New Mexico
Basin Outlook Report
April 1, 2019

Bountiful amounts of snow blanketed the northern mountains throughout the month of March. A view of the Hematite manual course which was bare ground at this time last year.
Image 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

March was an extremely important month for water supply in New Mexico and it did not disappoint! Locally heavy precipitation covered much of the Four Corners States during the beginning of the month providing much needed relief across the central Rockies and into northern New Mexico. With water year-to-date precipitation totals coming in with impressive triple digit numbers as high as 139 percent, the spring runoffs are looking favorable. This wet trend continued into the middle of the month providing New Mexico with relief from long-term soil moisture deficits, a receding snow pack, and aided in facilitating early runoff in the southern regions of the state. Another major winter event made its way into the state later in the month bringing with blizzard like conditions in many areas. Over a foot of snow was delivered in the northern mountains and southern Colorado affecting the Rio Grande and San Juan adding to what was already turning out to be a promising water year. Additionally, due to the recent above-average precipitation and snowpack conditions New Mexico saw noticeable improvements in exceptional drought conditions (D4) which were removed state-wide. Moderate to heavy precipitation continued to fall into the end of March with impressive 1 to 5 inch totals pushing snow-water-equivalent values toward record setting levels whilst continuing to reduce drought conditions in the lower elevations. As we move into April, temperatures have begun to rise with melt-off in process and even complete in southern regions of the state. High elevation snowpack is being retained by colder temperatures in the north and continues to be refreshed with smaller intermittent winter storms. Water users and managers can expect favorable runoff conditions for most of the state!

Snowpack

Statewide snowpack is currently at 125 percent of the median compared to 16 percent at this time last year! Snowpack in southern Colorado affecting our water supply is also currently above average, with the headwaters of the Rio Grande boasting 145 percent of the average compared to 50 percent last April. Peak SWE season is upon us and the northern mountains are looking spectacular this year! The Chuska Mountains near the Arizona state line also have impressive snowpack totals at 210 percent of the median. This is in stark contrast to the 8 percent which remained at the end of last March. The southern basins continue to be plagued by early warming resulting in early runoff, however they received significant precipitation and can expect better runoff totals than in years past. 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	154	4
PECOS RIVER BASIN	104	13
RIO GRANDE BASIN	123	26
MIMBRES RIVER BASIN	0	0
SAN FRANCISCO-UPPER GILA RIVER BASIN	13	0
ZUNI-BLUEWATER BASINS	82	82
SAN JUAN RIVER BASIN	153	54
CHUSKA MOUNTAINS	210	8
RIO HONDO BASIN	5	0
Statewide Snowpack Total	**125**	**16**
# of sites	37	37

Precipitation

March provided localized heavy precipitation throughout much of the Four Corners area with some regions receiving from 1-5 inches with reports of even heavier localized rainfall in some areas. March precipitation has totaled some impressive amounts with numbers as high as 220 percent of average in the San Juan Basin and Four Corners region. Statewide monthly precipitation is currently 152 percent of the average, with the water year-to-date average at 118 percent. Water users and managers should continue to monitor the evolution of the forecasts to help determine their water supply needs as we approach move through the peak SWE season.

Reservoirs

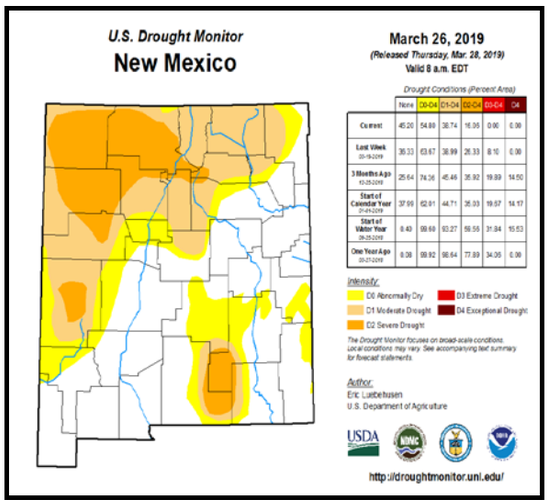
As of April 1st, most of New Mexico's major reservoirs are storing well below average amounts of water. Most smaller reservoirs are boasting impressive percentages regarding average water stored, yet overall every reservoir in New Mexico is well below capacity. Current statewide percent of average water stored has increased slightly and is at 46 percent as compared to 70 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 some impressive snowpack and precipitation totals throughout the month of March water-users can expect reservoir levels to continue to rise as the high elevation snowpack in the northern mountains begins to melt off.

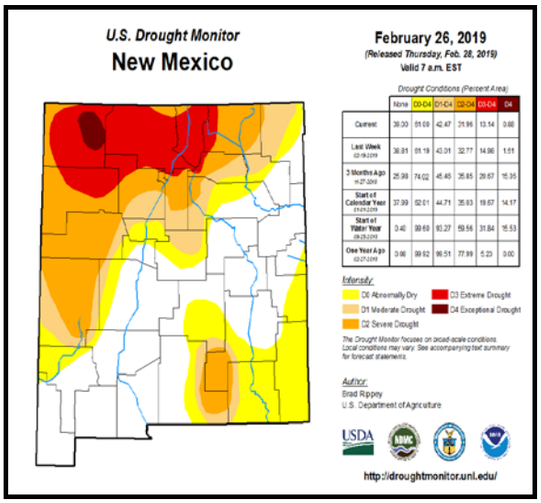
NEW MEXICO STATEWIDE	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Abiquiu Reservoir	63.3	124.9	153.9	1192.8	5%	10%	13%	41%	81%
Bluewater Lake	11.6	6.0	9.7	38.5	30%	16%	25%	119%	62%
Brantley Lake nr Carlsbad	29.8	38.0	30.1	1008.2	3%	4%	3%	99%	126%
Caballo Reservoir	31.1	57.9	84.6	332.0	9%	17%	25%	37%	68%
Cochiti Lake	45.6	47.4	58.0	491.0	9%	10%	12%	79%	82%
Conchas Lake	128.1	211.5	202.7	254.2	50%	83%	80%	63%	104%
Costilla Reservoir	3.0	11.9	7.3	16.0	19%	75%	46%	41%	164%
Eagle Nest Lake nr Eagle Nest, NM	36.6	43.0	55.6	79.0	46%	54%	70%	66%	77%
El Vado Reservoir	25.7	72.1	113.0	190.3	14%	38%	59%	23%	64%
Elephant Butte Reservoir	219.6	434.9	1283.0	2195.0	10%	20%	58%	17%	34%
Heron Reservoir	59.2	139.9	287.7	400.0	15%	35%	72%	21%	49%
Lake Avalon	1.3		1.6	4.0	33%		39%	83%	
Lake Sumner	32.9	41.0	29.7	102.0	32%	40%	29%	111%	138%
Navajo Reservoir	955.5	1236.4	1310.0	1696.0	56%	73%	77%	73%	94%
Santa Rosa Reservoir	57.5	93.2	52.4	438.3	13%	21%	12%	110%	178%
Basin-wide Total	1699.5	2558.1	3677.7	8433.3	20%	30%	44%	46%	70%
# of reservoirs	14	14	14	14	14	14	14	14	14

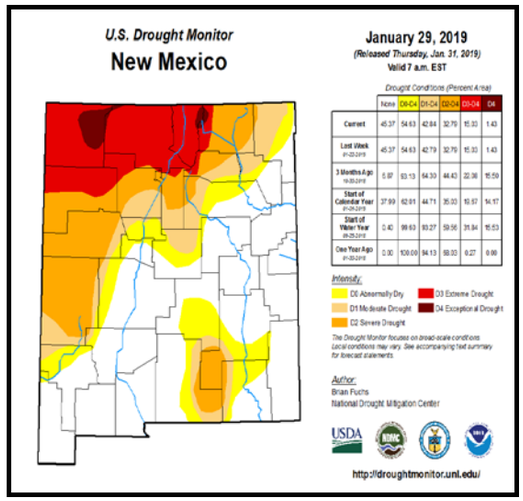
Streamflow

The April 1st streamflow values are impressive for all major rivers reliant on snowpack from the northern mountains. The Rio Grande Basin forecasts range from 140 percent of the average near the headwaters to 160 percent at San Marcial for the April to July time frame. The San Juan Basin also saw vast improvements throughout the month with the April to July forecast points all above 130 percent of the average. The Pecos Basin has also reaped the rewards of a solid month of snow and is currently forecast to be between 106 and 138 percent of the average. Additionally, the Canadian Basin made improvements throughout the month and is currently forecast between 120 and 135 percent of the average for April to June. The San Francisco and Upper Gila River Basins range from 95 to 109 percent of average with the Mimbres River now at 92 percent of the average after. Despite most of the snow already melting off in the Zuni and Rio Nutria the forecasts have impressive totals up to 211 percent of the average. Lastly, and unfortunately the lowest forecasts originate from the Rio Hondo Basin at 26 percent of the average for the April to June time frame. 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?







A steady stream of robust winter systems through the month of March have significantly improved drought conditions over the Land of Enchantment. For the first time since January 30, 2018 New Mexico had no areas designated in Extreme (D3) or Exceptional (D4) drought on the US Drought Monitor. While there has been significant improvement, long term drought remains over a large portion of the state. Areas of Severe (D2) drought remain over the northwest and north-central areas of the state as well as portions of the Sacramento Mountains. Periods of dry weather along with above normal evapotranspiration have periodically introduced areas of Abnormal Dryness (D0) on the USDM in the lower Pecos River Valley. Conditions in this area will continued to be monitored for further drought development through Spring 2019.

Temperatures over New Mexico for meteorological Winter 2019 generally ranged near normal (+/- 2F). Areas west of the Central Mountain Chain generally were up to 2F below normal with the opposite pattern evident east of the Central Mountain Chain. Moving into March 2019, this pattern reversed with generally above normal temperatures east of the Central Mountains and below normal temperatures eastward. Well above normal temperatures were noted along the Rio Grande Valley with some areas seeing departures in March of up +4F or more.

