69 percent decrease from last year at this time. December was a dry month for the basin having only received 18 percent of the average rainfall. Snowpack in the basin is currently at only 28 percent of median. This is a big decrease of 86 percent from last year! Navajo reservoir storage contains 1,269,600 acre-feet or 95 percent of the average. This is close to what the reservoir held last year at the end of December. This equates to 79 percent of the average capacity for the reservoir.



## San Juan River Basin Streamflow Forecasts - January 1, 2018

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

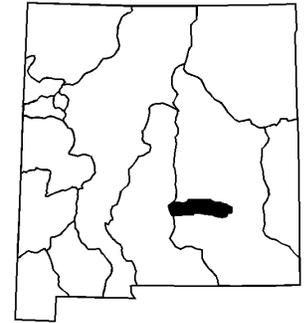
SAN JUAN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rio Blanco at Blanco Diversion <sup>2</sup>	APR-JUL	14.9	23	29	54%	36	47	54
Navajo R at Oso Diversion <sup>2</sup>	APR-JUL	17.7	27	35	54%	44	59	65
Navajo Reservoir Inflow <sup>2</sup>	APR-JUL	111	196	270	37%	355	495	735
Animas R at Durango	APR-JUL	98	154	200	48%	250	335	415
La Plata R at Hesperus	APR-JUL	2.5	5.6	8.4	37%	11.8	17.9	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 December, 2017	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Navajo Reservoir	1269.6	1296.8	1341.0	1696.0
Basin-wide Total	1269.6	1296.8	1341.0	1696.0
# of reservoirs	1	1	1	1

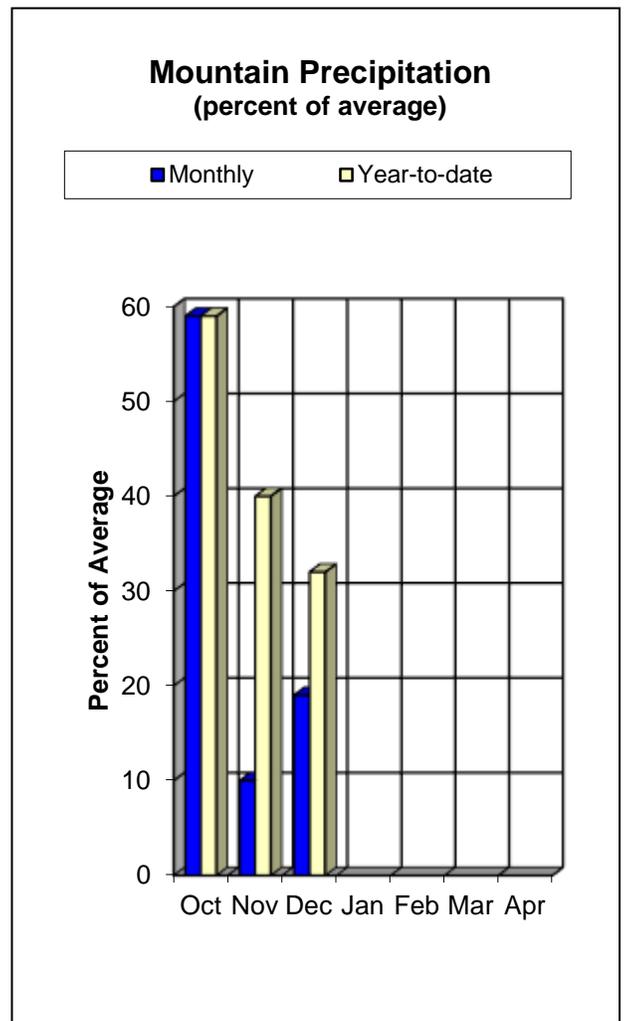
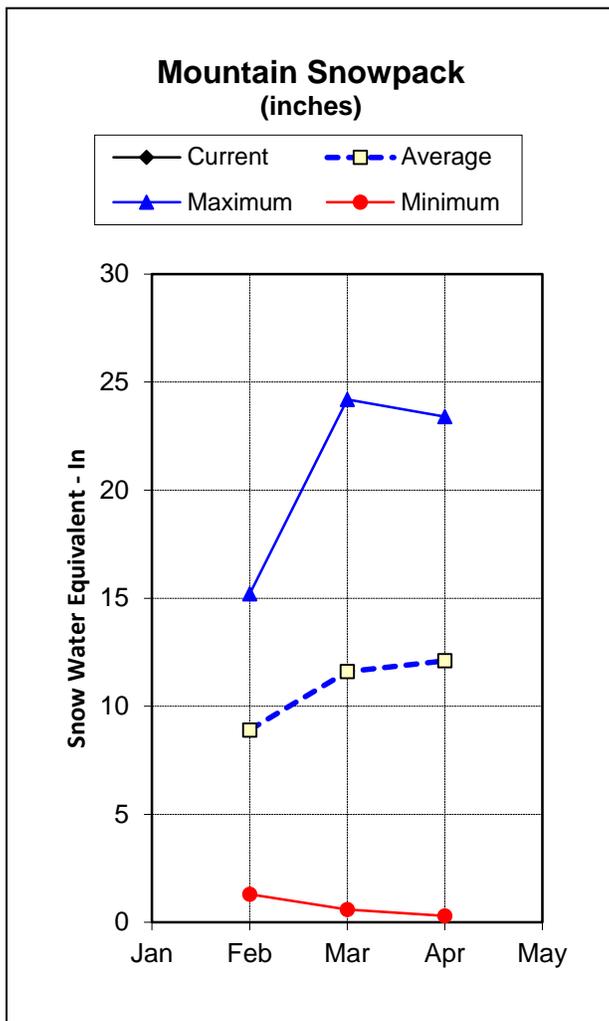
Watershed Snowpack Analysis January 1, 2018	# of Sites	% Median	Last Year % Median
SAN JUAN RIVER BASIN	11	28%	114%

# Rio Hondo Basin Water Supply Outlook Report as of January 1, 2018



The streamflow forecast for the March to June time period is just 30 percent of average for the Rio Ruidoso at Hollywood. Year-to-date precipitation is at 32 percent of average, and the Rio Hondo received only 19 percent of the average rainfall in December. Currently snowpack is at a very low 6 percent of the median, which is a decrease of 47 percent from last year at this time. This measurement however should be used with caution as the Sierra Blanca SNOTEL site was impacted by the Little Bear Fire four 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: 1/5/2018 4:22:45 PM

### Rio Hondo Basin Streamflow Forecasts - January 1, 2018

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	0.72	2	30%	3.9	7.9	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 January 1, 2018	# of Sites	% Median	Last Year % Median
RIO HONDO BASIN	1	6%	53%



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