



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

New Mexico

Basin Outlook Report

January 1, 2016



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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Summary

2015 turned out to have some of the warmest and wettest months on record. As a result our snowpack was somewhat disappointing, however the precipitation which followed the winter months provided badly needed relief for the state. Water year to date precipitation for December 2015 was 137 percent of average. As of January 1, 2016 snowpack levels across the state are at 139 percent. If you were to look at each basin independently the current snowpack depths reflect double the snowpack statewide as compared to the previous year. Every streamflow forecast point for the Rio Grande currently exceeds 100 percent of the average and tops the 30 year average at the 50 percent exceedance probability. Additionally, forecast models continue to support a very strong El Nino signature in the months to come. I don't want to get too excited but New Mexico is off to a great start!

Snowpack

During the last week of December a complex storm system produced large amounts of precipitation across the Southern US. This massive system brought with it heavy snows with storm reports topping out at 41 inches. The southern and eastern portions of the state were blanketed in upwards of two feet of snow with the higher elevations in the north receiving equal amounts. The Rio Grande basin is at 134 percent of the median as compared to 76 percent at this time last year. In fact every basin in New Mexico is currently at over 100 percent of the median with the Mimbres at 189 percent which is over three times the snowpack level of last year. Winter has definitely arrived for New Mexico. Water users and managers should continue to monitor conditions over the next months to determine the impacts of El Nino conditions. This could affect forecast values and users should be prepared for changing conditions.

NEW MEXICO STATEWIDE SNOWPACK	Percent of Median	Last Year Percent of Median
CANADIAN RIVER BASIN	134	70
PECOS RIVER BASIN	159	72
RIO GRANDE BASIN	134	76
MIMBRES RIVER BASIN	189	51
SAN FRANCISCO-UPPER GILA RIVER BASIN	146	34
ZUNI-BLUEWATER BASINS	166	62
SAN JUAN RIVER BASIN	122	71
CHUSKA MOUNTAINS	150	41
RIO HONDO BASIN	181	72
Statewide Snowpack Total	139	67
# of sites	28	28

Precipitation

Increased precipitation during the end of April marked New Mexico's slow march out of drought. By mid-May extensive precipitation had dramatically improved water-supply prospects and soil moisture for much of the state. July saw small improvements however most of western New Mexico still reflected long-term hydrological impacts. Light to moderate rain fell across the southern sections of New Mexico during August and in September pockets of beneficial rain were noted in the northwest corner of the state. October brought tropical moisture and heavy rains to central and eastern New Mexico however most of the rains fell on non-drought areas. By the last week of October new rain and snow along with precipitation the previous week led to further reductions in the coverage of dryness and drought. Reaching December conditions had slowly but surely improved over the past 12 months leading to the removal of the remaining drought areas in New Mexico. This marked the first time since November 23, 2010 that New Mexico was drought-free on the map. Currently, New Mexico statewide is at 136 percent of the average for the water year to date as compared to 79 percent at this time last year.

Reservoirs

During the spring of 2015 snowmelt and runoff occurred early and well below normal for the 5th year in a row. The well above normal temperatures through April directly affected the meager snowpack and ultimately New Mexico's reservoir storage levels. Storage levels are still well below capacity at all lakes across the state. Average statewide reservoir storage is only at 28 percent of capacity as of January 1st. As we move into the snow season the forecast for our reservoirs looks promising based on the amount of snow New Mexico has already received.

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	130.5	128.6	152.7	1192.8	11%	11%	13%	85%	84%
Bluewater Lake	2.0	2.4	5.7	38.5	5%	6%	15%	35%	42%
Brantley Lake nr Carlsbad	43.6	81.1	17.1	1008.2	4%	8%	2%	255%	474%
Caballo Reservoir	27.7	32.4	68.0	332.0	8%	10%	20%	41%	48%
Cochiti Lake	46.8	45.8	63.1	491.0	10%	9%	13%	74%	73%
Conchas Lake	137.1	83.9	197.9	254.2	54%	33%	78%	69%	42%
Costilla Reservoir	9.4	3.3	6.0	16.0	59%	21%	38%	157%	55%
Eagle Nest Lake nr Eagle Nest, NM	29.7	17.2	53.0	79.0	38%	22%	67%	56%	32%
El Vado Reservoir	36.5	13.5	102.8	190.3	19%	7%	54%	36%	13%
Elephant Butte Reservoir	322.5	256.4	1267.0	2195.0	15%	12%	58%	25%	20%
Heron Reservoir	68.6	64.3	308.0	400.0	17%	16%	77%	22%	21%
Lake Avalon	2.7	2.6	2.0	4.0	68%	65%	50%	135%	130%
Lake Sumner	43.6	41.5	26.7	102.0	43%	41%	26%	163%	155%
Navajo Reservoir	1397.0	1090.7	1341.0	1696.0	82%	64%	79%	104%	81%
Santa Rosa Reservoir	97.0	69.2	54.4	438.3	22%	16%	12%	178%	127%
Basin-wide Total	2394.7	1932.9	3665.4	8437.3	28%	23%	43%	65%	53%
# of reservoirs	15	15	15	15	15	15	15	15	15

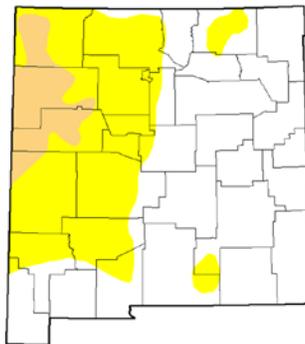
Streamflow

The January 1, 2016 forecast numbers from the NRCS continue to show a majority of New Mexico well positioned for a better than normal runoff season. However, it is still very early in the season and weather conditions are always subject to change in New Mexico. With that being said there is very strong evidence pointing towards El Nino like winter conditions. This will bring with it both increased precipitation and below normal temperatures across a majority of the state. Last year melt-out occurred much earlier than normal. There is a strong chance that this year will prove differently.

New Mexico Drought Monitor, real versus perceived conditions?

U.S. Drought Monitor New Mexico

October 13, 2015
(Released Thursday, Oct. 15, 2015)
Valid 8 a.m. EDT



	Drought Conditions (Percent Area)					
	None	D0-D1	D1-D2	D2-D3	D3-D4	D4
Current	99.02	00.97	2.04	0.00	0.00	0.00
Last Week (week)	97.68	02.12	2.94	0.00	0.00	0.00
3 Month 3-Agr (month)	49.44	50.56	21.09	4.92	0.00	0.00
Start of Calendar Year (calendar)	13.61	87.84	85.18	26.10	3.70	0.00
Start of Water Year (water)	96.70	03.30	2.94	0.00	0.00	0.00
One Year Ago (historic)	16.70	83.30	52.84	30.04	8.00	0.00

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

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

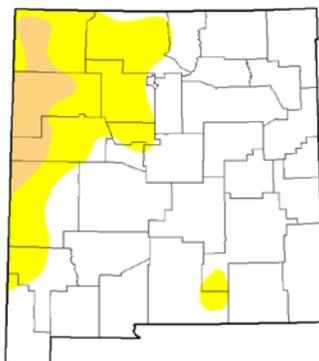
Author:
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<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor New Mexico

November 10, 2015
(Released Thursday, Nov. 12, 2015)
Valid 7 a.m. EST



	Drought Conditions (Percent Area)					
	None	D0-D1	D1-D2	D2-D3	D3-D4	D4
Current	73.76	26.24	6.21	0.00	0.00	0.00
Last Week (week)	73.76	26.24	6.21	0.00	0.00	0.00
3 Month 3-Agr (month)	40.44	59.56	19.36	0.27	0.00	0.00
Start of Calendar Year (calendar)	12.81	87.84	85.30	28.10	3.70	0.00
Start of Water Year (water)	96.70	03.30	2.94	0.00	0.00	0.00
One Year Ago (historic)	17.21	82.79	62.52	27.80	1.52	0.00

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

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

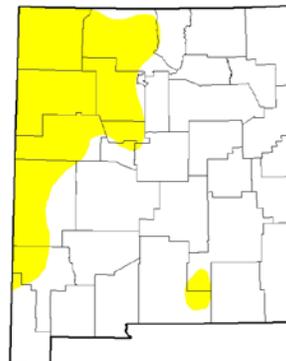
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<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor New Mexico

December 29, 2015
(Released Thursday, Dec. 31, 2015)
Valid 7 a.m. EST



	Drought Conditions (Percent Area)					
	None	D0-D1	D1-D2	D2-D3	D3-D4	D4
Current	73.76	26.24	0.00	0.00	0.00	0.00
Last Week (week)	73.76	26.24	0.00	0.00	0.00	0.00
3 Month 3-Agr (month)	56.70	43.30	2.94	0.00	0.00	0.00
Start of Calendar Year (calendar)	12.81	87.84	85.30	28.10	3.70	0.00
Start of Water Year (water)	96.70	03.30	2.94	0.00	0.00	0.00
One Year Ago (historic)	12.81	87.84	85.30	28.10	3.70	0.00

