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,
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Water Supply Specialist
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Arizona Basin Outlook Report
as of January 1, 2022

SUMMARY

As of January 1, snowpack is at median to well above median levels throughout the major basins of the state. Precipitation for the month of December was above median to well above median in the major river basins. The Salt and Verde River reservoir system stands at 68 percent of capacity, while San Carlos Reservoir is at 2 percent of capacity. The forecast calls for median to well above median runoff in the major basins for the spring runoff period.

SNOWPACK

Snow water equivalent in the state’s major river basins are median to well above median levels, ranging from 90 percent of median in the Gila River Basin to 169 percent of median in the Verde River Basin.
PRECIPITATION

Mountain data from NRCS SNOTEL sites and NWS Cooperator gages show that precipitation for December was above median to well above median in the major river basins, while cumulative precipitation since October 1 ranged from well below median to median levels throughout the state. Please refer to the precipitation graphs found in this report for more information on precipitation levels in the basins.

RESERVOIR STORAGE

As of January 1, the Salt and Verde River reservoir system stands at 68 percent of capacity. San Carlos Reservoir is currently at 2 percent of capacity.

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

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Current Storage</th>
<th>Last Year Storage</th>
<th>30-Year Median</th>
<th>Storage Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt River System</td>
<td>1471.8</td>
<td>1666.8</td>
<td>1073.0</td>
<td>2025.8</td>
</tr>
<tr>
<td>Verde River System</td>
<td>111.3</td>
<td>93.4</td>
<td>112.8</td>
<td>287.4</td>
</tr>
<tr>
<td>San Carlos Reservoir</td>
<td>20.0</td>
<td>19.6</td>
<td>79.4</td>
<td>875.0</td>
</tr>
<tr>
<td>Lyman Lake</td>
<td>4.8</td>
<td>7.7</td>
<td>7.1</td>
<td>30.0</td>
</tr>
<tr>
<td>Lake Havasu</td>
<td>567.3</td>
<td>553.2</td>
<td>558.0</td>
<td>619.0</td>
</tr>
<tr>
<td>Lake Mohave</td>
<td>1572.7</td>
<td>1581.0</td>
<td>1608.0</td>
<td>1810.0</td>
</tr>
<tr>
<td>Lake Mead</td>
<td>8915.0</td>
<td>10328.0</td>
<td>15014.0</td>
<td>26159.0</td>
</tr>
<tr>
<td>Lake Powell</td>
<td>6713.0</td>
<td>10130.0</td>
<td>13921.0</td>
<td>24322.0</td>
</tr>
</tbody>
</table>
STREAMFLOW

As of January 1, the forecast calls for median to well above median streamflow for the spring runoff period, ranging from 92 percent of median in the Gila River near Solomon to 142 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.
SALT RIVER BASIN as of January 1, 2022

Median streamflow levels are forecast for the basin. In the Salt River, near Roosevelt, the forecast calls for 108% of median streamflow through May, while at Tonto Creek, the forecast calls for 115% of median streamflow through May. Snow survey measurements show the Salt snowpack to be at 118% of median.
# Salt Streamflow Forecasts - January 1, 2022

<table>
<thead>
<tr>
<th>Forecast Period</th>
<th>90% (KAF)</th>
<th>70% (KAF)</th>
<th>50% (KAF)</th>
<th>% Median</th>
<th>30% (KAF)</th>
<th>10% (KAF)</th>
<th>30yr Median (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Salt R nr Roosevelt</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JAN</td>
<td>7.2</td>
<td>22</td>
<td>40</td>
<td>182%</td>
<td>65</td>
<td>117</td>
<td>22</td>
</tr>
<tr>
<td>JAN-MAY</td>
<td>99</td>
<td>187</td>
<td>270</td>
<td>108%</td>
<td>375</td>
<td>570</td>
<td>250</td>
</tr>
<tr>
<td>MAR-MAY</td>
<td>83</td>
<td>144</td>
<td>200</td>
<td>112%</td>
<td>270</td>
<td>395</td>
<td>179</td>
</tr>
<tr>
<td><strong>Tonto Ck ab Gun Ck nr Roosevelt</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JAN</td>
<td>0.98</td>
<td>2.7</td>
<td>5.5</td>
<td>145%</td>
<td>11.1</td>
<td>31</td>
<td>3.8</td>
</tr>
<tr>
<td>JAN-MAY</td>
<td>6.7</td>
<td>24</td>
<td>45</td>
<td>115%</td>
<td>76</td>
<td>143</td>
<td>39</td>
</tr>
</tbody>
</table>

