



# Utah Climate and Water Report

March 1, 2018



**Thistle Flat SNOTEL, Sanpete County**

Photo by Jordan Clayton

# Report Contents

## 1) Statewide Hydrologic Summary

- a) Utah General Summary
  - Supporting Documents

## 2) Climate and Water Information – SCAN

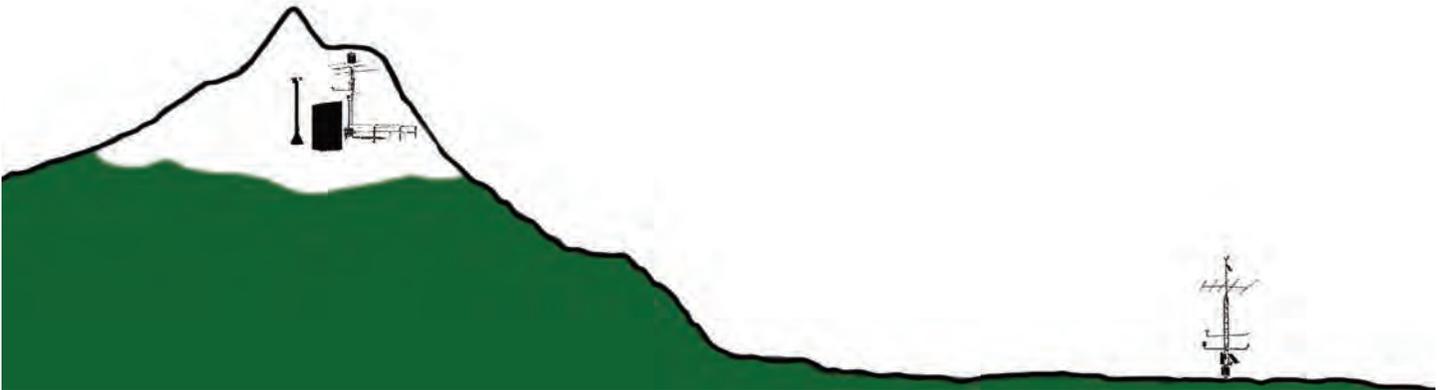
- a) Statewide SCAN
- b) Southeast
- c) South Central
- d) Western and Dixie
- e) Uinta Basin
- f) North Central
- g) Northern Mountains

## 3) Climate and Water Information – SNOTEL

- a) Statewide SNOTEL
- b) Bear River Basin
  - Water Availability Indices
- c) Weber & Ogden River Basins
  - Water Availability Indices
- d) Provo & Jordan River Basins
  - Water Availability Index
- e) Tooele Valley & West Desert Basins
- f) Northeastern Uinta Basin
  - Water Availability Indices
- g) Duchesne River Basins
  - Water Availability Indices
- h) San Pitch River Basin
  - Water Availability Index
- i) Price & San Rafael Basins
  - Water Availability Indices
- j) Lower Sevier Basin
  - Water Availability Index
- k) Upper Sevier Basin
  - Water Availability Index
- l) Southeastern Utah
  - Water Availability Index
- m) Dirty Devil
- n) Escalante River Basin
  - Water Availability Index
- o) Beaver River Basin
  - Water Availability Index
- p) Southwestern Utah
  - Water Availability Index

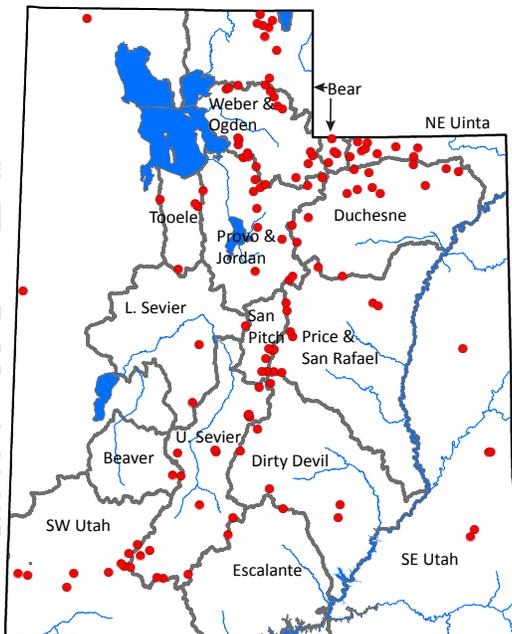
## Utah Climate and Water Report

The purpose of the Climate and Water Report is to provide a snapshot of current and immediate past climatic conditions and other information useful to agricultural and water user interests in Utah. The report utilizes data from several sources that represent specific parameters (streamflow data from the United States Geological Survey, reservoir data from the Bureau of Reclamation, and other sources), geography including high elevation United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Snowpack Telemetry (SNOTEL) data, and agriculturally important data from the USDA-NRCS Soil Climate Analysis Network (SCAN). Data on precipitation, soil moisture, soil temperature, reservoir storage, and streamflow are analyzed and presented. These data analyses can be used to increase irrigation efficiency and agricultural production. As with all data and analyses, there are limitations due to data quality, quantity, and spatial application.



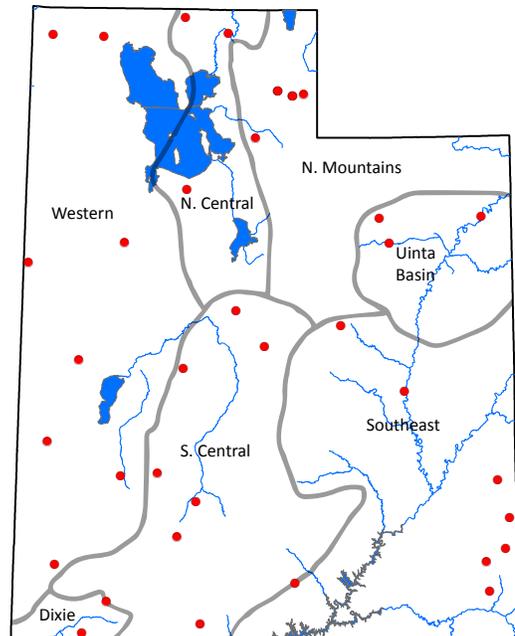
### SNOTEL

- Mountainous areas
- High elevation (>6,000 ft)
- Water supply forecasting
- Installed where snow pack represents the water supply



### SCAN

- Agricultural and range lands
- Mid elevation (3 – 7,000 ft).
- Irrigation efficiency and rangeland productivity
- Installed on spatially representative soils



## Utah General Summary

### March 1, 2018

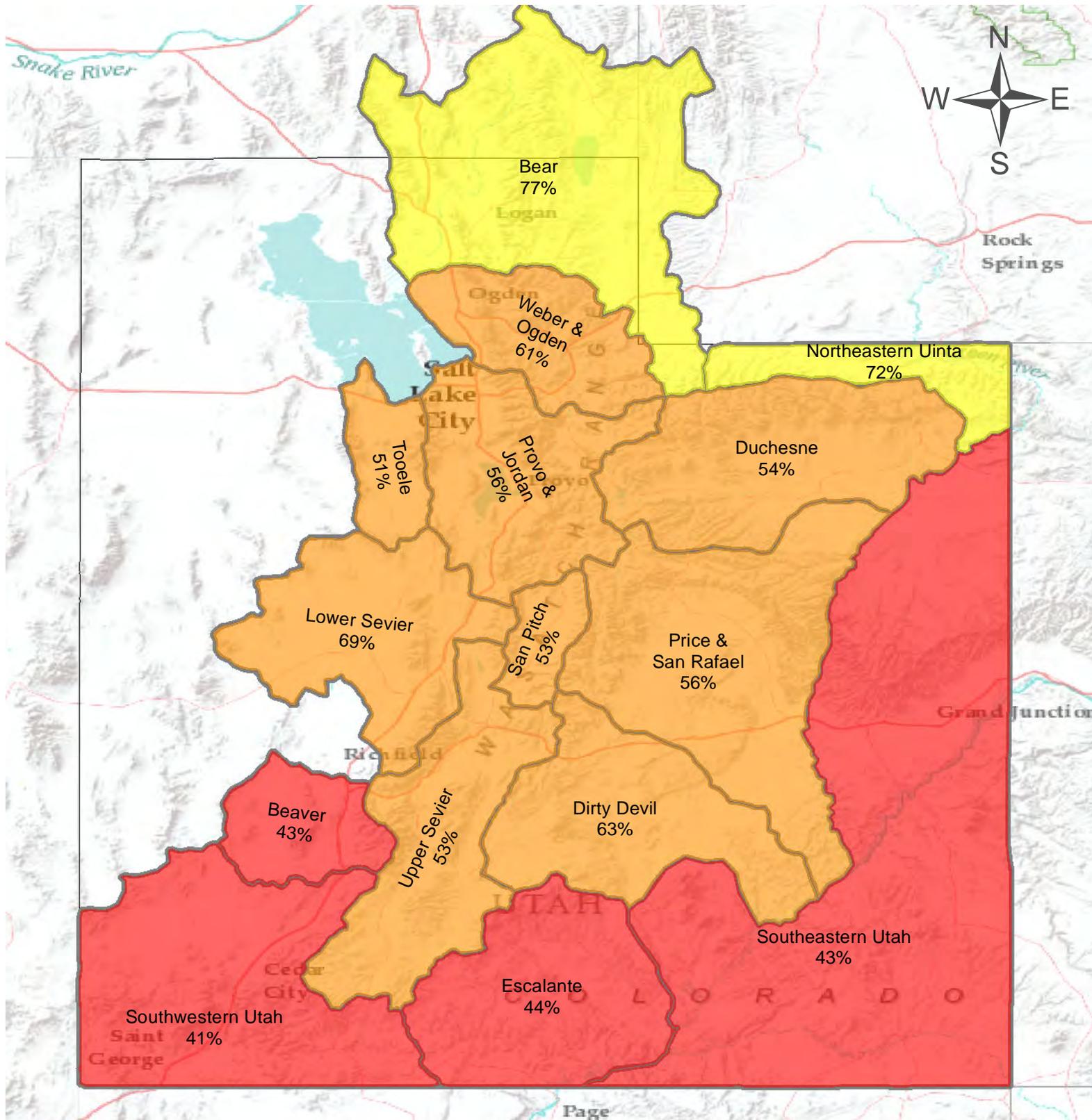
*This report has been reorganized to better reflect two distinct geographic areas being monitored – the low elevation valley sites (Soil Climate Analysis Network) that are critical for agricultural production and operations, and the high elevation mountainous areas where water supply is generated (SNOWTElemetry). Most of the graphs have been updated to utilize daily data versus the old monthly bar charts so that the timing and distribution of precipitation and other events can be seen. The timing distribution of precipitation can be as important as the overall amount in an agricultural context. These graphs are hyperlinked so that the user can simply click on the graph and be taken to the most recent version on the Snow Survey web page. Questions, comments and suggestions are welcome and should be directed to [Troy.Brosten@ut.usda.gov](mailto:Troy.Brosten@ut.usda.gov).*

### **Current Valley Conditions (SCAN)**

Overall, conditions remain drier than normal statewide in Utah's valley locations. February brought an average of 0.4 inches of precipitation to Utah's lower elevations, bringing the average water year total to 1.6 inches. For the first time this water year, a southern region led the north in monthly precipitation accumulation, with the South Central area receiving 0.5 inches. This is welcome news for residents of the Southern Utah, because the storm tracks have typically favored Northern Utah since September. Hopefully, this trend will continue because while lower than normal statewide, soil moisture levels are lagging the most in the southern regions. Both air and soil temperatures experienced a dramatic decrease in February, from significantly above to much below normal. Air temperature was on the rebound toward the end of the month, while soil temperature increased with its characteristic lag.

### **Current Mountain Conditions (SNOTEL)**

As a statewide average, the below-normal snowpack we had at the beginning of February is almost the same below-normal snowpack we now have at the end of February, and yes that's the good news. The regional picture is a little more complicated, though. Snow Water Equivalent (SWE) percentile numbers dropped a bit in northern Utah basins (less than 7%) while southern basins saw an improvement, on average, by 10% or more. The Bear River and Northeastern Uintah Basin continue to lead with the highest normal percentages at 76% and 81%, respectively. The rest of the northern basins that lost a little SWE are: Weber at 55%, Duchesne at 53%, and Provo at 53%. Remaining basins that have seen an improvement in SWE relative to February 1 values as a percent of average are: Tooele (3%), Price (8%), South East (14%), Lower Sevier (21%), Upper Sevier (10%), San Pitch (12%), Dirty Devil (13%), Escalante (7%), and the South West (6%). On average, our recent storms have staved off the snowpack decline, and while we'd all like to hear better news we'll take what we can get. February precipitation across most of the basins ranges from between 60% to 80% of average. Soil moisture conditions, in the mountains, are above to near normal in the north, and drop off to very dry conditions in the southern basins. Most reservoirs are at 75% capacity or better thanks to carryover from last year. Water Availability Index (WAI) numbers range from 28% to 92%, where above average percentage numbers are due to the reservoir carryover from the previous water year.



# Statewide Precipitation

As of March 1, 2018:

59% of Normal Precipitation

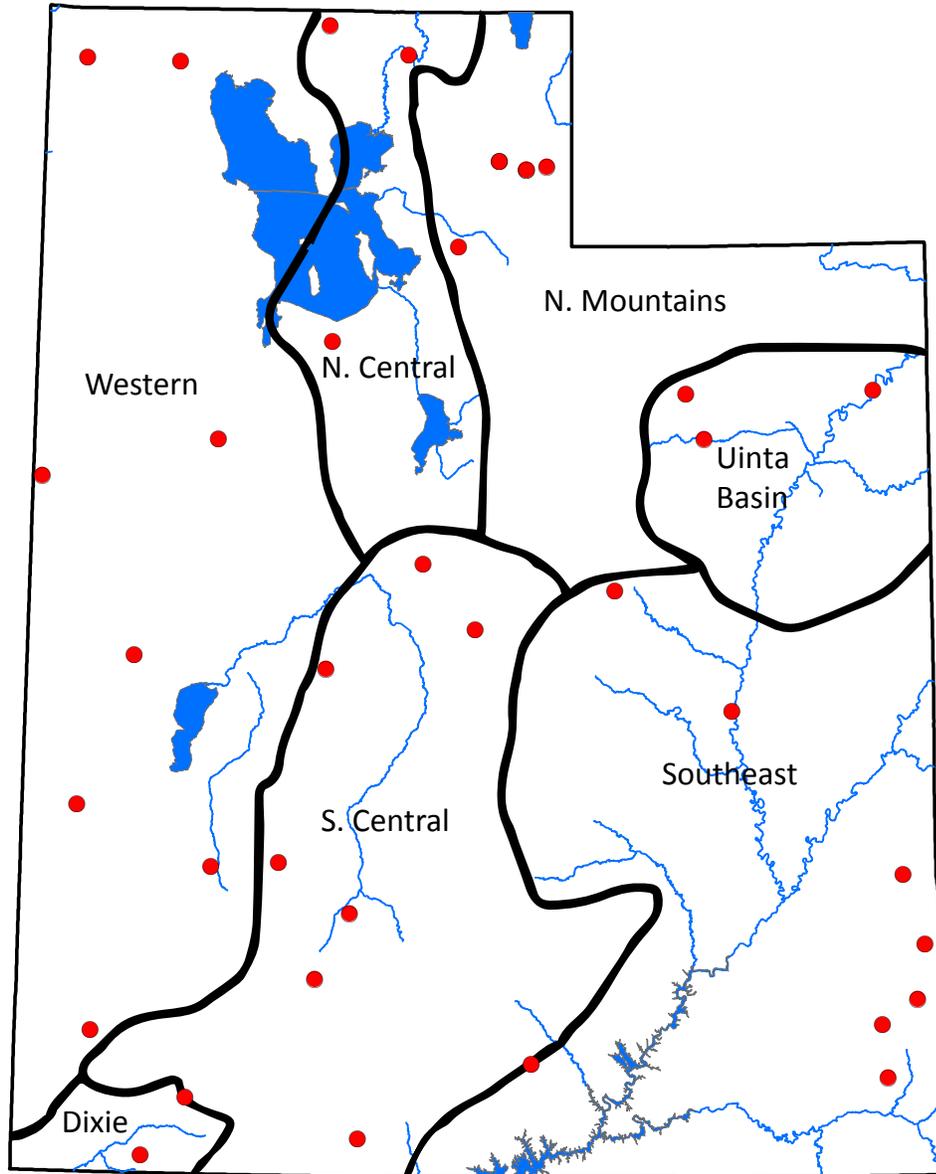
68% of Normal Precipitation Last Month

## % of Normal

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



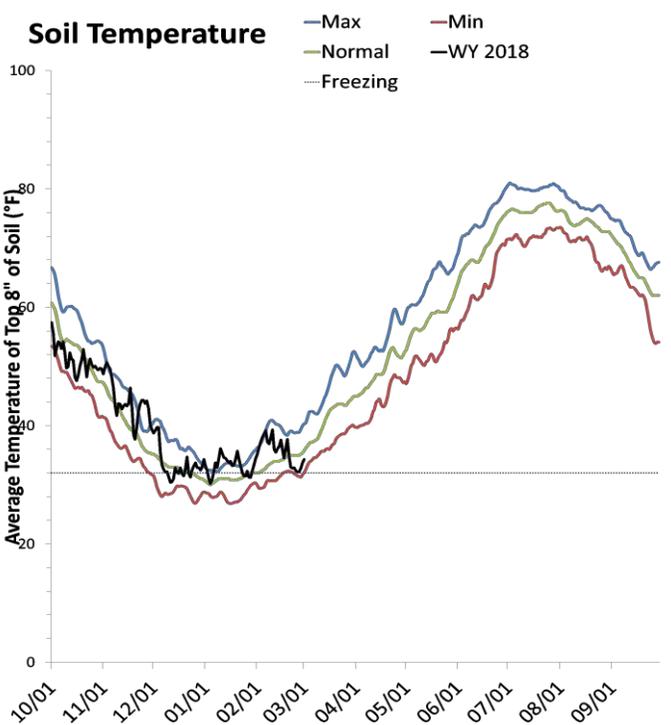
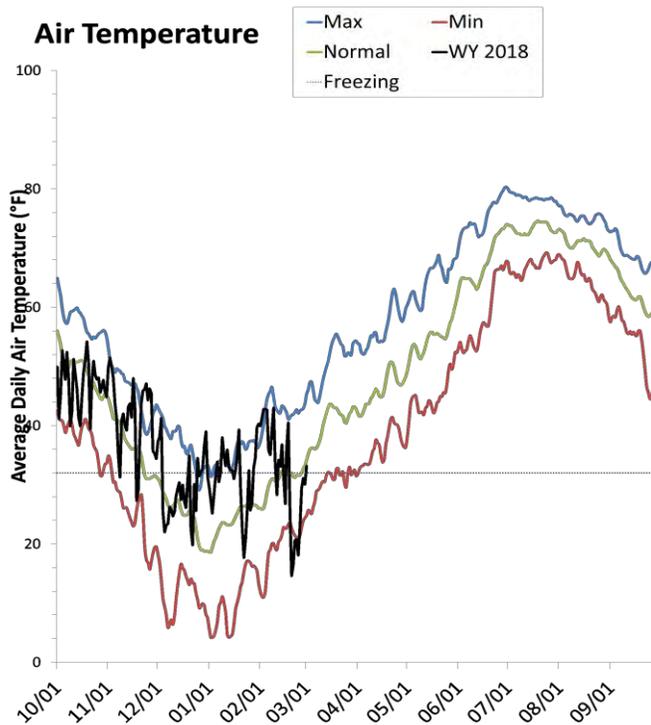
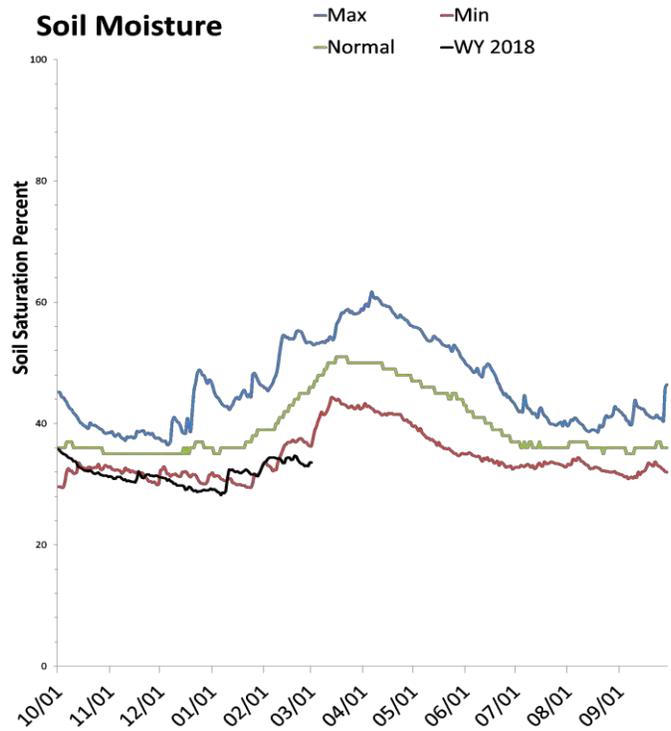
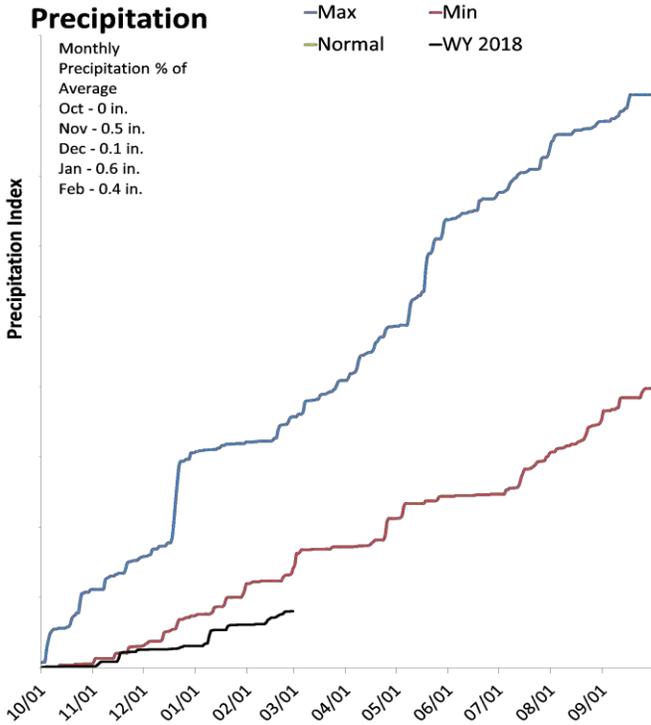
# SCAN portion of report



# Statewide SCAN

March 1, 2018

The average precipitation at SCAN sites within Utah was 0.4 inches in February, which brings the seasonal accumulation (Oct-Feb) to 1.6 inches. Soil moisture is at 33% compared to 53% last year.



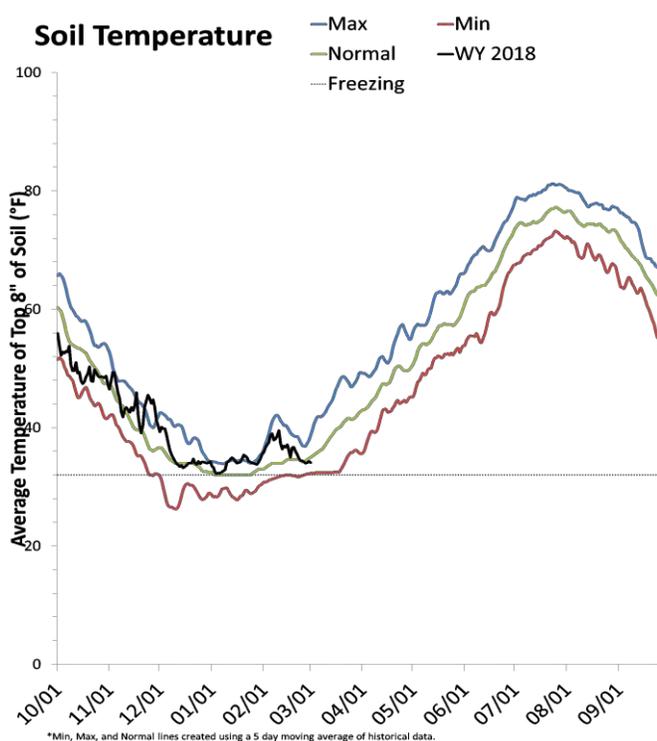
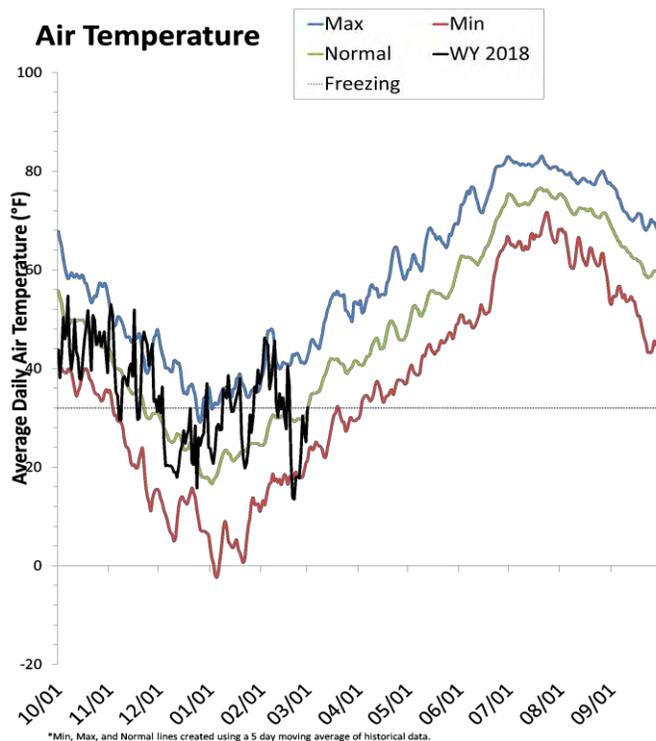
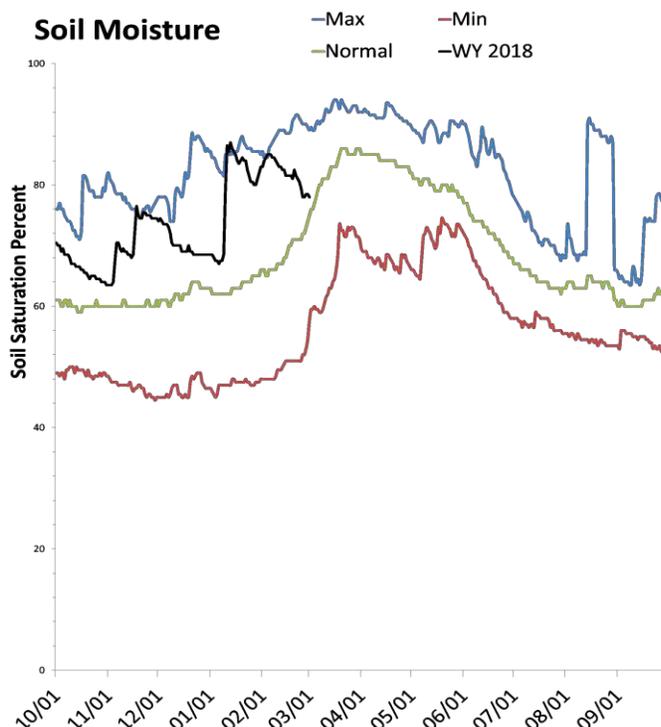
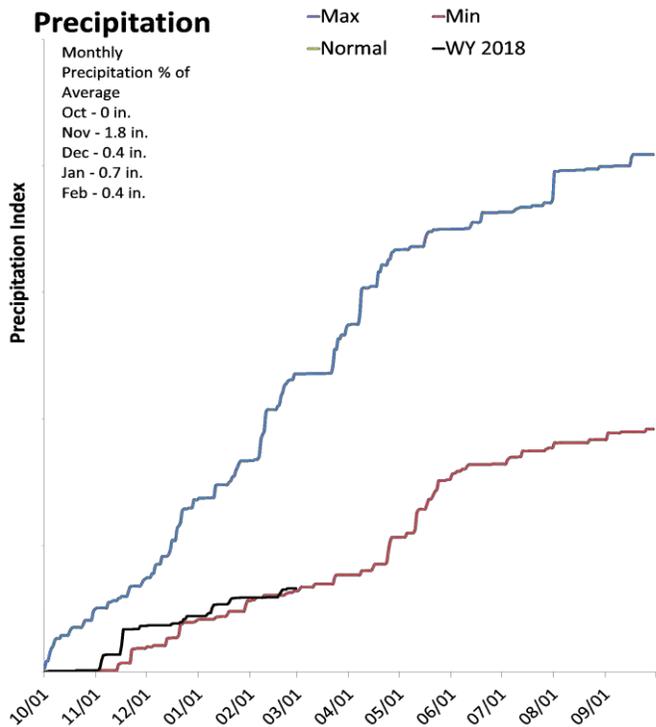
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