Precipitation totals were mixed over the state in March with well above normal values observed over most of northern New Mexico as well as the Gila Mountains. Below normal precipitation was the rule over the middle and lower Rio Grande Valley as well as most of the Pecos River Valley.

Royce Fontenot
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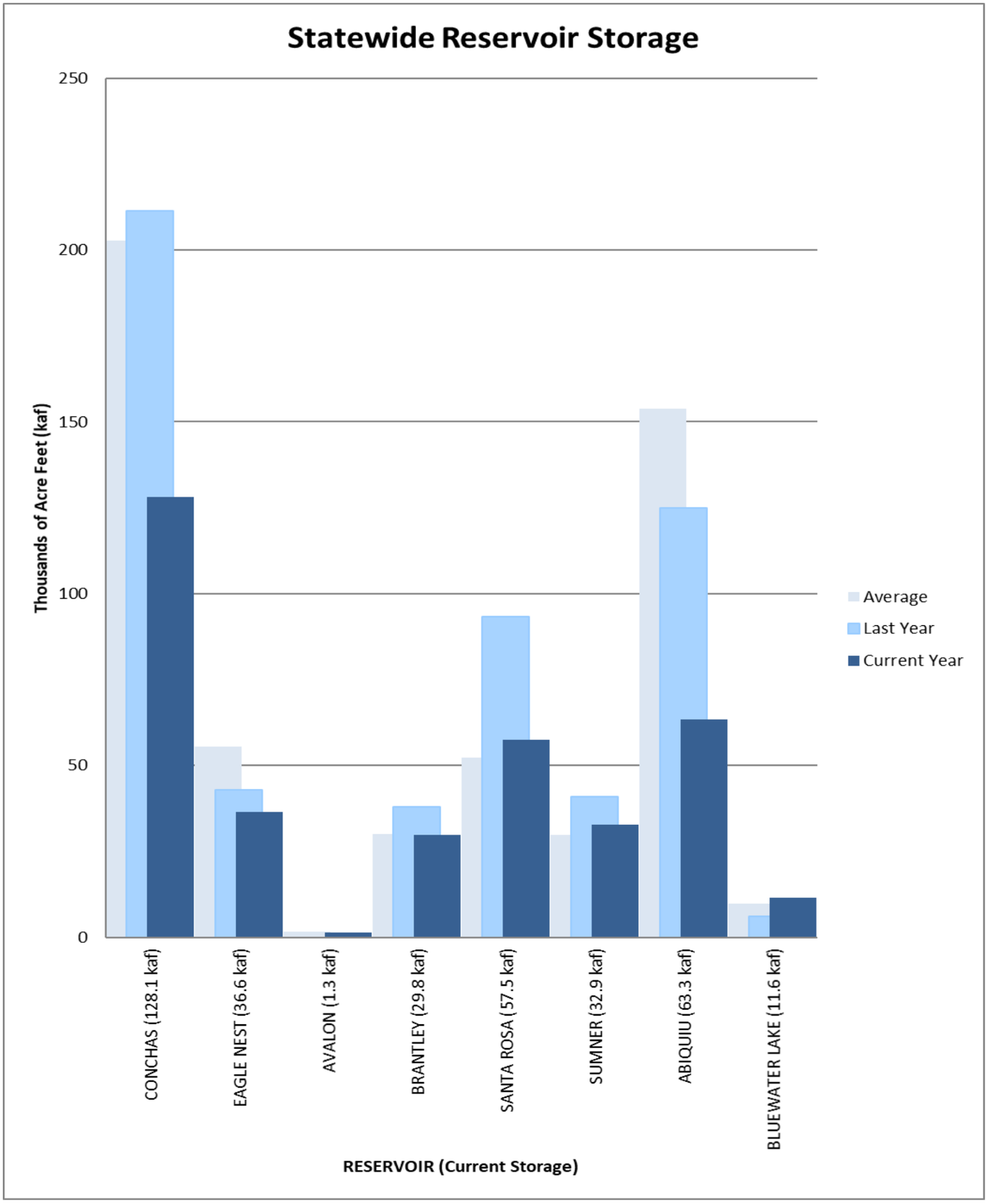
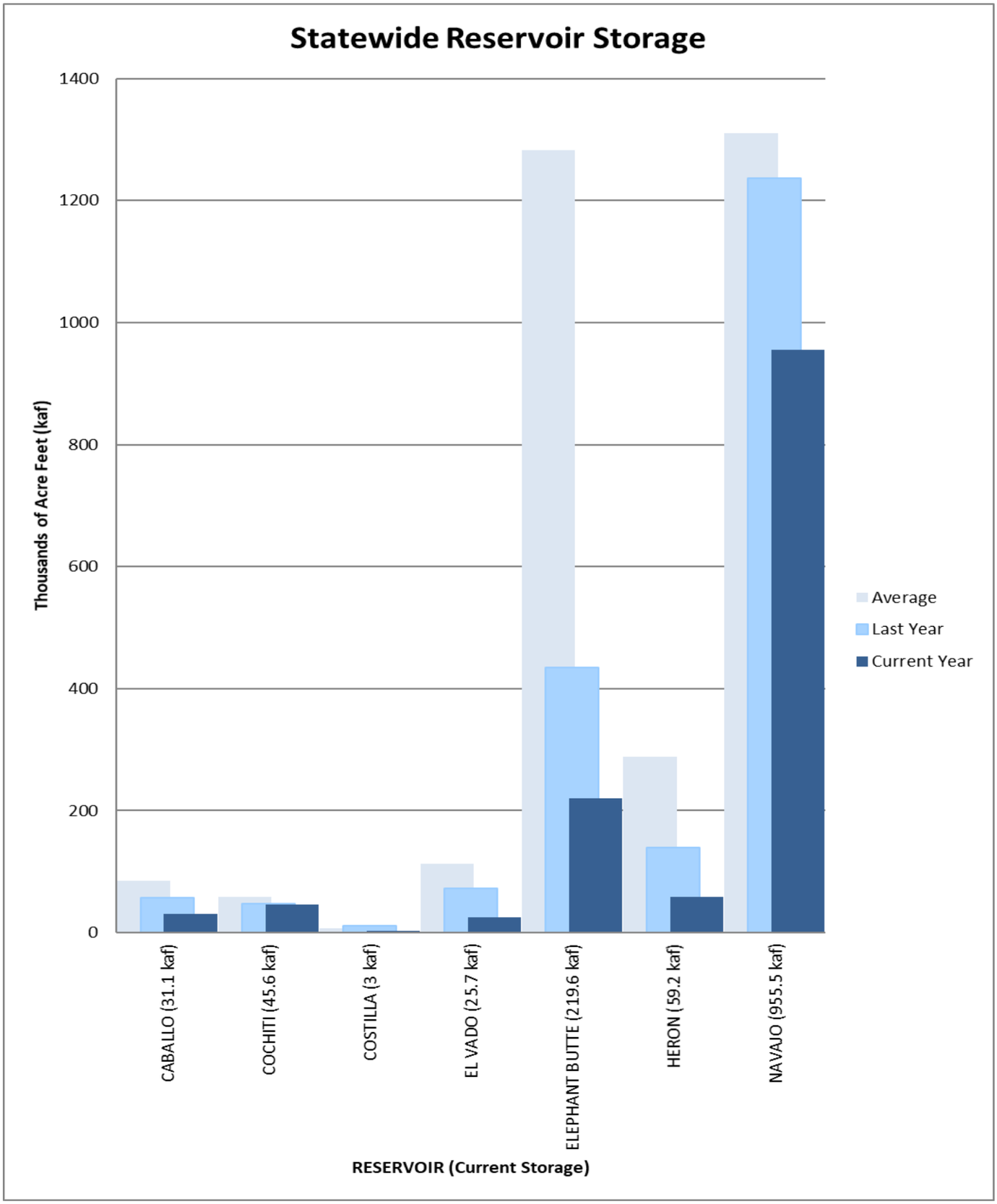

Statewide Reservoir Storage
250
200
150
100
50
0
Thousands of Acre Feet (kaf)
CONCHAS (128.1 kaf)
EAGLE NEST (36.6 kaf)
AVALON (1.3 kaf)
BRANTLEY (29.8 kaf)
SANTA ROSA (57.5 kaf)
SUMNER (32.9 kaf)
ABIQUIU (63.3 kaf)
BLUEWATER LAKE (11.6 kaf)
RESERVOIR (Current Storage)
Average
Last Year
Current Year


Statewide Reservoir Storage
1400
1200
1000
800
600
400
200
0
Thousands of Acre Feet (kaf)
CABALLO (31.1 kaf)
COCHITI (45.6 kaf)
COSTILLA (3 kaf)
EL VADO (25.7 kaf)
ELEPHANT BUTTE (219.6 kaf)
HERON (59.2 kaf)
NAVAJO (955.5 kaf)
RESERVOIR (Current Storage)
Average
Last Year
Current Year

