

New Mexico Basin Outlook Report January 1, 2020



Statewide snowpack is at 130 percent of the median! December storms bring fresh snow to the Taos Powderhorn SNOTEL site!
Photo courtesy of Logan Peterson, NRCS

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

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How forecasts are made

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

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

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

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Summary

Early December brought with it a tandem of storms that delivered cold temperatures and heavy snow to the mountainous regions of New Mexico. These same storms also brought above-normal precipitation to the mid and lower elevation regions helping to alleviate the impacts of a sub-par monsoon season. Another round of storms impacted the Southwest in mid-December leaving many areas with precipitation accumulations exceeding 300 percent of the normal over a 14-day period. This has helped to alleviate soil moisture deficits resulting from a dry summer and below average monsoon season. After several wet weeks in New Mexico the weather dried out but left water year-to-date basin average precipitation and snow water equivalent (SWE) values at or above normal for this time of year. However, drought continues to persist in areas where there are 180-day precipitation deficits resulting from long-term moderate (D1) to severe (D2) drought. December's weather ended with an area of upper-low pressure which made its way across the Four Corners region delivering heavy rain and high-elevation snow. It is however still very early in the water year with a long-range winter weather outlook of neutral conditions across the state. Water users and managers should continue to monitor conditions to see how the forecasts develop as we progress into snow accumulation season.

Snowpack

The January 1st snowpack looks very promising. All basins are currently above the median, however one must take into account that in some areas this could be the result of early season snows. Additionally, values could be skewed for example by marginal increases in snowpack where historically there has been little to no snow in a basin during this time of year. This will ultimately inflate the percentages until we are further into the water-year and they smooth out. Ranging from a high of 146 percent of median in the Chuska Mountains to a low of 114 percent in the Mimbres Basin we are off to a good start. Statewide snowpack average is 130 percent of median as compared to 88 percent at this time last year. With months of the snow accumulation period still ahead of us and the weather forecast mildly cooperating it looks promising that conditions over the next several months could significantly improve.

NEW MEXICO STATEWIDE SNOWPACK	Percent of Median	Last Year Percent of Median
CANADIAN RIVER BASIN	138	102
PECOS RIVER BASIN	134	96
RIO GRANDE BASIN	131	81
MIMBRES RIVER BASIN	114	66
SAN FRANCISCO-UPPER GILA RIVER BASIN	127	82
ZUNI-BLUEWATER BASINS	144	108
SAN JUAN RIVER BASIN	125	63
CHUSKA MOUNTAINS	146	97
RIO HONDO BASIN	128	103
Statewide Snowpack Total	130	88
# of sites	23	23

Precipitation

Water year precipitation starting October 1 through January is currently at 111 percent of average. After a lack luster monsoon season left the Four Corners region with long-term soil moisture deficits the beginning of the 2020 water year delivered abundant precipitation helping provide some relief. All basins outside of the Rio Hondo saw above average precipitation values throughout the month of December. The San Juan Basin received 148 percent of the average precipitation in December with the Rio Grande Basin just behind at 135 percent. The lowest amount of precipitation fell in the Rio Hondo Basin at 74 percent. Water users and managers should continue to monitor the evolution of the forecast to help determine their water supply needs as the water-year progresses.

Reservoirs

Reservoir storage across New Mexico currently looks promising as we move into the snow accumulation season. Elephant Butte is currently at an impressive 557,300 acre-feet as compared to last year's 114,900. Navajo Reservoir is holding 1,325,700 acre-feet in comparison to 878,700 last year. Bluewater Lake at 6,600 acre-feet is even double what it had last year at this time! Statewide reservoir storage is currently at 66 percent of the average as compared to 41 percent last year at this time. Total reservoir storage is 2,398,500 acre-feet as compared to 1,488,500 acre-feet last year. This equates to 43 percent of the average capacity and 28 percent of the actual capacity. Water-users should continue to monitor weather conditions to evaluate their water needs as the winter progresses.

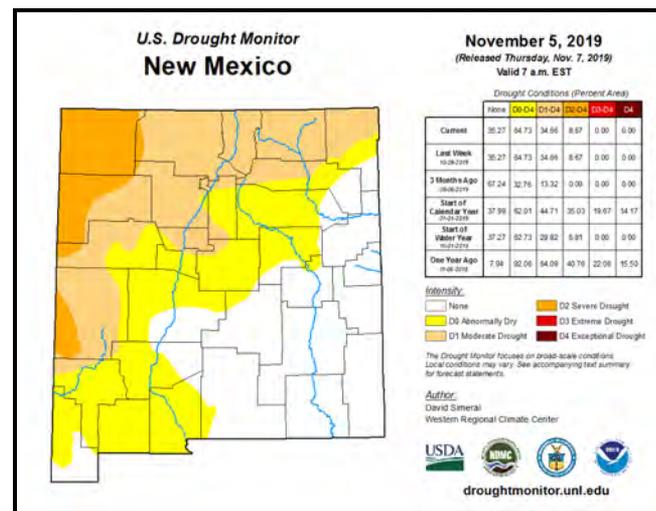
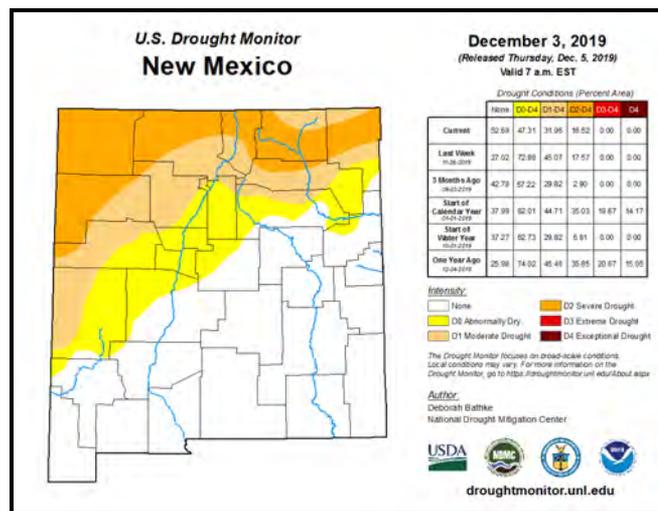
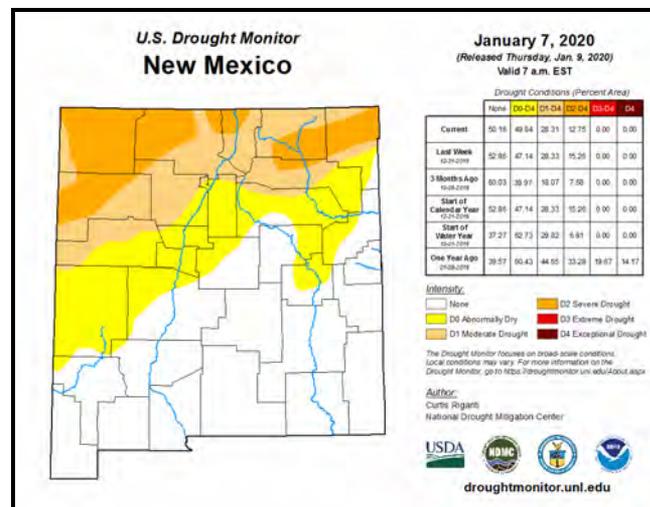
NEW MEXICO STATEWIDE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Abiquiu Reservoir	81.9	78.1	152.7	1192.8	7%	7%	13%	54%	51%
Bluewater Lake	6.6	3.1	5.7	38.5	17%	8%	15%	116%	55%
Brantley Lake nr Carlsbad	42.1	29.8	17.1	1008.2	4%	3%	2%	246%	174%
Caballo Reservoir	33.9	26.7	68.0	332.0	10%	8%	20%	50%	39%
Cochiti Lake	47.8	43.6	63.1	491.0	10%	9%	13%	76%	69%
Conchas Lake	74.0	129.6	197.9	254.2	29%	51%	78%	37%	65%
Costilla Reservoir		2.8	6.0	16.0		17%	38%		46%
Eagle Nest Lake nr Eagle Nest, NM	44.8	33.3	53.0	79.0	57%	42%	67%	85%	63%
El Vado Reservoir	30.6	12.5	102.8	190.3	16%	7%	54%	30%	12%
Elephant Butte Reservoir	557.3	114.9	1267.0	2195.0	25%	5%	58%	44%	9%
Heron Reservoir	106.2	56.3	308.0	400.0	27%	14%	77%	34%	18%
Lake Avalon	0.0	0.0	2.0	4.0	0%	0%	50%	0%	0%
Lake Sumner	21.5	28.6	26.7	102.0	21%	28%	26%	81%	107%
Navajo Reservoir	1325.7	878.7	1341.0	1696.0	78%	52%	79%	99%	66%
Santa Rosa Reservoir	26.0	53.4	54.4	438.3	6%	12%	12%	48%	98%
Basin-wide Total	2398.5	1488.5	3659.4	8421.3	28%	18%	43%	66%	41%
# of reservoirs	14	14	14	14	14	14	14	14	14

* Costilla Reservoir gauge data is currently unavailable

Streamflow

Forecasts across the state look deceptively promising for this early in the water year. Current streamflow conditions are somewhat misleading due to percentages ranging from just below average to slightly above. This is largely due to a very dry summer and fall across most of the state which has created some soil moisture and groundwater deficits that may limit snowmelt runoff generation next spring and summer. This can be overcome by an above average snowpack which is important to keep in mind as the water-year progresses. Water users and managers should continue to watch the forecasts as water supply conditions evolve across the state.

New Mexico Drought Monitor, real versus perceived conditions?

