

Colorado

Water Supply Outlook Report

March 1, 2021



“You can get yourself in, but how do you get yourself out?” Zack Wilson shows how it’s done while taking a break from the digging to have a look at Mt. Bierstadt, en-route from sampling the Geneva snow course. February offered increased and needed snow accumulation in Colorado, hopefully this trend continues for the sake of water supply in the state.

Photo By: Adam Pate

Date: February 25th, 2021

REMINDER: We are soliciting field work photos from the field again this year. Each month we will pick one to grace the cover of this report! Please include information on where, when and of who/what the photo was take

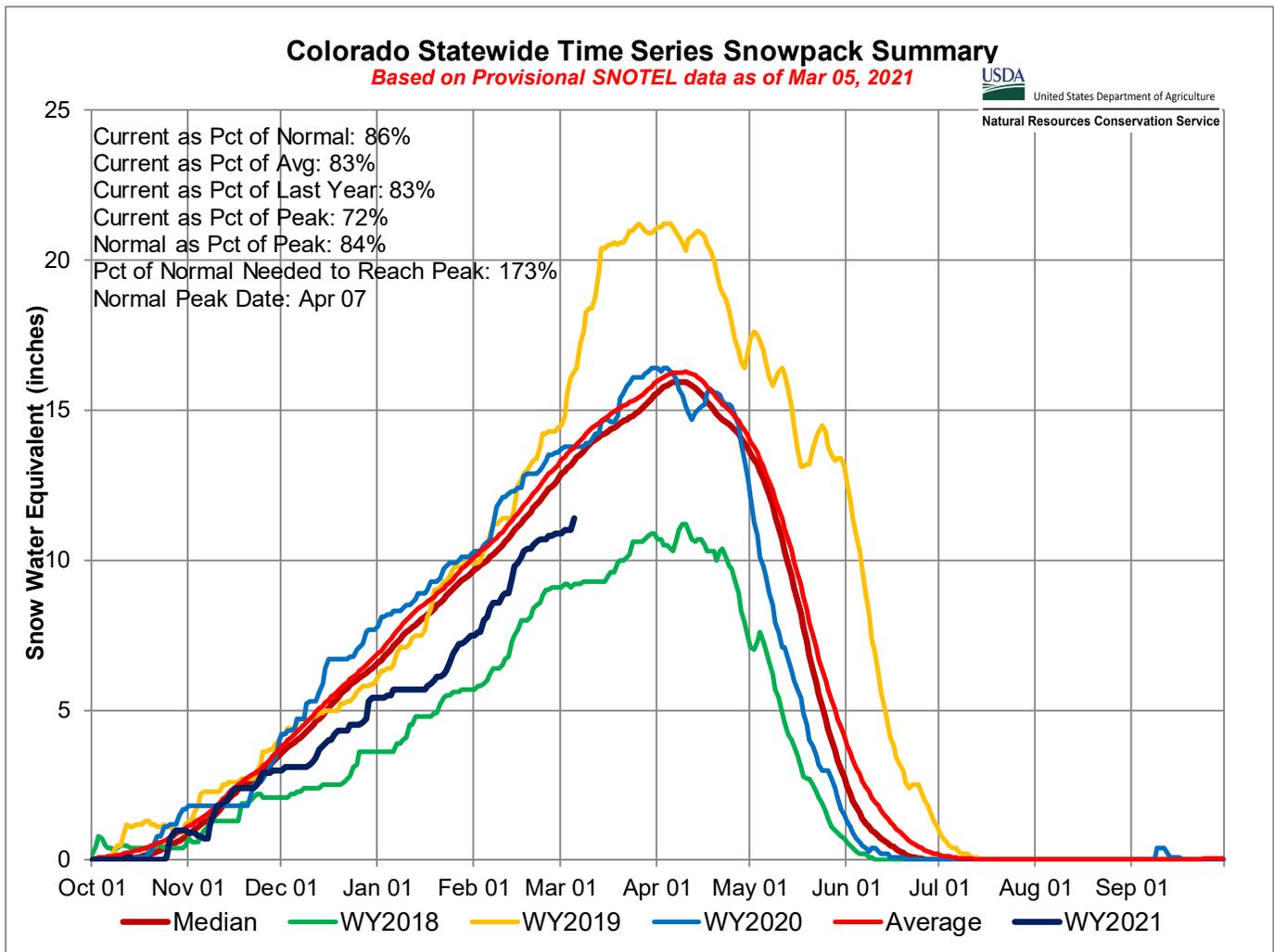
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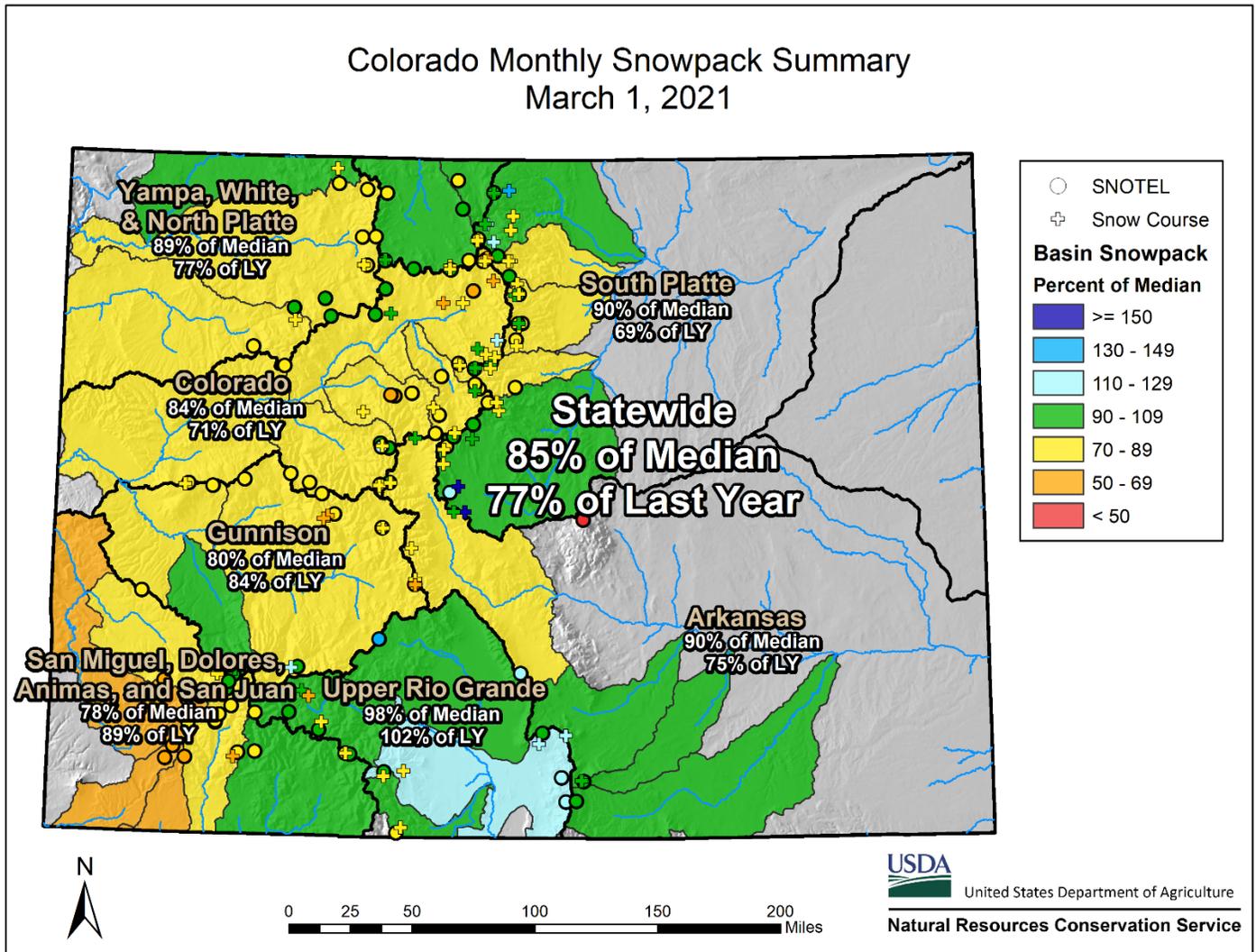
Colorado Statewide Water Supply Conditions

Summary



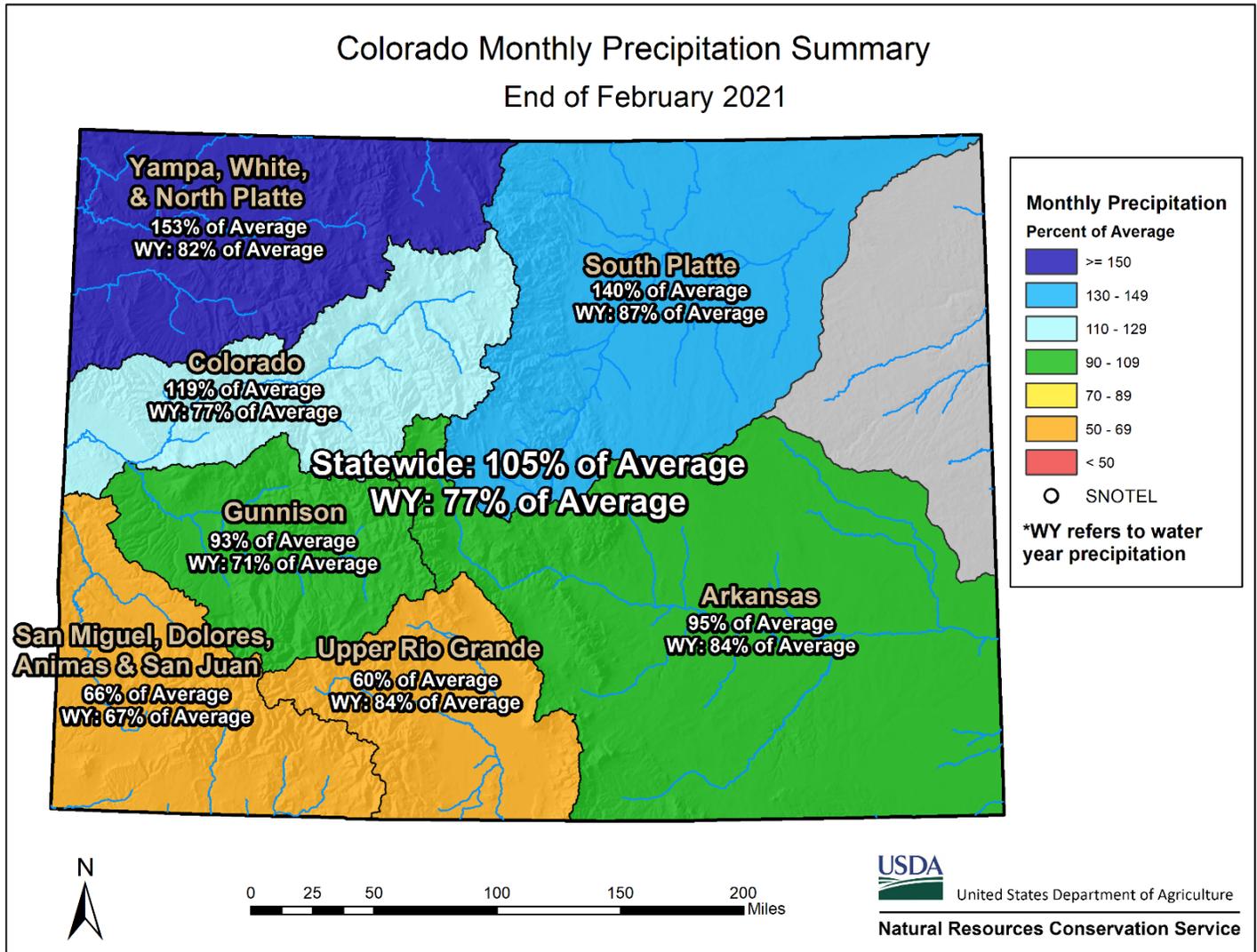
In a reversal from the last two months, a more substantial storm track developed out of the northwest bringing much-needed precipitation to the high country in northern Colorado. The storms improved statewide water supply overall but missed many southern basins in February. In northern basins of Colorado, much-needed precipitation left nearly every SNOTEL and snow course north of I-70 with above-average gains in snowpack and precipitation for the month. Likewise, March 1st water supply streamflow forecasts in northern basins saw improvements despite all forecasts still projecting below-average runoff. The North Platte River near Northgate saw the greatest improvements in forecasted streamflow volumes compared to last month where forecasts improved by 30 percentage points. Despite improvements in February, all streamflow runoff volumes across the state are forecasted to be below-average. Southern river basins in Colorado mostly maintained below-average snowpack and precipitation conditions over the month with a slight deterioration in snowpack in the Upper Rio Grande river basin. Furthermore, forecasted streamflow runoff volumes are still bleak in southern river basins, exacerbated by an exceptionally dry 2020 summer and fall. Due to receiving below-average precipitation the Upper Rio Grande, Arkansas, and the combined San Miguel-Dolores-Animas-San Juan river basins saw a decline in forecasted streamflow volumes compared to last month. Statewide reservoir storage only improved by a percentage point despite gains in northern basins. Below-average precipitation and snowpack continue to hamper water storage in the Arkansas river basin; the only river basin that saw a decrease in reservoir storage as a percent of average in February. With only one month to go before peak snowpack in many Colorado basins, runoff conditions look bleak for the coming summer months without substantial late-season storms.

Snowpack



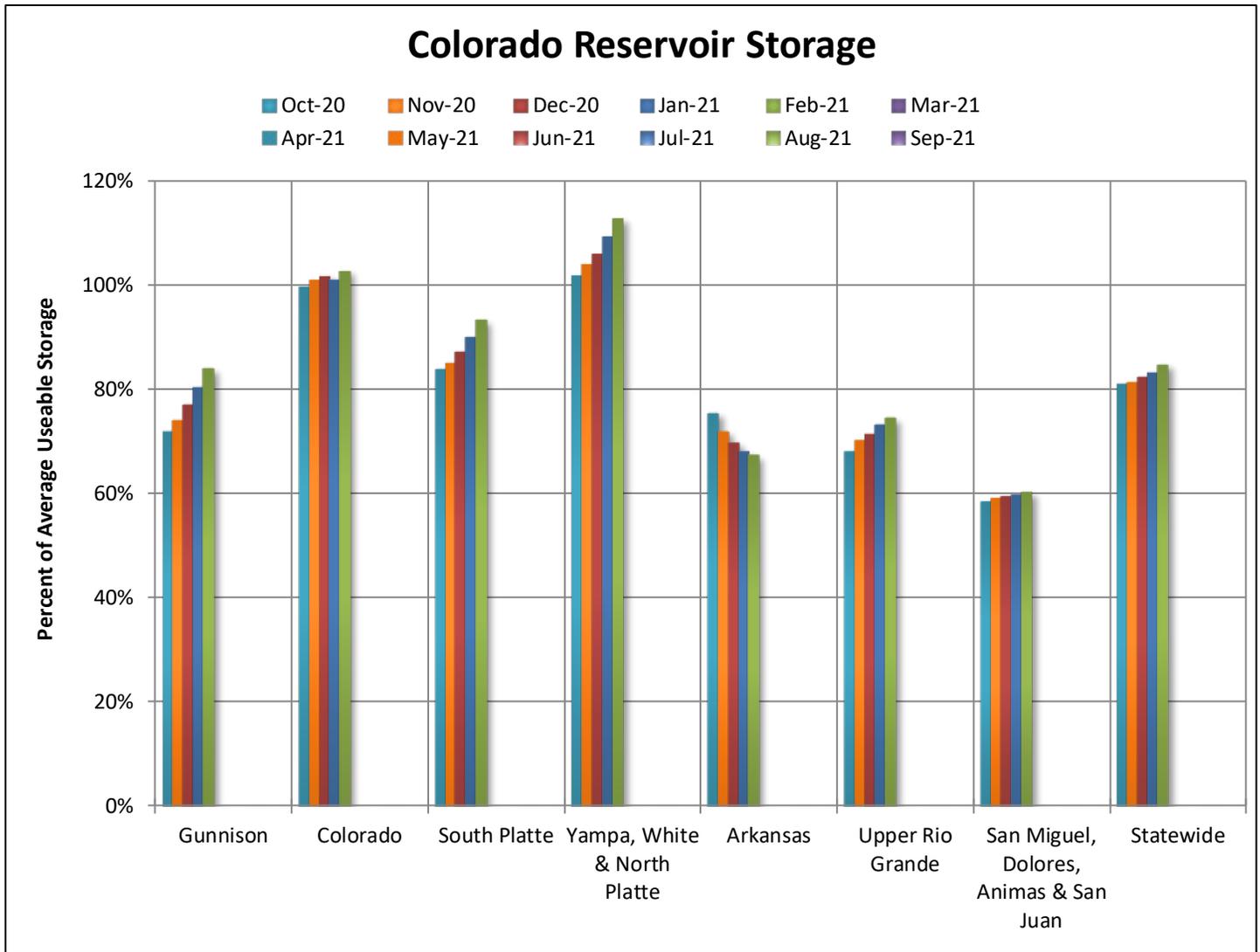
Despite widespread snowfall across the state during the month of February the low snowpack trend continues for this winter with every major river basin currently maintaining a below-median snowpack. The Upper Rio Grande basin remains the highest basin snowpack despite seeing the largest decrease from the median compared to last month, down from 106 percent to currently 98 percent of median. The adjacent combined San Miguel-Dolores-Animas-San Juan basin currently has the lowest snowpack compared to the median at 78 percent and has changed little throughout the season. The greatest gains in snowpack over the past month were seen in the Northern Colorado basins due to a more northerly storm track and a strong upslope storm along the Front Range. The combined Yampa-White-North Platte and South Platte basins are up 17 and 15 percentage points since last month. The rest of the state's river basins saw modest gains with the Colorado up to 84 percent from 72 percent of the median, the Gunnison up to 80 from 73 percent of median, and the Arkansas up to 88 percent from 72 percent of median. Overall, the state ended February with 85 percent of the median snowpack, a mere 2 percent increase from the start of the year. The Climate Prediction Center's monthly outlook predicts above average temperatures with below average precipitation for Colorado for the month of March. The most recent ENSO Diagnostic discussion shows La Niña holding on through March with a 60 percent chance of a transition from La Niña to ENSO-Neutral during the Northern Hemisphere spring 2021 (April-June). With a little over a month left in the accumulation season, there is little time for these basins to reach median peak snowpack conditions.

Precipitation



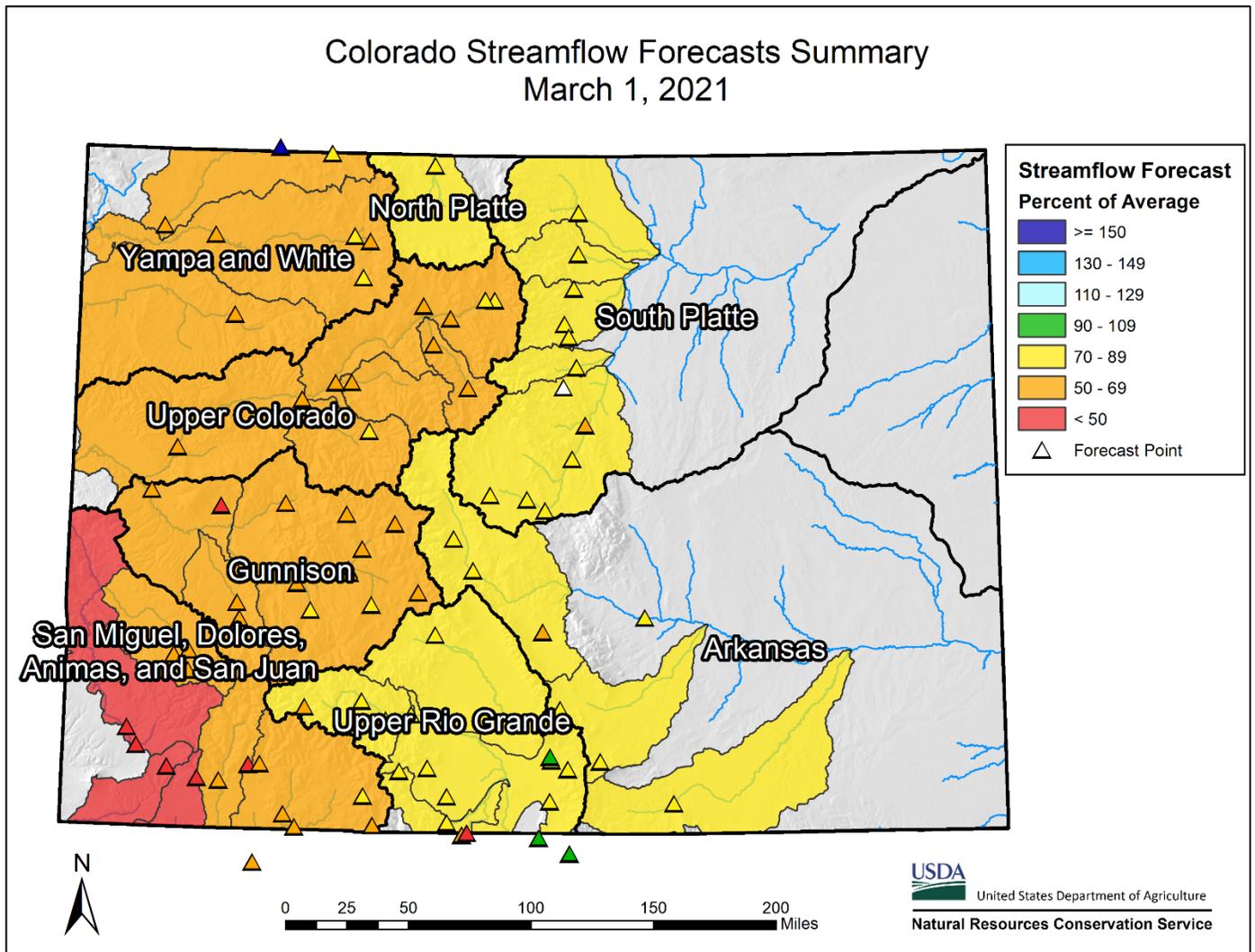
February 2021 brought a very welcomed series of storms that delivered much-needed precipitation to much of Colorado. The northern basins in the state fared particularly well: the combined Yampa-White-North Platte, the South Platte, and Colorado River basins all received well over 100 percent of average precipitation for the month. Although water year precipitation in each major river basin across Colorado is still below average, five of the seven major river basins saw modest increases in water year precipitation during the last month. The combined Yampa-White-North Platte River basin is now at 82 percent of average water year precipitation, the South Platte River basin is at 87 percent, and the Colorado River basin is currently at 77 percent of average water year precipitation. Moving farther South in the state, the Arkansas and Gunnison River basins saw slightly below average precipitation during February and are currently at 84 percent and 71 percent of average water year precipitation amounts, respectively. Compared to the rest of the state, little precipitation fell in the Upper Rio Grande and combined San Miguel-Dolores-Animas-San Juan River basin during February due to a more northerly storm track. Water year precipitation in the Upper Rio Grande River basin is now at 84 percent of average, down from 89 percent at the end of January, while water year precipitation in the combined San Miguel-Dolores-Animas-San Juan River basin is at 67 percent of average and has not changed since the end of January. Statewide, Colorado received 105 percent of average precipitation for February, which helped increase the water year precipitation from 69 percent of average at the end of January to 77 percent of average on March 1.

