



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

New Mexico Basin Outlook Report January 1, 2017



Chris Romero (NRCS) at the Taos Powderhorn SNOTEL site 12/29/16 - Photo courtesy of Aaron Miller, 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

After expectations of record snowpack in 2016 the water year turned out to be somewhat disappointing but not all bad. Early snows helped carry the state through the winter and as of May 1, 2016 statewide snowpack was at 77 percent of the median. Statewide precipitation for the 2015-16 water year totaled out at 106 percent of the average. Yet, despite decent rainfall and average snowpack our reservoir levels remain at 55 percent of the average across New Mexico. So, New Mexico turns to the 2017 water year in hopes of a reprieve from six consecutive years of below average snowpack and only slightly above average precipitation. Off to a slow start the month of October received only 30 percent of the normal precipitation statewide, making it the 18th driest on record. November provided some relief and ended up being the 12th wettest on record. November also received some snow and by the end of the month New Mexico was at 96 percent of the median. As the state moved deeper into winter the weather remained unseasonably warm, thus delivering more rain than snow and ending the month with snowpack levels at 98 percent of median. The first forecasts for this water year have arrived, and except for several in western New Mexico a majority are below average to average. Forecast models continue to support a marginal winter for New Mexico however as we have seen in year's past, anything can happen! 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 year unfolds.

Snowpack

A pair of storms during the last week of December delivered widespread precipitation in the form of both rain and snow to the state. The days following these events were however quiet with most basins reporting below average snowpack. The Rio Grande basin is at 124 percent of the median as compared to 134 percent at this time last year. The San Juan Basin and Chuska Mountains are in fact the only other areas above the average for this time of year. This does not however take into account several storms which arrived after the New Year. These will be reflected in the February Basin Outlook Report. Although slowly, winter has finally arrived for New Mexico. Water users and managers should continue to monitor conditions over the next months to determine the impacts of conditions.

NEW MEXICO STATEWIDE SNOWPACK	Percent of Median	Last Year Percent of Median
CANADIAN RIVER BASIN	97	134
PECOS RIVER BASIN	74	159
RIO GRANDE BASIN	124	134
MIMBRES RIVER BASIN	20	189
SAN FRANCISCO-UPPER GILA RIVER BASIN	30	146
ZUNI-BLUEWATER BASINS	43	166
SAN JUAN RIVER BASIN	114	122
CHUSKA MOUNTAINS	125	150
RIO HONDO BASIN	53	181
Statewide Snowpack Total	98	139
# of sites	28	28

Precipitation

March 2016 was a dismal month for precipitation. Statewide the average was only 8 percent of normal making it tied for the driest on record! April began to turn things around receiving 129 percent of the average statewide. May started out well across northern and central New Mexico and throughout the month several fast moving storms crossed northern New Mexico. June and July were moderately productive months with August and mid-September delivering a much wetter weather pattern. September ended up being near normal as New Mexico transitioned to a much dryer weather pattern which lasted into late October. Most areas saw 70 percent of the normal rainfall with eastern areas being wetter than the rest of the state. By the end of November moderate drought covered only 5 percent of the state. This could be compared to months earlier in September when moderate drought covered 17 percent of the state, mostly in the west and south. Currently, New Mexico statewide is at 97 percent of the average for the water year-to-date as compared to 136 percent at this time last year.

Reservoirs

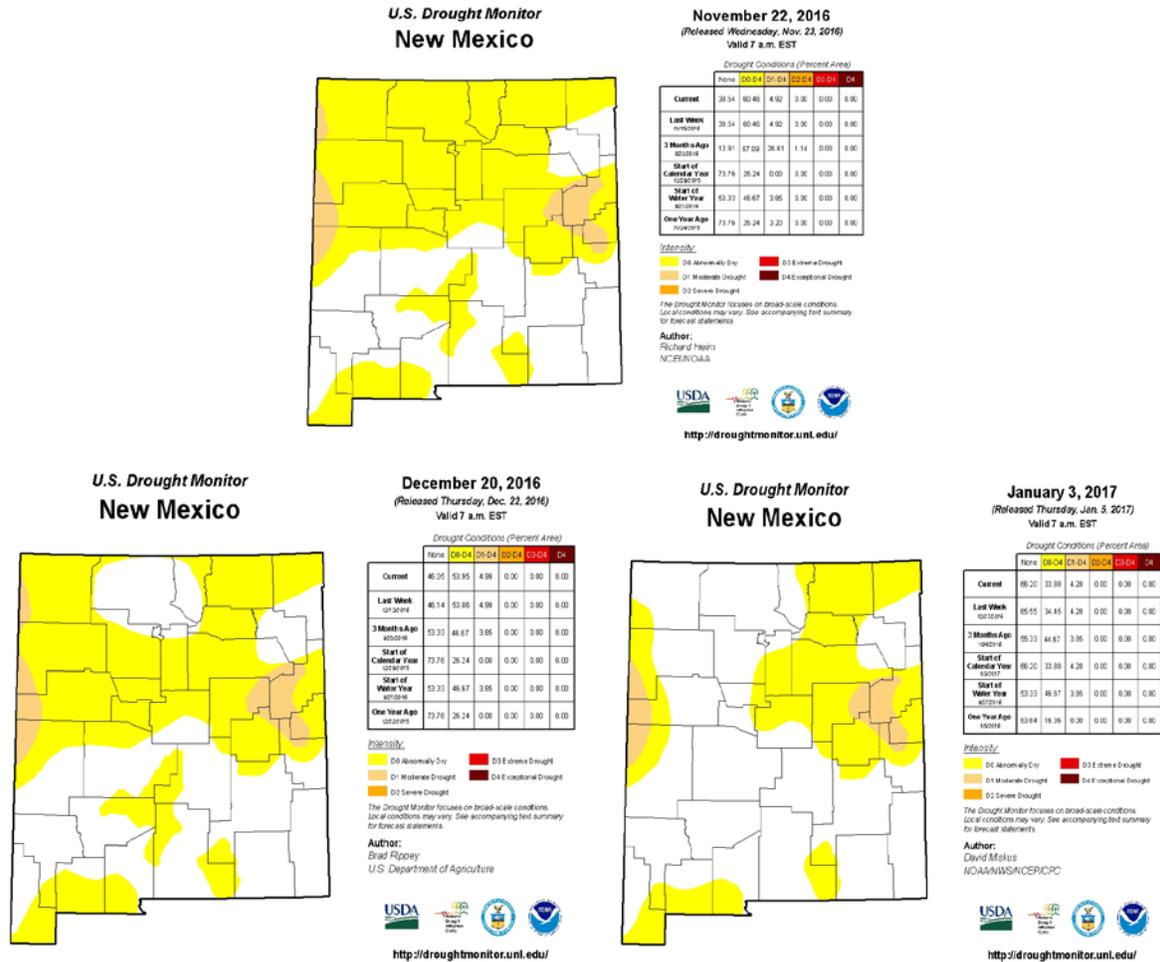
During the spring of 2016 snowmelt and runoff occurred early once again, and snowpack was below normal for the 6th year in a row across much of the state. Storage levels are still well below capacity at most reservoirs across the state. The average percent of capacity statewide is 43 percent. As we move into the snow season the forecast for our reservoirs looks as if it is behind the power curve already. Water-users should closely monitor streamflow forecasts as we move into the water year.

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	118.5	130.5	152.7	1192.8	10%	11%	13%	78%	85%
Bluewater Lake	1.6	2.0	5.7	38.5	4%	5%	15%	28%	35%
Brantley Lake nr Carlsbad	34.8	43.6	17.1	1008.2	3%	4%	2%	204%	255%
Caballo Reservoir	21.0	27.7	68.0	332.0	6%	8%	20%	31%	41%
Cochiti Lake	44.4	46.8	63.1	491.0	9%	10%	13%	70%	74%
Conchas Lake	71.3	137.1	197.9	254.2	28%	54%	78%	36%	69%
Costilla Reservoir	5.3	9.4	6.0	16.0	33%	59%	38%	88%	157%
Eagle Nest Lake nr Eagle Nest, NM	29.8	29.7	53.0	79.0	38%	38%	67%	56%	56%
El Vado Reservoir	51.9	36.5	102.8	190.3	27%	19%	54%	50%	36%
Elephant Butte Reservoir	204.0	322.5	1267.0	2195.0	9%	15%	58%	16%	25%
Heron Reservoir	64.4	68.6	308.0	400.0	16%	17%	77%	21%	22%
Lake Avalon	2.3	2.7	2.0	4.0	58%	68%	50%	115%	135%
Lake Sumner	26.7	43.6	26.7	102.0	26%	43%	26%	100%	163%
Navajo Reservoir	1296.8	1397.0	1341.0	1696.0	76%	82%	79%	97%	104%
Santa Rosa Reservoir	56.3	97.0	54.4	438.3	13%	22%	12%	103%	178%
Basin-wide Total	2029.1	2394.7	3665.4	8437.3	24%	28%	43%	55%	65%
# of reservoirs	15	15	15	15	15	15	15	15	15

Streamflow

The January 1, 2017 forecast numbers from the NRCS show that a majority of New Mexico is well below average for a majority of the forecast points across the state. There are only a handful of points which reflect average to slightly above average forecasts. 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.