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

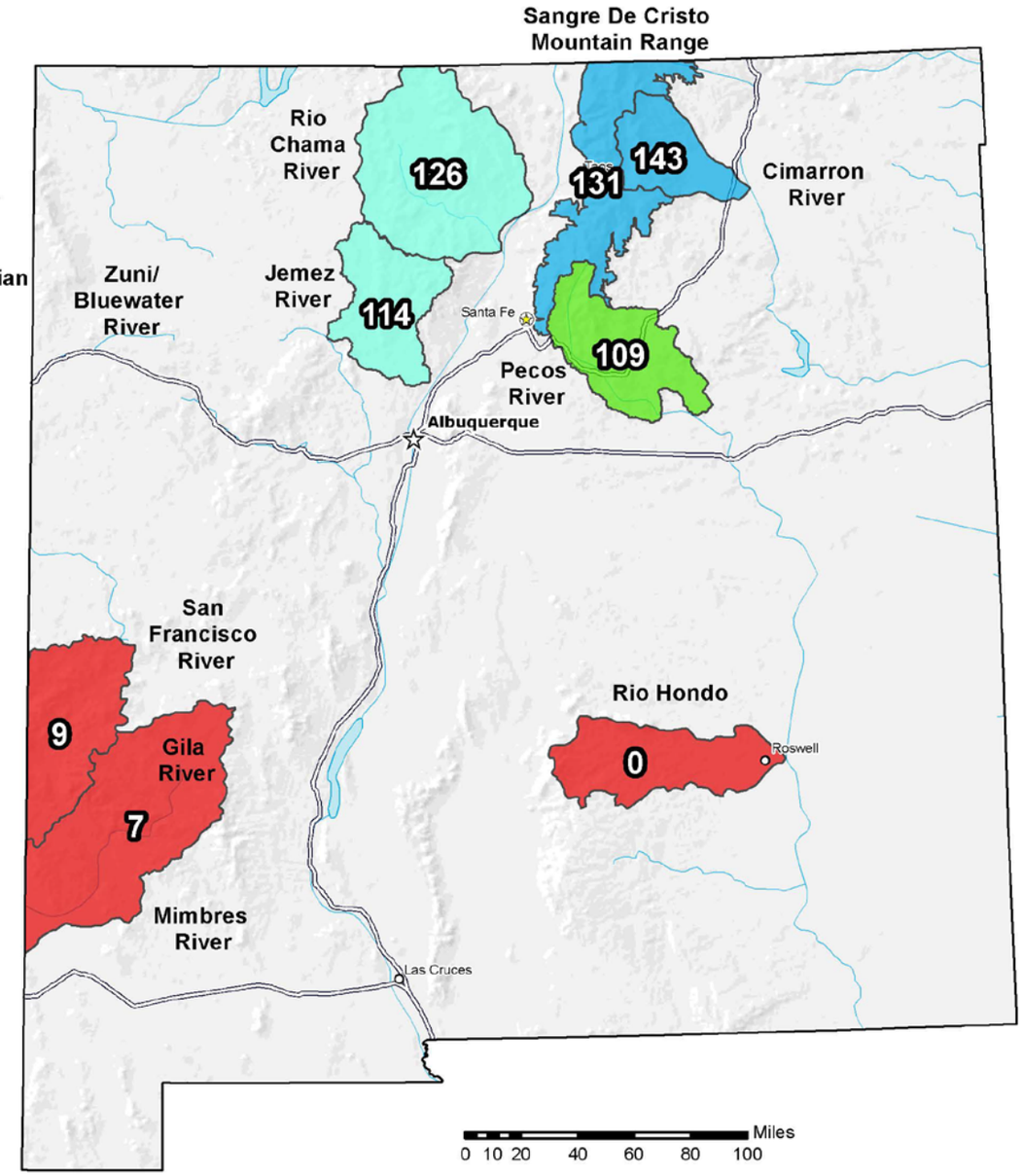
Apr 02, 2019

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

- unavailable *
- <50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- >=150%

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

Provisional Data Subject to Revision

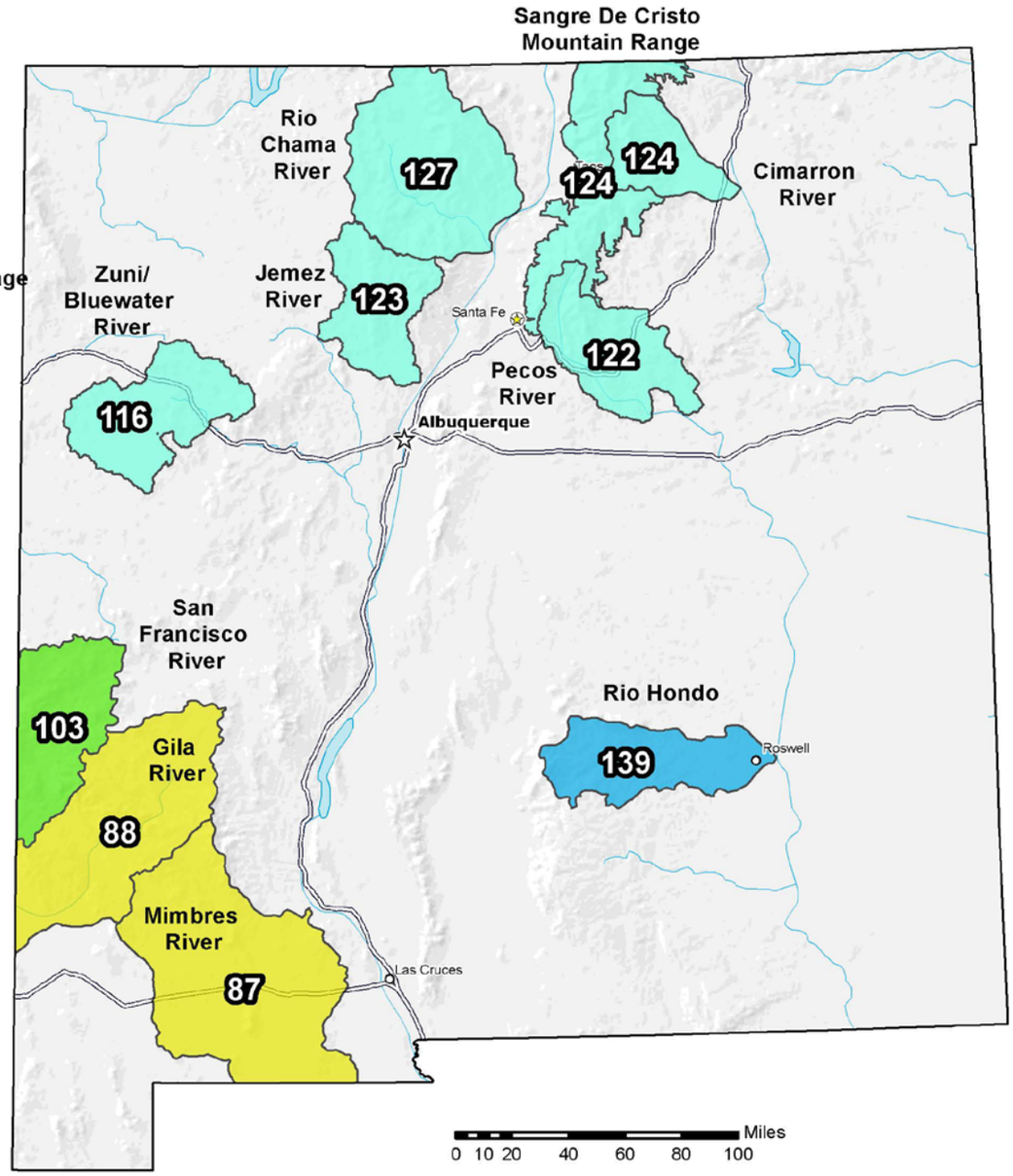


The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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

Apr 02, 2019



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

- unavailable *
- <50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- >=150%

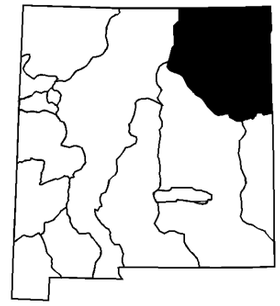
* *Data unavailable at time of posting or measurement is not representative at this time of year*

Provisional Data Subject to Revision

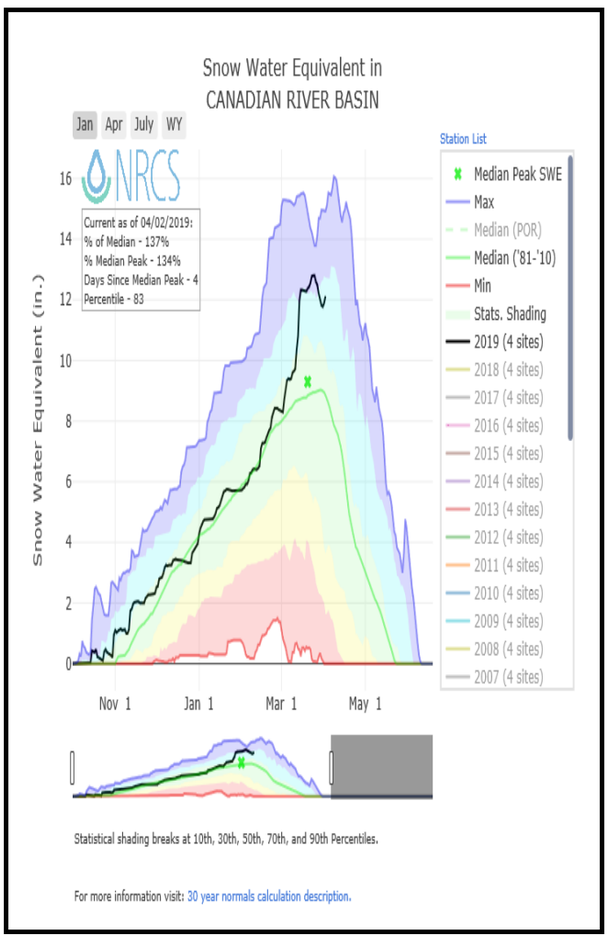
The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

