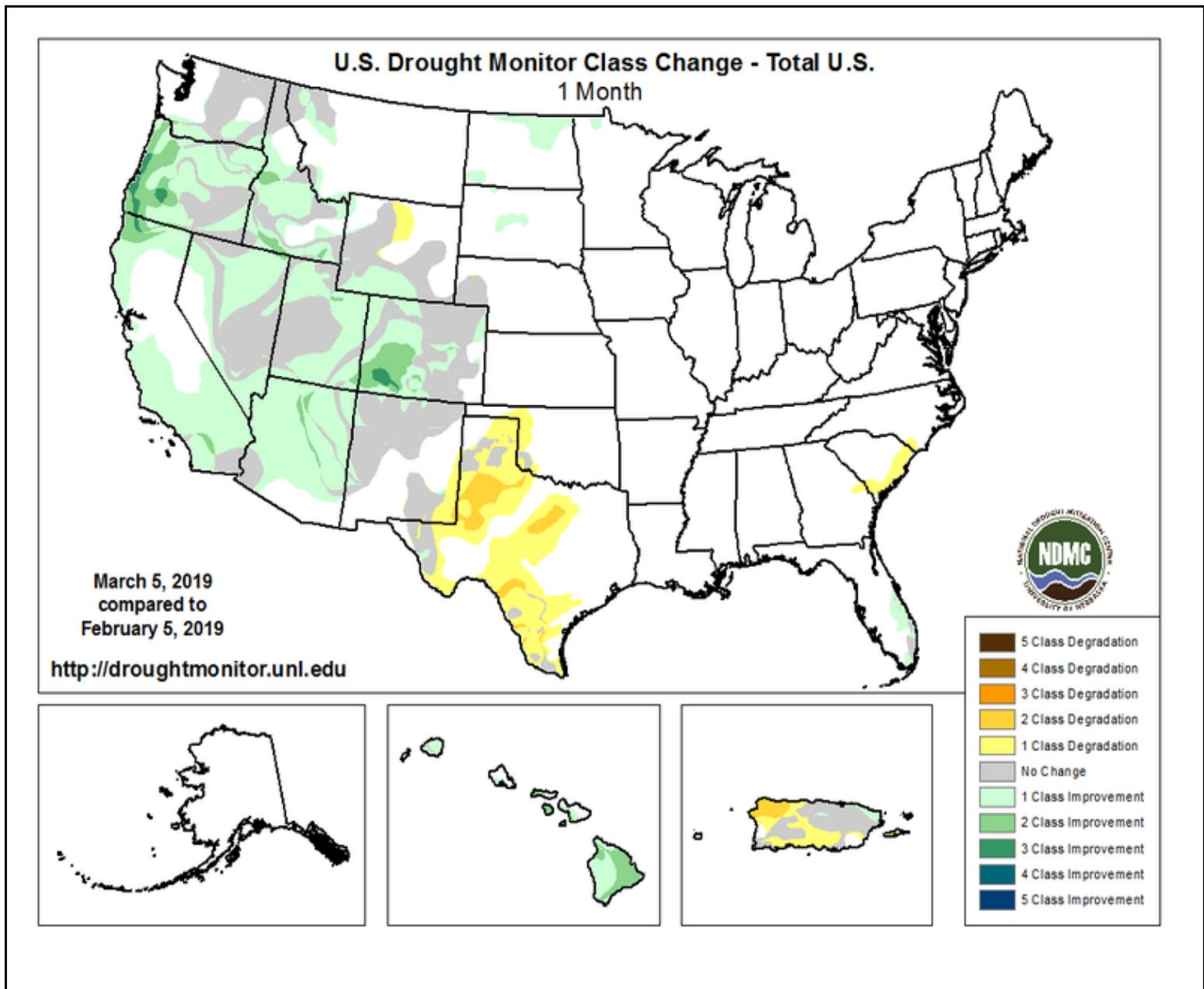


New Mexico

Basin Outlook Report

March 1, 2019



Multiple storms throughout February led to improvements in drought conditions in the Four Corners region and throughout the west. This bump in snowpack has resulted in above average forecasts for a majority of the state.

Image Courtesy of NOAA and the National Integrated Drought Information System (NIDS)
<https://www.drought.gov/drought/>

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/>

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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To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C., 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.

Summary

The month of February turned out to be a significant one for water supply in New Mexico. Strong storms infiltrated the state delivering heavy precipitation and snow to a large portion of New Mexico. Despite increasing temperatures the northern mountains have remained within a temperature range facilitating the retention of our current snowpack while recent storms have continued to increase it. Spring runoff looks favorable for most basins in the state with mountain snow water equivalents (SWE) at or above the average except for low values in the Gila Mountains. Statewide water year precipitation has accumulated some impressive amounts as of late, blanketing the state in moisture except for regional below normal averages in the SW and NE portions of New Mexico. With a forecasted active weather pattern still ahead of us and temperatures returning to seasonal norms the spring forecasts at this point in the water year look promising. However, many of the state's reservoirs are severely low and when runoff begins we will be starting with much lower base levels than in years past. Water users and managers should continue to monitor conditions to determine the extent of water supply conditions across the state.

Snowpack

The beginning of February was short on precipitation in any form throughout most of New Mexico. The second week, however, began the march of potent storms throughout the west. Although these weather systems lost much of their energy over the west coast and Sierra Nevada mountains, they did offer a refresh to what was a below average snowpack in the northern mountains. The middle of the month was a game changer and brought temperature decreases as well as wet weather resulting in the perfect recipe for copious amounts of snow. This significant snow fall, primarily in the Four Corners region, resulted in decreases in severe to exceptional drought throughout the area. Then the end of February brought significant improvements in high elevation snowpack in New Mexico and southern Colorado. Statewide snowpack is currently at 99 percent of the median compared to a low 29 percent last year at this time. Snowpack in southern Colorado affecting our water supply is also currently above average, with the headwaters of the Rio Grande boasting 118 percent of the average compared to 59 percent last year at this time. We are quickly approaching peak SWE season with more storms tracking our way. This has resulted in above average forecasts for many rivers in New Mexico. Water users and managers should continue to keep in mind that most reservoir levels were severely depleted at the end of the last water year and must be recharged. Additionally, soil moisture which has been improving was desperately dry and will take some time to reach normal levels when runoff occurs. Please continue to monitor conditions to determine runoff timing and volumes.

NEW MEXICO STATEWIDE SNOWPACK	Percent of Median	Last Year Percent of Median
CANADIAN RIVER BASIN	99	21
PECOS RIVER BASIN	88	20
RIO GRANDE BASIN	99	35
MIMBRES RIVER BASIN	1	5
SAN FRANCISCO-UPPER GILA RIVER BASIN	81	14
ZUNI-BLUEWATER BASINS	126	28
SAN JUAN RIVER BASIN	123	58
CHUSKA MOUNTAINS	131	24
RIO HONDO BASIN	52	54
Statewide Snowpack Total	99	29
# of sites	34	34

Precipitation

February provided localized heavy precipitation throughout much of the Four Corners area with some regions receiving from 1-4 inches with reports of even heavier localized rainfall in some areas. Water-year precipitation has totaled some impressive amounts with numbers as high as 225 percent of average over a majority of the Four Corners. This area is however recovering from a long-term drought situation when looking at the 24 month precipitation averages which are between 55-75 percent of the normal in core areas. Statewide monthly precipitation is currently 145 percent of the average, with the water year-to-date average at 111 percent. Water users and managers should continue to monitor the evolution of the forecasts to help determine their water supply needs as we approach historical peak snow accumulation.

Reservoirs

As of March 1st, most of New Mexico's major reservoirs are storing well below average amounts of water. Most smaller reservoirs are boasting impressive percentages regarding average water stored yet overall every reservoir in New Mexico is well below capacity. Current statewide percent of average water stored is at only 42 percent as compared to 71 percent last year. However, keep in mind that the warm temperatures last winter accelerated runoff filling most reservoirs early. Since then they have been depleted and await runoff this spring for a recharge. With more weather on the way it looks promising that reservoir levels will improve a great deal once snow melt begins. Water-users should continue to monitor weather conditions to evaluate their water needs as the water year progresses.

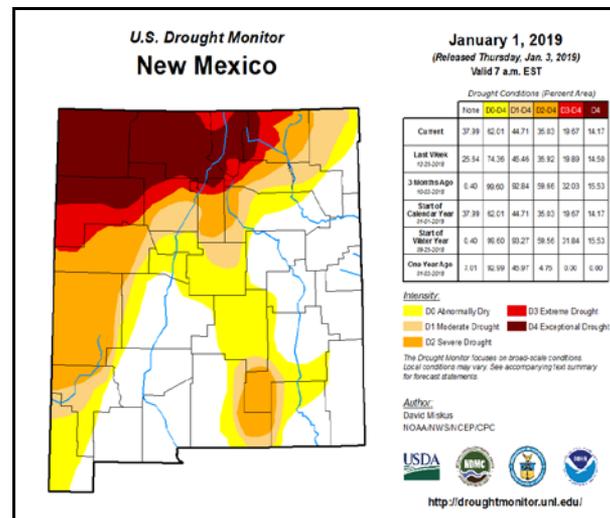
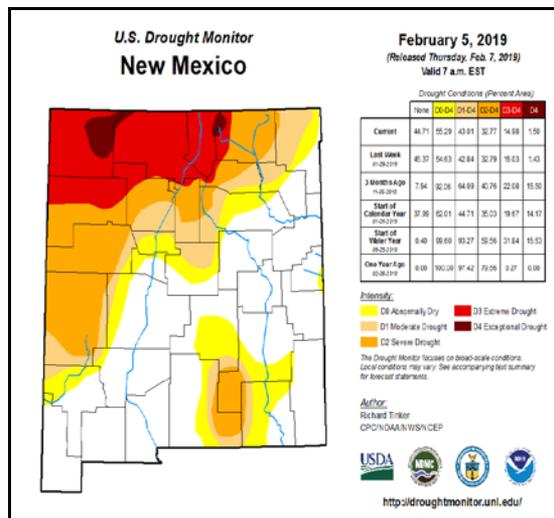
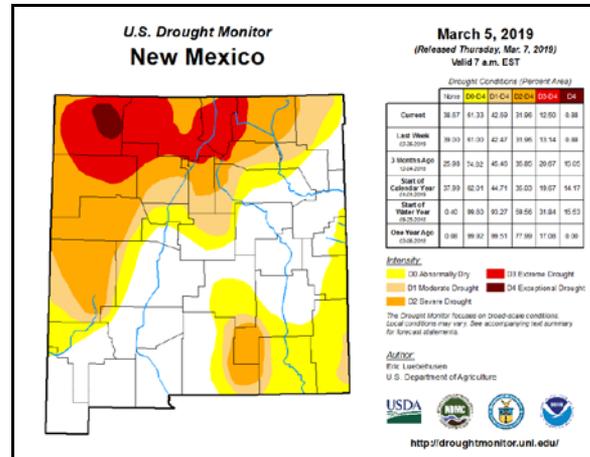
NEW MEXICO STATEWIDE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Abiquiu Reservoir	71.0	125.0	154.8	1192.8	6%	10%	13%	46%	81%
Bluewater Lake	4.1	6.2	6.6	38.5	11%	16%	17%	62%	94%
Brantley Lake nr Carlsbad	31.8	44.9	22.9	1008.2	3%	4%	2%	139%	196%
Caballo Reservoir	27.7	44.5	101.1	332.0	8%	13%	30%	27%	44%
Cochiti Lake	46.2	48.1	58.3	491.0	9%	10%	12%	79%	83%
Conchas Lake	128.4	213.2	202.0	254.2	51%	84%	79%	64%	106%
Costilla Reservoir		11.5	6.9	16.0		72%	43%		166%
Eagle Nest Lake nr Eagle Nest, NM	34.0	42.8	54.1	79.0	43%	54%	68%	63%	79%
El Vado Reservoir	15.9	70.6	100.8	190.3	8%	37%	53%	16%	70%
Elephant Butte Reservoir	170.8	483.0	1305.0	2195.0	8%	22%	59%	13%	37%
Heron Reservoir	56.7	139.9	297.8	400.0	14%	35%	74%	19%	47%
Lake Avalon	1.3	0.0	2.6	4.0	33%	0%	65%	50%	0%
Lake Sumner	33.8	42.5	33.1	102.0	33%	42%	32%	102%	129%
Navajo Reservoir	865.2	1246.0	1292.0	1696.0	51%	73%	76%	67%	96%
Santa Rosa Reservoir	52.7	93.9	53.2	438.3	12%	21%	12%	99%	177%
Basin-wide Total	1539.7	2600.7	3684.3	8421.3	18%	31%	44%	42%	71%
# of reservoirs	14	14	14	14	14	14	14	14	14