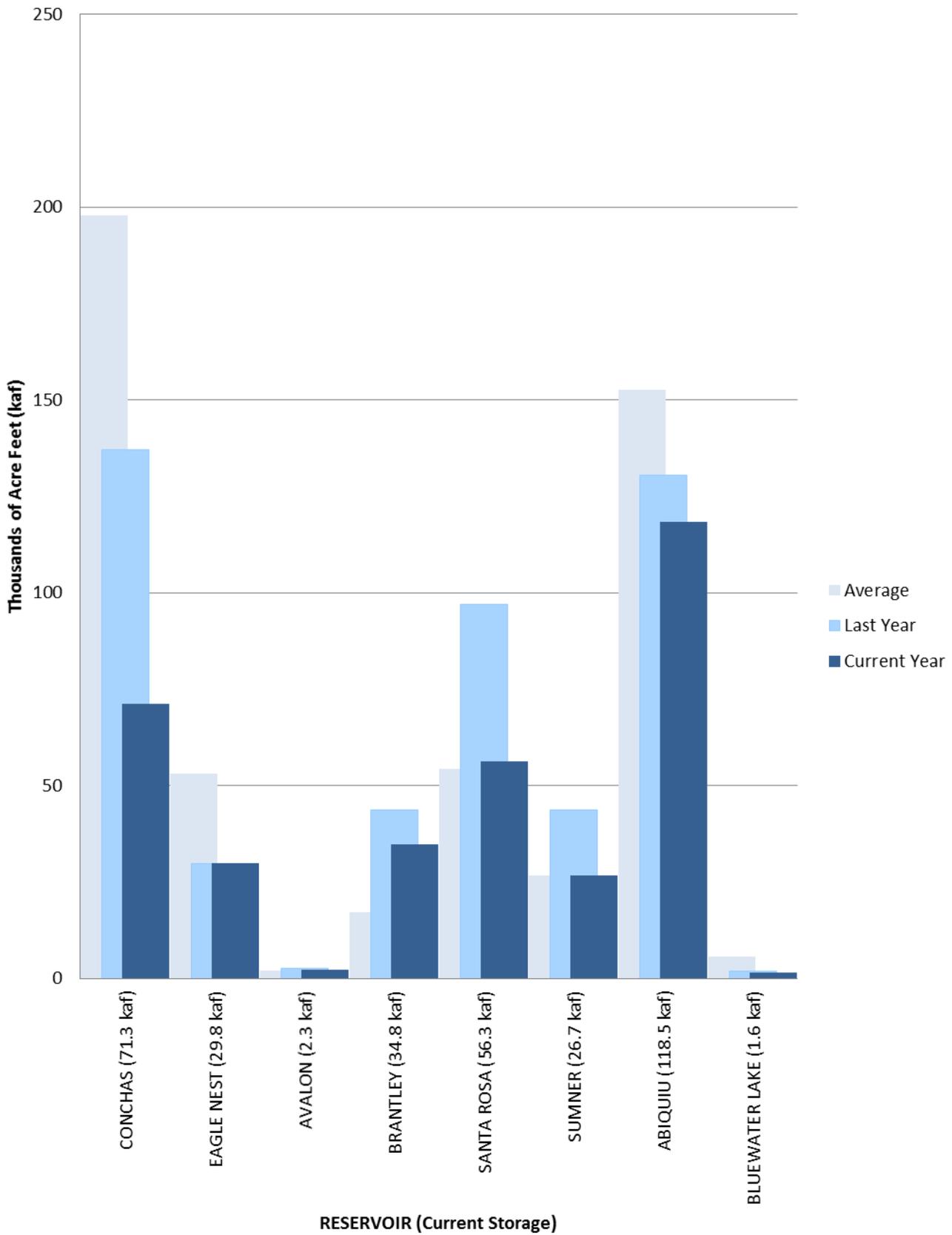
New Mexico Drought Monitor, real versus perceived conditions?



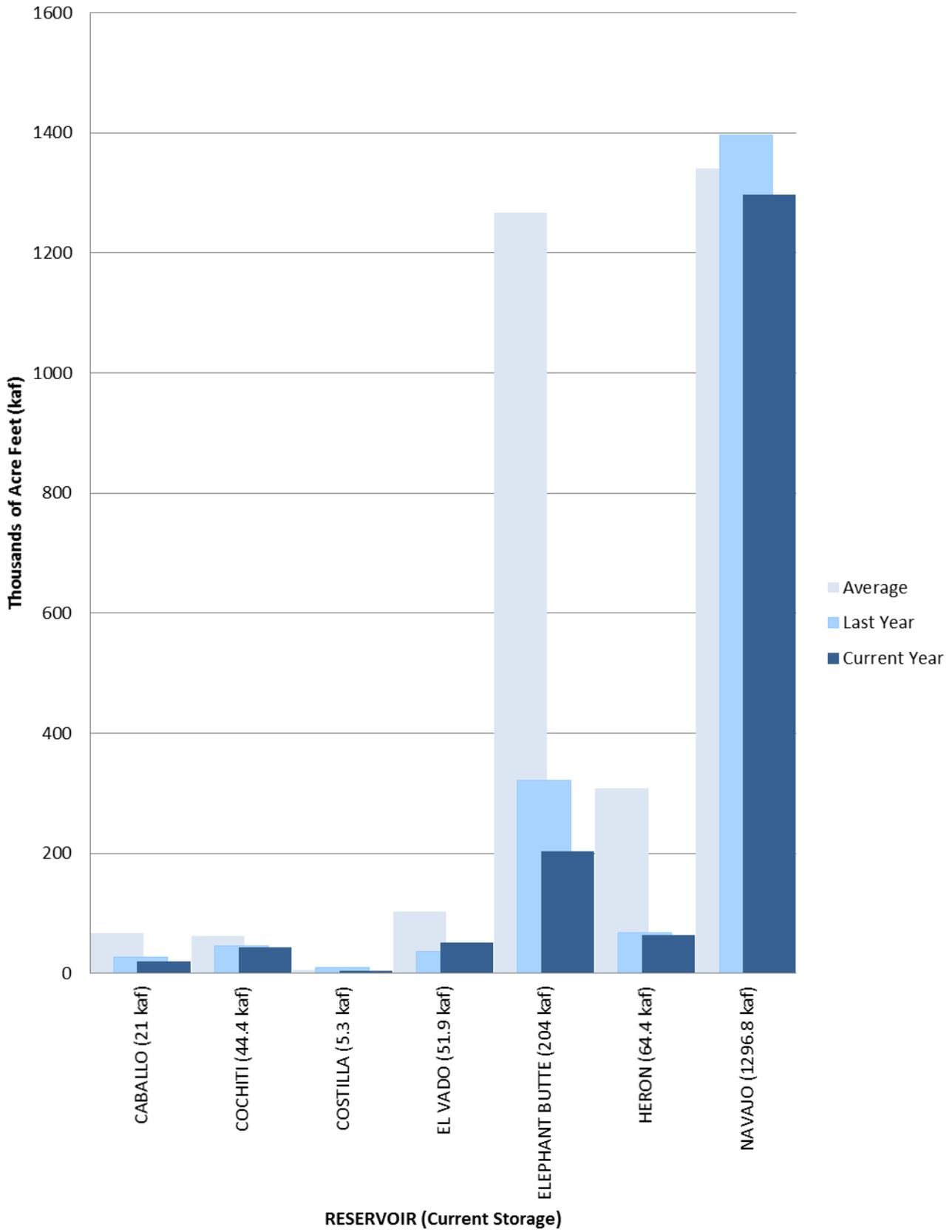
Every week, The U.S. Drought Monitor is produced in partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. This useful tool uses multiple inputs, including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

Following a somewhat disappointing winter, soil moisture conditions began to steadily improve for some areas of the state in the spring of 2016. By the end of May rainfall helped to improve drought conditions in eastern New Mexico. Southern New Mexico also saw improved conditions and a trimming of D1. Moving into the heat of summer a southwest monsoon kicked into gear around the 1st of July dropping light to moderate amounts of rain throughout western New Mexico. Monsoon-related showers continued to affect much of the state into August and temperatures were below normal for much of the Southwest. In southeast New Mexico locally heavy rainfall accumulations ranging from two-to-ten inches led to improvement in D0 and D1 areas. Western New Mexico continued to receive rainfall throughout September while temperatures remained below normal. A dry October resulted in the expansion of abnormally dry conditions in the northern half of the state. December brought with it several storms and precipitation which fell across the Southwest. Despite early winter precipitation this season's snowpack remains largely below average due to several "warm" storms that have produced more rain than snow. Drought conditions have ultimately improved across the northern and western portions of the state which a large portion of the abnormally dry status being removed. Water users should closely monitor snowpack, precipitation, reservoir, and forecast values as we move into winter.