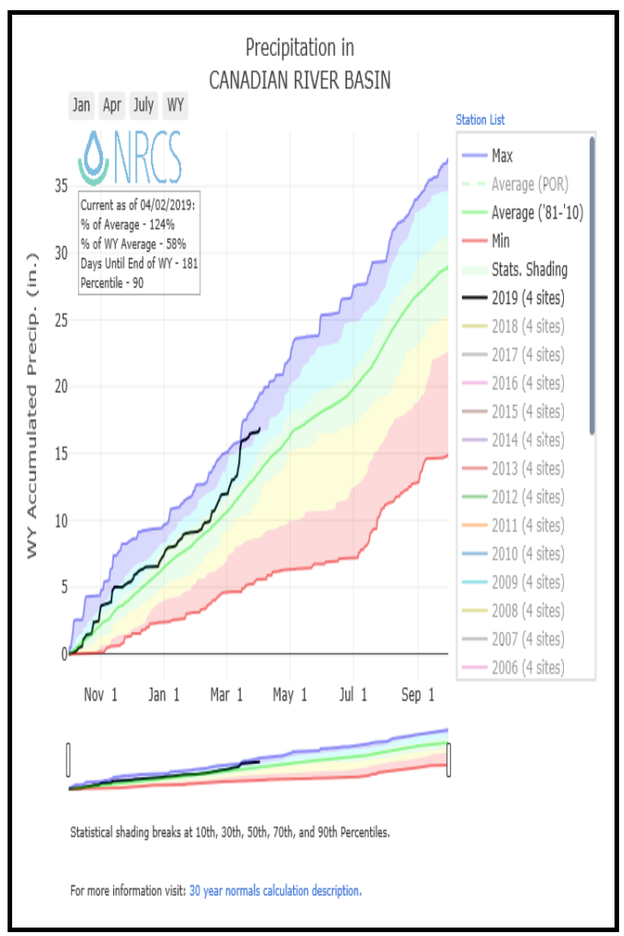
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov

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



The April to June forecasts range from a high of 135 percent of average for the Vermejo River near Dawson to a low of 120 percent at Rayado Creek near Cimarron. The month of March received 156 percent of the average amount of precipitation for the month. This puts the water year-to-date average amount of precipitation now at 123 percent as compared to 41 percent last year at this time. Snowpack in the basin is at 154 percent of the median! This is a vast improvement from 4 percent at this time last year! Reservoirs are currently holding 164,700 acre-feet of storage, which is a decrease of 89,800 acre-feet from this time last year. This equates to 78 percent of the average capacity and 64 percent of the average stored water for the basin at the end of March.





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Canadian River Basin
Streamflow Forecasts - April 1, 2019

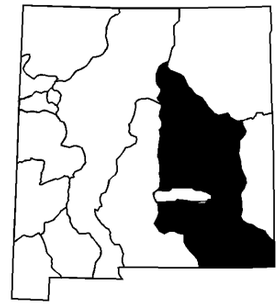
CANADIAN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Vermejo R nr Dawson								
	MAR-JUN	5.2	7.8	10	128%	12.6	17.2	7.8
	APR-JUN	4.9	7.5	9.7	135%	12.3	16.9	7.2
Eagle Nest Reservoir Inflow								
	MAR-JUN	7.1	10.9	14.2	127%	18.1	25	11.2
	APR-JUN	4.4	8.1	11.6	130%	16	24	8.9
Cimarron R nr Cimarron[2]								
	MAR-JUN	7.1	14.8	20	127%	25	33	15.8
	APR-JUN	3.9	11.4	16.4	124%	21	29	13.2
Ponil Ck nr Cimarron								
	MAR-JUN	5.4	7.7	9.7	135%	12	15.9	7.2
	APR-JUN	4.4	6.6	8.5	127%	10.7	14.5	6.7
Rayado Ck nr Cimarron								
	MAR-JUN	3.6	6.2	8.6	123%	11.5	16.9	7
	APR-JUN	2.7	5.2	7.7	120%	10.8	16.8	6.4
Conchas Reservoir Inflow[3]								
	MAR-JUN	8.6	21	35	117%	53	91	30
	APR-JUN	6.9	18.8	32	133%	50	88	24

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

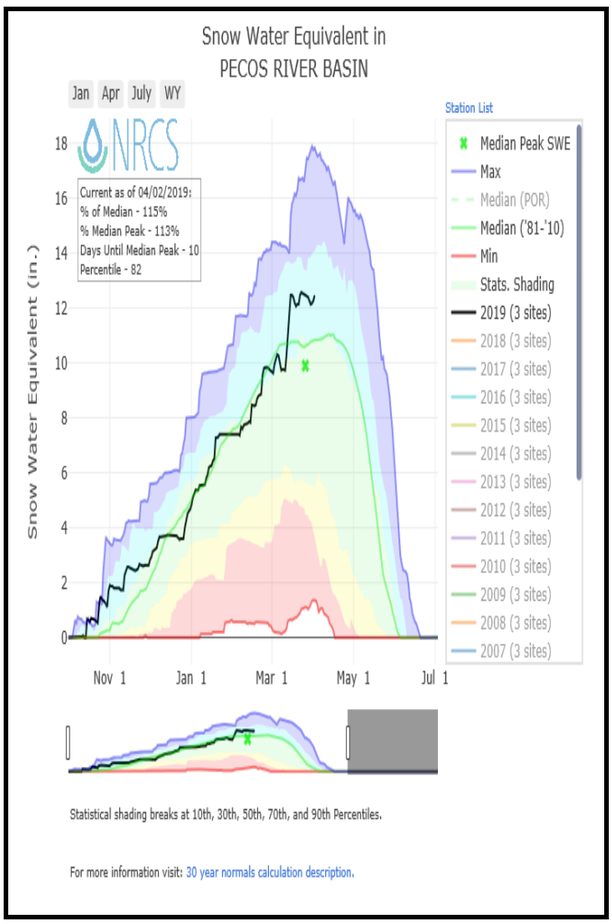
Reservoir Storage End of March, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Conchas Lake	128.1	211.5	202.7	254.4
Eagle Nest Lake nr Eagle Nest, NM	36.6	43.0	55.6	79.0
Basin-wide Total	164.7	254.5	258.3	333.4
# of reservoirs	2	2	2	2

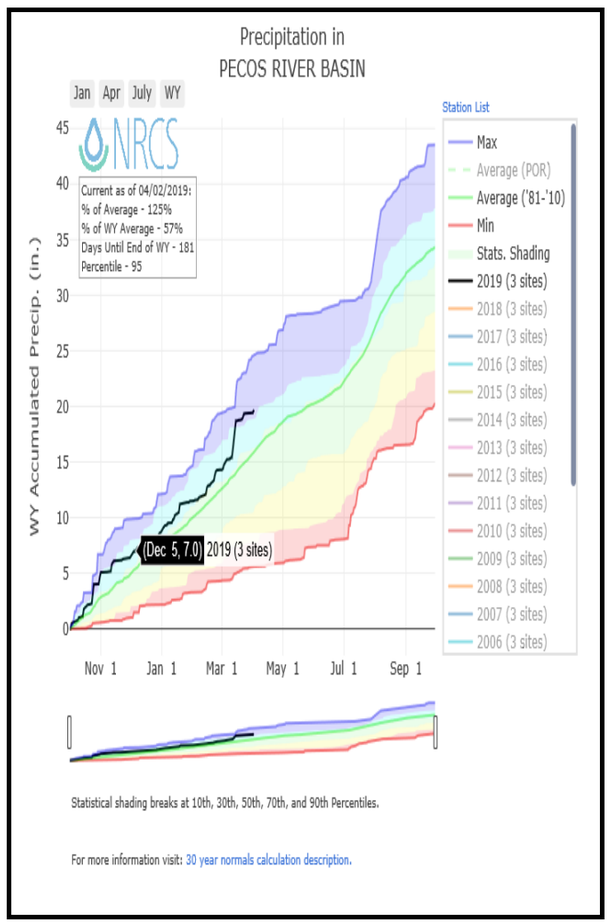
Watershed Snowpack Analysis April 1, 2019	# of Sites	% Median	Last Year % Median
CANADIAN RIVER BASIN	9	154%	4%

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



The April to July forecasts for the Pecos range from a high of 128 percent of average at Gallinas Creek near Montezuma to 106 percent for the Pecos River above Santa Rosa. March received 164 percent of the average precipitation for the month, putting the basin at 124 percent of average for the water year-to-date. This is 88 percent above last year's average of 36 percent! Snowpack in the Pecos River Basin increased throughout March and is now at 104 percent of the median! At this time last year the basin had just 13 percent of the median. As of March 1st, reservoir storage in the basin is at 120,200 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 153 percent of the average.





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Pecos River Basin
Streamflow Forecasts - April 1, 2019

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

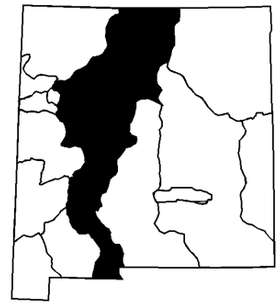
PECOS RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Pecos R nr Pecos								
	MAR-JUL	38	53	64	112%	77	98	57
	APR-JUL	34	49	60	113%	73	94	53
Pecos R nr Anton Chico								
	MAR-JUL	40	61	78	124%	99	134	63
	APR-JUL	25	46	63	111%	84	119	57
Gallinas Ck nr Montezuma								
	MAR-JUL	7	10.5	13.5	138%	16.9	22	9.8
	APR-JUL	4.5	8	11	128%	14.4	20	8.6
Pecos R ab Santa Rosa Lk								
	MAR-JUL	28	46	61	109%	79	110	56
	APR-JUL	22	40	55	106%	73	104	52