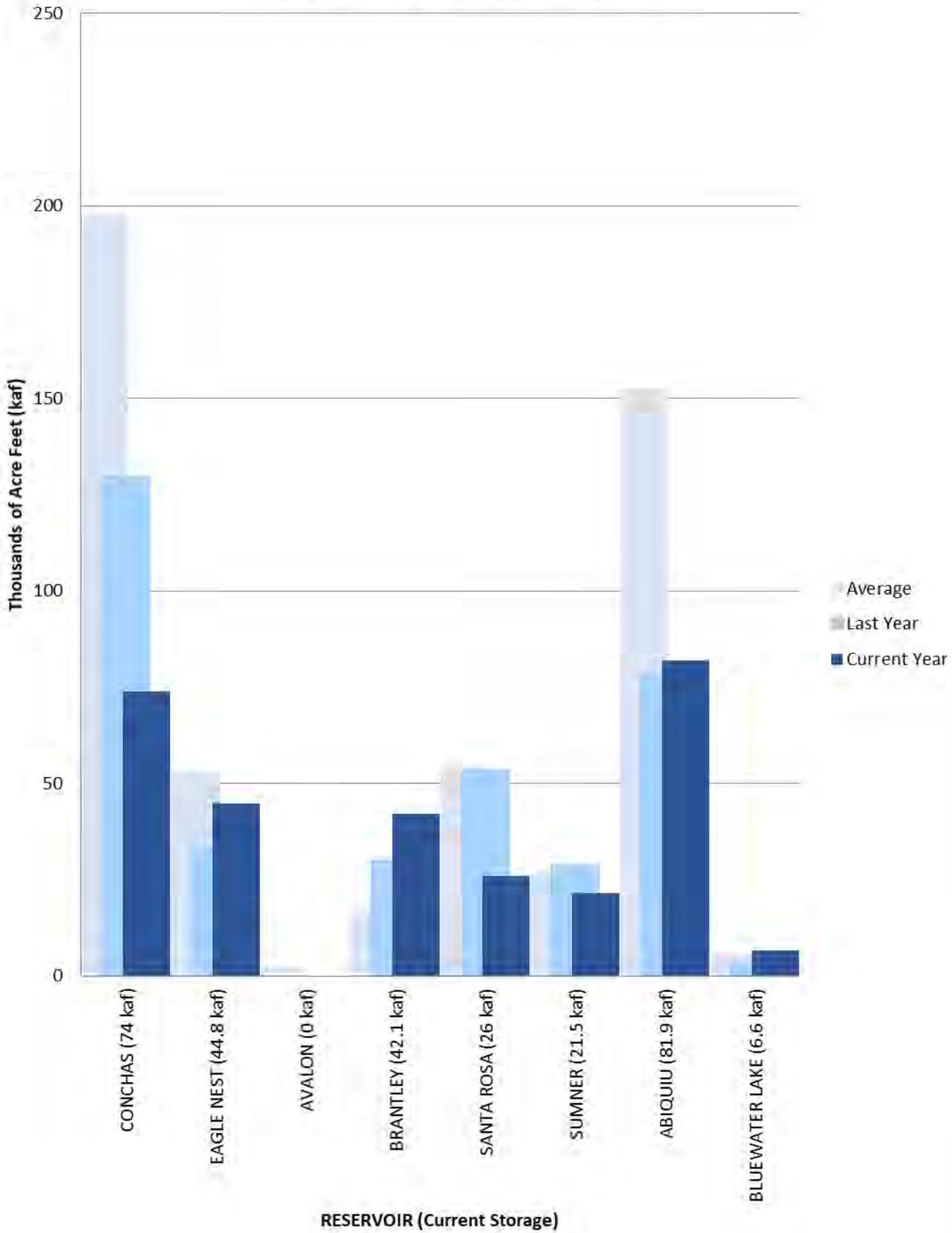


Every week, The U.S. Drought Monitor is produced in partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. This useful tool uses multiple inputs, including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

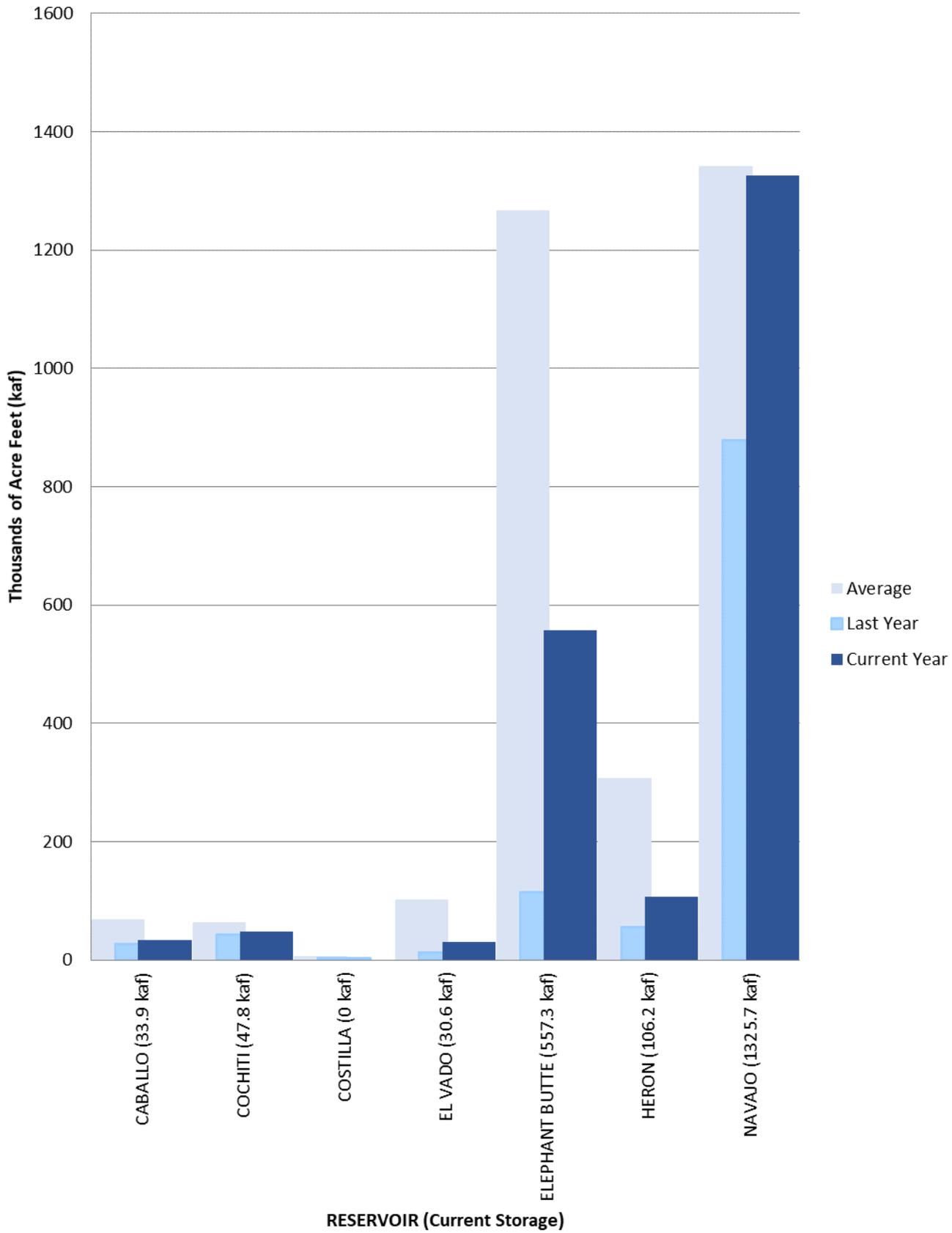
After the wet winter and spring of 2019, widespread drought has once again re-entered the Land of Enchantment. After the peak of the spring runoff in June 2019, drought remained primarily along the Continental Divide where winter and early spring precipitation was not as significant as it was over most of the state. As the 2019 Monsoon Season started, convection was well below normal over much of New Mexico, leading to a gradual re-introduction of drought during the late summer months with much of the Four Corners and Northern Mountains falling into the D1 categories. A late start to the snow season further deteriorated over the Four Corners and other areas along the northern third of the state into D2 on the USDM. December snowfall totals were plentiful, however, and this has led to some improvements in the higher elevations where snow-based hydrology is the dominate precipitation regime. Lowland elevations in the northern third of New Mexico remain in D2 drought as these regions are more influenced by monsoonal moisture and have received less precipitation recently than the higher elevations.

Concerns remain for most of eastern New Mexico as springtime precipitation and the monsoon were well below normal with the exception of several large events with periods of flash drought between these events. Further deterioration is possible if average or above spring time precipitation does not develop over the region

Statewide Reservoir Storage



Statewide Reservoir Storage

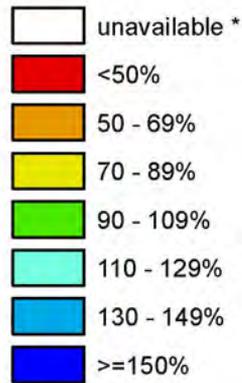


New Mexico

SNOTEL Current Snow Water Equivalent (SWE) % of Normal

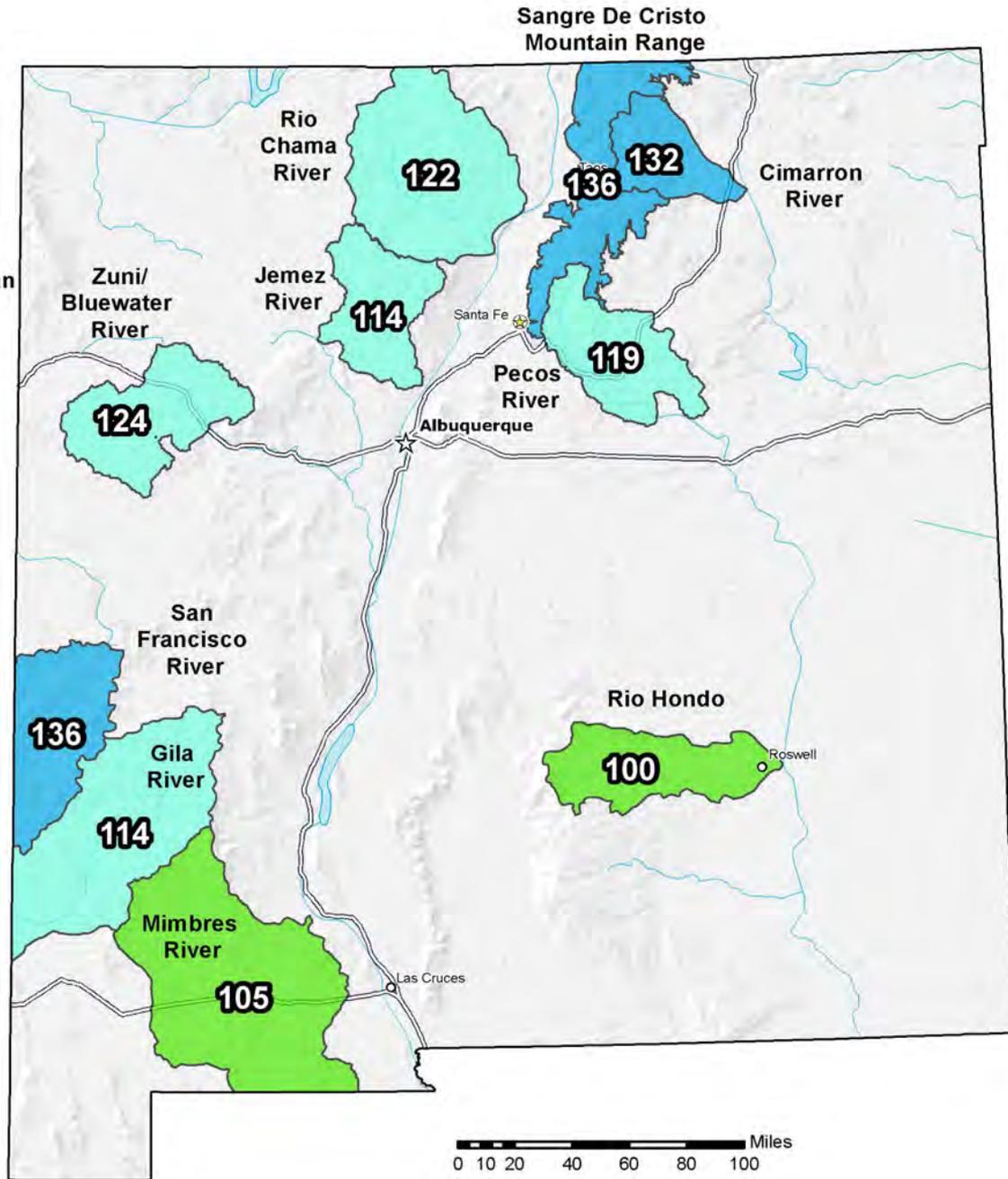
Jan 06, 2020

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).