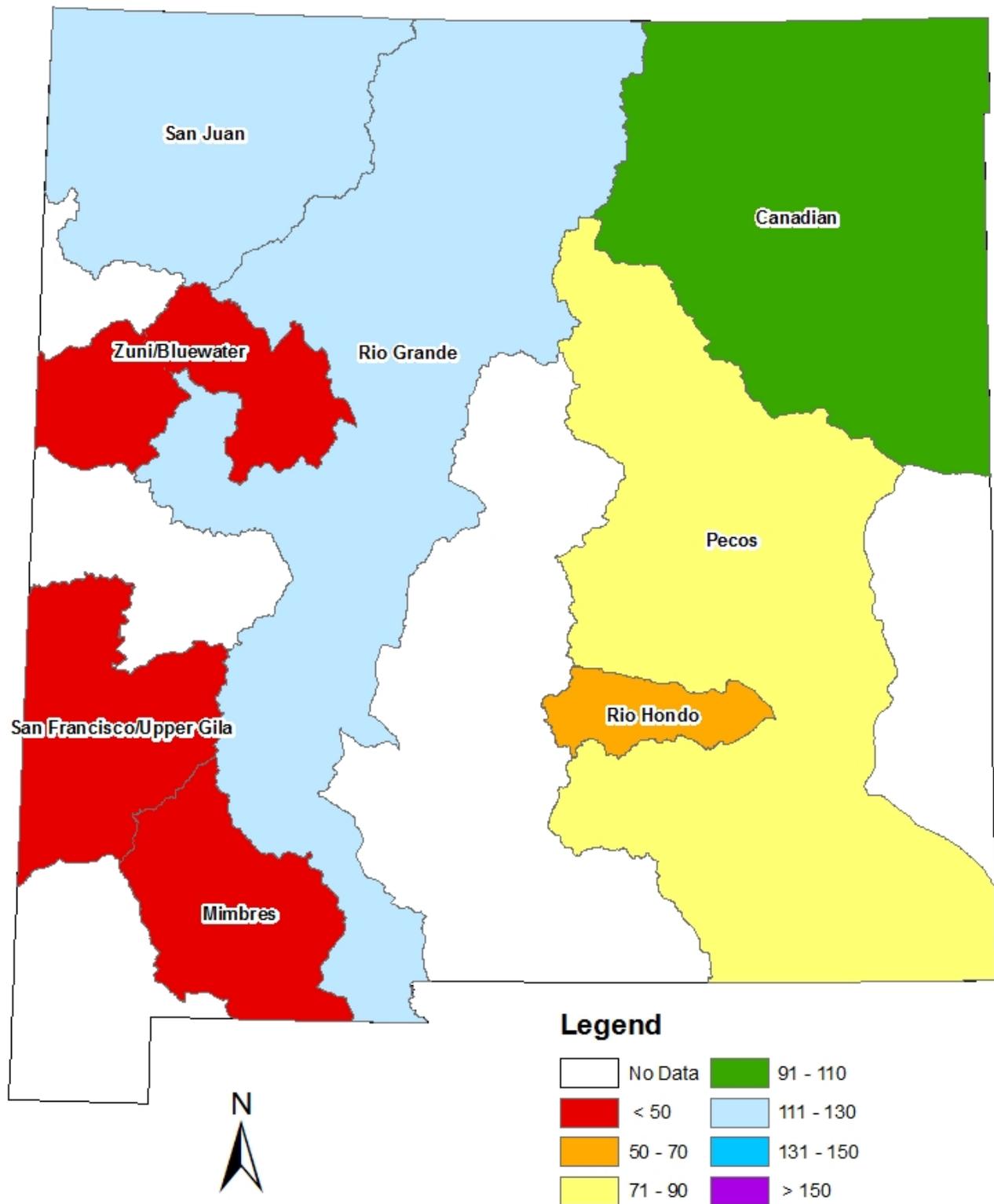
Statewide Reservoir Storage



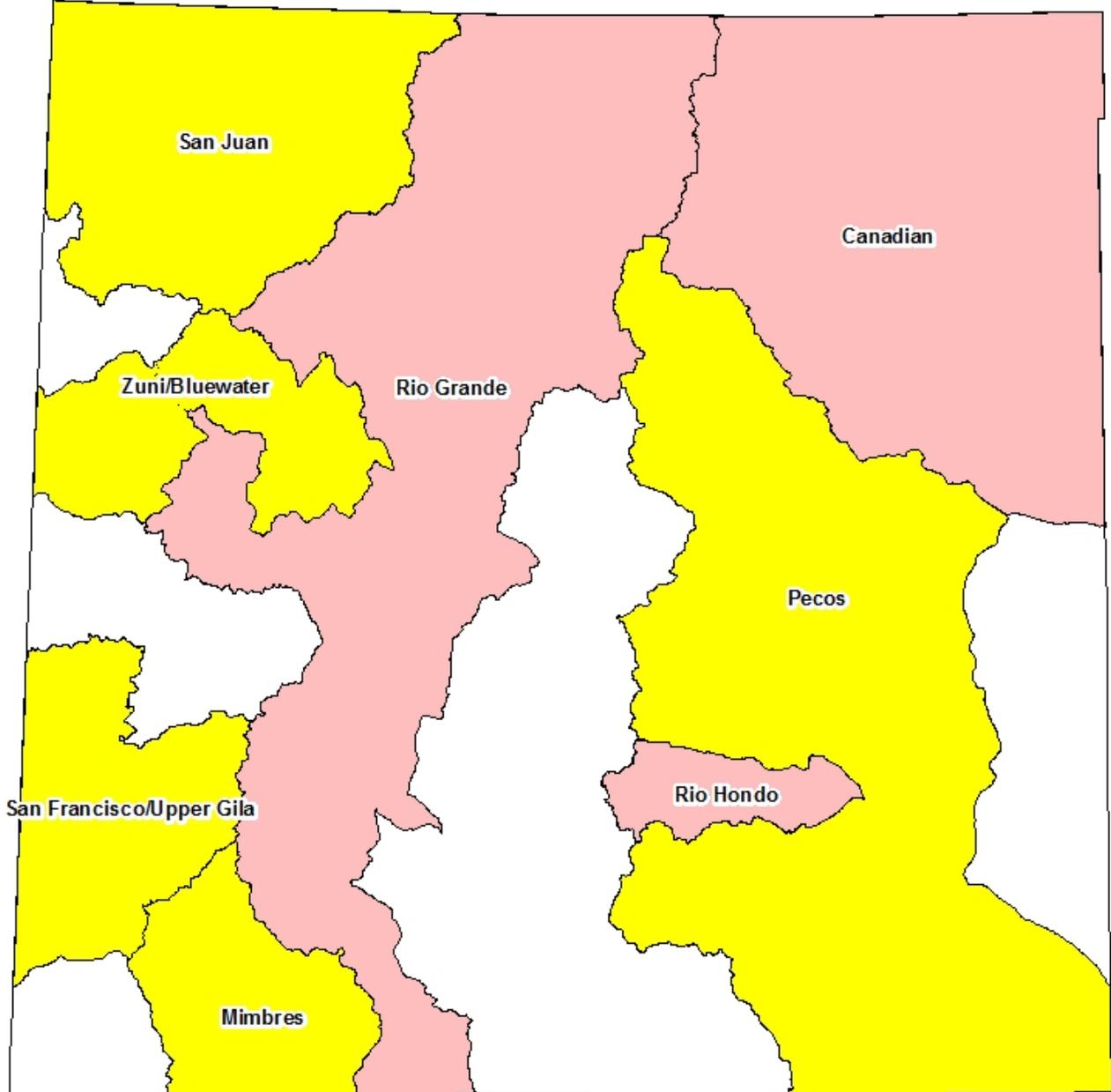
Statewide Reservoir Storage



New Mexico Percent of Median Snowpack as of January 1, 2017



New Mexico Surface Water Supply Index as of January 1, 2017



Legend

Surface Water Supply Index	
Yellow	-1.5 - 1.5
Green	1.6 - 3.0
Blue	3.1 - 4.0
White	No Data
Red	-4.0 - -3.1
Pink	-3.0 - -1.6

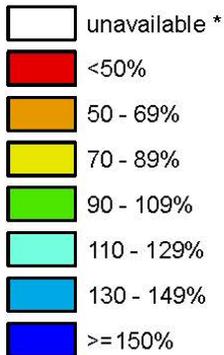


New Mexico

SNOTEL Current Snow Water Equivalent (SWE) % of Normal

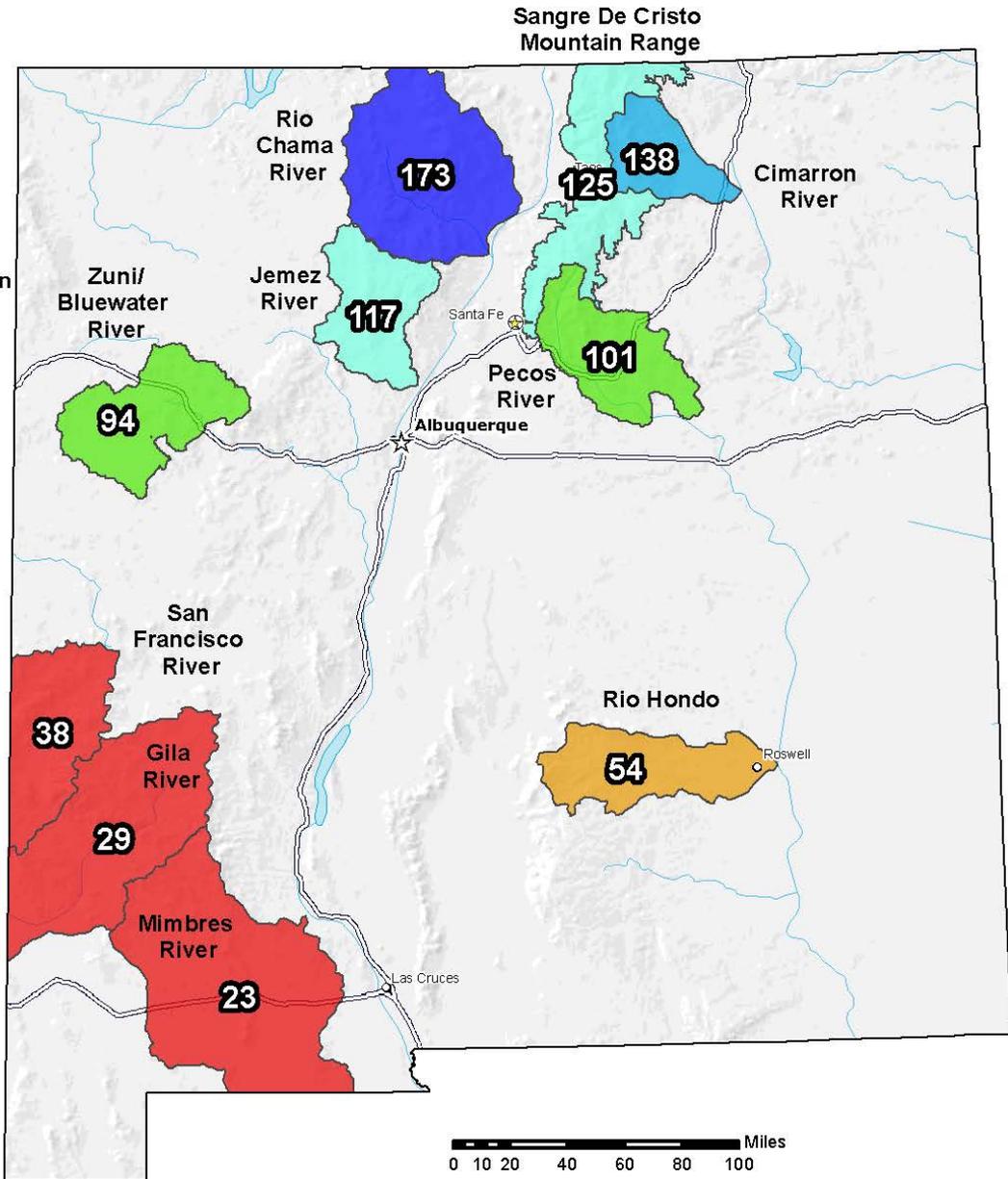
Jan 09, 2017

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).

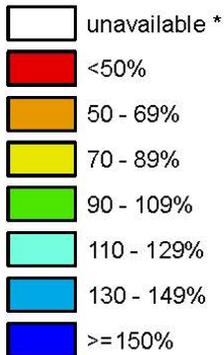
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