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

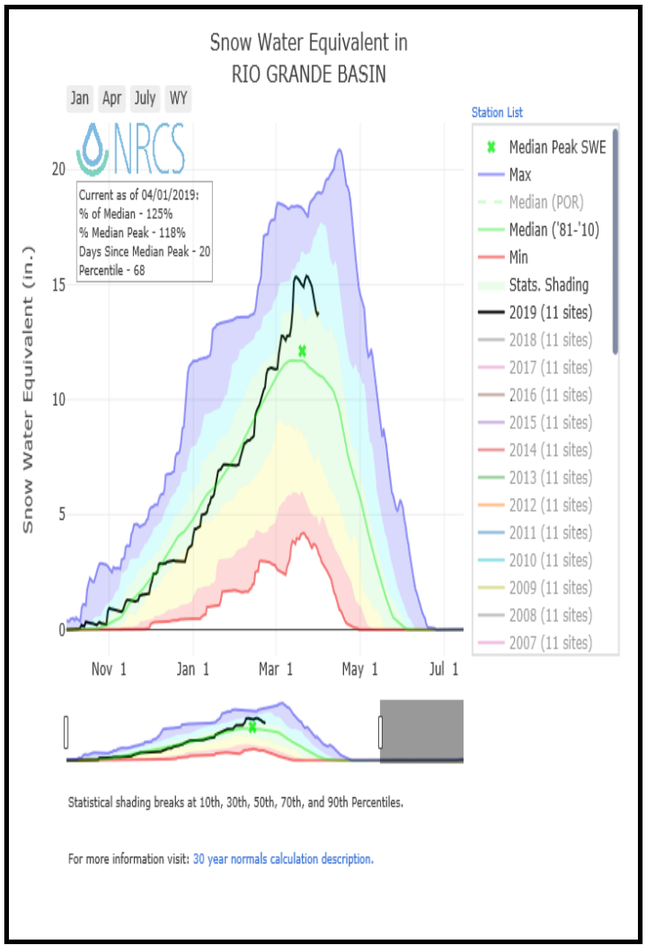
Reservoir Storage End of March, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Avalon	1.3		1.6	4.0
Brantley Lake nr Carlsbad	29.8	38.0	30.1	1008.2
Santa Rosa Reservoir	57.5	93.2	52.4	432.2
Lake Sumner	32.9	41.0	29.7	102.0
Basin-wide Total	120.2	172.2	112.2	1542.4
# of reservoirs	3	3	3	3

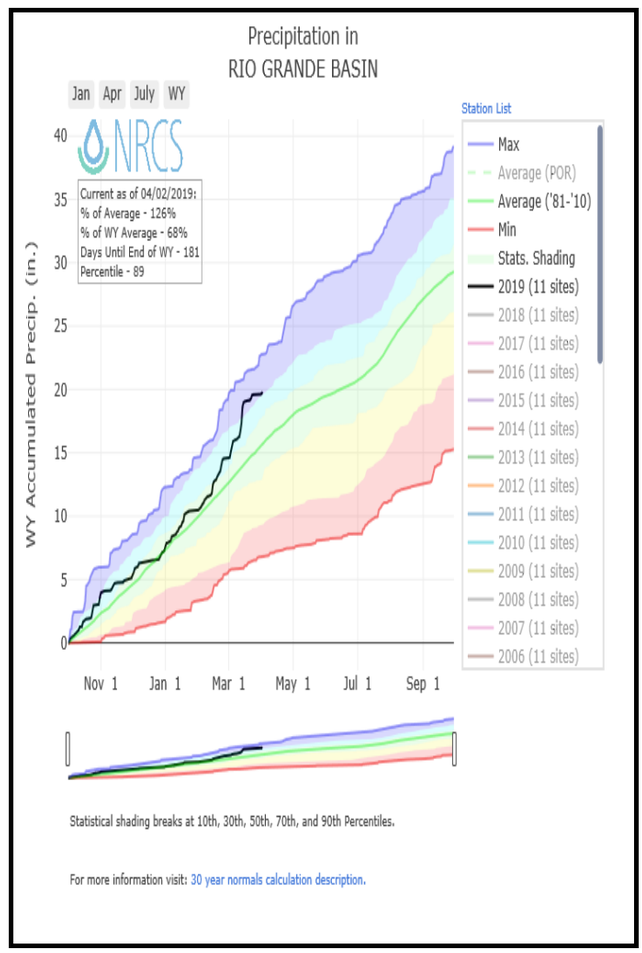
Watershed Snowpack Analysis April 1, 2019	# of Sites	% Median	Last Year % Median
PECOS RIVER BASIN	4	104%	13%

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



The April 1st forecasts for the Rio Grande have increased significantly from last month. They are all well above the average now. Near the head waters forecasts are as high as 140 percent of average and just slightly below that near Platoro. The Rio Pueblo near Taos is a high as 145 percent for the April to July time frame, and further south near Otowi Bridge up to 148 percent! Forecasts for the Rio Grande at San Marcial have also increased to 160 percent of the average for the same time frame. March was another excellent month for precipitation after receiving 171 percent of the average rainfall for the month which equates to 126 percent for the water year-to-date total. Snowpack in the basin increased slightly to 123 percent of the median which is significant compared to the 26 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 145 percent of the median as compared to 50 percent last year at this time. Current reservoir storage in the basin remains low at 459,100 acre-feet which is a decrease of 436,000 acre-feet from this time last year! However, keep in mind that last year saw a good deal of high elevation snowpack runoff by this time. This is just 41 percent of the average capacity in the basin and 23 percent of the average stored water.





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Rio Grande Basin
Streamflow Forecasts - April 1, 2019

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

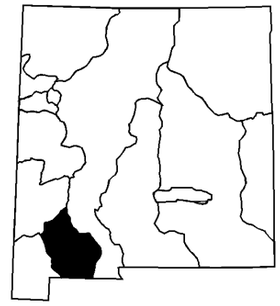
RIO GRANDE BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rio Grande nr Del Norte [2]								
	APR-SEP	535	645	720	140%	800	930	515
Platoro Reservoir Inflow								
	APR-JUL	58	66	72	129%	78	88	56
	APR-SEP	62	72	80	129%	87	99	62
Conejos R nr Mogote [2]								
	APR-SEP	194	230	250	129%	280	315	194
Costilla Reservoir Inflow								
	MAR-JUL	9.1	12.1	14.5	131%	17	21	11.1
	APR-JUL	9.1	12.1	14.5	141%	17	21	10.3
Costilla Ck nr Costilla [2]								
	MAR-JUL	22	30	36	138%	44	55	26
	APR-JUL	21	29	35	146%	43	54	24
Red R bl Fish Hatchery nr Questa								
	MAR-JUL	31	39	45	132%	51	60	34
	APR-JUL	29	37	43	139%	49	58	31
Rio Hondo nr Valdez								
	MAR-JUL	17.8	22	25	136%	27	32	18.4
	APR-JUL	17	21	24	138%	26	31	17.4
Rio Pueblo de Taos nr Taos								
	MAR-JUL	16.3	21	24	141%	28	34	17
	APR-JUL	15.4	20	23	145%	27	33	15.9
Rio Lucero nr Arroyo Seco								
	MAR-JUL	9.4	11.9	13.7	126%	15.6	18.8	10.9
	APR-JUL	9	11.5	13.3	129%	15.2	18.4	10.3
Rio Pueblo de Taos bl Los Cordovas								
	MAR-JUL	25	36	44	122%	54	69	36
	APR-JUL	24	35	43	130%	53	68	33
Embudo Ck at Dixon								
	MAR-JUL	36	51	63	131%	76	98	48
	APR-JUL	31	46	58	132%	71	93	44
El Vado Reservoir Inflow [2]								
	MAR-JUL	245	290	320	142%	355	410	225
	APR-JUL	220	265	295	144%	330	385	205
Santa Cruz R at Cundiyo								
	MAR-JUL	14.6	19.1	23	126%	26	32	18.3
	APR-JUL	11.1	15.6	19.1	114%	23	29	16.7
Nambe Falls Reservoir Inflow								
	MAR-JUL	4.9	6.3	7.4	114%	8.7	10.7	6.5
	APR-JUL	4	5.4	6.5	107%	7.8	9.8	6.1
Tesuque Ck ab diversions								
	MAR-JUL	0.76	1.16	1.5	112%	1.87	2.5	1.34
	APR-JUL	0.59	0.99	1.33	112%	1.7	2.3	1.19
Rio Grande at Otowi Bridge [2]								
	MAR-JUL	755	910	1020	142%	1140	1330	720
	APR-JUL	670	825	940	148%	1060	1250	635
Santa Fe R nr Santa Fe [2]								
	MAR-JUL	3.4	4.3	5	116%	5.8	7.1	4.3
	APR-JUL	2.2	3.1	3.8	100%	4.6	5.9	3.8
Jemez R nr Jemez								
	MAR-JUL	42	50	55	131%	61	70	42
	APR-JUL	30	38	43	123%	49	58	35
Jemez R bl Jemez Canyon Dam								
	MAR-JUL	32	40	47	138%	53	64	34
	APR-JUL	21	29	36	124%	42	53	29
Rio Grande at San Marcial [2]								
	MAR-JUL	550	675	765	150%	850	980	510
	APR-JUL	490	615	705	160%	790	920	440

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 March, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Abiquiu Reservoir	63.3	124.9	153.9	1198.5
Bluewater Lake	11.6	6.0	9.7	38.5
Caballo Reservoir	31.1	57.9	84.6	332.0
Cochiti Lake	45.6	47.4	58.0	491.0
Costilla Reservoir	3.0	11.9	7.3	16.0
El Vado Reservoir	25.7	72.1	113.0	184.8
Elephant Butte Reservoir	219.6	434.9	1283.0	2195.0
Heron Reservoir	59.2	139.9	287.7	400.0
Basin-wide Total	459.1	895.1	1997.2	4855.8
# of reservoirs	8	8	8	8