* Note: The Costilla Reservoir stream gauge is currently inoperative

Streamflow

The March 1st streamflow values look very promising and are above average for most of New Mexico. The Rio Grande Basin forecasts range from 113 percent of the average near the headwaters to a surprising 106 percent at San Marcial, with forecast points in between above average or slightly below. The San Juan Basin made improvements throughout the month in snowpack with the April through July forecast points all above 100 percent of the average. The Pecos Basin has also benefitted from copious amounts of snow this winter and is currently forecast to between 93 and 104 percent of the average. The Canadian Basin made slight improvements throughout the month and is currently forecast between 86 and 77 percent of the average. The San Francisco and Upper Gila River Basins range from 67 to 85 percent of average with the Mimbres River at just 69 percent of average after losing a majority of their snowpack this winter. Despite being below average the Zuni and Rio Nutria look better than they have in years with forecasts ranging from 80 to 87 percent of the average. With more precipitation and snow on the way as well as temperatures keeping the high-elevation snowpack stable the forecasts for New Mexico look very promising. Please continue to monitor the monthly forecasts as we move towards the end of the snow season to see just how much water we can expect this year.

New Mexico Drought Monitor, real versus perceived conditions?



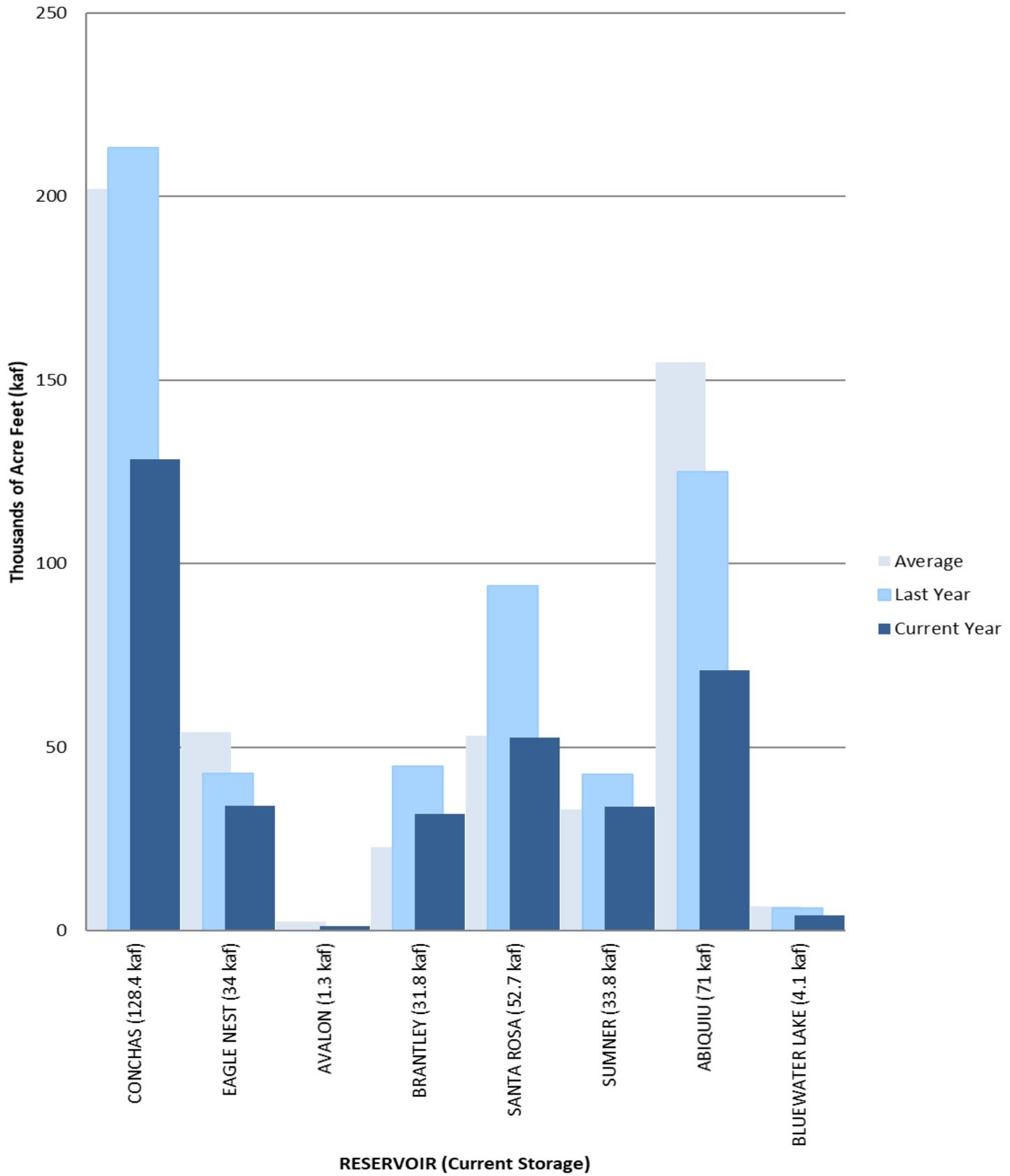
Every week, The U.S. Drought Monitor is produced in partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. This useful tool uses multiple inputs, including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

Drought conditions over New Mexico have generally continued to improve over the last 60-90 days as El Nino influenced storm systems have continued to produce normal to above normal precipitation conditions for much of the state. A large portion of northern New Mexico remains in D3 or Extreme Drought due to the longer term precipitation deficits dating back to October 2017. Impacts in these areas have been enhanced due to above normal evapotranspiration rates over much of 2018, which in turn increased environmental demand for moisture and greatly depleted soil moisture in the deeper layers of the soil column. D4, or exceptional drought, remains in portions of San Juan County where the 15 to 18 month deficits have been the largest.

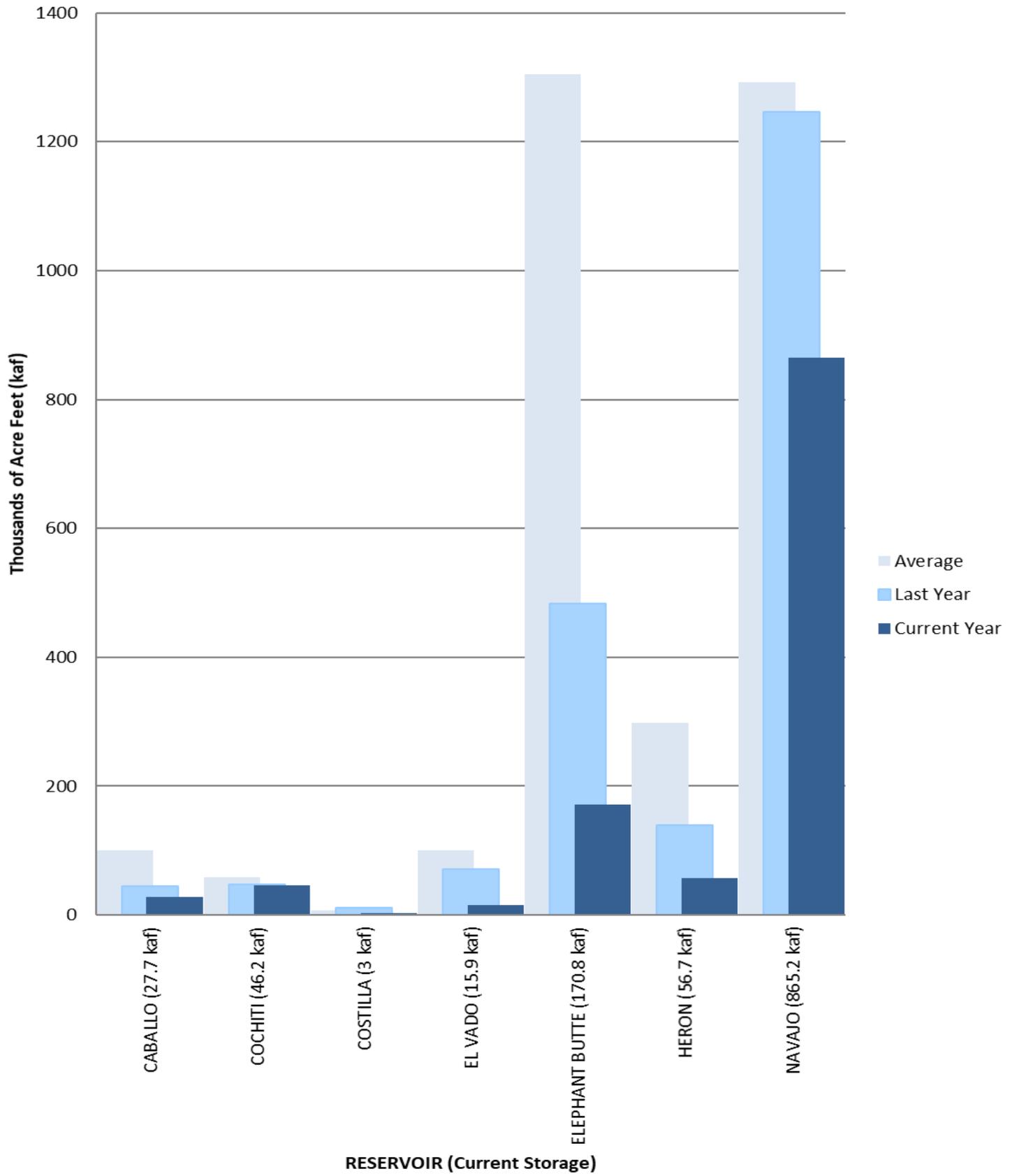
Drying conditions have been observed in portions of southeastern and eastern New Mexico where there has been a trend the last 30-60 days towards warmer and dryer conditions. Conditions will be monitored for any potential redevelopment of drought conditions.