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

## Reservoir Storage

<table>
<thead>
<tr>
<th>Reservoir Storage</th>
<th>Current (KAF)</th>
<th>Last Year (KAF)</th>
<th>Median (KAF)</th>
<th>Capacity (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt River Reservoir System</td>
<td>1471.8</td>
<td>1666.8</td>
<td>1073.0</td>
<td>2025.8</td>
</tr>
</tbody>
</table>

## Basin Index

# of reservoirs
VERDE RIVER BASIN as of January 1, 2022

Well above median streamflow levels are forecast for the basin. In the Verde River above Horseshoe Dam, the forecast calls for 142% of median streamflow through May. Snow survey measurements show the Verde snowpack to be at 169% of median.
Verde Streamflow Forecasts - January 1, 2022

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

<table>
<thead>
<tr>
<th>Verde R bl Tangle Ck ab Horseshoe Dam</th>
<th>Forecast Period</th>
<th>90% (KAF)</th>
<th>70% (KAF)</th>
<th>50% (KAF)</th>
<th>% Median</th>
<th>30% (KAF)</th>
<th>10% (KAF)</th>
<th>30yr Median (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN</td>
<td>15.5</td>
<td>27</td>
<td>40</td>
<td>167%</td>
<td>59</td>
<td>103</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>JAN-MAY</td>
<td>90</td>
<td>153</td>
<td>220</td>
<td>142%</td>
<td>315</td>
<td>540</td>
<td>155</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Reservoir Storage End of December, 2021</th>
<th>Current (KAF)</th>
<th>Last Year (KAF)</th>
<th>Median (KAF)</th>
<th>Capacity (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verde River Reservoir System</td>
<td>111.3</td>
<td>93.4</td>
<td>112.8</td>
<td>287.4</td>
</tr>
</tbody>
</table>

Basin Index
# of reservoirs
Median streamflow levels are forecast for the basin. In the San Francisco River, at Clifton, the forecast calls for 91% of median streamflow levels through May. In the Gila River, near Solomon, the forecast calls for 92% of median streamflow levels through May. At San Carlos Reservoir, inflow to the lake is forecast at 85% of median through May. Snow survey measurements show the snowpack for this basin to be at 90% of median.
### San Francisco - Upper Gila

