

Natural Resources Conservation Service

# Arizona Basin Outlook Report January 15, 2022



#### Issued by

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#### Released by

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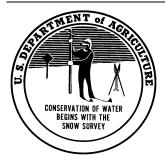
# **Basin Outlook Reports And Federal – State – Private Cooperative Snow Surveys**

#### How forecasts are made

Most of the annual streamflow in Arizona 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 Snow Telemetry (SNOTEL) sites, along with precipitation and streamflow values, are used in statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service (NRCS) the National Weather Service, and the Salt River Project.

Forecasts of any kind are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertainty 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 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 are concerned about having an adequate water supply, they may want to base their decisions on the 90% or 70% exceedance probability forecasts. On the other hand, if users anticipate receiving too much water, or are concerned about the threat of flooding, they may want to base their decisions on the 30% or 10% exceedance probability forecasts. Regardless of the forecast value users choose, they should be prepared to deal with either more or less water.



# For more water supply and resource management information, contact:

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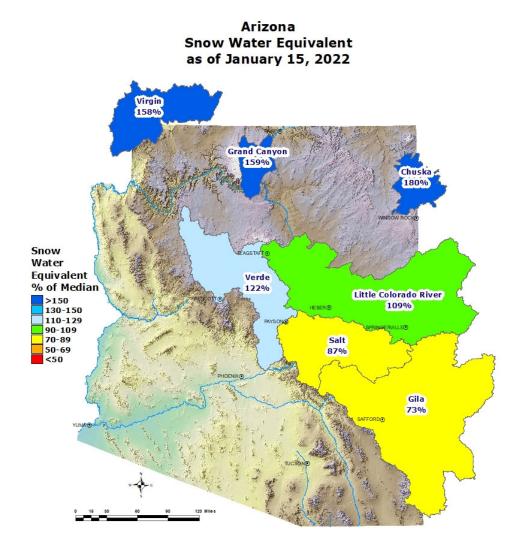
# ARIZONA Basin Outlook Report as of January 15, 2022

### **SUMMARY**

As of January 15, snowpack is below median to above median levels throughout the major basins of the state. Precipitation for the first half of January was median to well above median in the major river basins. The Salt and Verde River reservoir system stands at 71 percent of capacity, while San Carlos Reservoir is at 4 percent of capacity. The mid-month forecast calls for well below median to median runoff in all basins for the spring runoff period.

### **SNOWPACK**

Snow water equivalent in the state's major river basins are below median to above median, ranging from 73 percent of median in the Gila River Basin, to 122 percent of median in the Verde River Basin.

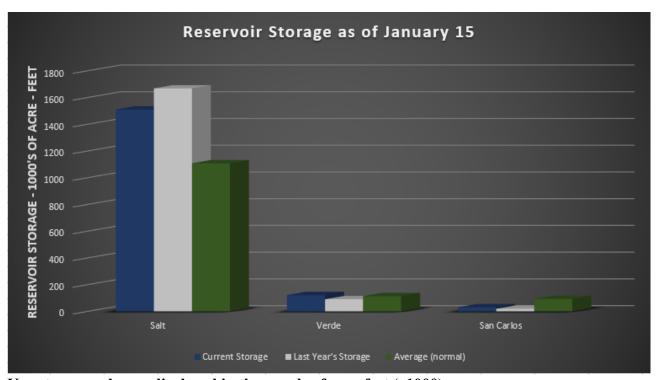


### **PRECIPITATION**

Mountain data from NRCS SNOTEL sites and NWS Cooperator gages show that precipitation for the first half of January was median to well above median in the major river basins. Cumulative precipitation since October 1 is well below median to median throughout the basins. Please refer to the precipitation graphs found in this report for more information on precipitation levels in the basins.

#### **RESERVOIR STORAGE**

As of January 15, the Salt and Verde River reservoir system stands at 71 percent of capacity. San Carlos Reservoir is currently at 4 percent of capacity.



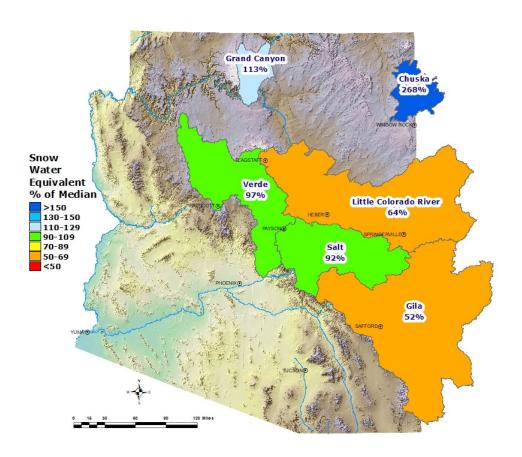
Key storage volumes displayed in thousands of acre-feet (x1000):

Reservoir	Current <u>Storage</u>	Last Year <u>Storage</u>	30-Year <u>Average</u>	Storage <u>Capacity</u>
Salt River System	1510.6	1668.3	1108.0	2025.8
Verde River System	122.3	91.2	113.7	287.4
San Carlos Reservoir	31.4	19.7	93.4	875.0
Lyman Lake	4.8	7.6	7.4	30.0
Lake Havasu	551.0	550.5	558.6	619.0
Lake Mohave	1594.0	1596.3	1651.0	1810.0
Lake Mead	8967.0	10422.0	15149.0	26159.0
Lake Powell	6532.0	9881.0	13711.0	24322.0