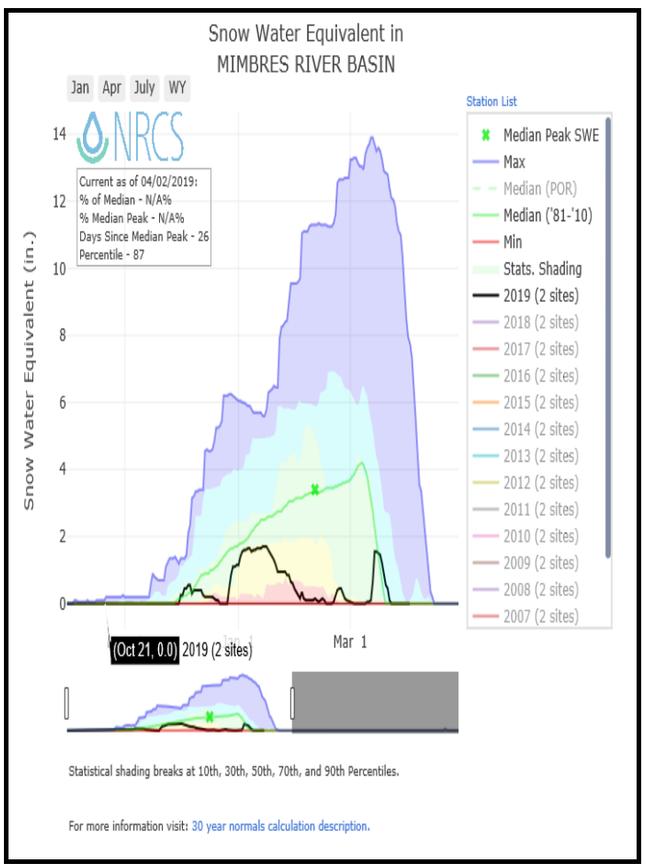
Watershed Snowpack Analysis April 1, 2019	# of Sites	% Median	Last Year % Median
RIO GRANDE BASIN	18	123%	26%

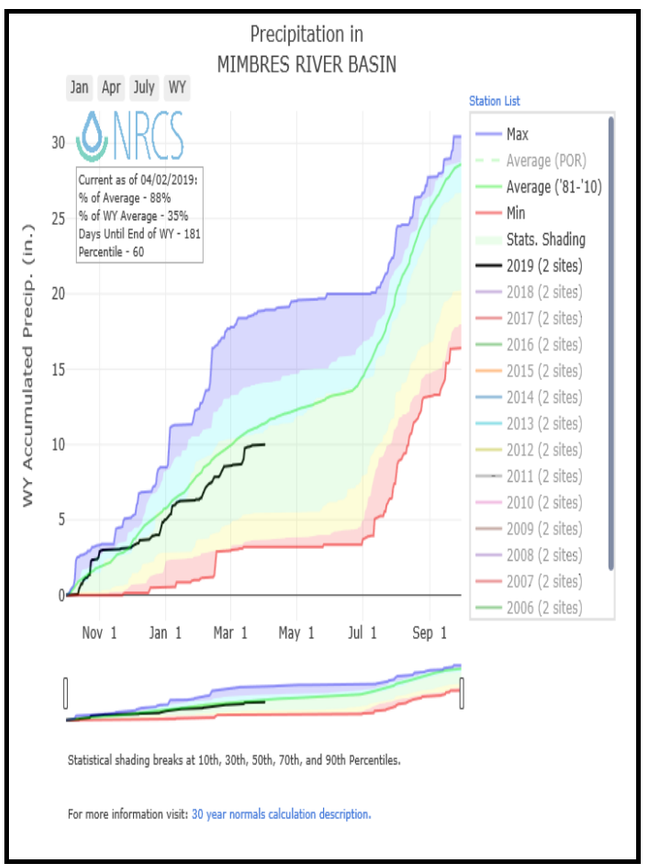
Mimbres River Basin
Water Supply Outlook Report
as of April 1, 2019



The April 1st forecasts for the Mimbres River at Mimbres have improved from 62 percent of the average last month to 92 percent this month. March was a decent month for the Mimbres which received 100 percent of the average monthly precipitation. This now brings the water year-to-date total to 88 percent of the average. Snowpack in the basin has continued to dwindle and has now almost completely melted out.

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 - April 1, 2019

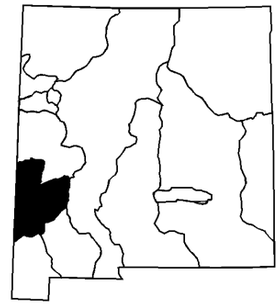
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

MIMBRES RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Mimbres R at Mimbres[3]								
	APR-MAY	0.3	0.65	1	92%	1.46	2.3	1.09

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

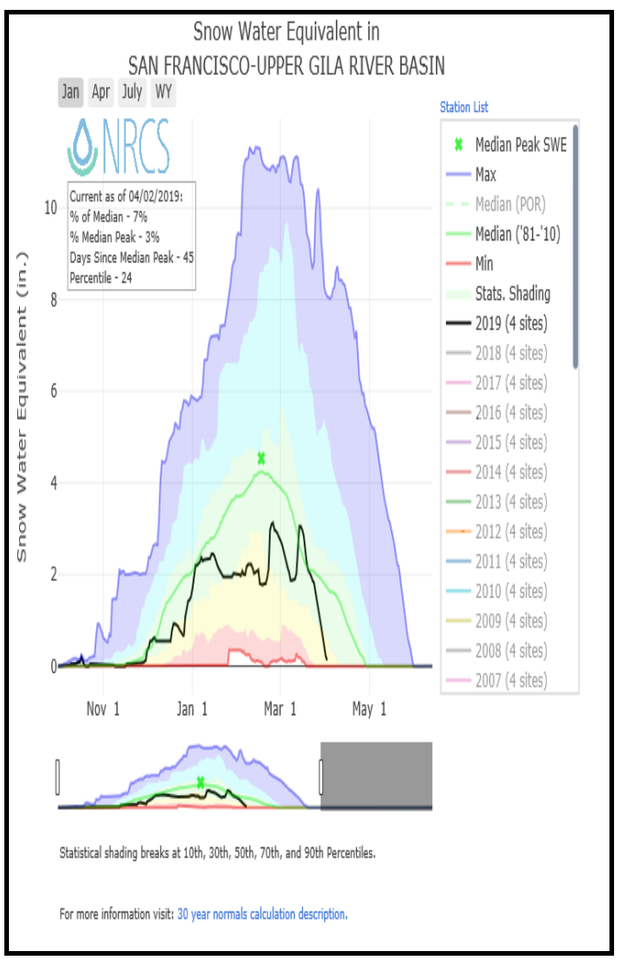
Watershed Snowpack Analysis April 1, 2019	# of Sites	% Median	Last Year % Median
MIMBRES RIVER BASIN	2		

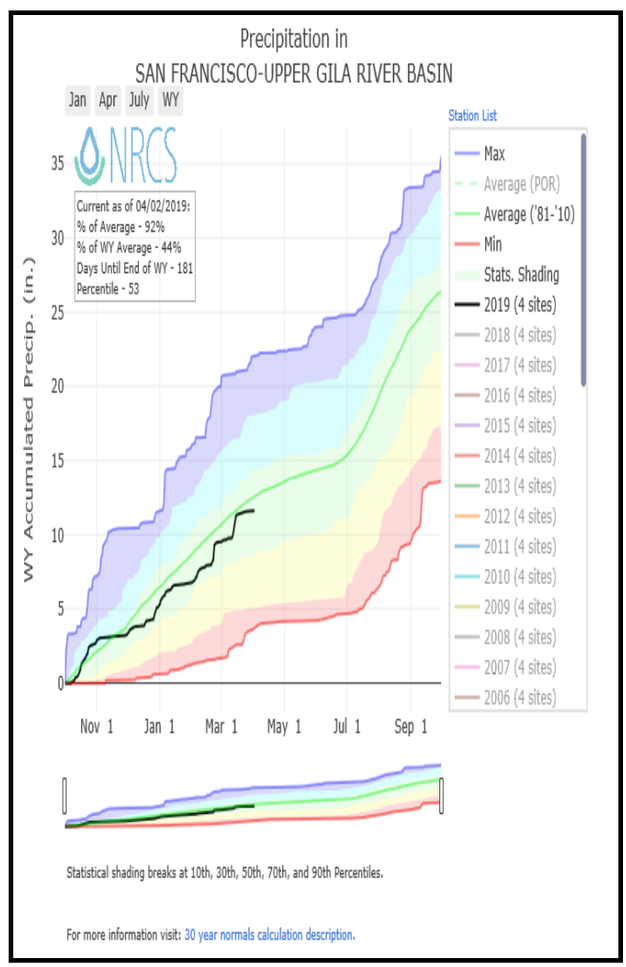
San Francisco / Upper Gila River Basin
Water Supply Outlook Report
as of April 1, 2019



The April 1st forecasts for the San Francisco and Upper Gila range from 109 percent of average for the Gila River at Gila to 96/95 percent for the San Francisco at Glenwood and Clifton. Water year-to-date precipitation is 92 percent of the average after receiving 114 percent of the average monthly precipitation in March. Snowpack in the basin has been impacted significantly by warm temperatures and is currently at 13 percent of the median as compared to 0 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 - April 1, 2019

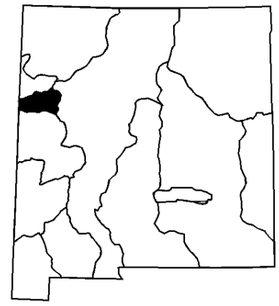
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

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]	APR-MAY	10.7	14.7	18	109%	22	28	16.5
Gila R bl Blue Ck nr Virden[3]	APR-MAY	9.3	16.2	22	105%	29	40	21
San Francisco R at Glenwood[3]	APR-MAY	3.1	5.1	7	96%	9.3	13.4	7.3
San Francisco R at Clifton[3]	APR-MAY	6.7	12	16.5	95%	22	31	17.3