**Streamflow Forecasts - January 1, 2022**

<table>
<thead>
<tr>
<th>San Francisco - Upper Gila</th>
<th>Forecast Period</th>
<th>90% (KAF)</th>
<th>70% (KAF)</th>
<th>50% (KAF)</th>
<th>% Median</th>
<th>30% (KAF)</th>
<th>10% (KAF)</th>
<th>30yr Median (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gila R nr Solomon</td>
<td>JAN</td>
<td>5.7</td>
<td>12.9</td>
<td>19.5</td>
<td>122%</td>
<td>27</td>
<td>41</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>JAN-MAY</td>
<td>15.2</td>
<td>55</td>
<td>97</td>
<td>92%</td>
<td>150</td>
<td>250</td>
<td>106</td>
</tr>
<tr>
<td>Gila R bl Blue Ck nr Virden</td>
<td>JAN-MAY</td>
<td>3.5</td>
<td>16.9</td>
<td>32</td>
<td>50%</td>
<td>51</td>
<td>89</td>
<td>64</td>
</tr>
<tr>
<td>Gila R at Gila</td>
<td>JAN-MAY</td>
<td>9.2</td>
<td>18.3</td>
<td>27</td>
<td>52%</td>
<td>38</td>
<td>60</td>
<td>52</td>
</tr>
<tr>
<td>San Carlos Reservoir Inflow</td>
<td>JAN-MAY</td>
<td>2.6</td>
<td>29</td>
<td>62</td>
<td>85%</td>
<td>109</td>
<td>200</td>
<td>73</td>
</tr>
<tr>
<td>San Francisco R at Glenwood</td>
<td>JAN-MAY</td>
<td>4.5</td>
<td>10.5</td>
<td>16.7</td>
<td>90%</td>
<td>25</td>
<td>42</td>
<td>18.5</td>
</tr>
<tr>
<td>San Francisco R at Clifton</td>
<td>JAN-MAY</td>
<td>6.6</td>
<td>23</td>
<td>40</td>
<td>91%</td>
<td>61</td>
<td>101</td>
<td>44</td>
</tr>
</tbody>
</table>

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

### Reservoir Storage

<table>
<thead>
<tr>
<th>Reservoir Storage</th>
<th>Current (KAF)</th>
<th>Last Year (KAF)</th>
<th>Median (KAF)</th>
<th>Capacity (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Carlos Reservoir</td>
<td>19.7</td>
<td>19.5</td>
<td>79.4</td>
<td>875.0</td>
</tr>
</tbody>
</table>

### Basin Index

<table>
<thead>
<tr>
<th># of reservoirs</th>
</tr>
</thead>
</table>

Data Current As of: 1/7/2022 1:12:37 PM
Above median streamflow levels are forecast for the basin. In the Little Colorado River, above Lyman Lake, the forecast calls for 124% of median streamflow through June. At Blue Ridge (C.C. Cragin) Reservoir, inflow to the lake is forecast at 157% of median through May. Snow survey measurements show the snowpack for this basin to be at 135% of median.
**Little Colorado**

**Streamflow Forecasts - January 1, 2022**

<table>
<thead>
<tr>
<th>Little Colorado</th>
<th>Forecast Period</th>
<th>90% (KAF)</th>
<th>70% (KAF)</th>
<th>50% (KAF)</th>
<th>% Median</th>
<th>30% (KAF)</th>
<th>10% (KAF)</th>
<th>30yr Median (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Colorado R ab Lyman Lake</td>
<td>JAN-JUN</td>
<td>2.9</td>
<td>5.2</td>
<td>7.3</td>
<td>124%</td>
<td>9.9</td>
<td>14.9</td>
<td>5.9</td>
</tr>
<tr>
<td>Blue Ridge Reservoir Inflow</td>
<td>JAN-MAY</td>
<td>5</td>
<td>12.2</td>
<td>19.8</td>
<td>157%</td>
<td>30</td>
<td>51</td>
<td>12.6</td>
</tr>
<tr>
<td>Rio Nutria nr Ramah</td>
<td>JAN-MAY</td>
<td>0.05</td>
<td>0.47</td>
<td>1.16</td>
<td>159%</td>
<td>2.3</td>
<td>5.2</td>
<td>0.73</td>
</tr>
<tr>
<td>Zuni R ab Black Rock Reservoir</td>
<td>JAN-MAY</td>
<td>0</td>
<td>0.04</td>
<td>0.35</td>
<td>269%</td>
<td>1.2</td>
<td>4</td>
<td>0.13</td>
</tr>
<tr>
<td>Lake Mary Reservoir Inflow</td>
<td>JAN-MAY</td>
<td>3.1</td>
<td>5.7</td>
<td>8.1</td>
<td>180%</td>
<td>11.1</td>
<td>16.7</td>
<td>4.5</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Reservoir Storage</th>
<th>Current (KAF)</th>
<th>Last Year (KAF)</th>
<th>Median (KAF)</th>
<th>Capacity (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lyman Reservoir</td>
<td>4.8</td>
<td>7.7</td>
<td>7.1</td>
<td>30.0</td>
</tr>
<tr>
<td>Cragin Dam Reservoir</td>
<td>5.7</td>
<td>3.2</td>
<td>7.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Show Low Lake</td>
<td></td>
<td></td>
<td></td>
<td>5.1</td>
</tr>
</tbody>
</table>