### **STREAMFLOW**

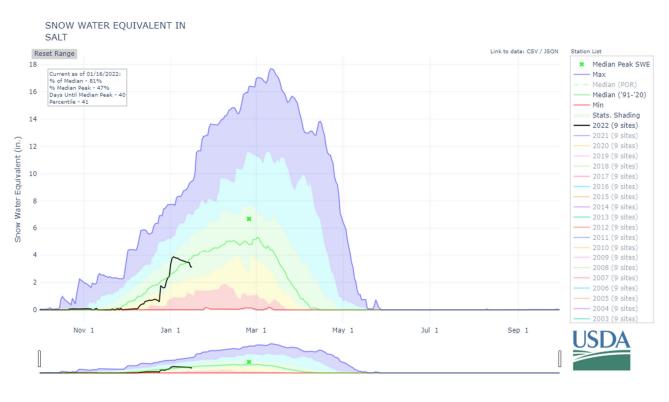
As of January 15, the forecast calls for well below median to median streamflow for the spring runoff period, ranging from 52 percent of median in the Gila River near Solomon to 97 percent of median in the Verde River above Horseshoe Dam. Please refer to the basin forecast tables found in this report for more information regarding water supply forecasts.

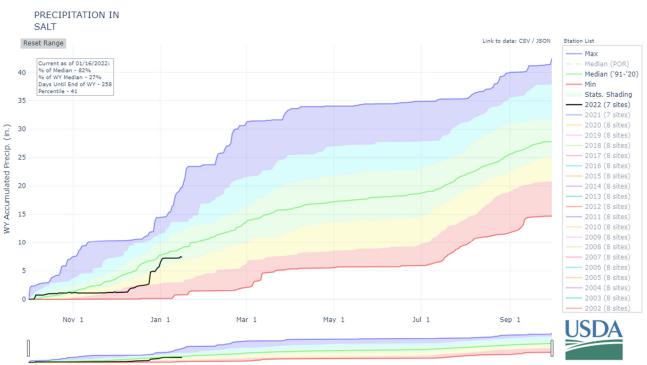
Arizona Spring Streamflow Forecasts as of January 15, 2022



### **SALT RIVER BASIN as of January 15, 2022**

Median streamflow levels are forecast for the basin. In the Salt River, near Roosevelt, the forecast calls for 92% of median streamflow through May, while at Tonto Creek, the forecast calls for 72% of median streamflow through May. Snow survey measurements show the Salt snowpack to be at 87% of median.





# Salt Streamflow Forecasts - January 16, 2022 Forecast Exceedance Probabilities for Risk Assessment

Salt		Chance that actual volume will exceed forecast							
	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)	
Tonto Ck ab Gun Ck nr Roosevelt <sup>3</sup>									
	JAN			5	132%			3.8	
	J15-MAY	6.2	15.8	26	72%	40	68	36	
Salt R nr Roosevelt <sup>3</sup>									
	MAR-MAY	63	114	160	89%	220	325	179	
	J15-MAY	87	156	220	92%	300	445	240	

<sup>1) 90%</sup> and 10% exceedance probabilities are actually 95% and 5%

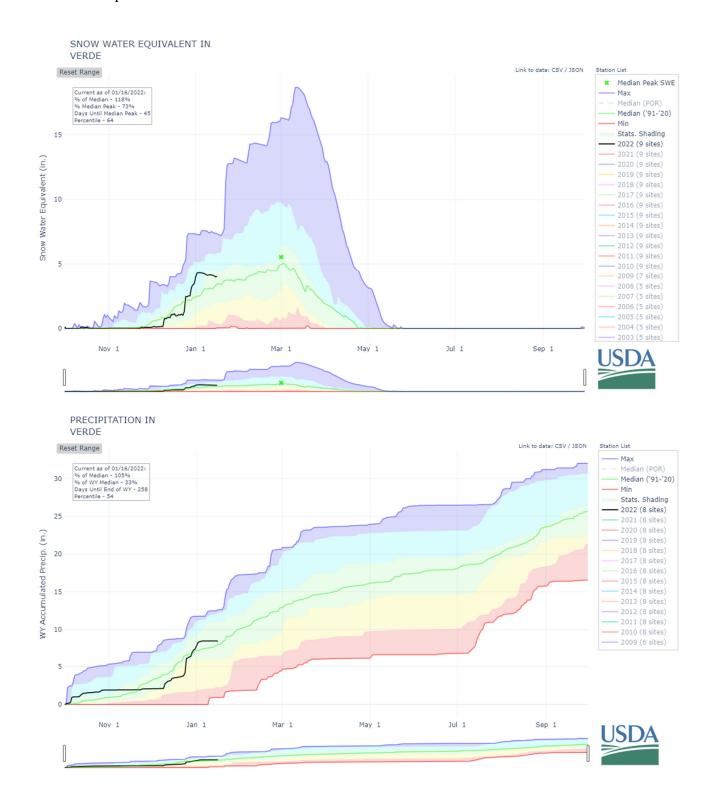
<sup>2)</sup> Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage Middle of December, 2021	Current (KAF)	Last Year (KAF)	Median (KAF)	Capacity (KAF)
Salt River Reservoir System	1510.6	1668.3	1108.0	2025.8
Basin-wide Total	1510.6	1668.3	1108.0	2025.8
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 16, 2022	# of Sites	% Median	Last Year % Median
Salt	11	87%	5%

### **VERDE RIVER BASIN as of January 15, 2022**

Median streamflow levels are forecast for the basin. In the Verde River above Horseshoe Dam, the forecast calls for 97% of median streamflow through May. Snow survey measurements show the Verde snowpack to be at 122% of median.