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

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

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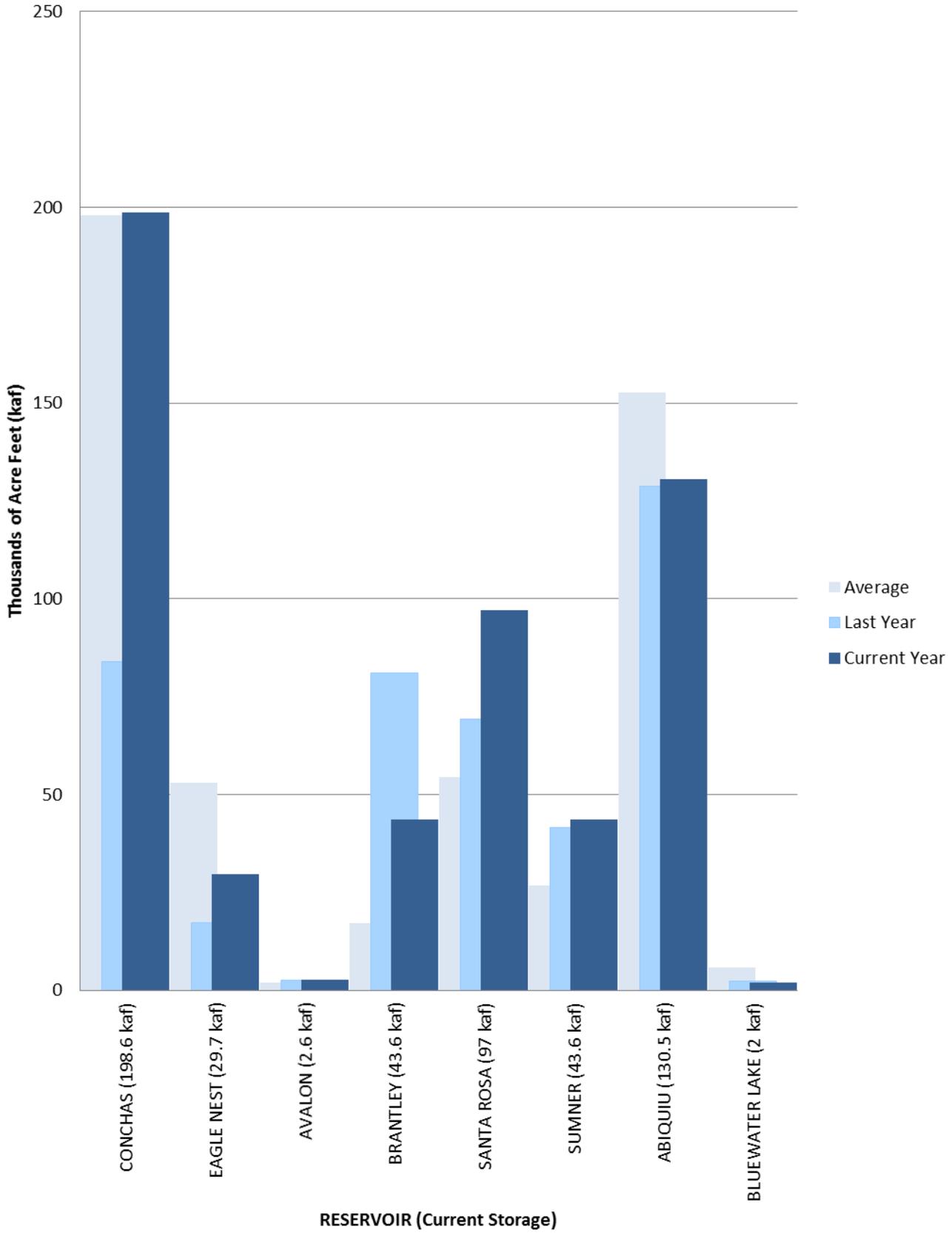


<http://droughtmonitor.unl.edu/>

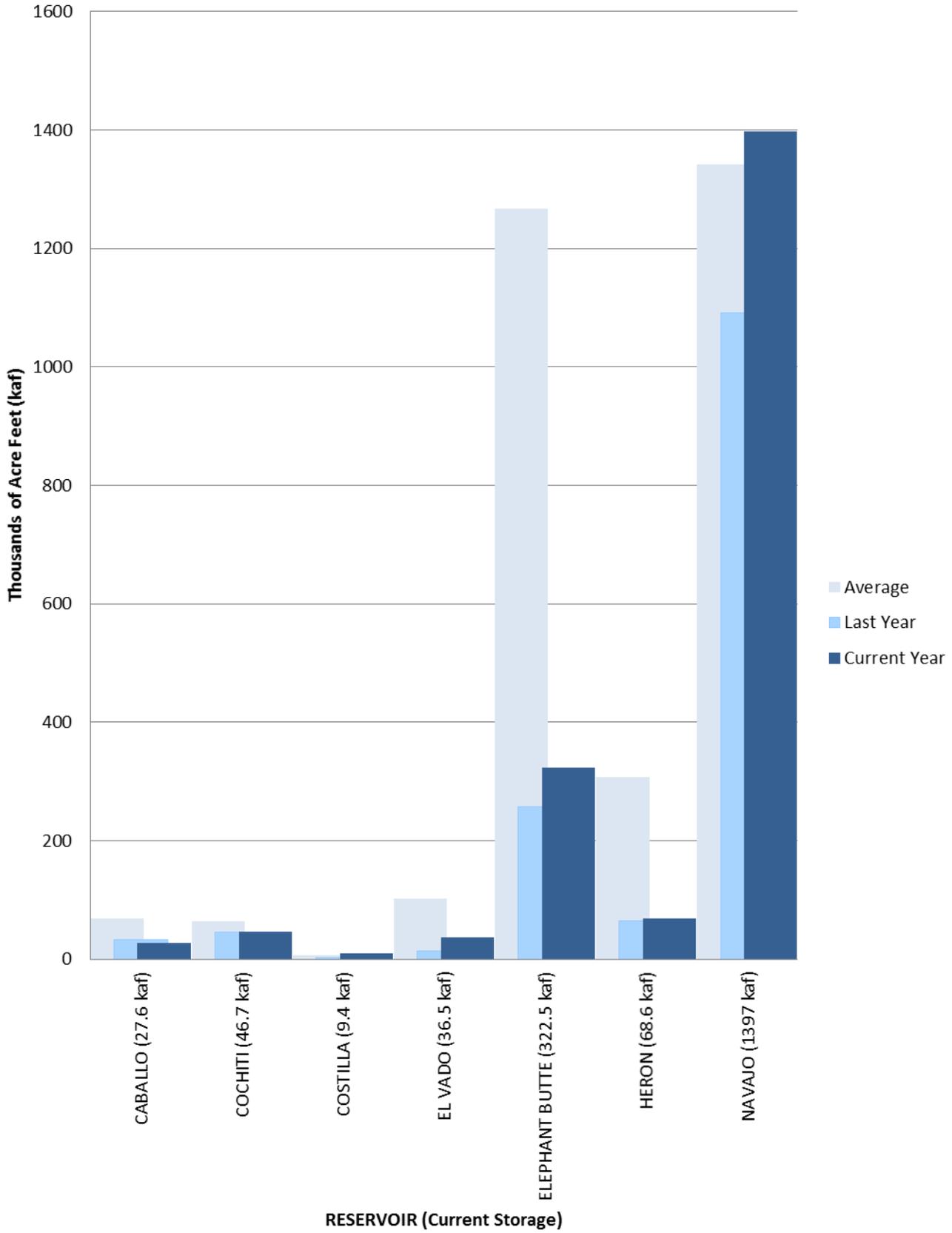
Every week, The U.S. Drought Monitor is produced in partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. This useful tool uses multiple inputs, including precipitation received, to give an indication of the extent and severity of drought conditions nationwide. 2015 proved to be a good year for short-term drought improvement across New Mexico. To sum conditions up for New Mexico from May of last year through the fall would be to say, “Wet and Warm”. Above normal precipitation paved the way for removal of short-term drought for the first time since 2010. Additionally, three months of the year fell into the top 10 wettest months and four months fell into the top 10 warmest.

Most models continue to indicate that a strong El Nino will continue through the Northern Hemisphere winter 2015-16, followed by a weakening and a transition to neutral conditions during the late spring or early summer. This El Nino will rank among the three strongest episodes dating back to 1950. What does this mean for New Mexico? This means that seasonal outlooks continue to indicate an increased likelihood for above-median precipitation across the southern tier of the United States. The January outlook trends toward an above average amount of precipitation with an equal chance for above or below normal temperatures. The three month outlook strongly favors above average precipitation with below average temperatures for much of the state. However, as we know weather conditions across New Mexico can rapidly change, water users should continue to closely monitor conditions over the next several months.