Basin Index

# of reservoirs
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 141% of median.
### Chuska - Defiance

#### Streamflow Forecasts - January 1, 2022

<table>
<thead>
<tr>
<th>Chuska - Defiance</th>
<th>Forecast Period</th>
<th>90% (KAF)</th>
<th>70% (KAF)</th>
<th>50% (KAF)</th>
<th>% Median</th>
<th>30% (KAF)</th>
<th>10% (KAF)</th>
<th>30yr Median (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheatfields Ck nr Wheatfields</td>
<td>MAR-MAY</td>
<td>0.37</td>
<td>1.41</td>
<td>2.5</td>
<td>301%</td>
<td>3.9</td>
<td>6.5</td>
<td>0.83</td>
</tr>
<tr>
<td>Bowl Canyon Ck ab Asaayi Lake</td>
<td>MAR-MAY</td>
<td>0.36</td>
<td>0.99</td>
<td>1.6</td>
<td>195%</td>
<td>2.4</td>
<td>3.7</td>
<td>0.82</td>
</tr>
<tr>
<td>Captain Tom Wash nr Two Gray Hills</td>
<td>MAR-MAY</td>
<td>0</td>
<td>0.49</td>
<td>1.92</td>
<td>310%</td>
<td>4.9</td>
<td>13.2</td>
<td>0.62</td>
</tr>
</tbody>
</table>

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
VIRGIN RIVER BASIN as of January 1, 2022

Well above median streamflow levels are forecast for the basin, ranging from 267% of median in the Virgin River at Virgin, to 342% of median in the Virgin River at Littlefield. Snow survey measurements show the snowpack for this basin to be at 218% of median.
Virgin Streamflow Forecasts - January 1, 2022

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

<table>
<thead>
<tr>
<th>Virgin R nr Hurricane</th>
<th>APR-JUL</th>
<th>38</th>
<th>75</th>
<th>100</th>
<th>323%</th>
<th>126</th>
<th>162</th>
<th>31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virgin R at Littlefield</td>
<td>APR-JUL</td>
<td>43</td>
<td>85</td>
<td>113</td>
<td>342%</td>
<td>142</td>
<td>184</td>
<td>33</td>
</tr>
<tr>
<td>Virgin R at Virgin</td>
<td>APR-JUL</td>
<td>50</td>
<td>76</td>
<td>96</td>
<td>267%</td>
<td>119</td>
<td>157</td>
<td>36</td>
</tr>
<tr>
<td>Santa Clara R nr Pine Valley</td>
<td>APR-JUL</td>
<td>4.2</td>
<td>7</td>
<td>9.4</td>
<td>294%</td>
<td>12.1</td>
<td>16.7</td>
<td>3.2</td>
</tr>
</tbody>
</table>

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

### Reservoir Storage
End of December, 2021

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Current (KAF)</th>
<th>Last Year (KAF)</th>
<th>Median (KAF)</th>
<th>Capacity (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kolob Reservoir</td>
<td>3.0</td>
<td>3.4</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>Sand Hollow Reservoir</td>
<td>37.7</td>
<td>44.7</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>Gunlock</td>
<td>4.5</td>
<td>4.7</td>
<td>6.2</td>
<td>10.4</td>
</tr>
<tr>
<td>Quail Creek</td>
<td>24.1</td>
<td>23.9</td>
<td>27.1</td>
<td>40.0</td>
</tr>
</tbody>
</table>