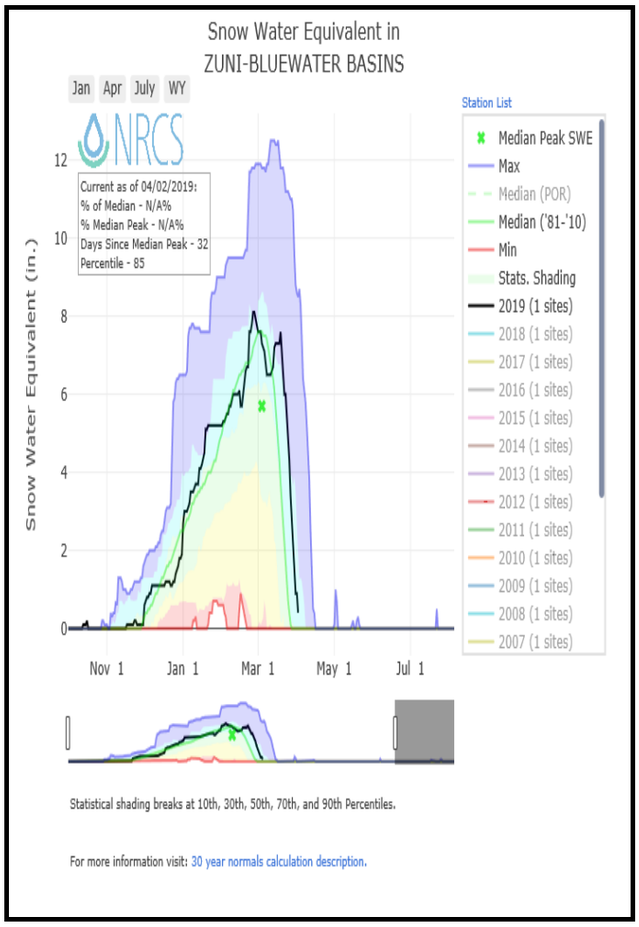
1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

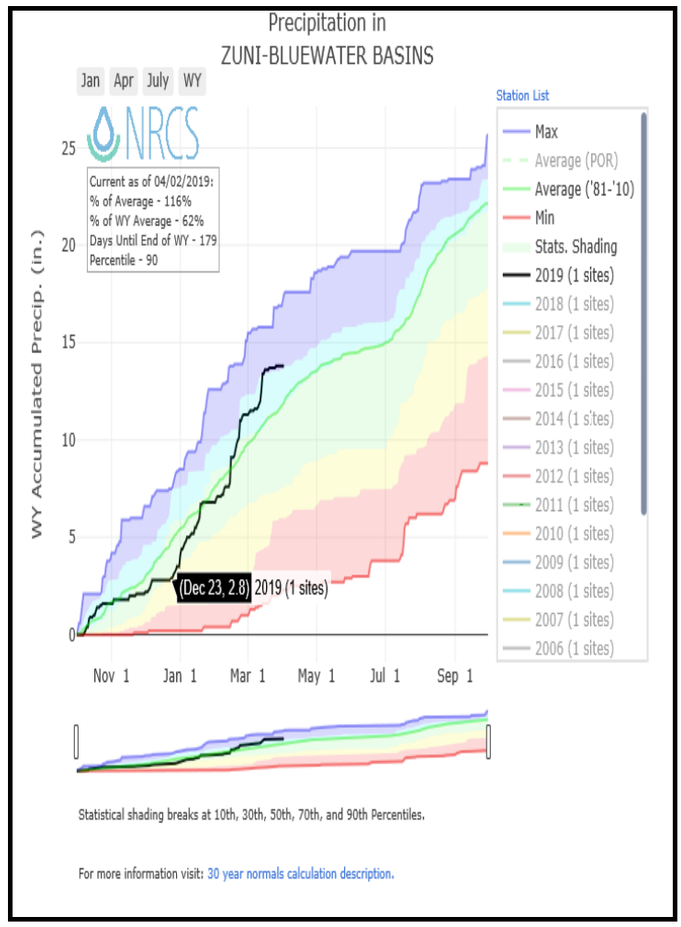
Watershed Snowpack Analysis April 1, 2019	# of Sites	% Median	Last Year % Median
SAN FRANCISCO-UPPER GILA RIVER BASIN	7	13%	0%

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



Forecasts for the Zuni/Bluewater area are currently between 211 and 120 percent of the average. Snowpack in the basin has dropped significantly due to the warming trend and as of the end of March is at 82 percent of the median. Yet, please keep in mind that this is based on a historically low snow pack. March received 125 percent of the average rainfall for the month which now puts the water year-to-date total at 117 percent of the average. Last year at this time the basin had only received 19 percent of the average. Bluewater Lake currently holds 11,600 acre-feet of water versus 6,000 acre-feet at this time last year! This is 119 percent of the average stored water as compared to 62 percent last year at this time.





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Zuni-Bluewater Basins
Streamflow Forecasts - April 1, 2019

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

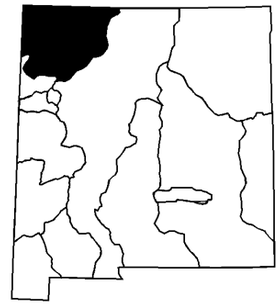
ZUNI-BLUEWATER BASINS	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rio Nutria nr Ramah[3]	APR-MAY	0.03	0.18	0.4	211%	0.74	1.54	0.19
Zuni R ab Black Rock Reservoir[3]	APR-MAY	0	0	0.12	120%	0.53	1.65	0.1

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

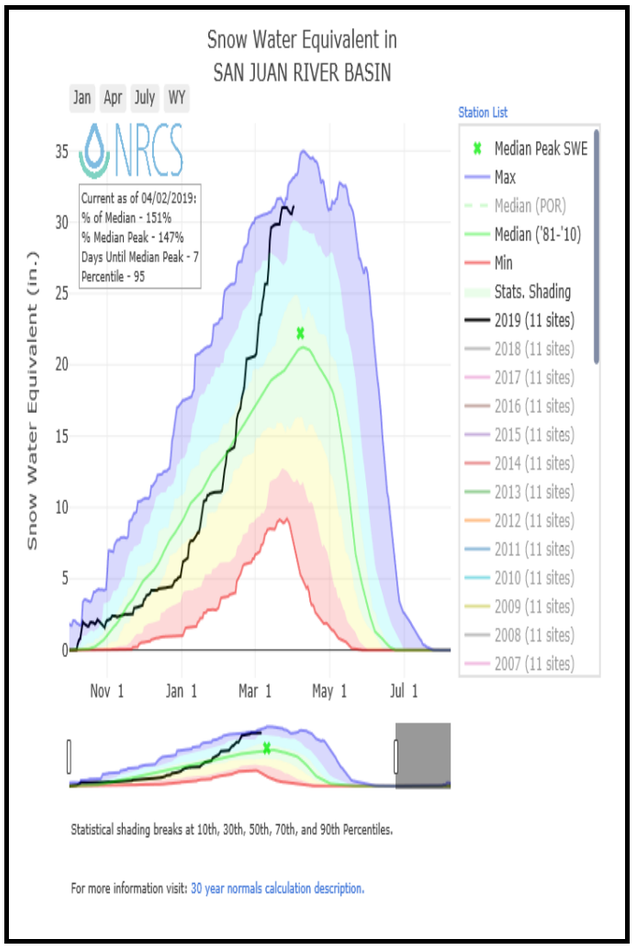
Reservoir Storage End of March, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bluewater Lake	11.6	6.0	9.7	38.5
Basin-wide Total	11.6	6.0	9.7	38.5
# of reservoirs	1	1	1	1

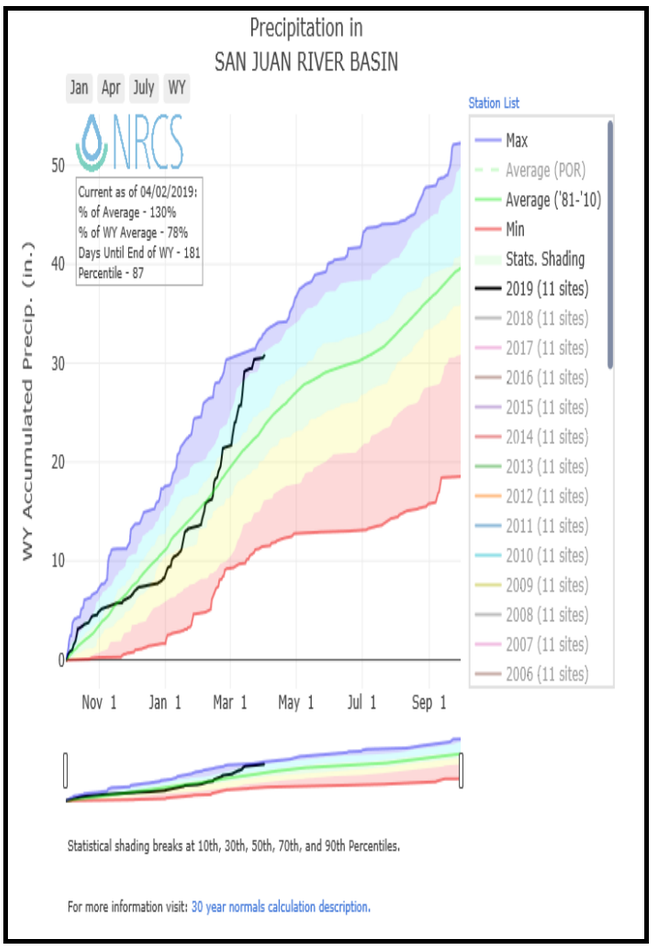
Watershed Snowpack Analysis April 1, 2019	# of Sites	% Median	Last Year % Median
ZUNI-BLUEWATER BASINS	5	82%	82%

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



Due to recent storm activity the April through July forecasts for the San Juan have improved and now range from 144-131 percent of the average! March received 220 percent of the average monthly precipitation! This now brings the water year-to-date total to 131 percent of the average. Snowpack in the basin has also improved and is now at 153 percent of median which is an increase from 54 percent at this time last year! Navajo reservoir storage contains 955,500 acre-feet or 73 percent of the average water stored at the end of March. This equates to 77 percent of the average capacity for the reservoir.