Courtesy of: Royce Fontenot, Senior Service Hydrologist, National Weather Service, Albuquerque, NM

Statewide Reservoir Storage



Statewide Reservoir Storage

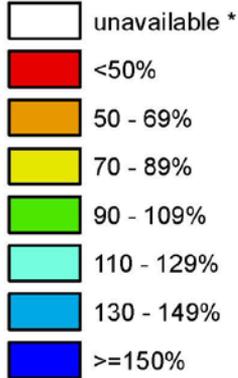


New Mexico

SNOTEL Current Snow Water Equivalent (SWE) % of Normal

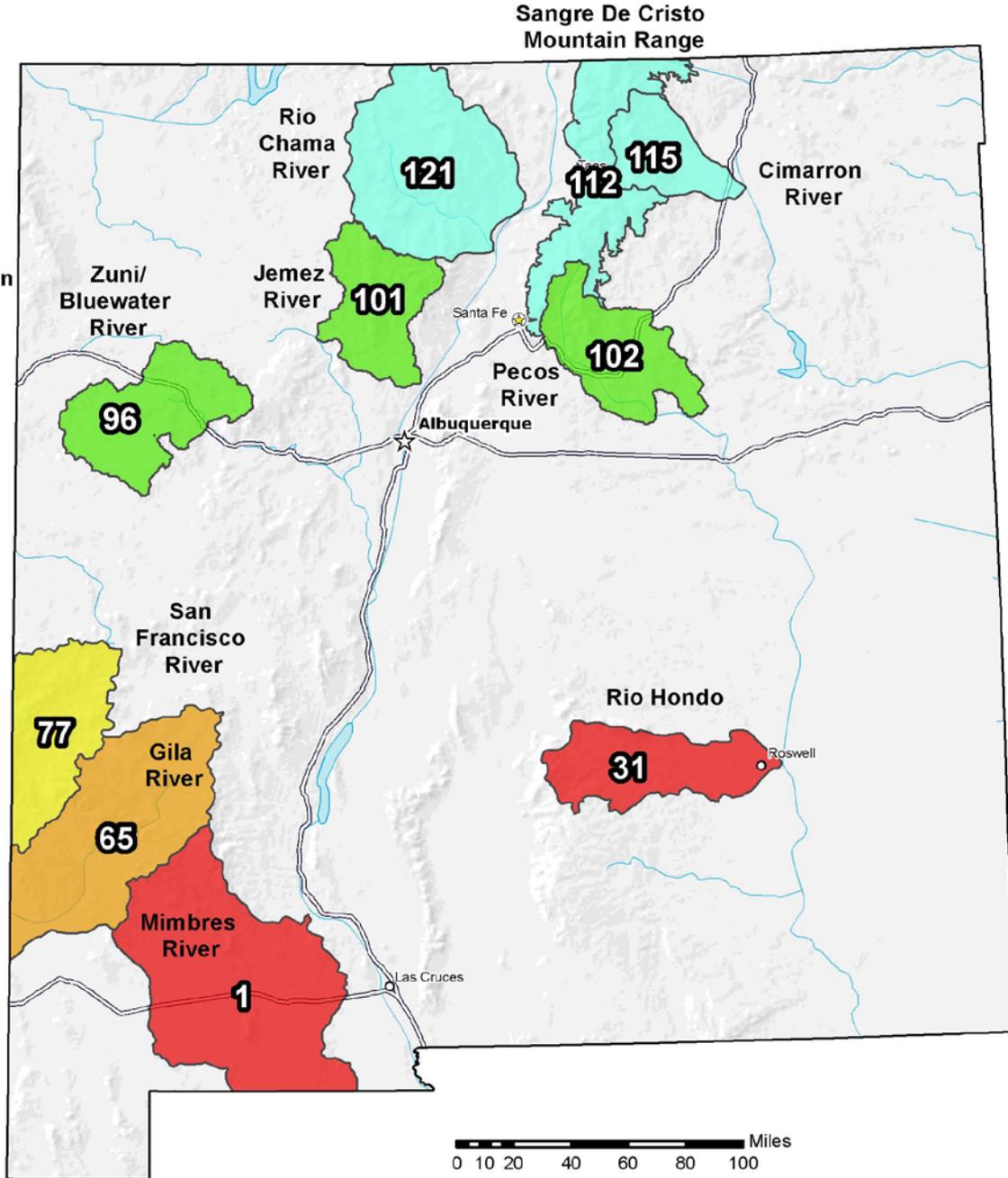
Mar 05, 2019

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



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

**Provisional Data
Subject to Revision**



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

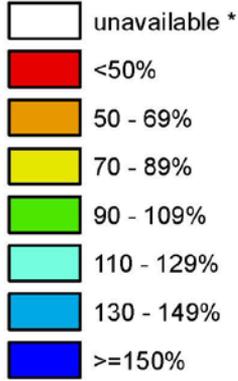
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

New Mexico

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

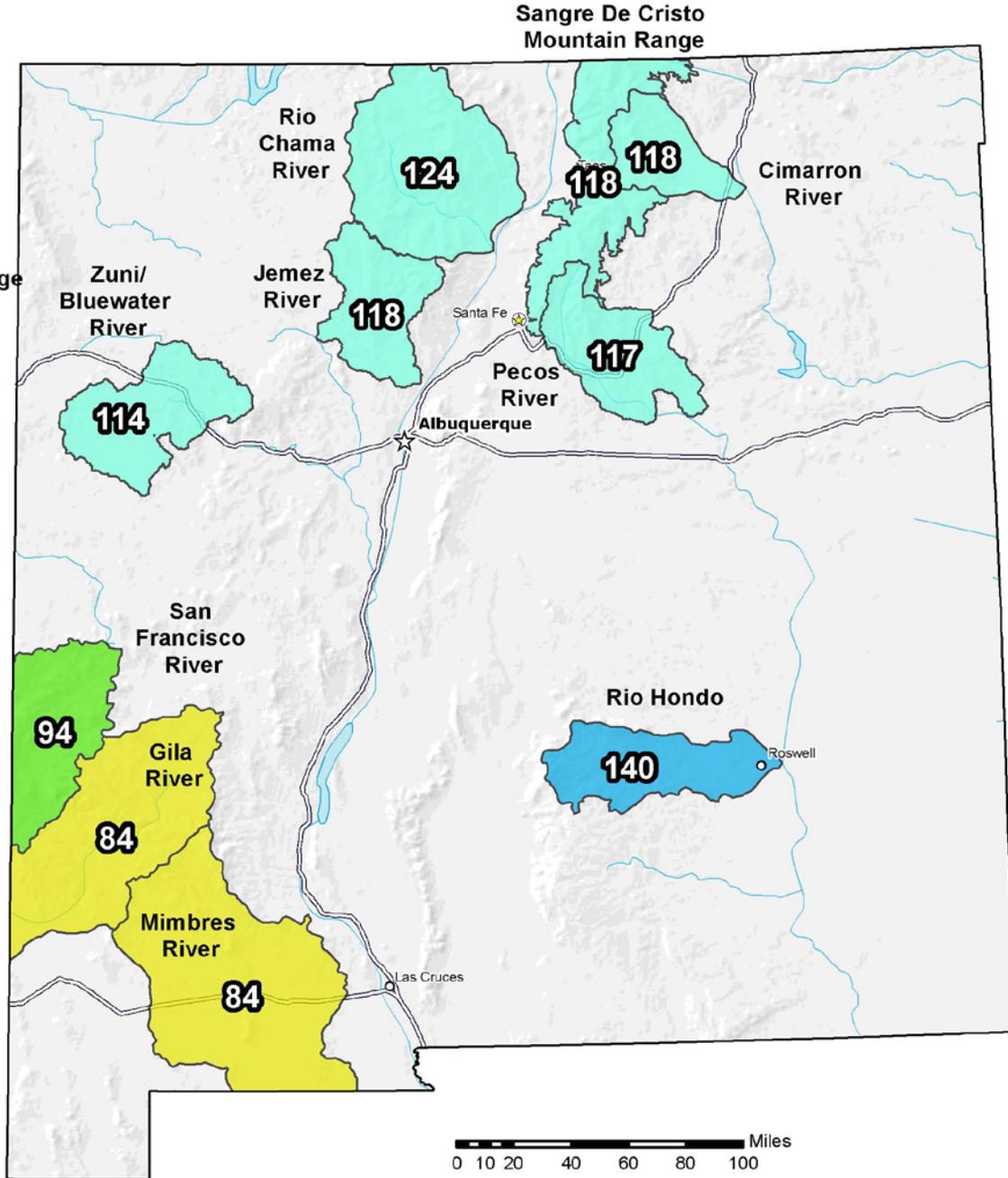
Mar 05, 2019

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



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

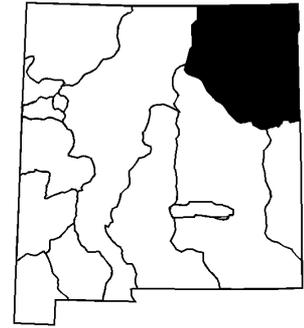
**Provisional Data
Subject to Revision**