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# Verde Streamflow Forecasts - January 16, 2022 Forecast Exceedance Probabilities for Risk Assessment

Verde								
	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Verde R bl Tangle Ck ab Horseshoe Dam								
	JAN			27	113%			24
	J15-MAY	50	96	140	97%	196	300	145

<sup>1) 90%</sup> and 10% exceedance probabilities are actually 95% and 5%

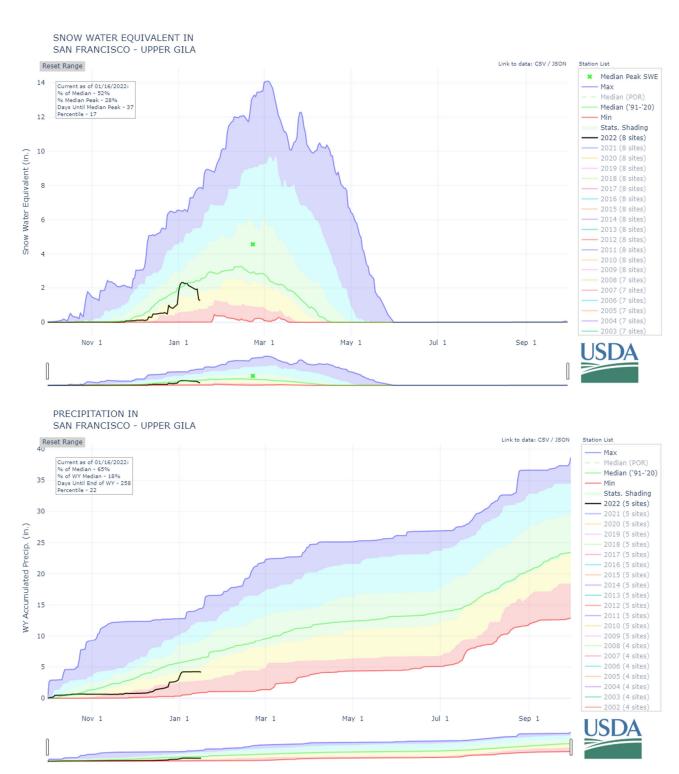
<sup>2)</sup> Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage	Current	Last Year	Median	Capacity
Middle of December, 2021	(KAF)	(KAF)	(KAF)	(KAF)
Verde River Reservoir System	122.3	91.2	113.7	287.4
Basin-wide Total	122.3	91.2	113.7	287.4
# of reservoirs	1	1	1	1

Watershed Snowpack Analysis January 16, 2022	# of Sites	% Median	Last Year % Median
Verde	12	122%	3%

### SAN FRANCISCO-UPPER GILA RIVER BASIN as of January 15, 2022

Well below normal streamflow levels are forecast for the basin. In the San Francisco River, at Clifton, the forecast calls for 67% of median streamflow levels through May. In the Gila River, near Solomon, the forecast calls for 52% of median streamflow levels through May. At San Carlos Reservoir, inflow to the lake is forecast at 45% of median through May. Snow survey measurements show the snowpack for this basin to be at 73% of median.



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### San Francisco - Upper Gila Streamflow Forecasts - January 16, 2022

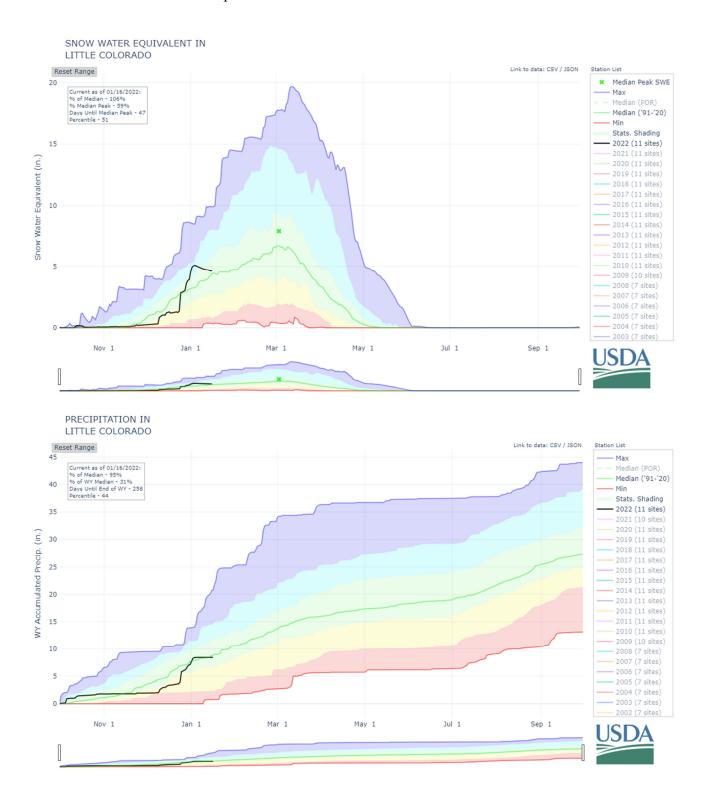
		!	nt					
San Francisco - Upper Gila	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Gila R at Gila <sup>3</sup>								_
	J15-MAY	5.7	12.8	20	43%	29	48	47
San Carlos Reservoir Inflow <sup>3</sup>								
	J15-MAY	0	8.1	29	45%	63	136	64
Gila R bl Blue Ck nr Virden <sup>3</sup>								
	J15-MAY	0.87	10.4	23	39%	40	75	59
San Francisco R at Glenwood <sup>3</sup>								
	J15-MAY	2.6	7.1	12	72%	18.8	33	16.7
Gila R nr Solomon <sup>3</sup>								
	JAN	6	11.4	16	100%	21	31	16
	J15-MAY	4.3	26	52	52%	86	153	100
San Francisco R at Clifton <sup>3</sup>								
	J15-MAY	2.3	14.2	28	67%	46	82	42