### Basin Index
# of reservoirs
### Basinwide Summary: January 1, 2022
(Medians based On 1991-2020 reference period)

<table>
<thead>
<tr>
<th>Network</th>
<th>Elevation (ft)</th>
<th>Depth (in)</th>
<th>SWE (in)</th>
<th>Median (in)</th>
<th>% Median</th>
<th>Last Year SWE (in)</th>
<th>Last Year % Median</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>San Francisco - Upper Gila</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beaver Head</td>
<td>SNOTEL</td>
<td>7990</td>
<td>2</td>
<td>2.0</td>
<td>2.0</td>
<td>100%</td>
<td>0.0</td>
</tr>
<tr>
<td>Coronado Trail</td>
<td>SC</td>
<td>8350</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coronado Trail</td>
<td>SNOTEL</td>
<td>8400</td>
<td>8</td>
<td>1.3</td>
<td>1.4</td>
<td>93%</td>
<td>0.0</td>
</tr>
<tr>
<td>Frisco Divide</td>
<td>SNOTEL</td>
<td>8000</td>
<td>4</td>
<td>1.0</td>
<td>1.3</td>
<td>77%</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>141%</td>
<td>64%</td>
</tr>
<tr>
<td><strong># of sites</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>Network</th>
<th>Elevation (ft)</th>
<th>Depth (in)</th>
<th>SWE (in)</th>
<th>Median (in)</th>
<th>% Median</th>
<th>Last Year SWE (in)</th>
<th>Last Year % Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bright Angel</td>
<td>SC</td>
<td>8400</td>
<td>30</td>
<td>7.0</td>
<td>2.8</td>
<td>250%</td>
<td>0.7</td>
<td>25%</td>
</tr>
<tr>
<td>Grand Canyon</td>
<td>SC</td>
<td>7500</td>
<td></td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Basin Index</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>250%</td>
<td>25%</td>
</tr>
<tr>
<td>Virgin</td>
<td>Network</td>
<td>Elevation (ft)</td>
<td>Depth (in)</td>
<td>SWE (in)</td>
<td>Median (in)</td>
<td>% Median</td>
<td>Last Year SWE (in)</td>
<td>Last Year % Median</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------</td>
<td>----------------</td>
<td>------------</td>
<td>----------</td>
<td>-------------</td>
<td>----------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Gardner Peak</td>
<td>SNOTEL</td>
<td>8322</td>
<td>43</td>
<td>8.0</td>
<td>4.8</td>
<td>167%</td>
<td>2.0</td>
<td>42%</td>
</tr>
<tr>
<td>Gutz Peak</td>
<td>SNOTEL</td>
<td>6763</td>
<td>36</td>
<td>10.9</td>
<td>3.6</td>
<td>303%</td>
<td>0.7</td>
<td>19%</td>
</tr>
<tr>
<td>Harris Flat</td>
<td>SNOTEL</td>
<td>7792</td>
<td>38</td>
<td>8.0</td>
<td>2.4</td>
<td>333%</td>
<td>1.0</td>
<td>42%</td>
</tr>
<tr>
<td>Kolob</td>
<td>SNOTEL</td>
<td>9263</td>
<td>60</td>
<td>13.3</td>
<td>7.4</td>
<td>180%</td>
<td>4.4</td>
<td>59%</td>
</tr>
<tr>
<td>Little Grassy</td>
<td>SNOTEL</td>
<td>6065</td>
<td>17</td>
<td>5.1</td>
<td>1.3</td>
<td>392%</td>
<td>0.8</td>
<td>62%</td>
</tr>
<tr>
<td>Long Flat</td>
<td>SNOTEL</td>
<td>7982</td>
<td>32</td>
<td>6.6</td>
<td>2.6</td>
<td>254%</td>
<td>0.7</td>
<td>27%</td>
</tr>
<tr>
<td>Long Valley Jct</td>
<td>SNOTEL</td>
<td>7465</td>
<td>34</td>
<td>6.7</td>
<td>2.2</td>
<td>305%</td>
<td>0.5</td>
<td>23%</td>
</tr>
<tr>
<td>Midway Valley</td>
<td>SNOTEL</td>
<td>9827</td>
<td>60</td>
<td>11.2</td>
<td>8.0</td>
<td>140%</td>
<td>4.5</td>
<td>56%</td>
</tr>
<tr>
<td>Webster Flat</td>
<td>SNOTEL</td>
<td>9203</td>
<td>43</td>
<td>9.0</td>
<td>3.8</td>
<td>237%</td>
<td>2.2</td>
<td>58%</td>
</tr>
</tbody>
</table>