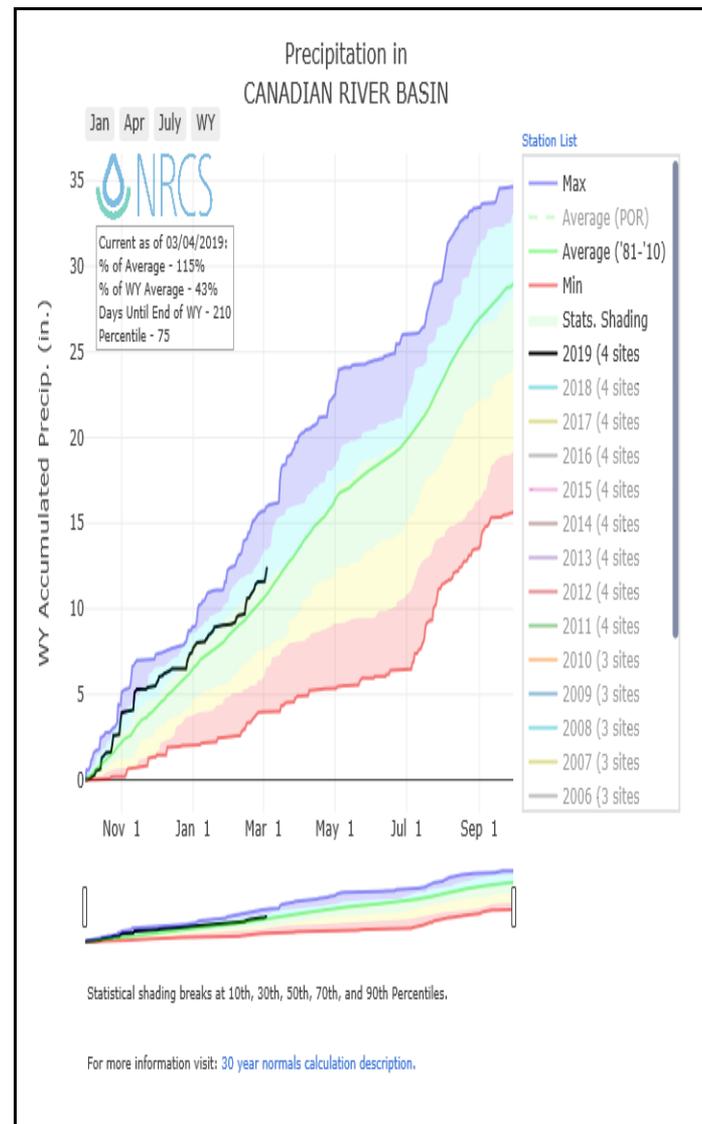
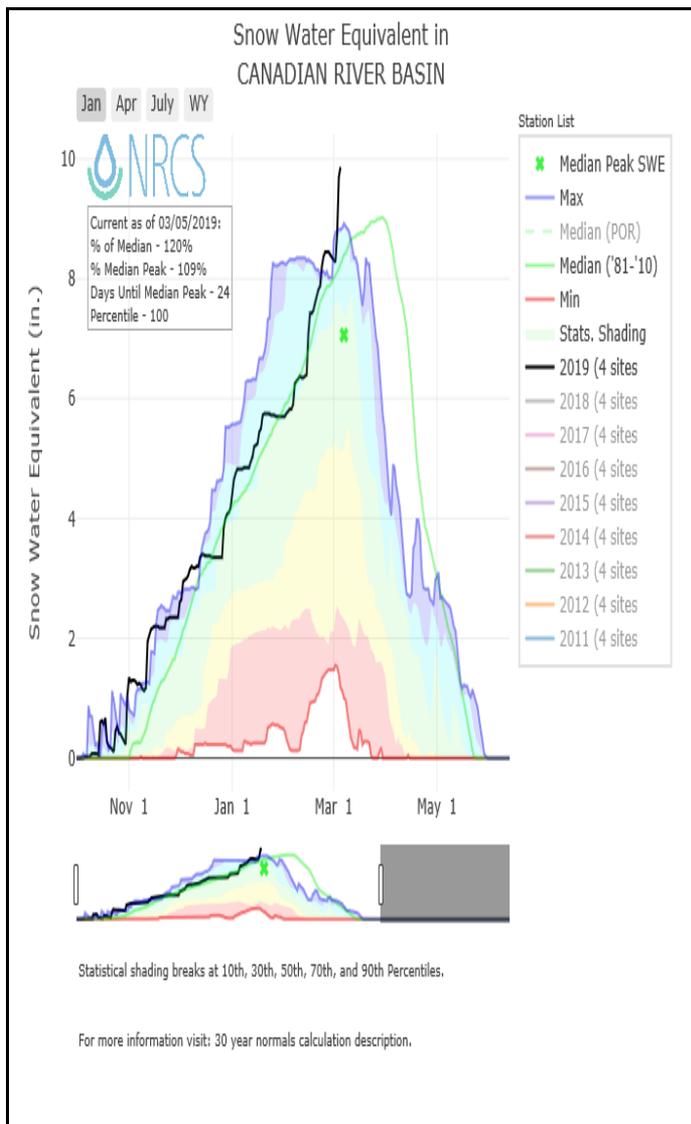
The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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

Canadian River Basin Water Supply Outlook Report as of March 1, 2019



Forecasts range from 85 percent of the average for the Vermejo River near Dawson to 77 percent at the Conchas Reservoir Inflow. The month of February received a high 136 percent of the average amount of precipitation for the month. This puts the water year-to-date average amount of precipitation now at 113 percent as compared to 43 percent last year at this time! Snowpack in the basin is at 99 percent of the median. This remains a notable improvement from 21 percent last year at this time! Reservoirs are currently holding 162,400 acre-feet of storage, which is a decrease of 93,700 acre-feet from this time last year. This equates to 77 percent of the average capacity and 63 percent of the average stored water for the basin at the end of February.



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**Canadian River Basin
Streamflow Forecasts - March 1, 2019**

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	4.7	6.6	85%	8.9	13.3	7.8
Eagle Nest Reservoir Inflow	MAR-JUN	4.1	6.6	8.8	79%	11.4	16.2	11.2
Cimarron R nr Cimarron ²	MAR-JUN	0.5	6.2	12.3	78%	18.5	27	15.8
Ponil Ck nr Cimarron	MAR-JUN	2.8	4.6	6.2	86%	8.1	11.5	7.2
Rayado Ck nr Cimarron	MAR-JUN	2.2	3.9	5.5	79%	7.4	11	7
Conchas Reservoir Inflow ³	MAR-JUN	3.9	12.7	23	77%	38	69	30

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

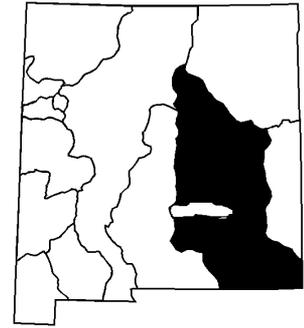
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

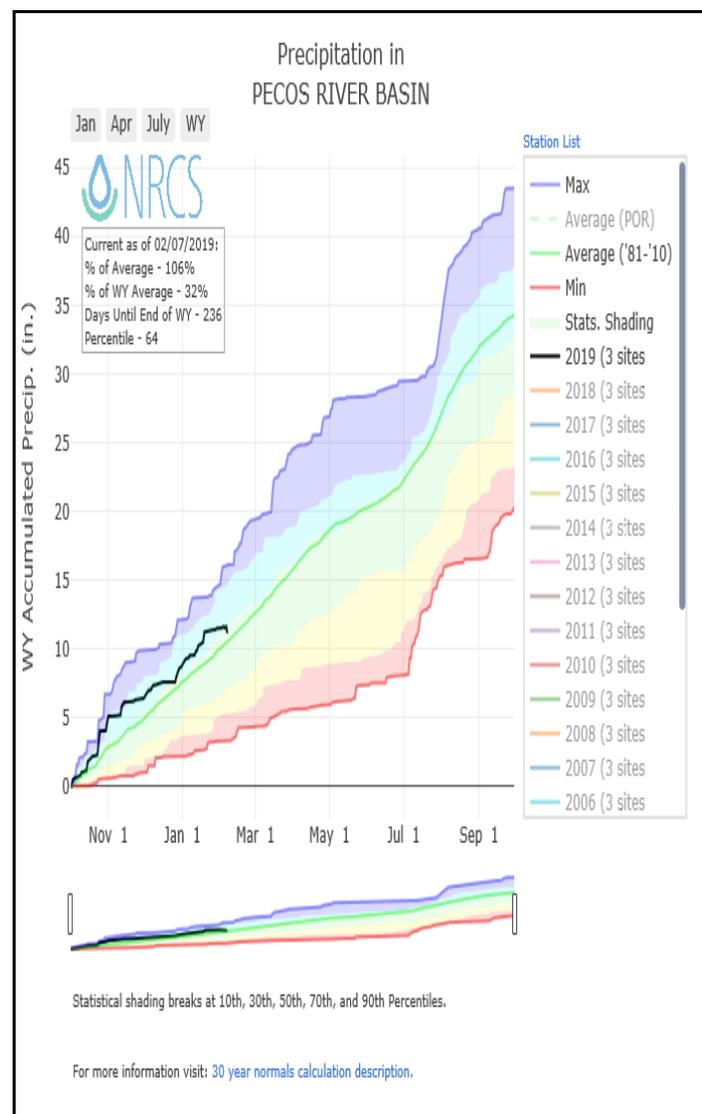
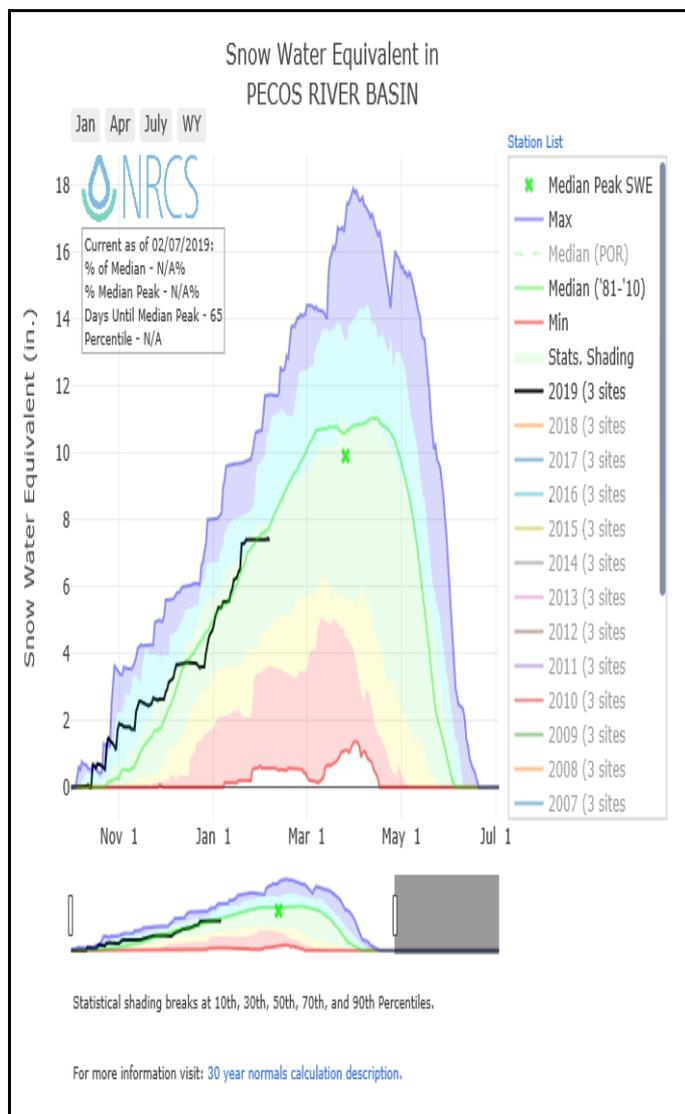
Reservoir Storage End of February, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Conchas Lake	128.4	213.2	202.0	254.4
Eagle Nest Lake nr Eagle Nest, NM	34.0	42.8	54.1	79.0
Basin-wide Total	162.4	256.0	256.1	333.4
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis March 1, 2019	# of Sites	% Median	Last Year % Median
CANADIAN RIVER BASIN	7	99%	21%

Pecos River Basin Water Supply Outlook Report as of March 1, 2019



The January forecasts for the Pecos range from a high of 104 percent of average at Gallinas Creek near Montezuma to 93 percent for the Pecos River above Santa Rosa. January received 110 percent of the average precipitation for the month, putting the basin at 114 percent of average for the water year-to-date. This is 75 percent above last year's average of 40 percent! Snowpack in the Pecos River Basin took a slight decline this month yet is still at 88 percent of the median! At this time last year the basin had just 20 percent of the median. As of March 1st, reservoir storage in the basin is at 119,600 acre-feet. This remains just 7 percent of the average capacity and 107 percent of the average stored water. Last year at this time reservoir storage was 162 percent of the average.