<sup>1) 90%</sup> 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

Reservoir Storage Middle of December, 2021	Current (KAF)	Last Year (KAF)	Median (KAF)	Capacity (KAF)
San Carlos Reservoir	31.3	19.6	93.4	875.0
Basin-wide Total	31.3	19.6	93.4	875.0
# of reservoirs	1	1	1	1
Watershed Snowpack Analysis January 16, 2022	# of Sites	% Median	Last Year % Median	
San Francisco - Unner Gila	10	73%	11%	

### LITTLE COLORADO RIVER BASIN as of January 15, 2022

Well below normal streamflow levels are forecast for the basin. In the Little Colorado River, above Lyman Lake, the forecast calls for 64% of median streamflow through June. At Blue Ridge (C.C. Cragin) Reservoir, inflow to the lake is forecast at 81% of median through May. Snow survey measurements show the snowpack for this basin to be at 109% of median.



### Little Colorado Streamflow Forecasts - January 16, 2022

Little Colorado		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast							
	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)	
Rio Nutria nr Ramah <sup>3</sup>									
Little Colorado R ab Lyman Lake <sup>3</sup>	JAN-JUN	1.25	2.5	3.8	64%	5.4	8.5	5.9	
Blue Ridge Reservoir Inflow <sup>2</sup>	JAN-MAY	2.6	6.3	10.2	81%	15.5	26	12.6	
Zuni R ab Black Rock Reservoir									
Lake Mary Reservoir Inflow	JAN-MAY	2.1	3.6	5	111%	6.7	9.8	4.5	

<sup>1) 90%</sup> and 10% exceedance probabilities are actually 95% and 5%

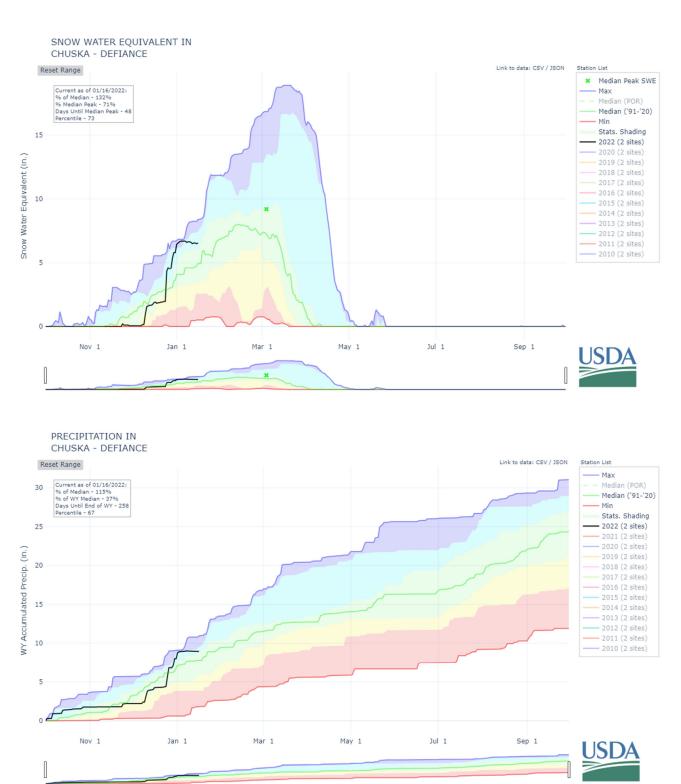
<sup>2)</sup> Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage Middle of December, 2021	Current (KAF)	Last Year (KAF)	Median (KAF)	Capacity (KAF)
Lyman Reservoir	4.8	7.6	7.4	30.0
Cragin Dam Reservoir	6.2	3.0	7.5	0.0
Show Low Lake			3.0	5.1
Basin-wide Total	11.0	10.6	17.9	35.1
# of reservoirs	2	2	3	3

Watershed Snowpack Analysis January 16, 2022	# of Sites	% Median	Last Year % Median
Little Colorado	17	109%	8%

### CHUSKA MOUNTAINS as of January 15, 2022

Well above median streamflow levels are forecast for Wheatfields Creek, Captain Tom Wash, and Bowl Canyon Creek. Snow survey measurements conducted by staff of the Navajo Nation Water Management Branch show the Chuska snowpack to be at 180% of median.