# North Central

March 1, 2018

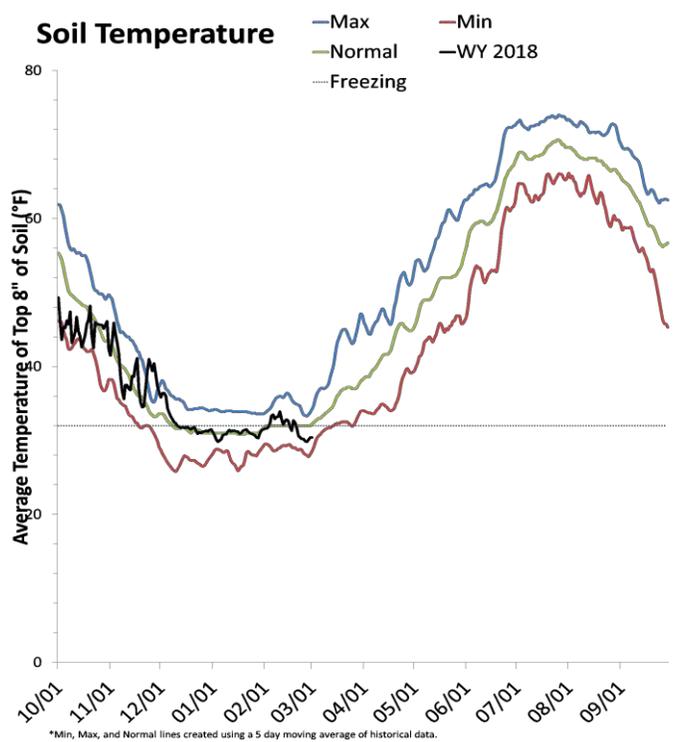
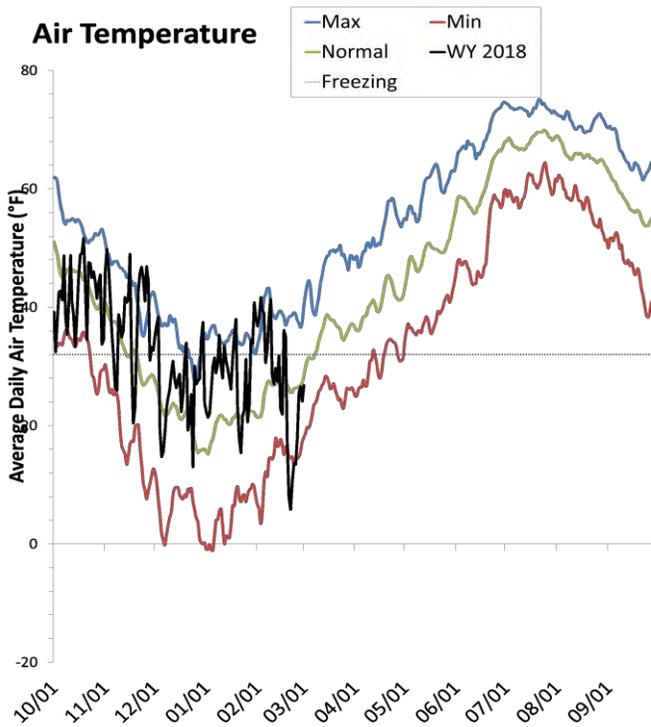
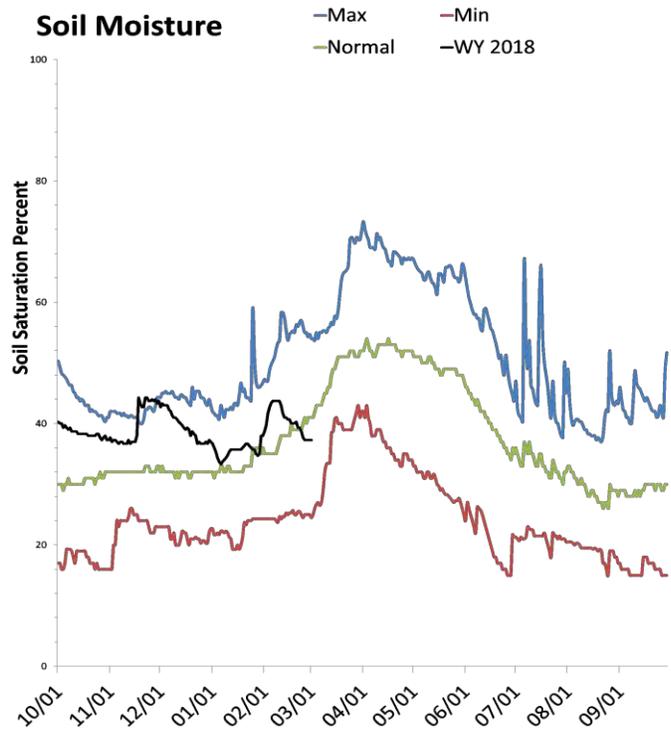
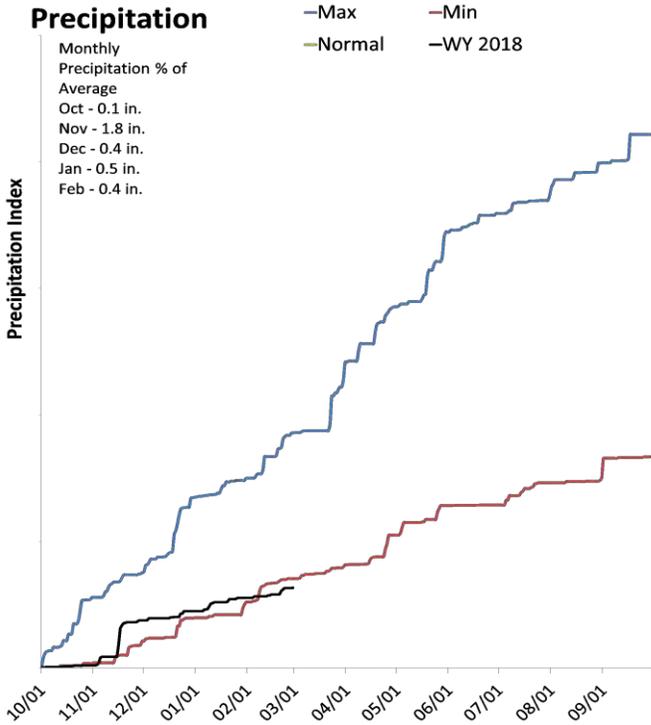
The average precipitation in February at SCAN sites within the basin was 0.4 inches, which brings the seasonal accumulation (Oct-Feb) to 3.3 inches. Soil moisture is at 79% compared to 89% last year.



# Northern Mountains

March 1, 2018

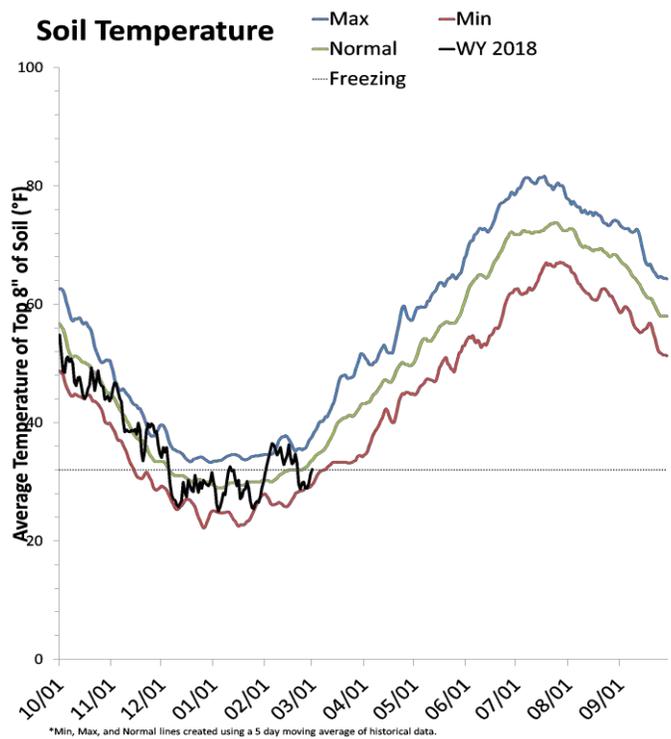
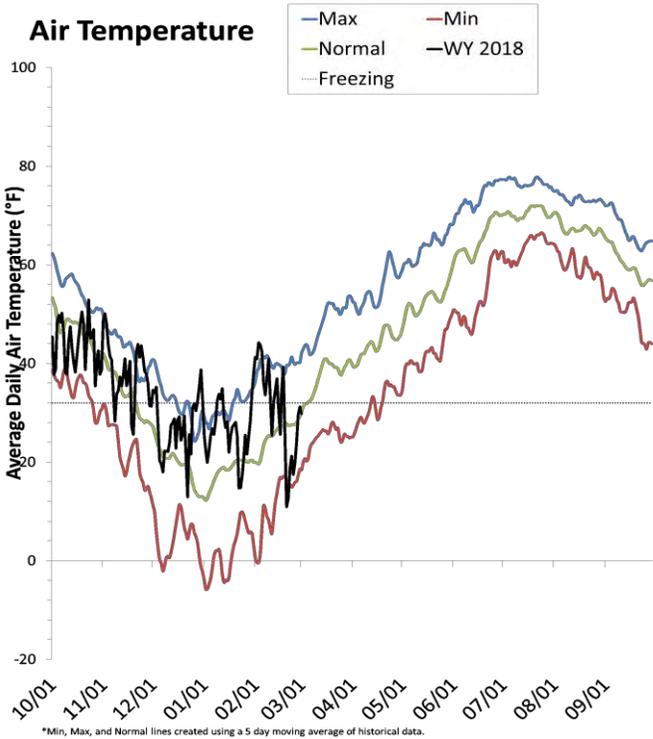
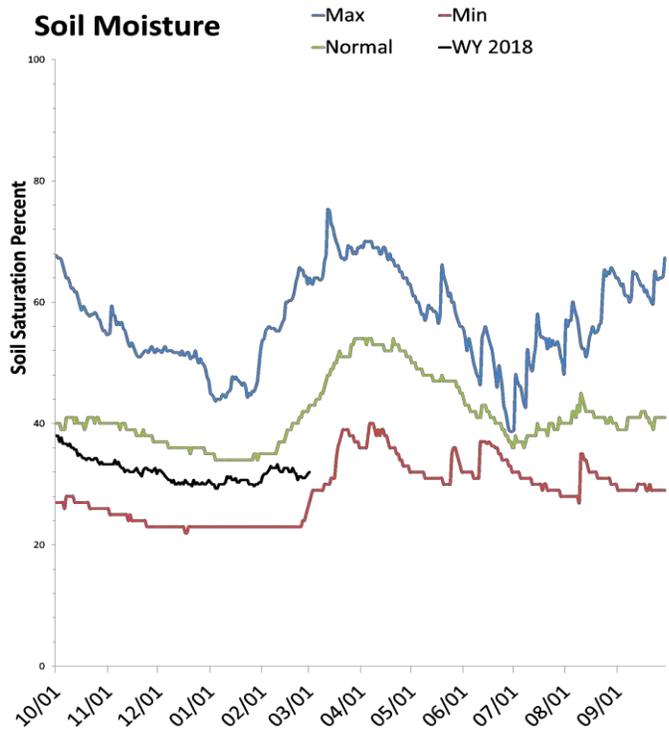
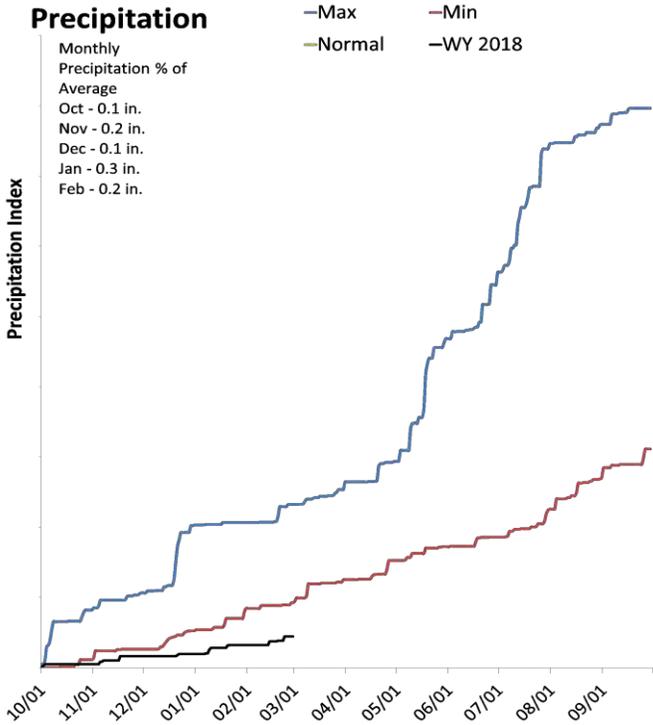
The average precipitation in February at SCAN sites within the basin was 0.4 inches, which brings the seasonal accumulation (Oct-Feb) to 3.2 inches. Soil moisture is at 37% compared to 54% last year.



# Uinta Basin

March 1, 2018

The average precipitation in February at SCAN sites within the basin was 0.2 inches, which brings the seasonal accumulation (Oct-Feb) to 0.9 inches. Soil moisture is at 31% compared to 63% last year.



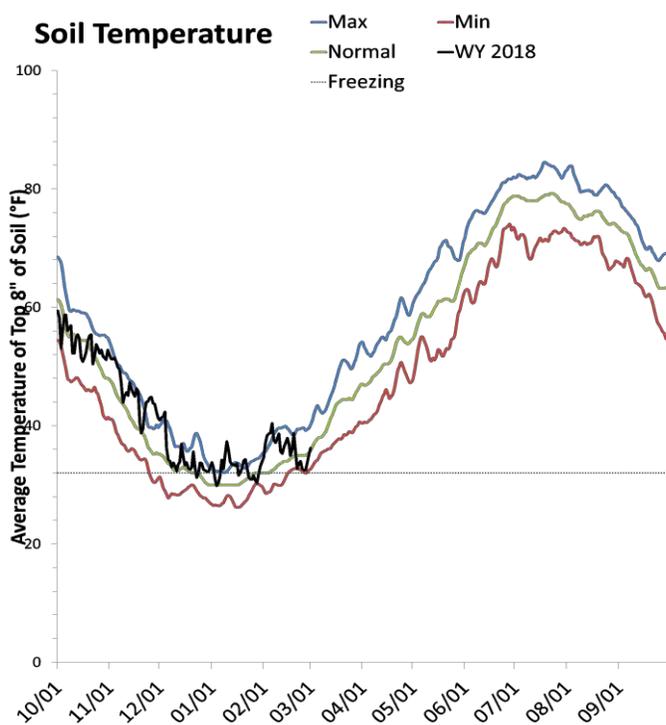
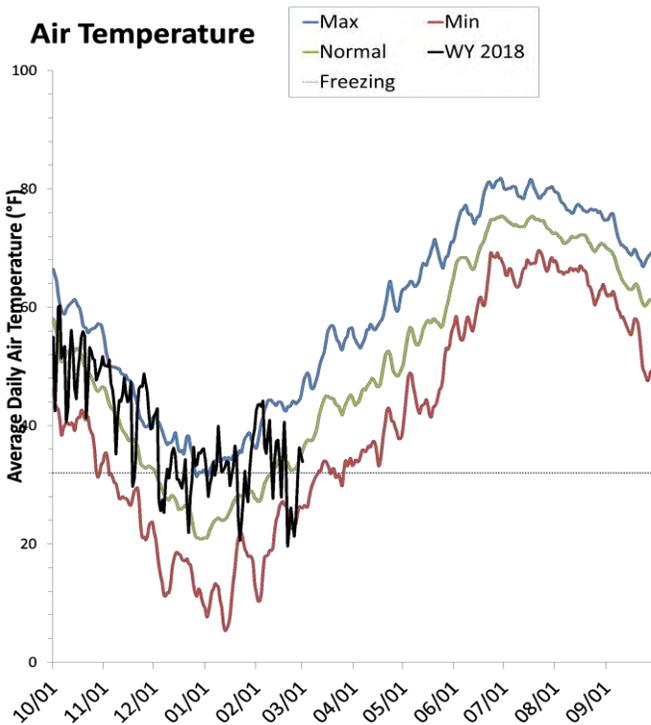
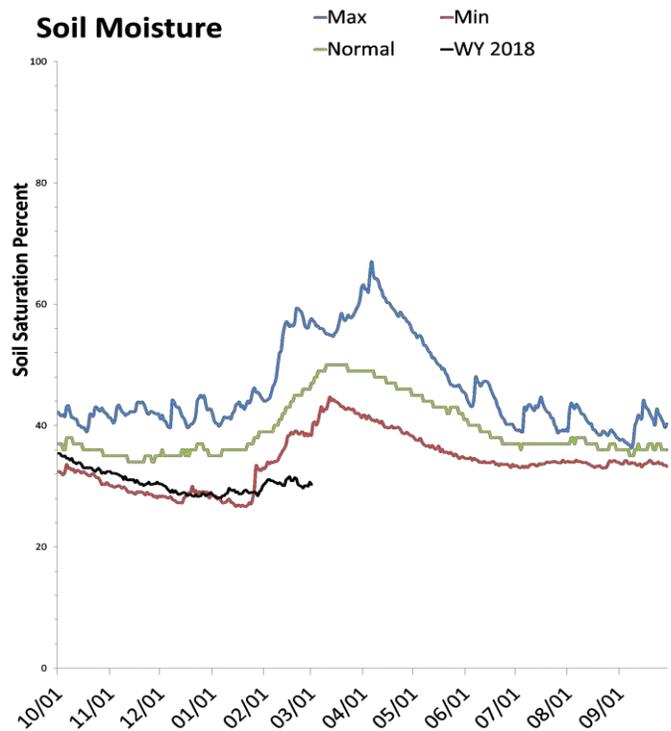
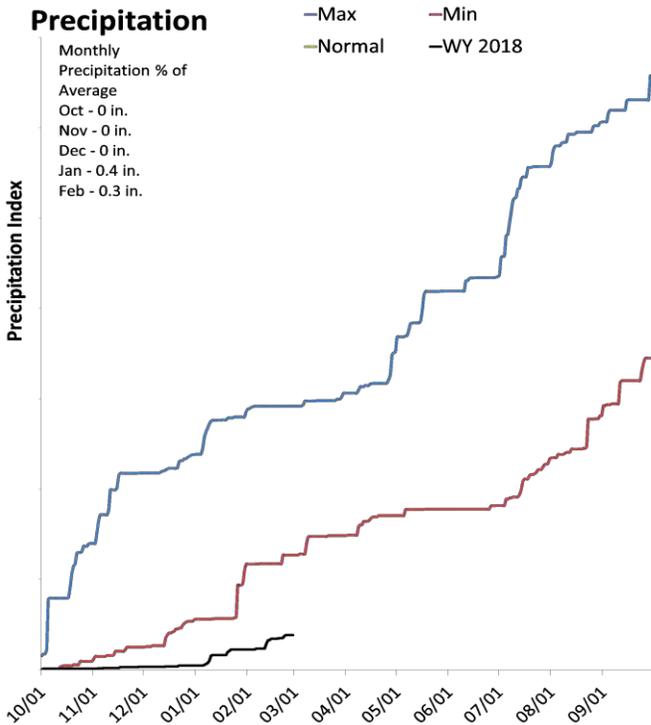
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

# Southeast

March 1, 2018

The average precipitation in February at SCAN sites within the basin was 0.3 inches, which brings the seasonal accumulation (Oct-Feb) to 0.8 inches. Soil moisture is at 31% compared to 56% last year.



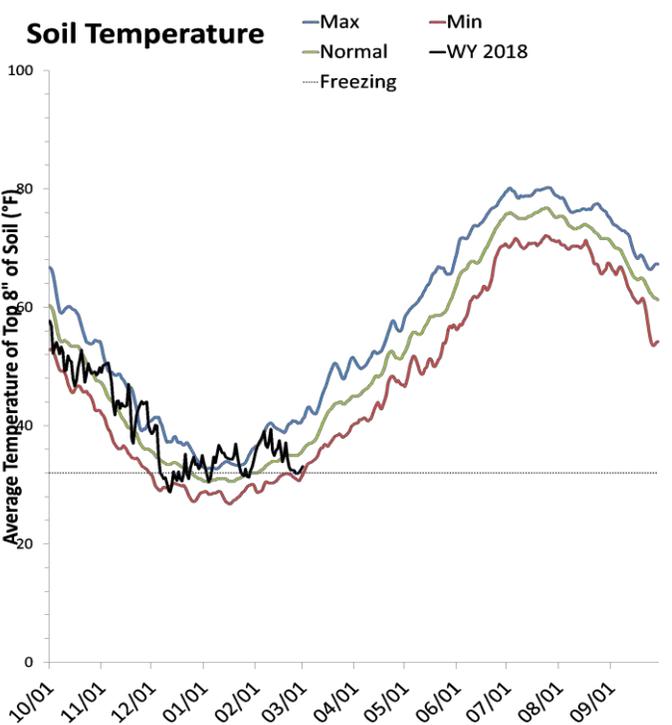
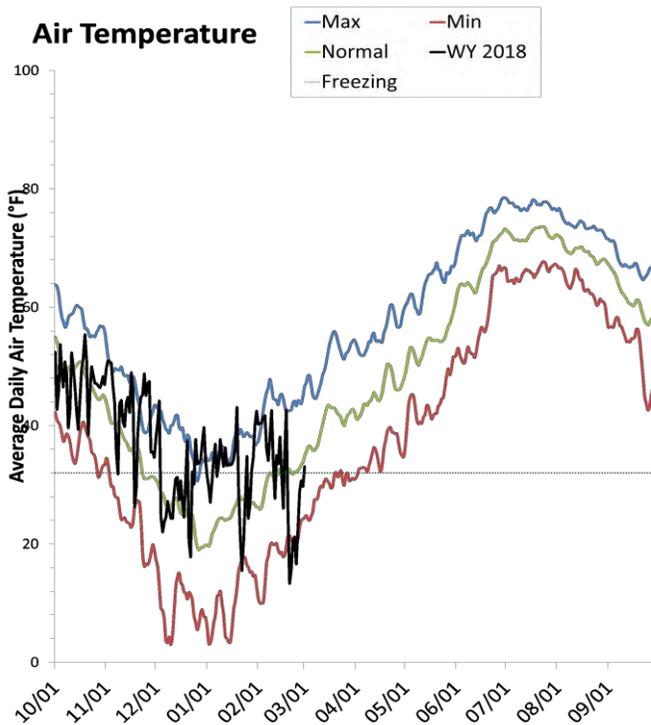
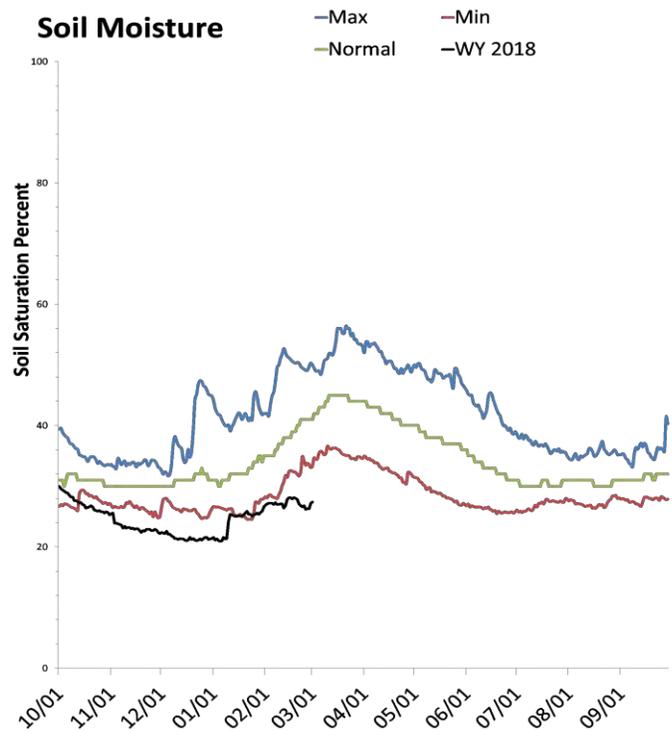
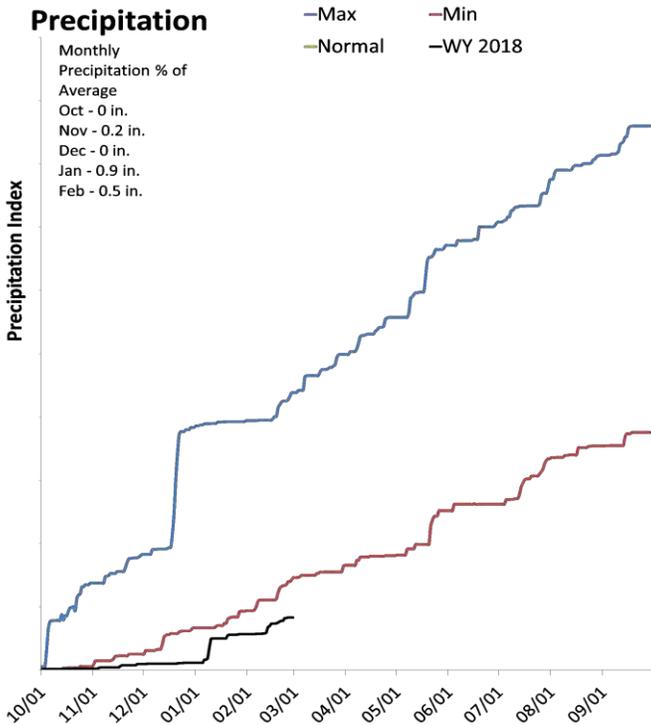
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

# South Central

March 1, 2018

The average precipitation in February at SCAN sites within the basin was 0.5 inches, which brings the seasonal accumulation (Oct-Feb) to 1.6 inches. Soil moisture is at 27% compared to 48% last year.