| Basin Index     |         | 218%          |            | 47%       |

| # of sites      | 9       | 9             |            |
### Streamflow Forecast Summary: January 1, 2022
(Medians based On 1991-2020 reference period)

<table>
<thead>
<tr>
<th>Forecast Exceedance Probabilities For Risk Assessment</th>
<th>Chance that actual volume will exceed forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>San Francisco - Upper Gila</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Gila R nr Solomon</strong></td>
<td></td>
</tr>
<tr>
<td>JAN 5.7 12.9 19.5 122% 27 41 16</td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 15.2 55 97 92% 150 250 106</td>
<td></td>
</tr>
<tr>
<td><strong>Gila bl Blue Ck nr Virden</strong></td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 3.5 16.9 32 50% 51 89 64</td>
<td></td>
</tr>
<tr>
<td><strong>Gila R at Gila</strong></td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 9.2 18.3 27 52% 38 60 52</td>
<td></td>
</tr>
<tr>
<td><strong>San Carlos Reservoir Inflow</strong></td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 2.6 29 62 85% 109 200 73</td>
<td></td>
</tr>
<tr>
<td><strong>San Francisco R at Glenwood</strong></td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 4.5 10.5 16.7 90% 25 42 18.5</td>
<td></td>
</tr>
<tr>
<td><strong>San Francisco R at Clifton</strong></td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 6.6 23 40 91% 61 101 44</td>
<td></td>
</tr>
</tbody>
</table>

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
**Salt**

<table>
<thead>
<tr>
<th>Forecast Exceedance Probabilities For Risk Assessment</th>
<th>Chance that actual volume will exceed forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Salt R nr Roosevelt</strong></td>
<td></td>
</tr>
<tr>
<td>JAN 7.2 22 40 182% 65 117 22</td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 99 187 270 108% 375 570 250</td>
<td></td>
</tr>
<tr>
<td>MAR-MAY 83 144 200 112% 270 395 179</td>
<td></td>
</tr>
<tr>
<td><strong>Tonto Ck ab Gun Ck nr Roosevelt</strong></td>
<td></td>
</tr>
<tr>
<td>JAN 0.98 2.7 5.5 145% 11.1 31 3.8</td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 6.7 24 45 115% 76 143 39</td>
<td></td>
</tr>
</tbody>
</table>

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
**Little Colorado**

<table>
<thead>
<tr>
<th>Forecast Exceedance Probabilities For Risk Assessment</th>
<th>Chance that actual volume will exceed forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Little Colorado R ab Lyman Lake</strong></td>
<td></td>
</tr>
<tr>
<td>JAN-JUN 2.9 5.2 7.3 124% 9.9 14.9 5.9</td>
<td></td>
</tr>
<tr>
<td><strong>Blue Ridge Reservoir Inflow</strong></td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 5 12.2 19.8 157% 30 51 12.6</td>
<td></td>
</tr>
<tr>
<td><strong>Rio Nutria nr Ramah</strong></td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 0.05 0.47 1.16 159% 2.3 5.2 0.73</td>
<td></td>
</tr>
<tr>
<td><strong>Zuni R ab Black Rock Reservoir</strong></td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 0 0.04 0.35 269% 1.2 4 0.13</td>
<td></td>
</tr>
<tr>
<td><strong>Lake Mary Reservoir Inflow</strong></td>
<td></td>
</tr>
<tr>
<td>JAN-MAY 3.1 5.7 8.1 180% 11.1 16.7 4.5</td>
<td></td>
</tr>
</tbody>
</table>

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.