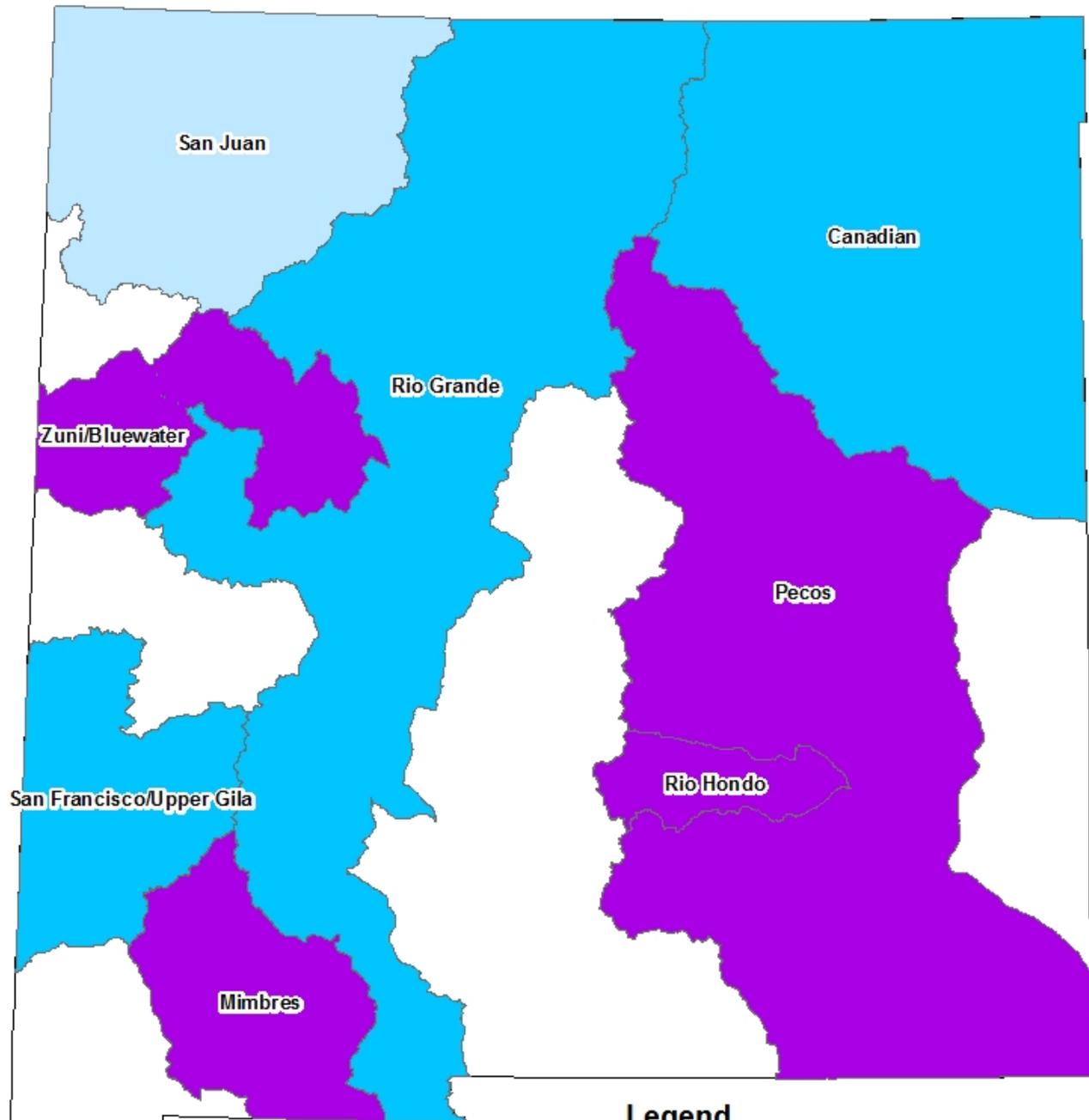
Statewide Reservoir Storage



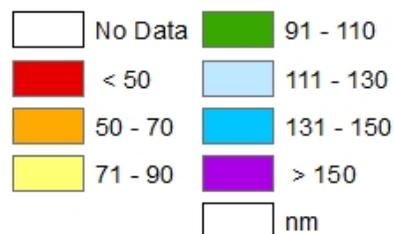
Statewide Reservoir Storage



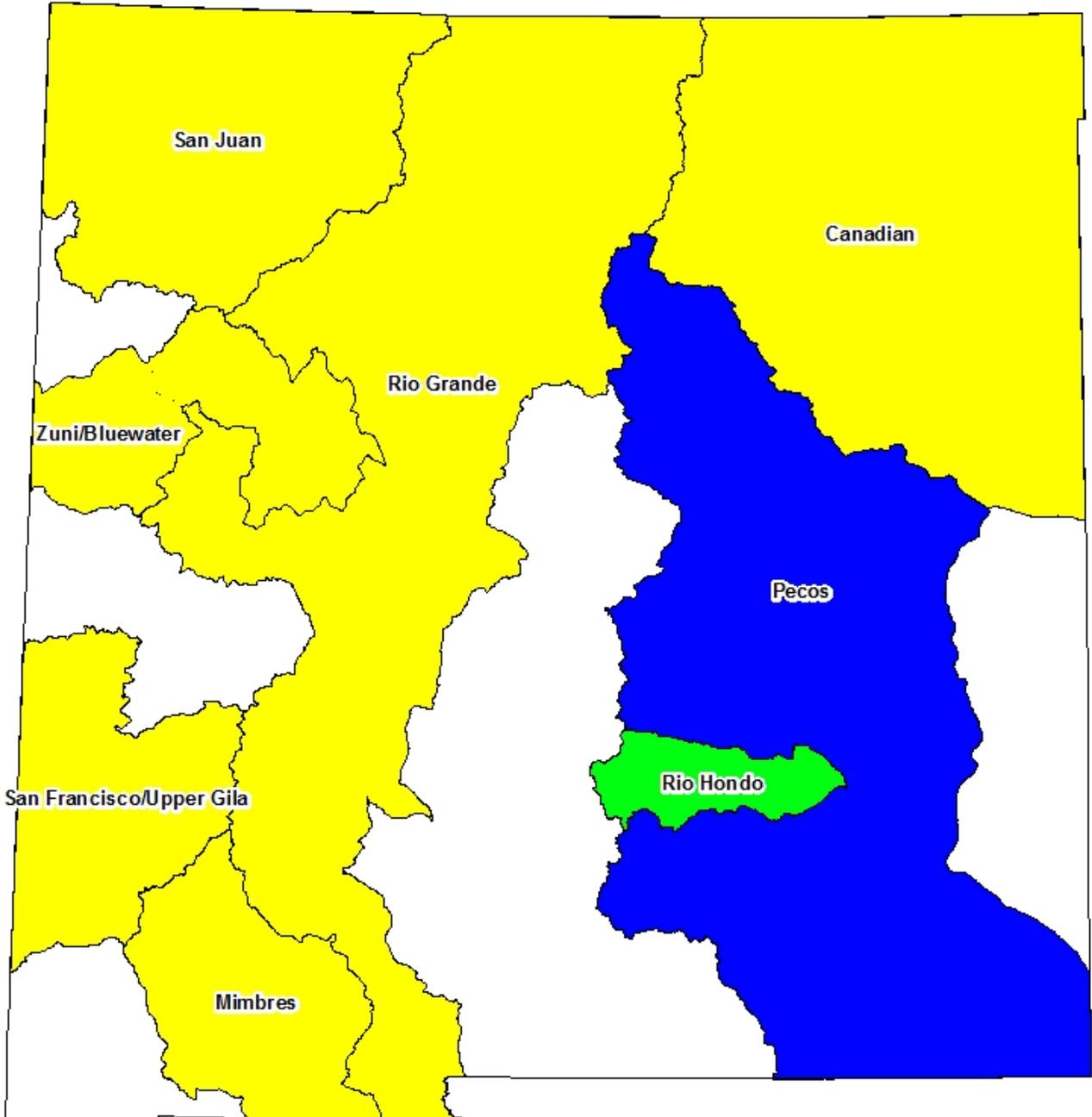
New Mexico Percent of Median Snowpack as of Jan 1, 2016



Legend



New Mexico Surface Water Supply Index as of Jan 1, 2016

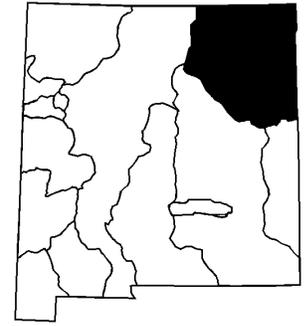


Legend

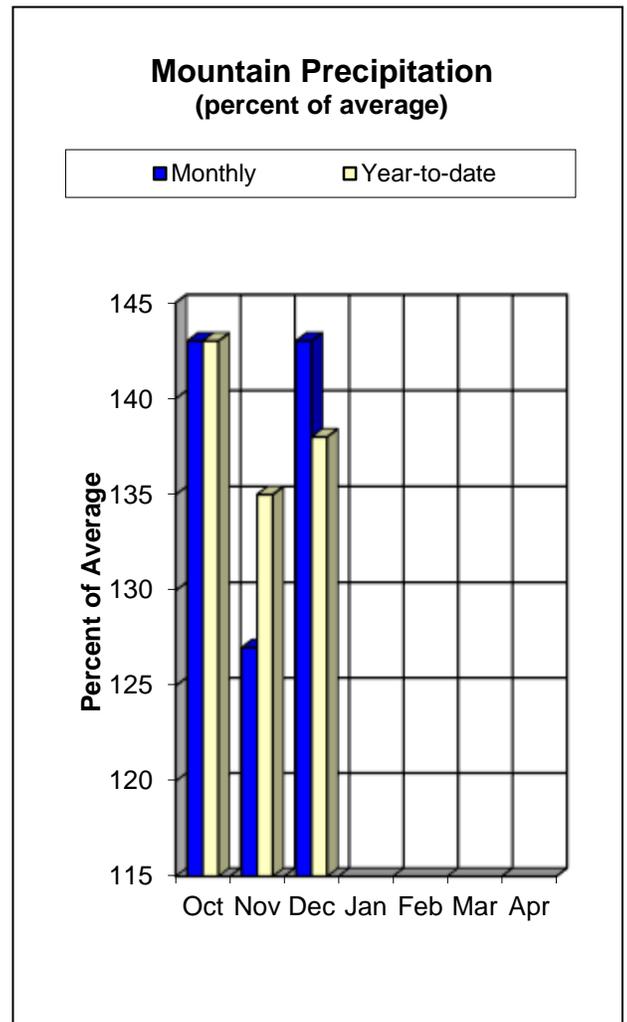
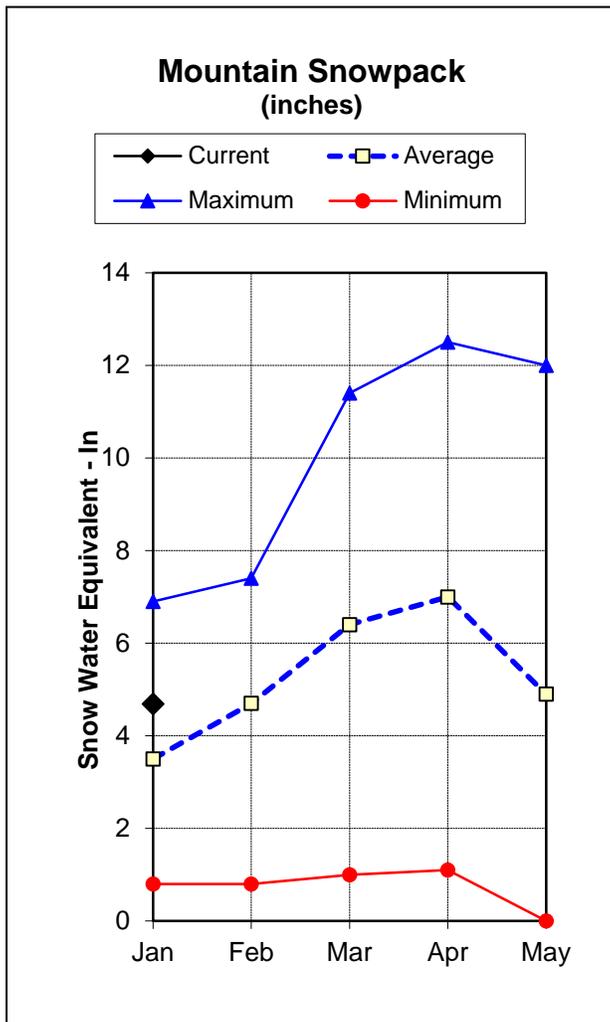
Surface Water Supply Index	
Yellow	-1.5 - 1.5
Green	1.6 - 3.0
Blue	3.1 - 4.0
Red	-4.0 - -3.1
Pink	-3.0 - -1.6
White	No Data



Canadian River Basin Water Supply Outlook Report as of January 1, 2016



The Canadian River Basin forecasts for the March to June time period are all above the average. They range from 112 percent of average for the Vermejo River near Dawson to 133 percent of average at the Conchas Reservoir inflow. Year-to-date precipitation in the Canadian River Basin is at 138 percent of average. Snowpack in the basin is also high at 134 percent of median. This is an increase of 64 percent from last January. Reservoirs are currently holding 166,800 acre-feet of storage which is an increase of 65,000 acre feet from last year at this time. Reservoir storage in the Canadian River Basin is now at 50 percent capacity as compared to 30 percent last year January.