New Mexico

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

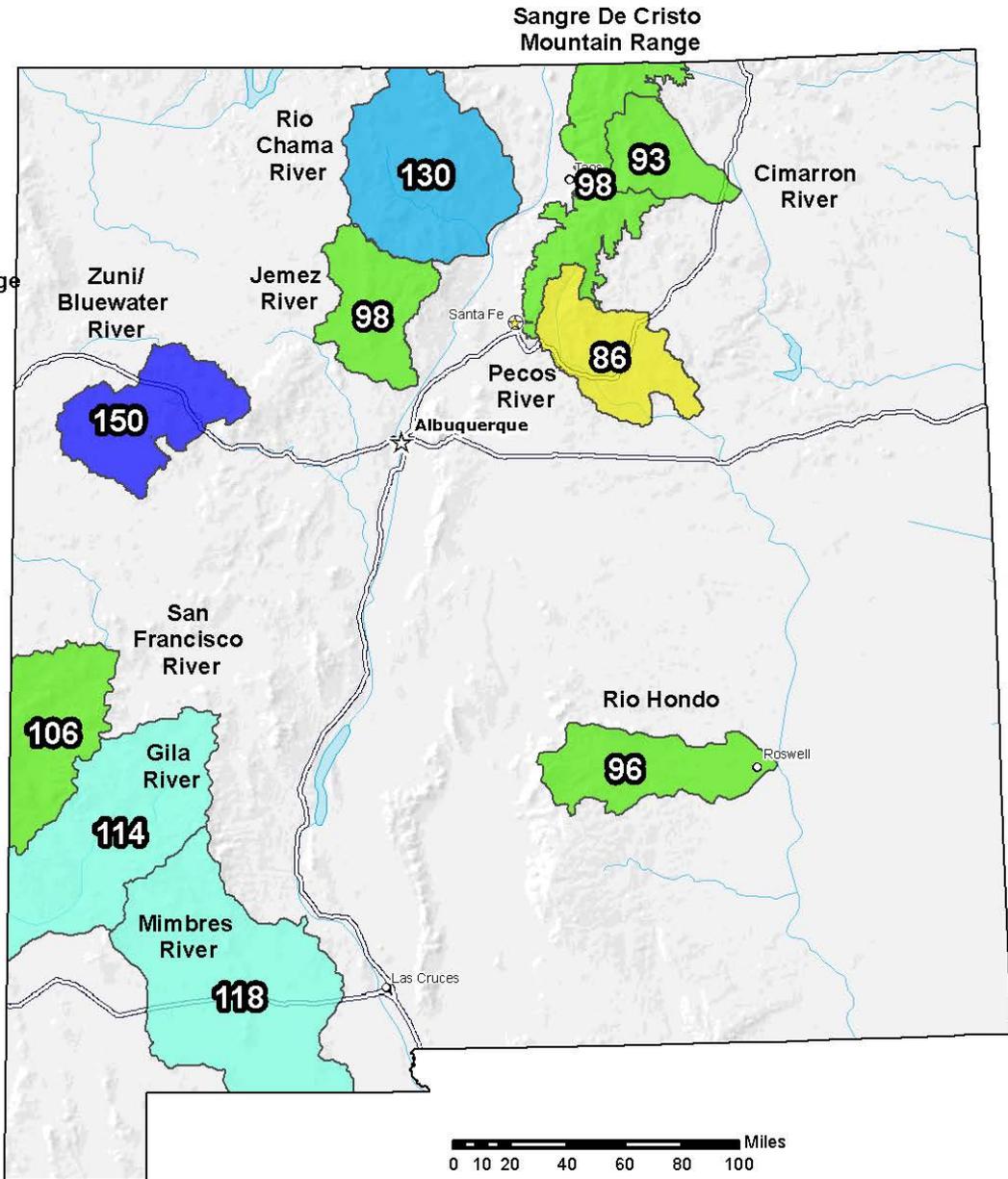
Jan 09, 2017

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

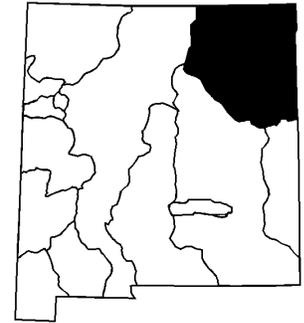
**Provisional Data
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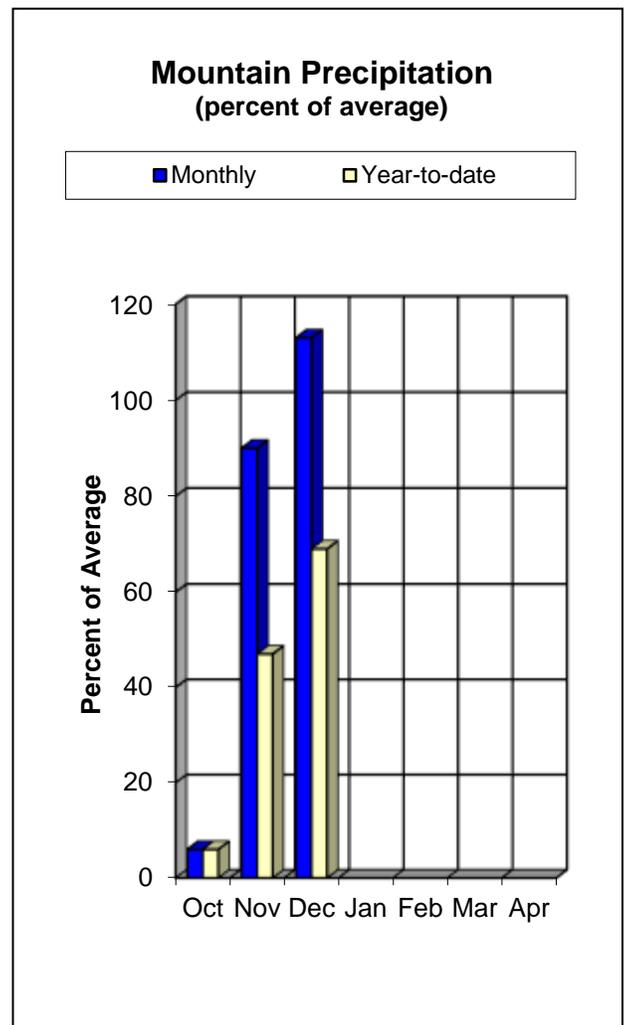
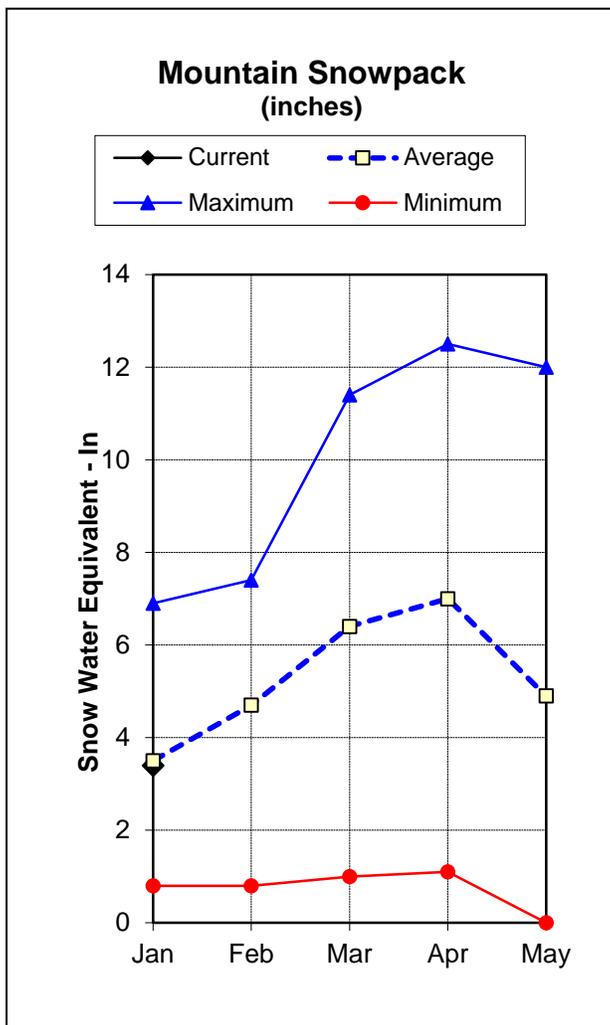
The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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, 2017



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 62 percent of average for the Vermejo River near Dawson, to 73 percent of average at the Conchas Reservoir inflow. The Cimarron River near Cimarron reflects the highest forecast at 80 percent of average. Water year-to-date precipitation in the Canadian River Basin is also well below the average at 69 percent, as compared to 138 percent last year at this time. Monthly precipitation for December in the basin was 113 percent of the average. Snowpack in the basin is 97 percent of median. This is however a decrease of 37 percent from last January. Reservoirs are currently holding 101,100 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 30 percent of capacity which reflects 75 percent of the average capacity.



Canadian River Basin Streamflow Forecasts - January 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	1.37	3.1	4.8	62%	7.1	11.6	7.8
Eagle Nest Reservoir Inflow	MAR-JUN	3.8	6.6	9	80%	12	17.4	11.2
Cimarron R nr Cimarron ²	MAR-JUN	0.5	6	12.6	80%	19.2	29	15.8
Ponil Ck nr Cimarron	MAR-JUN	1.7	3.4	5.1	71%	7.2	11.4	7.2
Rayado Ck nr Cimarron	MAR-JUN	1.1	2.7	4.4	63%	6.7	11.3	7
Conchas Reservoir Inflow ³	MAR-JUN	2.5	10.9	22	73%	39	77	30

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

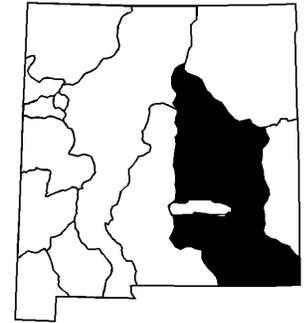
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

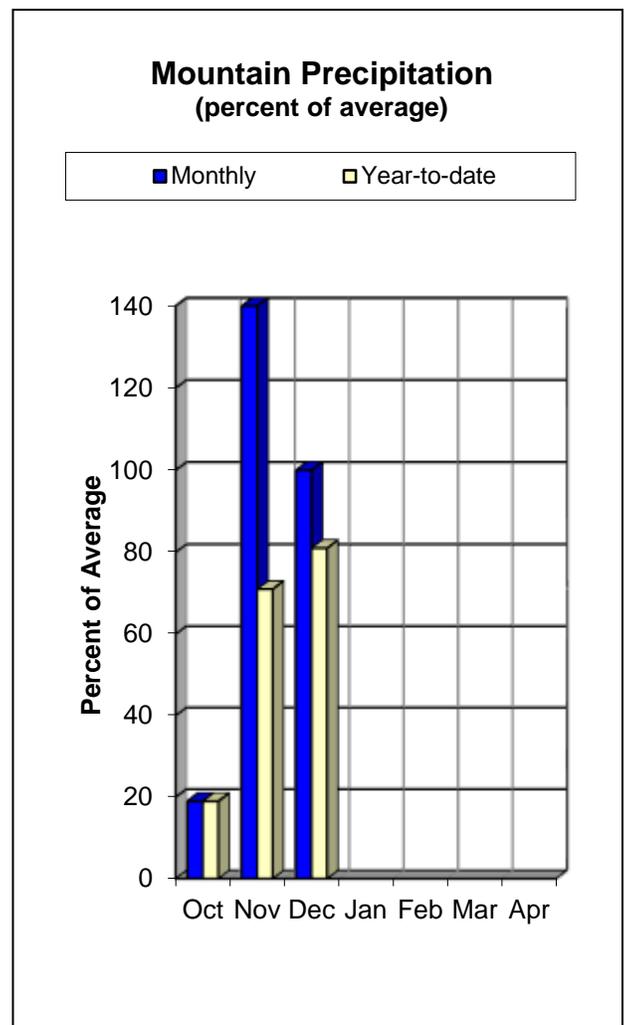
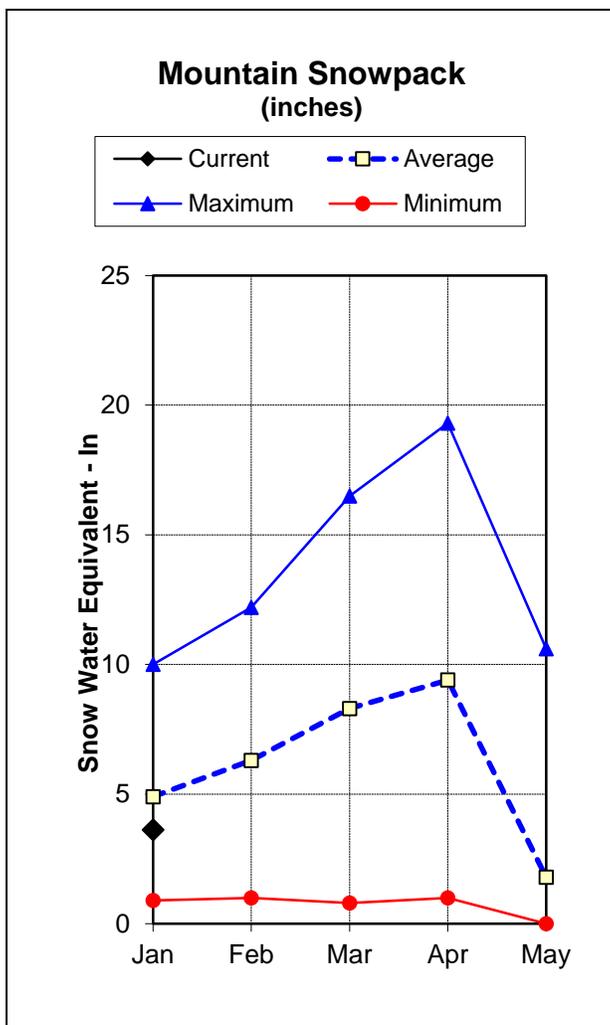
Reservoir Storage End of December, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Conchas Lake	71.3	137.1	197.9	254.2
Eagle Nest Lake nr Eagle Nest, NM	29.8	29.7	53.0	79.0
Basin-wide Total	101.1	166.8	250.9	333.2
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis January 1, 2017	# of Sites	% Median	Last Year % Median
CANADIAN RIVER BASIN	4	97%	134%