Reservoir Storage



In Colorado, all major river basins, except for the Arkansas, saw a small improvement in reservoir storage to end February. Statewide, reservoir storage improved only by a percentage point compared to January but still sits below average at 84 percent of average. Only the Colorado and the combined Yampa-White-North Platte river basins ended February with above-average storage at 102 and 113 percent of average, respectively. The Arkansas river basin reservoir storage has continued to decline as it has during much of the water year and ended February at 67 percent of average, a percentage point decrease from January. The Upper Rio Grande and the combined San Miguel-Dolores-Animas-San Juan river basin ended the month maintaining below-average storage at 74 and 60 percent of average, respectively. The Gunnison and the North Platte river basins had the largest gains in relative reservoir storage compared to last month, ending February with 84 and 93 percent of average, respectively. With much of the northern basins in the state receiving above-average precipitation during February and peak snowpack still a month away, there is still a chance for further improvements in reservoir storage as the snowpack builds before runoff season begins.

Streamflow

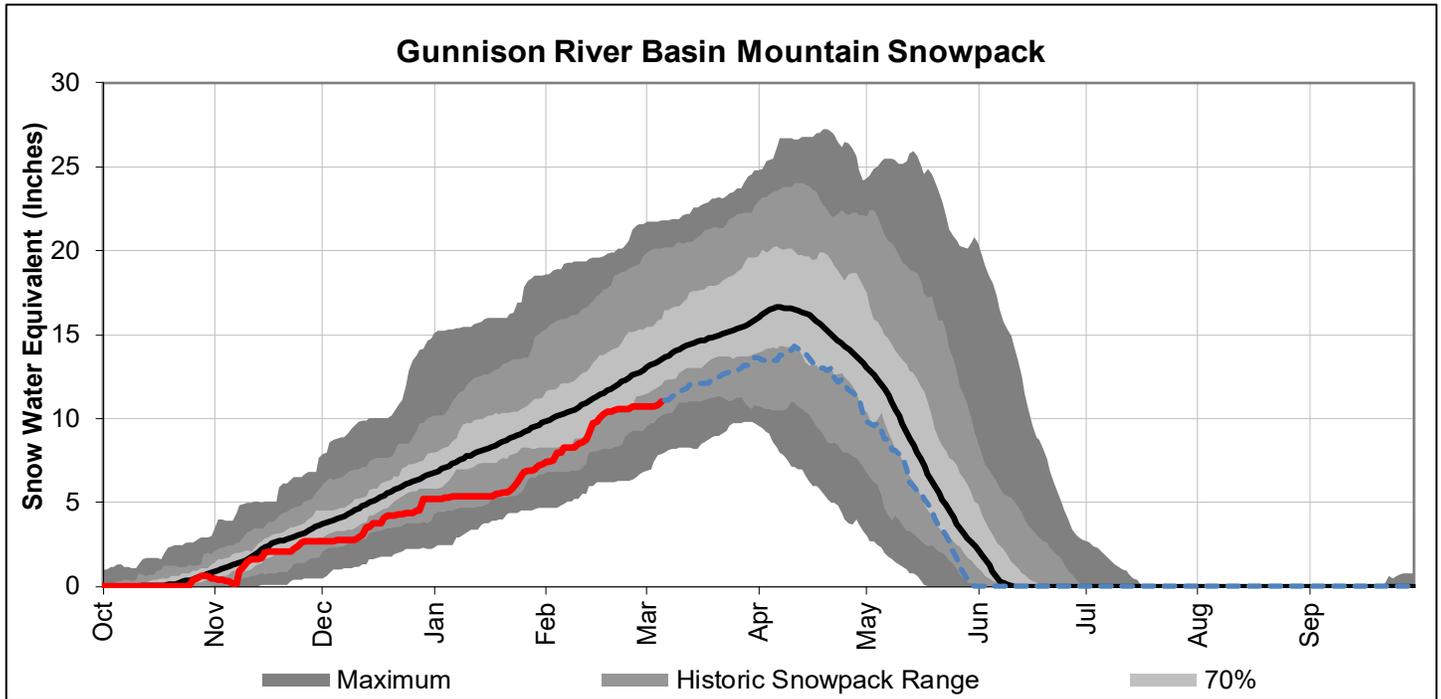


Streamflow forecasts have generally improved from last month due to recent storms bringing much needed precipitation across the state. However, all major river basins remain below average. The combination of dry antecedent soil conditions, persistent drought since last summer, and below average precipitation throughout the first part of winter has contributed to these below average forecasts. Streamflow volume forecasts range from a high of 90 percent of average for the Ute Creek near Fort Garland, to a low of 35 percent of average for the Mancos River near Mancos. The South Platte, North Platte, Arkansas and Upper Rio Grande river basins are currently forecasted to have streamflow volumes ranging from 73 percent in the Upper Rio Grande and North Platte to 80 percent of average in the South Platte. Forecasts in the Colorado Headwaters range from 63 to 75 percent of average for streamflow volumes and the White-Yampa river basin is at 65 percent of average. The Gunnison river basin is currently forecasted to produce streamflow volumes at 57 percent of average as streams within this basin range between 41 and 72 percent. Lastly, the combined San Miguel-Dolores-Animas-San Juan river basins have streamflow forecasts at 54 percent of average. Although a few locations in the state are forecasted to have near-average streamflow this year, much of the state is forecasted to have well-below average streamflow volumes. There are still a few months before runoff season begins, so these forecasts can change and, hopefully, improve. Please refer to individual basin sections in this report to get more details on individual forecast points.

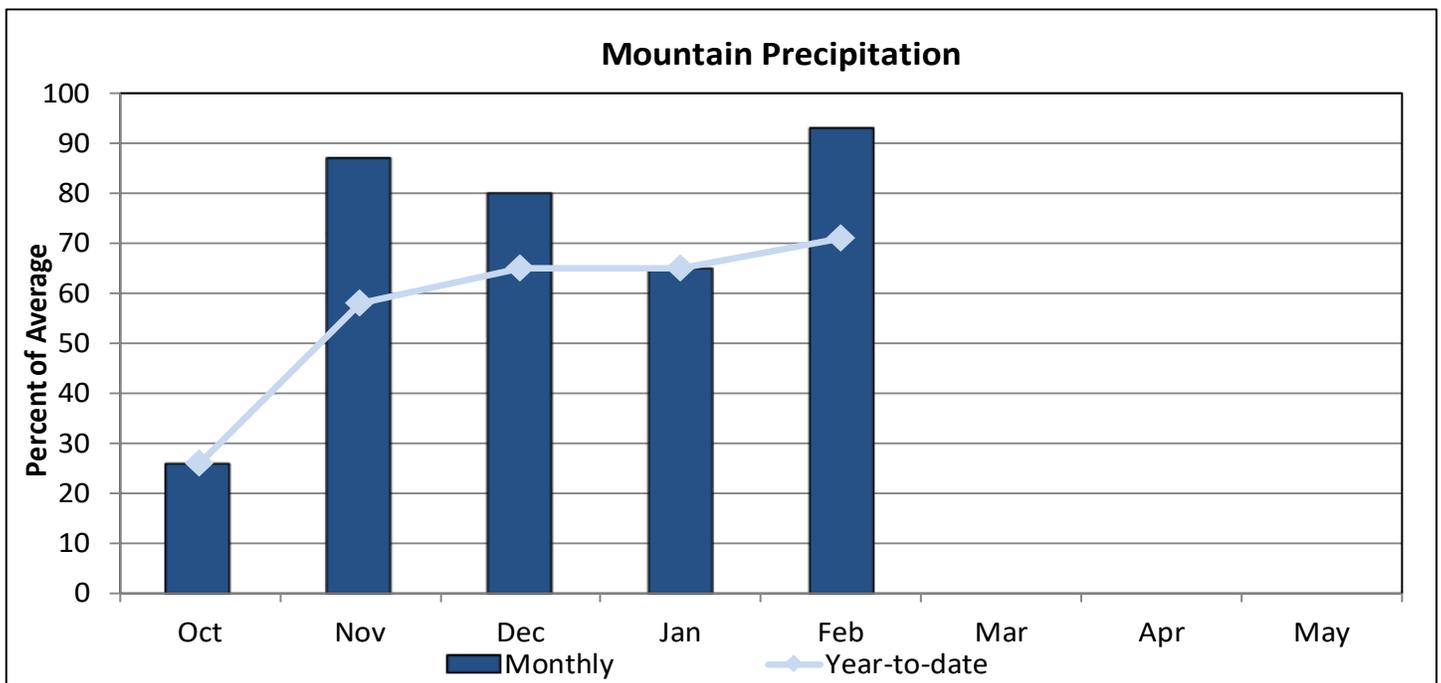
GUNNISON RIVER BASIN

March 1, 2021

Snowpack in the Gunnison river basin is below normal at 80% of the median. Precipitation for February was 93% of average which brings water year-to-date precipitation to 71% of average. Reservoir storage at the end of February was 84% of average compared to 106% last year. Current streamflow forecasts range from 42% of average for Surface Creek at Cedaredge to 71% of average for Cochetopa Creek below Rock Creek near Parlin.

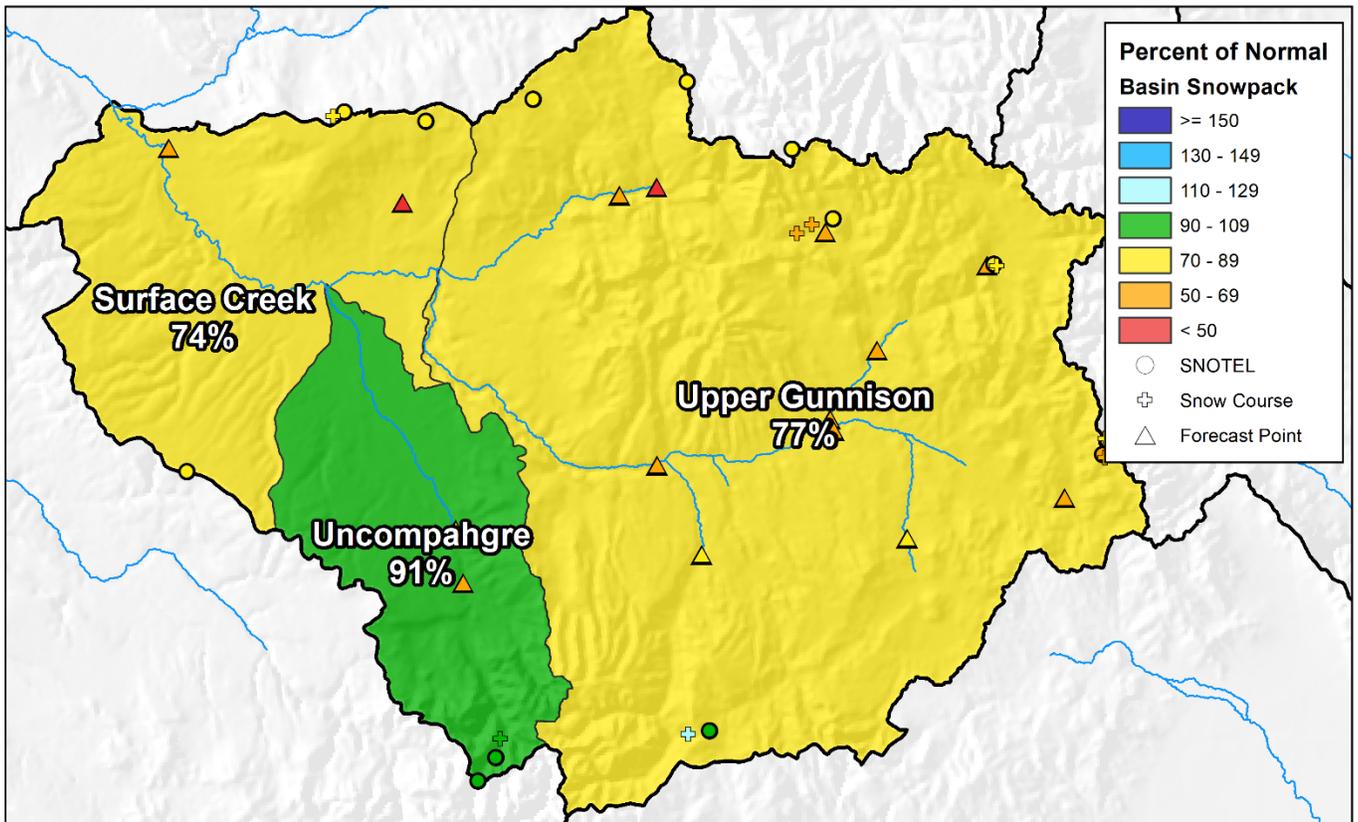


*SWE values calculated using daily SNOTEL data only



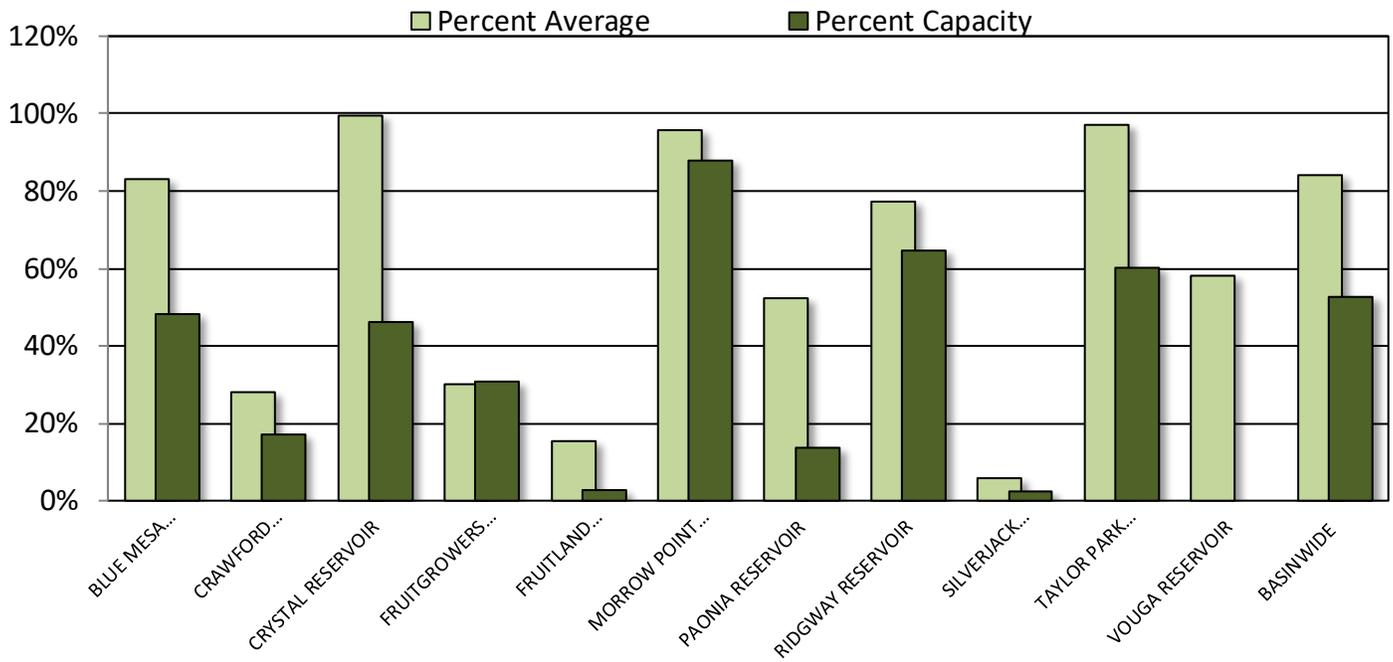
*SWE values calculated using first of month SNOTEL data and snow course measurements

Gunnison River Basin Snowpack and Streamflow Forecasts March 1, 2021



United States Department of Agriculture
Natural Resources Conservation Service

End of February Reservoir Storage



Watershed Snowpack Analysis March 1st, 2021

Sub-Basin	# of Sites	% Median	Median	Last Year %
Upper Gunnison	17	77		96
Surface Creek	3	74		71
Uncompahgre	4	91		95
Basin-Wide Total	21	80		96

*SWE values calculated using first of month SNOTEL data and snow course measurements

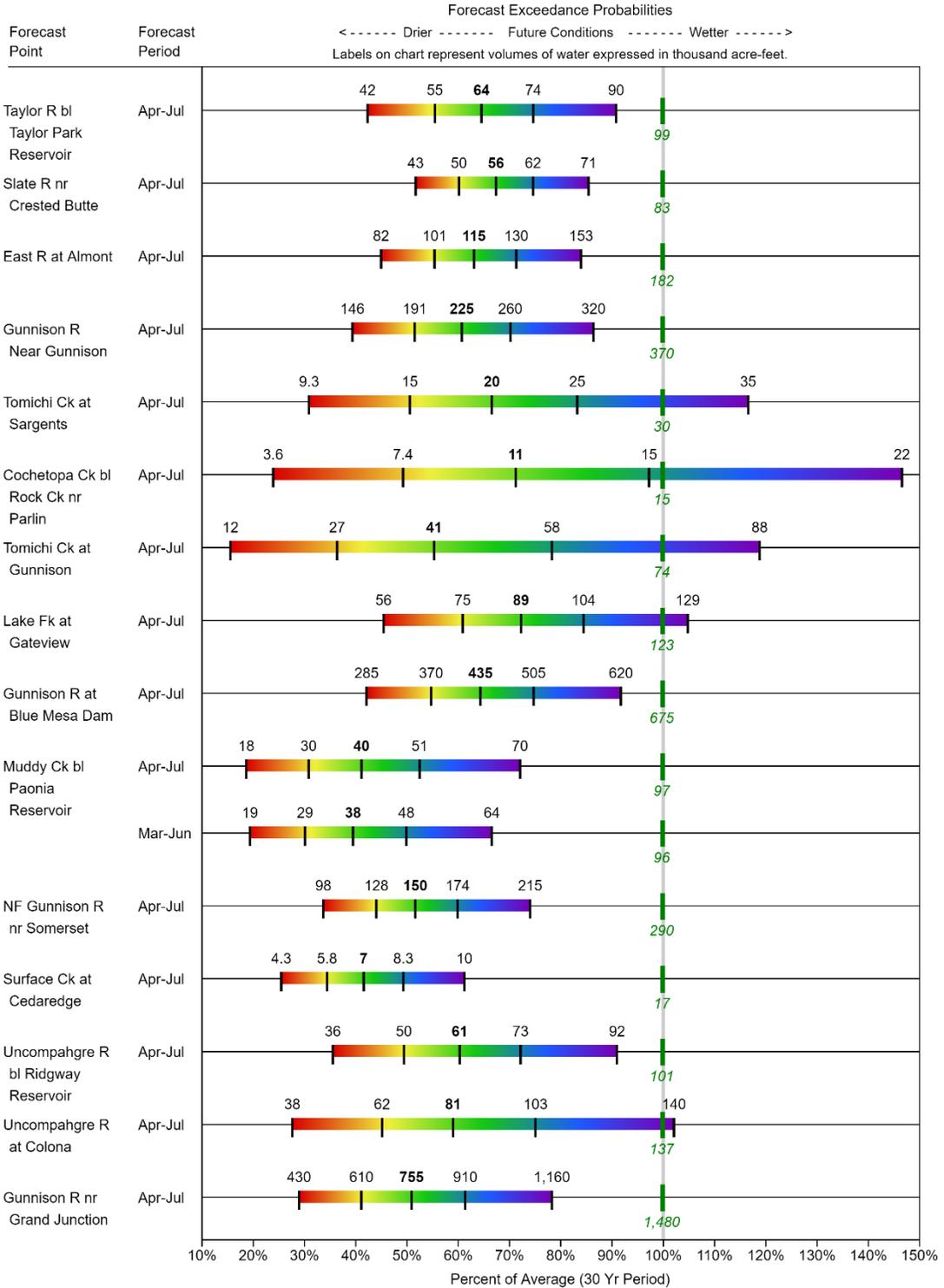
Reservoir Storage End of February 2021

Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
BLUE MESA RESERVOIR	400.9	537.0	482.2	830.0
CRAWFORD RESERVOIR	2.4	7.8	8.5	14.0
CRYSTAL RESERVOIR	8.1	8.0	8.1	17.5
FRUITGROWERS RESERVOIR	1.1	3.3	3.7	3.6
FRUITLAND RESERVOIR	0.3	1.2	1.7	9.2
MORROW POINT RESERVOIR	106.3	107.4	111.1	121.0
PAONIA RESERVOIR	2.1	4.9	4.0	15.4
RIDGWAY RESERVOIR	53.7	66.0	69.4	83.0
SILVERJACK RESERVOIR	0.3	0.8	5.5	12.8
TAYLOR PARK RESERVOIR	63.7	72.7	65.7	106.0
VOUGA RESERVOIR	0.4		0.7	0.9
BASINWIDE	639.3	809.1	760.6	1213.4
Number of Reservoirs	11	10	11	11

GUNNISON RIVER BASIN

Water Supply Forecasts

March 1, 2021



Legend



When selected, the following historic streamflow values and statistics will be shown.