Canadian River Basin Streamflow Forecasts - January 1, 2016

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	3.2	6.1	8.7	112%	12	18.2	7.8
Eagle Nest Reservoir Inflow	MAR-JUN	6.2	9.8	13	116%	16.8	24	11.2
Cimarron R nr Cimarron ²	MAR-JUN	1.82	11.5	18.1	115%	25	34	15.8
Ponil Ck nr Cimarron	MAR-JUN	3.5	6.2	8.6	119%	11.6	17.1	7.2
Rayado Ck nr Cimarron	MAR-JUN	2.9	5.6	8.3	119%	11.7	18.2	7
Conchas Reservoir Inflow ³	MAR-JUN	7.6	23	40	133%	64	116	30

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

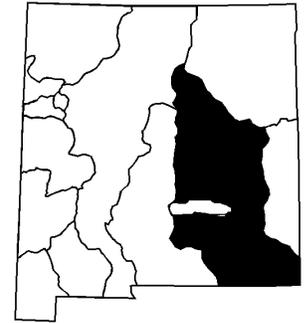
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

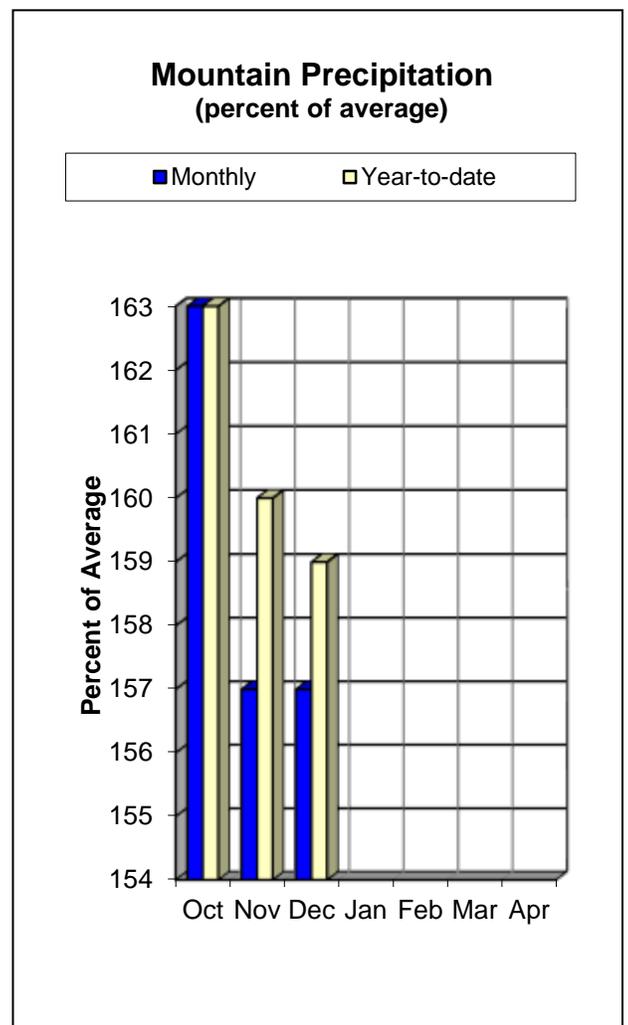
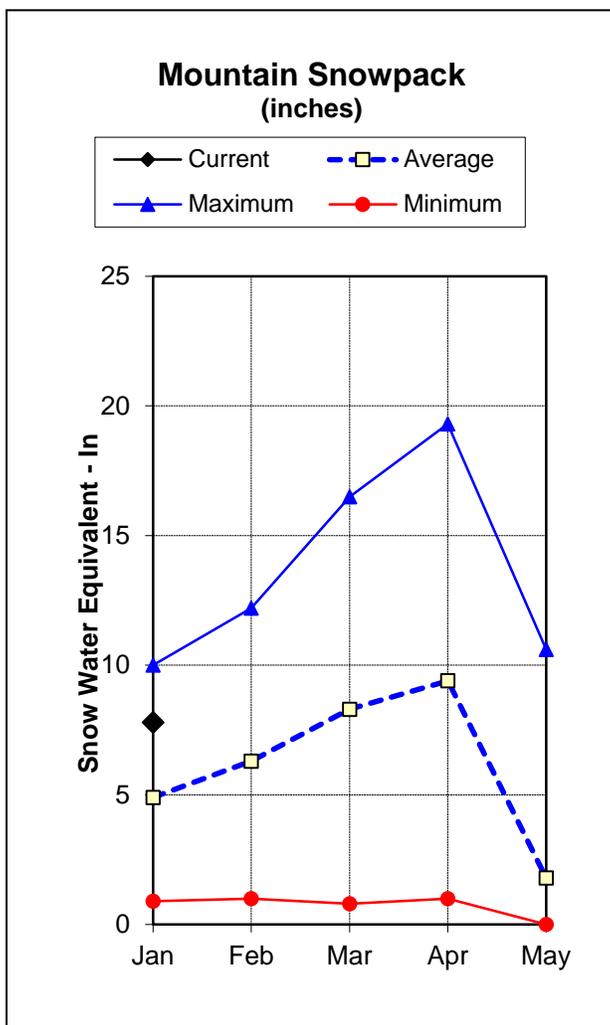
Reservoir Storage End of December, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Conchas Lake	137.1	83.9	197.9	254.2
Eagle Nest Lake nr Eagle Nest, NM	29.7	17.2	53.0	79.0
Basin-wide Total	166.8	101.1	250.9	333.2
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis January 1, 2016	# of Sites	% Median	Last Year % Median
CANADIAN RIVER BASIN	4	134%	70%

Pecos River Basin Water Supply Outlook Report as of January 1, 2016



Streamflow forecasts for the Pecos River Basin for the March to July timeframe are positive. They range from 141 percent of average for the Pecos River above Santa Rosa Lake to 147 percent of average for the Pecos River near Pecos. December saw 134 percent of the average precipitation which puts the Pecos at 138 percent of average for the water year. Snowpack levels in the Pecos River Basin are at 159 percent of median. Last year at this time we saw 72 percent of median. As of January 1st reservoir storage in the basin is at 186,900 acre-feet, which equates to 12 percent of capacity.



Pecos River Basin Streamflow Forecasts - January 1, 2016

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

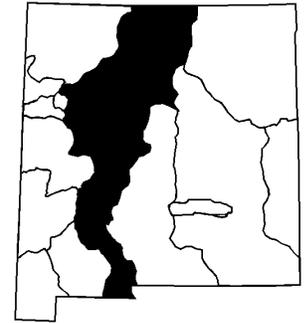
PECOS RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Pecos R nr Pecos	MAR-JUL	47	68	84	147%	102	132	57
Pecos R nr Anton Chico	MAR-JUL	31	62	90	143%	123	180	63
Gallinas Ck nr Montezuma	MAR-JUL	4.6	9.6	14	143%	19.3	29	9.8
Pecos R ab Santa Rosa Lk	MAR-JUL	28	55	79	141%	107	156	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