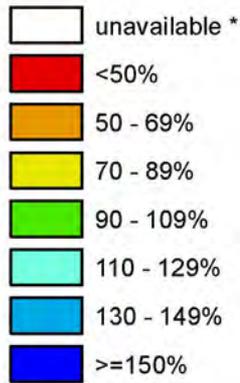
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

New Mexico

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

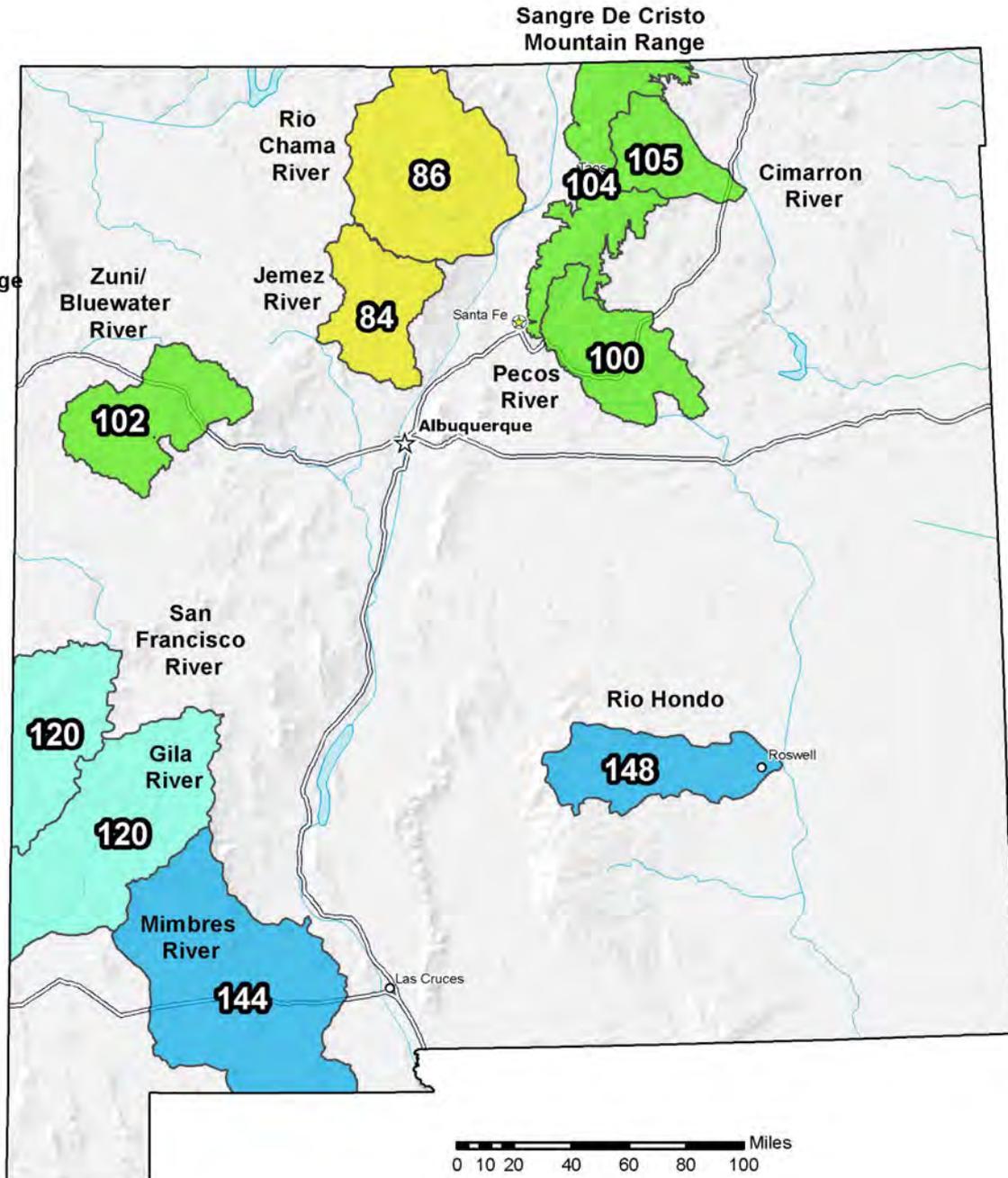
Jan 06, 2020

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

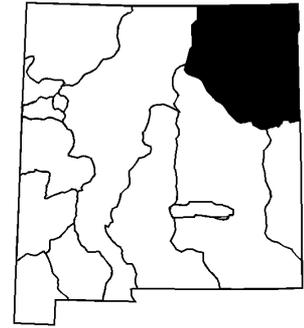
**Provisional Data
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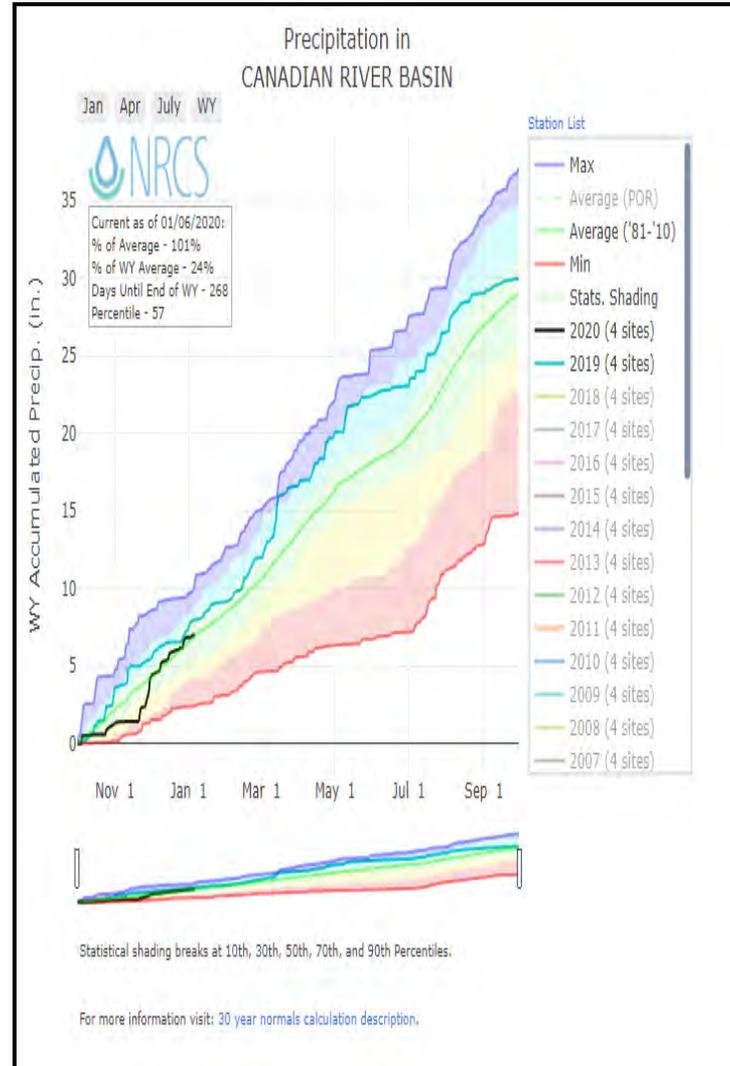
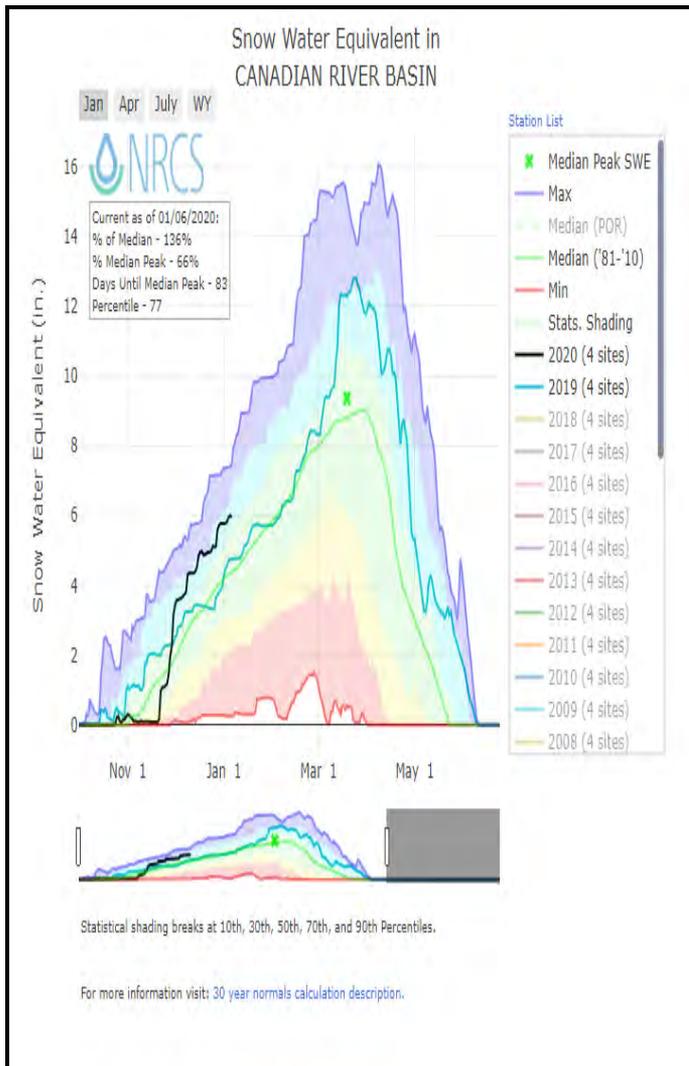
The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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, 2020



The month of December received 112 percent of the average amount of precipitation for the month. This puts the water year-to-date average amount of precipitation at 105 percent as compared to 116 percent last year at this time. Snowpack in the basin is at 138 percent of the median. This is a slight increase from 102 percent at this time last year. Forecasts are all close to or slightly above the average with the highest being 104 percent of average at Ponil Creek near Cimarron. Reservoirs are currently holding 118,800 acre-feet of storage, which is a decrease of 44,100 acre-feet from last year at this time. This equates to 75 percent of the average capacity and 47 percent of the average stored water for the basin at the end of December.