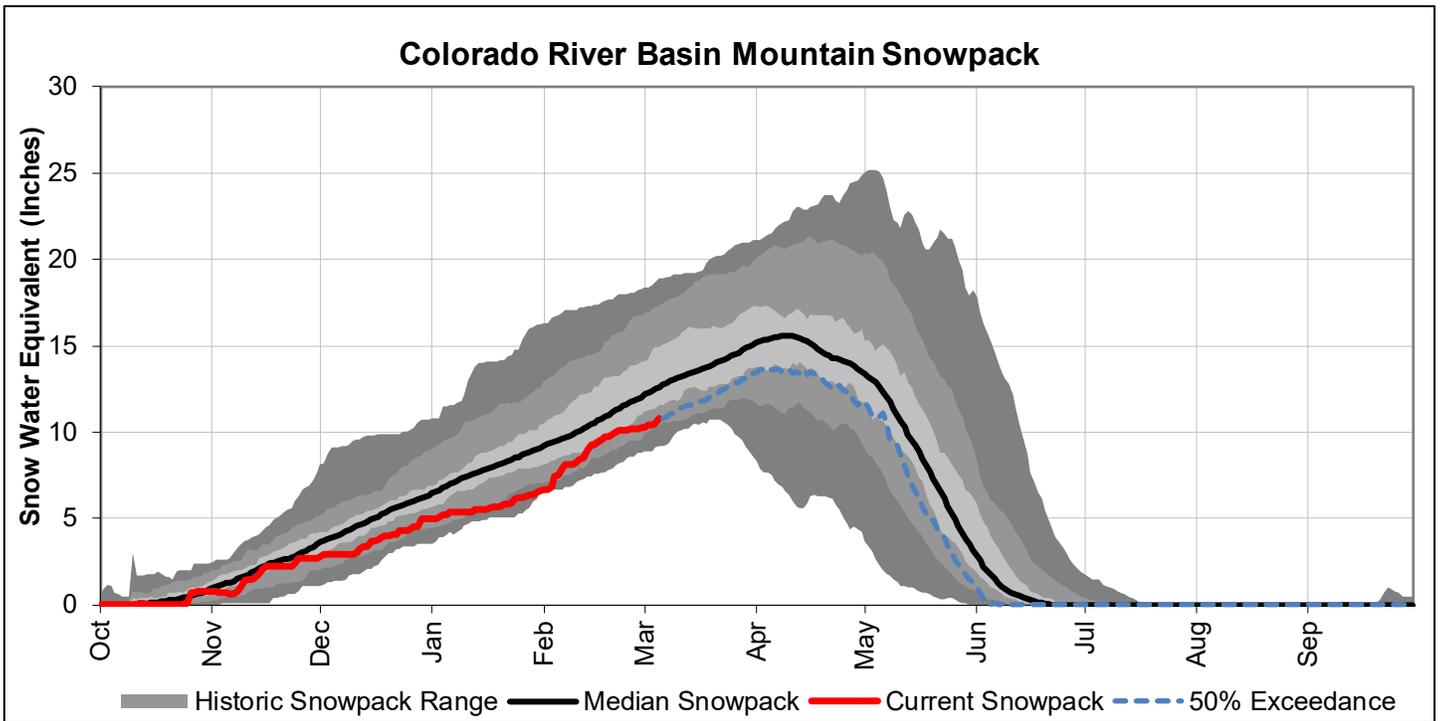
 <i>Period of Record Minimum Streamflow KAF (Year)</i>	 <i>1981-2010 Normal Streamflow KAF</i>	 <i>Observed Streamflow KAF</i>	 <i>Period of Record Maximum Streamflow KAF (Year)</i>
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Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

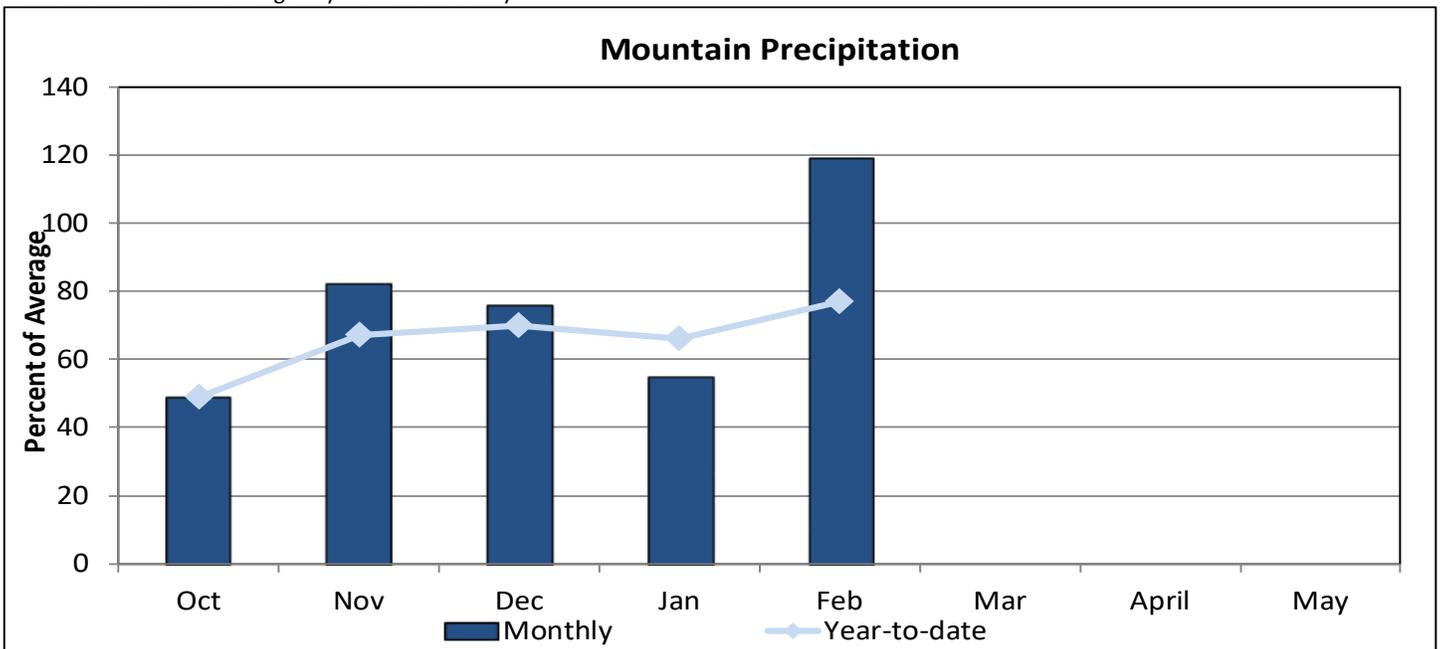
COLORADO RIVER BASIN

March 1, 2021

Snowpack in the Colorado river basin is below normal at 84% of the median. Precipitation for February was 119% of average which brings water year-to-date precipitation to 77% of average. Reservoir storage at the end of February was 103% of average compared to 112% last year. Current streamflow forecasts range from 63% of average for Muddy Creek below the Wolford Mountain Reservoir to 75% of average for the Colorado River below Lake Granby.

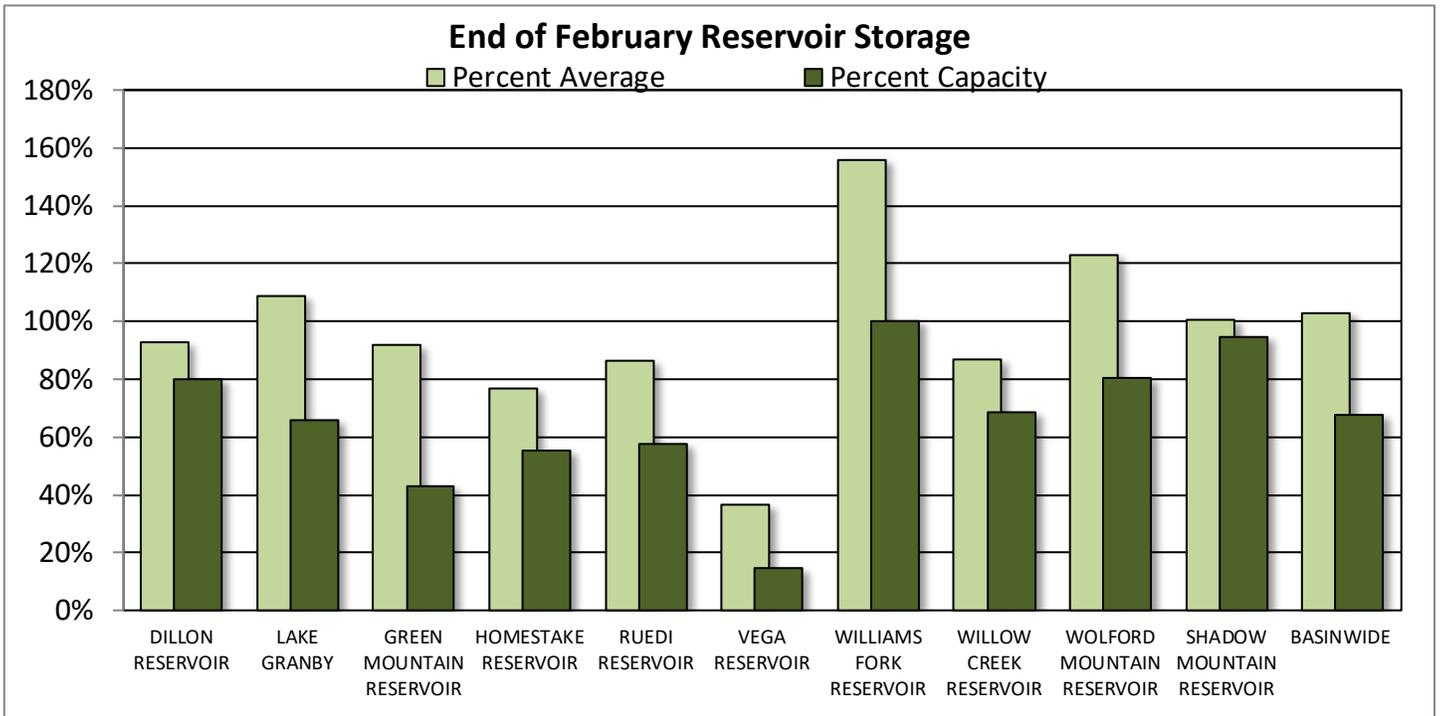
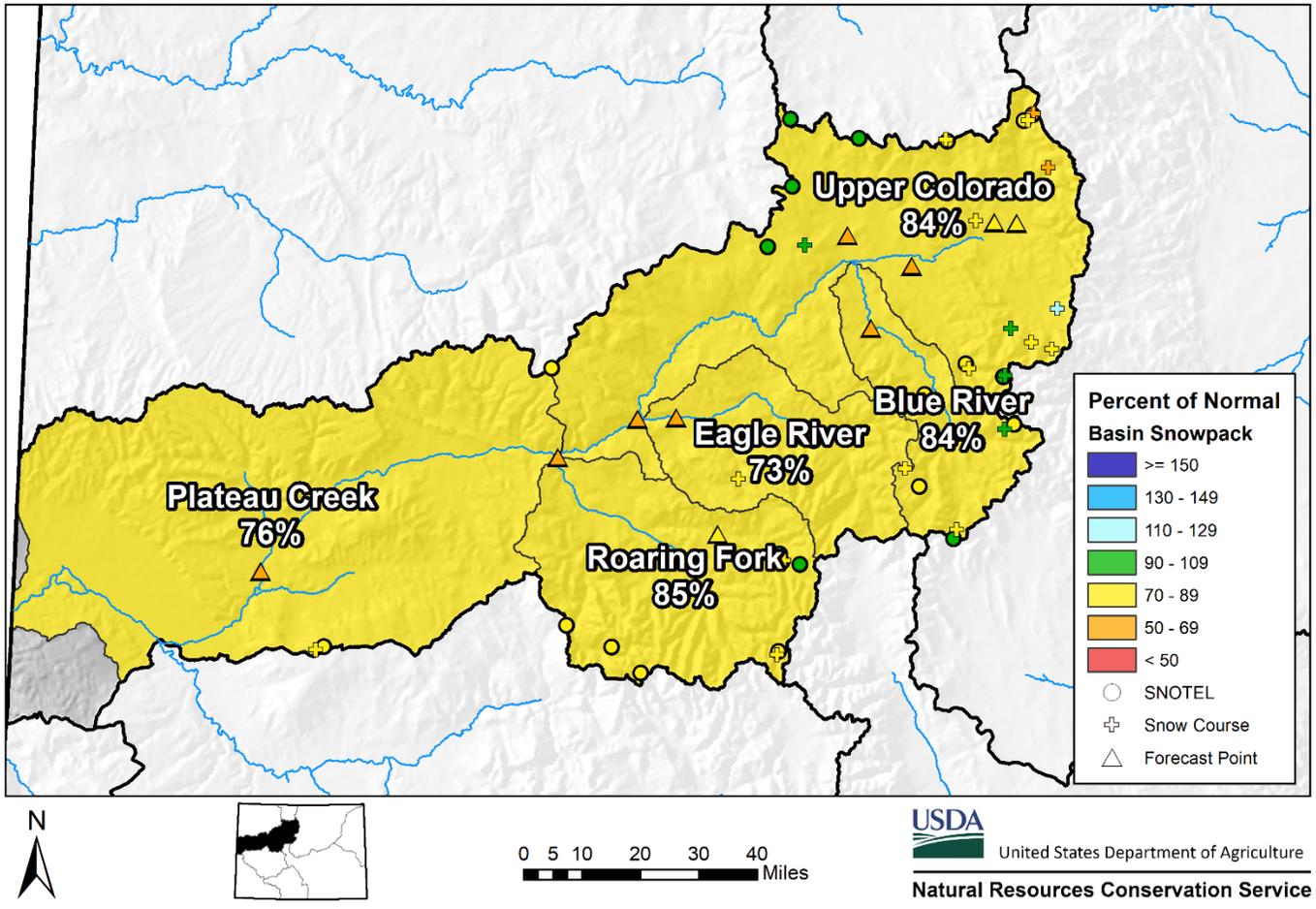


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements

Upper Colorado River Basin Snowpack and Streamflow Forecasts March 1, 2021



Watershed Snowpack Analysis March 1st, 2021

Sub-Basin	# of Sites	% Median	Last Year % Median
Blue River	8	84	129
Upper Colorado	36	84	125
Muddy Creek	5	90	134
Eagle River	5	73	112
Plateau Creek	6	76	78
Roaring Fork	9	85	112
Williams Fork	5	94	129
Willow Creek	5	77	121
Basin-Wide Total	48	84	119

*SWE values calculated using first of month SNOTEL data and snow course measurements

Reservoir Storage End of February 2021

Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
DILLON RESERVOIR	199.0	223.3	214.5	249.1
LAKE GRANBY	307.6	342.8	282.6	465.6
GREEN MOUNTAIN RESERVOIR	63.1	63.5	68.7	146.8
HOMESTAKE RESERVOIR	23.8	41.3	31.0	43.0
RUEDI RESERVOIR	58.6	70.9	67.9	102.0
VEGA RESERVOIR	4.8	14.6	13.1	32.9
WILLIAMS FORK RESERVOIR	97.1	75.1	62.4	97.0
WILLOW CREEK RESERVOIR	6.3	7.4	7.2	9.1
WOLFORD MOUNTAIN RESERVOIR	53.1	50.7	43.2	65.9
SHADOW MOUNTAIN RESERVOIR	17.4	17.3	17.3	18.4
BASINWIDE	830.7	906.9	807.9	1229.8
Number of Reservoirs	10	10	10	10

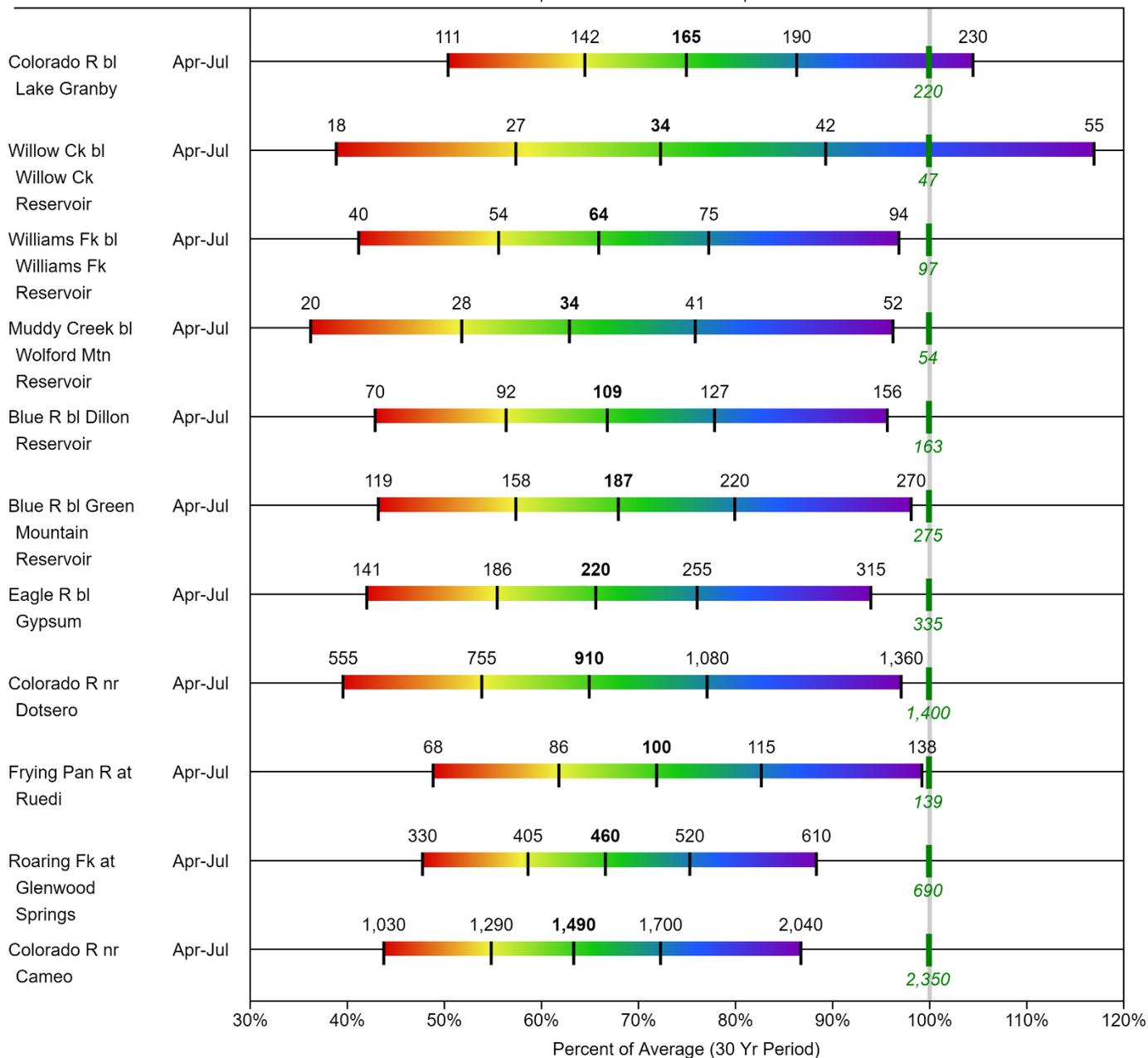
UPPER COLORADO RIVER BASIN

Water Supply Forecasts

March 1, 2021

Forecast Exceedance Probabilities

<----- Drier ----- Future Conditions ----- Wetter ----->
 Labels on chart represent volumes of water expressed in thousand acre-feet.



Legend



When selected, the following historic streamflow values and statistics will be shown.