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**Pecos River Basin
Streamflow Forecasts - March 1, 2019**

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

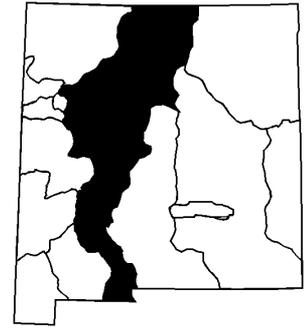
PECOS RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Pecos R nr Pecos	MAR-JUL	34	48	58	102%	69	88	57
Pecos R nr Anton Chico	MAR-JUL	25	44	60	95%	79	110	63
Gallinas Ck nr Montezuma	MAR-JUL	3.8	7.3	10.2	104%	13.7	19.6	9.8
Pecos R ab Santa Rosa Lk	MAR-JUL	21	38	52	93%	69	97	56

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

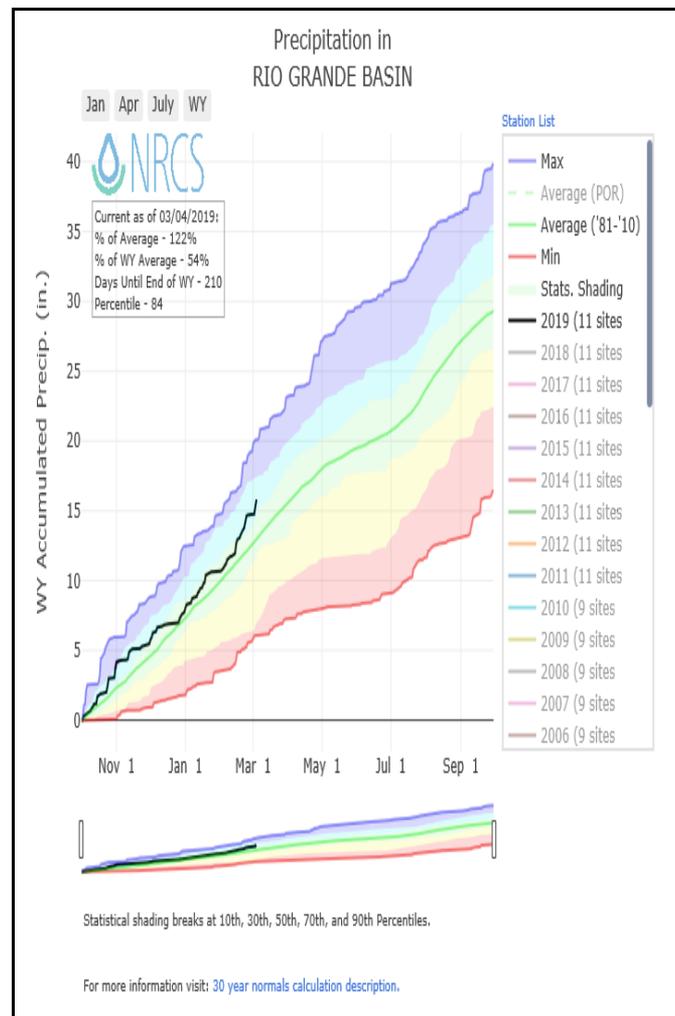
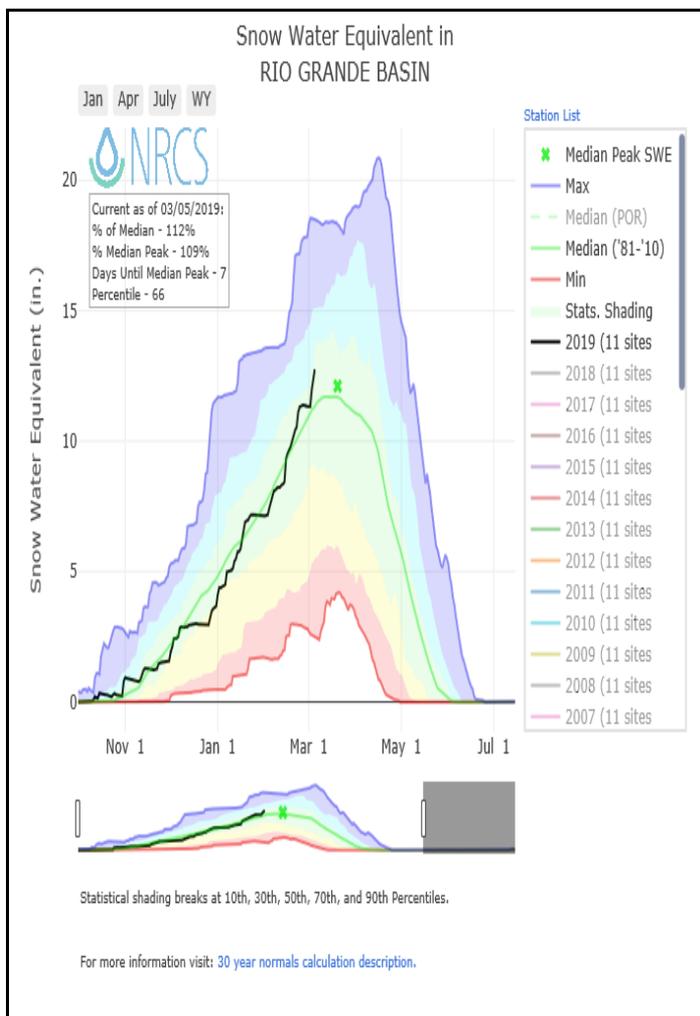
Reservoir Storage End of February, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Avalon	1.3	0.0	2.6	4.0
Brantley Lake nr Carlsbad	31.8	44.9	22.9	1008.2
Santa Rosa Reservoir	52.7	93.9	53.2	432.2
Lake Sumner	33.8	42.5	33.1	102.0
Basin-wide Total	119.6	181.3	111.8	1546.4
# of reservoirs	4	4	4	4

Watershed Snowpack Analysis March 1, 2019	# of Sites	% Median	Last Year % Median
PECOS RIVER BASIN	4	88%	20%

Rio Grande Basin Water Supply Outlook Report as of March 1, 2019



The February forecasts for the Rio Grande range from average to slightly above average. Near the head waters forecasts are as high as 113 percent of average and just slightly below that near Platoro. Forecasts for the Rio Grande at San Marcial have also increased significantly from 69 percent of the average last month to 106 percent for the March to July timeframe. February continued to be an excellent month for precipitation after receiving 152 percent of the average rainfall for the month which equates to 115 percent for the water year-to-date total. Snowpack in the basin increased slightly to 99 percent of the median. This is significant for water supply in the Rio Grande when compared to the 35 percent of median the basin had last year. Snowpack in southern Colorado near the headwaters of the Rio Grande has also improved and is now at 115 percent of the median as compared to 59 percent last year at this time. Following up on the heels of one of the worst water years on record, current reservoir storage in the basin remains low at 392,500 acre-feet which is a decrease of 524,900 acre-feet from this time last year! This is just 42 percent of the average capacity in the basin and 19 percent of the average stored water.



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**Rio Grande Basin
Streamflow Forecasts - March 1, 2019**

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	385	495	580	113%	670	815	515
Platoro Reservoir Inflow	APR-JUL	39	48	54	96%	61	72	56
	APR-SEP	42	52	60	97%	68	81	62
Conejos R nr Mogote ²	APR-SEP	129	163	189	97%	215	260	194
Costilla Reservoir Inflow	MAR-JUL	7.5	10.1	12.1	109%	14.3	17.8	11.1
Costilla Ck nr Costilla ²	MAR-JUL	15.5	23	28	108%	34	44	26
Red R bl Fish Hatchery nr Questa	MAR-JUL	21	29	35	103%	41	51	34
Rio Hondo nr Valdez	MAR-JUL	10.1	14.4	17.8	97%	21	28	18.4
Rio Pueblo de Taos nr Taos	MAR-JUL	9.5	14.1	17.9	105%	22	29	17
Rio Lucero nr Arroyo Seco	MAR-JUL	5.6	8.3	10.4	95%	12.8	16.6	10.9
Rio Pueblo de Taos bl Los Cordovas	MAR-JUL	14.7	26	35	97%	46	64	36
Embudo Ck at Dixon	MAR-JUL	21	35	47	98%	61	85	48
El Vado Reservoir Inflow ²	MAR-JUL	153	205	250	111%	295	365	225
	APR-JUL	135	186	225	110%	265	335	205
Santa Cruz R at Cundiyo	MAR-JUL	11.7	15.7	18.7	102%	22	27	18.3
Nambe Falls Reservoir Inflow	MAR-JUL	3.8	5.2	6.2	95%	7.3	9.1	6.5
Tesuque Ck ab diversions	MAR-JUL	0.7	1.1	1.43	107%	1.8	2.4	1.34
Rio Grande at Otowi Bridge ²	MAR-JUL	455	625	755	105%	900	1130	720
Santa Fe R nr Santa Fe ²	MAR-JUL	2.8	3.6	4.3	100%	5	6.2	4.3
Jemez R nr Jemez	MAR-JUL	27	36	43	102%	51	63	42
Jemez R bl Jemez Canyon Dam	MAR-JUL	20	28	35	103%	42	53	34
Rio Grande at San Marcial ²	MAR-JUL	215	410	540	106%	670	865	510

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

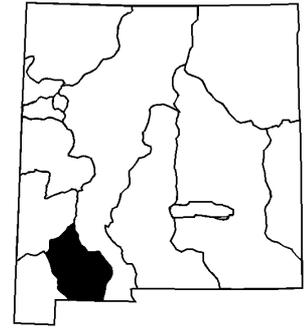
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

Reservoir Storage End of February, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Abiquiu Reservoir	71.0	125.0	154.8	1198.5
Bluewater Lake	4.1	6.2	6.6	38.5
Caballo Reservoir	27.7	44.5	101.1	332.0
Cochiti Lake	46.2	48.1	58.3	491.0
Costilla Reservoir		11.5	6.9	16.0
El Vado Reservoir	15.9	70.6	100.8	184.8
Elephant Butte Reservoir	170.8	483.0	1305.0	2195.0
Heron Reservoir	56.7	139.9	297.8	400.0
Basin-wide Total	392.5	917.4	2024.4	4839.8
# of reservoirs	7	7	7	7