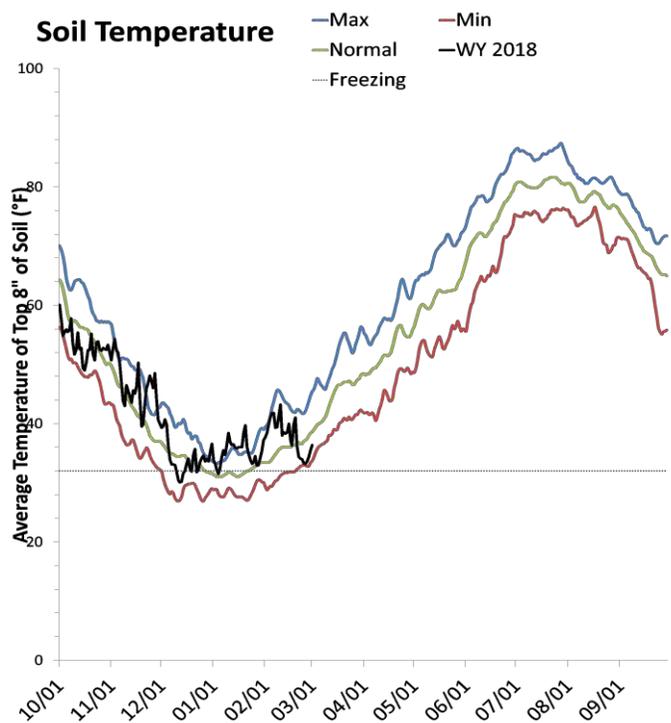
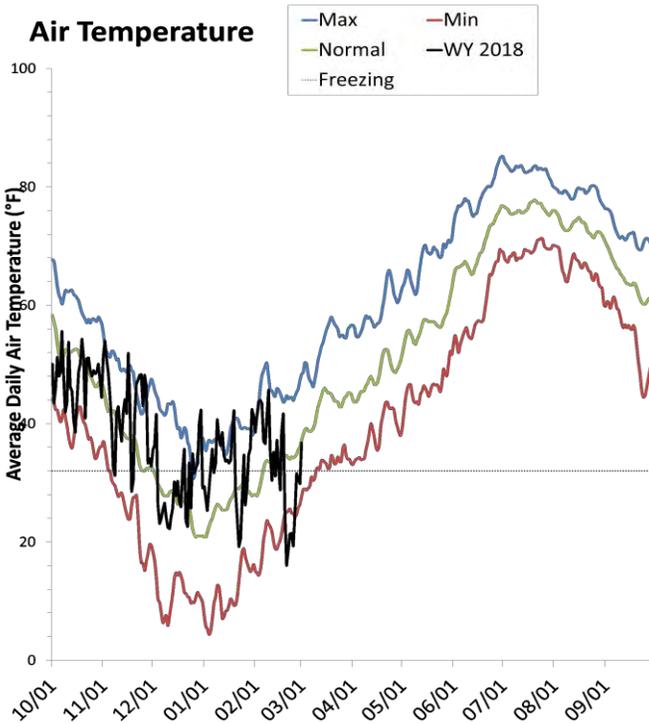
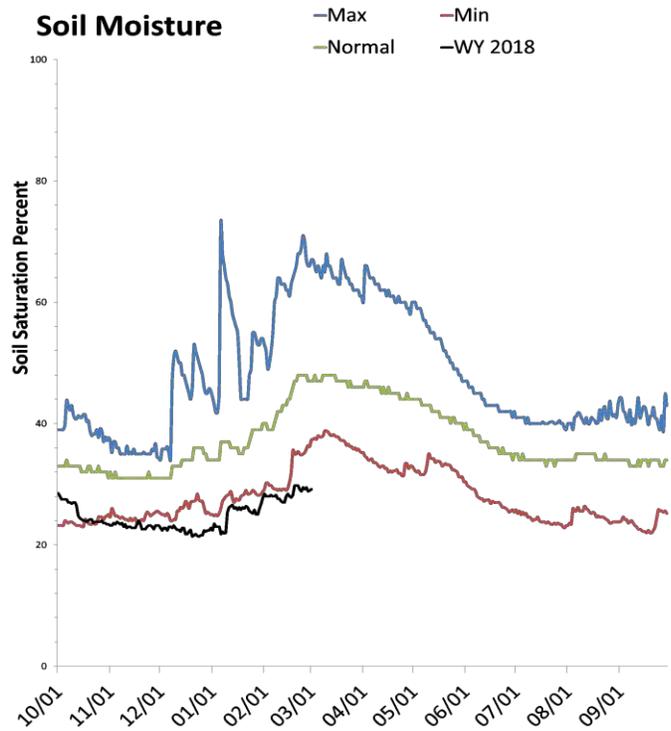
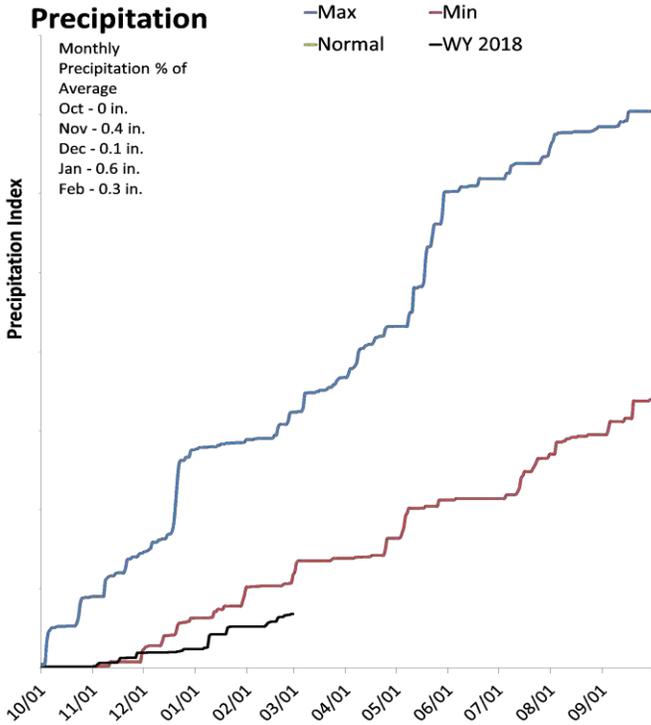
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

# Western and Dixie

March 1, 2018

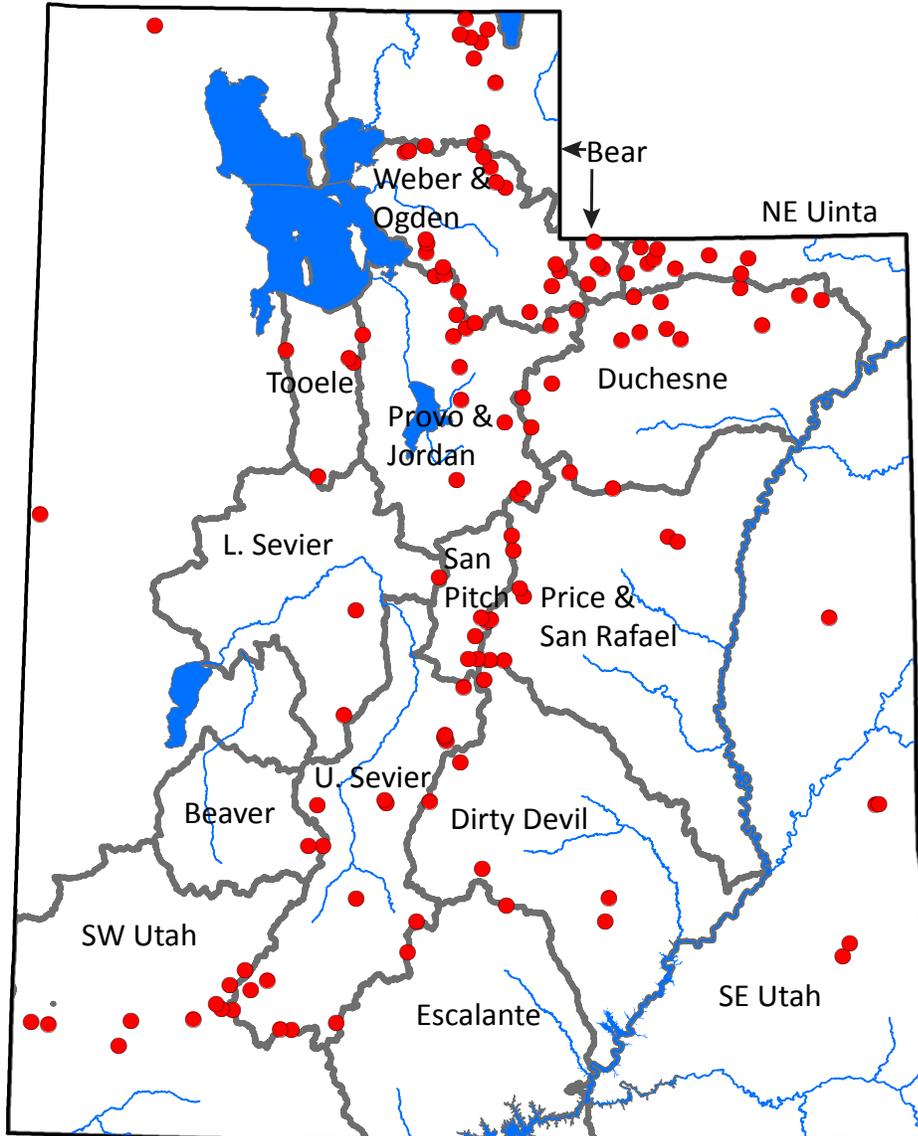
The average precipitation in February at SCAN sites within the basin was 0.3 inches, which brings the seasonal accumulation (Oct-Feb) to 1.4 inches. Soil moisture is at 28% compared to 37% last year.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

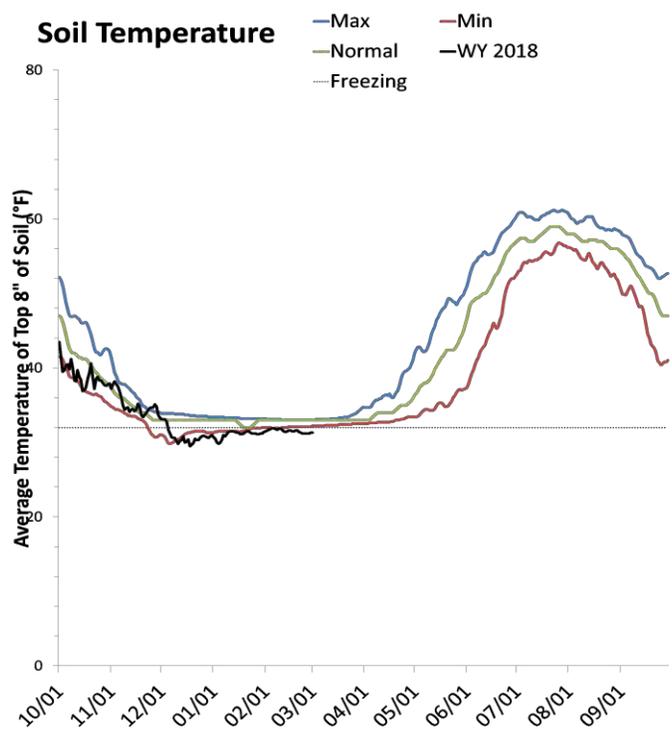
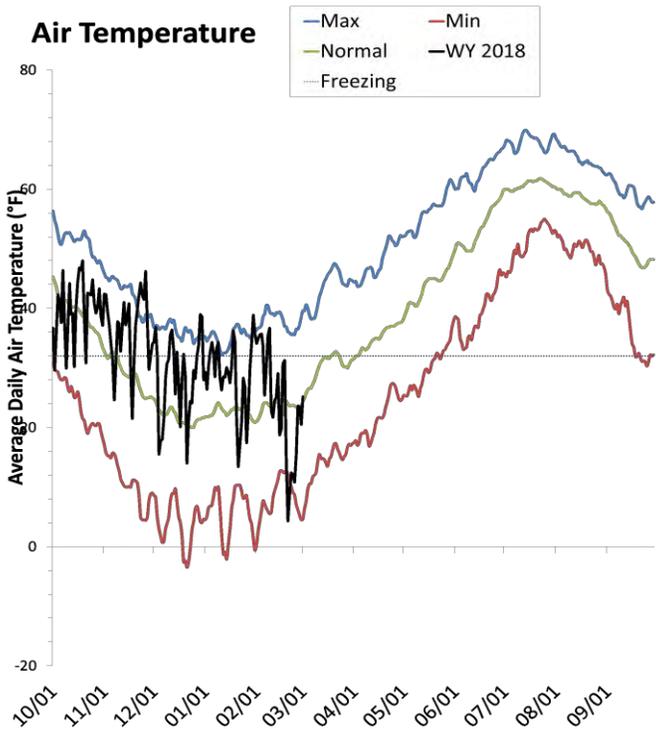
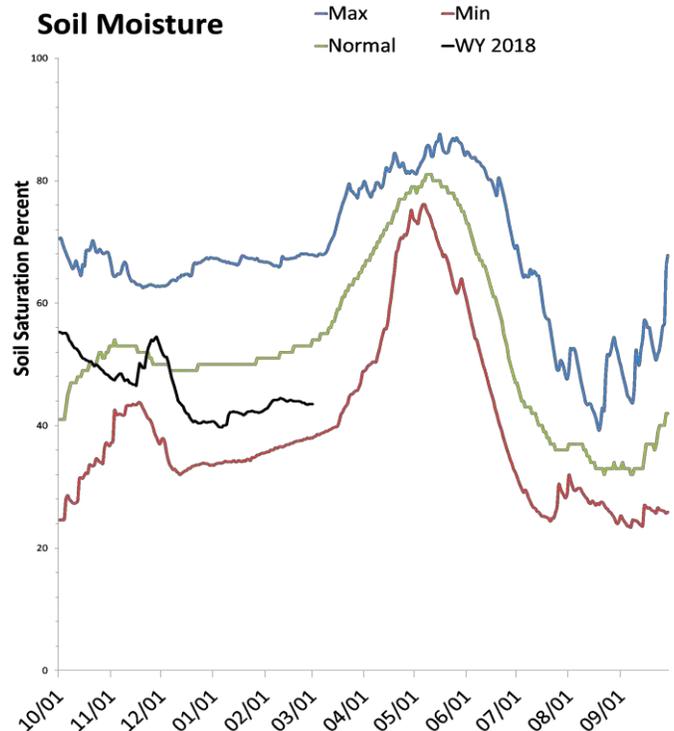
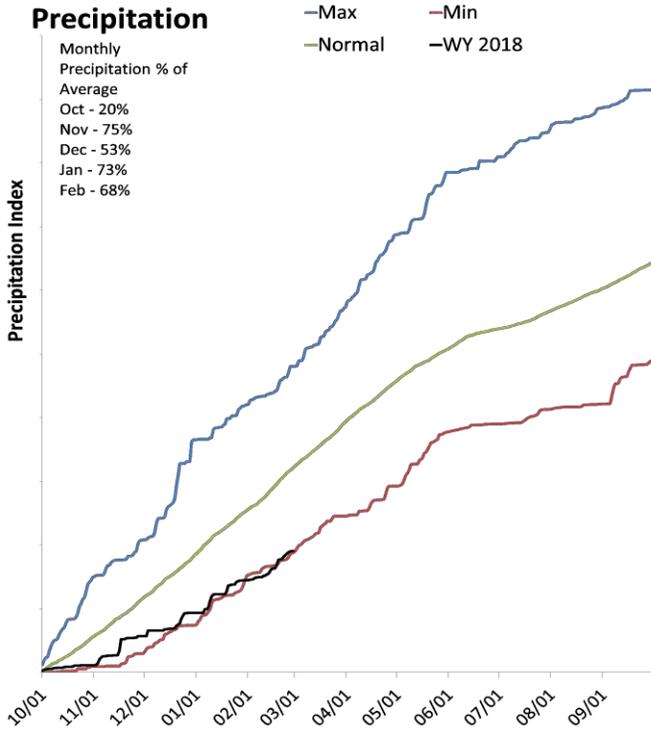
# SNOTEL portion of report



# Statewide SNOTEL

March 1, 2018

Precipitation at SNOTEL sites during February was much below average at 68%, which brings the seasonal accumulation (Oct-Feb) to 59% of average. Soil moisture is at 43% compared to 68% last year. Reservoir storage is at 75% of capacity, compared to 58% last year.



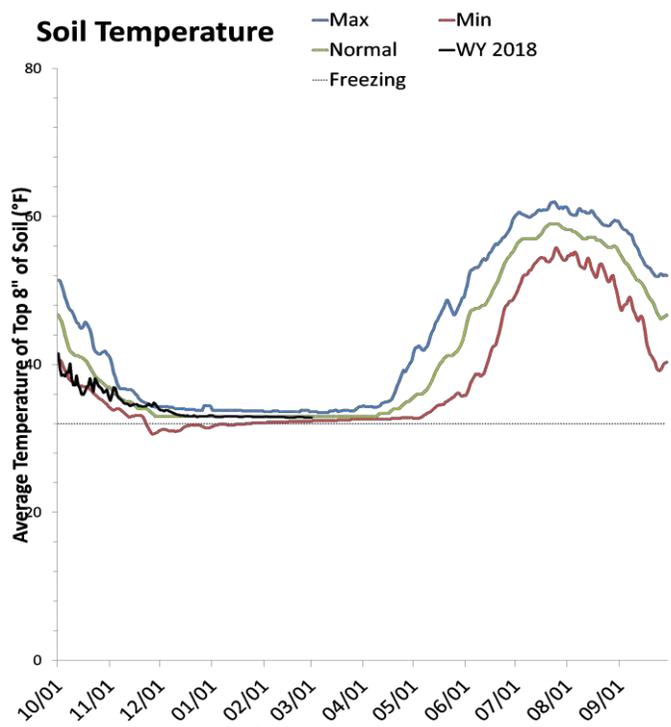
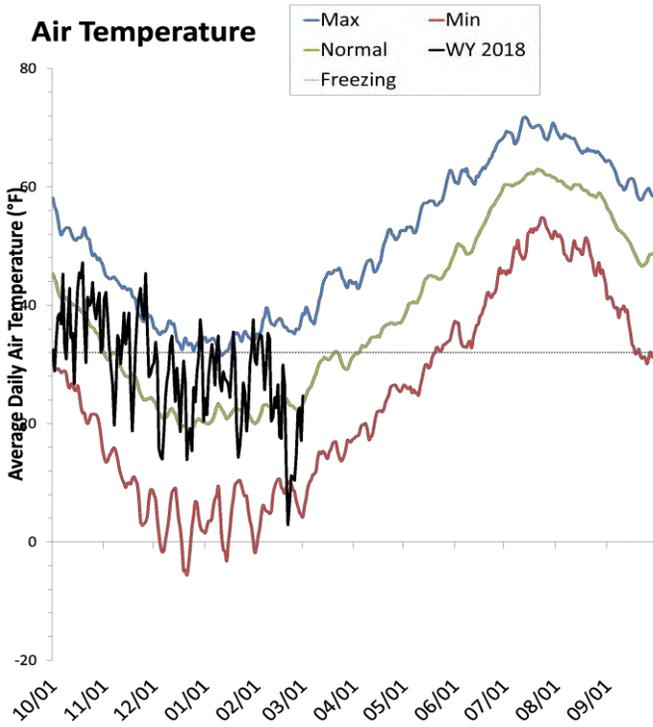
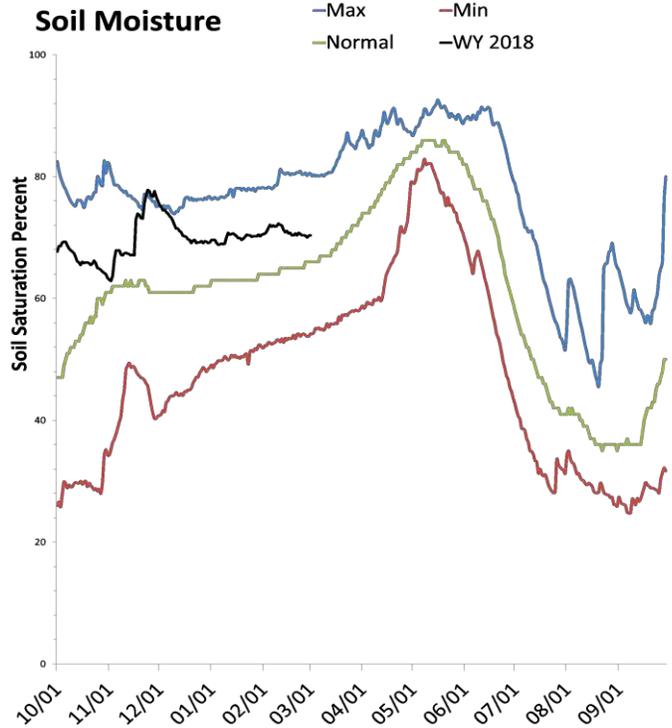
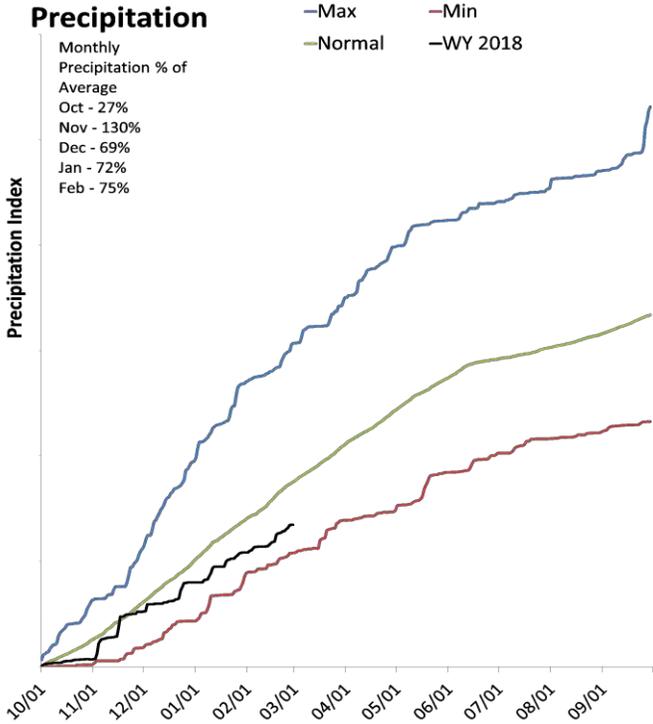
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

# Bear River Basin

March 1, 2018

Precipitation in February was below average at 76%, which brings the seasonal accumulation (Oct-Feb) to 77% of average. Soil moisture is at 70% compared to 79% last year. Reservoir storage is at 77% of capacity, compared to 45% last year. The water availability index for the Bear River is 87%, 85% for Woodruff Narrows and 70% for the Little Bear.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

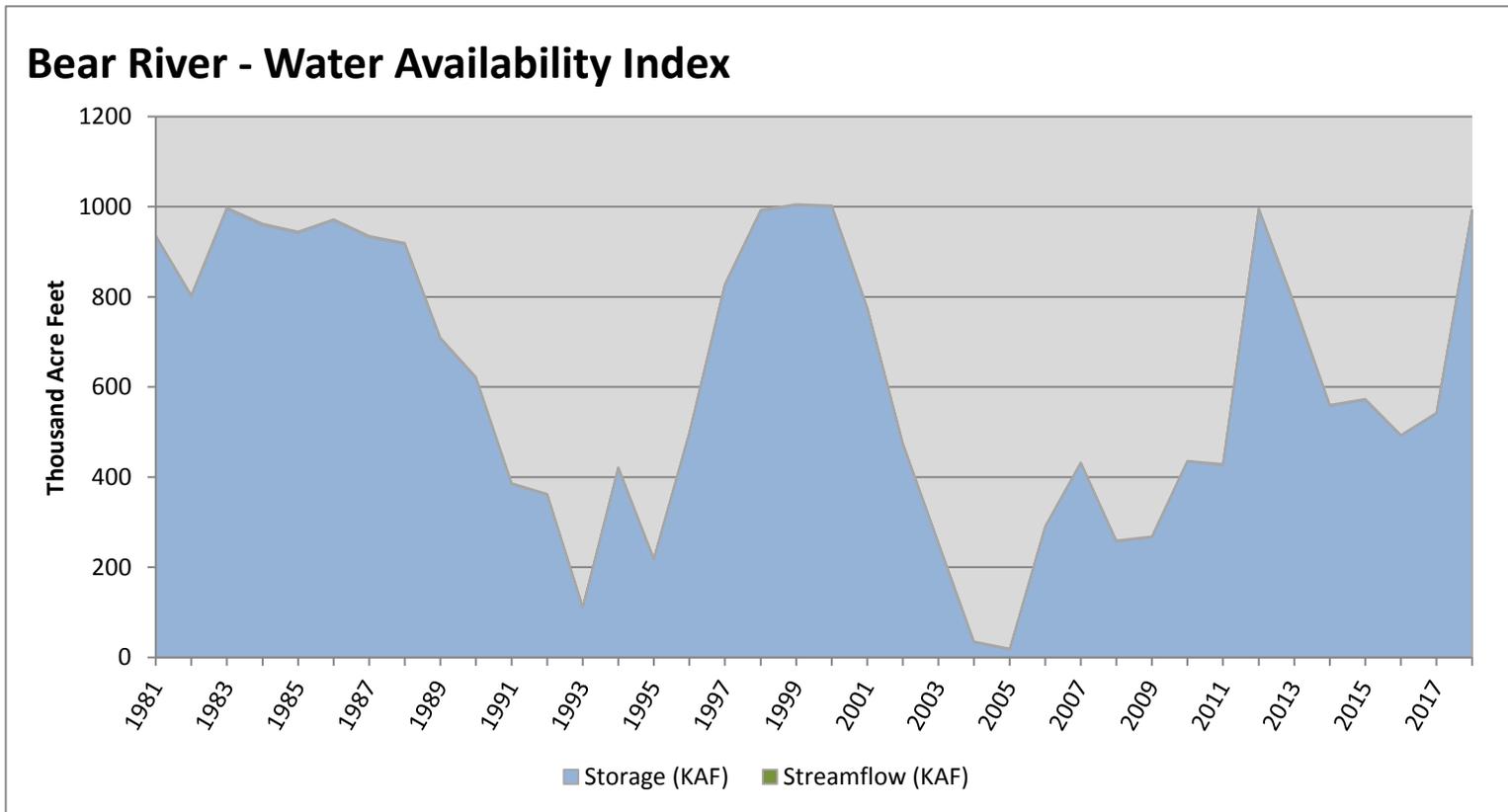
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Bear River</b>	<b>991.51</b>	<b>2.00</b>	<b>993.51</b>	<b>87</b>	<b>3.1</b>	<b>86, 98, 12, 83</b>

<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.