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**Canadian River Basin
Streamflow Forecasts - January 1, 2020**

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	2.6	5.1	7.5	96%	10.5	16.3	7.8
Eagle Nest Reservoir Inflow	MAR-JUN	5.2	8.5	11.4	102%	14.9	21	11.2
Cimarron R nr Cimarron ²	MAR-JUN	0.12	9.8	16.4	104%	23	33	15.8
Ponil Ck nr Cimarron	MAR-JUN	2.8	5.1	7.2	100%	9.9	14.8	7.2
Rayado Ck nr Cimarron	MAR-JUN	2.2	4.6	6.9	99%	9.9	15.8	7
Conchas Reservoir Inflow ³	MAR-JUN	3.7	14	27	90%	46	88	30

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

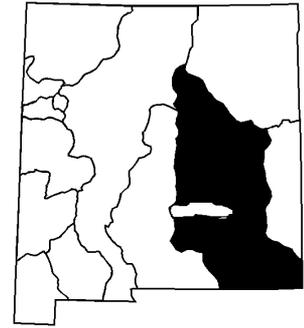
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

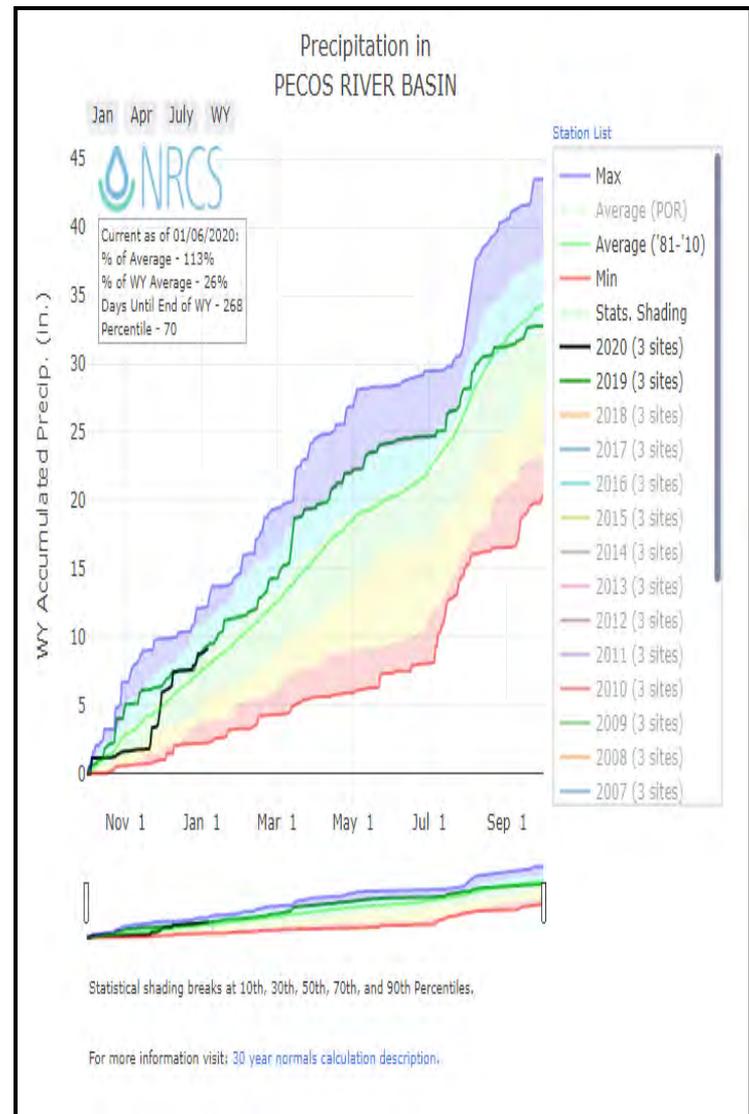
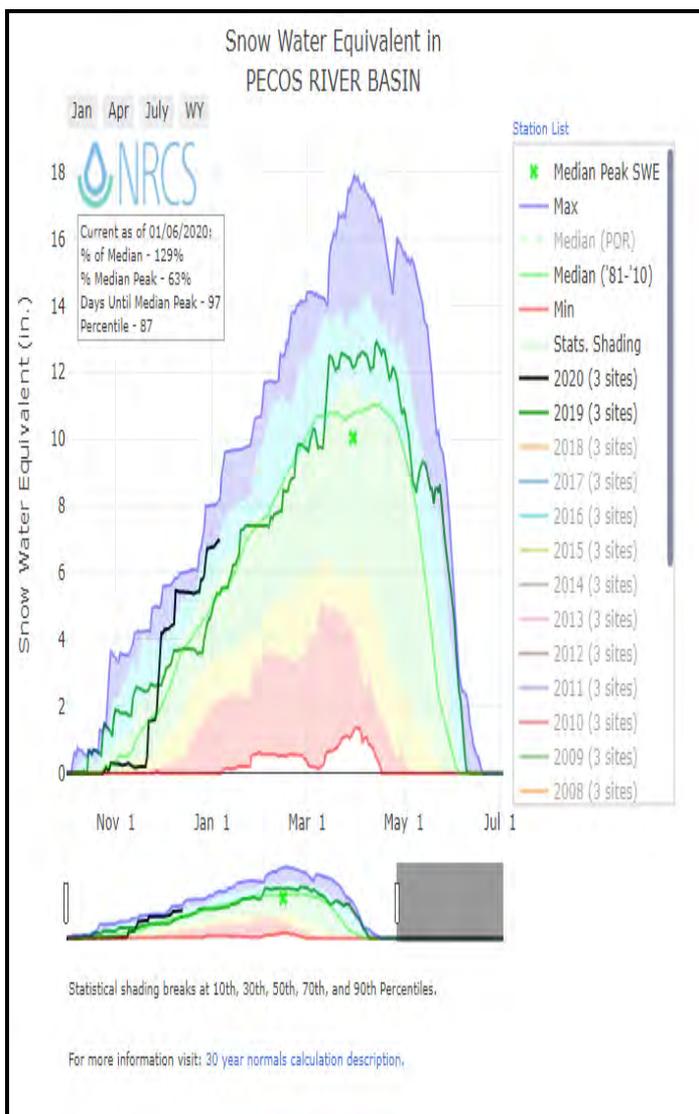
Reservoir Storage End of December, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Conchas Lake	74.0	129.6	197.9	254.4
Eagle Nest Lake nr Eagle Nest, NM	44.8	33.3	53.0	79.0
Basin-wide Total	118.8	162.9	250.9	333.4
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis January 1, 2020	# of Sites	% Median	Last Year % Median
CANADIAN RIVER BASIN	4	138%	102%

Pecos River Basin Water Supply Outlook Report as of January 1, 2020



December received 110 percent of the average precipitation for the month, putting the basin at 116 percent of average for the water year-to-date. This is the same as last year's average at this time. Snowpack in the Pecos River Basin is at 134 percent of the median! Last year at this time the basin had 96 percent of the median snowpack. Forecasts in the Pecos Basin are all slightly above average with the highest near the headwaters at 107 percent. As of January 1st, reservoir storage in the basin is at 89,600 acre-feet. This is just 6 percent of the average capacity and 89 percent of the average stored water. Last year at this time reservoir storage was 112 percent of the average.



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**Pecos River Basin
Streamflow Forecasts - January 1, 2020**

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

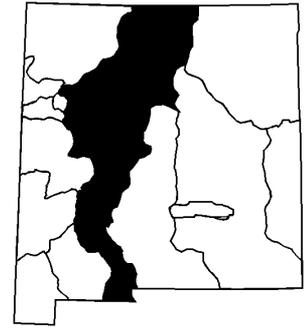
PECOS RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Pecos R nr Pecos	MAR-JUL	30	47	61	107%	76	102	57
Pecos R nr Anton Chico	MAR-JUL	16	40	63	100%	91	141	63
Gallinas Ck nr Montezuma	MAR-JUL	2.4	6.3	10	102%	14.5	23	9.8
Pecos R ab Santa Rosa Lk	MAR-JUL	16	38	58	104%	82	126	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