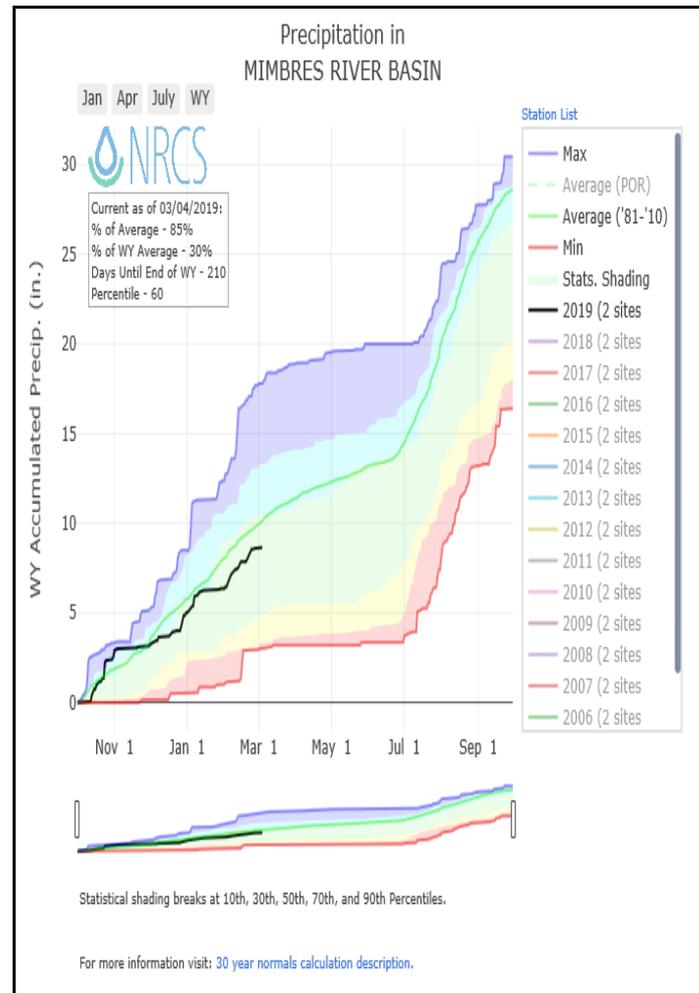
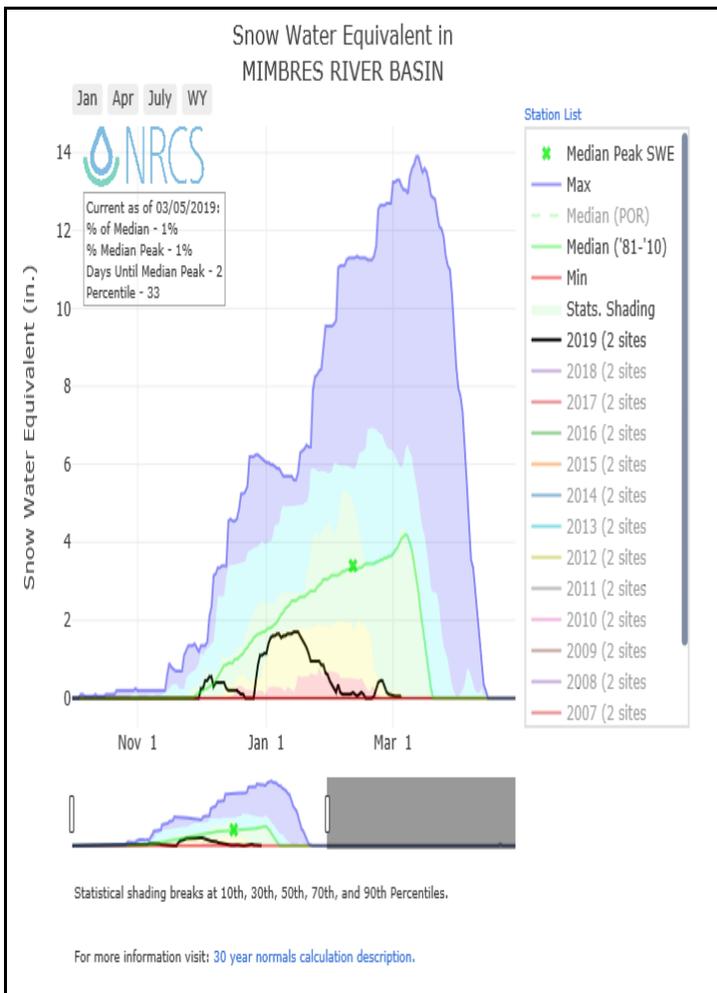
Watershed Snowpack Analysis March 1, 2019	# of Sites	% Median	Last Year % Median
RIO GRANDE BASIN	17	99%	35%

Mimbres River Basin Water Supply Outlook Report as of March 1, 2019



The March 1st forecasts for the Mimbres River at Mimbres have improved slightly from 52 percent of the average last month to 69 percent this month. February did receive a significant amount of precipitation with 134 percent of the average, which brings the water year-to-date total to 86 percent of the average. Snowpack in the basin has continued to dwindle and is now at a meager 1 percent of the median, as compared to 5 percent last year at this time.

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 - March 1, 2019**

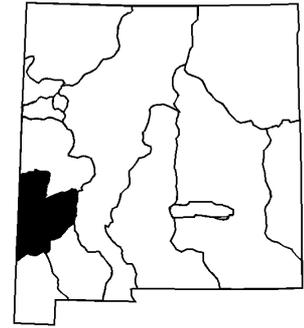
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

MIMBRES RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Mimbres R at Mimbres ³	MAR-MAY	0.22	0.61	1.04	69%	1.65	2.9	1.5

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

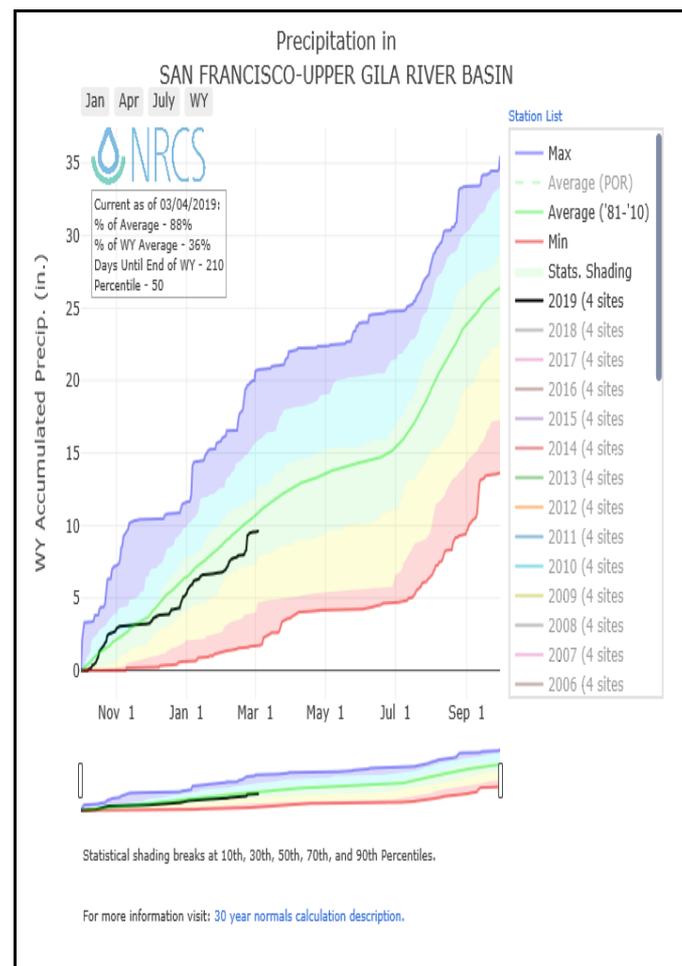
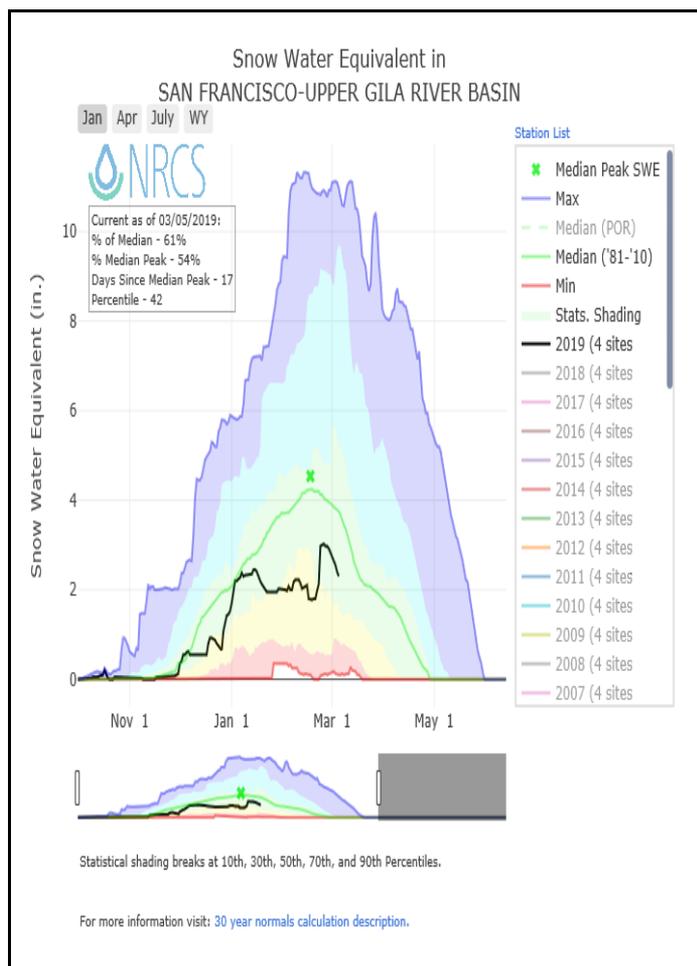
Watershed Snowpack Analysis March 1, 2019	# of Sites	% Median	Last Year % Median
MIMBRES RIVER BASIN	2	1%	5%

San Francisco / Upper Gila River Basin Water Supply Outlook Report as of March 1, 2019



The March 1st forecasts for the San Francisco and Upper Gila range from 85 percent of average for the Gila River at Gila to 67/68 percent for the San Francisco at Glenwood and Clifton. Water year-to-date precipitation is 89 percent of the average after receiving 134 percent of the average monthly precipitation in February. Snowpack in the basin has improved significantly and is currently at 81 percent of the median as compared to 14 percent at this time last year.

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 - March 1, 2019**

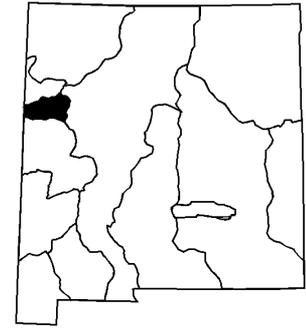
Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast

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	MAR-MAY	15.5	23	29	85%	36	49	34
Gila R bl Blue Ck nr Virden ³	MAR-MAY	14	25	36	84%	48	70	43
San Francisco R at Glenwood ³	MAR-MAY	3.3	6.7	10.2	67%	14.6	23	15.2
San Francisco R at Clifton ³	MAR-MAY	7	16.8	26	68%	37	57	38