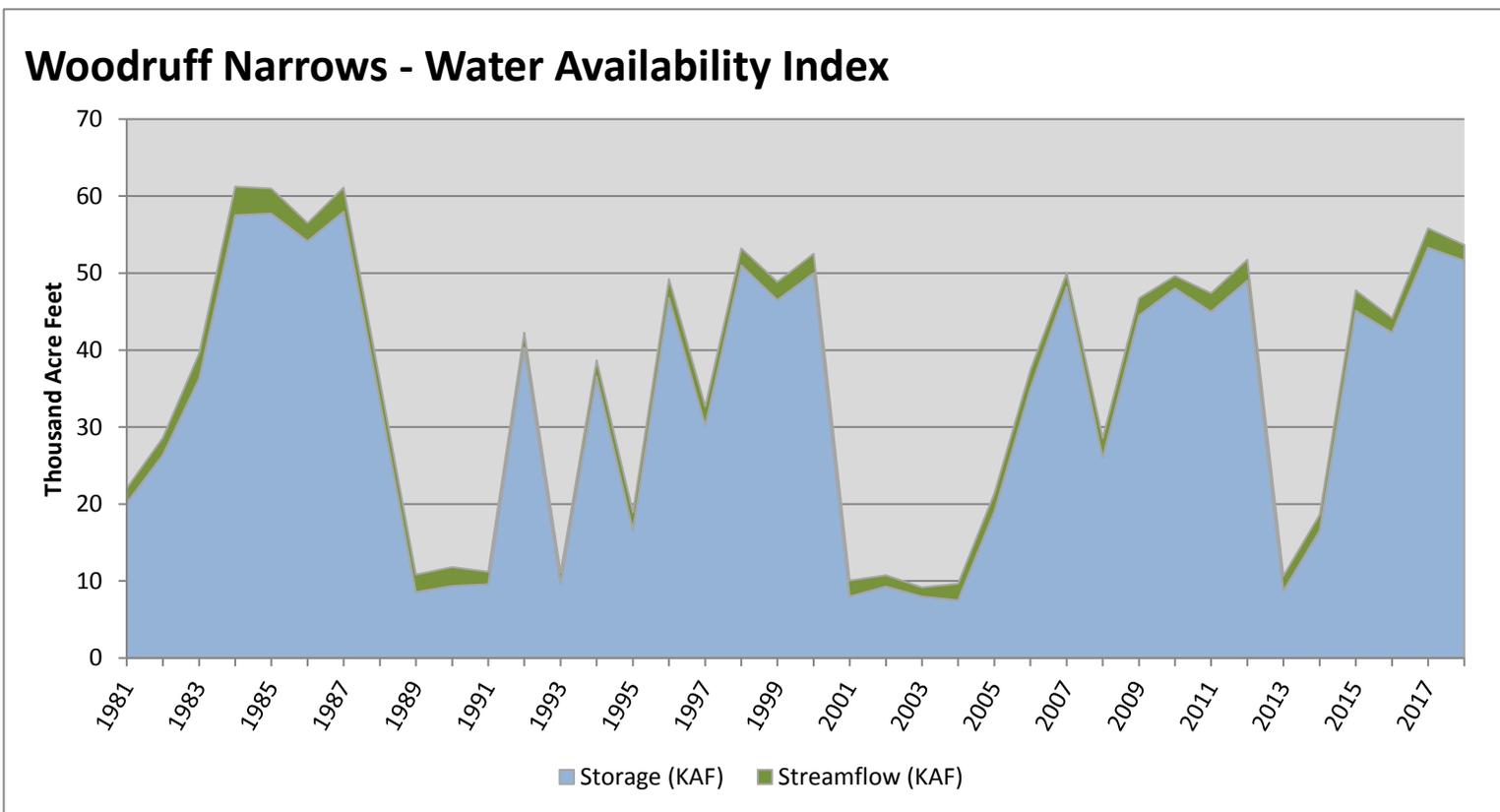


March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Woodruff Narrows</b>	<b>51.64</b>	<b>2.00</b>	<b>53.64</b>	<b>85</b>	<b>2.88</b>	<b>00, 98, 17, 86</b>

<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.

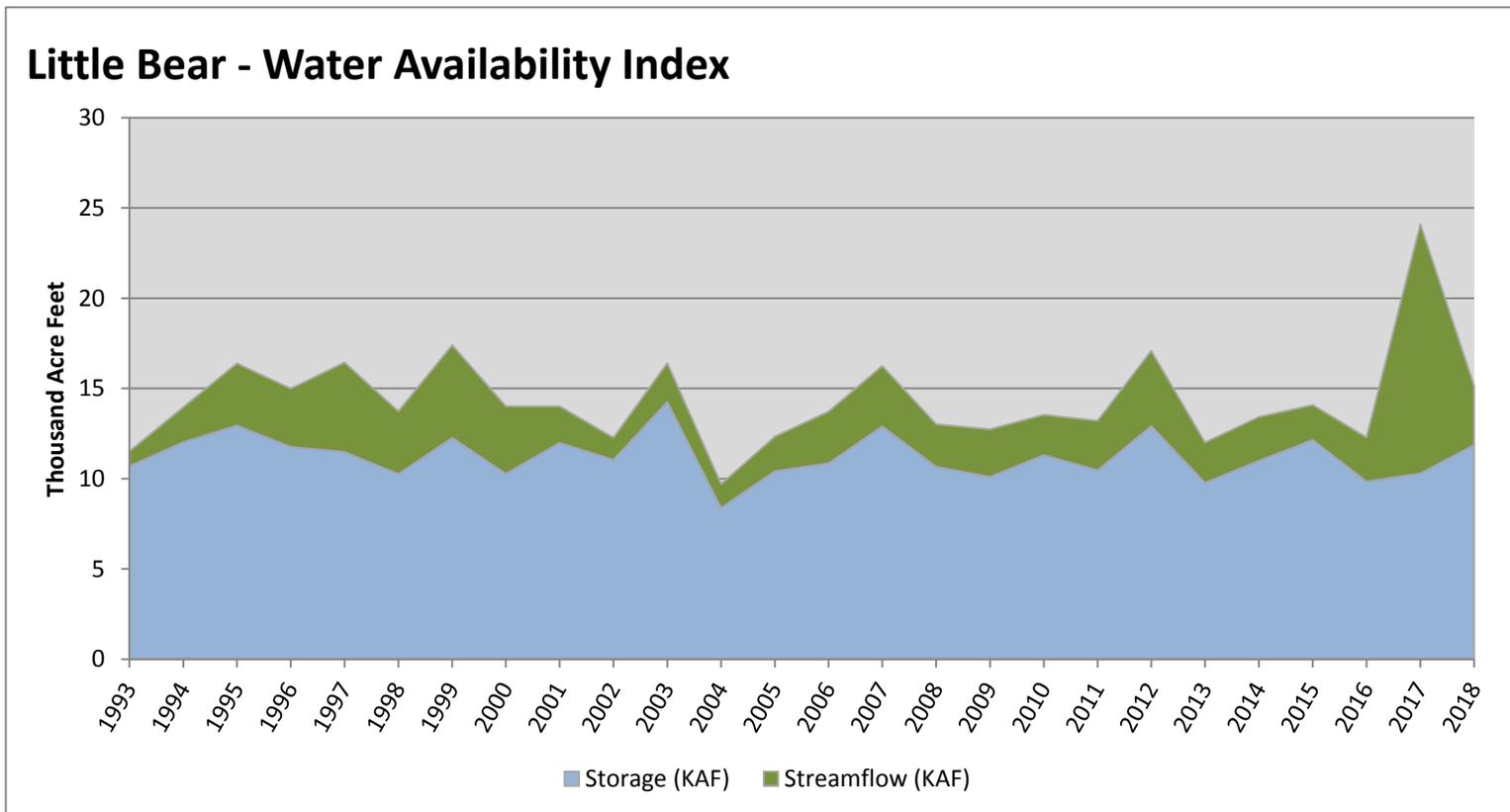


March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>*</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Little Bear</b>	<b>11.86</b>	<b>3.30</b>	<b>15.16</b>	<b>70</b>	<b>1.7</b>	<b>15, 96, 07, 95</b>

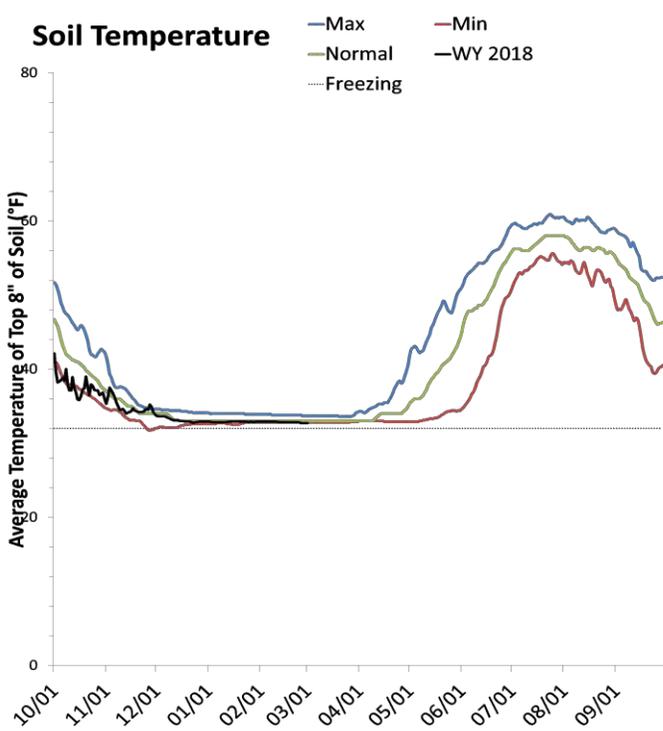
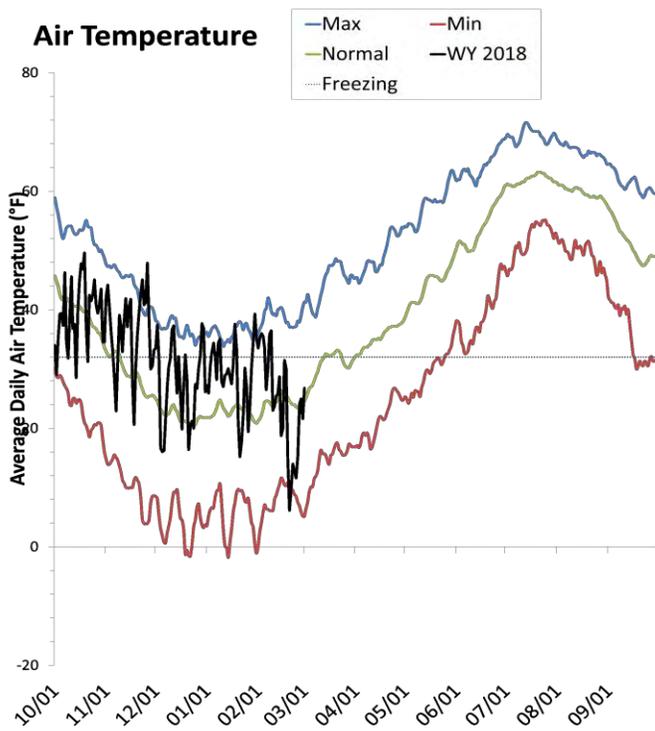
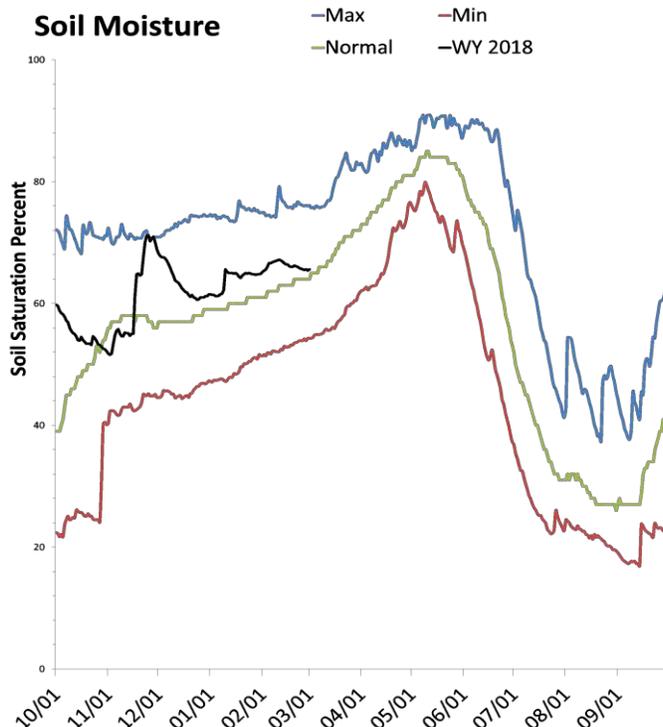
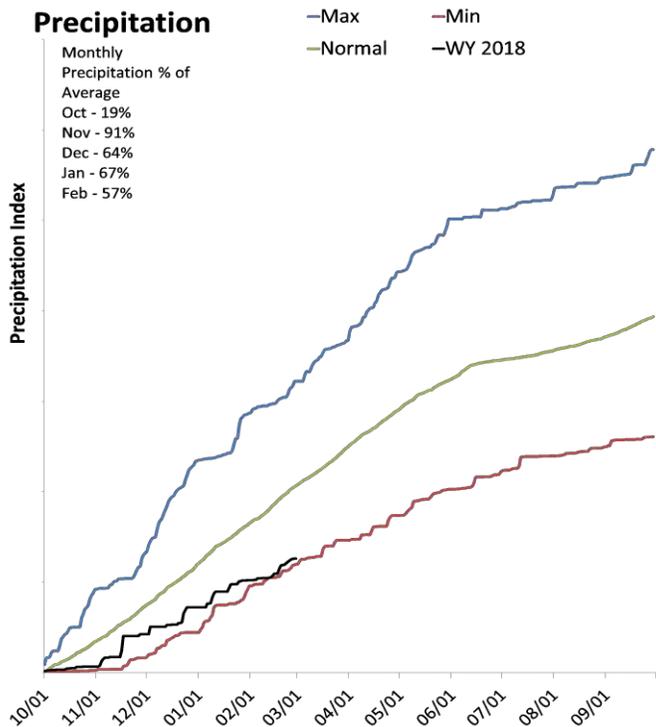
<sup>\*</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# Weber & Ogden River Basins

March 1, 2018

Precipitation in February was much below average at 57%, which brings the seasonal accumulation (Oct-Feb) to 61% of average. Soil moisture is at 65% compared to 74% last year. Reservoir storage is at 79% of capacity, compared to 71% last year. The water availability index for the Ogden River is 90% and 93% for the Weber River.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

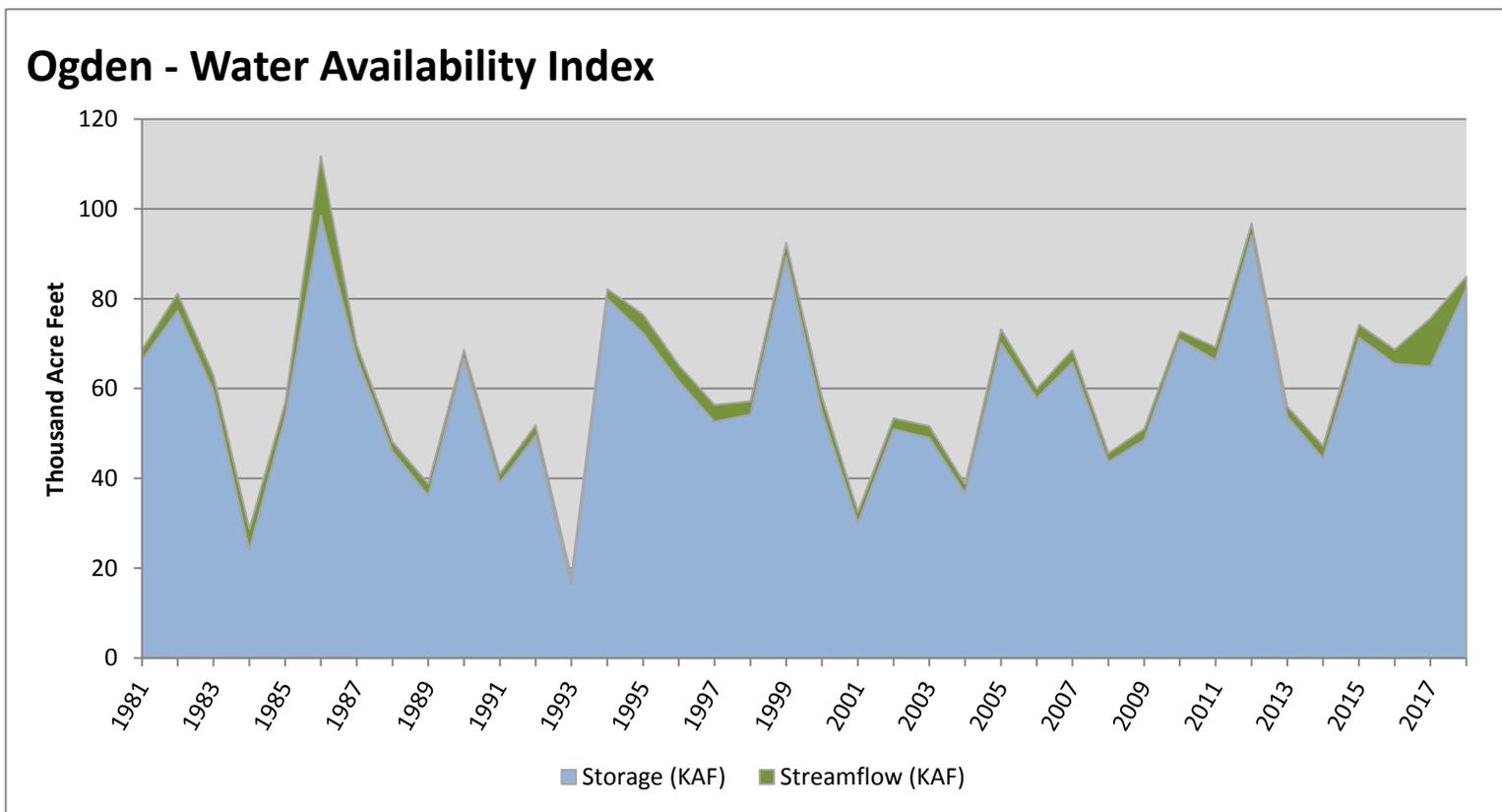
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Ogden</b>	<b>82.28</b>	<b>2.68</b>	<b>84.96</b>	<b>90</b>	<b>3.31</b>	<b>82, 94, 99, 12</b>

<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.

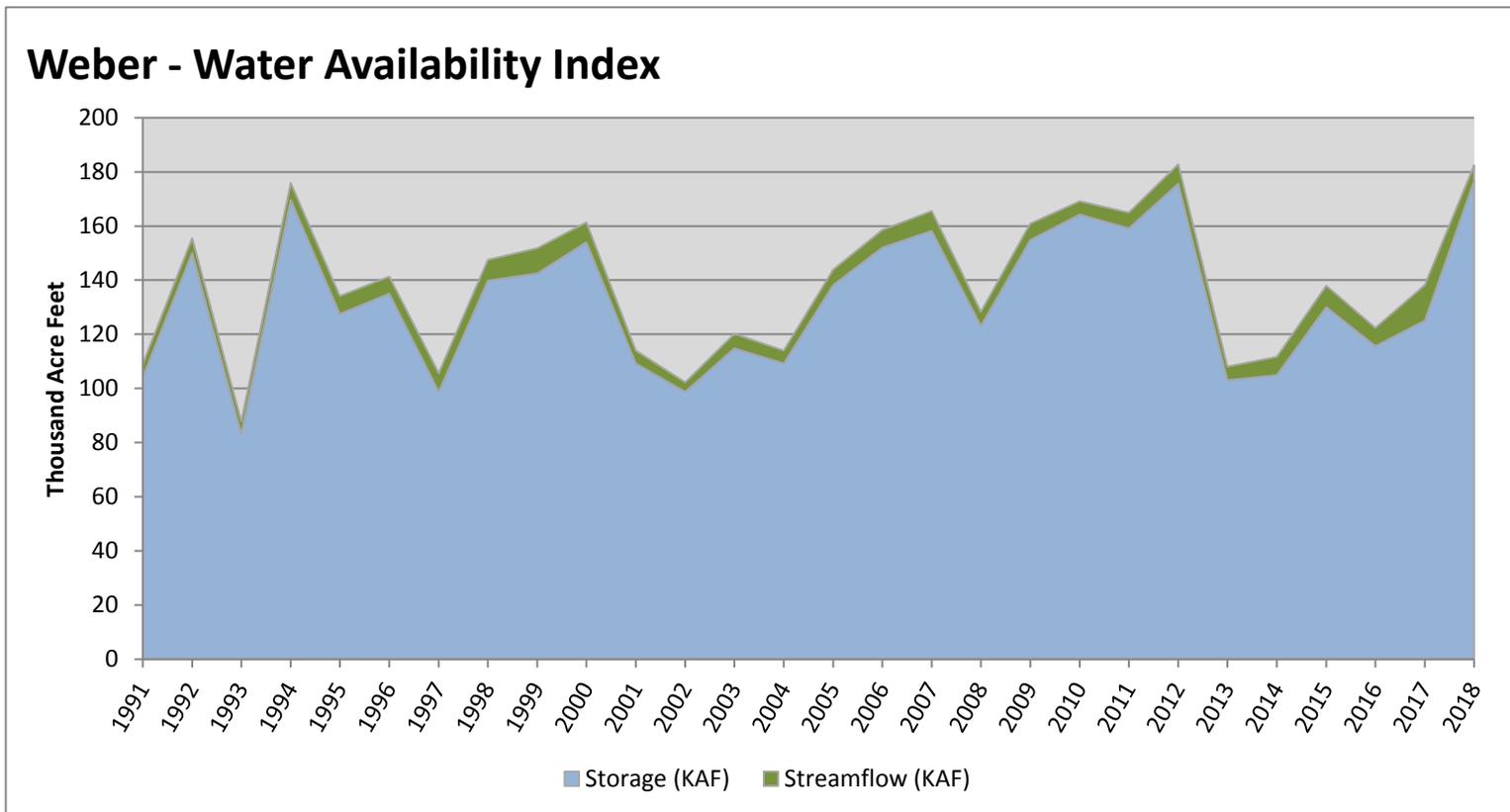


March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Weber</b>	<b>176.58</b>	<b>5.78</b>	<b>182.36</b>	<b>93</b>	<b>3.59</b>	<b>12, 94, 10, 07</b>

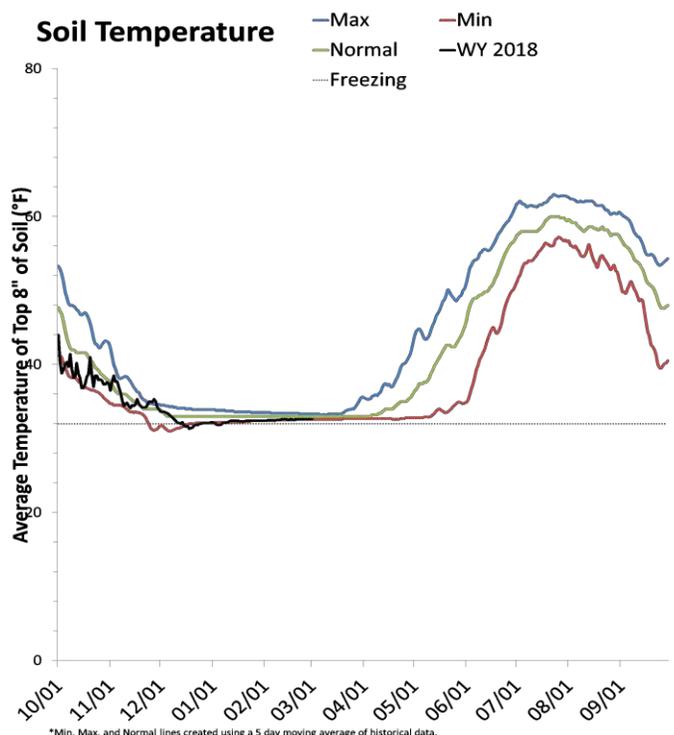
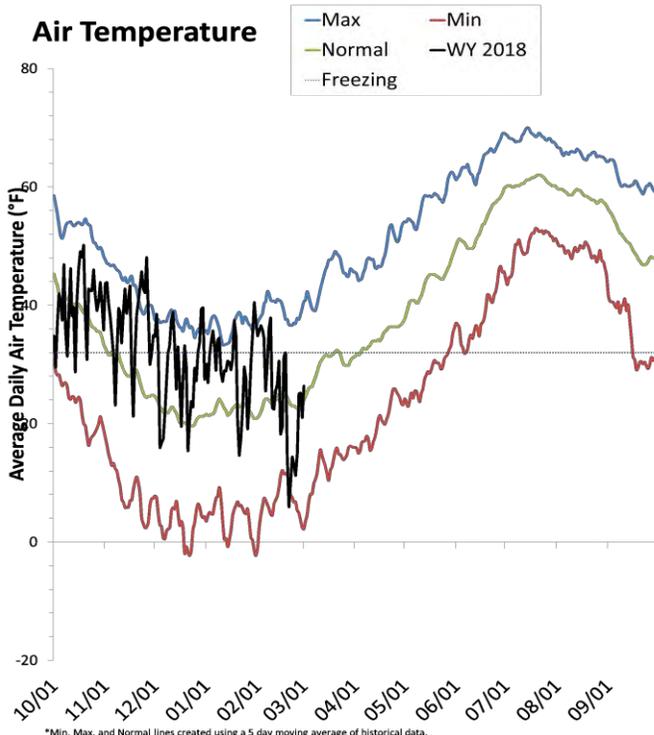
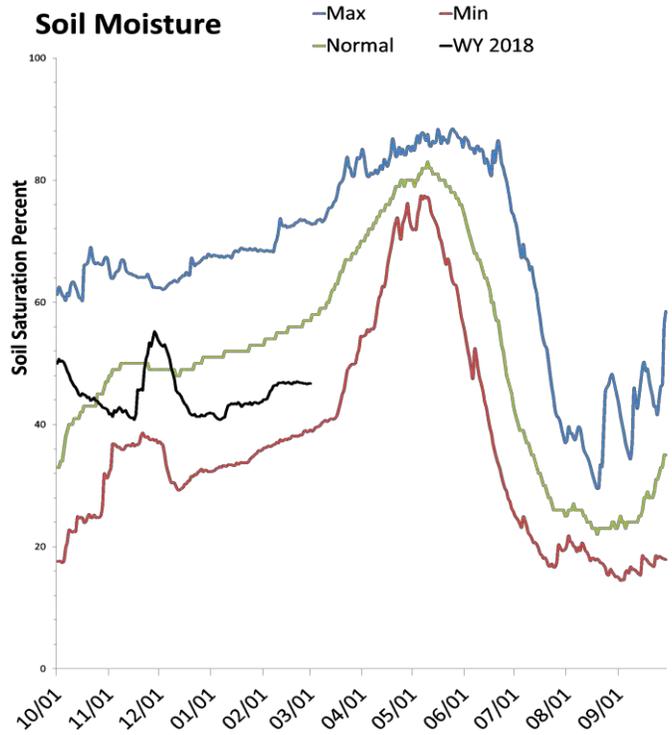
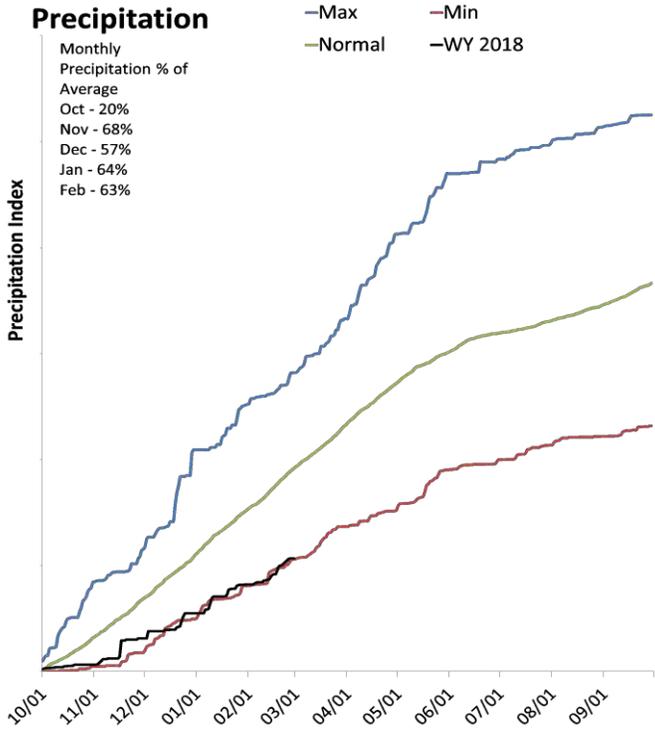
<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# Provo & Jordan River Basins