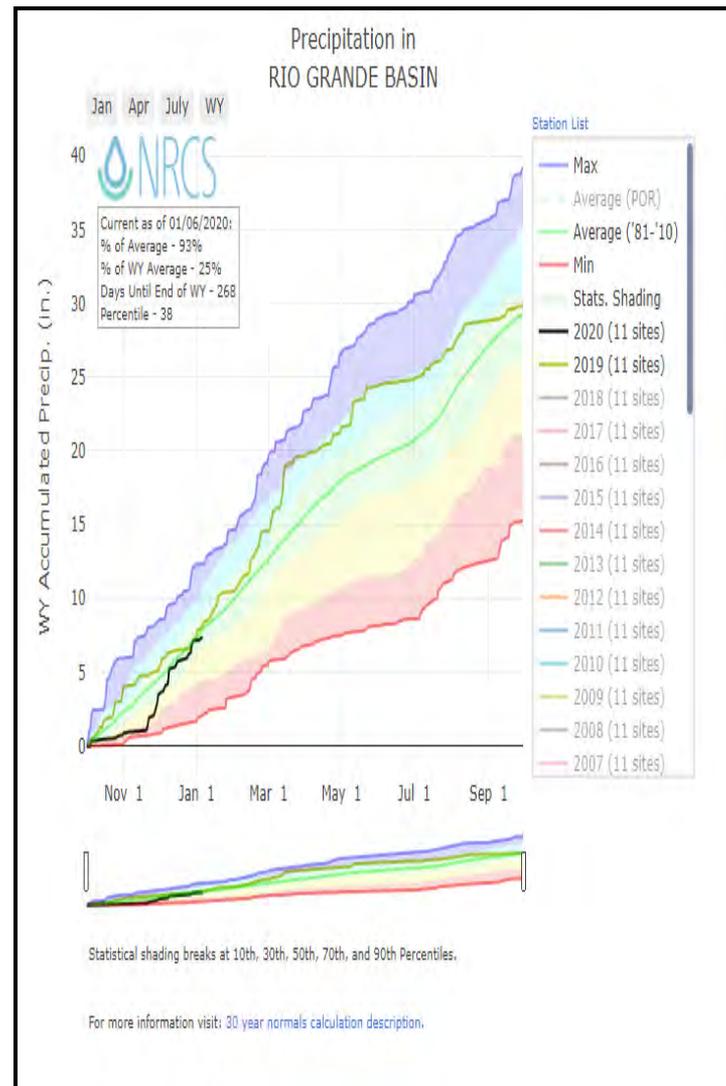
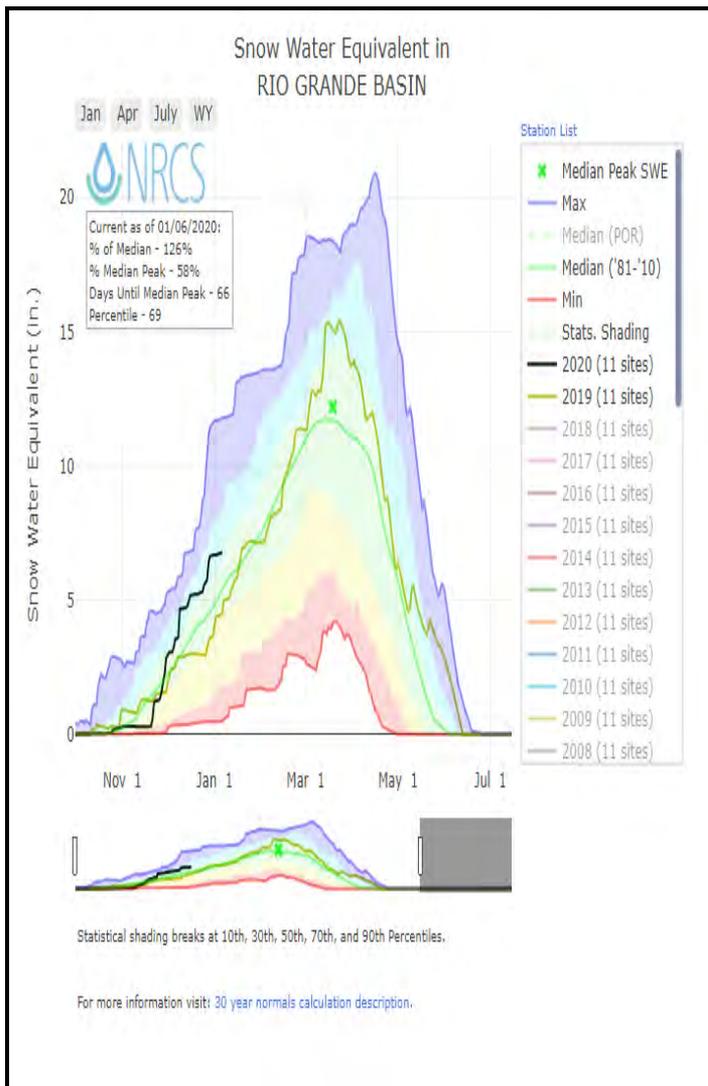
Reservoir Storage End of December, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Avalon	0.0	0.0	2.0	4.0
Brantley Lake nr Carlsbad	42.1	29.8	17.1	1008.2
Santa Rosa Reservoir	26.0	53.4	54.4	432.2
Lake Sumner	21.5	28.6	26.7	102.0
Basin-wide Total	89.6	111.8	100.2	1546.4
# of reservoirs	4	4	4	4

Watershed Snowpack Analysis January 1, 2020	# of Sites	% Median	Last Year % Median
PECOS RIVER BASIN	3	134%	96%

Rio Grande Basin Water Supply Outlook Report as of January 1, 2020



December was a slightly above average month for precipitation in the basin accumulating 135 percent of the average leaving the water year-to-date precipitation at 97 percent of the average. Snowpack in the basin is also above the median at 131 percent. This is 50 percent above last year's median! Snowpack in southern Colorado near the headwaters of the Rio Grande is 129 percent of the median as compared to 76 percent last year at this time. Forecasts for the Rio Grande Basin are off to a good start ranging from 76 percent on the Jemez to 112 percent of median at Costilla Creek. Current reservoir storage in the basin is well above last year's values. Current storage in the basin is 864,300 acre-feet as compared to 335,200 acre-feet from this time last year! This is 41 percent of the average capacity in the basin and 44 percent of the average stored water.



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**Rio Grande Basin
Streamflow Forecasts - January 1, 2020**

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

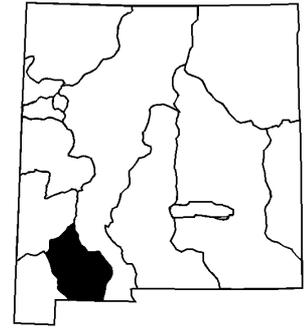
RIO GRANDE BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rio Grande nr Del Norte ²	APR-SEP	310	410	485	94%	570	700	515
Platoro Reservoir Inflow	APR-JUL	33	42	49	88%	56	68	56
	APR-SEP	37	47	54	87%	62	75	62
Conejos R nr Mogote ²	APR-SEP	110	144	170	88%	198	245	194
Costilla Reservoir Inflow	MAR-JUL	7.4	9.9	11.8	106%	14	17.4	11.1
Costilla Ck nr Costilla ²	MAR-JUL	17	24	29	112%	35	45	26
Red R bl Fish Hatchery nr Questa	MAR-JUL	23	30	36	106%	42	51	34
Rio Hondo nr Valdez	MAR-JUL	10.6	15.6	19.5	106%	24	31	18.4
Rio Pueblo de Taos nr Taos	MAR-JUL	7.5	12.5	16.6	98%	21	29	17
Rio Lucero nr Arroyo Seco	MAR-JUL	6.3	9.1	11.3	104%	13.8	17.8	10.9
Rio Pueblo de Taos bl Los Cordovas	MAR-JUL	11.2	21	29	81%	39	56	36
Embudo Ck at Dixon	MAR-JUL	19.2	33	45	94%	59	82	48
El Vado Reservoir Inflow ²	MAR-JUL	96	156	205	91%	260	355	225
	APR-JUL	85	140	185	90%	235	325	205
Santa Cruz R at Cundiyo	MAR-JUL	9.5	14.5	18.5	101%	23	30	18.3
Nambe Falls Reservoir Inflow	MAR-JUL	3.5	5.2	6.6	102%	8.2	10.7	6.5
Tesuque Ck ab diversions	MAR-JUL	0.6	1.09	1.5	112%	1.98	2.8	1.34
Rio Grande at Otowi Bridge ²	MAR-JUL	370	525	650	90%	790	1010	720
Santa Fe R nr Santa Fe ²	MAR-JUL	1.87	3.3	4.5	105%	5.9	8.3	4.3
Jemez R nr Jemez	MAR-JUL	15.8	25	33	79%	42	57	42
Jemez R bl Jemez Canyon Dam	MAR-JUL	9.7	18.4	26	76%	35	50	34
Rio Grande at San Marcial ²	MAR-JUL	99	295	430	84%	565	765	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, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Abiquiu Reservoir	81.9	78.1	152.7	1198.5
Bluewater Lake	6.6	3.1	5.7	38.5
Caballo Reservoir	33.9	26.7	68.0	332.0
Cochiti Lake	47.8	43.6	63.1	491.0
Costilla Reservoir		2.8	6.0	16.0
El Vado Reservoir	30.6	12.5	102.8	184.8
Elephant Butte Reservoir	557.3	114.9	1267.0	2195.0
Heron Reservoir	106.2	56.3	308.0	400.0
Basin-wide Total	864.3	335.2	1967.3	4839.8
# of reservoirs	7	7	7	7

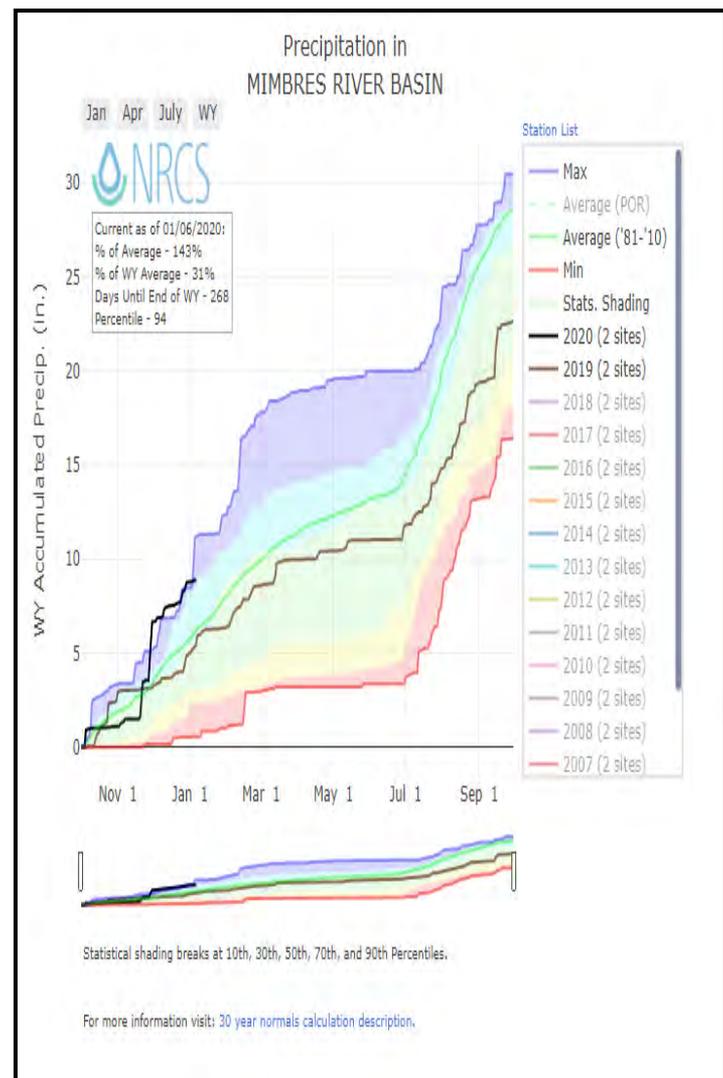
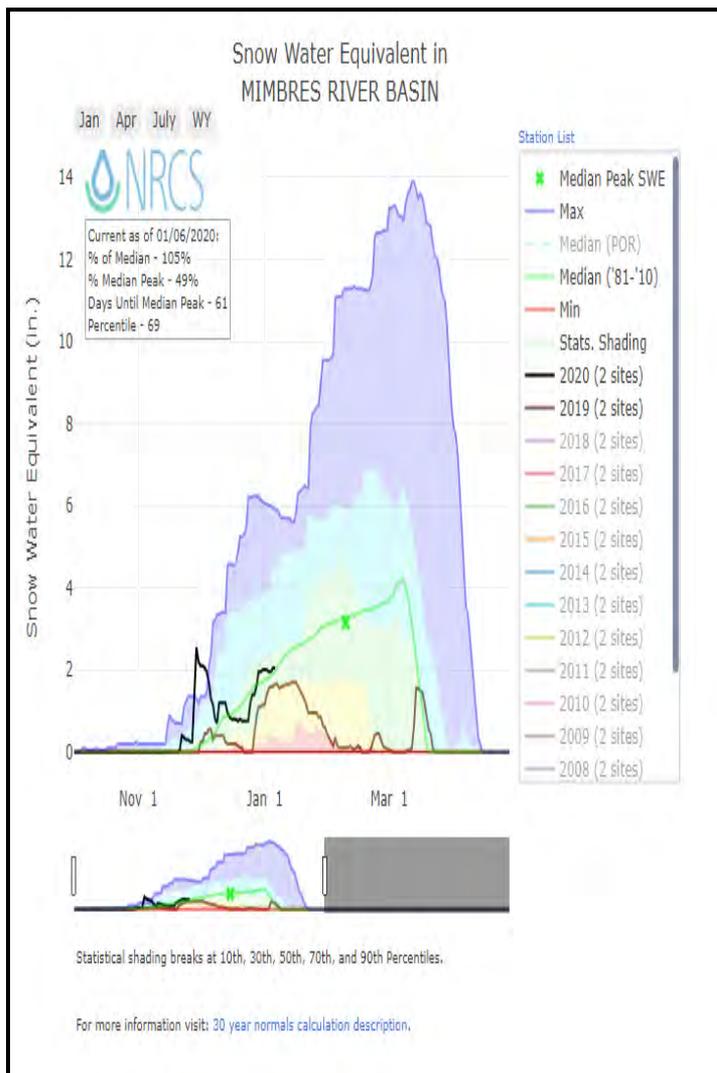
Watershed Snowpack Analysis January 1, 2020	# of Sites	% Median	Last Year % Median
RIO GRANDE BASIN	12	131%	81%