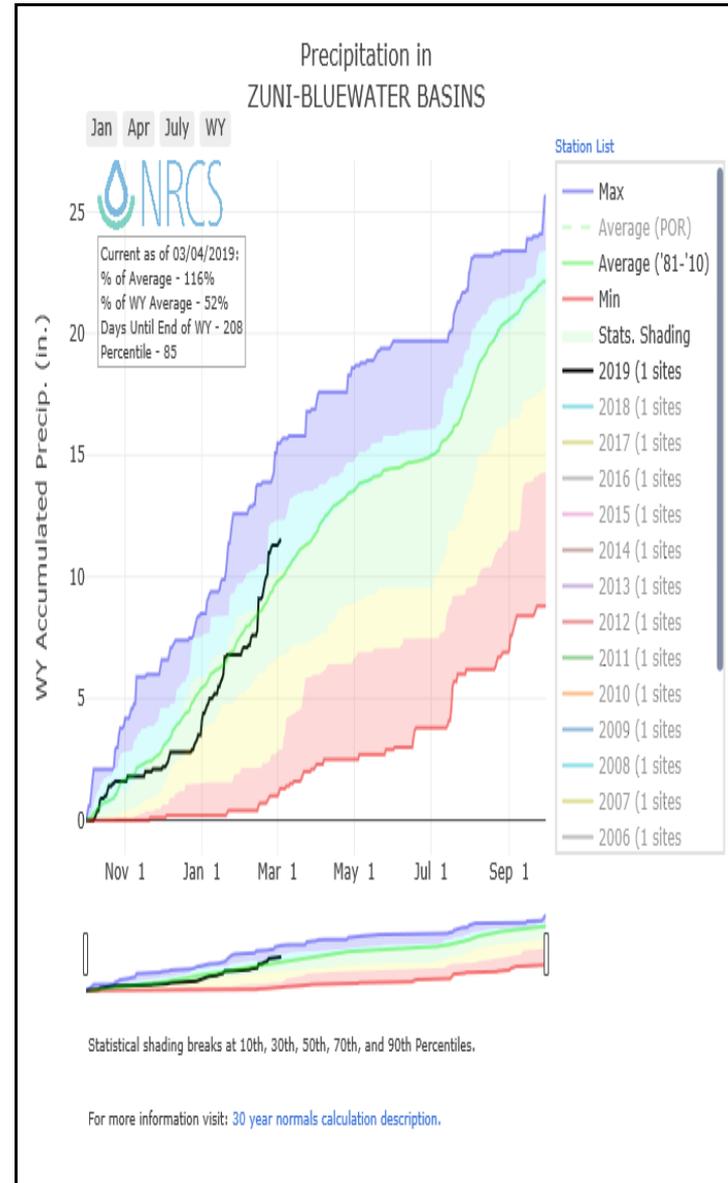
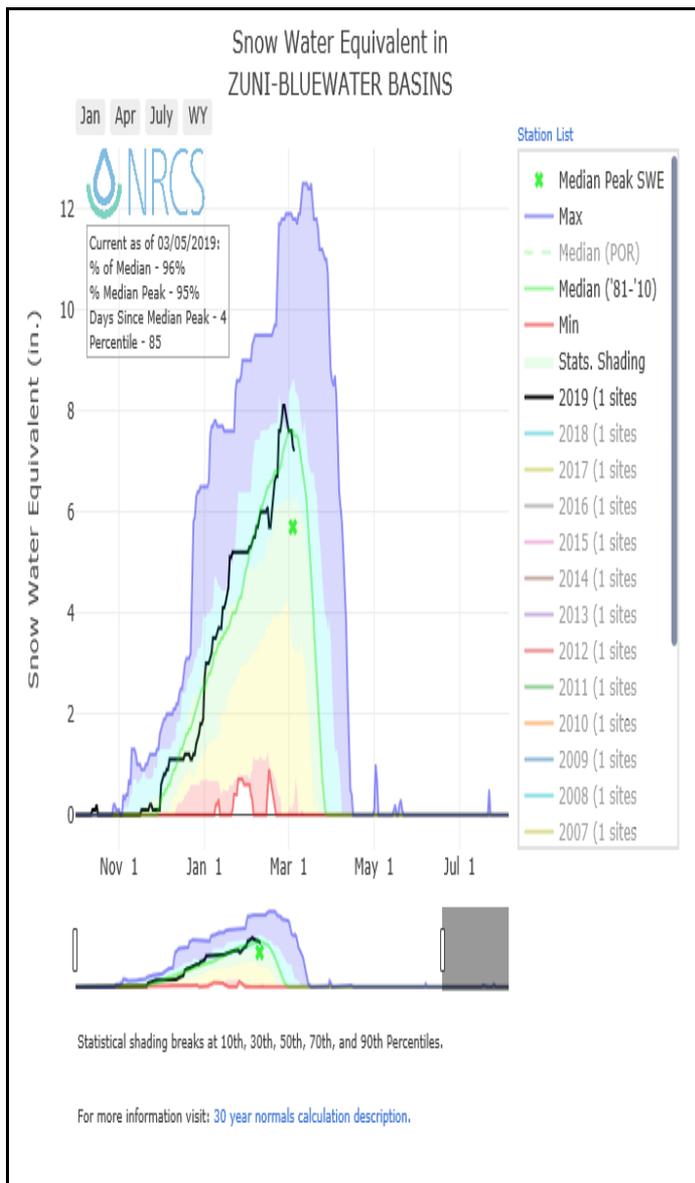
- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Watershed Snowpack Analysis March 1, 2019	# of Sites	% Median	Last Year % Median
SAN FRANCISCO-UPPER GILA RIVER BASIN	7	81%	14%

Zuni / Bluewater Basins Water Supply Outlook Report as of March 1, 2019



Forecasts for the Zuni/Bluewater area are currently between 80 and 87 percent of the average. Snowpack in the basin has improved significantly due to recent storms and is at 126 percent of the median as compared to 28 percent at this time last year! February received over 200 percent of the average rainfall for the month! This now puts the water year-to-date total at 115 percent of the average. Last year at this time it was a meager 10 percent of the average. Bluewater Lake currently holds 4,100 acre-feet of water versus 6,200 acre-feet at this time last year. This is 62 percent of the average stored water as compared to 94 percent last year at this time. However, keep in mind that at this time last year the basin was well into melt out.



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**Zuni-Bluewater Basins
Streamflow Forecasts - March 1, 2019**

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	MAR-MAY	0.07	0.41	0.9	80%	1.69	3.5	1.12
Zuni R ab Black Rock Reservoir ³	MAR-MAY	0	0.01	0.2	87%	0.82	3	0.23

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

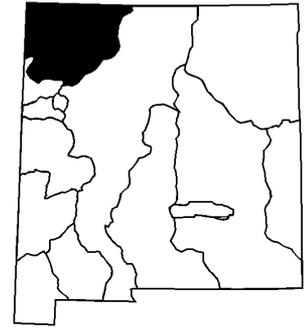
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

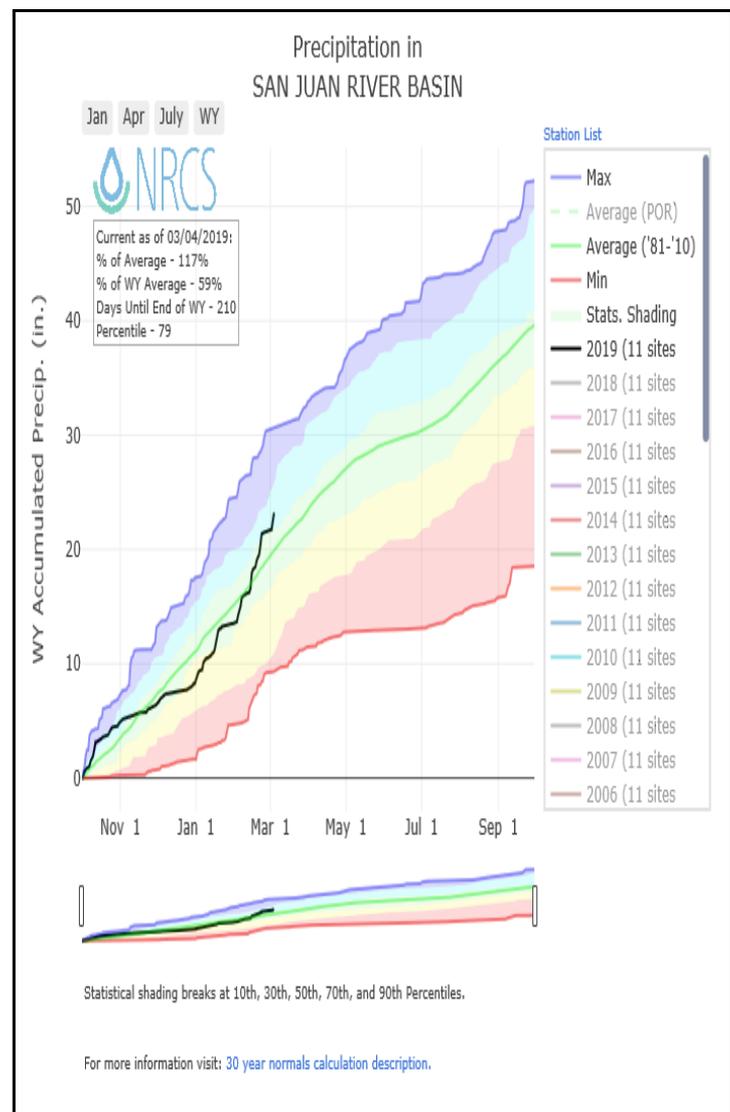
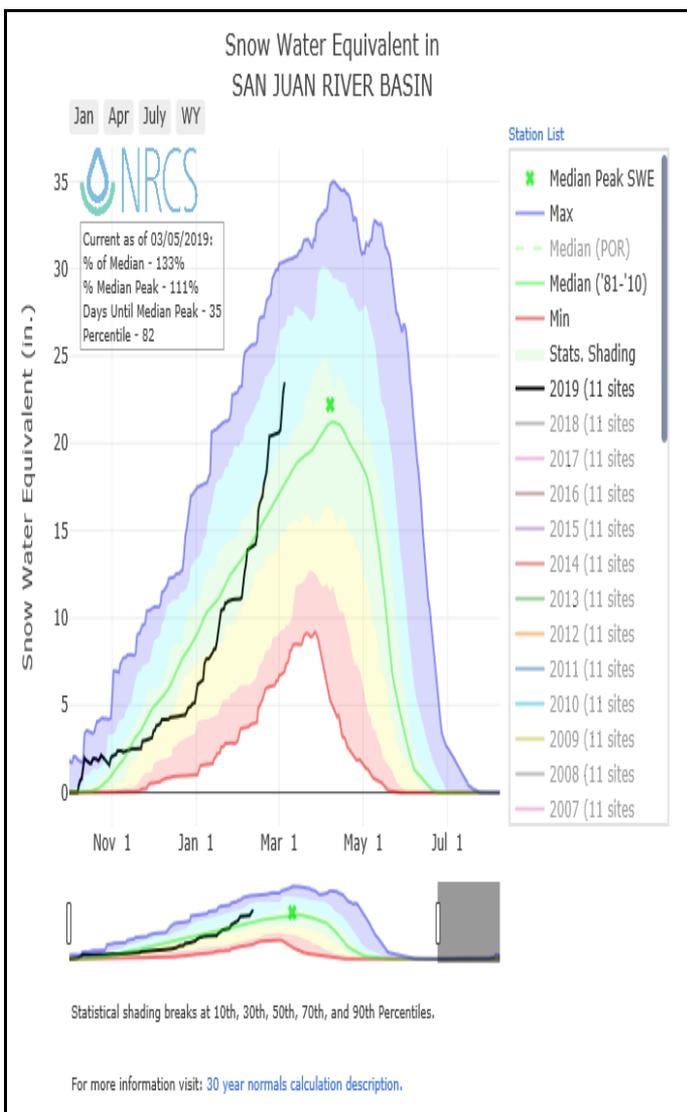
Reservoir Storage End of February, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bluewater Lake	4.1	6.2	6.6	38.5
Basin-wide Total	4.1	6.2	6.6	38.5
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis March 1, 2019	# of Sites	% Median	Last Year % Median
ZUNI-BLUEWATER BASINS	4	126%	28%

San Juan River Basin Water Supply Outlook Report as of March 1, 2019



Due to February storms the April through July forecasts for the San Juan have improved and now range from 100-110 percent of the average! February received 194 percent of the average monthly precipitation bringing the water year-to-date total to 112 percent of the average. Snowpack in the basin has also improved and is now at 123 percent of median which is an increase from just 58 percent at this time last year! Navajo reservoir storage contains 865,200 acre-feet or 67 percent of the average water stored at the end of February. This equates to 76 percent of the average capacity for the reservoir.