March 1, 2018

Precipitation in February was much below average at 63%, which brings the seasonal accumulation (Oct-Feb) to 56% of average. Soil moisture is at 47% compared to 74% last year. Reservoir storage is at 79% of capacity, compared to 64% last year. The water availability index for the Provo River is 88%.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

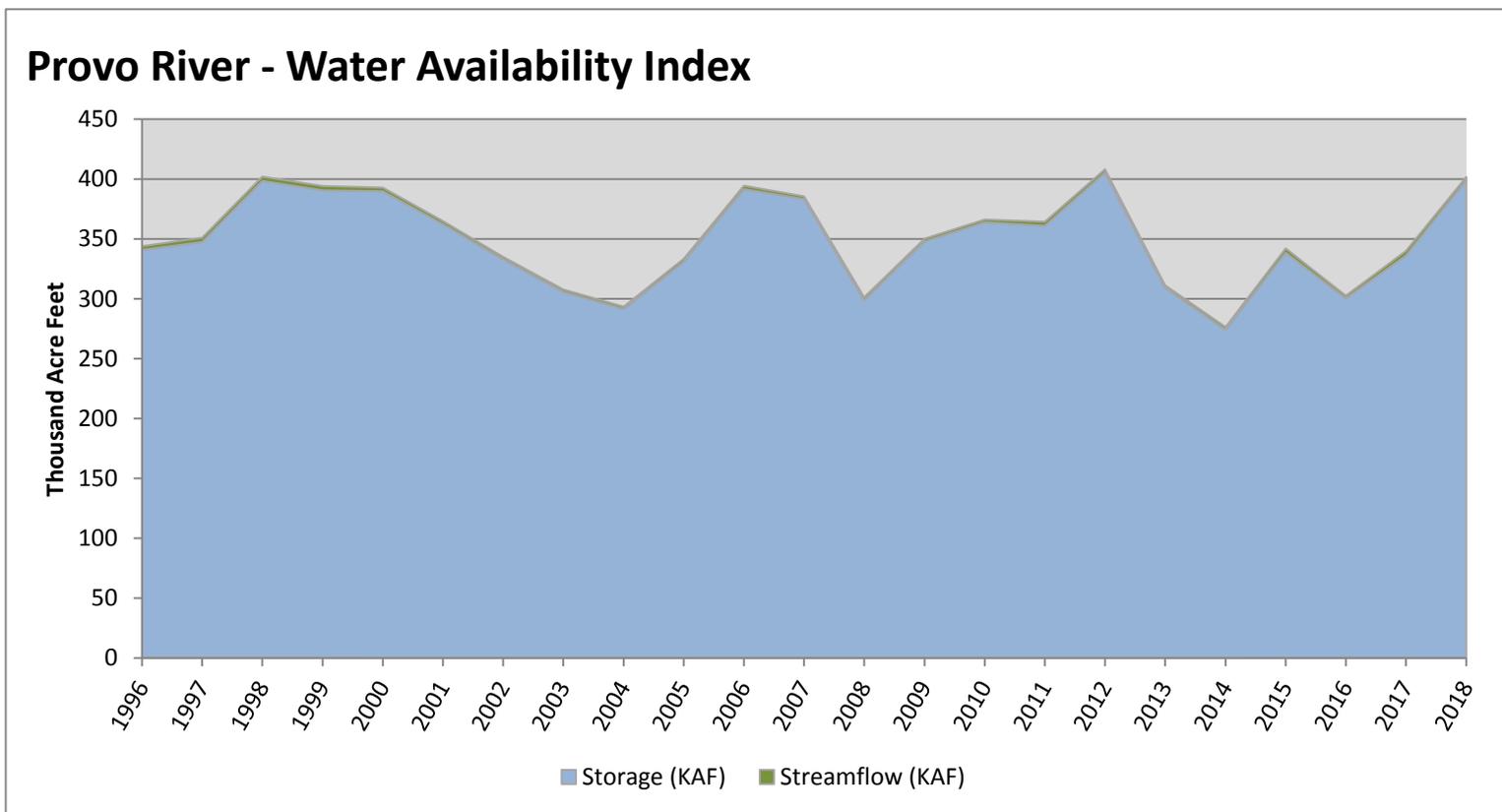
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Provo River</b>	<b>398.81</b>	<b>2.94</b>	<b>401.75</b>	<b>88</b>	<b>3.13</b>	<b>99, 06, 98, 12</b>

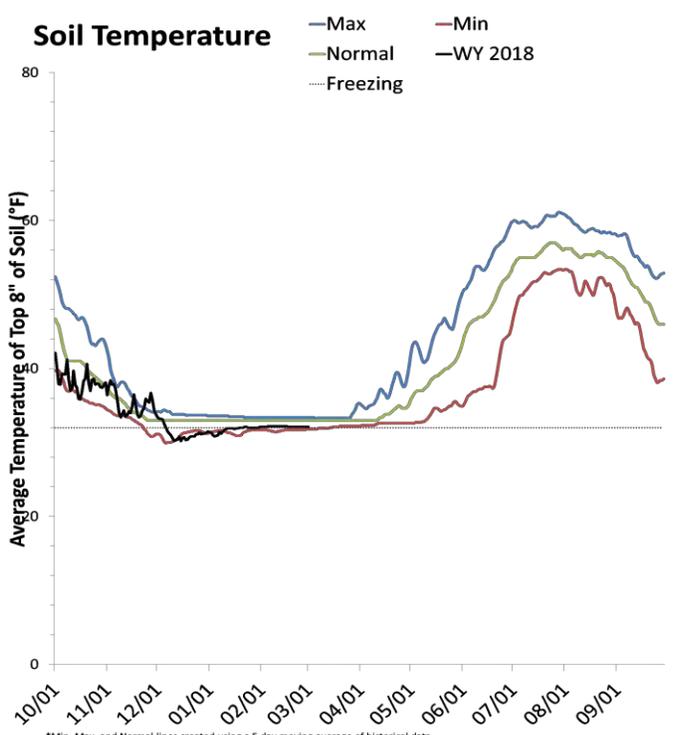
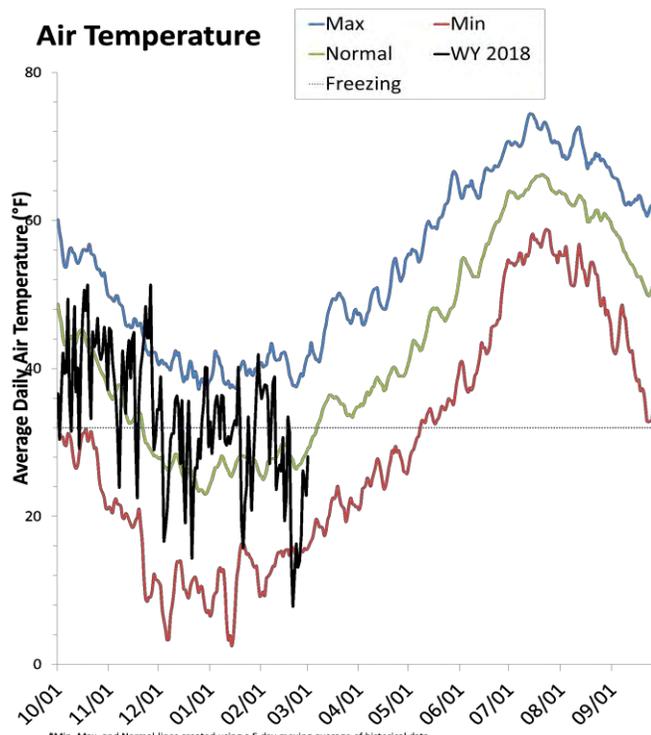
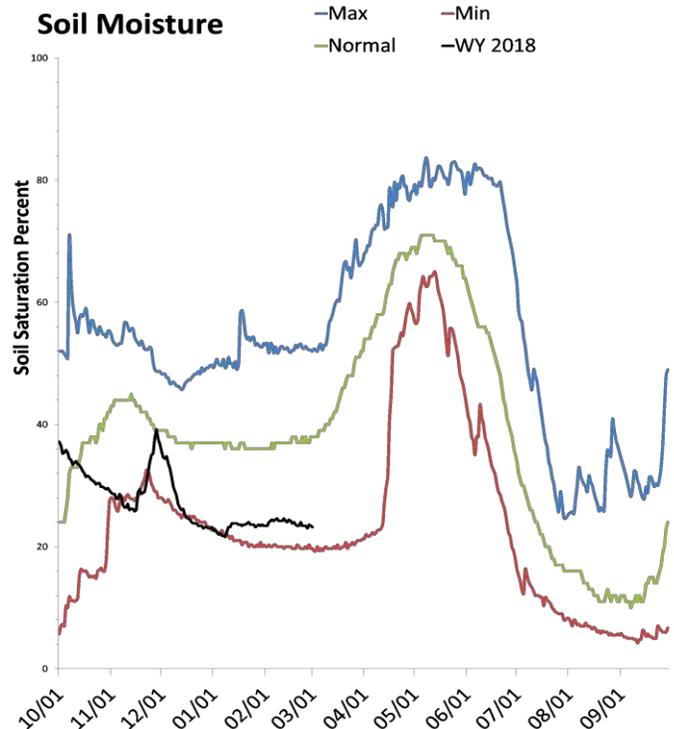
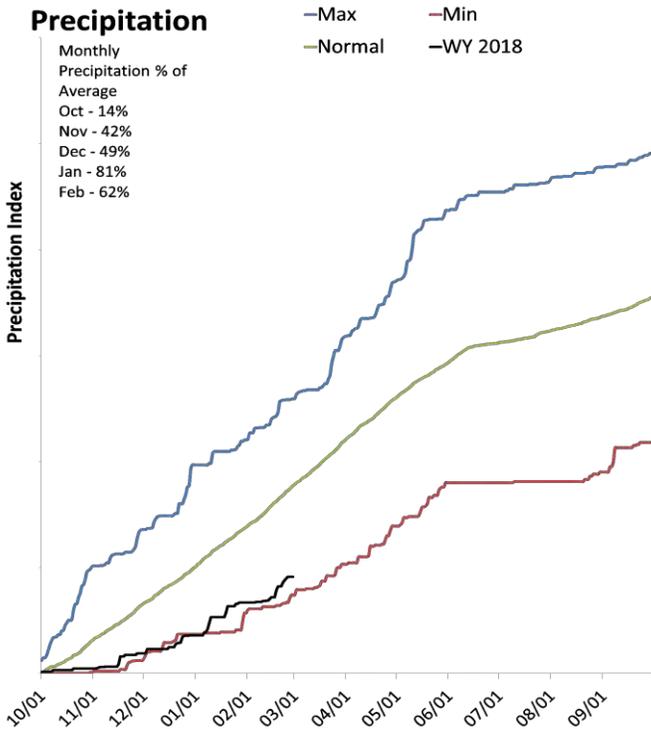
<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# Tooele Valley & West Desert Basins

March 1, 2018

Precipitation in February was much below average at 62%, which brings the seasonal accumulation (Oct-Feb) to 51% of average. Soil moisture is at 23% compared to 52% last year. Reservoir storage is at 75% of capacity, compared to 43% last year.



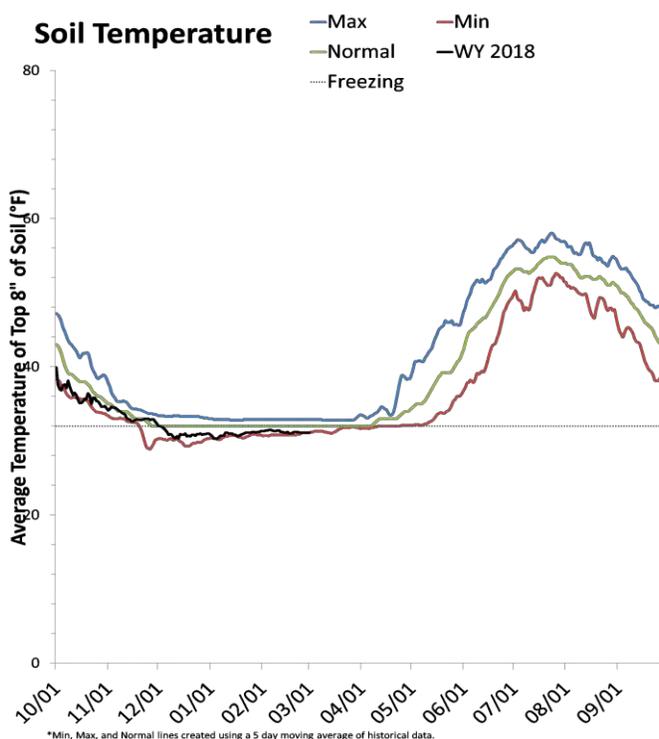
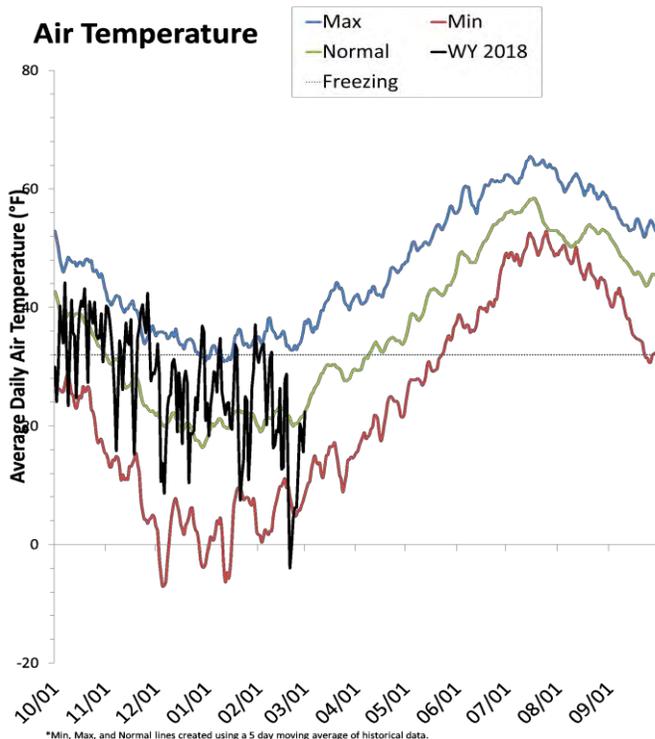
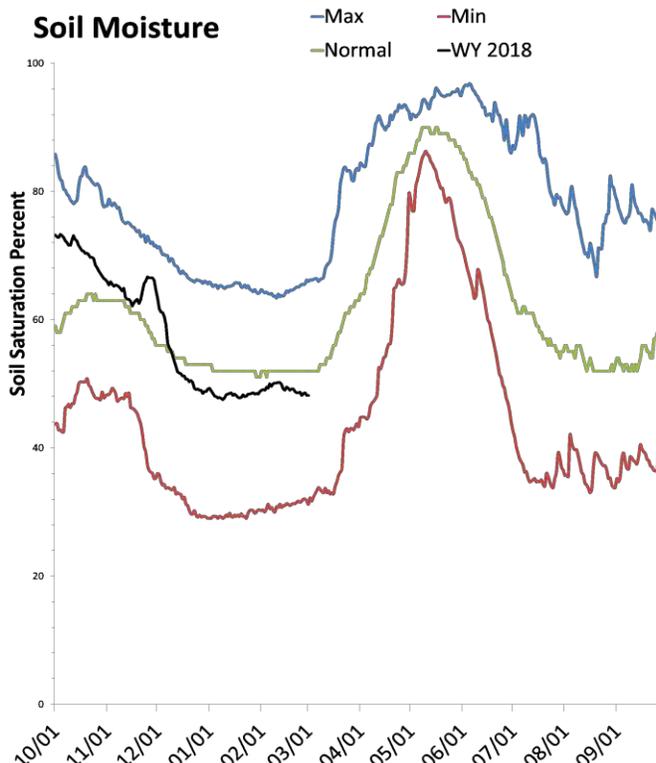
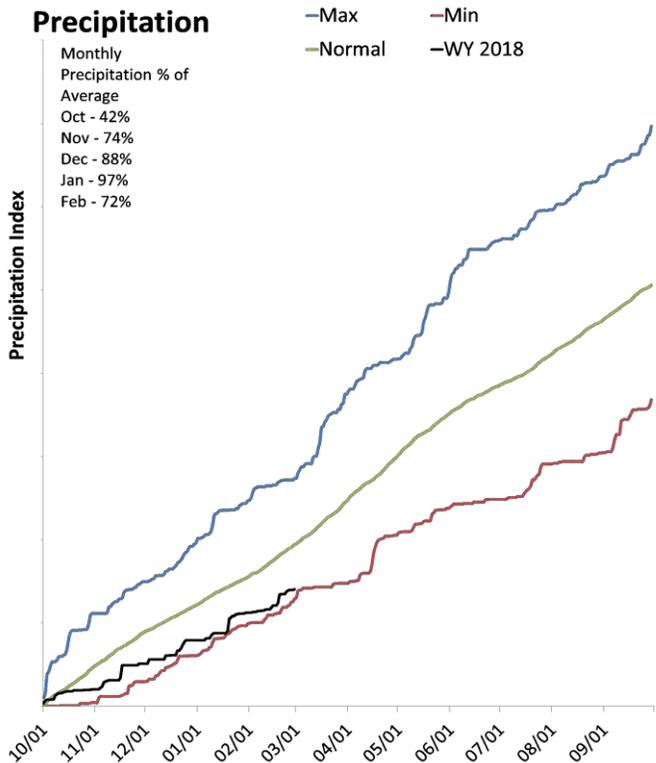
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

# Northeastern Uinta Basin

March 1, 2018

Precipitation in February was below average at 71%, which brings the seasonal accumulation (Oct-Feb) to 72% of average. Soil moisture is at 46% compared to 66% last year. Reservoir storage is at 85% of capacity, compared to 82% last year. The water availability index for Blacks Fork is 58% and 63% for Smiths Creek.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

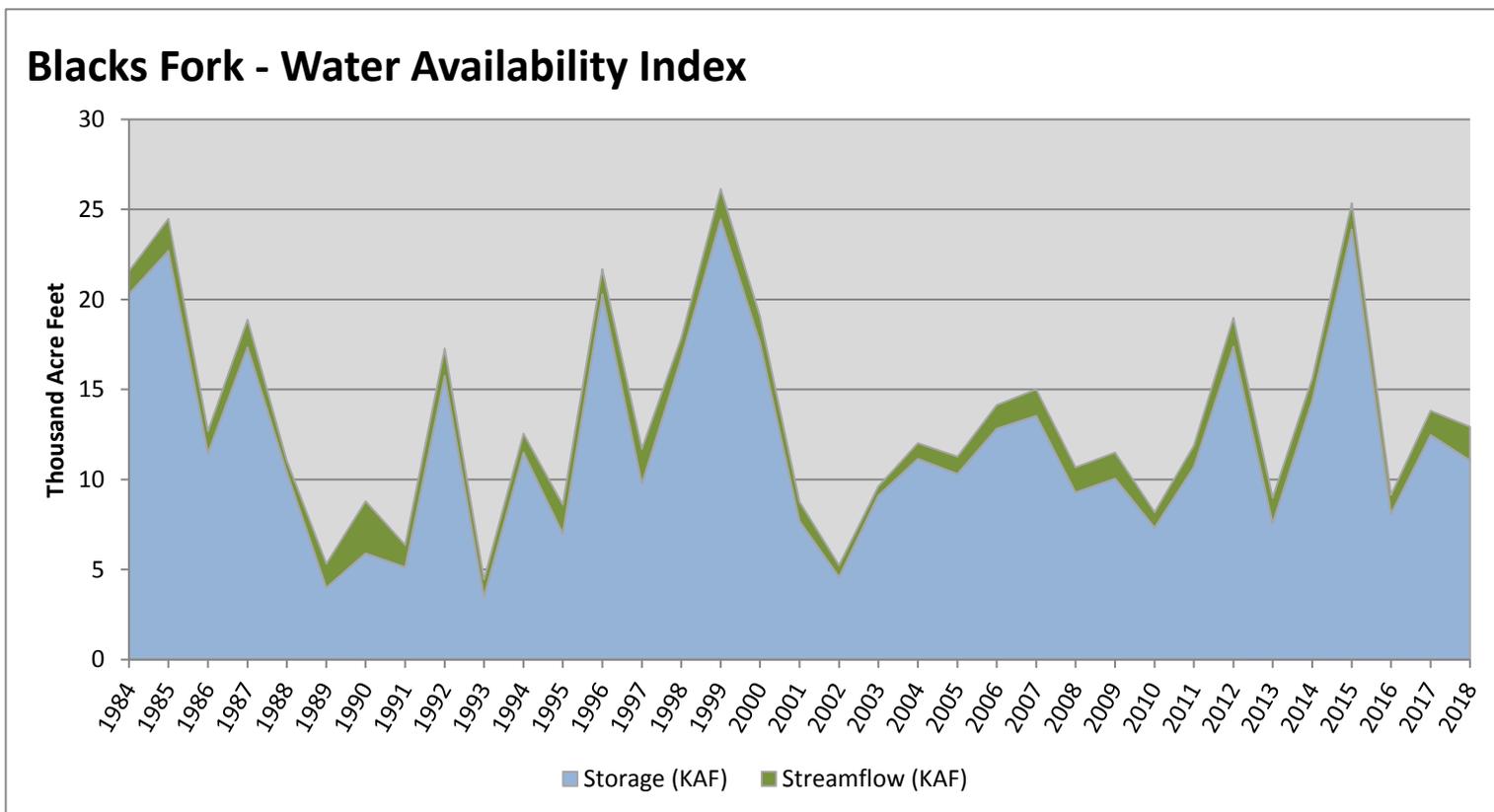
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Blacks Fork</b>	<b>11.07</b>	<b>1.86</b>	<b>12.93</b>	<b>58</b>	<b>0.69</b>	<b>94, 86, 17, 06</b>

<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.