Mimbres River Basin Water Supply Outlook Report as of January 1, 2020



December received 100 percent of the average monthly precipitation bringing the water year-to-date total up to 153 percent of the average. Snowpack in the basin is currently at 114 percent of the median as compared to 66 percent last year at this time. Forecasts for the Mimbres River are well above the average at 154 percent!

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.



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Mimbres River Basin
Streamflow Forecasts - January 1, 2020

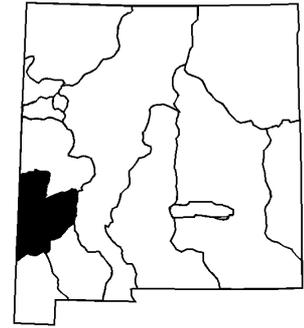
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

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	1.06	2.4	3.7	154%	5.4	8.8	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

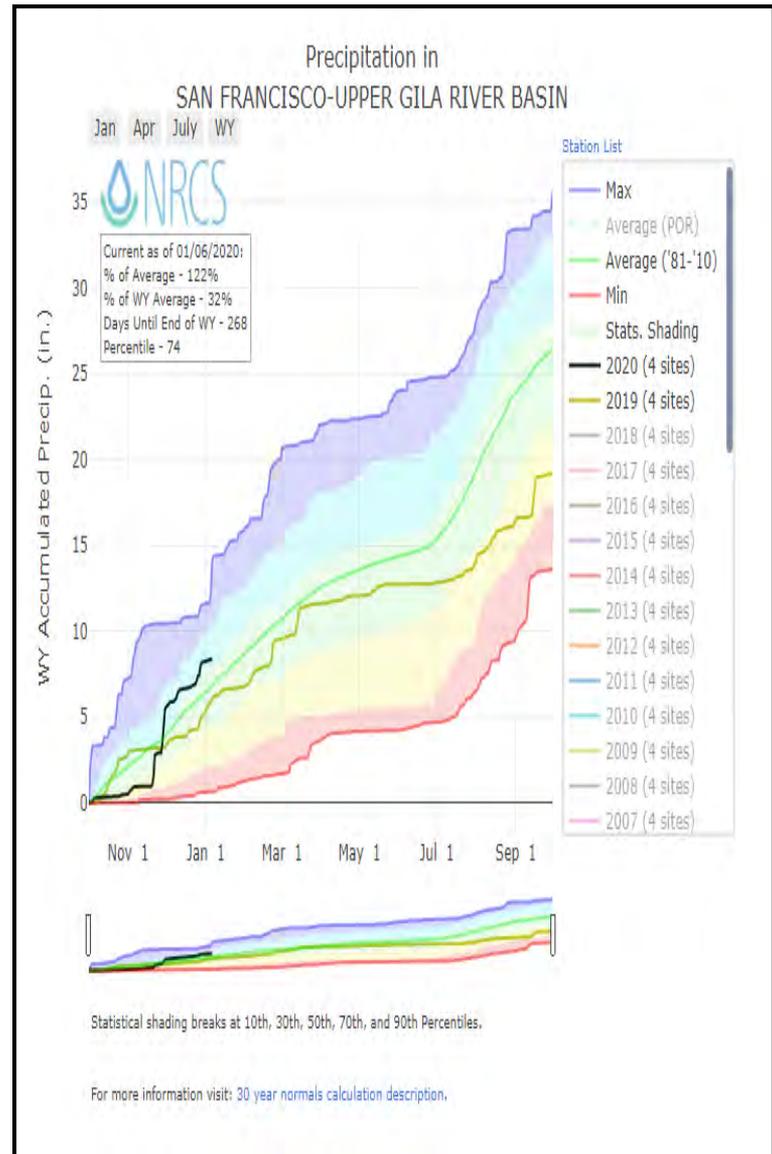
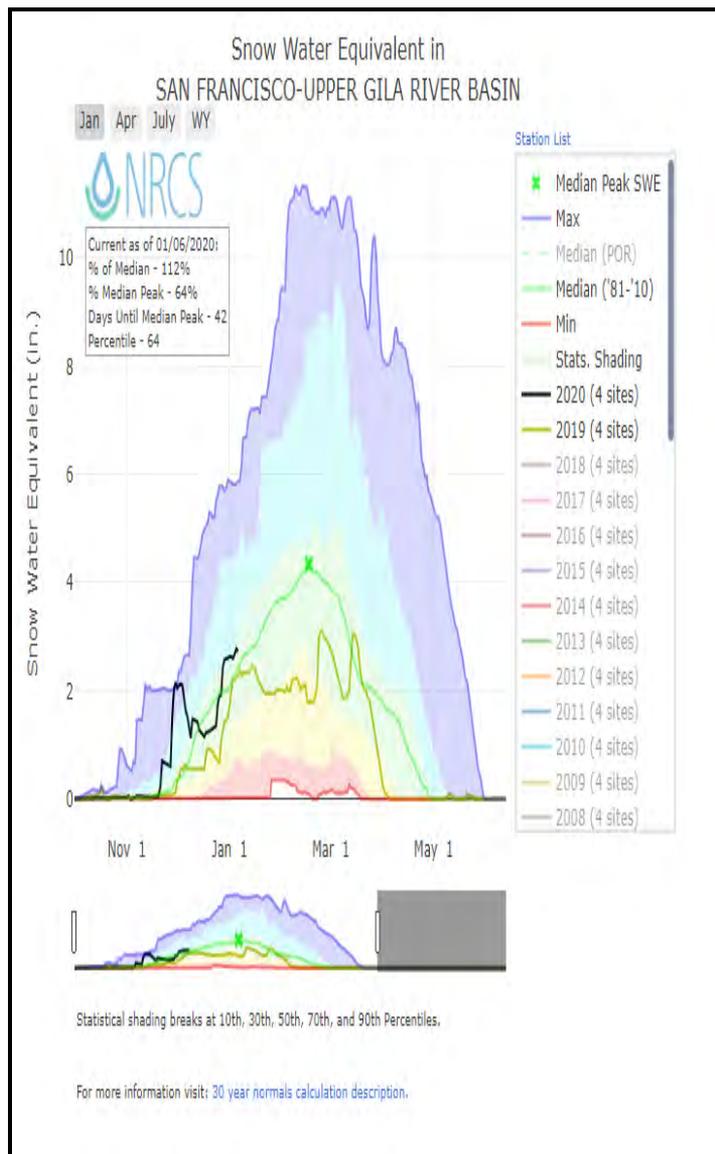
Watershed Snowpack Analysis January 1, 2020	# of Sites	% Median	Last Year % Median
MIMBRES RIVER BASIN	2	114%	66%

San Francisco / Upper Gila River Basin Water Supply Outlook Report as of January 1, 2020



Water year-to-date precipitation is at 127 percent of the average with December receiving 106 percent of the average monthly precipitation. Snowpack in the basin is currently at 127 percent of the median as compared to 82 percent at this time last year. Forecasts for the basin are all well above the average ranging from 116 to 195 percent of the average.

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.



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**San Francisco-Upper Gila River Basin
Streamflow Forecasts - January 1, 2020**

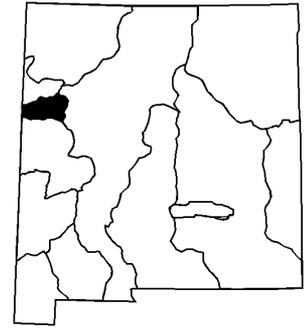
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

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	30	49	65	116%	85	120	56
Gila R bl Blue Ck nr Virden ³	JAN-MAY	42	76	105	138%	139	197	76
San Francisco R at Glenwood ³	JAN-MAY	16.5	29	41	195%	55	82	21
San Francisco R at Clifton ³	JAN-MAY	42	75	104	170%	137	194	61