Period of Record Minimum Streamflow KAF (Year)

1981-2010 Normal Streamflow KAF

Observed Streamflow KAF

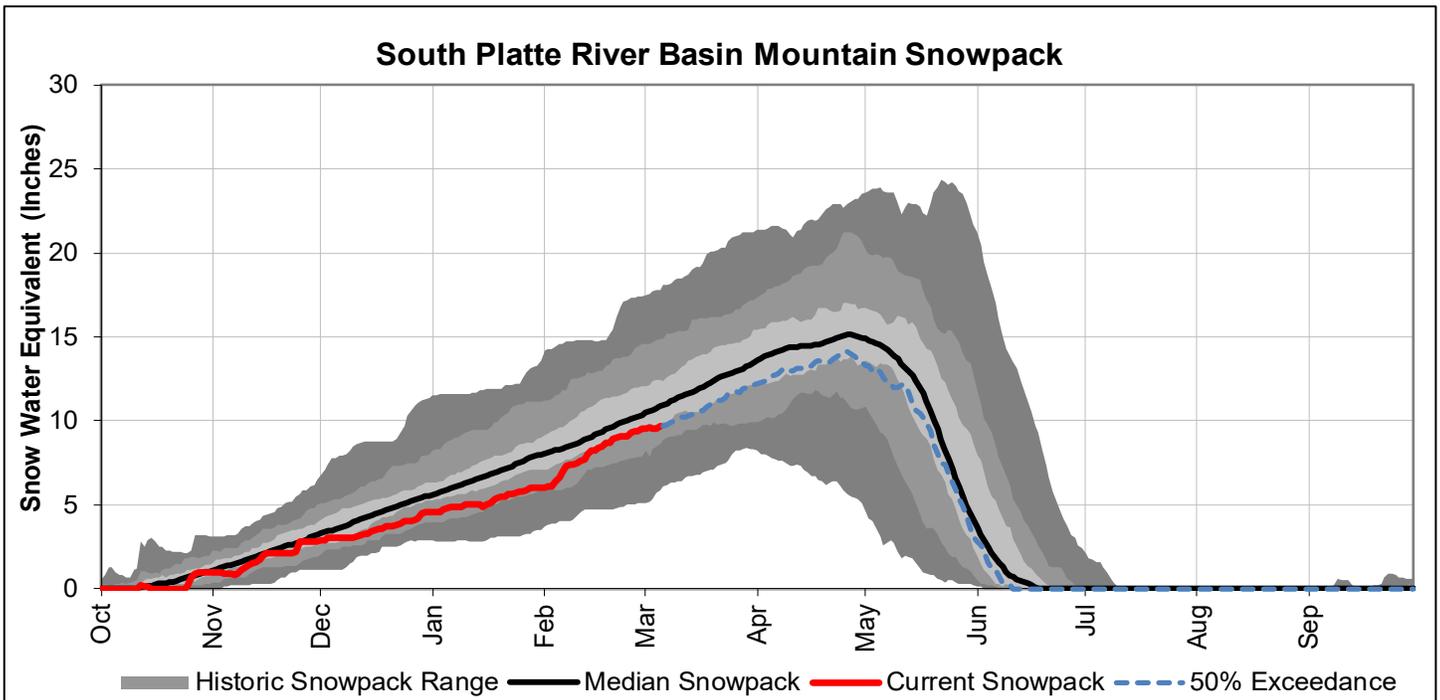
Period of Record Maximum Streamflow KAF (Year)

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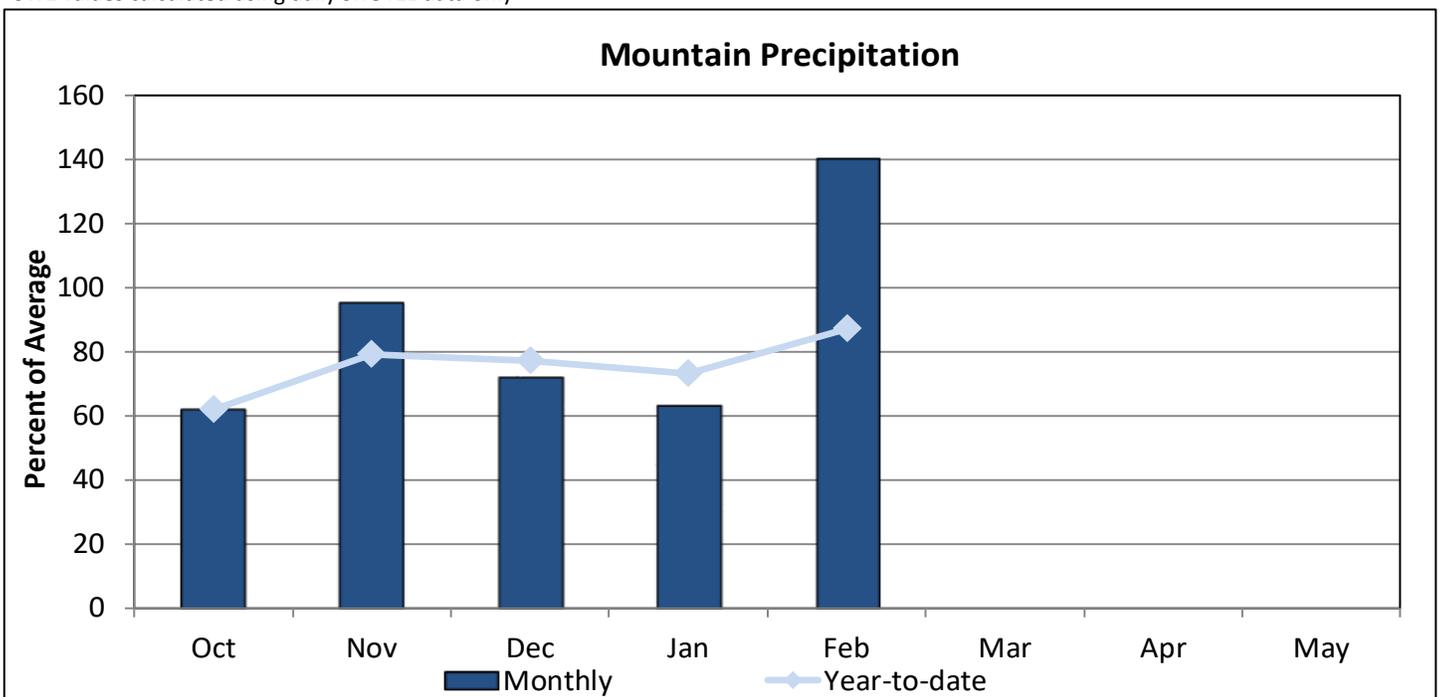
SOUTH PLATTE RIVER BASIN

March 1, 2021

Snowpack in the South Platte river basin is below normal at 90% of the median. Precipitation for February was 140% of average which brings water year-to-date precipitation to 87%. Reservoir storage at the end of February was 93% of average compared to 113% last year. Current streamflow forecasts range from 66% of average for the South Platte River at South Platte to 87% of average for the Cache la Poudre at the canyon mouth.

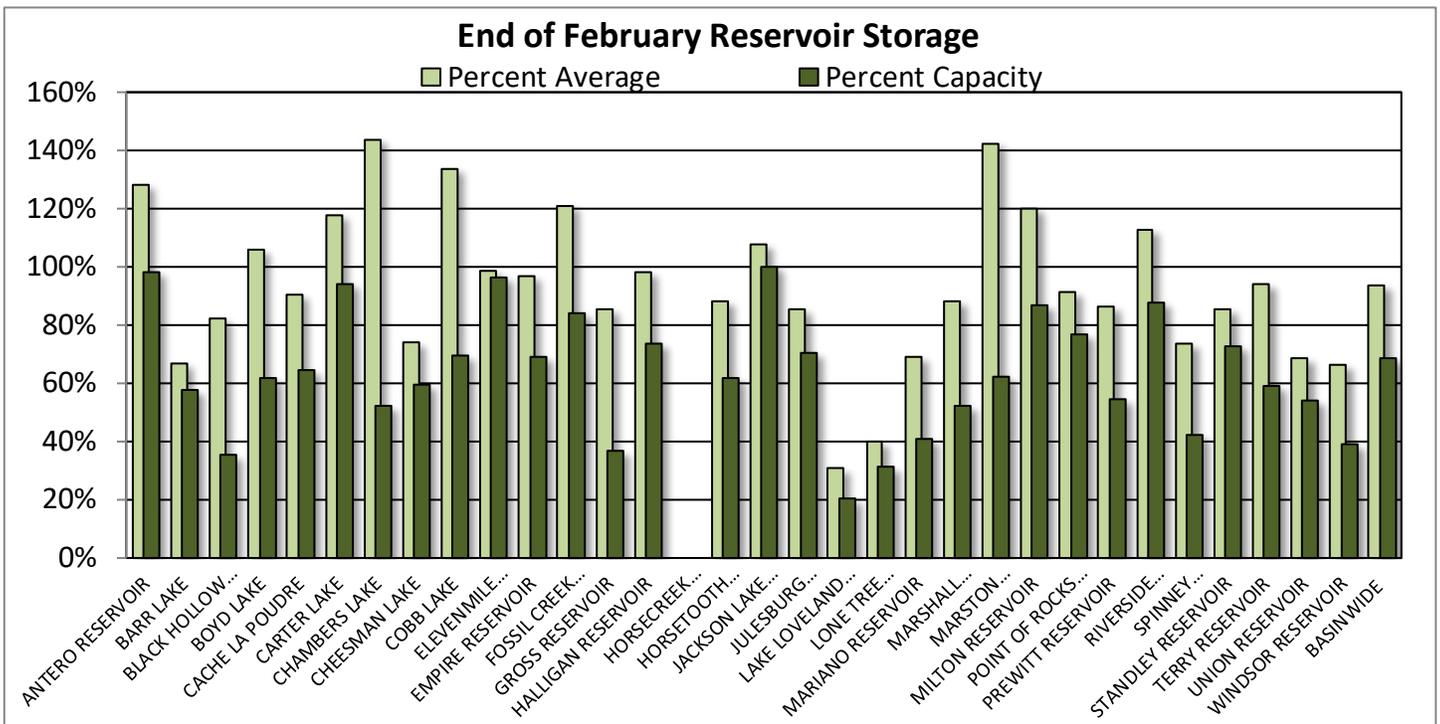
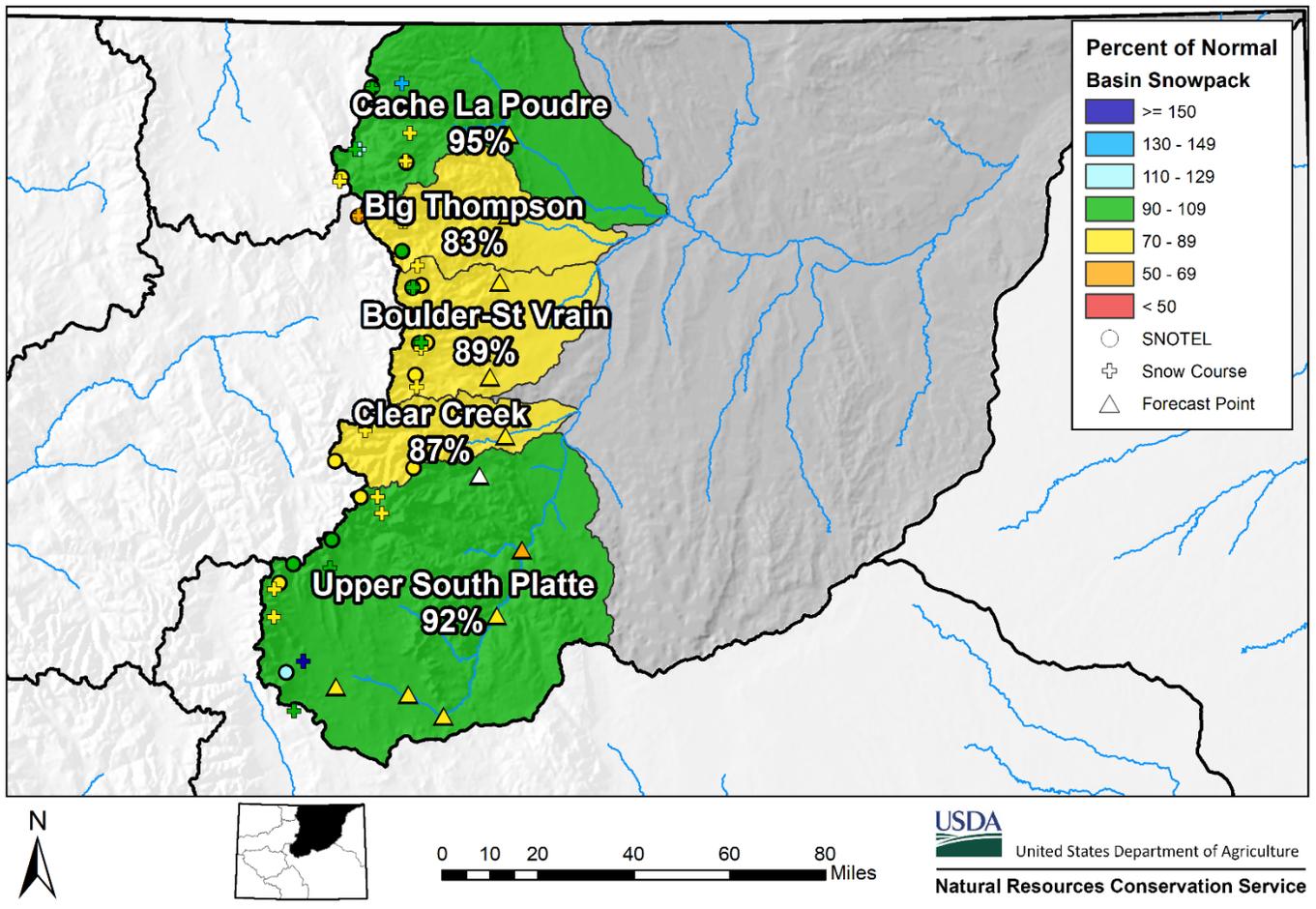


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements

South Platte River Basin Snowpack and Streamflow Forecasts March 1, 2021



Watershed Snowpack Analysis March 1st, 2021

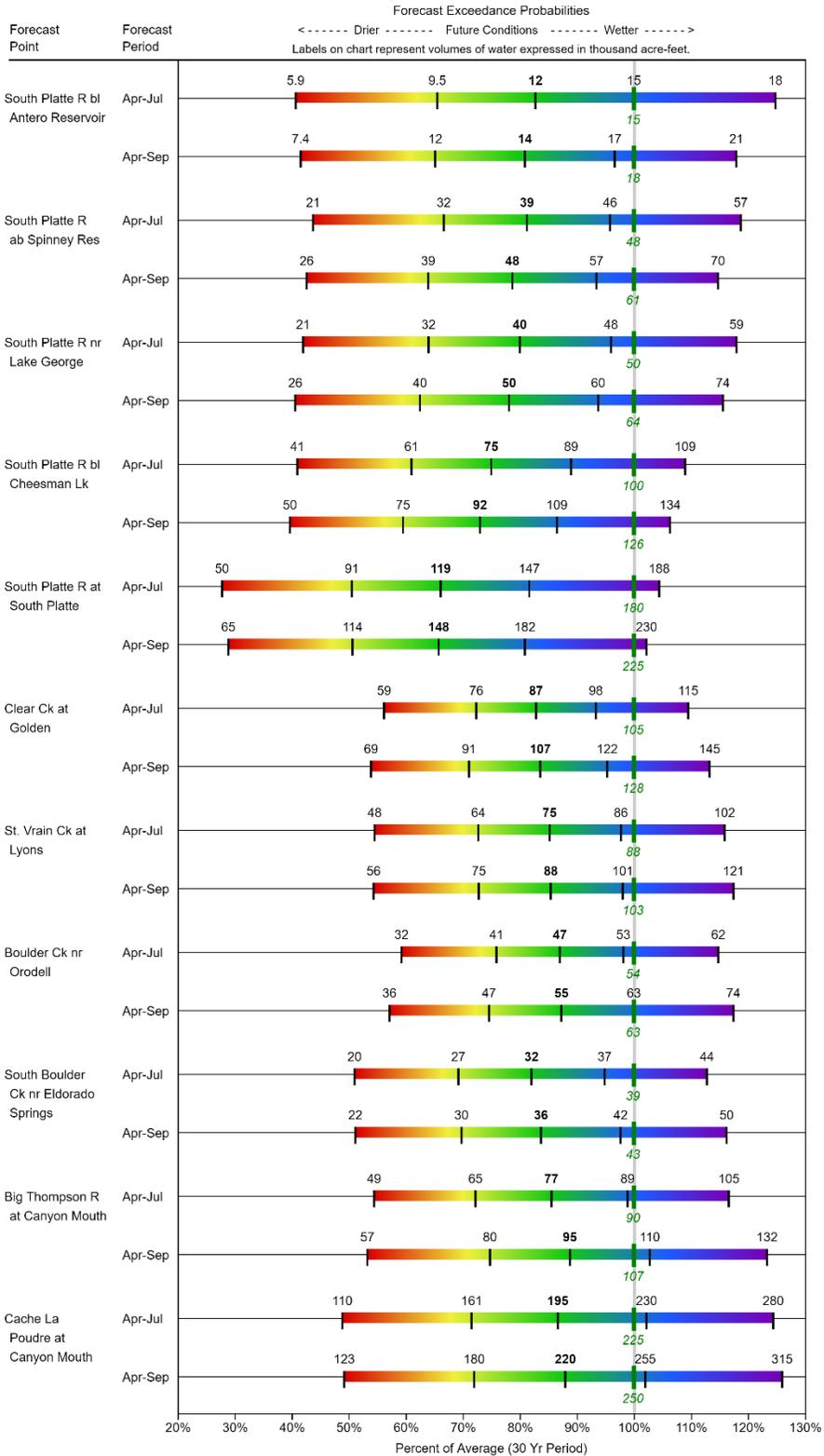
Sub-Basin	# of Sites	% Median	Last Year % Median
Big Thompson	7	83	124
Boulder Creek	6	89	132
Cache La Poudre	10	95	131
Clear Creek	4	87	127
Saint Vrain	4	88	127
Upper South Platte	16	92	145
Basin-Wide Total	46	90	132

*SWE values calculated using first of month SNOTEL data and snow course measurements

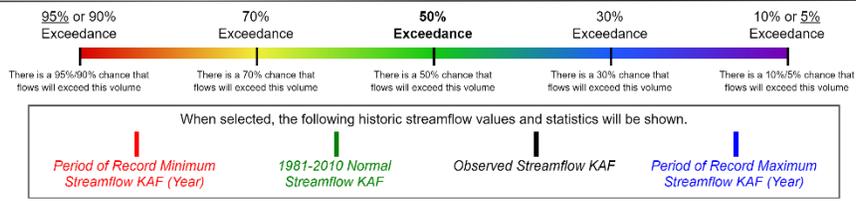
Reservoir Storage End of February 2021

Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
ANTERO RESERVOIR	19.5	20.0	15.2	19.9
BARR LAKE	17.3	23.0	26.0	30.1
BLACK HOLLOW RESERVOIR	2.3	3.7	2.8	6.5
BOYD LAKE	29.8	34.3	28.2	48.4
CACHE LA POUUDRE	6.5	8.4	7.2	10.1
CARTER LAKE	102.4	91.1	87.0	108.9
CHAMBERS LAKE	4.6	4.4	3.2	8.8
CHEESMAN LAKE	46.8	54.2	63.4	79.0
COBB LAKE	15.5	18.1	11.6	22.3
ELEVENMILE CANYON RESERVOIR	94.5	100.3	95.8	98.0
EMPIRE RESERVOIR	25.1	25.7	25.9	36.5
FOSSIL CREEK RESERVOIR	9.3	9.3	7.7	11.1
GROSS RESERVOIR	10.9	13.9	12.8	29.8
HALLIGAN RESERVOIR	4.7	5.1	4.8	6.4
HORSECREEK RESERVOIR	0.0	9.2	11.7	14.7
HORSETOOTH RESERVOIR	92.5	142.4	104.8	149.7
JACKSON LAKE RESERVOIR	26.1	22.2	24.2	26.1
JULESBURG RESERVOIR	14.4	17.4	16.9	20.5
LAKE LOVELAND RESERVOIR	2.1	2.8	6.8	10.3
LONE TREE RESERVOIR	2.7	7.1	6.8	8.7
MARIANO RESERVOIR	2.2	0.2	3.2	5.4
MARSHALL RESERVOIR	5.2	6.3	5.9	10.0
MARSTON RESERVOIR	8.1	8.6	5.7	13.0
MILTON RESERVOIR	20.4	18.2	17.0	23.5
POINT OF ROCKS RESERVOIR	54.0	73.3	59.2	70.6
PREWITT RESERVOIR	15.3	26.3	17.7	28.2
RIVERSIDE RESERVOIR	49.0	52.1	43.5	55.8
SPINNEY MOUNTAIN RESERVOIR	20.7	36.1	28.1	49.0
STANDLEY RESERVOIR	30.4	38.3	35.7	42.0
TERRY RESERVOIR	4.7	5.3	5.0	8.0
UNION RESERVOIR	7.0	9.7	10.2	13.0
WINDSOR RESERVOIR	5.9	10.2	8.9	15.2
BASINWIDE	750.0	897.2	802.9	1079.5
Number of Reservoirs	32	32	32	32