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



Streamflow forecasts for the Pecos River Basin for the March to July timeframe are below average. They range from 79 percent of average for the Pecos River near Pecos to 71 percent of average for Gallinas Creek near Montezuma. The Pecos River above Santa Rosa Lake is 75 percent of the average. December received 100 percent of the average precipitation which puts the Pecos at 81 percent of average for the water year. This is 78 percent below last year's high average of 159 percent. Snowpack levels in the Pecos River Basin are at 74 percent of median. Last year at this time the basin received 159 percent of the median snowpack. As of January 1st reservoir storage in the basin is at 120,100 acre-feet, which is just 6 percent of the average capacity.



Pecos River Basin Streamflow Forecasts - January 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	19.3	33	45	79%	58	81	57
Pecos R nr Anton Chico	MAR-JUL	7.7	26	45	71%	69	113	63
Gallinas Ck nr Montezuma	MAR-JUL	1.09	4	7	71%	10.8	18	9.8
Pecos R ab Santa Rosa Lk	MAR-JUL	8.2	25	42	75%	63	102	56

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

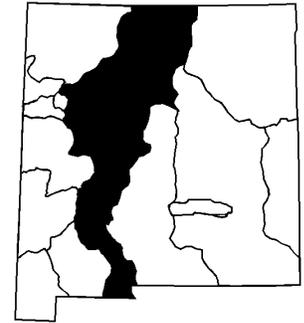
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3) Median value used in place of average

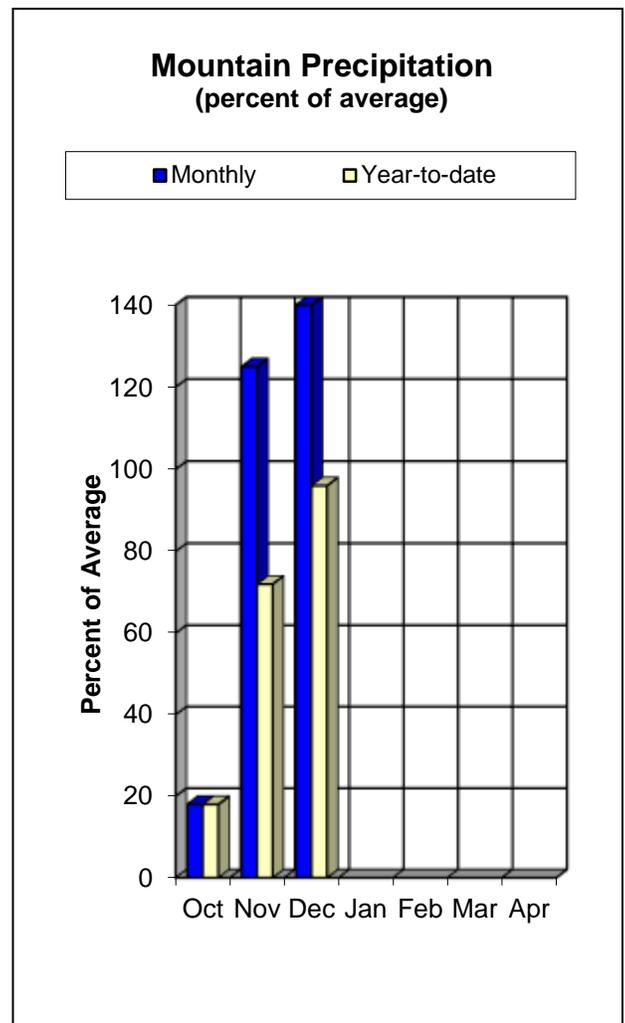
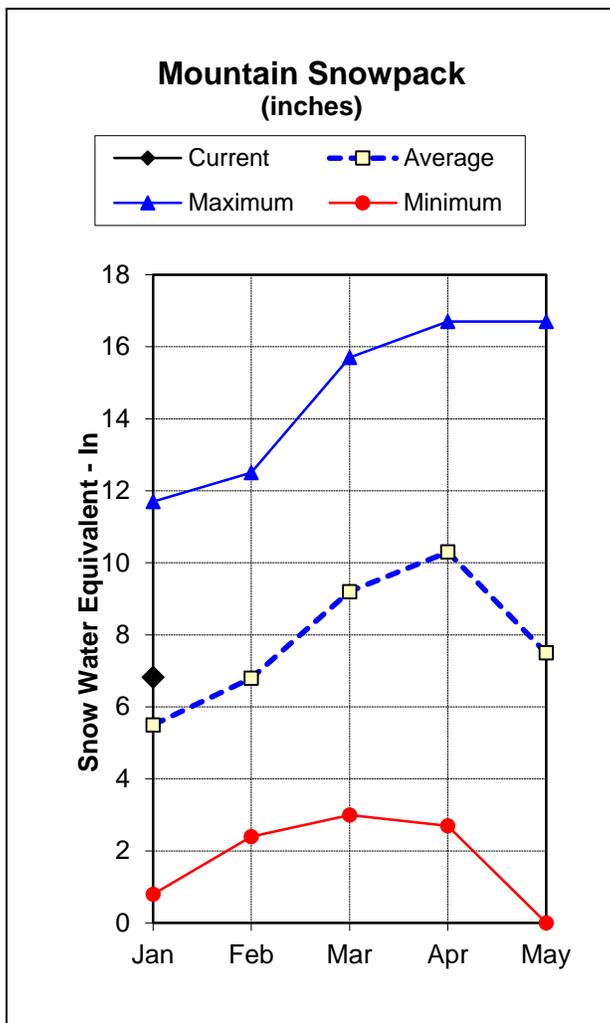
Reservoir Storage End of December, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Avalon	2.3	2.7	2.0	4.0
Brantley Lake nr Carlsbad	34.8	43.6	17.1	1008.2
Santa Rosa Reservoir	56.3	97.0	54.4	438.3
Lake Sumner	26.7	43.6	26.7	102.0
Basin-wide Total	120.1	186.9	100.2	1552.5
# of reservoirs	4	4	4	4

Watershed Snowpack Analysis January 1, 2017	# of Sites	% Median	Last Year % Median
PECOS RIVER BASIN	3	74%	159%

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



Streamflow forecasts for the Rio Grande Basin are near to above average at El Vado Reservoir. Costilla Creek near Costilla currently shows 100 percent of average for the March to July forecast. Additionally, for the March to July forecasts the Jemez River below Jemez Canyon Dam is at 97 percent of average, and the Rio Grande at San Marcial is at 99 percent of average. Year-to-date precipitation is at 96 percent of average which is 34 percent below last year's total. December did however receive 140 percent of the average precipitation which is just 2 percent less than last year at this time. Snowpack in the basin looks promising at 124 percent of median. This is just 10 percent below last year's median. Snowpack in southern Colorado affecting the Rio Grande is at 109 percent of average which is a decrease of 17 percent from last year. Current reservoir storage in the basin is 511,100 acre-feet which is a decrease of 132,900 acre-feet from last year. This is just 26 percent of the average. Currently the basin is at 41 percent of the average capacity which is only 11 percent of total reservoir capacity.



Rio Grande Basin Streamflow Forecasts - January 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 ²	APR-SEP	295	395	470	91%	550	685	515
Platoro Reservoir Inflow	APR-JUL	35	44	51	91%	59	70	56
	APR-SEP	39	49	57	92%	65	78	62
Conejos R nr Mogote ²	APR-SEP	121	157	184	95%	215	260	194
Costilla Reservoir Inflow	MAR-JUL	6.7	9.1	10.9	98%	13	16.3	11.1
Costilla Ck nr Costilla ²	MAR-JUL	14.9	21	26	100%	32	41	26
Red R bl Fish Hatchery nr Questa	MAR-JUL	21	28	33	97%	39	48	34
Rio Hondo nr Valdez	MAR-JUL	9.9	14.7	18.5	101%	23	30	18.4
Rio Pueblo de Taos nr Taos	MAR-JUL	7.7	12.8	17	100%	22	30	17
Rio Lucero nr Arroyo Seco	MAR-JUL	5.9	8.6	10.8	99%	13.2	17.2	10.9
Rio Pueblo de Taos bl Los Cordovas	MAR-JUL	14.1	25	34	94%	45	63	36
Embudo Ck at Dixon	MAR-JUL	17.3	31	42	88%	55	78	48
El Vado Reservoir Inflow ²	MAR-JUL	146	220	275	122%	340	445	225
	APR-JUL	130	197	250	122%	310	410	205
Santa Cruz R at Cundiyo	MAR-JUL	7.7	12.3	16	87%	20	27	18.3
Nambe Falls Reservoir Inflow	MAR-JUL	2.5	4.1	5.3	82%	6.7	9.1	6.5
Tesuque Ck ab diversions	MAR-JUL	0.36	0.75	1.1	82%	1.52	2.3	1.34
Rio Grande at Otowi Bridge ²	MAR-JUL	420	590	720	100%	865	1100	720
Santa Fe R nr Santa Fe ²	MAR-JUL	1.31	2.5	3.6	84%	4.8	7	4.3
Jemez R nr Jemez	MAR-JUL	21	31	40	95%	50	66	42
Jemez R bl Jemez Canyon Dam	MAR-JUL	14.1	24	33	97%	43	60	34
Rio Grande at San Marcial ²	MAR-JUL	172	370	505	99%	640	840	510