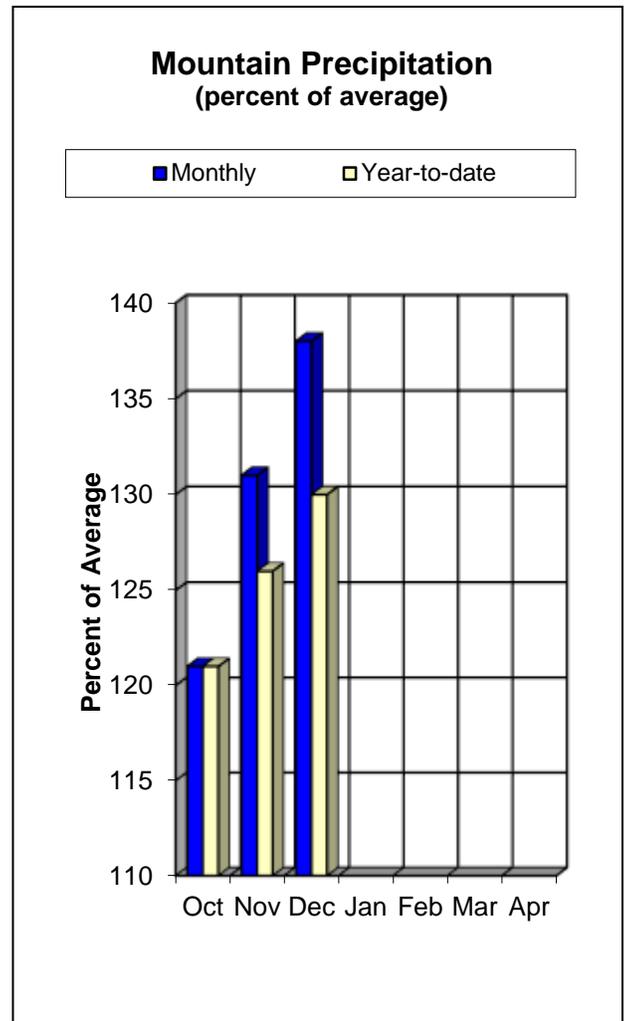
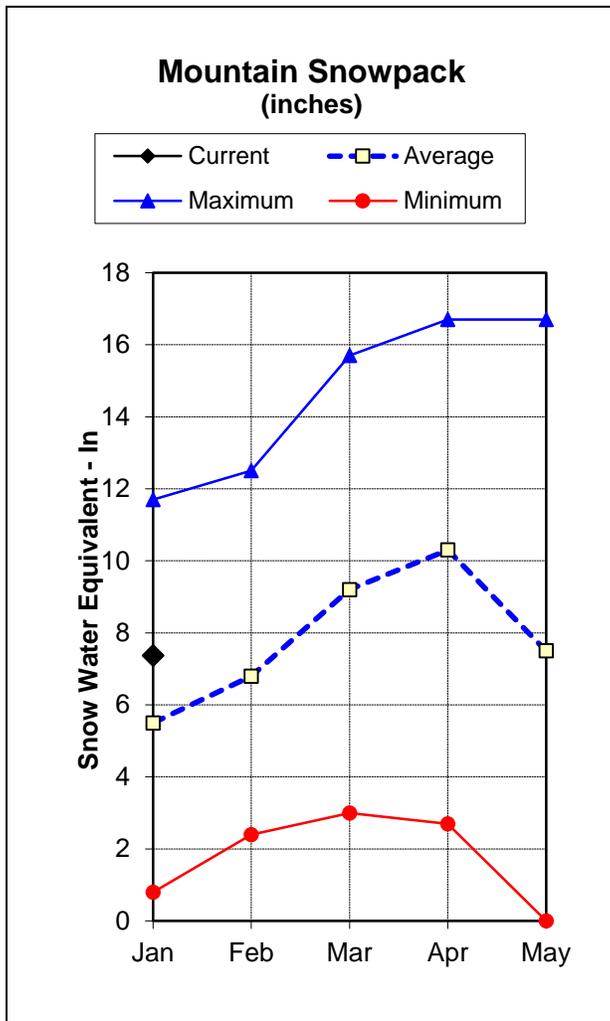
Reservoir Storage End of December, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Avalon	2.7	2.6	2.0	4.0
Brantley Lake nr Carlsbad	43.6	81.1	17.1	1008.2
Santa Rosa Reservoir	97.0	69.2	54.4	438.3
Lake Sumner	43.6	41.5	26.7	102.0
Basin-wide Total	186.9	194.4	100.2	1552.5
# of reservoirs	4	4	4	4

Watershed Snowpack Analysis January 1, 2016	# of Sites	% Median	Last Year % Median
PECOS RIVER BASIN	3	159%	72%

Rio Grande Basin Water Supply Outlook Report as of January 1, 2016



Streamflow forecasts for the Rio Grande Basin look promising. Costilla Creek near Costilla currently shows 119 percent of average for the March to July forecast. Additionally, for the March to July forecasts the Jemez River below Jemez Canyon Dam is at 126 percent of average, and the Rio Grande at San Marcial is at 111 percent of average. Year-to-date precipitation is at 130 percent of average. This is 45 percent above last year's total. December received 138 percent of the average precipitation as compared to 99 percent last year at this time. Snowpack in the basin is off to a strong start at 134 percent of median. This is 63 percent above last year's percent of average! Snowpack in southern Colorado affecting the Rio Grande is at 126 percent of average which is an increase of 56 percent from last year. Southern Colorado's increase in snowpack will continue to impact runoff forecasts for the Rio Grande Basin. Current reservoir storage in the basin is 644,000 acre-feet, up from last year's 546,700 acre-feet at this time. This is however only 13 percent of capacity which is an increase of only 2 percent from this time last year.



Rio Grande Basin Streamflow Forecasts - January 1, 2016

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

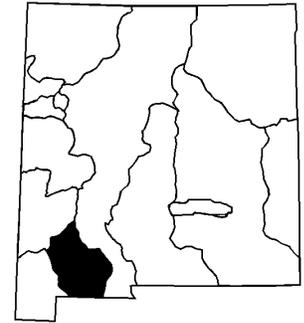
RIO GRANDE BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rio Grande nr Del Norte ²	APR-SEP	385	495	580	113%	670	815	515
Platoro Reservoir Inflow	APR-JUL	44	54	62	111%	70	82	56
	APR-SEP	48	60	68	110%	77	92	62
Conejos R nr Mogote ²	APR-SEP	146	185	215	111%	245	295	194
Costilla Reservoir Inflow	MAR-JUL	8.1	10.7	12.7	114%	14.9	18.4	11.1
Costilla Ck nr Costilla ²	MAR-JUL	18.3	25	31	119%	37	47	26
Red R bl Fish Hatchery nr Questa	MAR-JUL	23	30	36	106%	42	51	34
Rio Hondo nr Valdez	MAR-JUL	11.1	16.1	20	109%	24	32	18.4
Rio Pueblo de Taos nr Taos	MAR-JUL	11.2	17.3	22	129%	28	37	17
Rio Lucero nr Arroyo Seco	MAR-JUL	6.5	9.4	11.6	106%	14.1	18.2	10.9
Rio Pueblo de Taos bl Los Cordovas	MAR-JUL	19.5	32	42	117%	54	74	36
Embudo Ck at Dixon	MAR-JUL	37	55	70	146%	87	114	48
El Vado Reservoir Inflow ²	MAR-JUL	120	186	240	107%	300	400	225
	APR-JUL	107	167	215	105%	270	365	205
Santa Cruz R at Cundiyo	MAR-JUL	15.8	22	27	148%	32	41	18.3
Nambe Falls Reservoir Inflow	MAR-JUL	5.6	7.8	9.5	146%	11.3	14.4	6.5
Tesuque Ck ab diversions	MAR-JUL	0.92	1.52	2	149%	2.6	3.5	1.34
Rio Grande at Otowi Bridge ²	MAR-JUL	450	620	755	105%	905	1150	720
Santa Fe R nr Santa Fe ²	MAR-JUL	3.1	4.9	6.3	147%	7.9	10.7	4.3
Jemez R nr Jemez	MAR-JUL	30	43	53	126%	64	82	42
Jemez R bl Jemez Canyon Dam	MAR-JUL	21	33	43	126%	55	74	34
Rio Grande at San Marcial ²	MAR-JUL	230	430	565	111%	700	895	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, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Abiquiu Reservoir	130.5	128.6	152.7	1192.8
Bluewater Lake	2.0	2.4	5.7	38.5
Caballo Reservoir	27.7	32.4	68.0	332.0
Cochiti Lake	46.8	45.8	63.1	491.0
Costilla Reservoir	9.4	3.3	6.0	16.0
El Vado Reservoir	36.5	13.5	102.8	190.3
Elephant Butte Reservoir	322.5	256.4	1267.0	2195.0
Heron Reservoir	68.6	64.3	308.0	400.0
Basin-wide Total	644.0	546.7	1973.3	4855.6
# of reservoirs	8	8	8	8

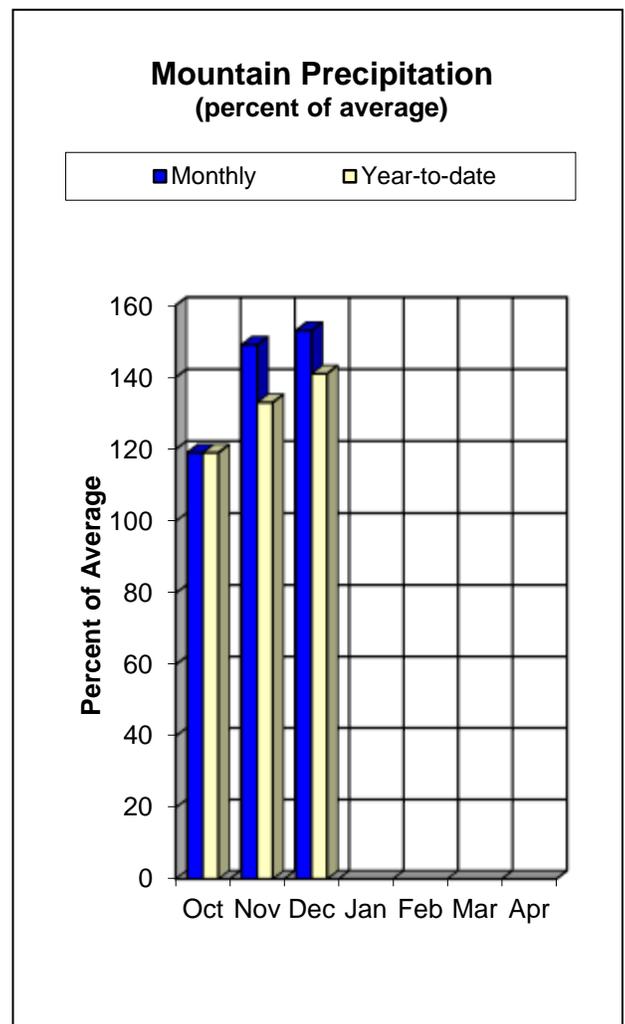
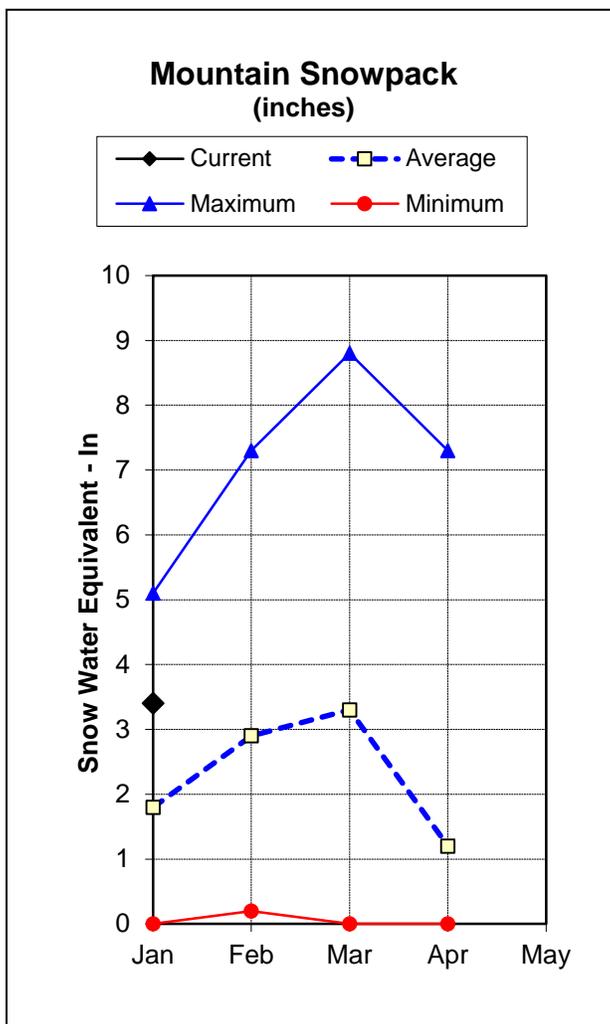
Watershed Snowpack Analysis January 1, 2016	# of Sites	% Median	Last Year % Median
RIO GRANDE BASIN	12	134%	76%