SOUTH PLATTE RIVER BASIN
Water Supply Forecasts
 March 1, 2021



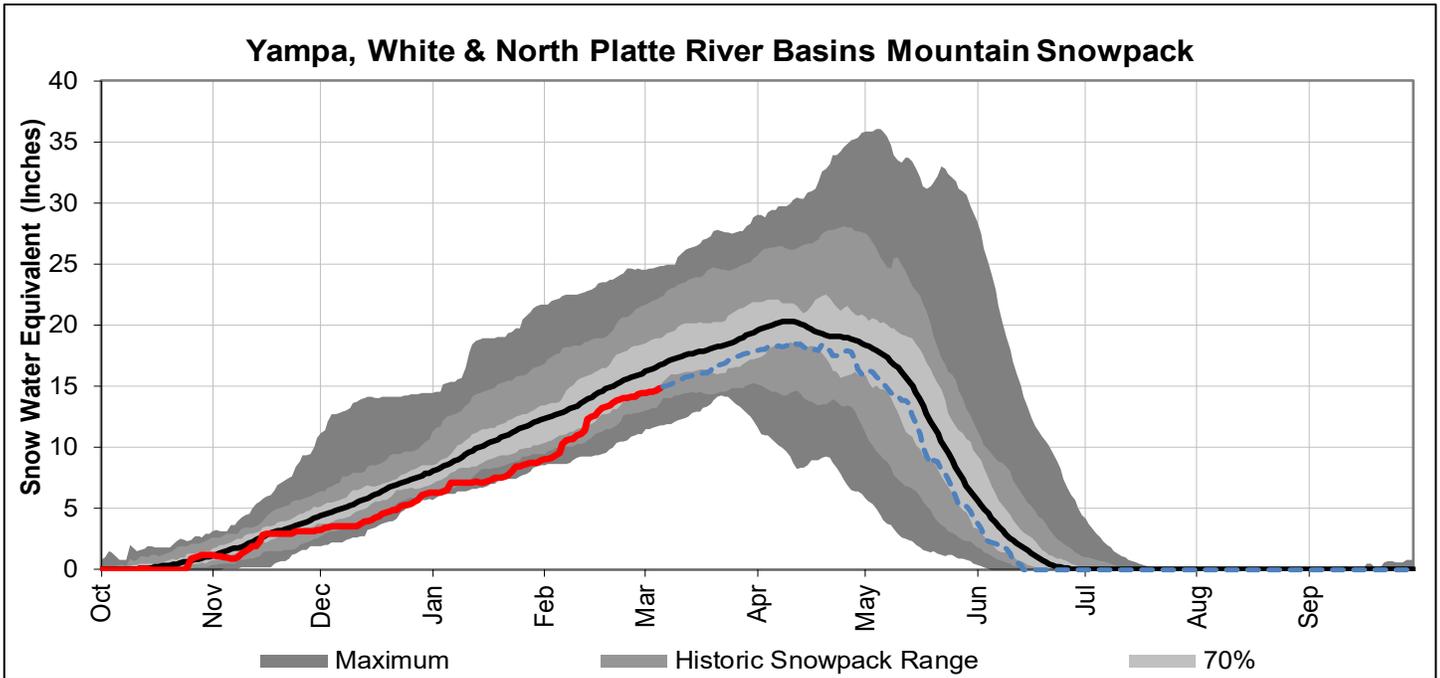
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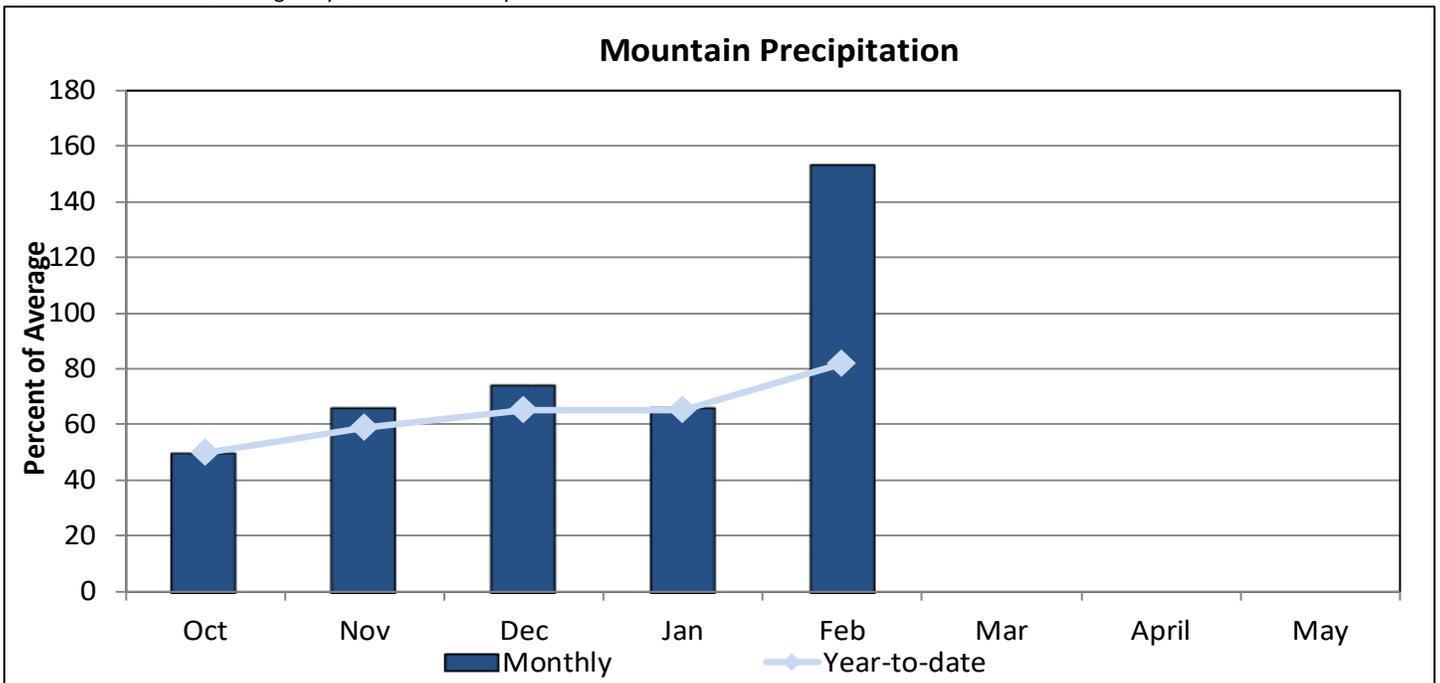
YAMPA, WHITE, NORTH PLATTE, AND LARAMIE RIVER BASINS

March 1, 2021

Snowpack in the Yampa, White & North Platte basins is below normal at 89% of the median. Precipitation for February was 153% of average and water year-to-date precipitation is 82% of average. Reservoir storage at the end of February was 113% of average compared to 123% last year. Current streamflow forecasts range from 58% of average for White River near Meeker to 89% of average for Laramie River near Woods Landing.

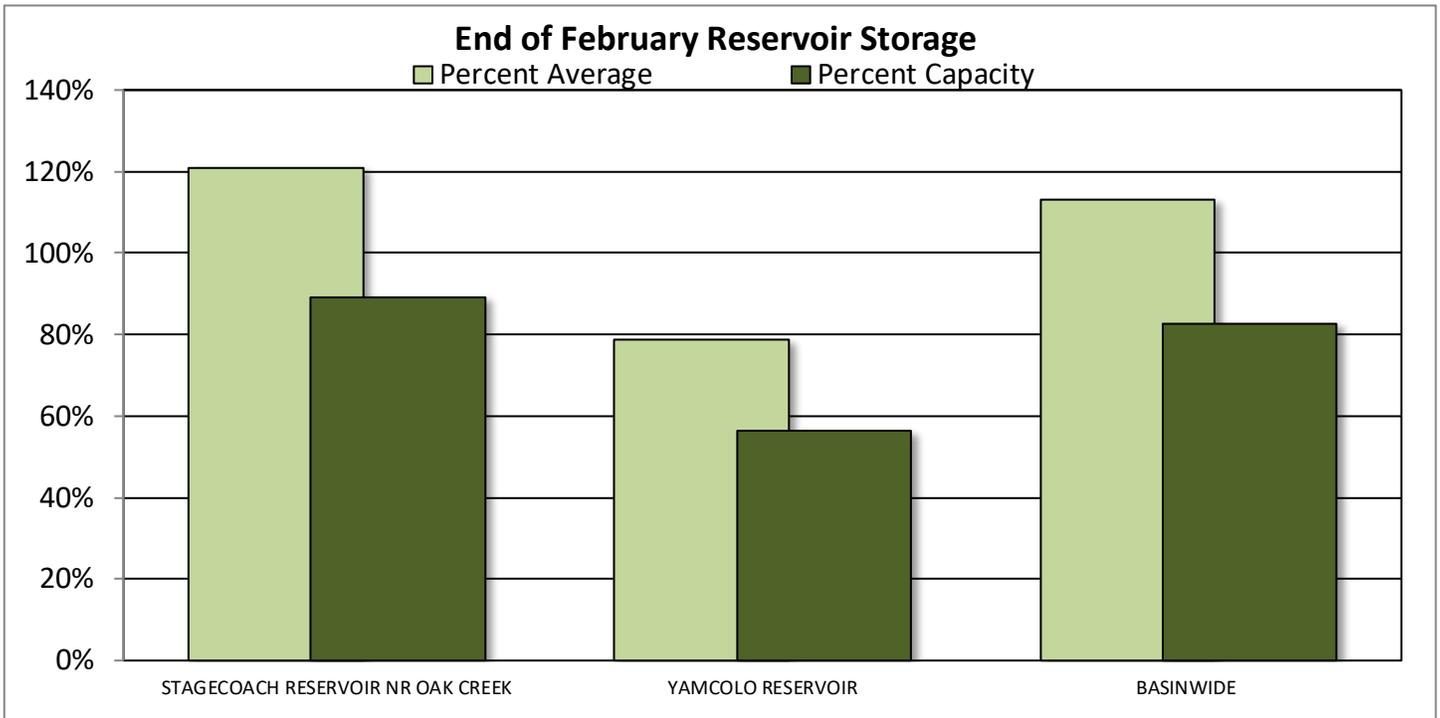
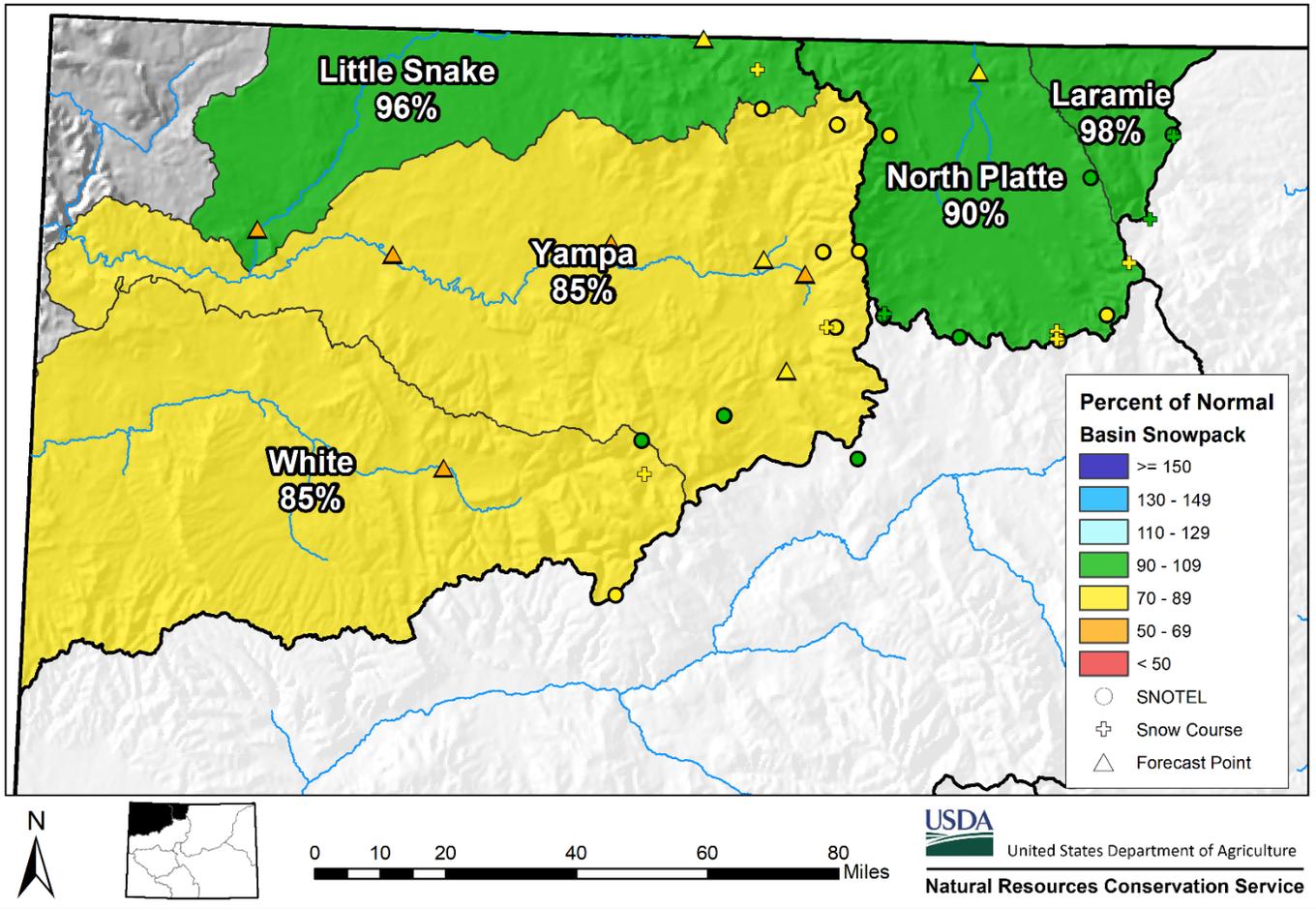


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements

Yampa, White, and North Platte River Basins Snowpack and Streamflow Forecasts March 1, 2021



Watershed Snowpack Analysis March 1st, 2021

Sub-Basin	# of Sites	% Median	Last Year % Median
Laramie	4	98	121
North Platte	12	90	118
Total Laramie & North Platte	16	91	118
Elk	2	82	102
Yampa	11	85	117
White	4	85	99
Total Yampa & White	14	84	113
Little Snake	9	96	120
Basin-Wide Total	35	89	116

*SWE values calculated using first of month SNOTEL data and snow course measurements

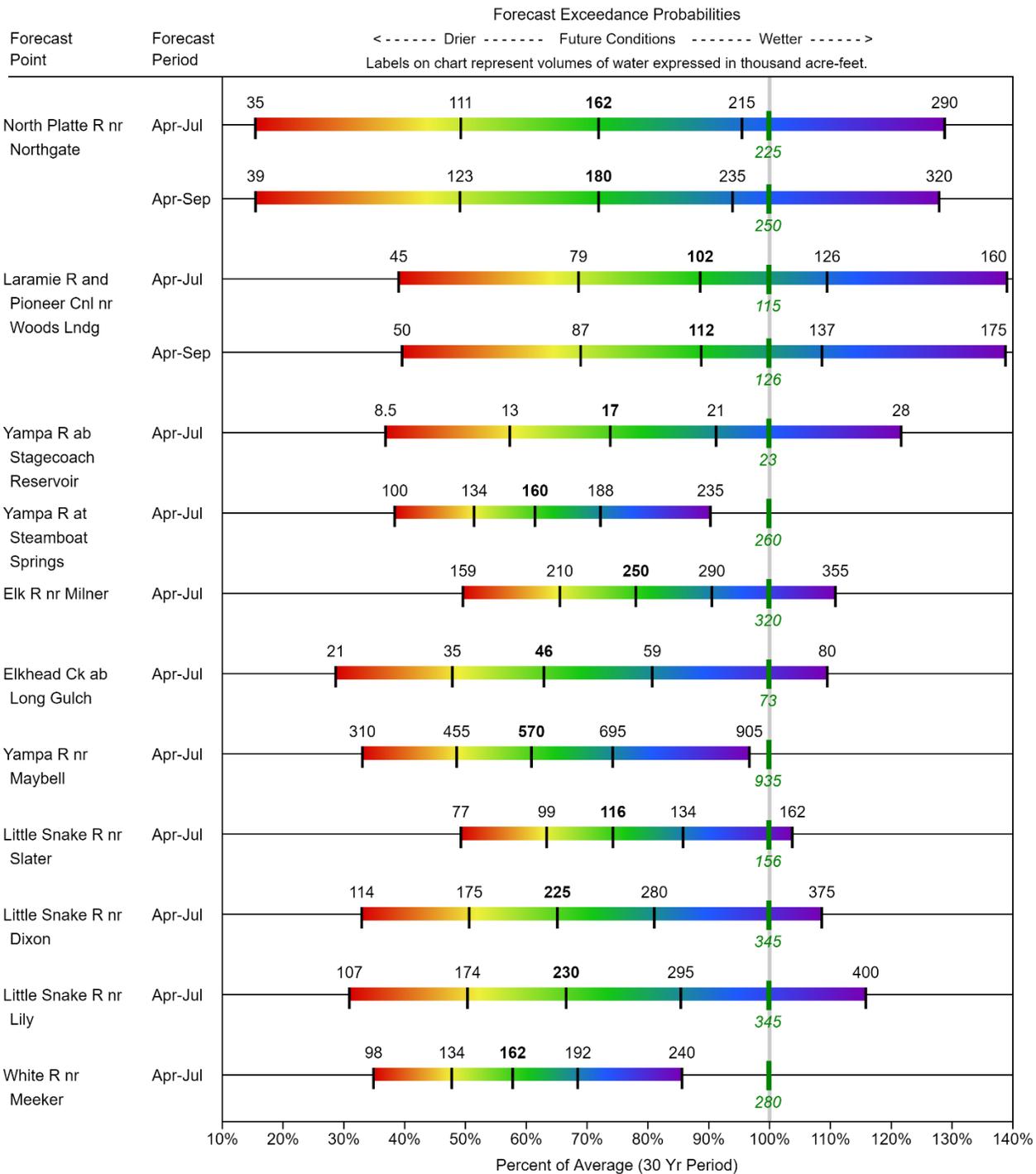
Reservoir Storage End of February 2021

Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
STAGECOACH RESERVOIR NR OAK CREEK	32.5	34.1	26.9	36.5
YAMCOLO RESERVOIR	4.9	6.7	6.2	8.7
BASINWIDE	37.4	40.8	33.1	45.2
Number of Reservoirs	2	2	2	2

YAMPA-WHITE-NORTH PLATTE RIVER BASINS

Water Supply Forecasts

March 1, 2021



Legend



When selected, the following historic streamflow values and statistics will be shown.

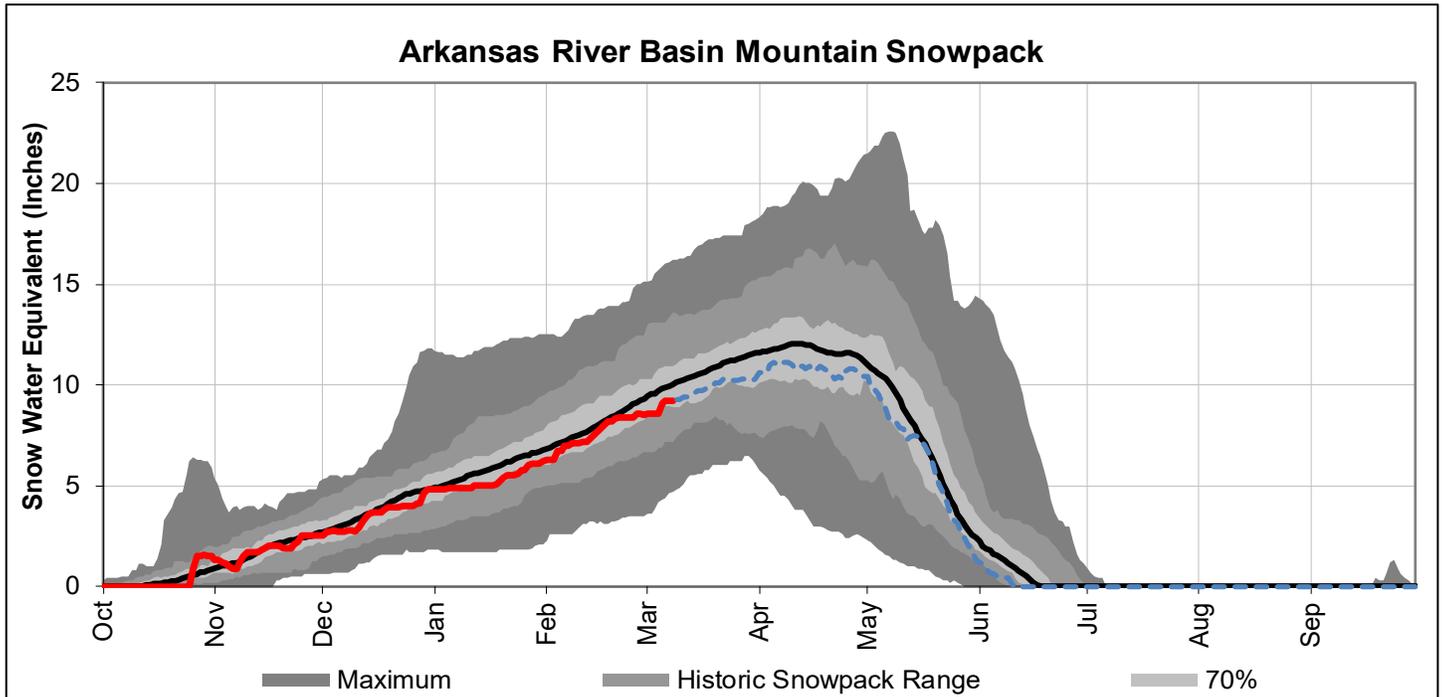
█ *Period of Record Minimum Streamflow KAF (Year)*
 █ *1981-2010 Normal Streamflow KAF*
 █ *Observed Streamflow KAF*
 █ *Period of Record Maximum Streamflow KAF (Year)*

Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

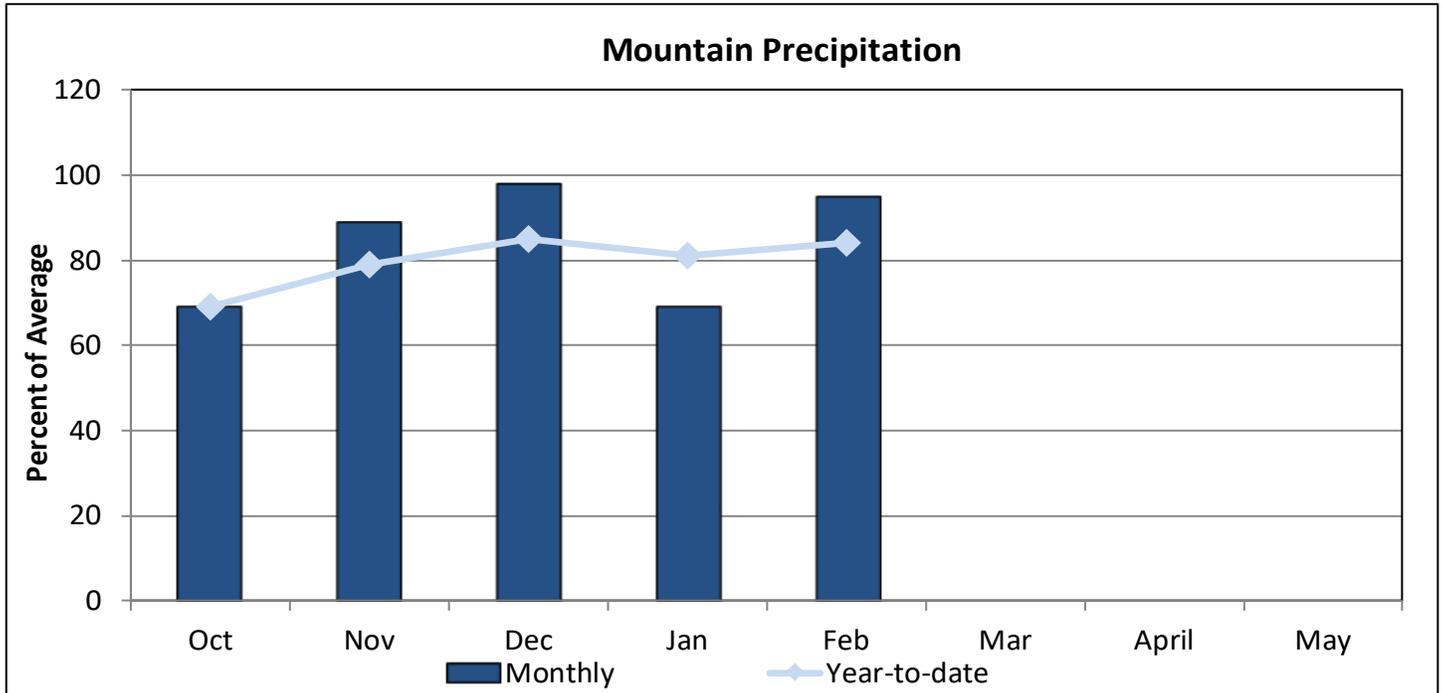
ARKANSAS RIVER BASIN

March 1, 2021

Snowpack in the Arkansas river basin is below normal at 90% of the median. Precipitation for February was 95% of average which brings water year-to-date precipitation to 84% of average. Reservoir storage at the end of February was 67% of average compared to 94% last year. Current streamflow forecasts range from 66% of average for Grape Creek near Westcliffe to 89% of average for the Cucharas River near La Veta.

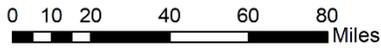
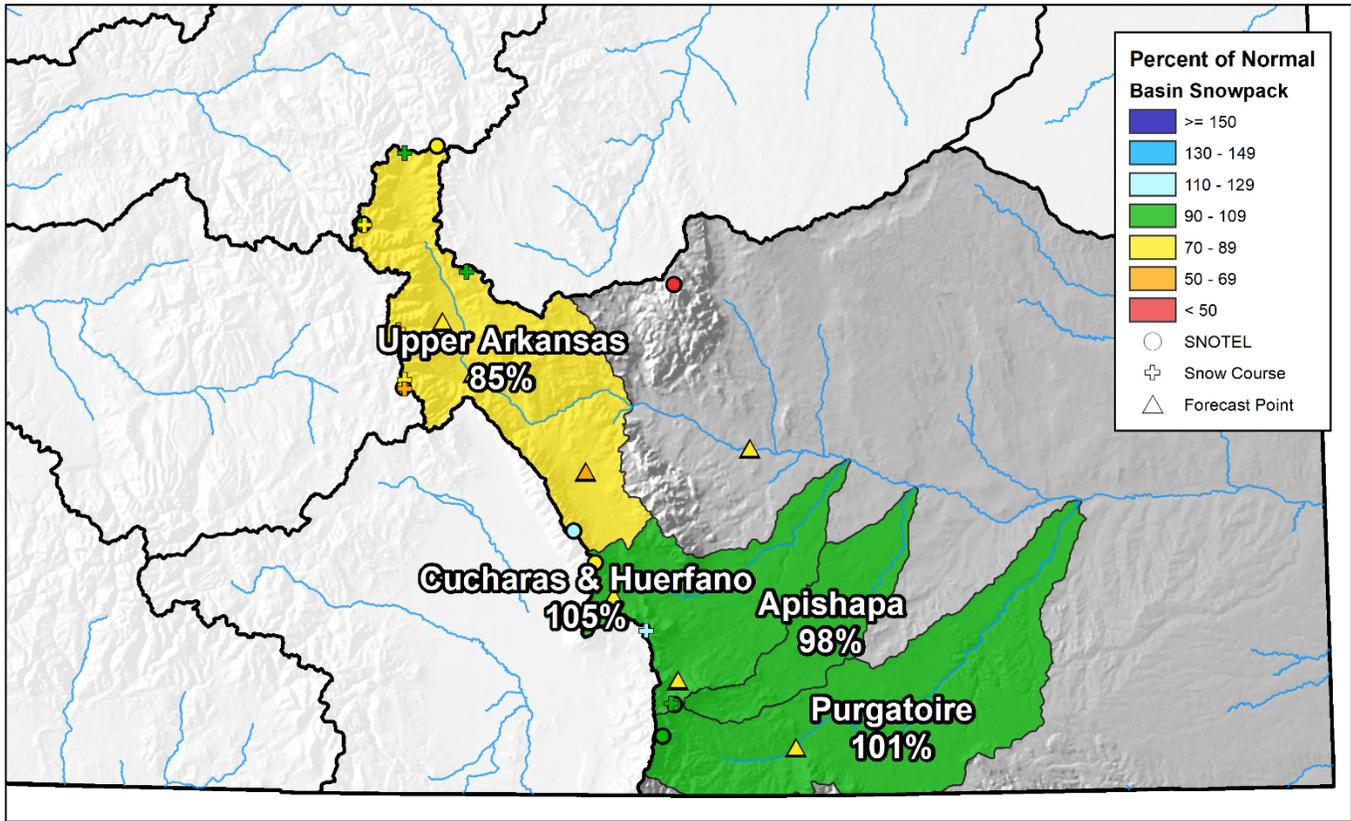


*SWE values calculated using daily SNOTEL data only



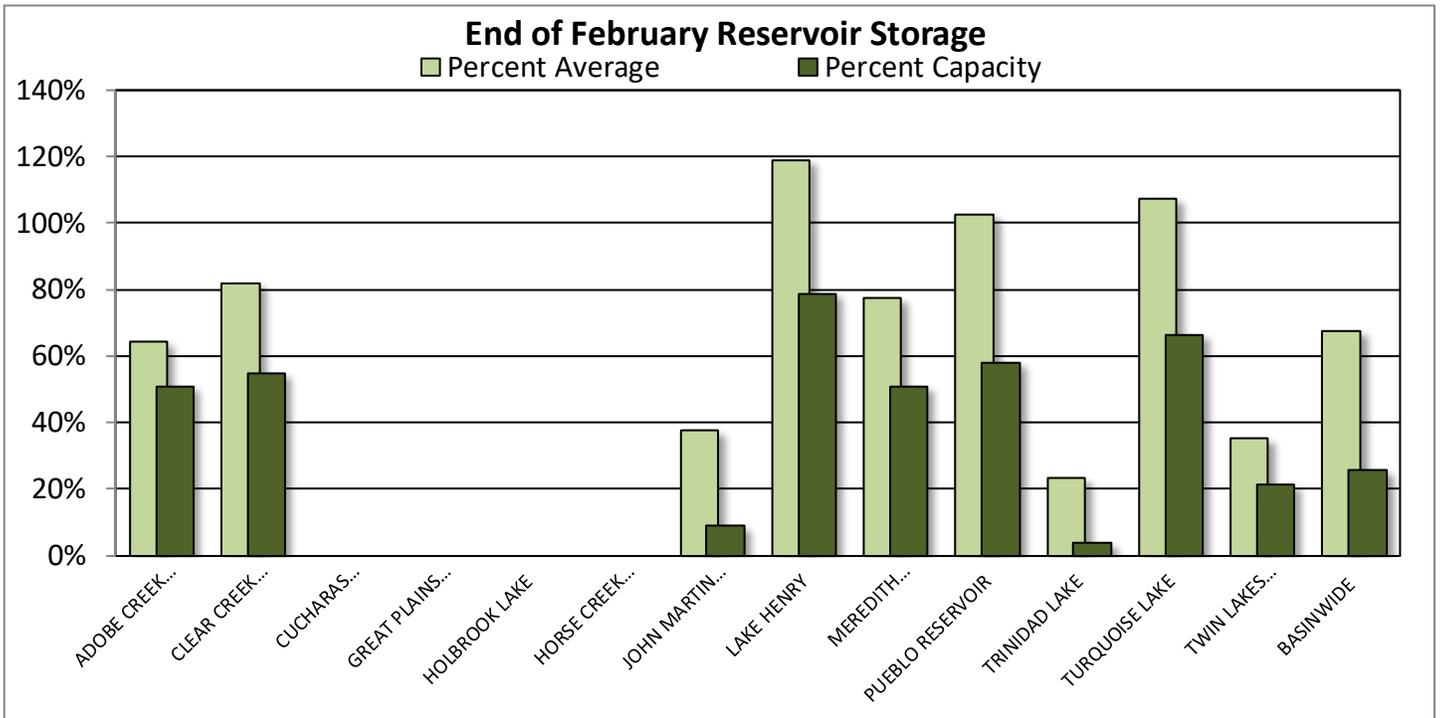
*SWE values calculated using first of month SNOTEL data and snow course measurements

Arkansas River Basin Snowpack and Streamflow Forecasts March 1, 2021



United States Department of Agriculture

Natural Resources Conservation Service



Watershed Snowpack Analysis March 1st, 2021

Sub-Basin	# of Sites	% Median	Median	Last Year %
Upper Arkansas		9	85	133
Cucharas & Huerfano		5	105	102
Purgatoire		2	101	101
Basin-Wide Total		16	90	120

*SWE values calculated using first of month SNOTEL data and snow course measurements

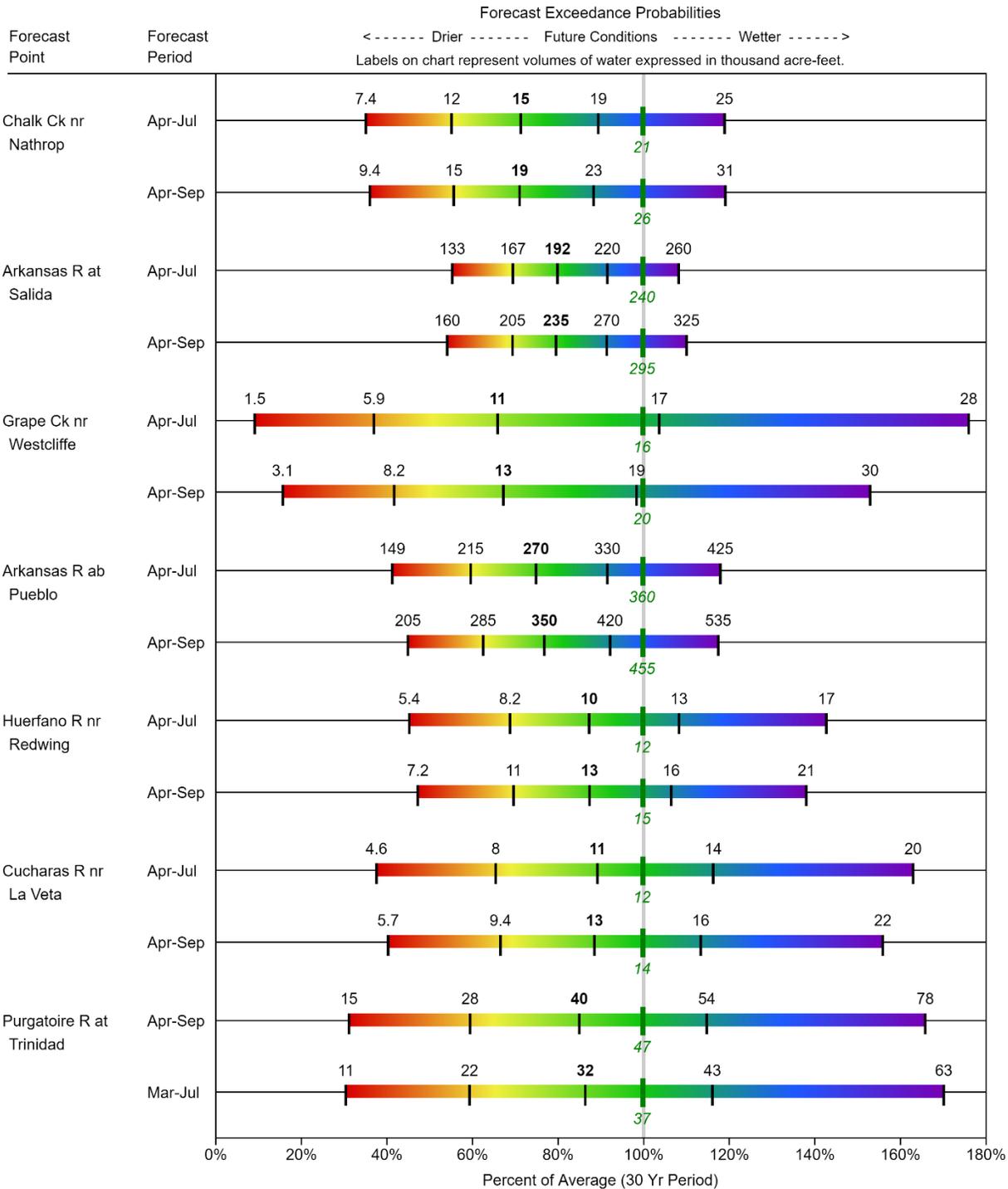
Reservoir Storage End of February 2021

Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
ADOBE CREEK RESERVOIR	31.4	48.6	48.9	62.0
CLEAR CREEK RESERVOIR	6.2	8.0	7.6	11.4
CUCHARAS RESERVOIR				40.0
GREAT PLAINS RESERVOIR				150.0
HOLBROOK LAKE	0.0	4.0	4.6	7.0
HORSE CREEK RESERVOIR	0.0	3.6	12.7	27.0
JOHN MARTIN RESERVOIR	55.7	109.1	148.2	616.0
LAKE HENRY	7.4	3.9	6.2	9.4
MEREDITH RESERVOIR	21.3	41.5	27.4	42.0
PUEBLO RESERVOIR	205.5	262.2	200.6	354.0
TRINIDAD LAKE	6.2	23.8	26.8	167.0
TURQUOISE LAKE	84.1	54.6	78.5	127.0
TWIN LAKES RESERVOIR	18.2	49.7	51.8	86.0
BASINWIDE	436.0	609.1	613.3	1698.8
Number of Reservoirs	11	11	11	13

ARKANSAS RIVER BASIN

Water Supply Forecasts

March 1, 2021



Legend



When selected, the following historic streamflow values and statistics will be shown.

Period of Record Minimum
Streamflow KAF (Year)

1981-2010 Normal
Streamflow KAF

Observed Streamflow KAF

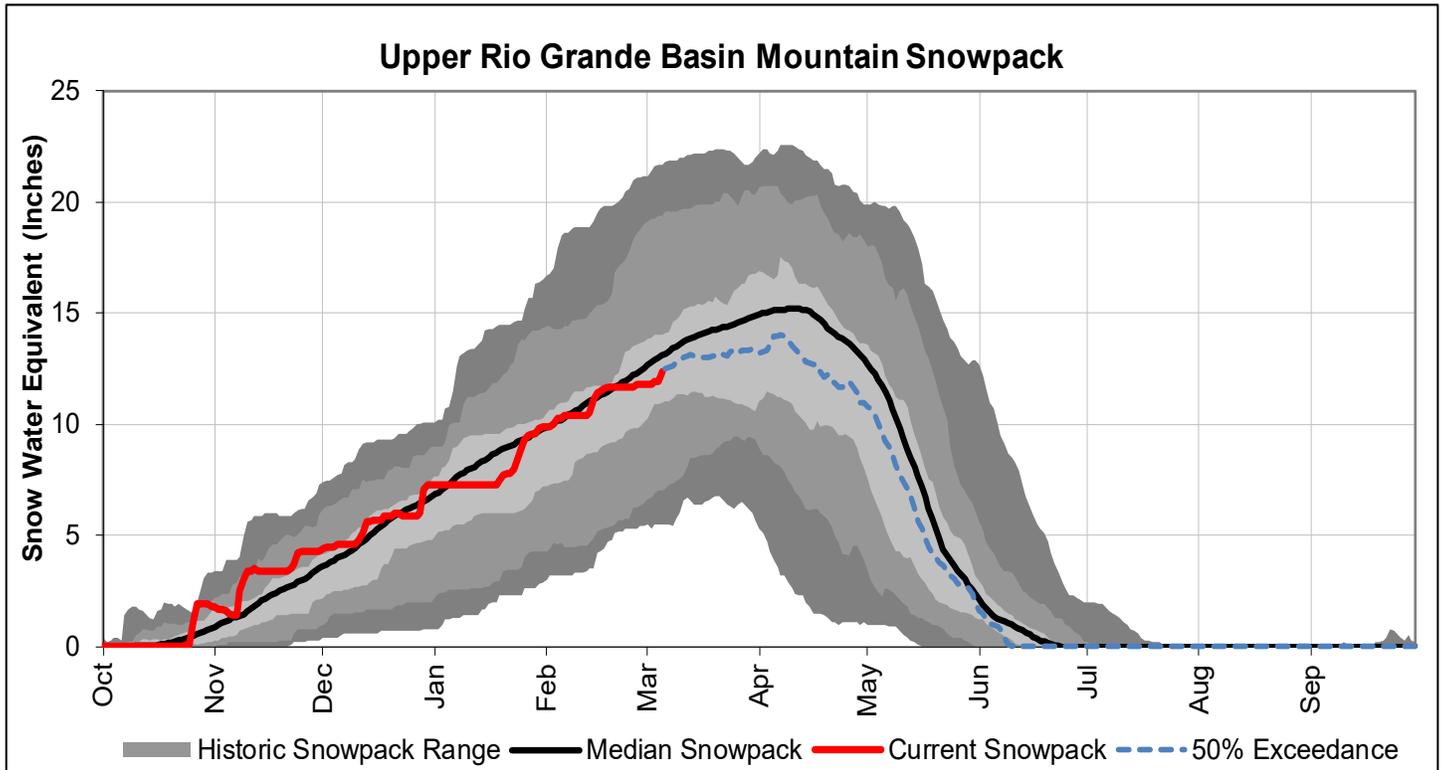
Period of Record Maximum
Streamflow KAF (Year)

Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

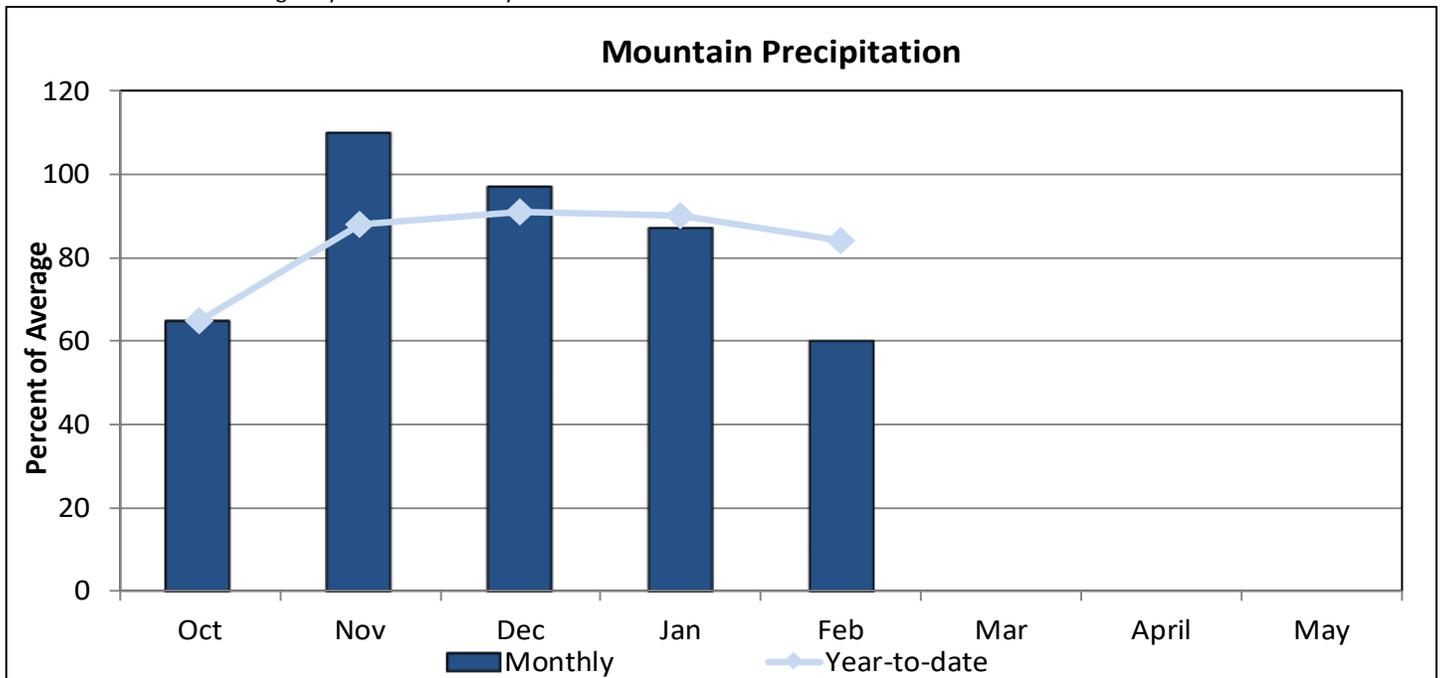
UPPER RIO GRANDE RIVER BASIN

March 1, 2021

Snowpack in the Upper Rio Grande river basin is 98% of median. Precipitation for February was 60% of average which brings water year-to-date precipitation to 84% of average. Reservoir storage at the end of February was 74% of average compared to 80% last year. Current streamflow forecasts range from 42% of average for the Sn Antonio River near Ortiz to 92% of average for Costilla Creek near Costilla.