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

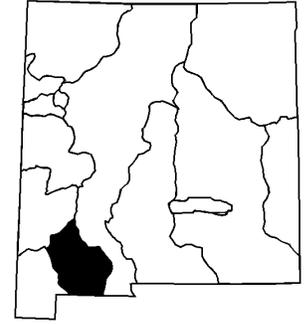
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3) Median value used in place of average

Reservoir Storage End of December, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Abiquiu Reservoir	118.5	130.5	152.7	1192.8
Bluewater Lake	1.6	2.0	5.7	38.5
Caballo Reservoir	21.0	27.7	68.0	332.0
Cochiti Lake	44.4	46.8	63.1	491.0
Costilla Reservoir	5.3	9.4	6.0	16.0
El Vado Reservoir	51.9	36.5	102.8	190.3
Elephant Butte Reservoir	204.0	322.5	1267.0	2195.0
Heron Reservoir	64.4	68.6	308.0	400.0
Basin-wide Total	511.1	644.0	1973.3	4855.6
# of reservoirs	8	8	8	8

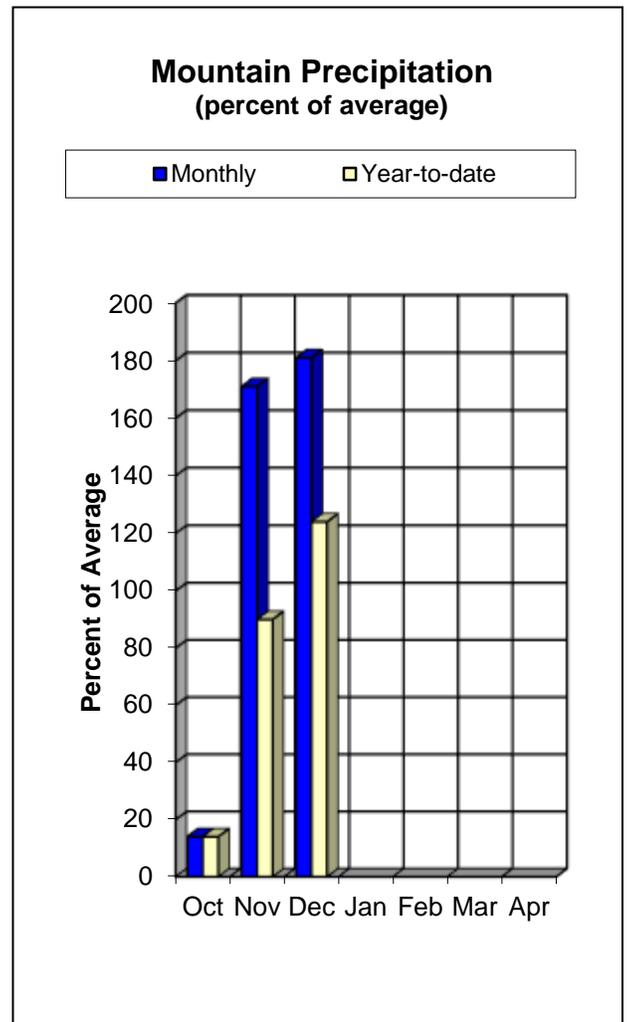
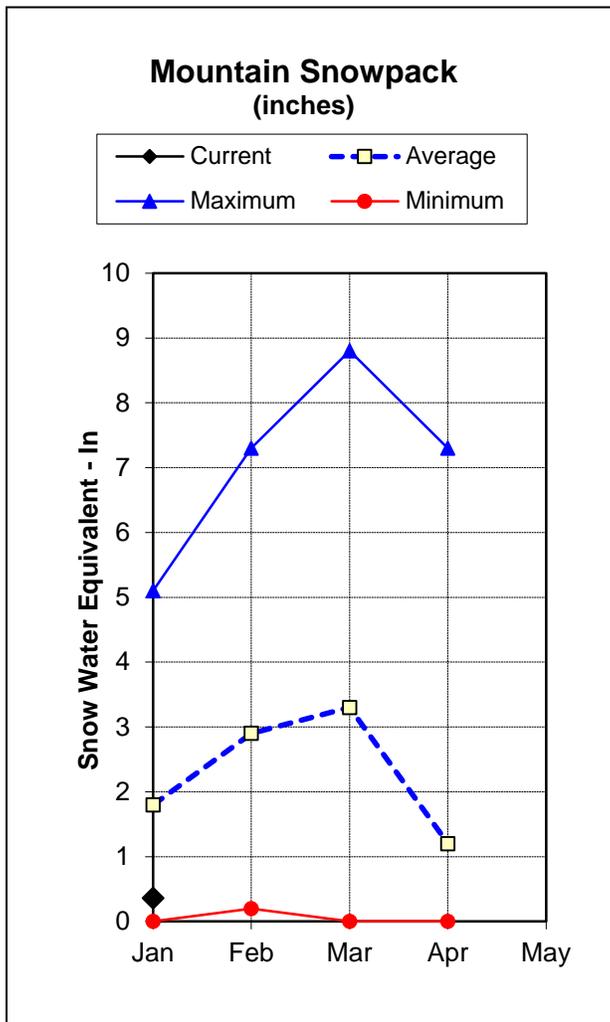
Watershed Snowpack Analysis January 1, 2017	# of Sites	% Median	Last Year % Median
RIO GRANDE BASIN	12	124%	134%

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



The January through May forecast for the Mimbres River at Mimbres is currently at 92 percent of the average. Water year-to-date precipitation is at 124 percent of average as compared to 141 percent last year. The month of December saw much needed precipitation receiving 181 percent of the average rainfall. However, despite receiving so much rainfall it has just been too warm to produce snow. The snowpack in the Mimbres basin is only at 20 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, 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 ³	JAN-MAY	0.88	1.3	2.2	92%	3.5	6.1	2.4

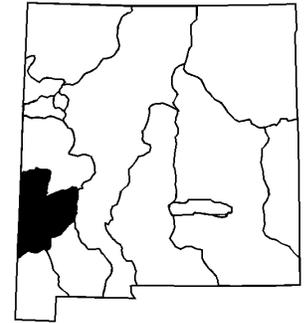
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

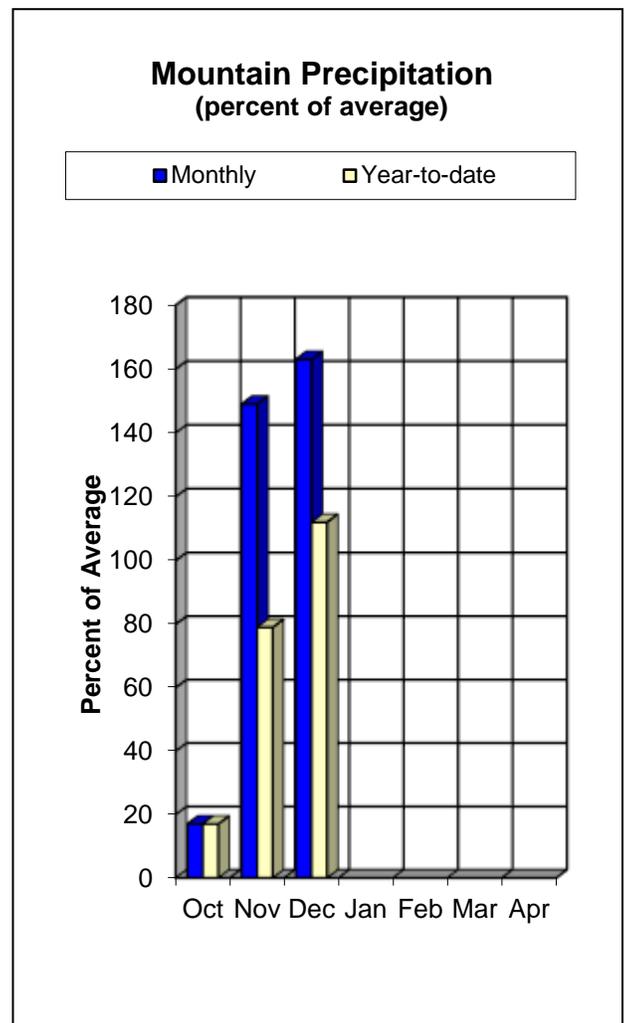
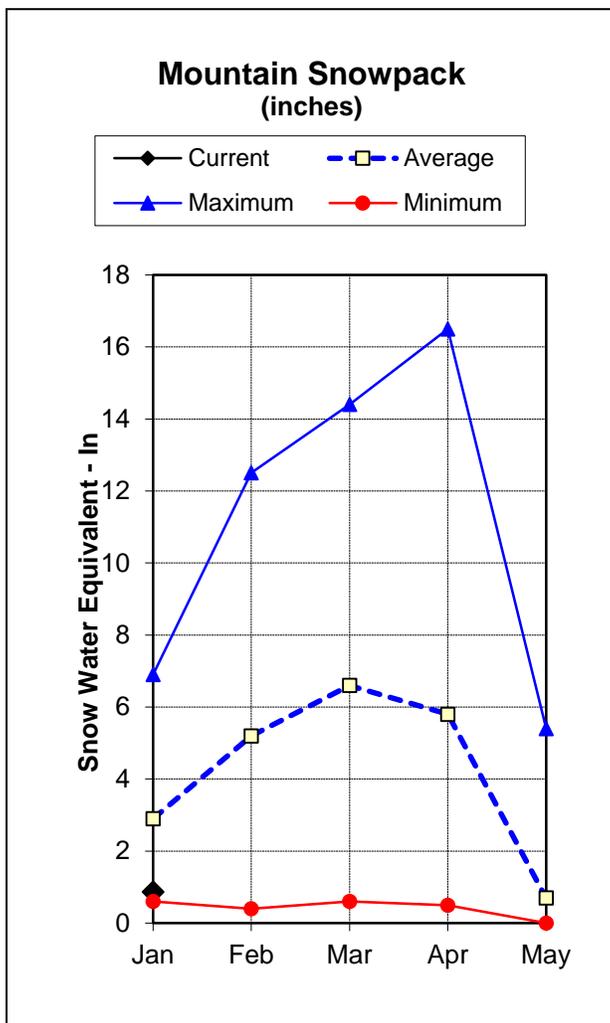
Watershed Snowpack Analysis January 1, 2017	# of Sites	% Median	Last Year % Median
MIMBRES RIVER BASIN	2	20%	189%

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



Streamflow forecasts for the San Francisco/Upper Gila River Basin have started off below average this water year. For the January through May forecast the Gila River at Gila is at 70 percent of the average. For the same time period the San Francisco River at Clifton is forecasting 80 percent of the average. The year-to-date precipitation is currently 112 percent of the average. December alone received 163 percent of the average precipitation. Snowpack in the basin is well below the median at 30 percent. This is 116 percent below last January's snowpack!