Mimbres River Basin Water Supply Outlook Report as of January 1, 2016



The January through May forecast for the Mimbres River at Mimbres is a strong 250 percent of average. Water year-to-date precipitation is at 141 percent of average as compared to 78 percent last year. The month of December saw 153 percent of the average rainfall. This has dramatically increased snow pack in the basin which is at 189 percent of the median. This is an increase of 138 percent from 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.



Mimbres River Basin Streamflow Forecasts - January 1, 2016

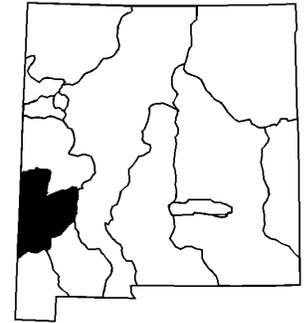
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

MIMBRES RIVER BASIN	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Mimbres R at Mimbres	JAN-MAY	2.2	4.1	6	250%	8.4	12.8	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

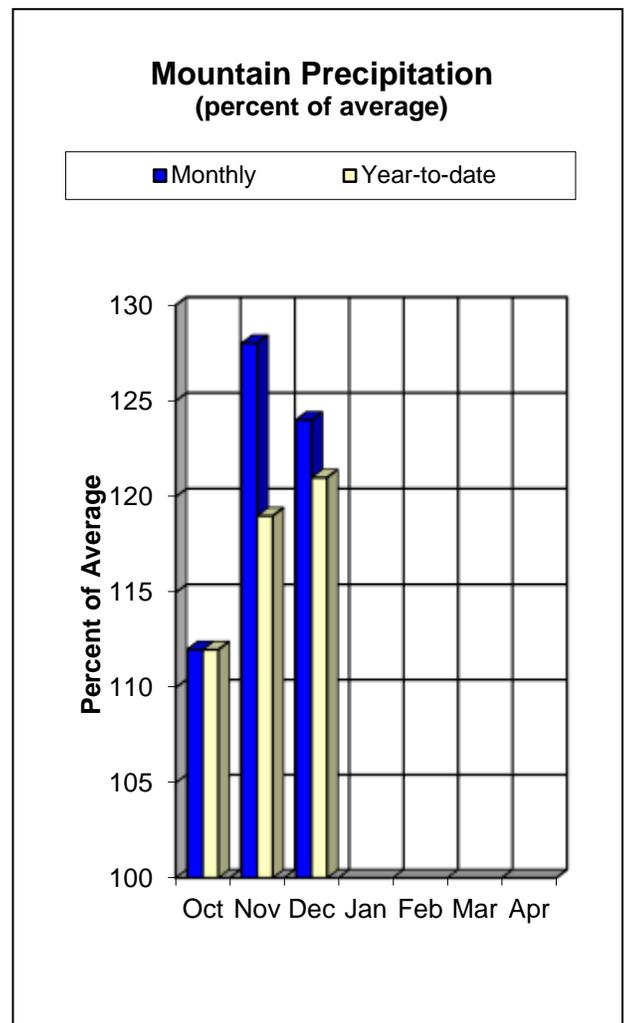
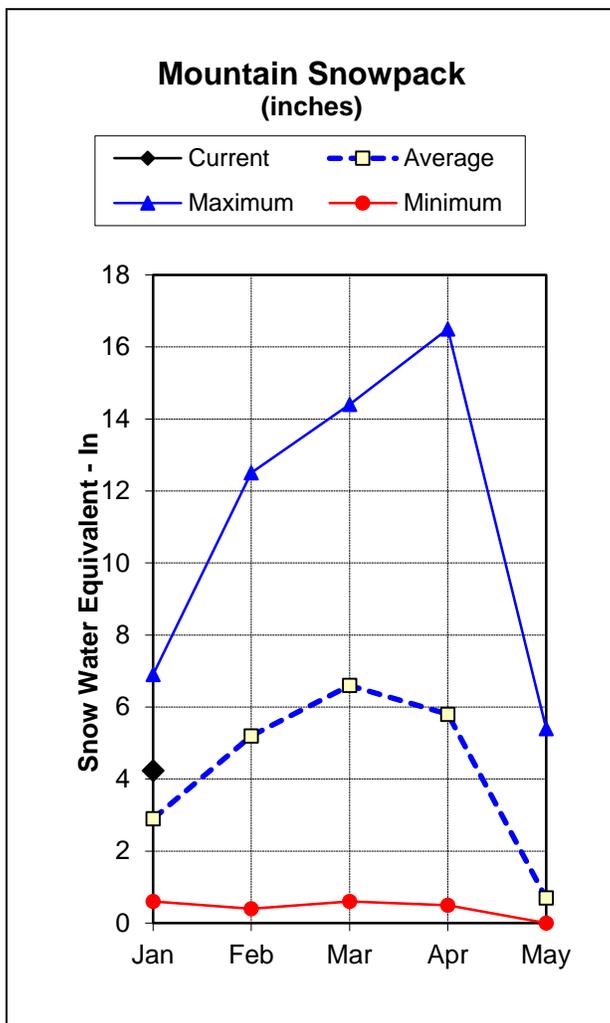
Watershed Snowpack Analysis January 1, 2016	# of Sites	% Median	Last Year % Median
MIMBRES RIVER BASIN	2	189%	51%

San Francisco / Upper Gila River Basin Water Supply Outlook Report as of January 1, 2016



Streamflow forecasts for the San Francisco/Upper Gila River Basin are much improved over last year. For the January through May forecast the Gila River at Gila is 143 percent of the average. For the same time period the San Francisco River at Clifton is forecasting 116 percent of the average. The year-to-date precipitation is double from last year's numbers at 121 percent of average. December alone saw 124 percent of average precipitation. Snowpack in the basin also looks promising at 146 percent of median which is an increase of 112 percent from last January.

Due to budget and contracting issues, the aerial markers at Hummingbird Saddle and Whitewater Baldy are not currently being measured. Plans are in effect to automate these sites with depth sensors which will transmit out data daily as soon as possible.



San Francisco-Upper Gila River Basin Streamflow Forecasts - January 1, 2016

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	39	61	80	143%	102	142	56
Gila R bl Blue Ck nr Virden ³	JAN-MAY	53	90	122	161%	158	220	76
San Francisco R at Glenwood ³	JAN-MAY	11.2	21	31	148%	43	66	21
San Francisco R at Clifton ³	JAN-MAY	22	48	71	116%	99	149	61

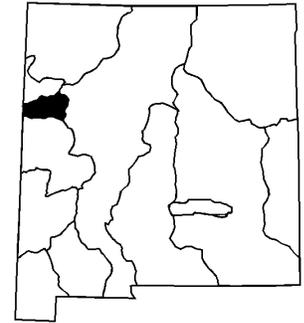
1) 90% and 10% exceedance probabilities are actually 95% and 5%