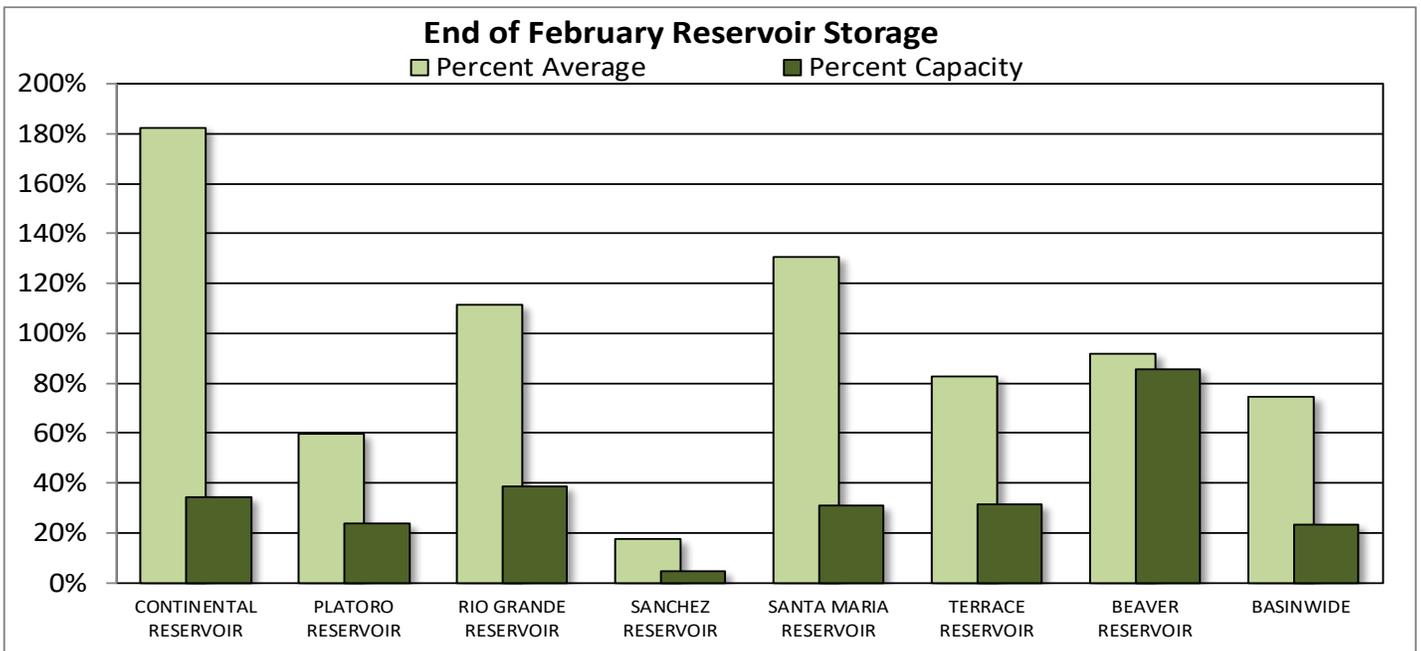
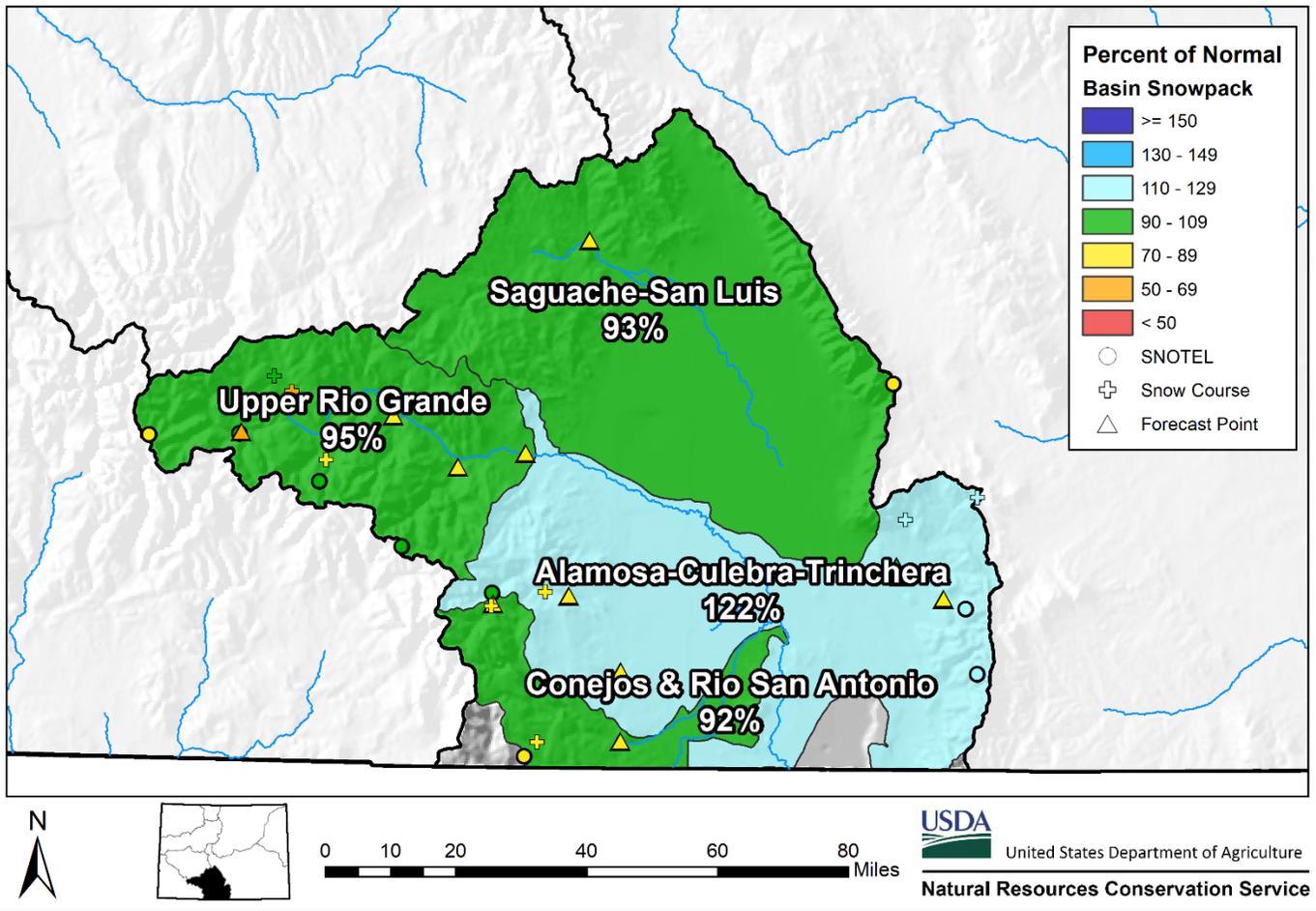


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements

Upper Rio Grande River Basin Snowpack and Streamflow Forecasts March 1, 2021



Watershed Snowpack Analysis March 1st, 2021

Sub-Basin	# of Sites	% Median	Last Year % Median
Alamosa Creek	3	92	73
Conejos & Rio San Antonio	4	92	78
Culebra & Trinchera Creek	5	116	93
Upper Rio Grande	8	95	100
Basin-Wide Total	19	98	91

*SWE values calculated using first of month SNOTEL data and snow course measurements

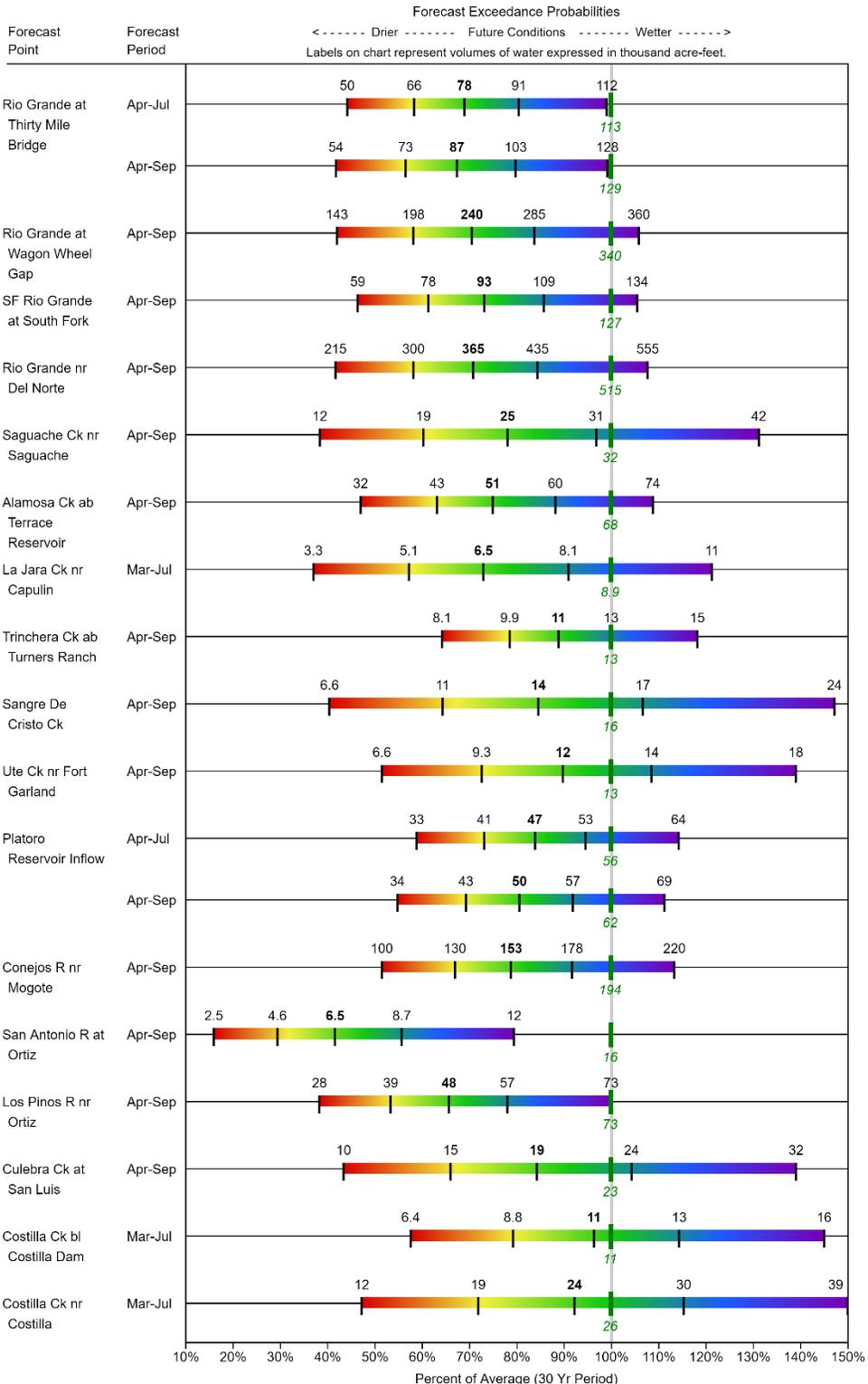
Reservoir Storage End of February 2021

Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
CONTINENTAL RESERVOIR	9.3	16.1	5.1	27.0
PLATORO RESERVOIR	14.2	18.2	23.9	60.0
RIO GRANDE RESERVOIR	19.6	0.0	17.6	51.0
SANCHEZ RESERVOIR	4.8	8.6	27.6	103.0
SANTA MARIA RESERVOIR	14.0	21.6	10.7	45.0
TERRACE RESERVOIR	5.7	8.3	6.9	18.0
BEAVER RESERVOIR	3.8	4.1	4.2	4.5
BASINWIDE	71.5	76.8	96.0	308.5
Number of Reservoirs	7	7	7	7

UPPER RIO GRANDE BASIN

Water Supply Forecasts

March 1, 2021



Legend



When selected, the following historic streamflow values and statistics will be shown.

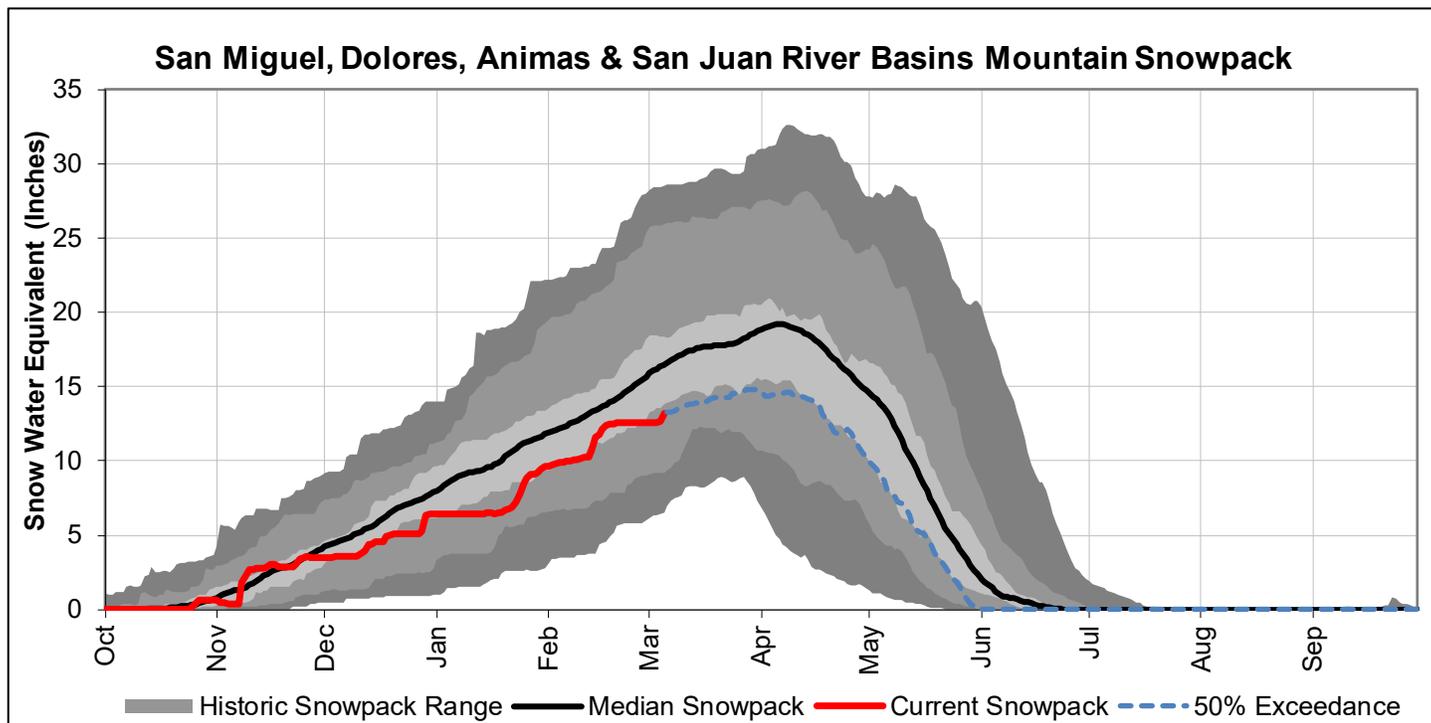


Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

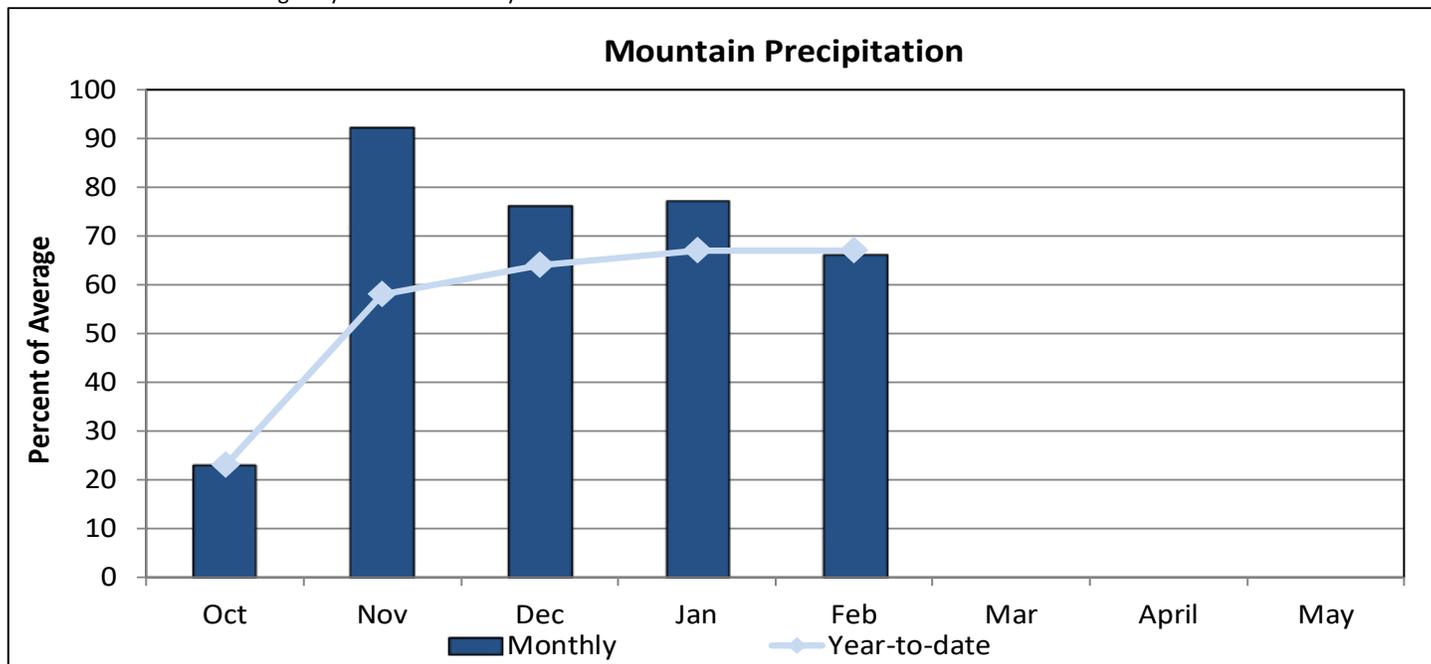
SAN MIGUEL, DOLORES, ANIMAS, AND SAN JUAN RIVER BASINS

March 1, 2021

Snowpack in the combined southwest river basins is below normal at 78% of median. Precipitation for February was 66% of average which brings water year-to-date precipitation to 67% of average. Reservoir storage at the end of February was 60% of average compared to 107% last year. Current streamflow forecasts range from 35% of average for the Mancos River near Mancos to 74% of average for the Rio Blanco River below the Blanco Diversion.