### Verde

<table>
<thead>
<tr>
<th>Period</th>
<th>90% (KAF)</th>
<th>70% (KAF)</th>
<th>50% (KAF)</th>
<th>% Median</th>
<th>30% (KAF)</th>
<th>10% (KAF)</th>
<th>30yr Median (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN</td>
<td>15.5</td>
<td>27</td>
<td>40</td>
<td>167%</td>
<td>59</td>
<td>103</td>
<td>24</td>
</tr>
<tr>
<td>JAN-MAY</td>
<td>90</td>
<td>153</td>
<td>220</td>
<td>142%</td>
<td>315</td>
<td>540</td>
<td>155</td>
</tr>
</tbody>
</table>

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.

### Chuska - Defiance

<table>
<thead>
<tr>
<th>Period</th>
<th>90% (KAF)</th>
<th>70% (KAF)</th>
<th>50% (KAF)</th>
<th>% Median</th>
<th>30% (KAF)</th>
<th>10% (KAF)</th>
<th>30yr Median (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheatfields Ck nr Wheatfields</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAR-MAY</td>
<td>0.37</td>
<td>1.41</td>
<td>2.5</td>
<td>301%</td>
<td>3.9</td>
<td>6.5</td>
<td>0.83</td>
</tr>
<tr>
<td>Bowl Canyon Ck ab Asaayi Lake</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAR-MAY</td>
<td>0.36</td>
<td>0.99</td>
<td>1.6</td>
<td>195%</td>
<td>2.4</td>
<td>3.7</td>
<td>0.82</td>
</tr>
<tr>
<td>Captain Tom Wash nr Two Gray Hills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAR-MAY</td>
<td>0</td>
<td>0.49</td>
<td>1.92</td>
<td>310%</td>
<td>4.9</td>
<td>13.2</td>
<td>0.62</td>
</tr>
</tbody>
</table>

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.

### Grand Canyon

<table>
<thead>
<tr>
<th>Period</th>
<th>90% (KAF)</th>
<th>70% (KAF)</th>
<th>50% (KAF)</th>
<th>% Median</th>
<th>30% (KAF)</th>
<th>10% (KAF)</th>
<th>30yr Median (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Powell Inflow</td>
<td>3890</td>
<td>5750</td>
<td>7230</td>
<td>118%</td>
<td>8880</td>
<td>11600</td>
<td>6130</td>
</tr>
</tbody>
</table>

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.

### Virgin

<table>
<thead>
<tr>
<th>Period</th>
<th>90% (KAF)</th>
<th>70% (KAF)</th>
<th>50% (KAF)</th>
<th>% Median</th>
<th>30% (KAF)</th>
<th>10% (KAF)</th>
<th>30yr Median (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virgin R nr Hurricane</td>
<td>APR-JUL</td>
<td>38</td>
<td>75</td>
<td>100</td>
<td>323%</td>
<td>126</td>
<td>162</td>
</tr>
<tr>
<td>Virgin R at Littlefield</td>
<td>APR-JUL</td>
<td>43</td>
<td>85</td>
<td>113</td>
<td>342%</td>
<td>142</td>
<td>184</td>
</tr>
<tr>
<td>Virgin R at Virgin</td>
<td>APR-JUL</td>
<td>50</td>
<td>76</td>
<td>96</td>
<td>267%</td>
<td>119</td>
<td>157</td>
</tr>
<tr>
<td>Santa Clara R nr Pine Valley</td>
<td>APR-JUL</td>
<td>4.2</td>
<td>7</td>
<td>9.4</td>
<td>294%</td>
<td>12.1</td>
<td>16.7</td>
</tr>
</tbody>
</table>

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.