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

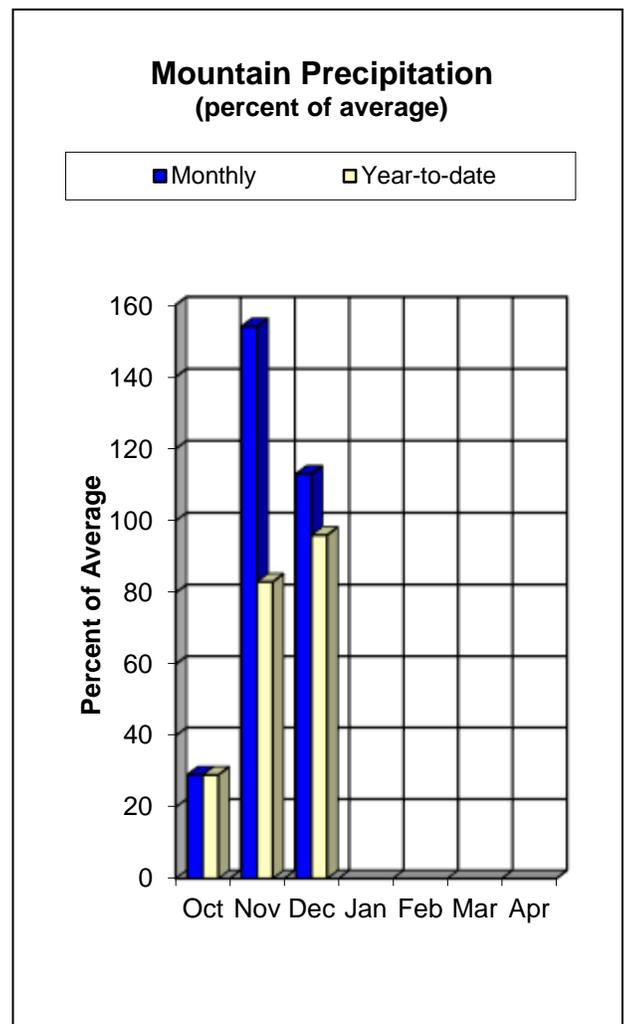
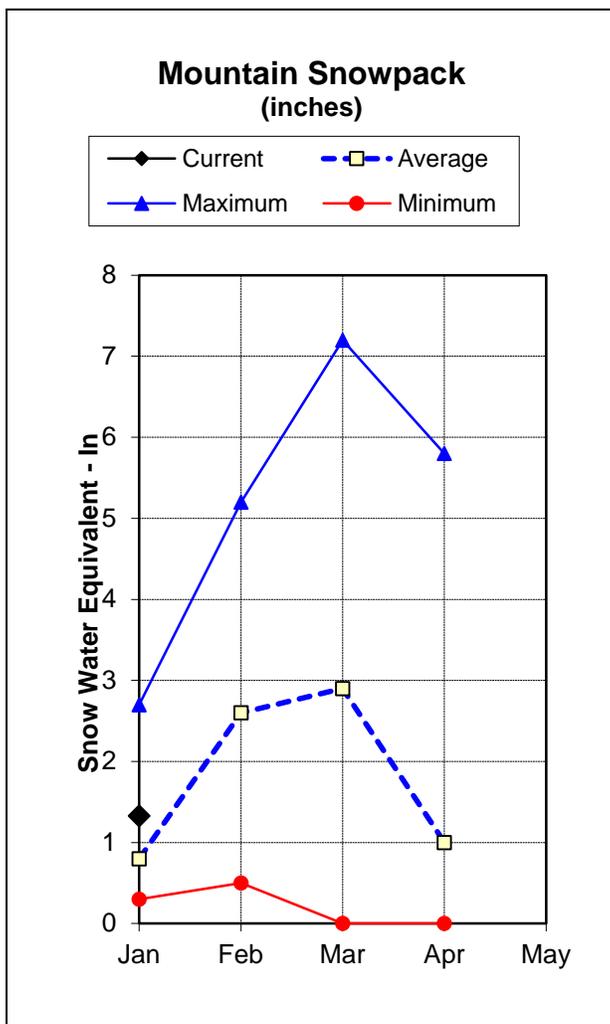
3) Median value used in place of average

Watershed Snowpack Analysis January 1, 2016	# of Sites	% Median	Last Year % Median
SAN FRANCISCO-UPPER GILA RIVER BASIN	7	146%	34%

Zuni / Bluewater Basins Water Supply Outlook Report as of January 1, 2016



Both the Zuni/Bluewater Basins are substantially better than last year. In January 2015 the Bluewater Lake inflow was forecast at 30 percent of average and is now at 121 percent. Additionally, the Zuni River at Black Rock was at 35 percent last January and is now at 117 percent of average. The Zuni Basin is at 96 percent of average for the water year to date, and 113 percent of average for December. Although early in the season the snowpack does look promising at 166 percent of median as compared to 62 percent last year. Bluewater Lake is somewhat lower than last January at 2,000 acre feet versus 2400. This is only 5 percent of capacity which is a 1 percent decrease from last year.



Zuni-Bluewater Basins Streamflow Forecasts - January 1, 2016

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)
Bluewater Lake Inflow ³	JAN-MAY	0	1	4	121%	9.6	17.7	3.3
Rio Nutria nr Ramah ³	JAN-MAY	0.19	0.92	1.95	137%	3.5	7.2	1.42
Ramah Reservoir Inflow ³	JAN-MAY	0.08	0.53	1.07	137%	1.8	3.2	0.78
Zuni R ab Black Rock Reservoir ³	JAN-MAY	0	0.1	0.55	117%	1.64	5	0.47

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

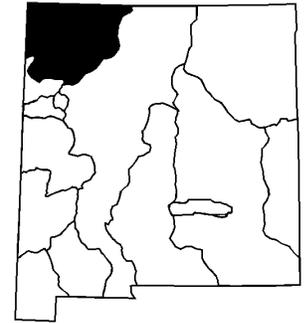
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

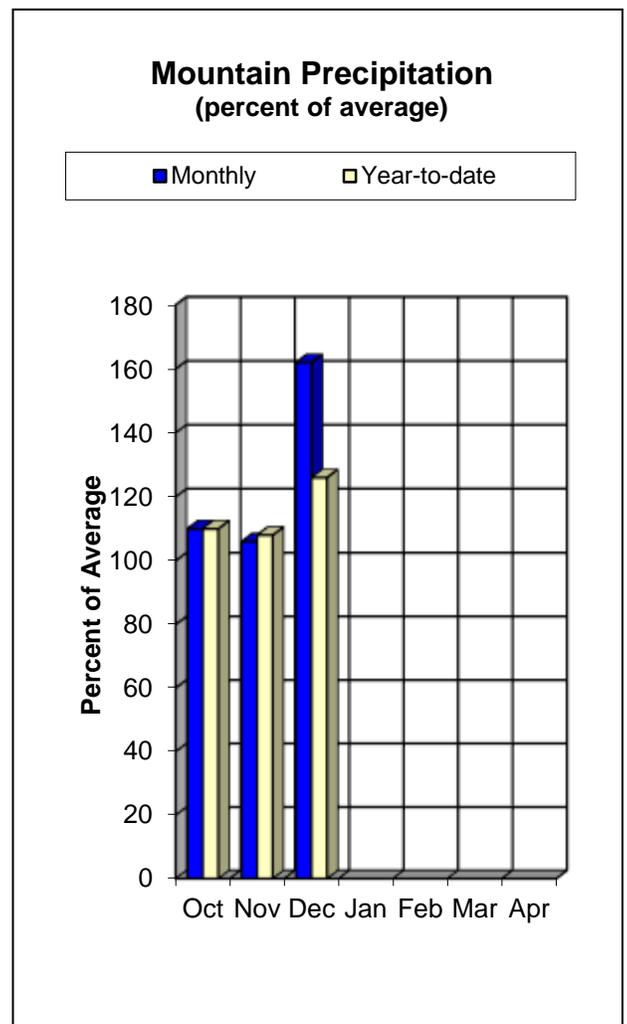
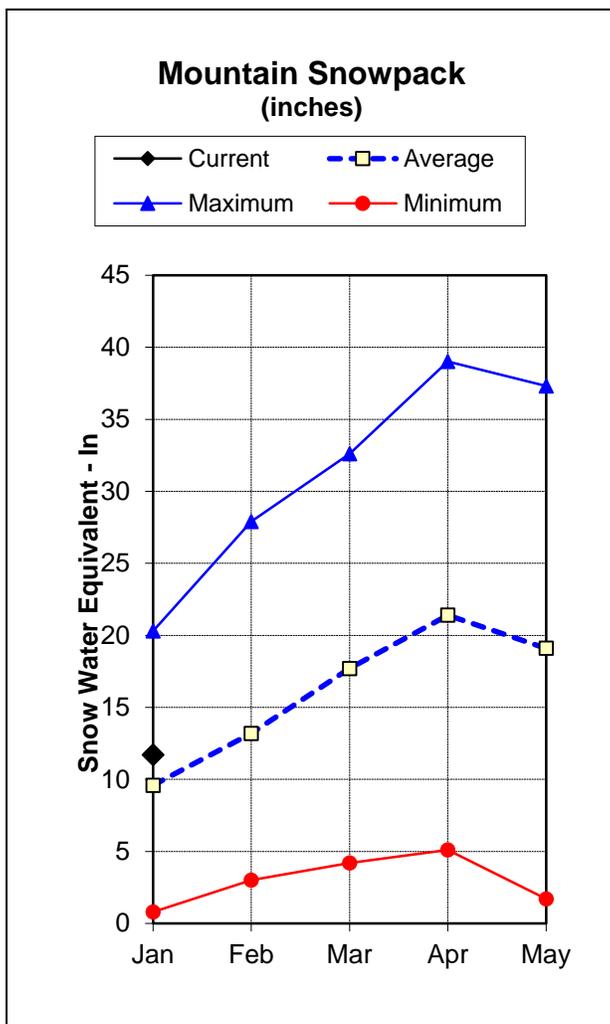
Reservoir Storage End of December, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bluewater Lake	2.0	2.4	5.7	38.5
Basin-wide Total	2.0	2.4	5.7	38.5
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 1, 2016	# of Sites	% Median	Last Year % Median
ZUNI-BLUEWATER BASINS	4	166%	62%

San Juan River Basin Water Supply Outlook Report as of January 1, 2016



The April to July forecasts look promising so far with 114 percent of average at the Navajo Reservoir Inflow. Additionally, the Animas River at Durango is 110 percent of the average. Year-to-date precipitation is at 126 percent of average which is a 53 percent increase from last year at this time. December received 162 percent of the average rainfall. Snowpack in the basin is currently at 122 percent of median. This is 51 percent increase from last year. Navajo reservoir storage contains 1,397,000 acre-feet or 104 percent of the average. This is up from last year's 1,090,700 acre-feet at the end of December. This equates to 82 percent of capacity for the reservoir.