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, 2017

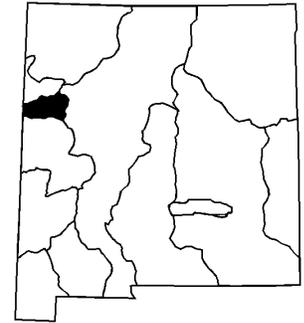
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

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 ³	JAN-MAY	15.3	28	39	70%	53	79	56
Gila R bl Blue Ck nr Virden ³	JAN-MAY	11.9	32	52	68%	77	121	76
San Francisco R at Glenwood ³	JAN-MAY	3.6	8.9	14.5	69%	22	37	21
San Francisco R at Clifton ³	JAN-MAY	10.7	30	49	80%	73	116	61

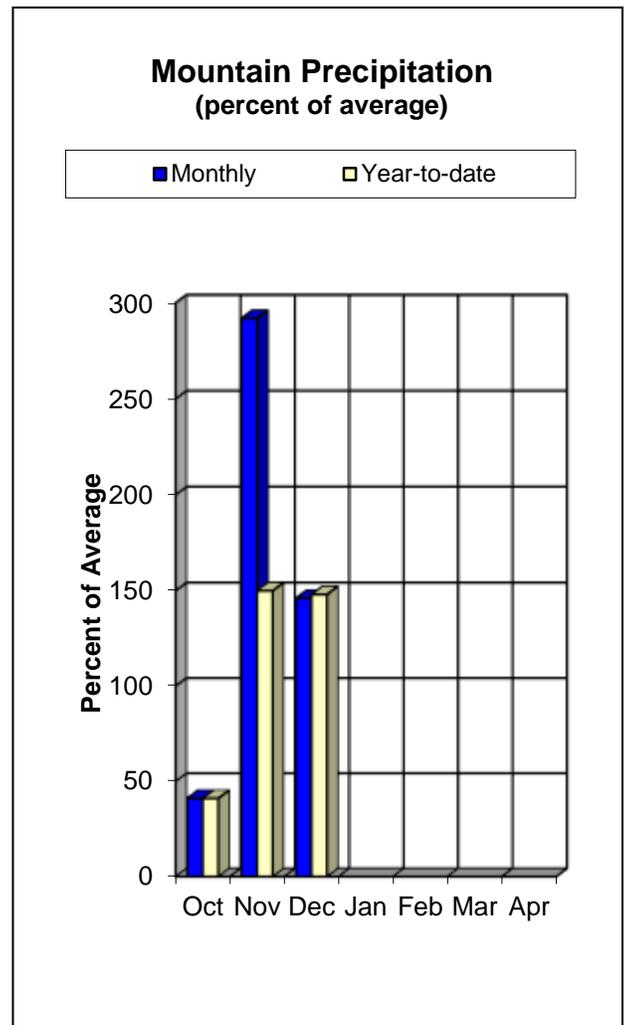
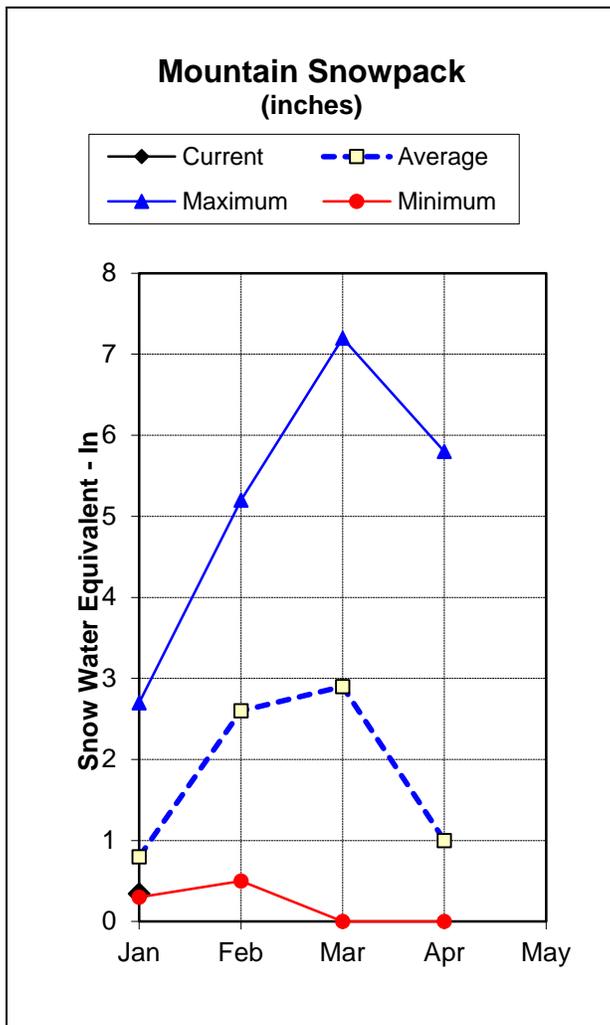
- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Watershed Snowpack Analysis January 1, 2017	# of Sites	% Median	Last Year % Median
SAN FRANCISCO-UPPER GILA RIVER BASIN	7	30%	146%

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



Both the Zuni/Bluewater Basins are off to a promising start for the water year. The Rio Nutria near Ramah is currently forecast at 162 percent of average. Additionally, the Zuni River above Black Rock is 157 percent of the average. The Zuni-Bluewater Basins received 148 percent of the average precipitation for the water year-to-date, and 148 percent of the average for December. Due to such warm weather during early winter the snowpack is only at 43 percent of the median, as compared to 166 percent last year at this time. Bluewater Lake is somewhat lower than last January at 1,600 acre feet versus 2,000. This is 28 percent of the average, and only 15 percent of the average capacity.



Zuni-Bluewater Basins Streamflow Forecasts - January 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 ³	JAN-MAY	0.26	1.14	2.3	162%	4.1	8	1.42
Zuni R ab Black Rock Reservoir ³	JAN-MAY	0	0.16	0.74	157%	2	5.7	0.47

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

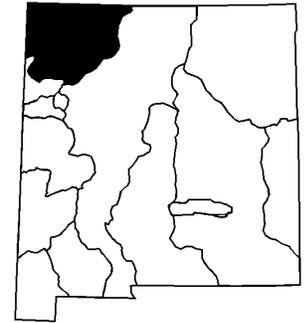
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

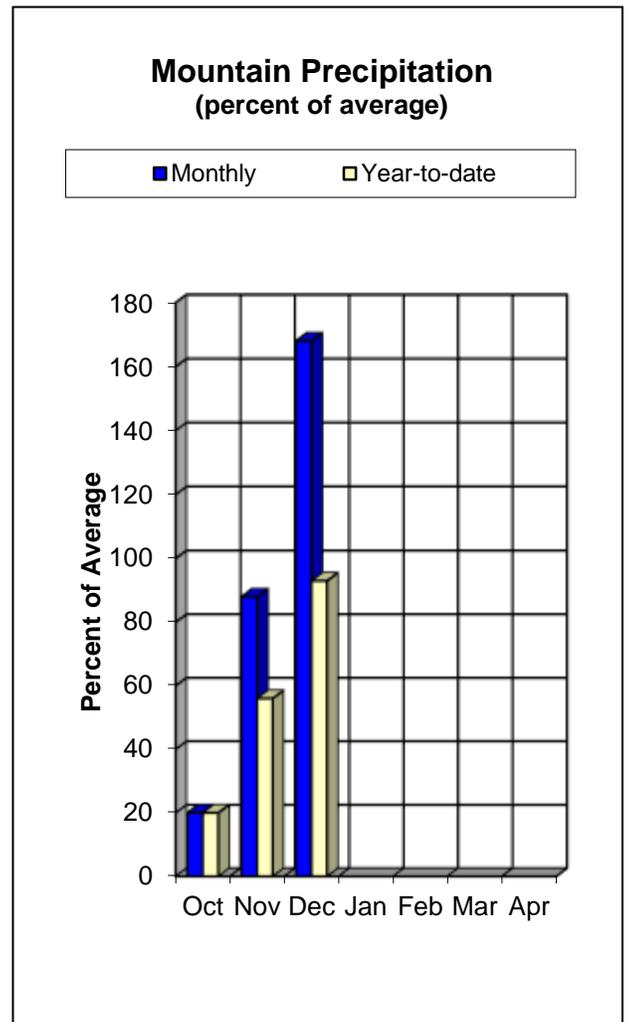
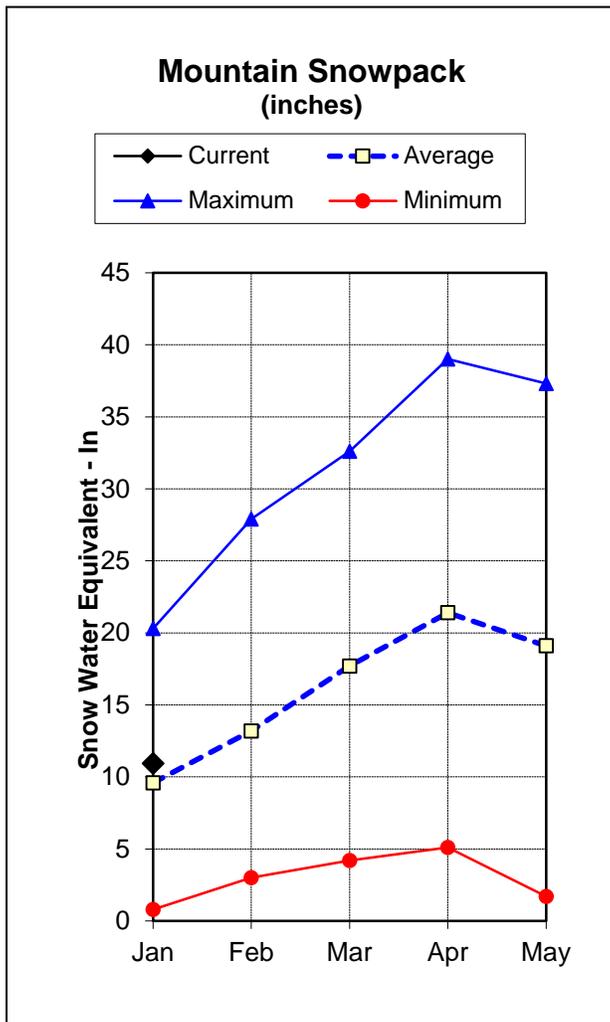
Reservoir Storage End of December, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bluewater Lake	1.6	2.0	5.7	38.5
Basin-wide Total	1.6	2.0	5.7	38.5
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2017	# of Sites	% Median	Last Year % Median
ZUNI-BLUEWATER BASINS	4	43%	166%