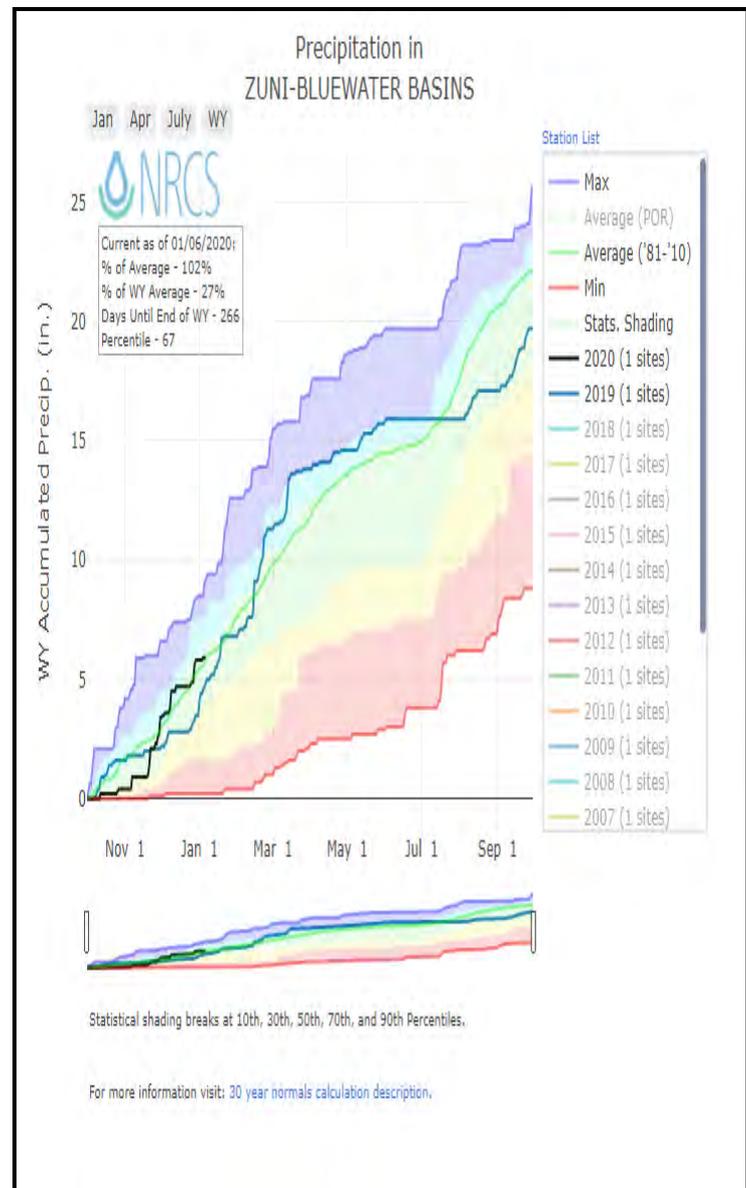
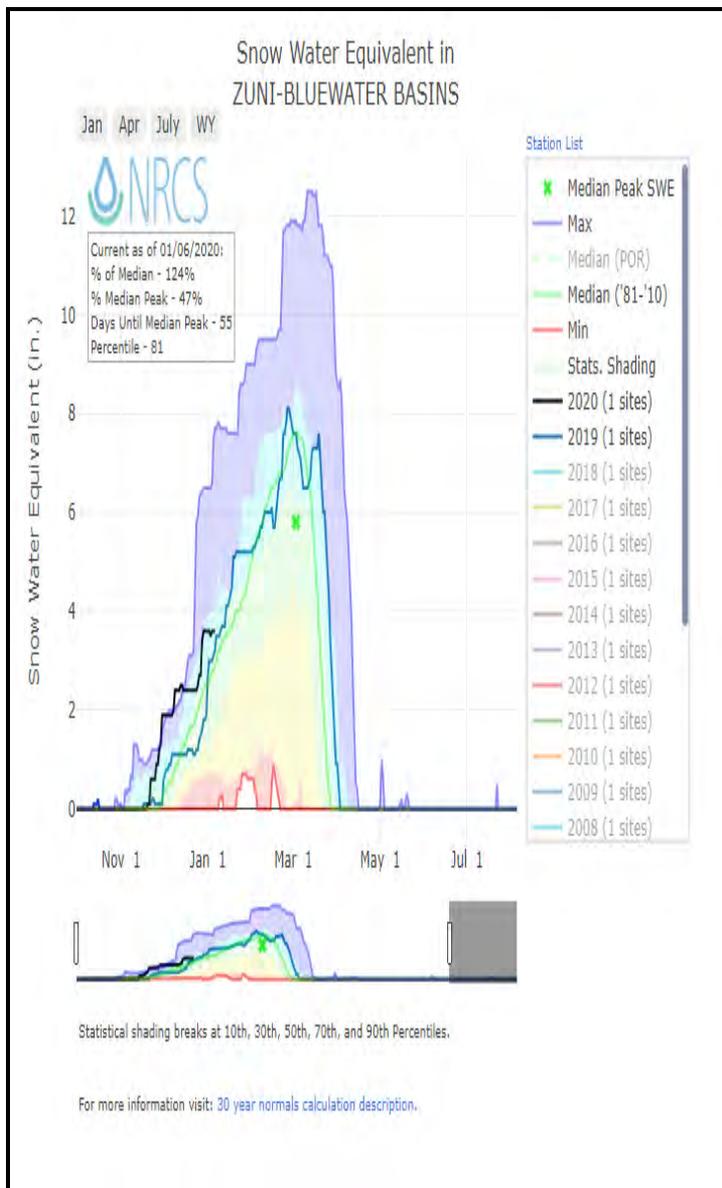
- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Watershed Snowpack Analysis January 1, 2020	# of Sites	% Median	Last Year % Median
SAN FRANCISCO-UPPER GILA RIVER BASIN	4	127%	82%

Zuni / Bluewater Basins Water Supply Outlook Report as of January 1, 2020



Snowpack in the basin is at 144 percent of the median as compared to 108 percent at this time last year! December saw gains in precipitation as well having received 100 percent of the average. This puts the water year-to-date total at 107 percent of the average. Forecasts for the Rio Nutriah and Zuni River are also above average at 128 percent. Bluewater Lake currently holds 6,600 acre-feet of water versus 3,100 acre-feet at this time last year. This is 116 percent of the average water stored as compared to 55 percent last year at this time.



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**Zuni-Bluewater Basins
Streamflow Forecasts - January 1, 2020**

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	0.16	0.84	1.8	127%	3.3	6.8	1.42
Zuni R ab Black Rock Reservoir ³	JAN-MAY	0.03	0.11	0.6	128%	1.74	5.2	0.47

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

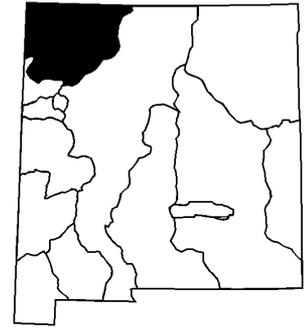
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

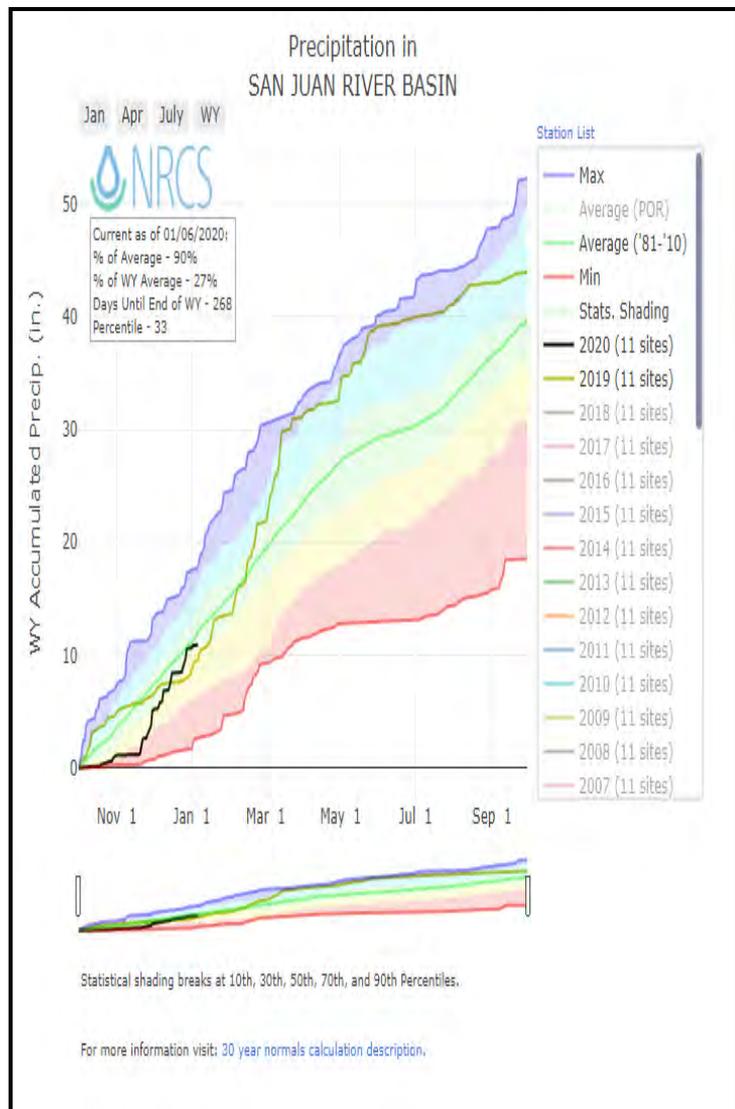
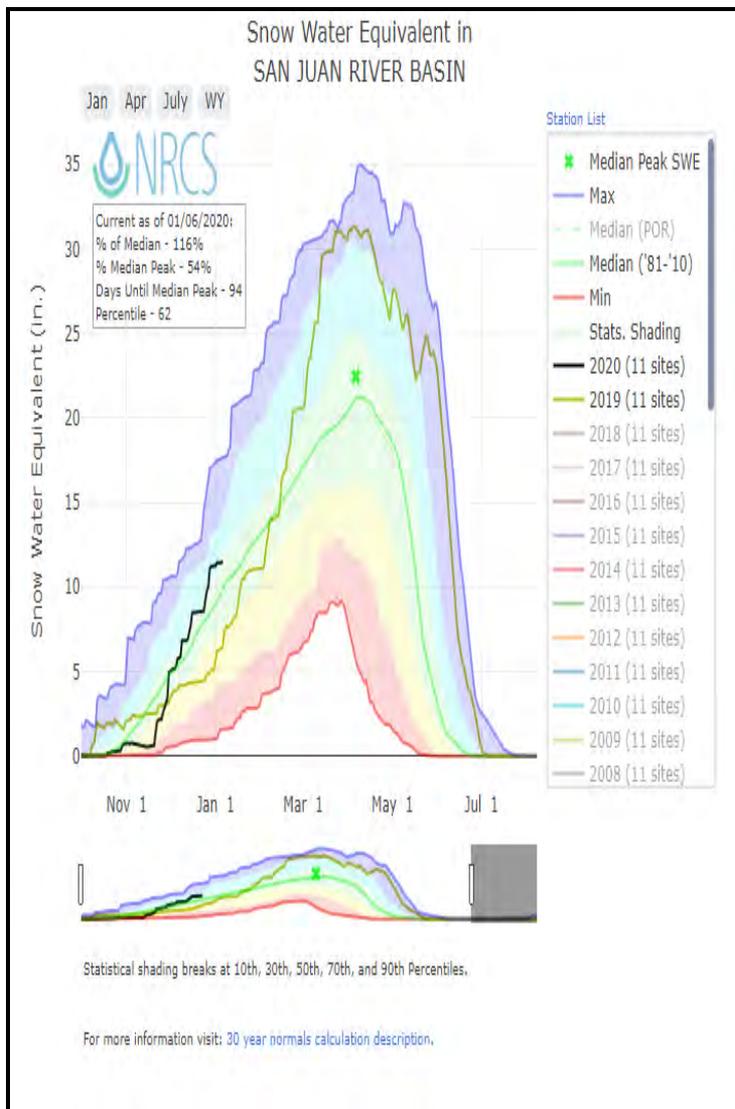
Reservoir Storage End of December, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bluewater Lake	6.6	3.1	5.7	38.5
Basin-wide Total	6.6	3.1	5.7	38.5
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2020	# of Sites	% Median	Last Year % Median
ZUNI-BLUEWATER BASINS	1	144%	108%

San Juan River Basin Water Supply Outlook Report as of January 1, 2020



December received 148 percent of the average monthly precipitation bringing the water year-to-date total to 96 percent of the average. Snowpack is well above the median at 125 percent, which is a big increase from the 63 percent at this time last year! Forecasts for the San Juan Basin are just slightly below average ranging from 89 to 96 percent. Navajo reservoir storage contains 1,325,700 acre-feet or 99 percent of the average water stored at the end of December. This equates to 79 percent of the average capacity for the reservoir.