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San Juan River Basin
Streamflow Forecasts - April 1, 2019

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

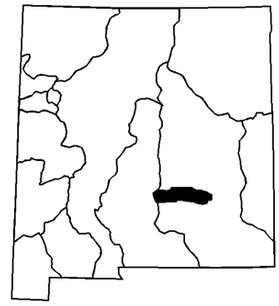
SAN JUAN RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rio Blanco at Blanco Diversion [2]	APR-JUL	56	66	74	137%	81	93	54
Navajo R at Oso Diversion [2]	APR-JUL	65	77	85	131%	94	107	65
Navajo Reservoir Inflow [2]	APR-JUL	815	955	1060	144%	1170	1340	735
Animas R at Durango	APR-JUL	430	500	550	133%	600	685	415
La Plata R at Hesperus	APR-JUL	26	30	33	143%	36	40	23

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

Reservoir Storage End of March, 2019	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Navajo Reservoir	955.5	1236.4	1310.0	1696.0
Basin-wide Total	955.5	1236.4	1310.0	1696.0
# of reservoirs	1	1	1	1

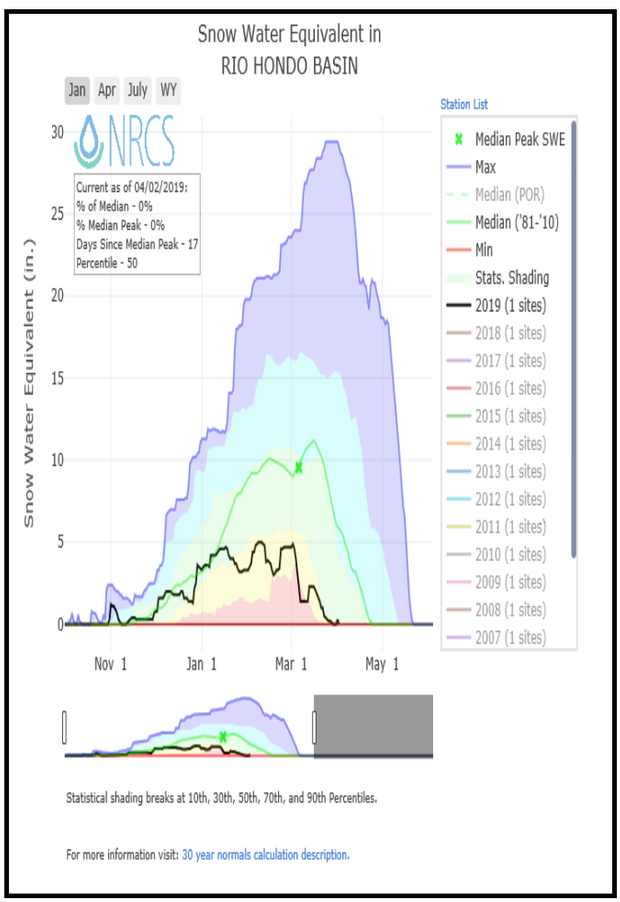
Watershed Snowpack Analysis April 1, 2019	# of Sites	% Median	Last Year % Median
SAN JUAN RIVER BASIN	12	153%	54%

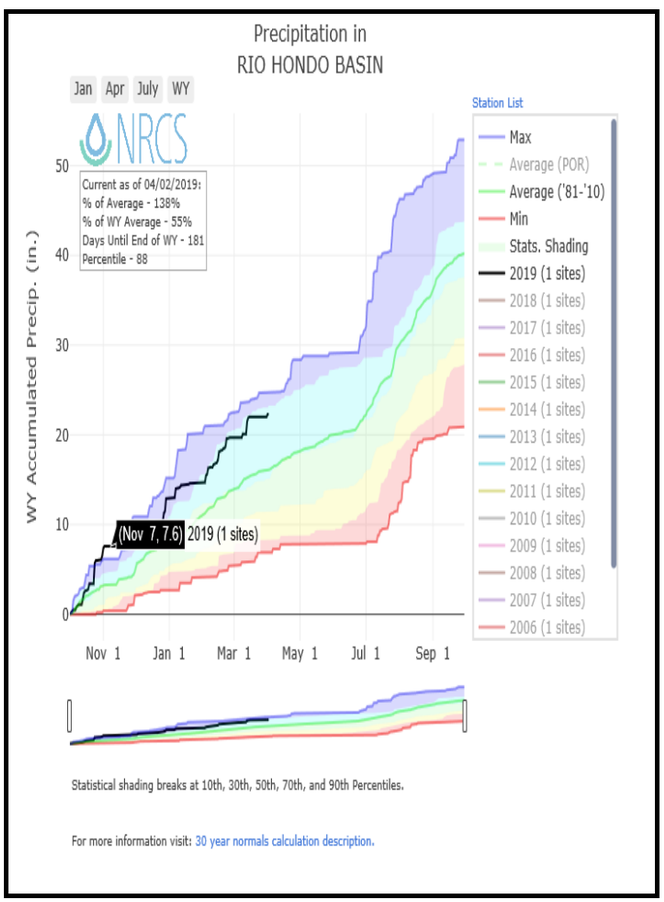
Rio Hondo Basin
Water Supply Outlook Report
as of April 1, 2019



The April to July forecasts for the Rio Ruidoso at Hollywood remain low at just 26 percent of the average. March continued to be a wet month for the region receiving 118 percent of the average rainfall for the month. This puts the water year-to-date total at 139 percent of the average. Snowpack in the basin has also dropped significantly throughout the month and is now at just 5 percent of the median as compared to 0 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 - April 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	2.7	3.2	3.7	55%	4.4	5.6	6.7
	APR-JUN	0.23	0.76	1.29	26%	1.96	3.2	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 April 1, 2019	# of Sites	% Median	Last Year % Median
RIO HONDO BASIN	1	5%	0%

NEW MEXICO STATEWIDE	Network	Elevation (ft)	Depth (in)	SWE (in)	Median (in)	% Median	Last Year SWE (in)	Last Year % Median
Alamitos	SC	9320			5.2		0.5	10%
Aztec #2	SC	9880	19	6.8	4.3	158%	0.6	14%
Bateman	SNOTEL	9300	40	16.0	12.2	131%	4.0	33%
Boon	SC	8140	0	0.0	0.8	0%	0.5	63%
Bowl Canyon	SC	8980	33	13.5	7.8	173%	1.8	23%
Chamita	SNOTEL	8400	38	13.4	7.9	170%	0.0	0%
Dan Valley	SC	7640	0	0.0	0.1	0%	0.2	200%
Elk Cabin	SNOTEL	8210	1	0.3	0.6	50%	0.0	0%
Emory Pass #2	SC	7800			0.0			
Frisco Divide	SNOTEL	8000	0	0.0	0.0		0.0	
Gallegos Peak	SNOTEL	9800	38	12.6	10.4	121%	2.0	19%
Hematite Park	SC	9500	33	9.8	3.6	272%	0.2	6%
Hidden Valley	SC	8480	27	11.7			0.0	
Hopewell	SNOTEL	10000	63	21.5	19.5	110%	8.7	45%
Hummingbird - Aerial And Snow Course	SC	10550			9.0			
Lookout Mountain	SNOTEL	8500	0	0.0	0.0		0.0	
Mcgaffey	SC	8120	0	0.0	0.0		0.2	
Mcknight Cabin	SNOTEL	9240	0	0.0	0.0		0.0	
Mcknight Cabin Aerial Marker	SC	9300						
Mcknight Cabin Snow Course	SC	9300			1.1			
Missionary Spring	SC	7940	0	0.0	0.0		0.0	
Navajo Whiskey Ck	SNOTEL	9050	33	15.1			0.0	
North Costilla	SNOTEL	10600	32	9.8	4.8	204%	0.0	0%
Ojo Redondo	SC	8200	0	0.0	0.2	0%	0.0	0%
Palo	SNOTEL	9350	16	7.0			0.0	
Palo	SC	9300	32	10.7	7.4	145%	0.8	11%
PanchueLa	SC	8400	4	0.2			0.0	
Post Office Flats	SC	8400			0.0			
Quemazon	SNOTEL	9500	10	4.5	7.0	64%	0.0	0%
Red River Pass #2	SNOTEL	9850	36	10.4	7.4	141%	0.0	0%
Rice Park	SNOTEL	8460	2	0.9	0.0		0.0	
Rice Park	SC	8460			0.8			
Rio En Medio	SC	10300	23	6.6	9.1	73%	1.2	13%
Rio Santa Barbara	SNOTEL	10664	60	18.5			4.4	
San Antonio Sink	SNOTEL	9100	29	10.7			2.9	
San Antonio Sink	SC	9200	32	11.2	7.5	149%	1.2	16%
Santa Fe	SNOTEL	11445	60	19.2	15.9	121%	4.2	26%
Senorita Divide #2	SNOTEL	8600	24	7.9	8.5	93%	0.0	0%
Shuree	SNOTEL	10100	26	9.4			0.0	
Shuree	SC	10097	31	9.3	2.6	358%	0.4	15%
Sierra Blanca	SNOTEL	10280	5	0.3	5.9	5%	0.0	0%
Signal Peak	SNOTEL	8360	0	0.0	0.0		0.0	
Silver Creek Divide	SNOTEL	9000	2	0.9	7.0	13%	0.0	0%
State Line	SC	8000	0	0.0	0.0		0.0	
Taos Canyon	SC	9100	25	5.2	4.4	118%	0.1	2%
Taos Powderhorn	SNOTEL	11057	82	24.5			7.0	
Taos Powderhorn	SC	11250	88	27.4	25.8	106%	8.3	32%
Tolby	SNOTEL	10180	35	10.1	7.6	133%	0.0	0%
Tolby	SC	10180			9.8			
Tres Ritos	SNOTEL	8600	0	0.0			0.0	
Tres Ritos	SC	8600	13	4.5	4.4	102%	0.2	5%
Vacas Locas	SNOTEL	9306	33	13.5	8.1	167%	1.1	14%
Wesner Springs	SNOTEL	11120	55	17.3	16.0	108%	0.0	0%
Whiskey Creek	SC	9050	44	17.7	8.7	203%	1.0	11%
Whitewater - Aerial And Snow Course	SC	10750			22.6			
Basin Index						**125%**		**16%**
# of sites						37		37

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New Mexico
Basin Outlook Report

Natural Resources Conservation Service
Albuquerque, New Mexico