San Juan River Basin Streamflow Forecasts - January 1, 2016

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	40	52	61	113%	71	87	54
Navajo R at Oso Diversion ²	APR-JUL	47	62	74	114%	87	107	65
Navajo Reservoir Inflow ²	APR-JUL	535	710	840	114%	985	1220	735
Animas R at Durango	APR-JUL	295	385	455	110%	530	655	415
La Plata R at Hesperus	APR-JUL	14.1	21	26	113%	32	41	23

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

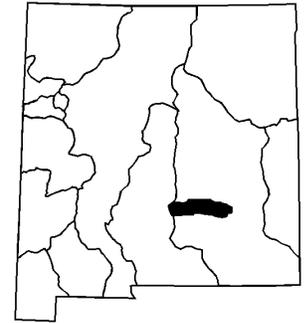
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

Reservoir Storage End of December, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Navajo Reservoir	1397.0	1090.7	1341.0	1696.0
Basin-wide Total	1397.0	1090.7	1341.0	1696.0
# of reservoirs	1	1	1	1

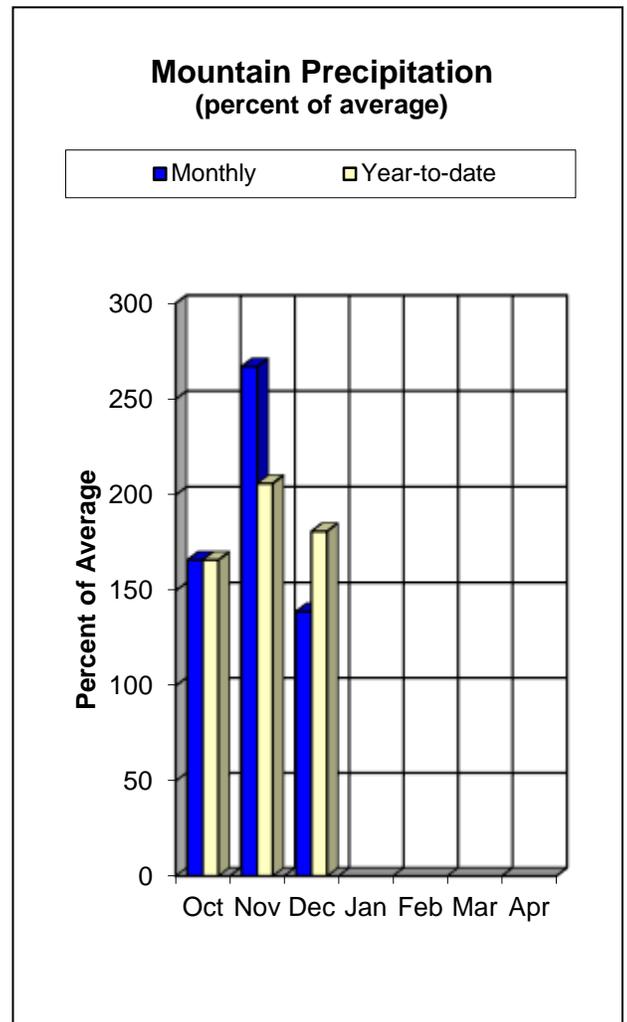
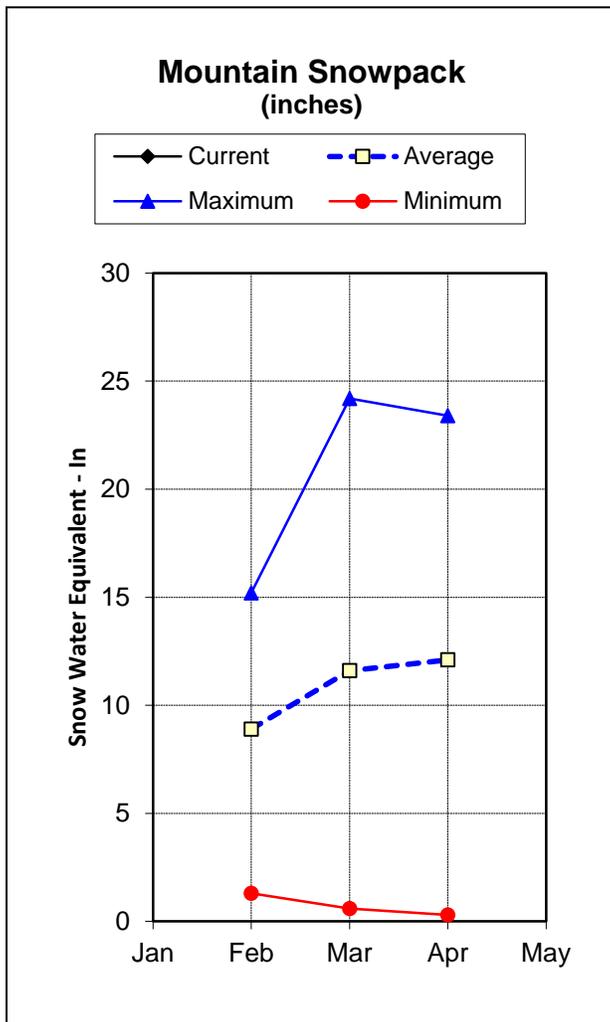
Watershed Snowpack Analysis January 1, 2016	# of Sites	% Median	Last Year % Median
SAN JUAN RIVER BASIN	11	122%	71%

Rio Hondo Basin Water Supply Outlook Report as of January 1, 2016



The streamflow forecast for the March to June time period for the Rio Hondo Basin is 134 percent of average for the Rio Ruidoso at Hollywood. This can be compared to last January's forecast of 23 percent. This is a dramatic improvement for the basin this early in the season. Year-to-date precipitation is at 181 percent of average, and the Rio Hondo received 139 percent of the average rainfall in December. This is up from last year's average of 62 percent for the water year to date. Currently snowpack is at 181 percent of the median, a marked increase from 72 percent at this time last year. This measurement however should be used with caution as the Sierra Blanca SNOTEL site was impacted by the Little Bear Fire three years ago.

It should be noted that the switch to using median snowpack values three years ago has had a significant influence on the "average" calculations for the Rio Hondo Basin. Using the old system of computing averages based on the 1971-2000 period, 6.7 inches of SWE was considered normal for January 1. Using the new median calculations based on the 1981-2010 period, 3.2 inches of SWE is now normal. For this reason, comparisons of "percent of average" from year to year will be limited in this basin to minimize confusion.



Rio Hondo Basin Streamflow Forecasts - January 1, 2016

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	2.6	5.9	9	134%	12.7	19.4	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, 2016	# of Sites	% Median	Last Year % Median
RIO HONDO BASIN	1	181%	72%

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		5.0	4.3	116%	4.2	98%
Boon	SC	8140	13	2.8	1.4	200%	1.1	79%
Bowl Canyon	SC	8980	22	4.9	3.5	140%	1.6	46%
Chamita	SNOTEL	8400	25	5.2	4.0	130%	2.3	58%
Dan Valley	SC	7640	9	2.0	1.2	167%	0.8	67%
Elk Cabin	SNOTEL	8210	10	2.1	1.8	117%	1.4	78%
Emory Pass #2	SC	7800			0.6			
Frisco Divide	SNOTEL	8000	7	1.3	1.5	87%	0.3	20%
Gallegos Peak	SNOTEL	9800	32	6.7	4.1	163%	4.9	120%
Hematite Park	SC	9500						
Hidden Valley	SC	8480	17	3.7			1.0	
Hopewell	SNOTEL	10000	39	8.1	7.1	114%	6.0	85%
Hummingbird - Aerial And Snow Course	SC	10550			4.4			
Lookout Mountain	SNOTEL	8500	8	2.2	1.4	157%	0.4	29%
Mcgaffey	SC	8120	10	1.8	1.0	180%	0.6	60%
Mcknight Cabin	SNOTEL	9240	13	3.4	1.6	213%	0.9	56%
Mcknight Cabin Aerial Marker	SC	9300						
Mcknight Cabin Snow Course	SC	9300						
Missionary Spring	SC	7940	8	1.8	1.1	164%	0.3	27%
Navajo Whiskey Ck	SNOTEL	9050	22	5.8			1.4	
North Costilla	SNOTEL	10600	16	3.2	2.6	123%	2.2	85%
Ojo Redondo	SC	8200						
Palo	SNOTEL	9350	13	3.1			3.1	
Palo	SC	9300						
PanchueLa	SC	8400						
Post Office Flats	SC	8400						
Quemazon	SNOTEL	9500	21	5.2	4.6	113%	1.7	37%
Red River Pass #2	SNOTEL	9850	20	4.1	3.6	114%	2.2	61%
Rice Park	SNOTEL	8460	16	3.5	2.5	140%	1.3	52%
Rice Park	SC	8460						
Rio En Medio	SC	10300						
Rio Santa Barbara	SNOTEL	10664	45	10.5			7.3	
San Antonio Sink	SNOTEL	9100	24	5.5			2.8	
San Antonio Sink	SC	9200						
Santa Fe	SNOTEL	11445	45	11.7	6.5	180%	5.8	89%
Senorita Divide #2	SNOTEL	8600	19	4.2	2.8	150%	1.5	54%
Shuree	SNOTEL	10100	19	4.0			2.6	
Shuree	SC	10097						
Sierra Blanca	SNOTEL	10280	36	5.8	3.2	181%	2.3	72%
Signal Peak	SNOTEL	8360	12	3.2	1.9	168%	0.9	47%
Silver Creek Divide	SNOTEL	9000	18	4.4	3.5	126%	1.7	49%
State Line	SC	8000	5	1.0	0.6	167%	0.1	17%
Taos Canyon	SC	9100						
Taos Powderhorn	SNOTEL	11057	42	10.6			6.3	
Taos Powderhorn	SC	11250	59	13.9	12.0	116%	7.6	63%
Tolby	SNOTEL	10180	24	5.0	3.8	132%	3.6	95%
Tolby	SC	10180						
Tres Ritos	SNOTEL	8600	11	2.4			1.6	
Tres Ritos	SC	8600						
Vacas Locas	SNOTEL	9306	29	6.7	4.8	140%	3.8	79%
Wesner Springs	SNOTEL	11120	47	10.2	6.8	150%	3.7	54%
Whiskey Creek	SC	9050	23	5.0	3.5	143%	1.9	54%
Whitewater - Aerial And Snow Course	SC	10750			9.5			
Basin Index						139%		67%
# of sites						28		28

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