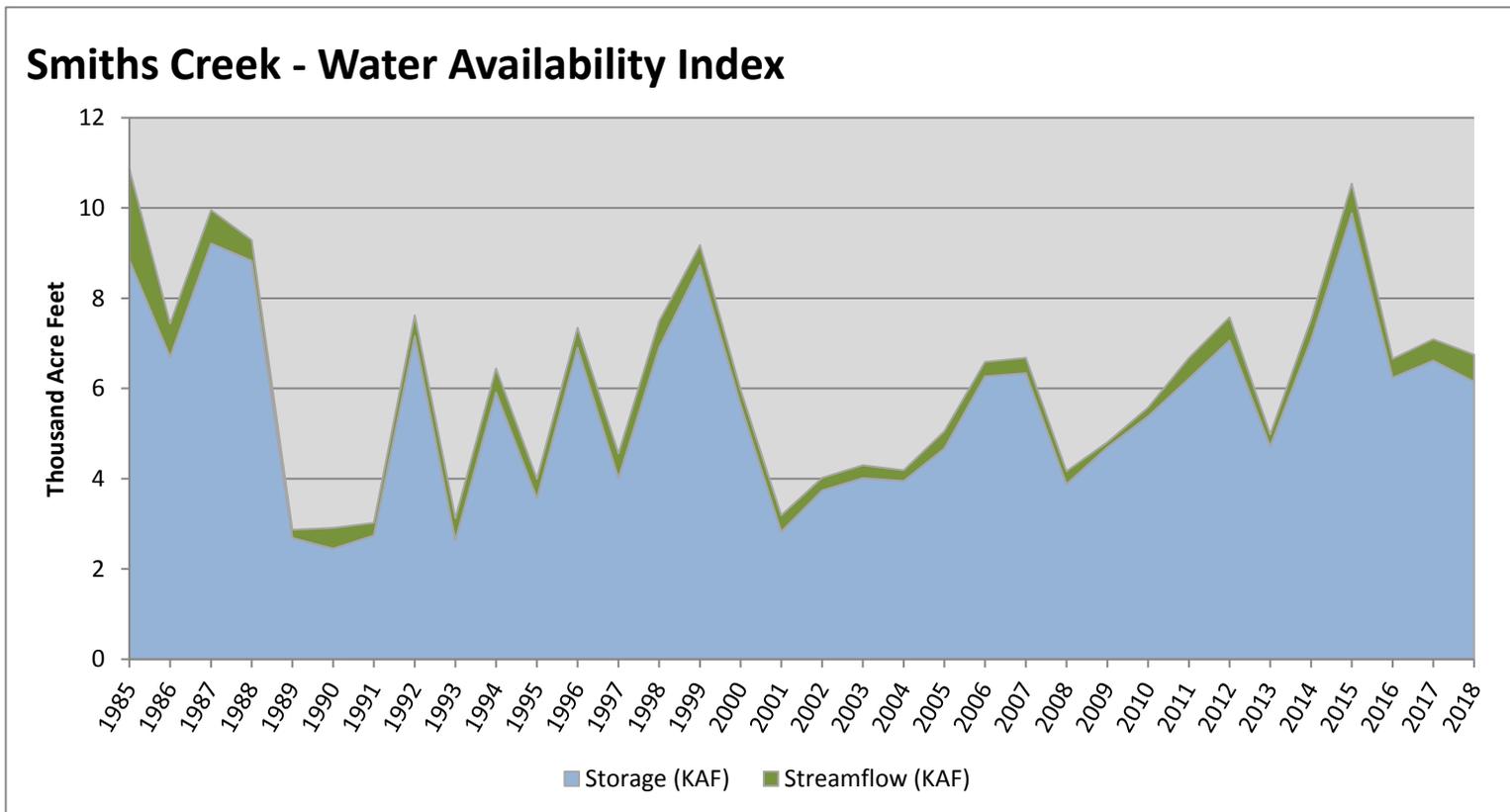


March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Smiths Creek</b>	<b>6.15</b>	<b>0.60</b>	<b>6.75</b>	<b>63</b>	<b>1.07</b>	<b>07, 11, 17, 96</b>

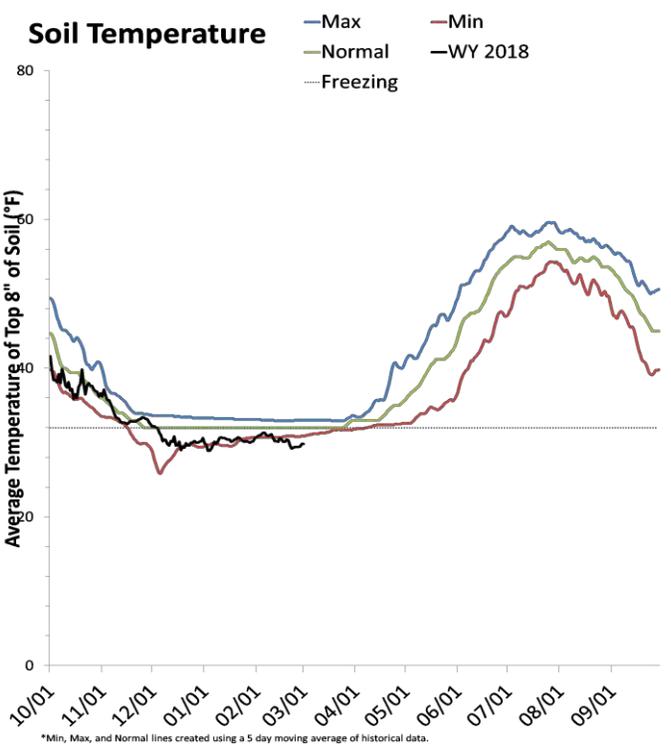
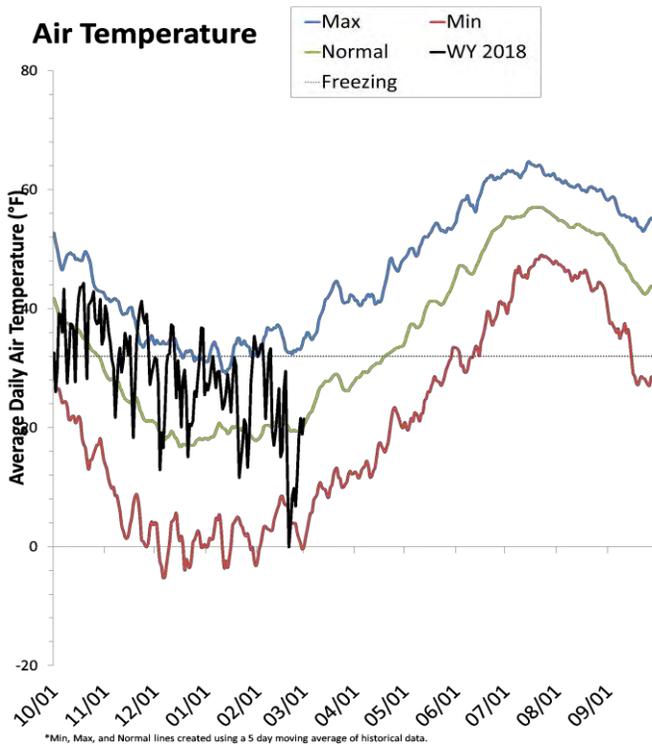
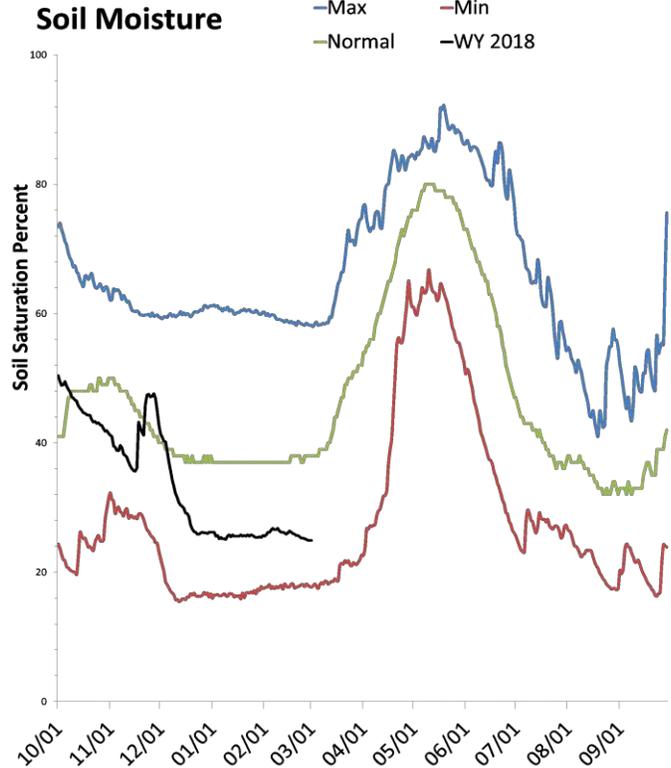
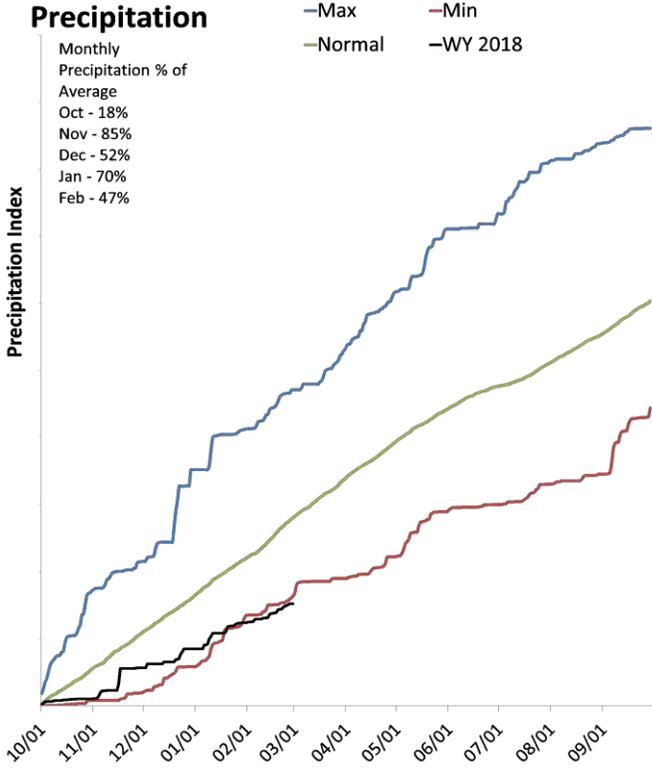
<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# Duchesne River Basin

March 1, 2018

Precipitation in February was much below average at 47%, which brings the seasonal accumulation (Oct-Feb) to 54% of average. Soil moisture is at 25% compared to 59% last year. Reservoir storage is at 84% of capacity, compared to 71% last year. The water availability index for the Western Uintas is 91% and 38% for the Eastern Uintas.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

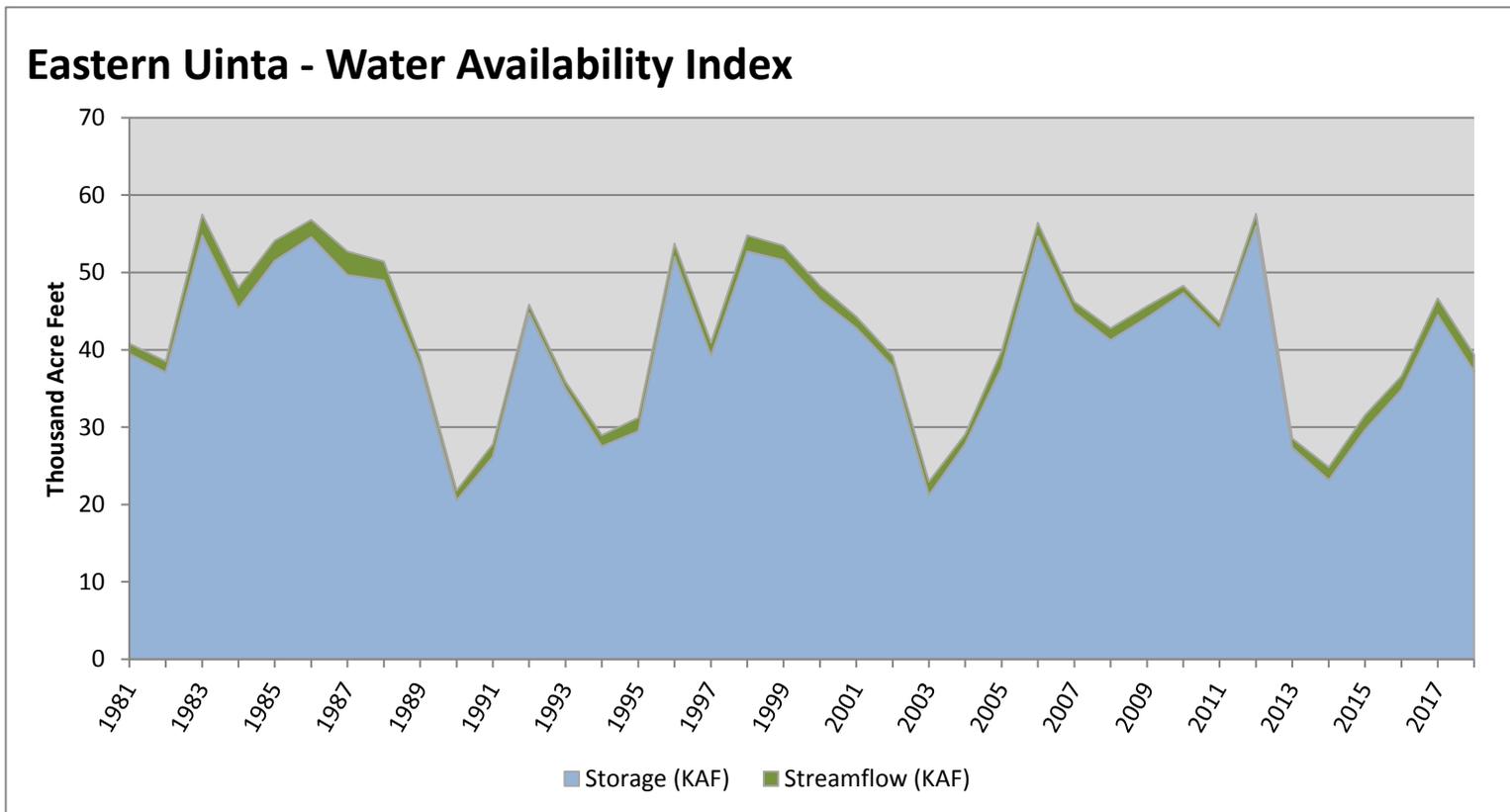
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Eastern Uinta</b>	<b>37.21</b>	<b>2.16</b>	<b>39.37</b>	<b>38</b>	<b>-0.96</b>	<b>89, 02, 05, 81</b>

<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.

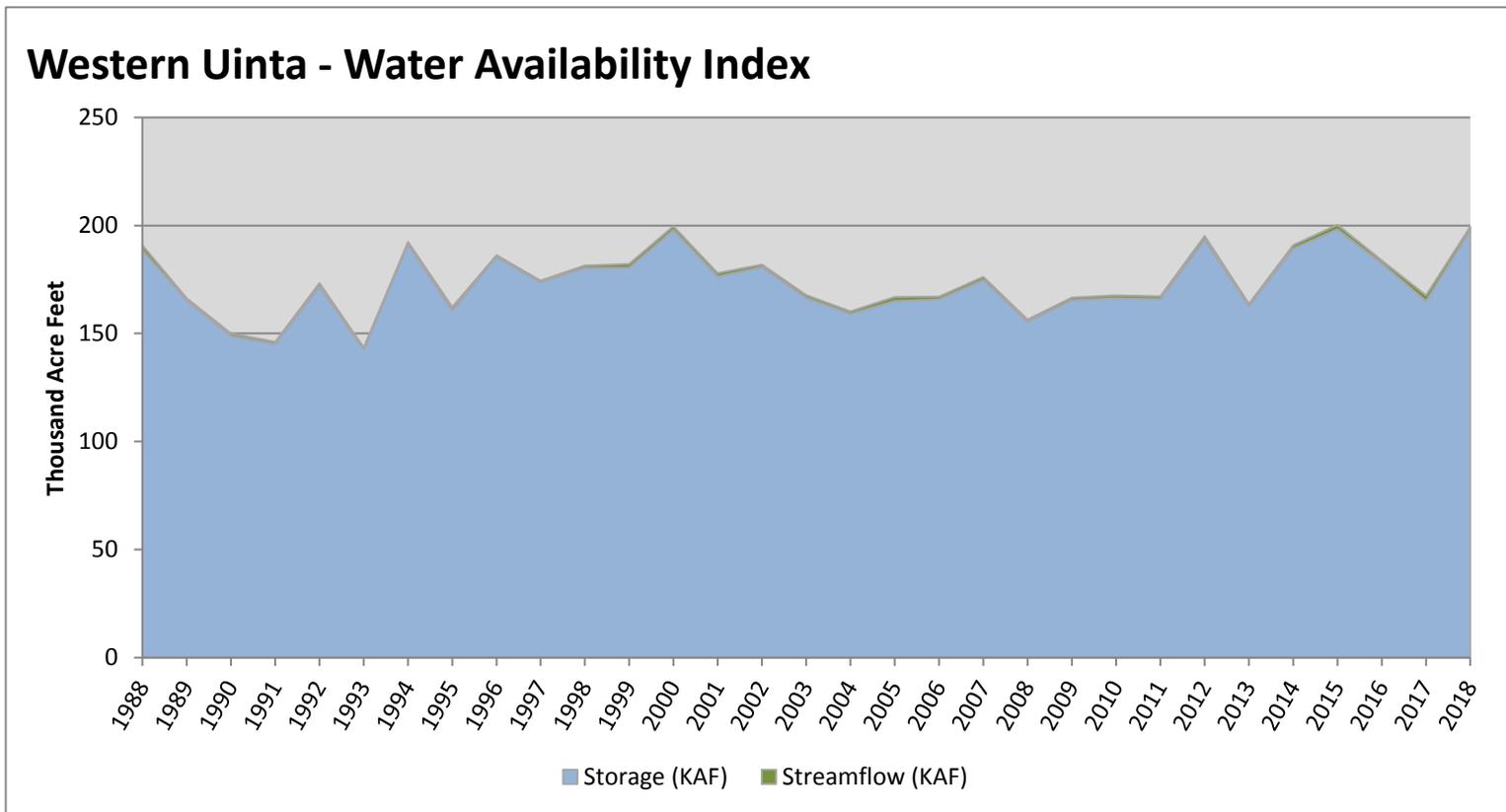


March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Western Uinta</b>	<b>197.62</b>	<b>1.74</b>	<b>199.36</b>	<b>91</b>	<b>3.39</b>	<b>94, 12, 00, 15</b>

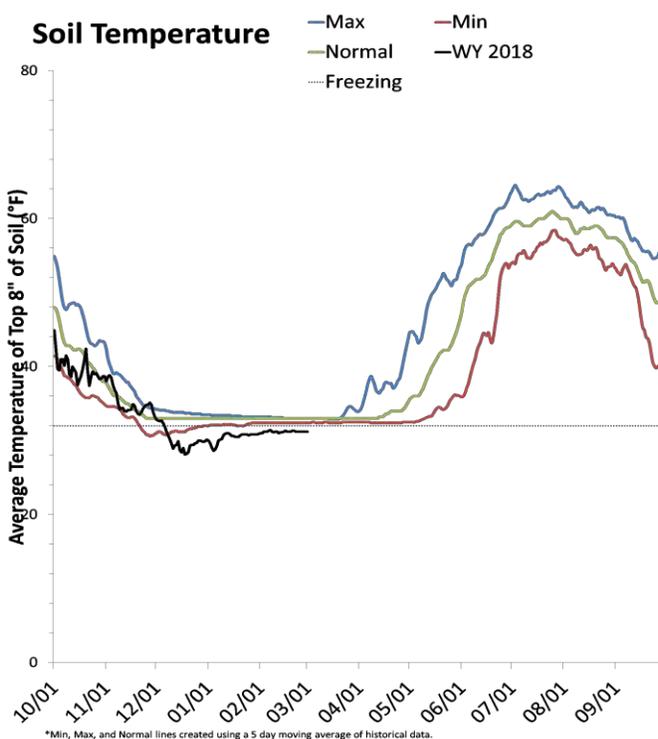
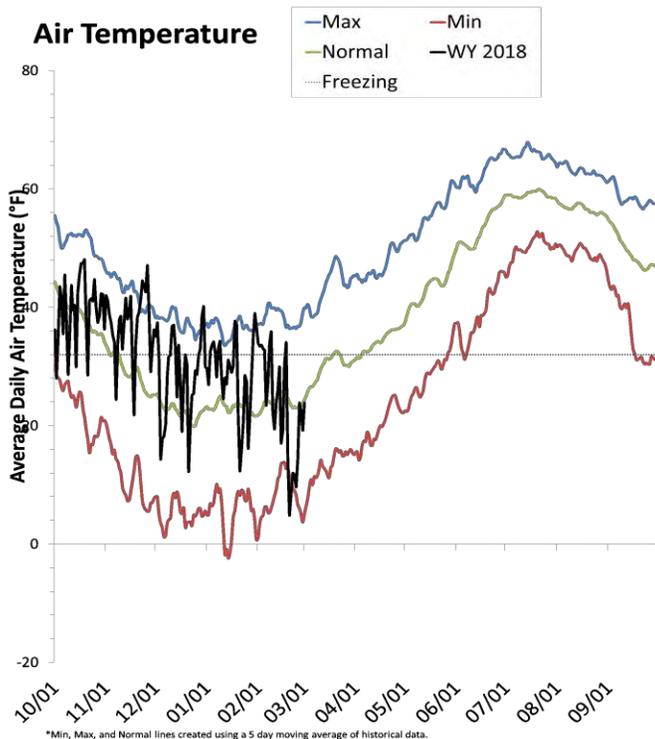
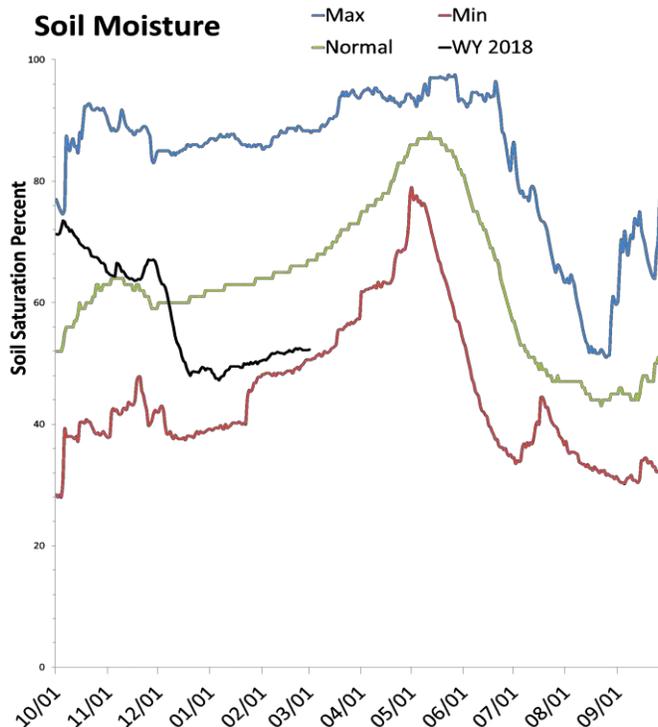
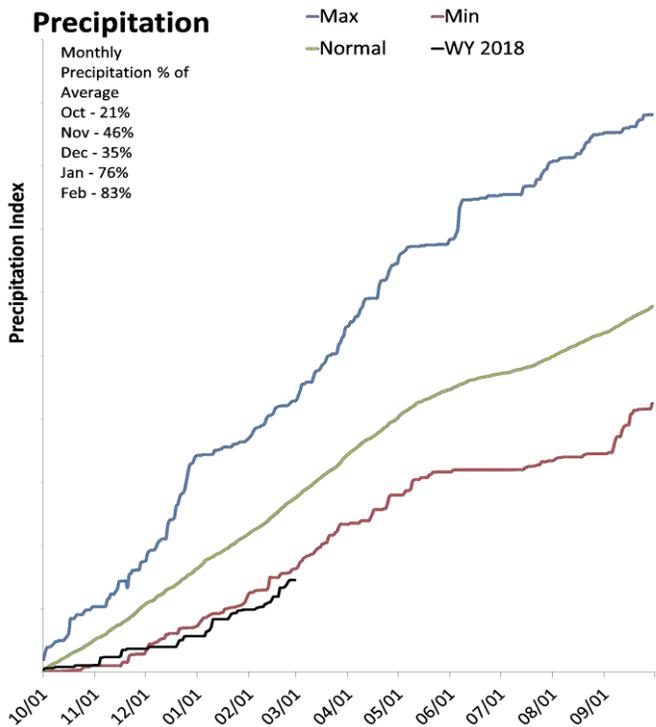
<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# San Pitch River Basin

March 1, 2018

Precipitation in February was below average at 84%, which brings the seasonal accumulation (Oct-Feb) to 53% of average. Soil Moisture is at 52% compared to 82% last year. Reservoir storage is at 16% of capacity, compared to 11% last year. The water availability index for the San Pitch is 23%.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

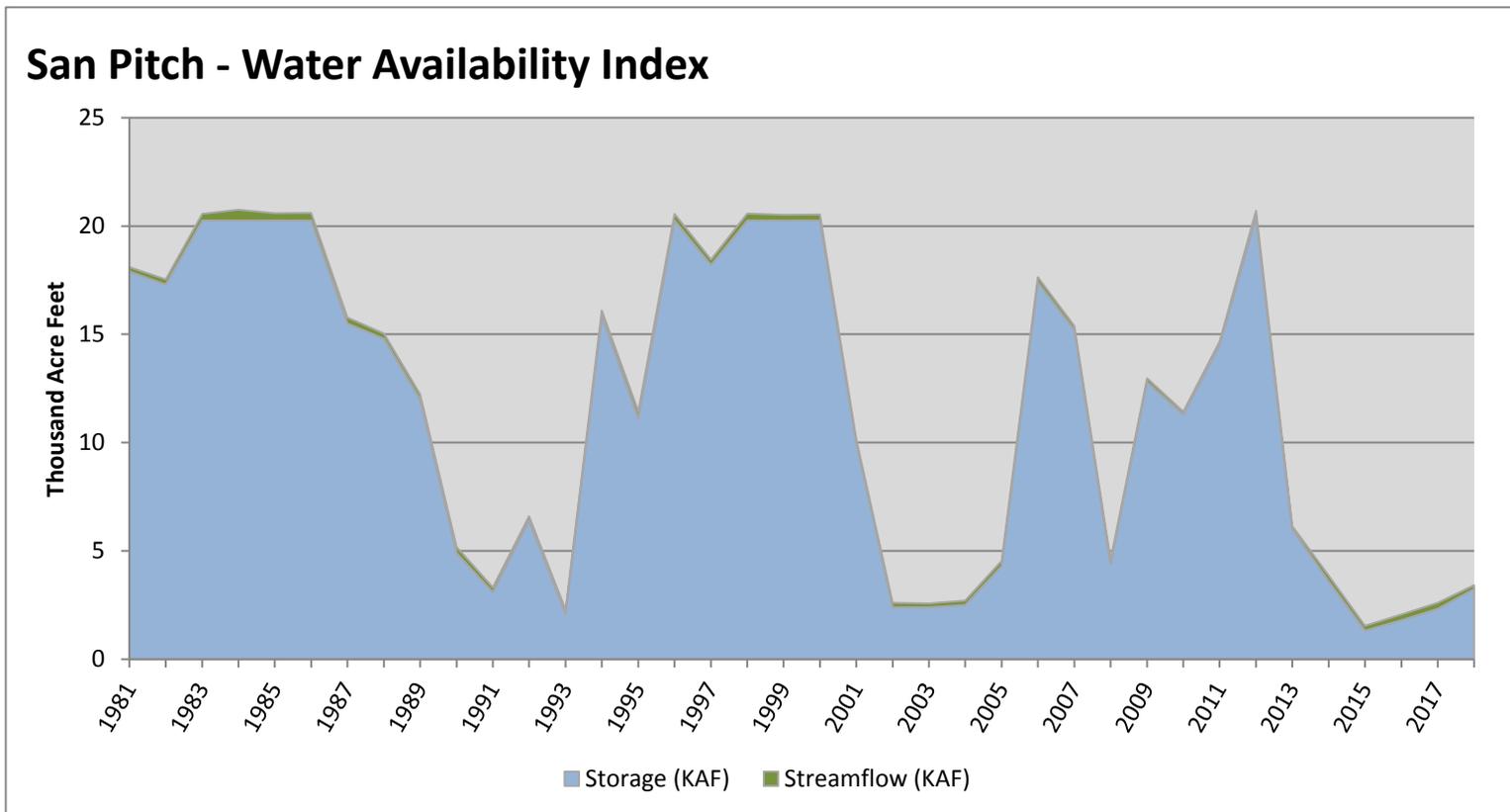
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>San Pitch</b>	<b>3.24</b>	<b>0.18</b>	<b>3.42</b>	<b>23</b>	<b>-2.24</b>	<b>04, 91, 14, 05</b>