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**San Juan River Basin
Streamflow Forecasts - March 1, 2019**

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	46	55	102%	65	80	54
Navajo R at Oso Diversion ²	APR-JUL	41	55	65	100%	76	94	65
Navajo Reservoir Inflow ²	APR-JUL	550	700	810	110%	930	1120	735
Animas R at Durango	APR-JUL	325	395	450	108%	505	595	415
La Plata R at Hesperus	APR-JUL	17.4	22	25	109%	28	34	23

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

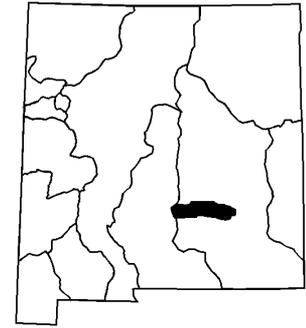
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

Reservoir Storage End of February, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Navajo Reservoir	865.2	1246.0	1292.0	1696.0
Basin-wide Total	865.2	1246.0	1292.0	1696.0
# of reservoirs	1	1	1	1

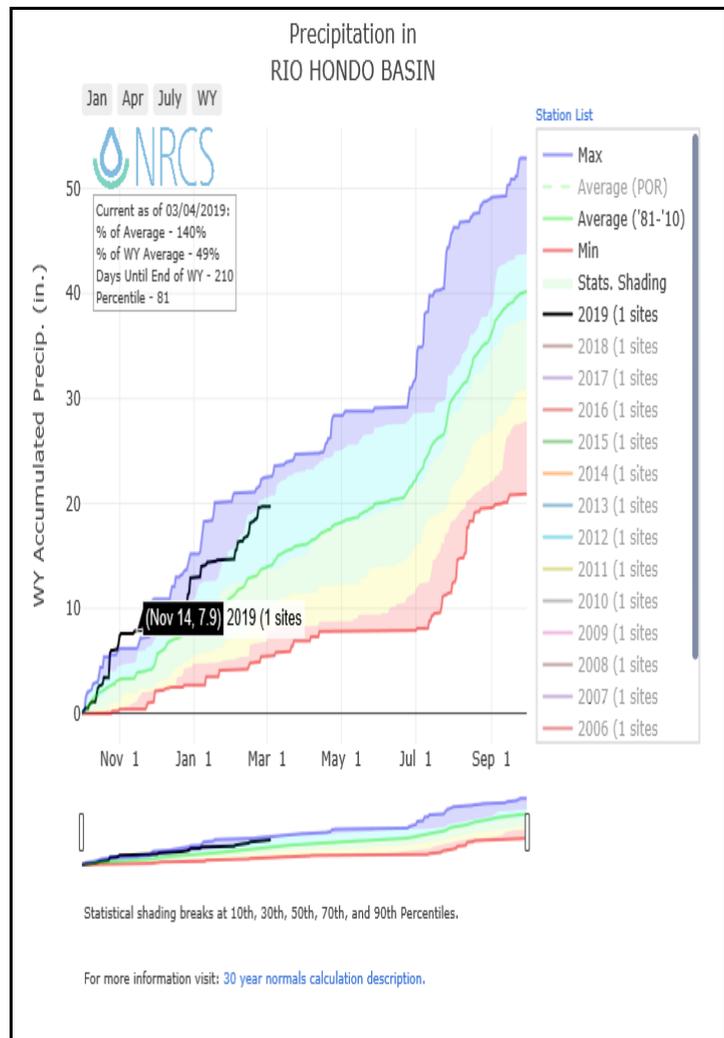
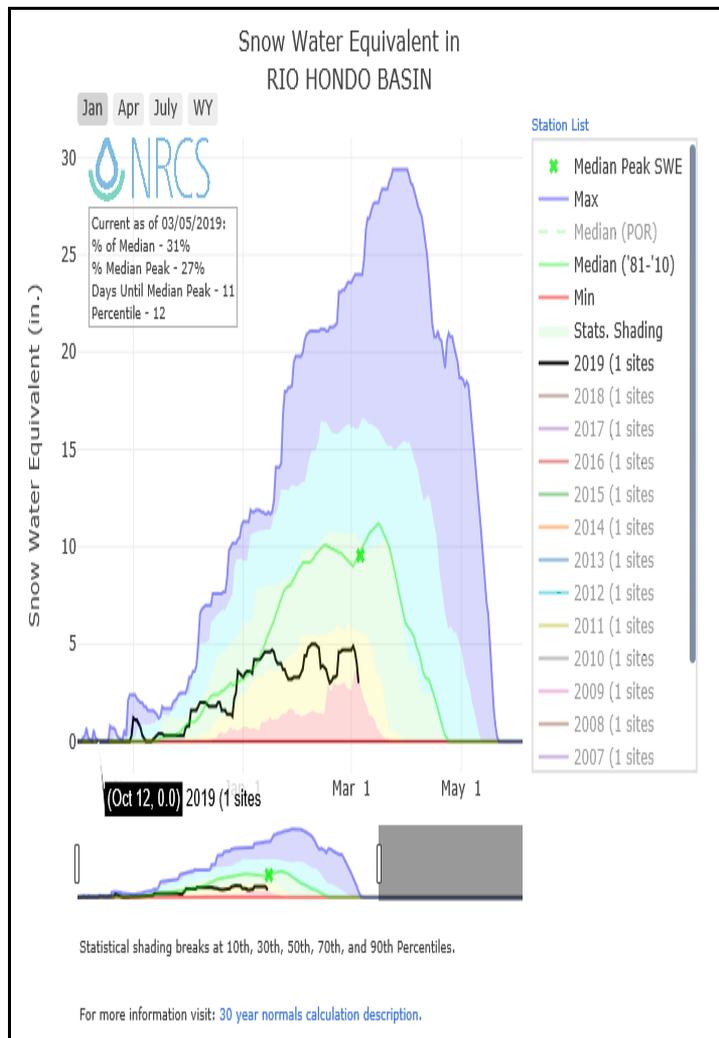
Watershed Snowpack Analysis March 1, 2019	# of Sites	% Median	Last Year % Median
SAN JUAN RIVER BASIN	12	123%	58%

Rio Hondo Basin Water Supply Outlook Report as of March 1, 2019



The March 1st forecasts for the Rio Ruidoso at Hollywood remain low at just 31 percent of the average. February was a wet month for the region receiving 172 percent of the average rainfall for the month. This puts the water year-to-date total at 142 percent of the average. Snowpack in the basin has also increased slightly and is now at 52 percent of the median as compared to 54 percent at this time last year! This measurement 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 - March 1, 2019

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	0.29	1.19	2.1	31%	3.4	5.7	6.7

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

Watershed Snowpack Analysis March 1, 2019	# of Sites	% Median	Last Year % Median
RIO HONDO BASIN	1	52%	54%

NEW MEXICO STATEWIDE	Network	Elevation (ft)	Depth (in)	SWE (in)	Median (in)	% Median	Last Year SWE (in)	Last Year % Median
Alamitos	SC	9320			6.4		0.3	5%
Aztec #2	SC	9880	17	4.2	3.5	120%	0.8	23%
Bateman	SNOTEL	9300	42	11.9	10.9	109%	4.2	39%
Boon	SC	8140	21	6.2	4.5	138%	1.4	31%
Bowl Canyon	SC	8980	44	11.3	8.7	130%	2.8	32%
Chamita	SNOTEL	8400	43	11.3	9.5	119%	3.7	39%
Dan Valley	SC	7640	16	5.0	3.5	143%	0.8	23%
Elk Cabin	SNOTEL	8210	6	3.4	4.8	71%	0.3	6%
Frisco Divide	SNOTEL	8000	5	2.1	2.4	88%	0.0	0%
Gallegos Peak	SNOTEL	9800	44	10.3	9.8	105%	3.7	38%
Hematite Park	SC	9500			5.0		0.9	18%
Hidden Valley	SC	8480	39	9.8			0.8	
Hopewell	SNOTEL	10000	55	14.9	16.2	92%	6.0	37%
Lookout Mountain	SNOTEL	8500	0	0.0	0.6	0%	0.0	0%
Mcgaffey	SC	8120	10	2.6	1.4	186%	0.9	64%
Mcknight Cabin	SNOTEL	9240	1	0.1	3.1	3%	0.4	13%
Missionary Spring	SC	7940	22	5.6	4.1	137%	0.4	10%
Navajo Whiskey Ck	SNOTEL	9050	45	13.0			0.0	
North Costilla	SNOTEL	10600	26	7.0	5.9	119%	0.7	12%
Ojo Redondo	SC	8200			3.6		0.4	11%
Palo	SNOTEL	9350	22	6.7			1.5	
Palo	SC	9300	29	7.0	6.8	103%	1.9	28%
Panchuela	SC	8400	15	3.0				
Quemazon	SNOTEL	9500	27	8.6	8.4	102%	1.4	17%
Red River Pass #2	SNOTEL	9850	33	7.5	6.8	110%	2.2	32%
Rice Park	SNOTEL	8460	24	7.6	7.6	100%	1.6	21%
Rio En Medio	SC	10300	22	5.0	8.4	60%	2.1	25%
Rio Santa Barbara	SNOTEL	10664	53	12.9			3.9	
San Antonio Sink	SNOTEL	9100	36	9.4			3.9	
San Antonio Sink	SC	9200	34	8.5	7.1	120%	3.7	52%
Santa Fe	SNOTEL	11445	54	13.9	13.4	104%	3.8	28%
Senorita Divide #2	SNOTEL	8600	26	7.5	8.7	86%	3.3	38%
Shuree	SNOTEL	10100	29	7.7			1.3	
Shuree	SC	10097			2.7		1.0	37%
Sierra Blanca	SNOTEL	10280	21	4.7	9.1	52%	4.9	54%
Signal Peak	SNOTEL	8360	0	0.0	4.3	0%	0.0	0%
Silver Creek Divide	SNOTEL	9000	25	8.9	8.3	107%	2.6	31%
State Line	SC	8000	11	2.1	1.4	150%	0.0	0%
Taos Canyon	SC	9100	20	3.0	5.6	54%	1.2	21%
Taos Powderhorn	SNOTEL	11057	58	15.4			4.7	
Taos Powderhorn	SC	11250	74	18.4	20.3	91%	5.9	29%
Tolby	SNOTEL	10180	31	7.1	7.2	99%	1.4	19%
Tres Ritos	SNOTEL	8600	5	2.0			0.0	
Tres Ritos	SC	8600	24	6.7	5.8	116%	1.0	17%
Vacas Locas	SNOTEL	9306	40	11.8	11.7	101%	4.8	41%
Wesner Springs	SNOTEL	11120	41	11.7	12.1	97%	1.7	14%
Whiskey Creek	SC	9050	46	13.4	9.3	144%	2.6	28%
Basin Index						99%		29%
# of sites						34		34

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New Mexico
Basin Outlook Report
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