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### **Chuska - Defiance** Streamflow Forecasts - January 16, 2022 Forecast Exceedance Probabilities for Risk Assessment

			Chance that actual volume will exceed forecast							
Chuska - Defiance	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)		
Bowl Canyon Ck ab Asaayi Lake <sup>3</sup>										
	MAR-MAY	8.0	1.53	2.2	268%	2.9	4.2	0.82		
Captain Tom Wash nr Two Gray Hills <sup>3</sup>										
	MAR-MAY	0.23	1.36	3	484%	5.6	11.7	0.62		
Wheatfields Ck nr Wheatfields										
	MAR-MAY	1.92	3.1	4	482%	5.1	6.8	0.83		

<sup>1) 90%</sup> 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

Watershed Snowpack Analysis January 16, 2022	# of Sites	% Median	Last Year % Median
Chuska - Defiance	9	180%	25%

## Basinwide Summary: January 16, 2022 (Medians based on 1991-2020 reference period)

Snowpack Summary for January 16, 2022

San Francisco - Upper Gla				Depth	SWE	Median	%	Last Year	Last Year
Coronado Trail	San Francisco - Upper Gila	Network	Elevation (ft)						
Second	Beaver Head	SNOTEL	7990	1	1.9	2.6	73%	0.0	0%
Seconda	Coronado Trail	SNOTEL	8400	2	1.2	2.2	55%	0.0	0%
Hannagan Meadows	Coronado Trail	SC	8350	6	1.5	2.2			
Nutrioso	Frisco Divide	SNOTEL	8000	3	1.3	1.8	72%	0.0	0%
	Hannagan Meadows	SNOTEL	9020	8	5.2	5.2	100%	1.2	23%
Nutrioso   SNOTEL   8500   0   0.0   0.5   0.0		SNOTEL	8500	0	0.0	1.4	0%	0.0	0%
Signal Peak Silver Creek Divide         SNOTEL SNOTEL         9000 900         9         3.1         2.0         60% 8.2%         1.0         0.0% 97%           State Line         Basin Index # of sites         C         8000         9         3.1         3.8         3.2%         1.4         37%           State Line         Basin Index # of sites         C         8000         Permitted         1.16         1.16           Sait         Basin Index # of sites         C         8000         Permitted         1.16         1.17           Sait         Network # of sites         Elevation (ft) Pipin Pi	Nutrioso	SC	8500	4	1.1	1.0	110%	0.0	0%
Silver Creek Divide	Nutrioso	SNOTEL	8500	0	0.0	0.5	0%	0.0	0%
State Line   Sc	Signal Peak	SNOTEL	8360	3	1.2	2.0	60%	0.0	0%
Salt	Silver Creek Divide	SNOTEL	9000	9	3.1	3.8	82%	1.4	37%
Metwork   Elevation (ft)   Depth (ft)   Number (ft)   Outside (ft)   Number (ft)   N	State Line	SC	8000			1.6			
Network   Elevation (ft)   Depth (in)   (in)   (in)   Median   Median   SWE (in)   SWE (in)   Median   SWE (in)	Basin Index						73%		11%
Baldy	# of sites						10		10
Baldy				Depth	SWF	Median	%	Last Year	Last Year
Beaver Head   SNOTEL   7990   1   1.9   2.6   73%   0.0   0%   0%   0%   0%   0%   0%	Salt	Network	Elevation (ft)	•					
Buck Spring	Baldy	SNOTEL	9125	15	3.6	4.2	86%	0.0	0%
Coronado Trail         SNOTEL         8400         2         1.2         2.2         55%         0.0         0%           Coronado Trail         SC         8350         6         1.5         2.2         68%         0.0         0%           Fort Apache         SC         9160         19         4.8         4.6         104%         0.7         15%           Hannagan Meadows         SNOTEL         9020         8         5.2         5.2         100%         1.2         23%           Hawley Lake         SNOTEL         8300         30         7.8          1.4         Heber         SNOTEL         7640         13         3.7         3.8         97%         1.4         Heber         SNOTEL         7640         13         3.7         3.8         97%         1.4         Heber         SNOTEL         7930         17         6.5         6.4         102%         0.0         0%           Workman Creek         SNOTEL         7930         17         6.5         6.4         102%         0.0         0%           Basin Index         # of sites         For Store         10         2.3         1.8         128%         0.0         0%	Beaver Head	SNOTEL	7990	1	1.9	2.6	73%	0.0	0%
Coronado Trail	Buck Spring	SC	7400	3	1.0	1.2	83%	0.0	0%
Fort Apache	Coronado Trail	SNOTEL	8400	2	1.2	2.2	55%	0.0	0%
Hannagan Meadows	Coronado Trail	SC	8350	6	1.5	2.2	68%	0.0	0%
Hawley Lake   SNOTEL   R300   30   7.8     1.4	Fort Apache	SC	9160	19	4.8	4.6	104%	0.7	15%
Heber   SNOTEL   7640   13   3.7   3.8   97%   Maverick Fork   SNOTEL   9200   17   4.7   5.2   90%   0.0   0%   0%   0%   0%   0%   0%	Hannagan Meadows	SNOTEL	9020	8	5.2	5.2	100%	1.2	23%
Maverick Fork   SNOTEL   9200   17   4.7   5.2   90%   0.0   0%   0%   0%   0%   0%   0%	Hawley Lake	SNOTEL	8300	30	7.8			1.4	
Promontory   SNOTEL   7930   17   6.5   6.4   102%   0.0   0%   0%   0%   0%   0%   0%	Heber	SNOTEL	7640	13	3.7	3.8	97%		
Wildcat   Workman Creek   SNOTEL   7850   10   2.3   1.8   128%   0.0   0%   0%   0%   0%   0%   0%	Maverick Fork	SNOTEL	9200	17	4.7	5.2	90%	0.0	0%
Network   SNOTEL   6900   3   1.0   3.2   31%   0.0   0%   5%   5%   11   11   11   11   11   1	Promontory	SNOTEL	7930	17	6.5	6.4	102%	0.0	0%
Basin Index # of sites		SNOTEL	7850	10		1.8		0.0	
Little Colorado         Network         Elevation (ft) (in)         Depth (in) (in)         SWE (in) (in) (in)         Median (in)         Last Year SWE (in)         Last Year SWE (in)         Median Median           Baker Butte         SNOTEL         7300         6         2.3         2.8         82%         0.0         0%           Baker Butte No. 2         SC         7700         15         4.0         5.6         71%         0.0         0%           Baldy         SNOTEL         9125         15         3.6         4.2         86%         0.0         0%           Boon         SC         8140         88%         0.0         0%           Buck Spring         SC         7400         3         1.0         1.2         83%         0.0         0%           Cheese Springs         SC         8700         14         3.4         3.1         110%         0.7         23%           Dan Valley         SC         7640         7640         19         4.8         4.6         104%         0.7         15%           Fort Valley         SNOTEL         7350         6         2.1         1.4         100%         0.0         0%           Fort Valley <t< td=""><td></td><td>SNOTEL</td><td>6900</td><td>3</td><td>1.0</td><td>3.2</td><td></td><td>0.0</td><td></td></t<>		SNOTEL	6900	3	1.0	3.2		0.0	
Little Colorado         Network         Elevation (ft) (in)         Depth (in)         SWE (in)         Median (in)         % Median (in)         Last Year SWE (in)         A Median (in)           Baker Butte         SNOTEL         7300         6         2.3         2.8         82%         0.0         0%           Baker Butte No. 2         SC         7700         15         4.0         5.6         71%         0.0         0%           Baker Butte Smt         SNOTEL         7700         16         5.5         6.1         90%         0.0         0%           Baldy         SNOTEL         9125         15         3.6         4.2         86%         0.0         0%           Boon         SC         8140         8         4.2         86%         0.0         0%           Buck Spring         SC         7400         3         1.0         1.2         83%         0.0         0%           Cheese Springs         SC         8700         14         3.4         3.1         110%         0.7         23%           Dan Valley         SC         7640         19         4.8         4.6         104%         0.7         15%           Fort Valley									
Network   Elevation (it)   (in)   (in)   (in)   Median   SWE (in)   Median	# of sites						11		11