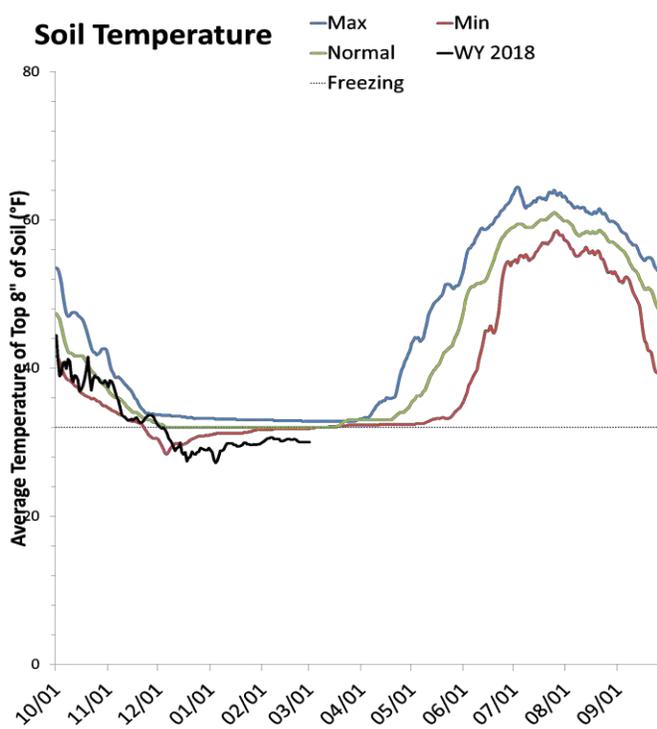
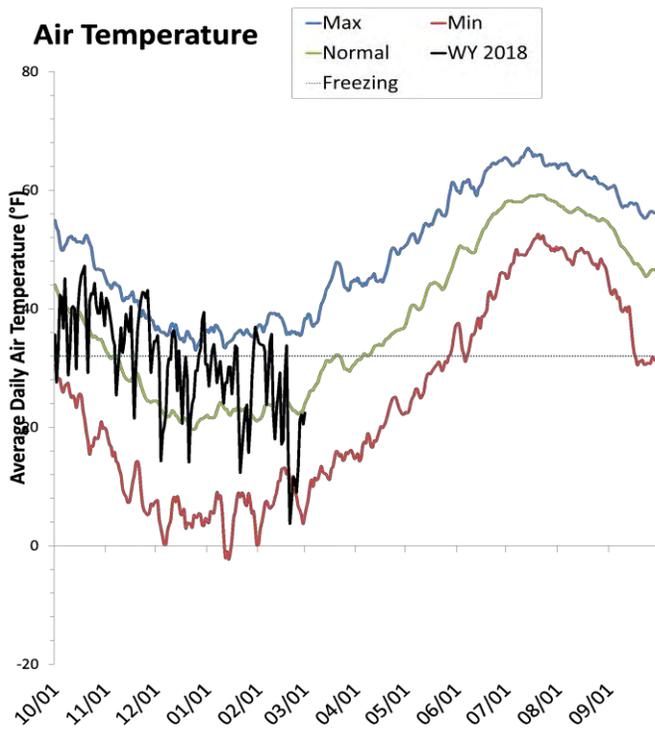
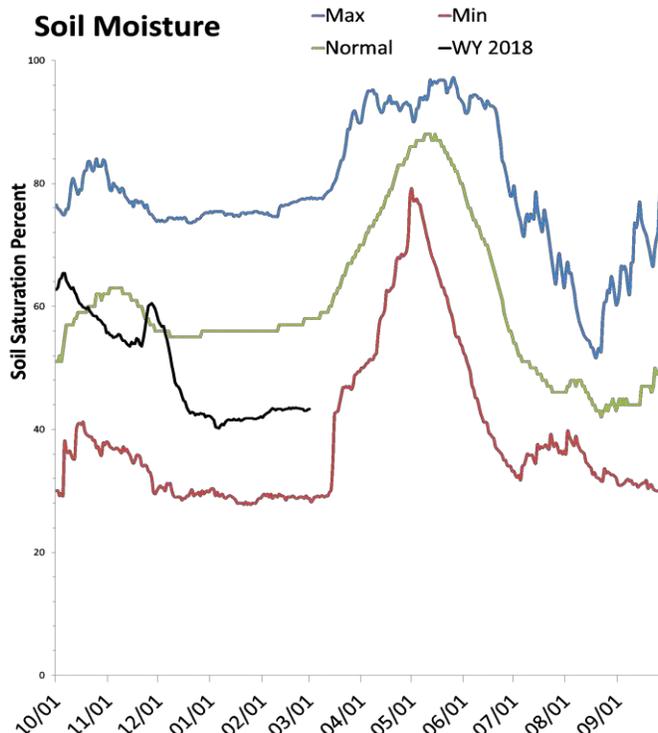
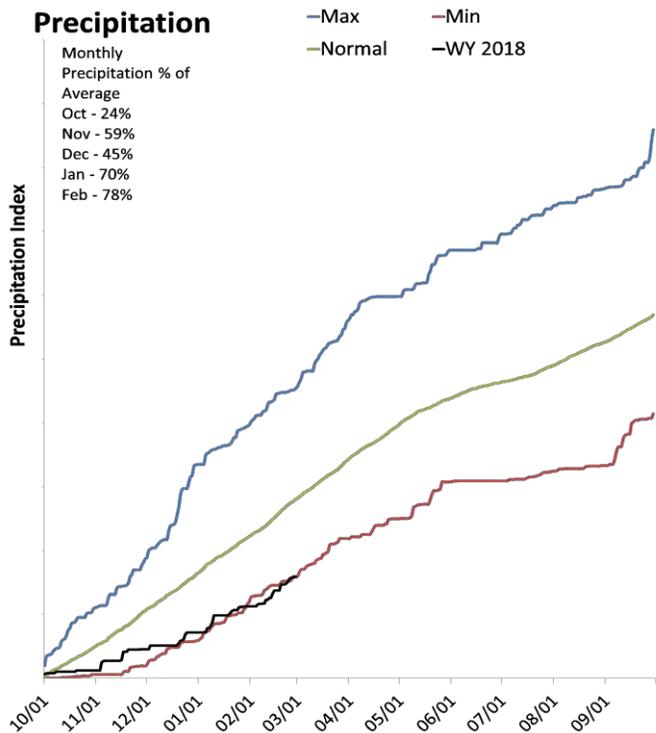
<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# Price & San Rafael Basins

March 1, 2018

Precipitation in February was below average at 78%, which brings the seasonal accumulation (Oct-Feb) to 56% of average. Soil moisture is at 43% compared to 79% last year. Reservoir storage is at 70% of capacity, compared to 42% last year. The water availability index for the Price River is 92%, and 72% for Joe's Valley.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

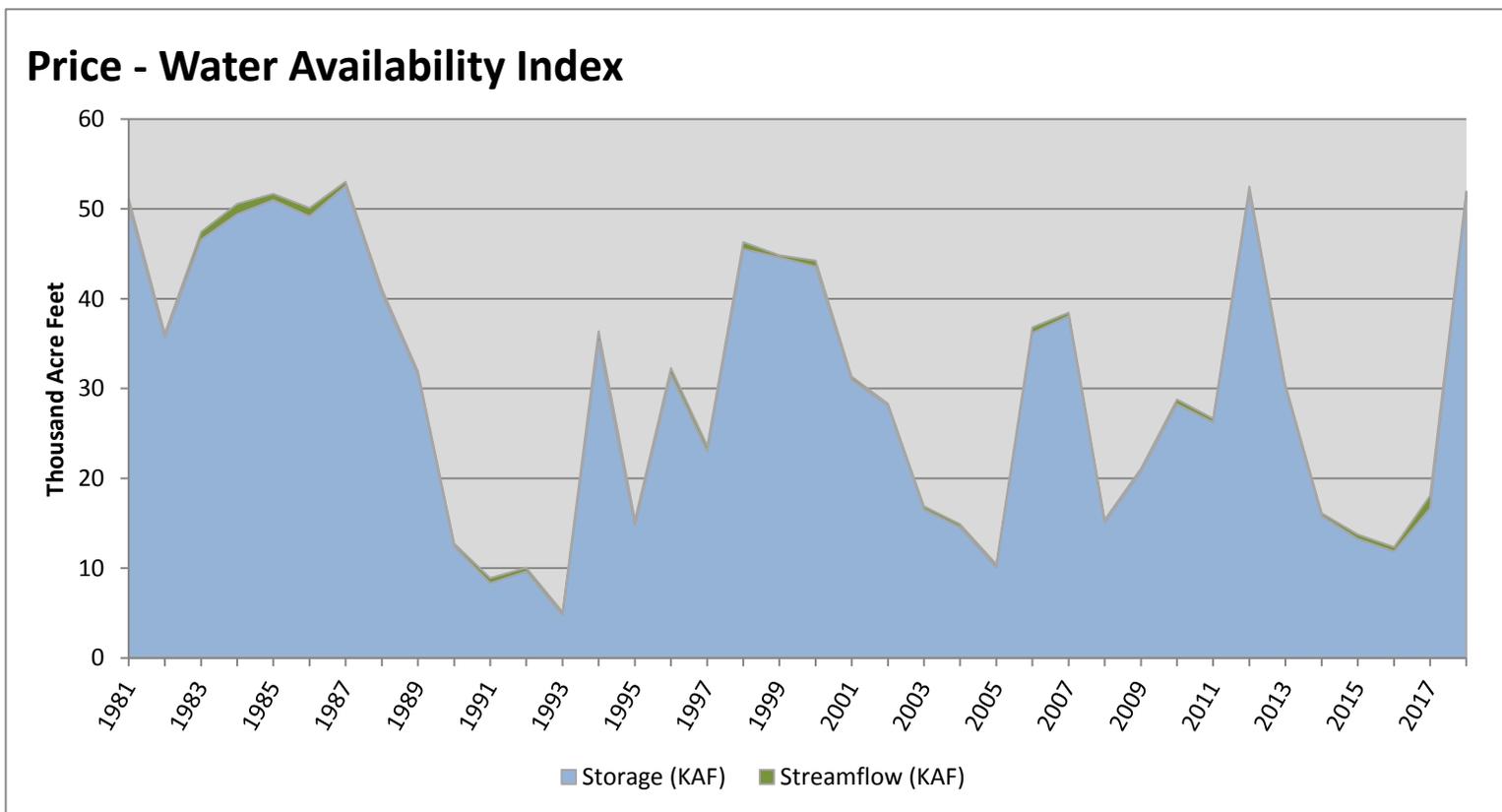
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Price</b>	<b>51.40</b>	<b>0.56</b>	<b>51.96</b>	<b>92</b>	<b>3.53</b>	<b>81, 85, 12, 87</b>

<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.

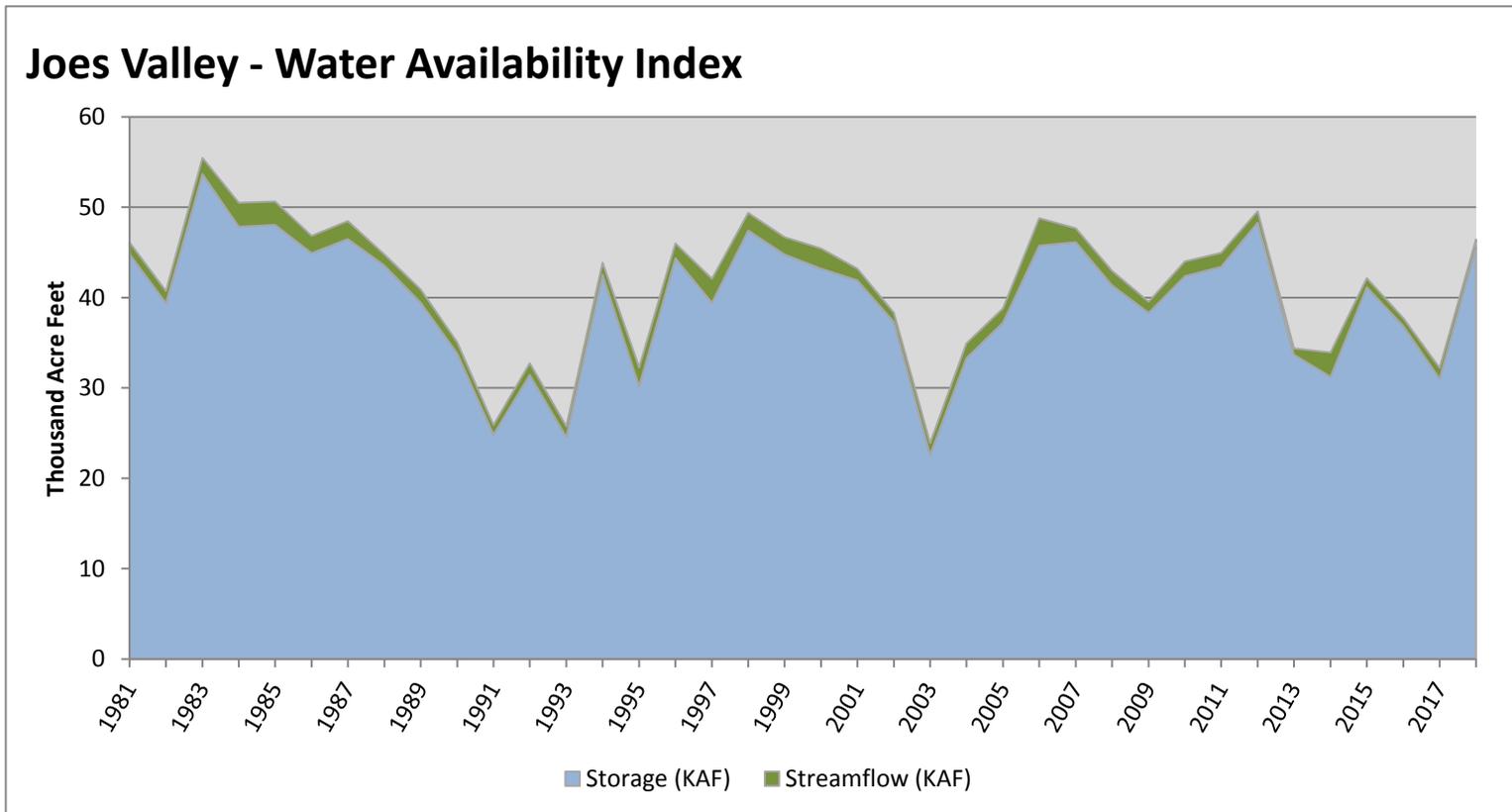


March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Joese Valley</b>	<b>45.56</b>	<b>0.88</b>	<b>46.44</b>	<b>72</b>	<b>1.82</b>	<b>96, 81, 99, 86</b>

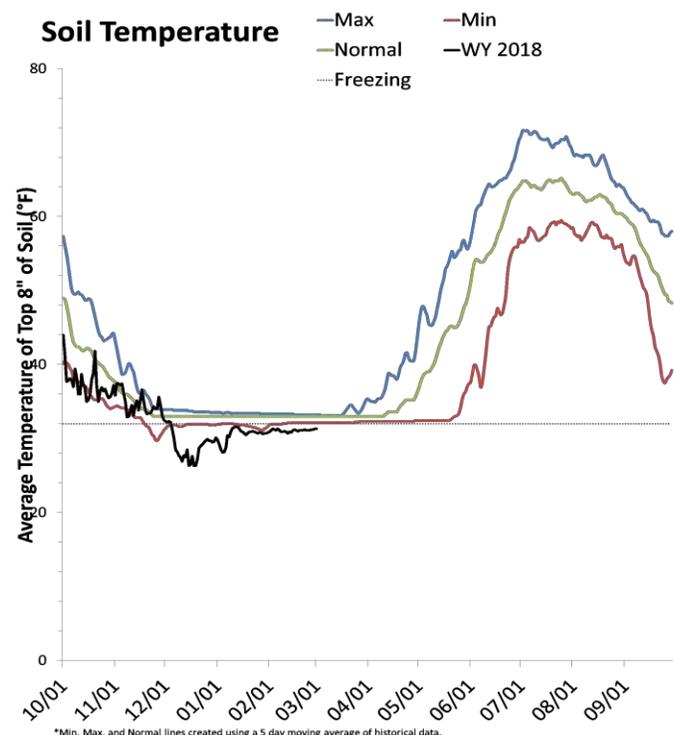
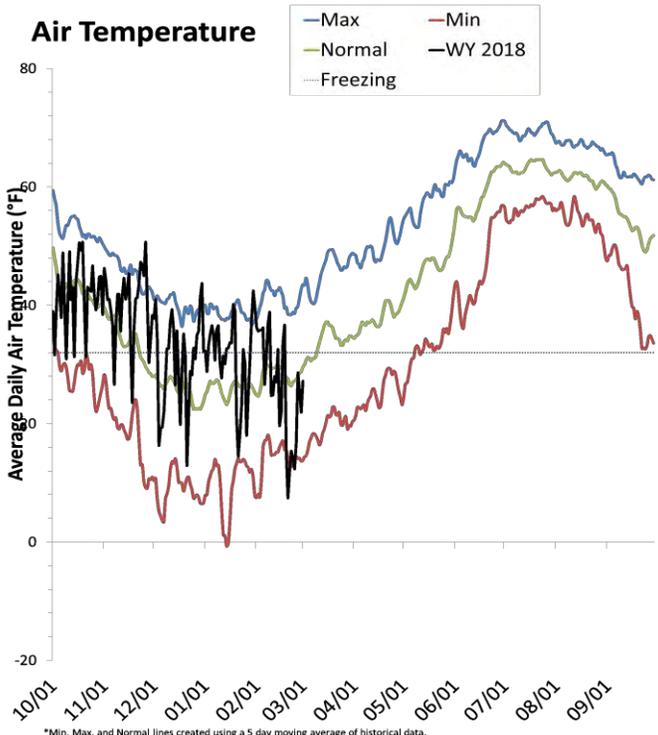
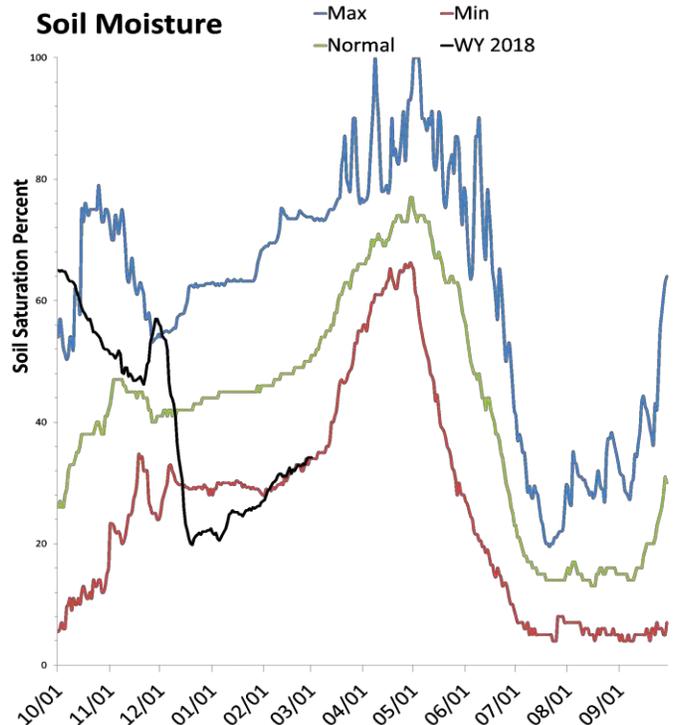
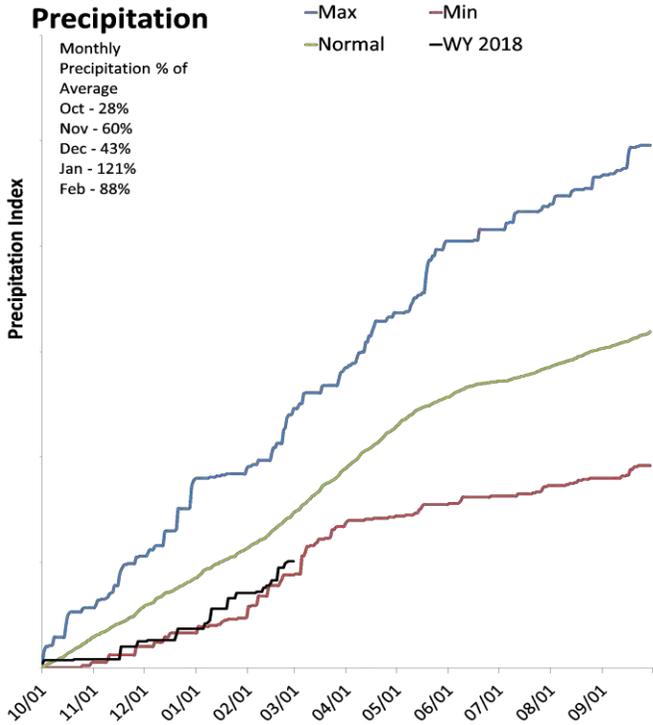
<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# Lower Sevier Basin

March 1, 2018

Precipitation in February was below average at 88%, which brings the seasonal accumulation (Oct-Feb) to 69% of average. Soil moisture is at 34% compared to 71% last year. Reservoir storage is at 35% of capacity, compared to 31% last year. The water availability index for the Lower Sevier is 13%.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

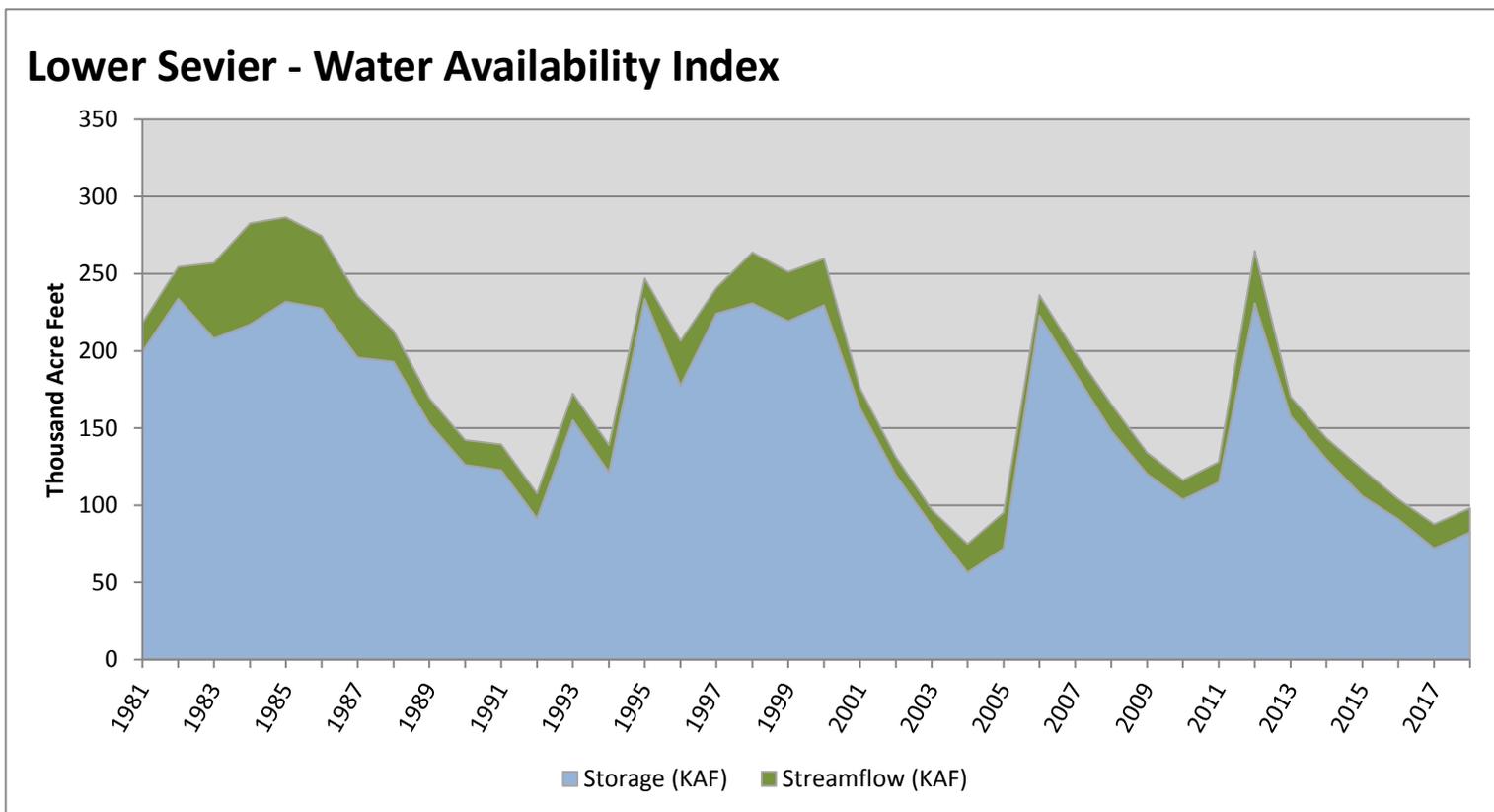
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Lower Sevier</b>	<b>82.55</b>	<b>15.53</b>	<b>98.08</b>	<b>13</b>	<b>-3.1</b>	<b>05, 03, 16, 92</b>