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**San Juan River Basin
Streamflow Forecasts - January 1, 2020**

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	29	40	48	89%	57	71	54
Navajo R at Oso Diversion ²	APR-JUL	35	48	58	89%	69	87	65
Navajo Reservoir Inflow ²	APR-JUL	345	490	600	82%	720	925	735
Animas R at Durango	APR-JUL	225	305	370	89%	440	550	415
La Plata R at Hesperus	APR-JUL	11.4	17.3	22	96%	27	36	23

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

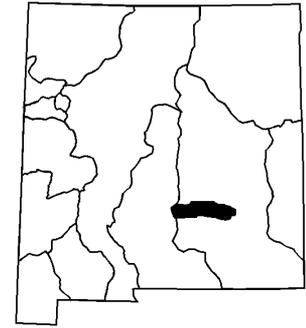
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

Reservoir Storage End of December, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Navajo Reservoir	1325.7	878.7	1341.0	1696.0
Basin-wide Total	1325.7	878.7	1341.0	1696.0
# of reservoirs	1	1	1	1

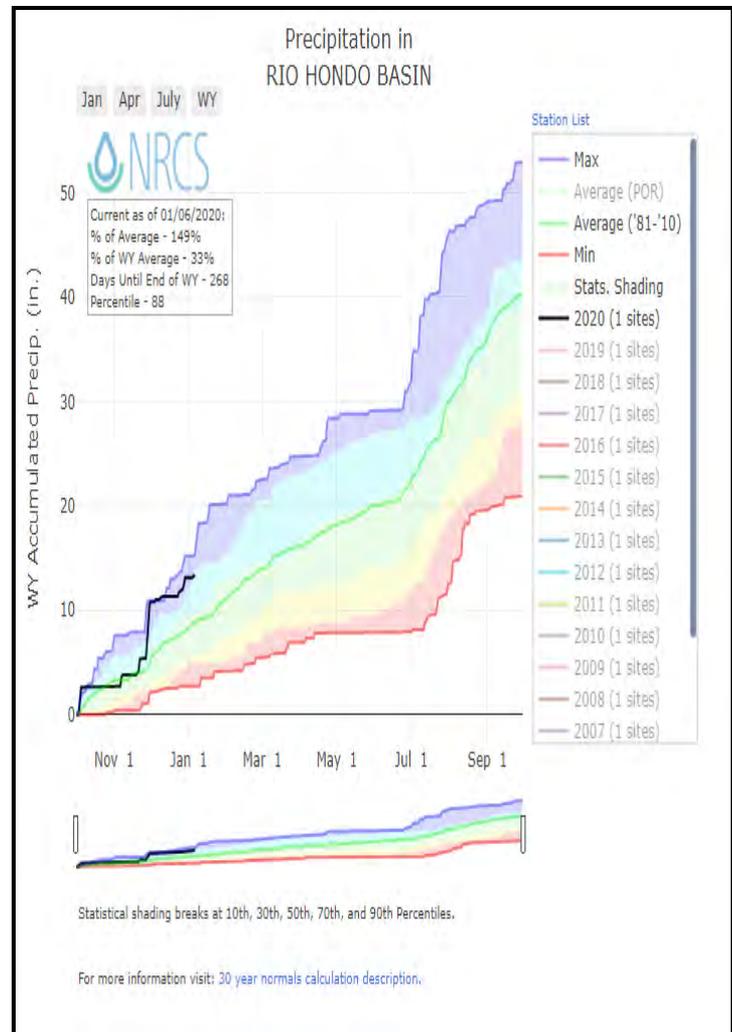
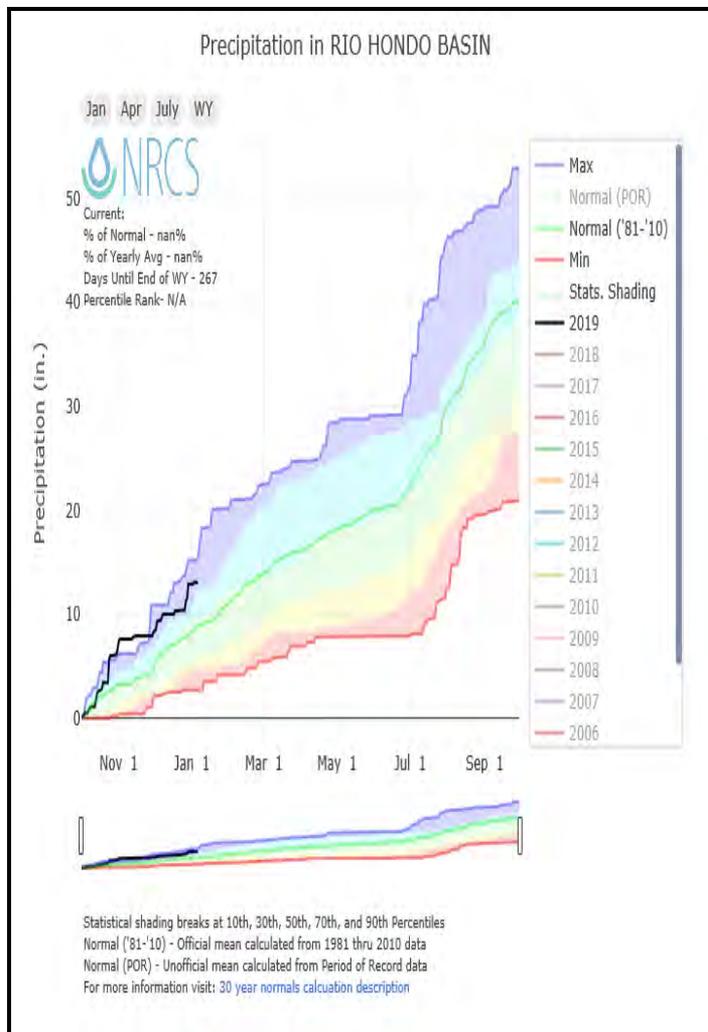
Watershed Snowpack Analysis January 1, 2020	# of Sites	% Median	Last Year % Median
SAN JUAN RIVER BASIN	11	125%	63%

Rio Hondo Basin Water Supply Outlook Report as of January 1, 2020



December was a below average month for the Rio Hondo having received just 74 percent of the average monthly precipitation. However, this puts the water year-to-date total at 156 percent of the average due to early water-year rain storms inflating the numbers. Snowpack in the basin is currently at 128 percent of the median as compared to 103 percent at this time last year. The forecast for the Rio Ruidoso at Hollywood is above average at 122 percent. This measurement however should be used with caution as the Sierra Blanca SNOTEL site was impacted by the Little Bear Fire five years ago.

It should be noted that the switch to using median snowpack values four 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, 2020**

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	2.1	5.3	8.2	122%	11.8	18.2	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, 2020	# of Sites	% Median	Last Year % Median
RIO HONDO BASIN	1	128%	103%

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	31	7.2	4.3	167%	4.3	100%
Boon	SC	8140	6	1.2	1.4	86%		
Bowl Canyon	SC	8980	15	4.9	3.5	140%	2.8	80%
Chamita	SNOTEL	8400	26	6.0	4.0	150%	2.6	65%
Dan Valley	SC	7640	1	0.2	1.2	17%		
Elk Cabin	SNOTEL	8210	10	3.3	1.8	183%	1.6	89%
Frisco Divide	SNOTEL	8000	8	1.5	1.5	100%	0.9	60%
Gallegos Peak	SNOTEL	9800	25	5.6	4.1	137%	4.4	107%
Hematite Park	SC	9500						
Hidden Valley	SC	8480	15	4.4				
Hopewell	SNOTEL	10000	36	8.0	7.1	113%	4.4	62%
Lookout Mountain	SNOTEL	8500	5	1.0	1.4	71%	0.8	57%
Mcgaffey	SC	8120	4	0.6	1.0	60%		
Mcknight Cabin	SNOTEL	9240	12	2.7	1.6	169%	1.3	81%
Missionary Spring	SC	7940	4	0.7	1.1	64%	1.4	127%
Navajo Whiskey Ck	SNOTEL	9050	25	7.0			3.9	
North Costilla	SNOTEL	10600	19	4.9	2.6	188%	4.0	154%
Ojo Redondo	SC	8200						
Palo	SNOTEL	9350	18	4.1			4.0	
Palo	SC	9300						
PanchueLa	SC	8400						
Quemazon	SNOTEL	9500	20	4.9	4.6	107%	3.8	83%
Red River Pass #2	SNOTEL	9850	18	5.0	3.6	139%	3.2	89%
Rice Park	SNOTEL	8460	16	3.6	2.5	144%	2.7	108%
Rio En Medio	SC	10300						
Rio Santa Barbara	SNOTEL	10664	29	6.6			6.9	
San Antonio Sink	SNOTEL	9100	21	4.4			2.3	
San Antonio Sink	SC	9200						
Santa Fe	SNOTEL	11445	36	9.0	6.5	138%	7.0	108%
Senorita Divide #2	SNOTEL	8600	19	4.0	2.8	143%	2.5	89%
Shuree	SNOTEL	10100	21	4.9			4.0	
Shuree	SC	10097						
Sierra Blanca	SNOTEL	10280	18	4.1	3.2	128%	3.3	103%
Signal Peak	SNOTEL	8360	9	1.3	1.9	68%	1.0	53%
Silver Creek Divide	SNOTEL	9000	19	6.7	3.5	191%	4.1	117%
State Line	SC	8000			0.6			
Taos Canyon	SC	9100						
Taos Powderhorn	SNOTEL	11057	40	10.3			8.0	
Taos Powderhorn	SC	11250	48	11.8	12.0	98%	7.4	62%
Tolby	SNOTEL	10180	26	5.2	3.8	137%	4.0	105%
Tres Ritos	SNOTEL	8600	14	3.0			1.3	
Tres Ritos	SC	8600						
Vacas Locas	SNOTEL	9306	27	6.5	4.8	135%	4.5	94%
Wesner Springs	SNOTEL	11120	30	8.0	6.8	118%	5.9	87%
Whiskey Creek	SC	9050			3.5		2.6	74%
Basin Index						130%		88%
# of sites						23		23

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New Mexico
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