Network   Elevation (It)   (in)   (in)   (in)   Median   SWE (in)   Median				Б "	0)4/5		0.4		
Baker Butte         SNOTEL         7300         6         2.3         2.8         82%         0.0         0%           Baker Butte No. 2         SC         7700         15         4.0         5.6         71%         0.0         0%           Baker Butte Smt         SNOTEL         7700         16         5.5         6.1         90%           Baldy         SNOTEL         9125         15         3.6         4.2         86%         0.0         0%           Boon         SC         8140         86%         0.0         0%         0.0         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0%         0% <td>Little Colorado</td> <td>Network</td> <td>Elevation (ft)</td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Little Colorado	Network	Elevation (ft)	•					
Baker Butte No. 2         SC         7700         15         4.0         5.6         71%         0.0         0%           Baker Butte Smt         SNOTEL         7700         16         5.5         6.1         90%         0         0%           Baldy         SNOTEL         9125         15         3.6         4.2         86%         0.0         0%           Boon         SC         8140         88%         0.0         0%           Buck Spring         SC         7400         3         1.0         1.2         83%         0.0         0%           Cheese Springs         SC         8700         14         3.4         3.1         110%         0.7         23%           Dan Valley         SC         7640 <t< td=""><td>Baker Butte</td><td>SNOTEL</td><td>7300</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Baker Butte	SNOTEL	7300						
Baker Butte Smt         SNOTEL         7700         16         5.5         6.1         90%           Baldy         SNOTEL         9125         15         3.6         4.2         86%         0.0         0%           Boon         SC         8140         8140         83%         0.0         0%           Buck Spring         SC         7400         3         1.0         1.2         83%         0.0         0%           Cheese Springs         SC         8700         14         3.4         3.1         110%         0.7         23%           Dan Valley         SC         7640         5         7640									
Baldy         SNOTEL         9125         15         3.6         4.2         86%         0.0         0%           Boon         SC         8140         8140         8140         88%         0.0         0%           Buck Spring         SC         7400         3         1.0         1.2         83%         0.0         0%           Cheese Springs         SC         8700         14         3.4         3.1         110%         0.7         23%           Dan Valley         SC         7640         5         7640         5         7640								0.0	0 70
Boon         SC         8140           Buck Spring         SC         7400         3         1.0         1.2         83%         0.0         0%           Cheese Springs         SC         8700         14         3.4         3.1         110%         0.7         23%           Dan Valley         SC         7640								0.0	0%
Buck Spring         SC         7400         3         1.0         1.2         83%         0.0         0%           Cheese Springs         SC         8700         14         3.4         3.1         110%         0.7         23%           Dan Valley         SC         7640	-			10	0.0	7.2	0070	0.0	070
Cheese Springs         SC         8700         14         3.4         3.1         110%         0.7         23%           Dan Valley         SC         7640				3	1.0	12	83%	0.0	0%
Dan Valley         SC         7640           Fort Apache         SC         9160         19         4.8         4.6         104%         0.7         15%           Fort Valley         SNOTEL         7350         4         1.4         1.4         100%         0.0         0%           Fort Valley         SC         7350         6         2.1         1.4         150%         0.0         0%           Heber         SNOTEL         7640         13         3.7         3.8         97%         0.0         0%           Lake Mary         SC         6930         6         1.8         1.9         95%         0.0         0%           Maverick Fork         SNOTEL         9200         17         4.7         5.2         90%         0.0         0%           Mcgaffey         SC         8120         812	· · · · ·								
Fort Apache         SC         9160         19         4.8         4.6         104%         0.7         15%           Fort Valley         SNOTEL         7350         4         1.4         1.4         100%         0.0         0%           Fort Valley         SC         7350         6         2.1         1.4         150%         0.0         0%           Heber         SNOTEL         7640         13         3.7         3.8         97%         0.0         0%           Lake Mary         SC         6930         6         1.8         1.9         95%         0.0         0%           Maverick Fork         SNOTEL         9200         17         4.7         5.2         90%         0.0         0%           Mcgaffey         SC         8120					0. 1	0.1	11070	0.7	2070
Fort Valley         SNOTEL         7350         4         1.4         1.4         100%         0.0         0%           Fort Valley         SC         7350         6         2.1         1.4         150%         0.0         0%           Heber         SNOTEL         7640         13         3.7         3.8         97%         0.0         0%           Lake Mary         SC         6930         6         1.8         1.9         95%         0.0         0%           Maverick Fork         SNOTEL         9200         17         4.7         5.2         90%         0.0         0%           Mcgaffey         SC         8120	·			19	48	4.6	104%	0.7	15%
Fort Valley         SC         7350         6         2.1         1.4         150%         0.0         0%           Heber         SNOTEL         7640         13         3.7         3.8         97%           Lake Mary         SC         6930         6         1.8         1.9         95%         0.0         0%           Maverick Fork         SNOTEL         9200         17         4.7         5.2         90%         0.0         0%           Mcgaffey         SC         8120	·								
Heber         SNOTEL         7640         13         3.7         3.8         97%           Lake Mary         SC         6930         6         1.8         1.9         95%         0.0         0%           Maverick Fork         SNOTEL         9200         17         4.7         5.2         90%         0.0         0%           Mcgaffey         SC         8120	-								
Lake Mary         SC         6930         6         1.8         1.9         95%         0.0         0%           Maverick Fork         SNOTEL         9200         17         4.7         5.2         90%         0.0         0%           Mcgaffey         SC         8120	-							0.0	0,0
Maverick Fork         SNOTEL         9200         17         4.7         5.2         90%         0.0         0%           Mcgaffey         SC         8120								0.0	0%
Mcgaffey SC 8120	· · · · · · · · · · · · · · · · · · ·								
								2.0	2.70
Normon   Nountain   5NOTEL   7500   14 4.7 3.0 157%   0.0 0%	Mormon Mountain	SNOTEL	7500	14	4.7	3.0	157%	0.0	0%