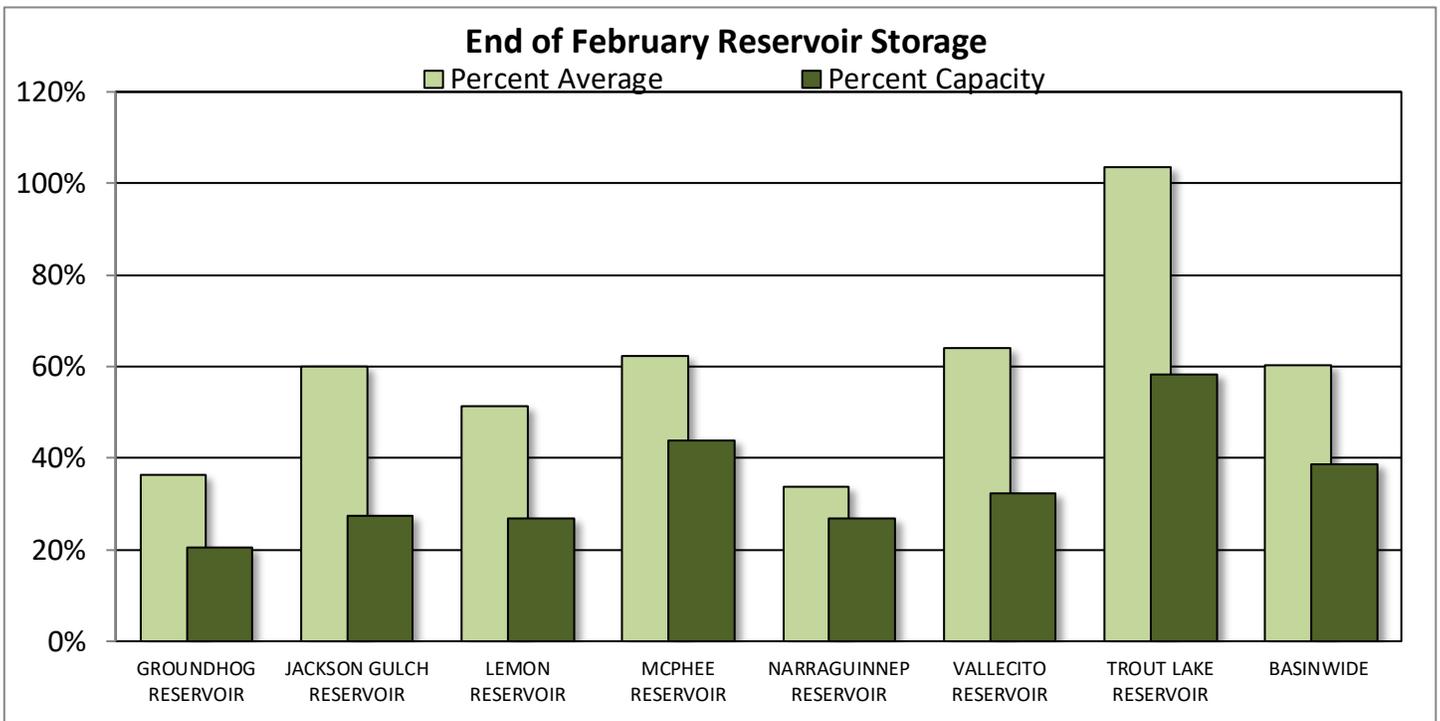
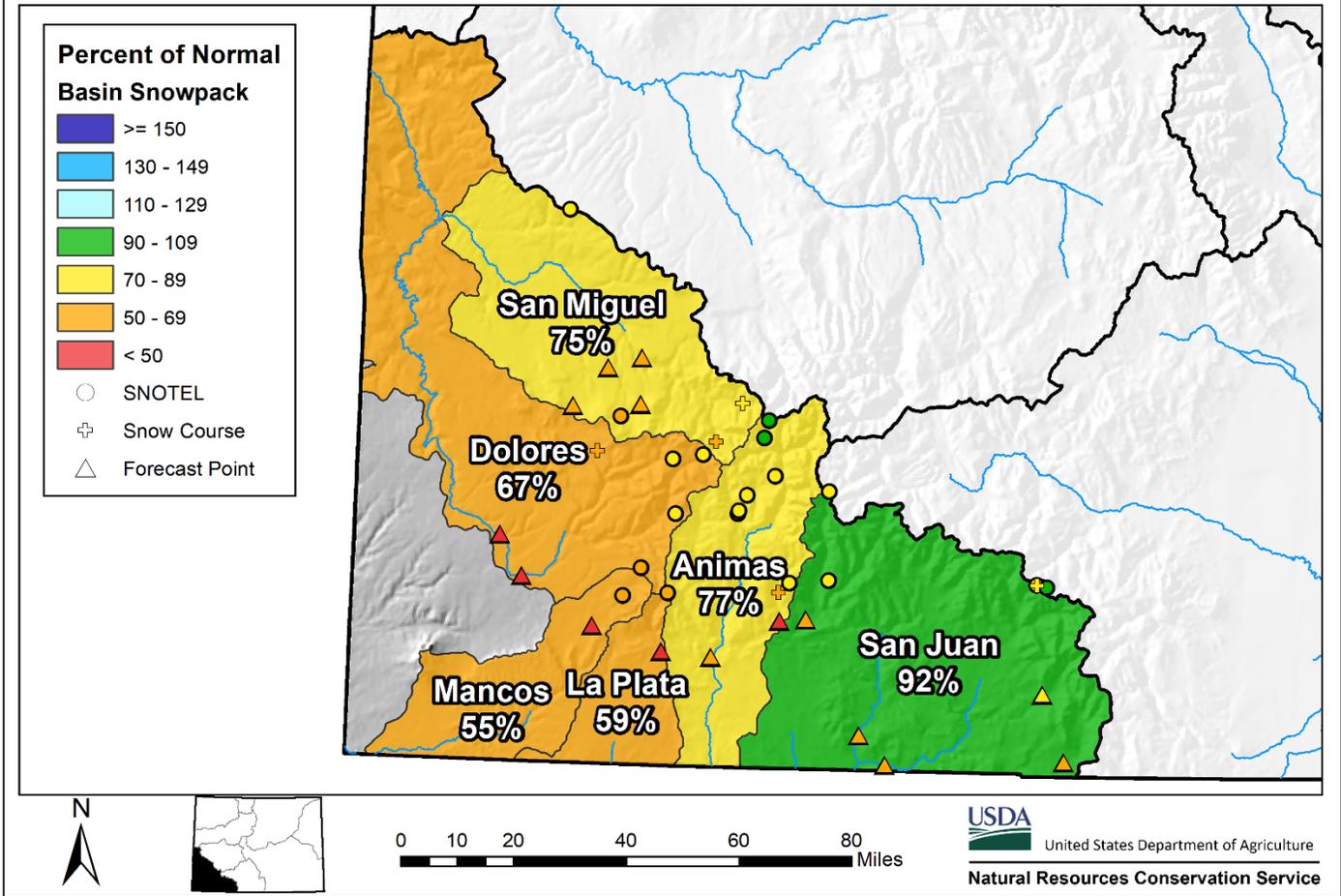


*SWE values calculated using daily SNOTEL data only



*SWE values calculated using first of month SNOTEL data and snow course measurements

San Miguel, Dolores, Animas, and San Juan River Basins Snowpack and Streamflow Forecasts March 1, 2021



Watershed Snowpack Analysis March 1st, 2021

Sub-Basin	# of Sites	% Median	Last Year % Median
Animas	10	77	93
Dolores	6	67	85
San Miguel	5	75	82
San Juan	4	92	89
Basin-Wide Total	24	78	89

*SWE values calculated using first of month SNOTEL data and snow course measurements

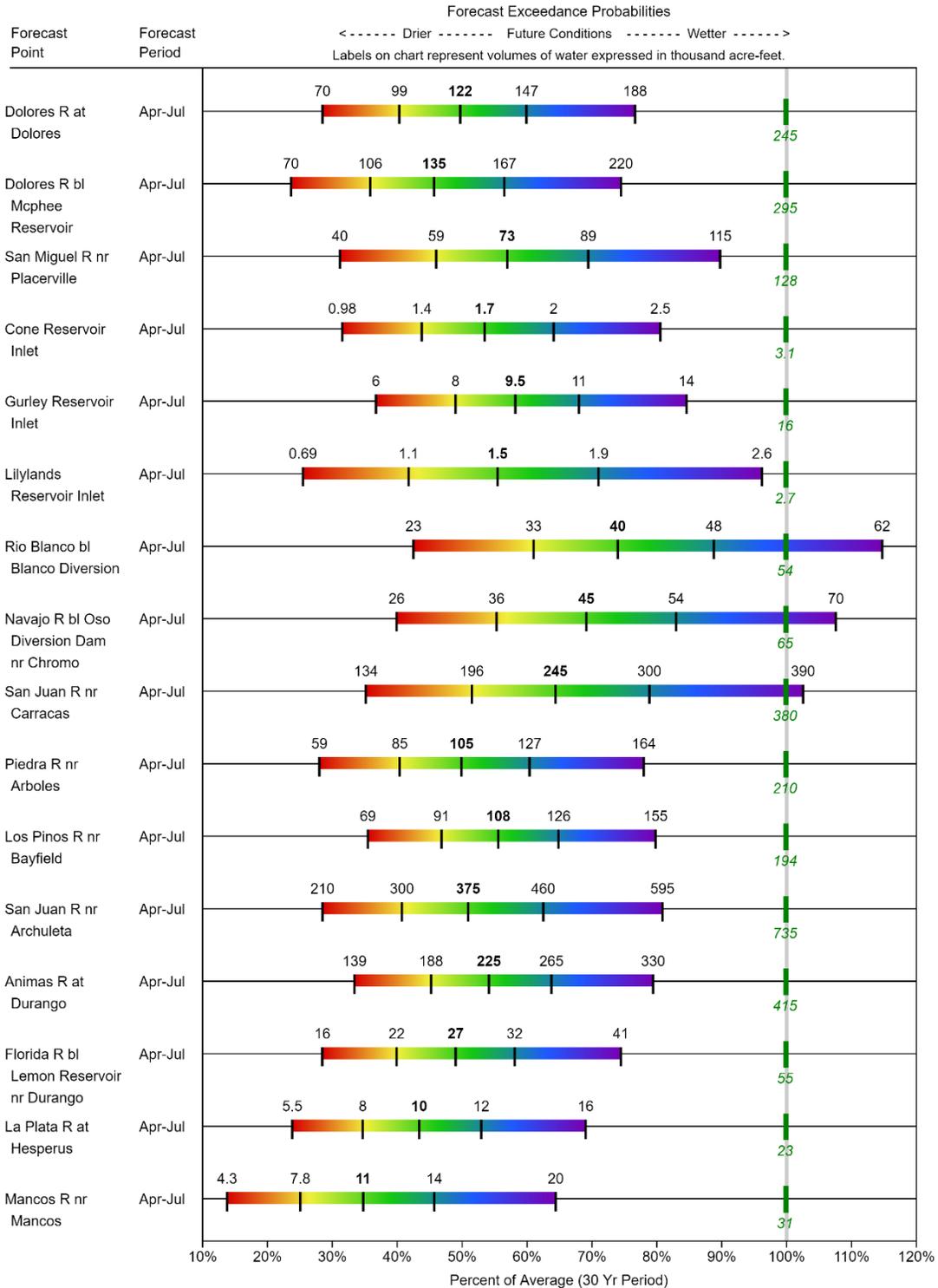
Reservoir Storage End of February 2021

Reservoir	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
GROUNDHOG RESERVOIR	4.5	16.0	12.4	22.0
JACKSON GULCH RESERVOIR	2.8	3.7	4.6	10.0
LEMON RESERVOIR	10.8	17.4	21.0	40.0
MCPHEE RESERVOIR	167.3	286.7	268.0	381.0
NARRAGUINNEP RESERVOIR	5.1	8.4	15.1	19.0
VALLECITO RESERVOIR	40.7	79.9	63.6	126.0
TROUT LAKE RESERVOIR	1.9	2.3	1.8	3.2
BASINWIDE	233.0	414.4	386.5	601.2
Number of Reservoirs	7	7	7	7

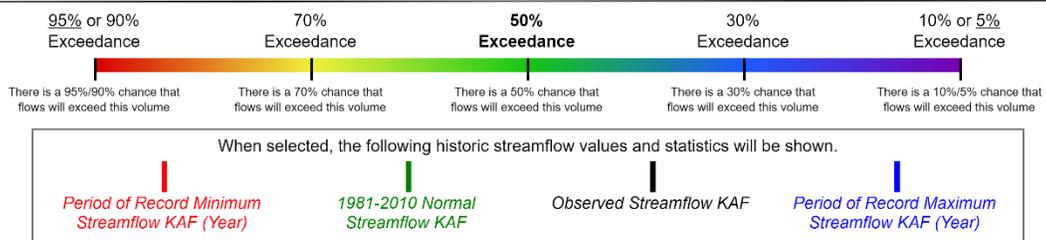
SAN MIGUEL-DOLORES-ANIMAS-SAN JUAN RIVER BASINS

Water Supply Forecasts

March 1, 2021



Legend



Some forecasts may be for volumes that are regulated or influenced by diversions and water management.

How to Read Snowpack Graphs

The graphs show snow water equivalent (SWE) (in inches), using daily SNOTEL data, for the October 1 through September 30 water year. Basin “observed” SWE values are computed using SNOTEL sites which are characteristic of the snowpack of the particular basin. The SWE observations at these sites are averaged and normalized to produce these basin snowpack graphs.

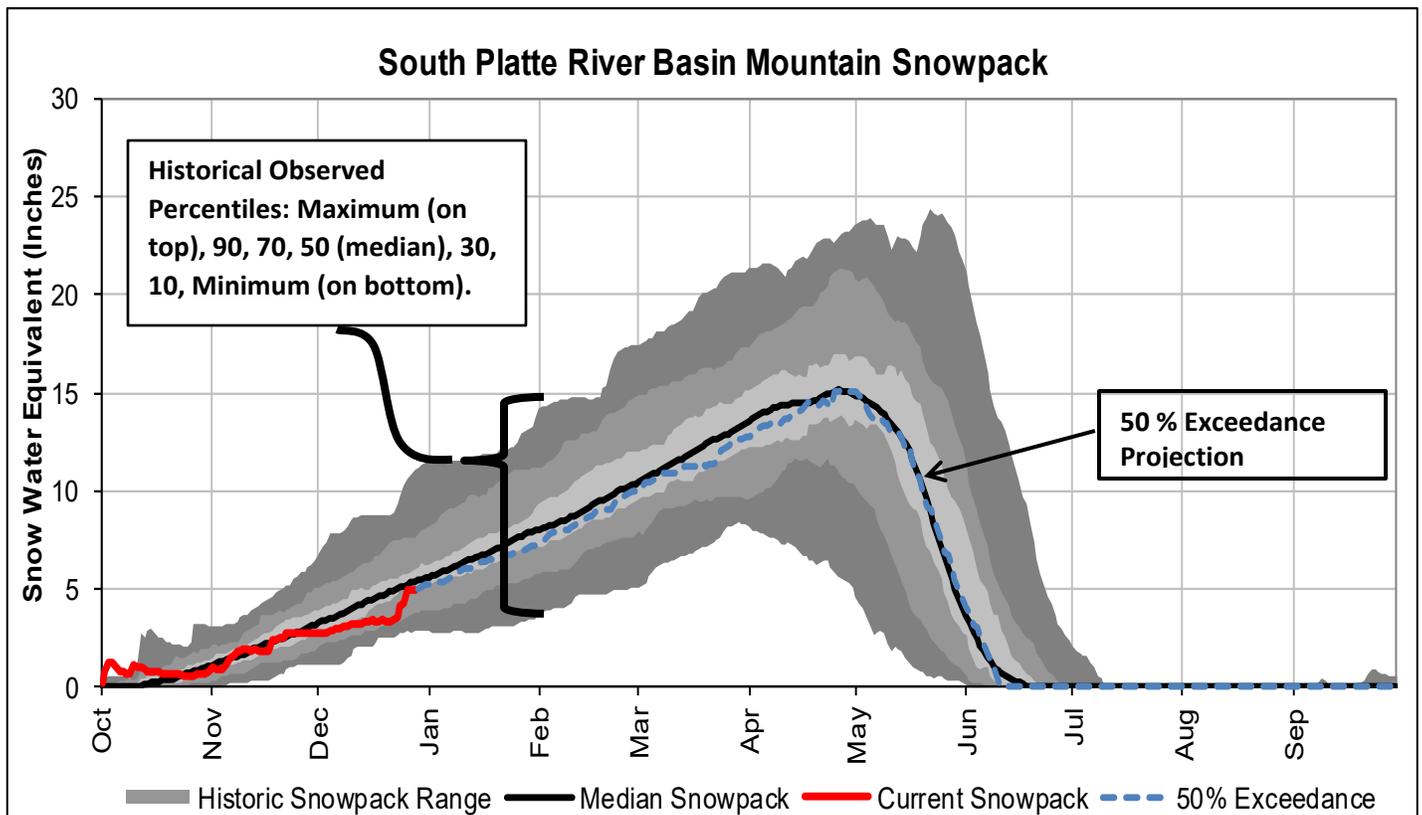
Current water year is represented by the heavy red line terminating on the last day the graphic was updated.

Historical observed percentile range is shown as a gray background area on the graph. Shades of gray indicate maximum, 90 percentile, 70 percentile, 50 percentile (solid black line), 30 percentile, 10 percentile, and minimum for the period of record.

50 % Exceedance Projection: The most probabilistic snowpack projection, based on the median snowpack is projected forward from the end of the current period to the end of the current water year.

For more detailed information on these graphs visit:

http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_062291.pdf



How Forecasts Are Made

For more water supply and resource management information, contact:

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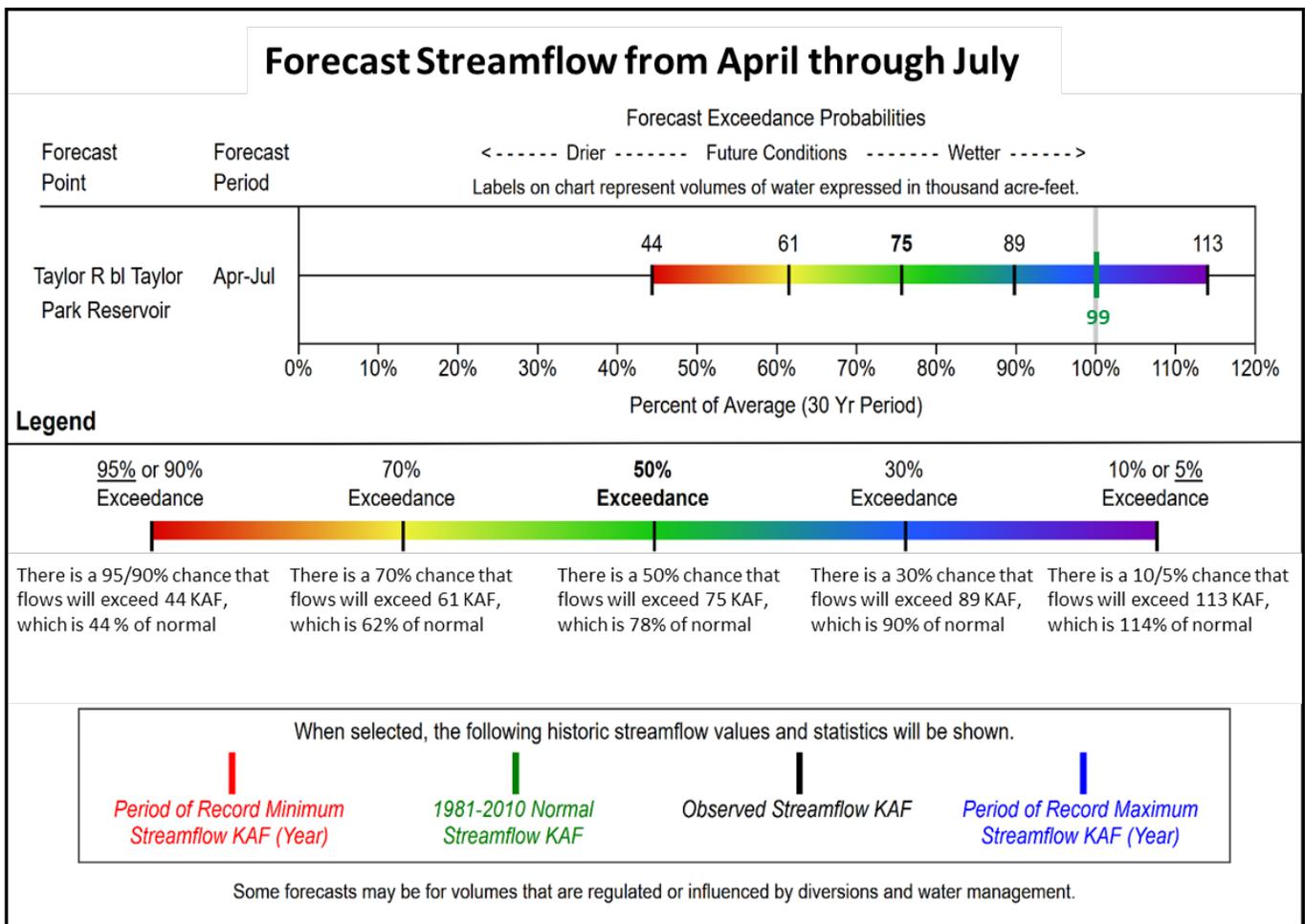
Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual 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. 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.

Interpreting the Forecast Graphics

These graphics provide a new way to visualize the range of streamflows represented by the forecast exceedance probabilities for each forecast period. The colors in the bar for each forecast point indicate the exceedance probability of the forecasts and the vertical lines on the bar signify the five published forecast exceedance probabilities. The numbers displayed above the color scale represent the actual forecasted streamflow volume (in KAF) for the given exceedance probability. The horizontal axis provides the percent of average represented by each forecast and the gray line centered above 100% represents the 1981-2010 historical average streamflow. The position of the gray line relative to the color scale provides a benchmark for considering future streamflows. If the majority of the forecast range is to the right of the gray line, there is a higher likelihood of above average streamflow volumes during the provided forecast period. Conversely, if the majority of the color bar is to the left of the average mark, below average volumes are more likely. The horizontal span of the forecasts offers an indication of the uncertainty in a given forecast: when the bar spans a large horizontal range, the forecast skill is low and uncertainty is high; when the bar is narrow in width, the forecast skill is higher and uncertainty lower.





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In addition to the water supply outlook reports, water supply forecast information for the Western United States is available from the Natural Resources Conservation Service and the National Weather Service monthly, February through June. The information may be obtained from the Natural Resources Conservation Service web page at <http://www.wcc.nrcs.usda.gov/wsf/westwide.html>

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Lakewood, Colorado

Colorado

Water Supply Outlook Report

Natural Resources Conservation Service
Lakewood, CO