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



The April to July forecasts are average to slightly above ranging from 103 percent of average for the Navajo River at Oso Diversion to 94 percent at the Navajo Reservoir inflow. Additionally, the Animas River at Durango is 92 percent of the average. Year-to-date precipitation is at 93 percent of the average, which is a 33 percent decrease from last year at this time. December did however make up for the lack of precipitation earlier in the water year by receiving 168 percent of the average rainfall. Snowpack in the basin is currently at 114 percent of median. This is a slight decrease of 8 percent from last year. Navajo reservoir storage contains 1,296,800 acre-feet or 97 percent of the average. This is down from last year's 1,397,000 acre-feet 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, 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 ²	APR-JUL	35	47	55	102%	65	80	54
Navajo R at Oso Diversion ²	APR-JUL	41	56	67	103%	79	98	65
Navajo Reservoir Inflow ²	APR-JUL	415	570	690	94%	820	1030	735
Animas R at Durango	APR-JUL	235	315	380	92%	450	560	415
La Plata R at Hesperus	APR-JUL	11.8	17.9	23	100%	28	37	23

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

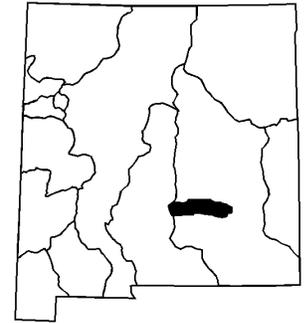
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

Reservoir Storage End of December, 2016	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Navajo Reservoir	1296.8	1397.0	1341.0	1696.0
Basin-wide Total	1296.8	1397.0	1341.0	1696.0
# of reservoirs	1	1	1	1

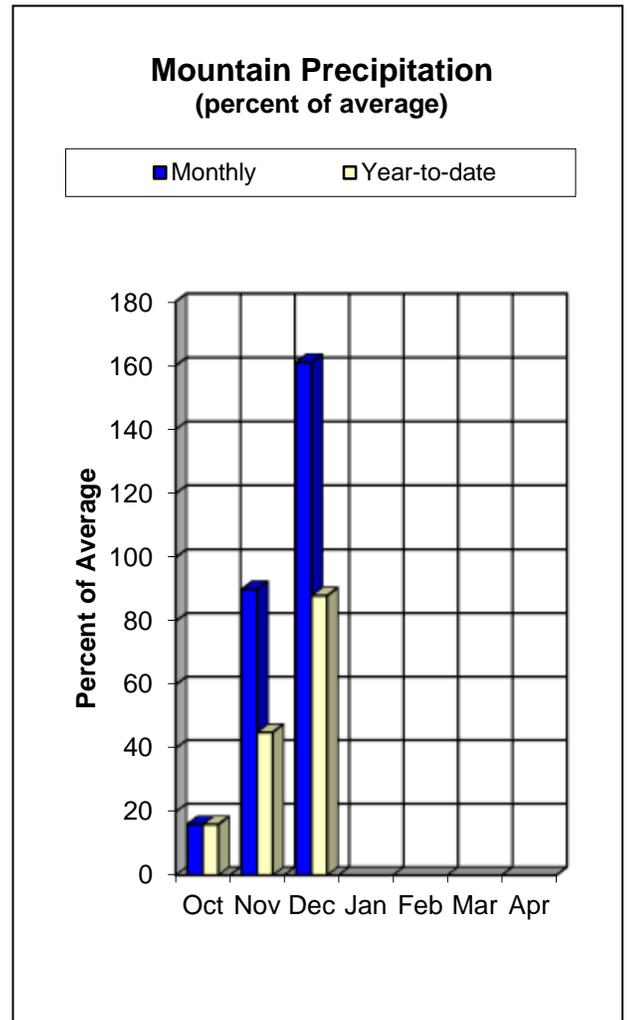
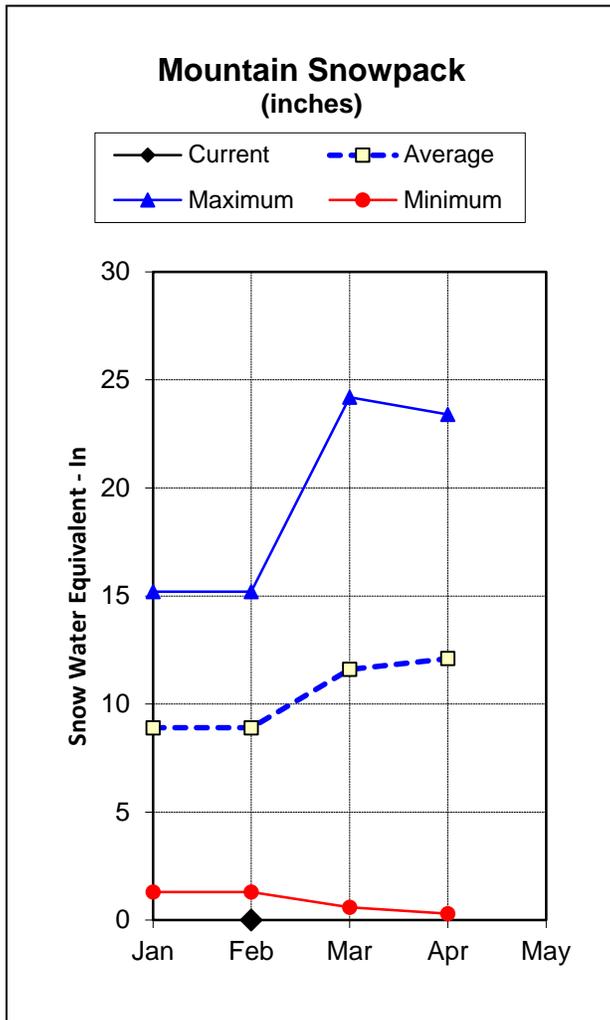
Watershed Snowpack Analysis January 1, 2017	# of Sites	% Median	Last Year % Median
SAN JUAN RIVER BASIN	11	114%	122%

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



The streamflow forecast for the March to June time period for the Rio Hondo Basin is 60 percent of average for the Rio Ruidoso at Hollywood. This is in contrast to last January's forecast of 134 percent due to early season snows. Year-to-date precipitation is at 88 percent of average, and the Rio Hondo received 161 percent of the average rainfall in December. Currently snowpack is at 53 percent of the median, a big decrease from the 181 percent we saw at 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 - January 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	1.6	2.1	4	60%	6.6	11.6	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, 2017	# of Sites	% Median	Last Year % Median
RIO HONDO BASIN	1	53%	181%

NEW MEXICO STATEWIDE	Network	Elevation (ft)	Depth (in)	SWE (in)	Median (in)	% Median	Last Year SWE (in)	Last Year % Median
Alamitos	SC	9320						
Aztec #2	SC	9880						
Bateman	SNOTEL	9300		7.6	4.3	177%	5.0	116%
Boon	SC	8140	4	0.4	1.4	29%	2.8	200%
Bowl Canyon	SC	8980	16	3.9	3.5	111%	4.9	140%
Chamita	SNOTEL	8400	28	6.9	4.0	173%	5.2	130%
Dan Valley	SC	7640	0	0.0	1.2	0%	2.0	167%
Elk Cabin	SNOTEL	8210	3	1.4	1.8	78%	2.1	117%
Emory Pass #2	SC	7800			0.6			
Frisco Divide	SNOTEL	8000	0	0.0	1.5	0%	1.3	87%
Gallegos Peak	SNOTEL	9800	18	4.3	4.1	105%	6.7	163%
Hematite Park	SC	9500						
Hidden Valley	SC	8480	9	2.7			3.7	
Hopewell	SNOTEL	10000	41	10.0	7.1	141%	8.1	114%
Hummingbird - Aerial And Snow Course	SC	10550			4.4			
Lookout Mountain	SNOTEL	8500	0	0.0	1.4	0%	2.2	157%
Mcgaffey	SC	8120	2	0.2	1.0	20%	1.8	180%
Mcknight Cabin	SNOTEL	9240	1	0.5	1.6	31%	3.4	213%
Mcknight Cabin Aerial Marker	SC	9300						
Mcknight Cabin Snow Course	SC	9300						
Missionary Spring	SC	7940	3	0.8	1.1	73%	1.8	164%
Navajo Whiskey Ck	SNOTEL	9050	14	4.6			5.8	
North Costilla	SNOTEL	10600		2.8	2.6	108%	3.2	123%
Ojo Redondo	SC	8200						
Palo	SNOTEL	9350	11	3.4			3.1	
Palo	SC	9300						
PanchueLa	SC	8400						
Post Office Flats	SC	8400						
Quemazon	SNOTEL	9500	14	3.8	4.6	83%	5.2	113%
Red River Pass #2	SNOTEL	9850	21	4.8	3.6	133%	4.1	114%
Rice Park	SNOTEL	8460	8	2.0	2.5	80%	3.5	140%
Rice Park	SC	8460						
Rio En Medio	SC	10300						
Rio Santa Barbara	SNOTEL	10664	21	5.2			10.5	
San Antonio Sink	SNOTEL	9100	25	6.5			5.5	
San Antonio Sink	SC	9200						
Santa Fe	SNOTEL	11445	20	5.2	6.5	80%	11.7	180%
Senorita Divide #2	SNOTEL	8600	16	4.1	2.8	146%	4.2	150%
Shuree	SNOTEL	10100	19	4.1			4.0	
Shuree	SC	10097						
Sierra Blanca	SNOTEL	10280	6	1.7	3.2	53%	5.8	181%
Signal Peak	SNOTEL	8360	1	0.2	1.9	11%	3.2	168%
Silver Creek Divide	SNOTEL	9000	6	1.6	3.5	46%	4.4	126%
State Line	SC	8000	2	0.6	0.6	100%	1.0	167%
Taos Canyon	SC	9100						
Taos Powderhorn	SNOTEL	11057	35	9.8			10.6	
Taos Powderhorn	SC	11250	49	12.3	12.0	103%	13.9	116%
Tolby	SNOTEL	10180	19	4.1	3.8	108%	5.0	132%
Tolby	SC	10180						
Tres Ritos	SNOTEL	8600	4	1.6			2.4	
Tres Ritos	SC	8600						
Vacas Locas	SNOTEL	9306	24	6.4	4.8	133%	6.7	140%
Wesner Springs	SNOTEL	11120	17	4.6	6.8	68%	10.2	150%
Whiskey Creek	SC	9050	16	5.0	3.5	143%	5.0	143%
Whitewater - Aerial And Snow Course	SC	10750			9.5			
Basin Index						98%		139%
# of sites						28		28

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