Mormon Mountain Summit #2	SC	8470	28	8.6	5.6	154%	0.0	0%
Mormon Mtn Summit	SNOTEL	8500	22	6.5	5.8	112%	0.0	0%
Nutrioso	SC	8500	4	1.1	1.0	110%	0.0	0%
Nutrioso	SNOTEL	8500	0	0.0	0.5	0%	0.0	0%
Promontory	SNOTEL	7930	17	6.5	6.4	102%	0.0	0%
Snow Bowl #2	SC	11200	36	7.6	8.4	90%		
Snowslide Canyon	SNOTEL	9730	30	12.4	9.3	133%	3.6	39%
Basin Index						109%		8%
# of sites						17		17
Verde	Network	Elevation (ft)	Depth	SWE	Median	%	Last Year	Last Year
verde	INCLWOIK	Lievation (it)	(in)	(in)	(in)	Median	SWE (in)	% Median
Baker Butte	SNOTEL	7300	6	2.3	2.8	82%	0.0	0%
Baker Butte No. 2	SC	7700	15	4.0	5.6	71%	0.0	0%
Baker Butte Smt	SNOTEL	7700	16	5.5	6.1	90%		
Bar M	SNOTEL	6393	1	0.9			0.0	
Chalender	SNOTEL	7100	4	2.0	2.7	74%		
Chalender	SC	7100	0	0.0	1.0	0%	0.0	0%
Fort Valley	SNOTEL	7350	4	1.4	1.4	100%	0.0	0%
Fort Valley	SC	7350	6	2.1	1.4	150%	0.0	0%
Fry	SNOTEL	7200	14	5.0	4.0	125%	0.5	13%
Happy Jack	SC	7630	10	3.1	2.0	155%		
Happy Jack	SNOTEL	7630	13	5.4	3.3	164%	0.7	21%
Mormon Mountain	SNOTEL	7500	14	4.7	3.0	157%	0.0	0%
Mormon Mountain Summit #2	SC	8470	28	8.6	5.6	154%	0.0	0%
Mormon Mtn Summit	SNOTEL	8500	22	6.5	5.8	112%	0.0	0%
Newman Park	SC	6750	5	2.0	1.4	143%	0.0	0%
Snow Bowl #2	SC	11200	36	7.6	8.4	90%		
White Horse Lake	SNOTEL	7180	6	3.1	1.6	194%	0.0	0%
Williams Ski Run	SC	7720			3.5		0.0	0%
Basin Index						122%		3%
# of sites						12		12
Chuska - Defiance	Network	Elevation (ft)	Depth	SWE	Median	%	Last Year	Last Year
		Licvation (it)	(in)	(in)	(in)	Median	SWE (in)	% Median
Beaver Spring	SC	9220	24	7.8	4.4	177%	1.4	32%
Beaver Spring	SNOTEL	9200	22	6.5	5.3	123%	1.1	21%
Bowl Canyon	SC	8980	25	7.4	4.0	185%	0.9	23%
Fluted Rock	SC	7800	12	3.0	1.6	188%	8.0	50%
Hidden Valley	SC	8480	23	7.4	3.0	247%	0.6	20%
Missionary Spring	SC	7940	11	3.2	2.1	152%	0.0	0%
Navajo Whiskey Ck	SNOTEL	9050	23	6.5	4.6	141%		
Tsaile Canyon #1	SC	8160	19	6.6	3.2	206%	0.6	19%
Tsaile Canyon #3	SC	8920	25	7.4	5.3	140%	1.4	26%
Whiskey Creek	SC	9050	33	11.0	4.6	239%	1.6	35%
Basin Index						180%		25%
# of sites						9		9
Grand Canyon	Network	Elevation (ft)	Depth (in)	SWE (in)	Median (in)	% Median	Last Year SWE (in)	Last Year % Median
Bright Angel	SC	8400	23	7.0	4.4	159%	0.3	7%
Grand Canyon	SC	7500			1.3		0.0	0%
Basin Index						159%		7%
# of sites						1		1

Virgin	Virgin Network		Depth (in)	SWE (in)	Median (in)	% Median	Last Year SWE (in)	Last Year % Median
Gardner Peak	SNOTEL	8322	25	8.0	5.0	160%	2.1	42%
Gutz Peak	SNOTEL	6763	30	10.9	5.1	214%	0.7	14%
Harris Flat	SNOTEL	7792	26	7.8	3.8	205%	1.0	26%
Kolob	SNOTEL	9263	43	13.1	9.8	134%	4.6	47%
Little Grassy	SNOTEL	6065	14	5.0	2.4	208%	0.4	17%
Long Flat	SNOTEL	7982	19	6.5	3.5	186%	0.7	20%
Long Valley Jct	SNOTEL	7465	21	6.3	2.6	242%	0.4	15%
Midway Valley	SNOTEL	9827	44	11.3	10.6	107%	4.8	45%
Webster Flat	SNOTEL	9203	29	8.5	6.2	137%	2.4	39%
Basin Index						158%		35%
# of sites						9		9

Report Created: 1/19/2022 3:18:05 PM

### Streamflow Forecast Summary: January 16, 2022 (Medians based on 1991-2020 reference period)

		F						
San Francisco - Upper Gila	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	ume will exceed % Median	30% (KAF)	10% (KAF)	⊒ 30yr Median (KAF)
Gila R at Gila <sup>3</sup>								
	J15-MAY	5.7	12.8	20	43%	29	48	47
San Carlos Reservoir I	nflow <sup>3</sup>							
	J15-MAY	0	8.1	29	45%	63	136	64
Gila R bl Blue Ck nr Vir	den <sup>3</sup>							
	J15-MAY	0.87	10.4	23	39%	40	75	59
San Francisco R at Gle	enwood <sup>3</sup>							
	J15-MAY	2.6	7.1	12	72%	18.8	33	16.7
Gila R nr Solomon <sup>3</sup>								
	JAN	6	11.4	16	100%	21	31	16
	J15-MAY	4.3	26	52	52%	86	153	100
San Francisco R at Clif	ton <sup>3</sup>							
	J15-MAY	2.3	14.2	28	67%	46	82	42

<sup>1) 90%</sup> and 10% exceedance probabilities are actually 95% and 5%

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

		F						
Salt	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Tonto Ck ab Gun Ck r	r Roosevelt <sup>3</sup>							
	JAN			5	132%			3.8
	J15-MAY	6.2	15.8	26	72%	40	68	36
Salt R nr Roosevelt <sup>3</sup>								
	MAR-MAY	63	114	160	89%	220	325	179
	J15-MAY	87	156	220	92%	300	445	240

<sup>1) 90%</sup> and 10% exceedance probabilities are actually 95% and 5%

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

		F			pabilities for Ris ume will exceed		nt	
Little Colorado	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Rio Nutria nr Ramah <sup>3</sup>								
Little Colorado R ab Ly	man Lake <sup>3</sup>							
	JAN-JUN	1.25	2.5	3.8	64%	5.4	8.5	5.9
Blue Ridge Reservoir Ir	nflow <sup>2</sup>							
•	JAN-MAY	2.6	6.3	10.2	81%	15.5	26	12.6
Zuni R ab Black Rock F	Reservoir							
Lake Mary Reservoir In	flow							
	JAN-MAY	2.1	3.6	5	111%	6.7	9.8	4.5

<sup>1) 90%</sup> 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

Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast									
Verde	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)	
Verde R bl Tangle Ck	ab Horseshoe D	am							
	JAN			27	113%			24	
	J15-MAY	50	96	140	97%	196	300	145	

- 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

		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast							
Chuska - Defiance	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)	
Bowl Canyon Ck ab Asa	aayi Lake <sup>3</sup>								
•	MAR-MAY	8.0	1.53	2.2	268%	2.9	4.2	0.82	
Captain Tom Wash nr T	wo Gray Hills <sup>3</sup>								
·	MAR-MAY	0.23	1.36	3	484%	5.6	11.7	0.62	
Wheatfields Ck nr Whea	atfields								
	MAR-MAY	1.92	3.1	4	482%	5.1	6.8	0.83	

- 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

		F	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast							
Grand Canyon	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)		
Lake Powell Inflow <sup>3</sup>										
	APR-JUL	3710	5490	6900	113%	8470	11100	6130		

- 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