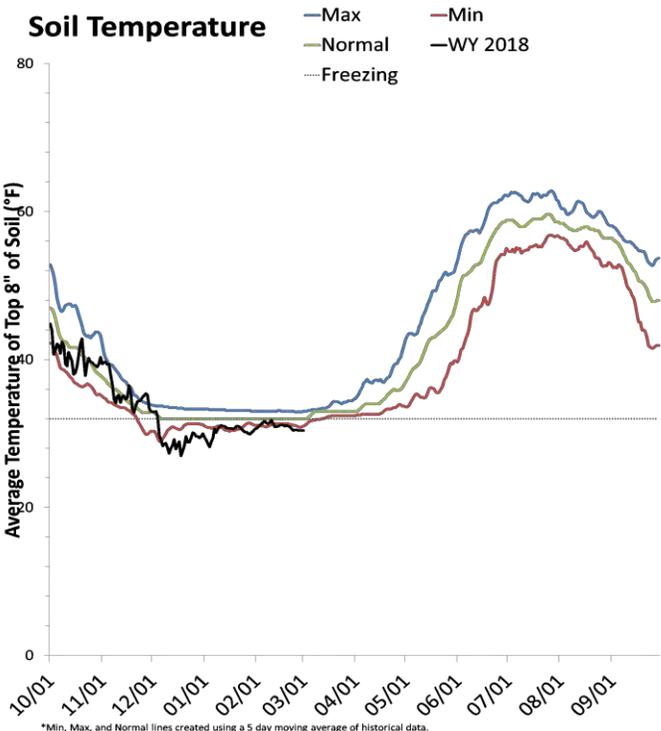
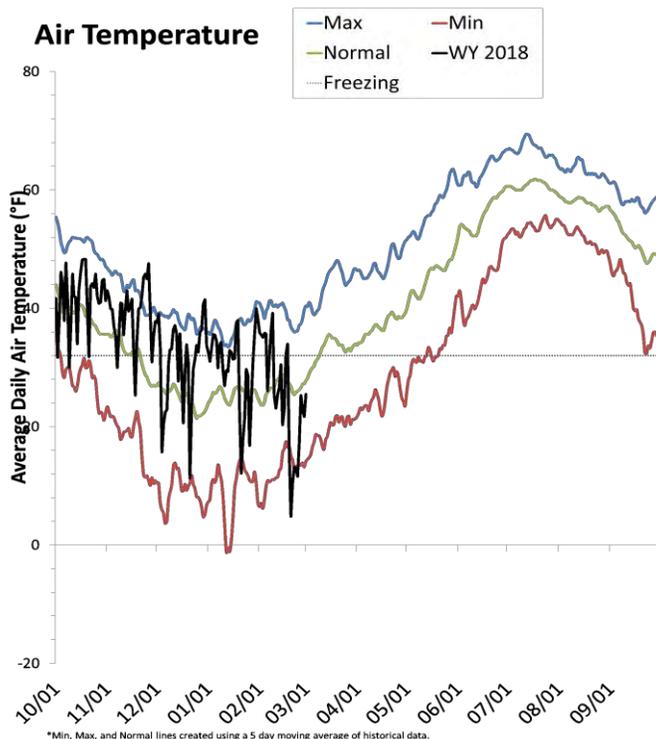
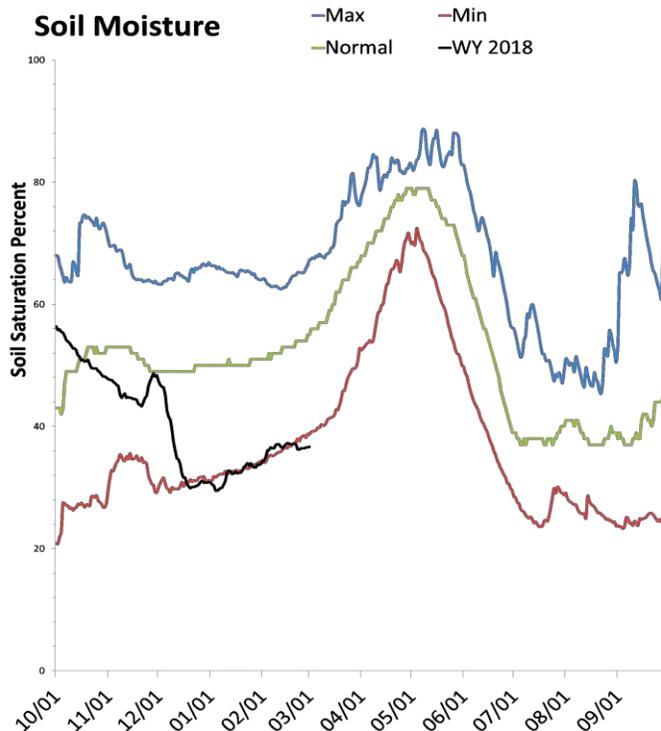
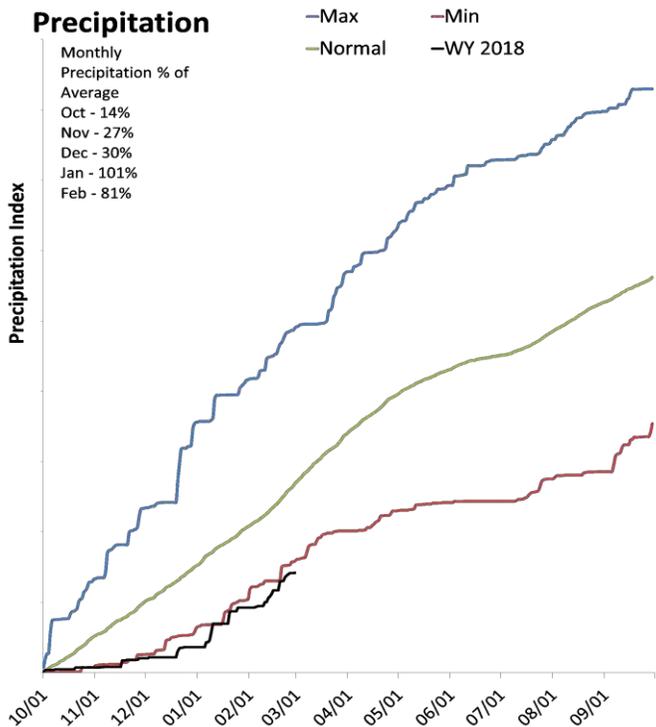
<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# Upper Sevier Basin

March 1, 2018

Precipitation in February was below average at 81%, which brings the seasonal accumulation (Oct-Feb) to 53% of average. Soil moisture is at 36% compared to 62% last year. Reservoir storage is at 55% of capacity, compared to 54% last year. The water availability index for the Upper Sevier is 28%.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

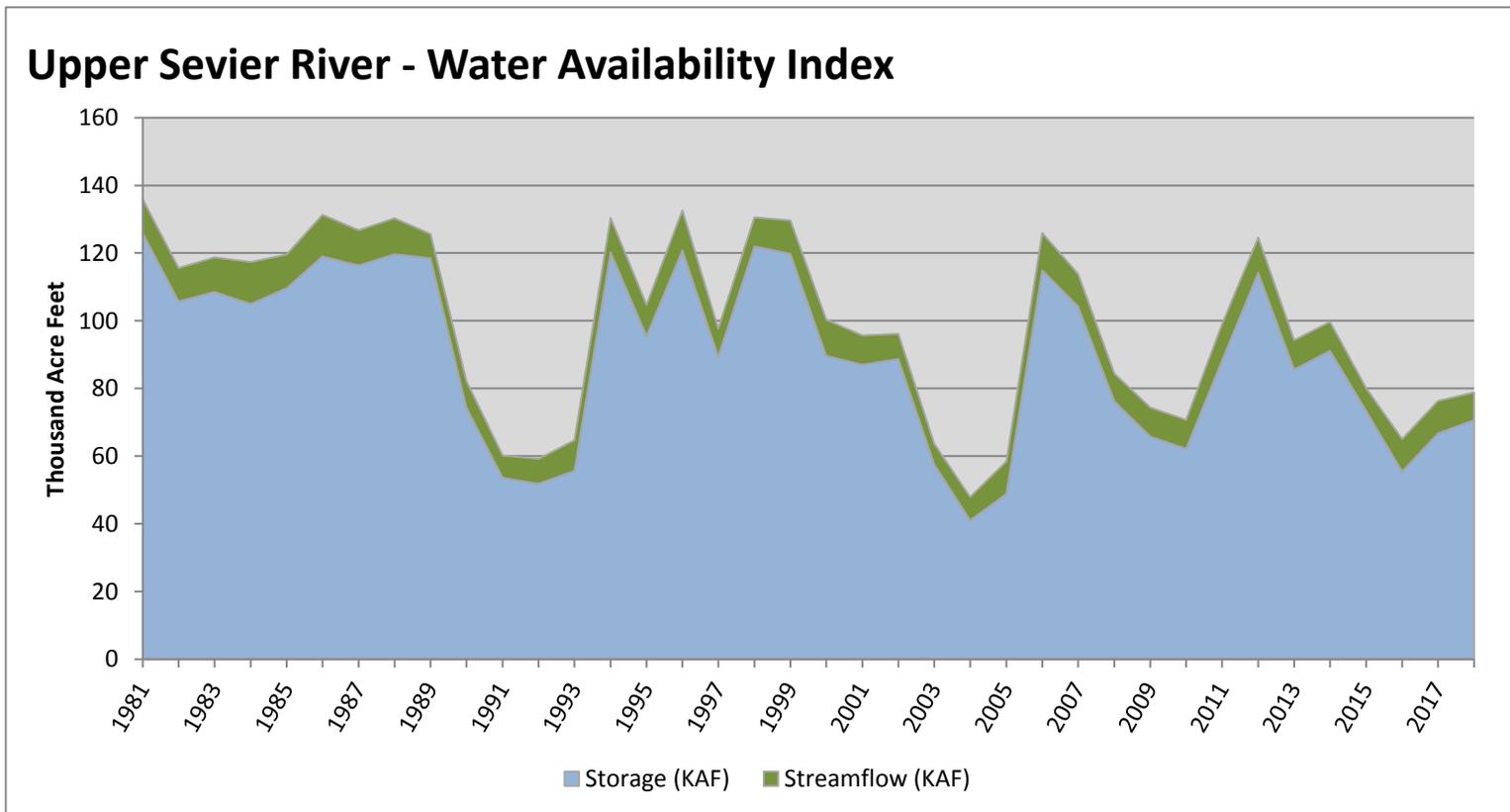
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Upper Sevier River</b>	<b>70.64</b>	<b>8.20</b>	<b>78.84</b>	<b>28</b>	<b>-1.82</b>	<b>09, 17, 15, 90</b>

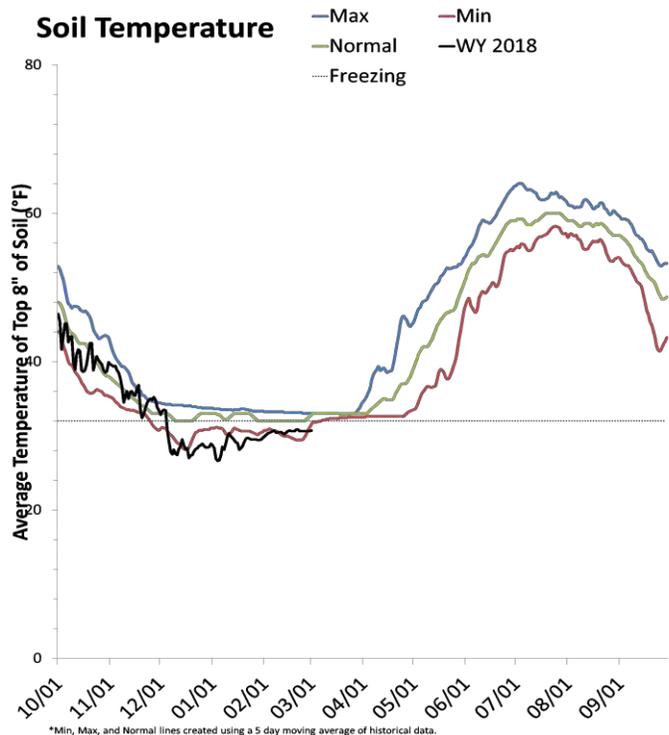
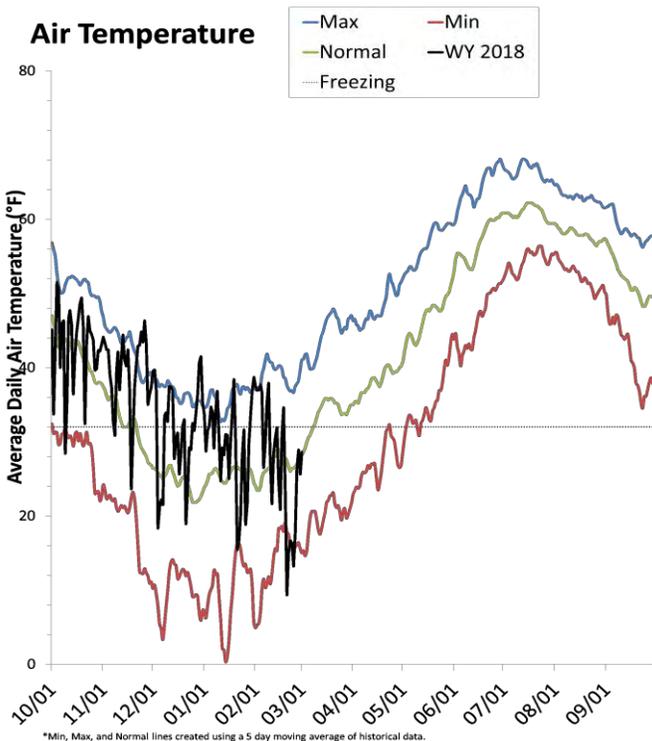
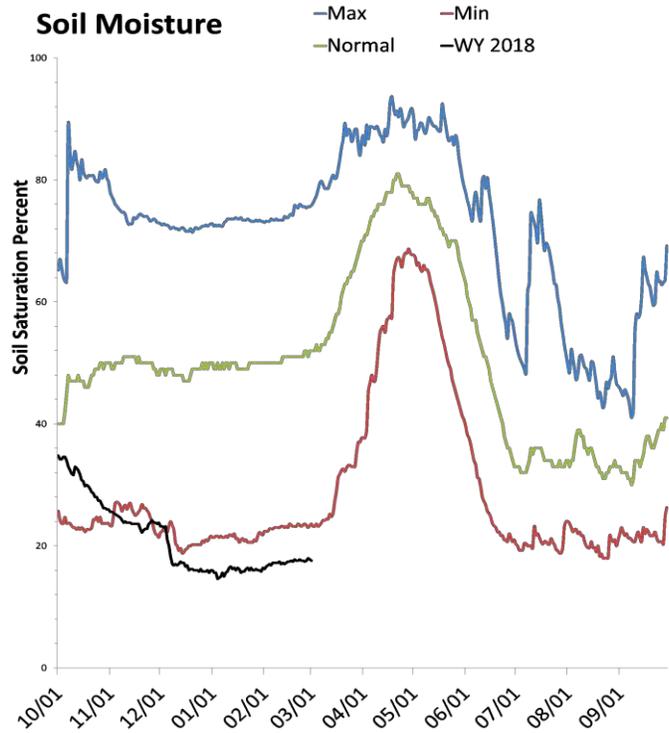
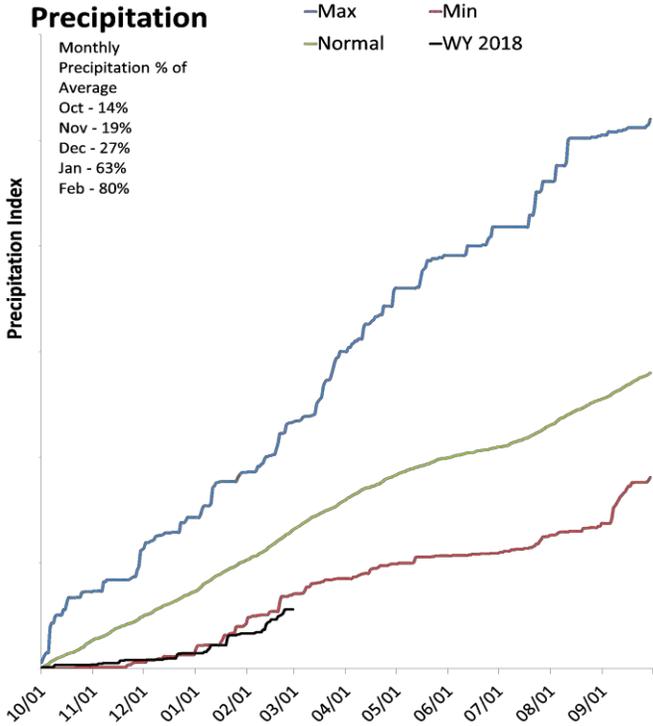
<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# Southeastern Utah

March 1, 2018

Precipitation in February was below average at 79%, which brings the seasonal accumulation (Oct-Feb) to 43% of average. Soil moisture is at 18% compared to 69% last year. Reservoir storage is at 58% of capacity, compared to 83% last year. The water availability index for Moab is 63%.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

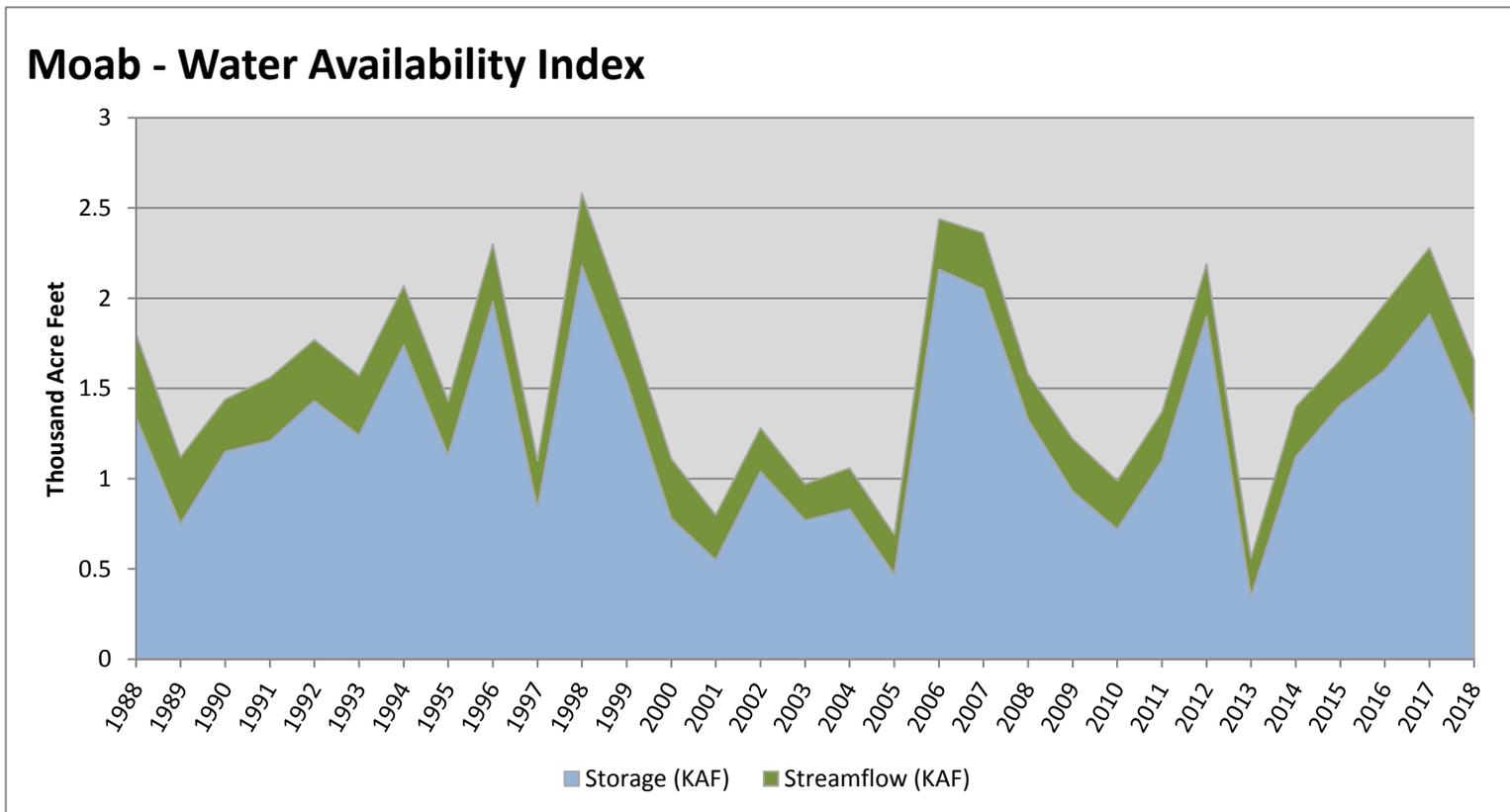
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Moab</b>	<b>1.33</b>	<b>0.33</b>	<b>1.66</b>	<b>63</b>	<b>1.04</b>	<b>08, 15, 92, 88</b>

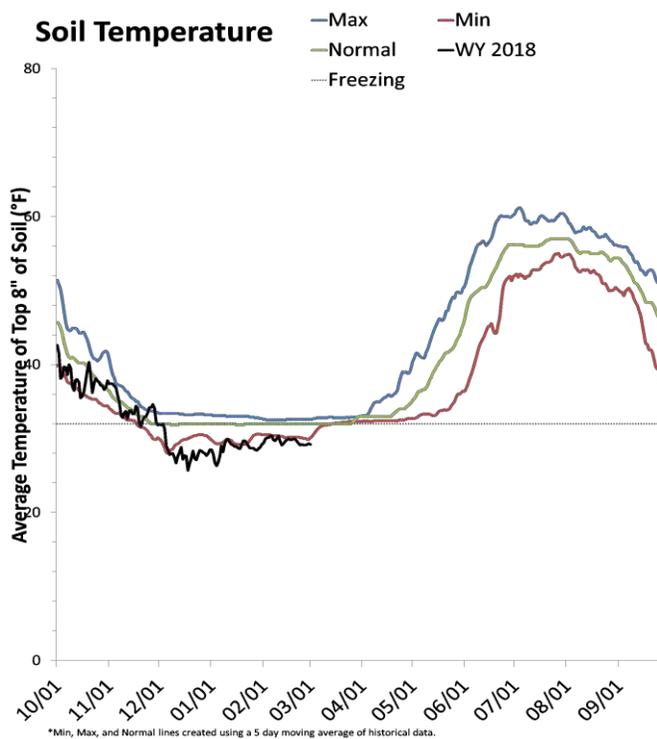
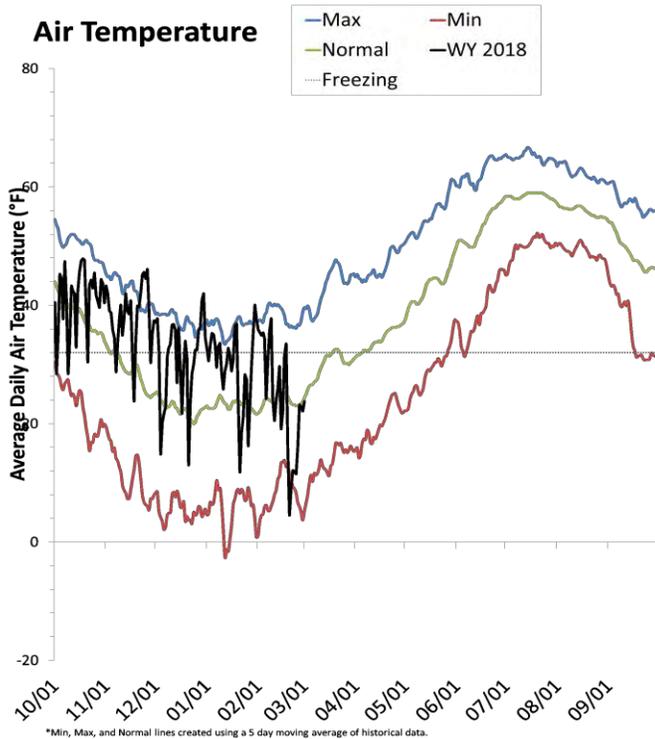
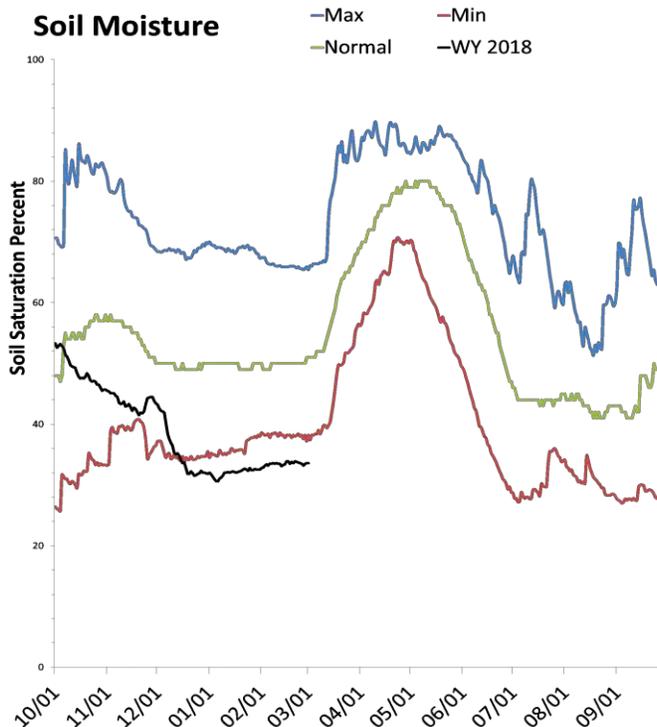
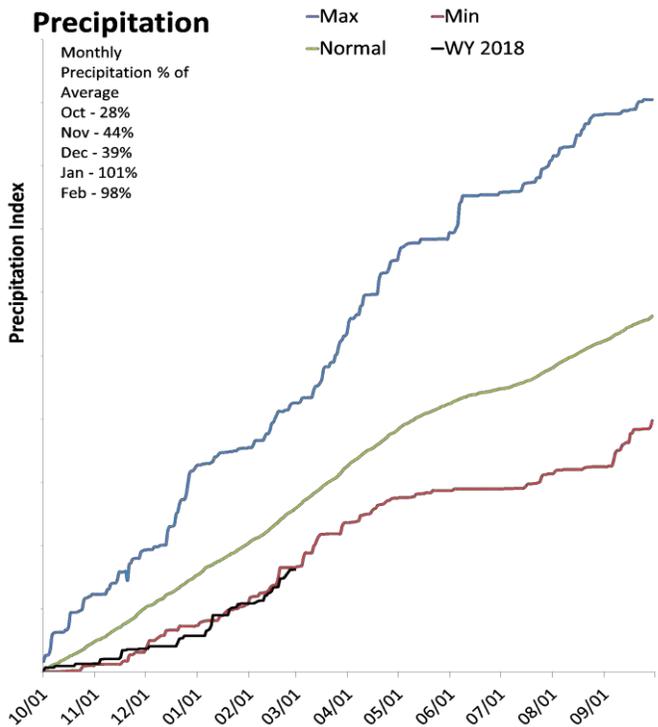
<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# Dirty Devil Basin

March 1, 2018

Precipitation in February was near average at 98%, which brings the seasonal accumulation (Oct-Feb) to 63% of average. Soil moisture is at 33% compared to 51% last year.



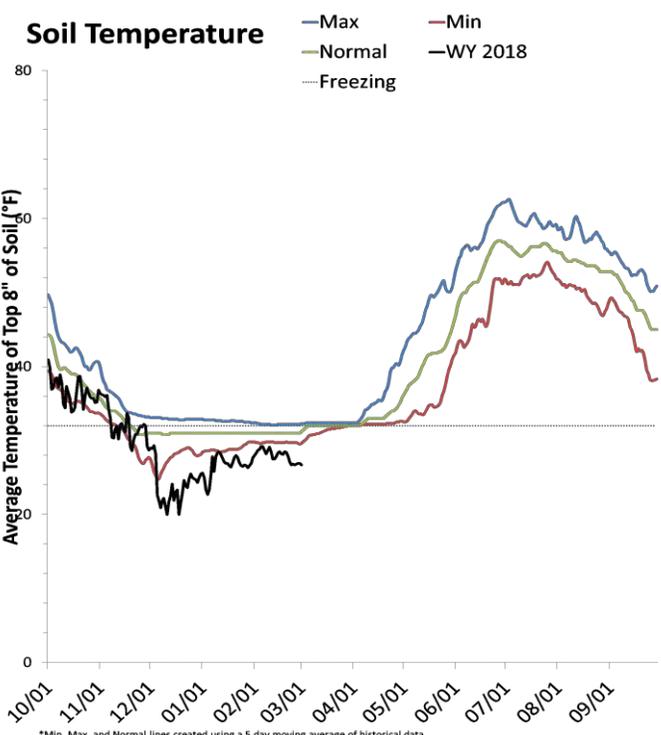
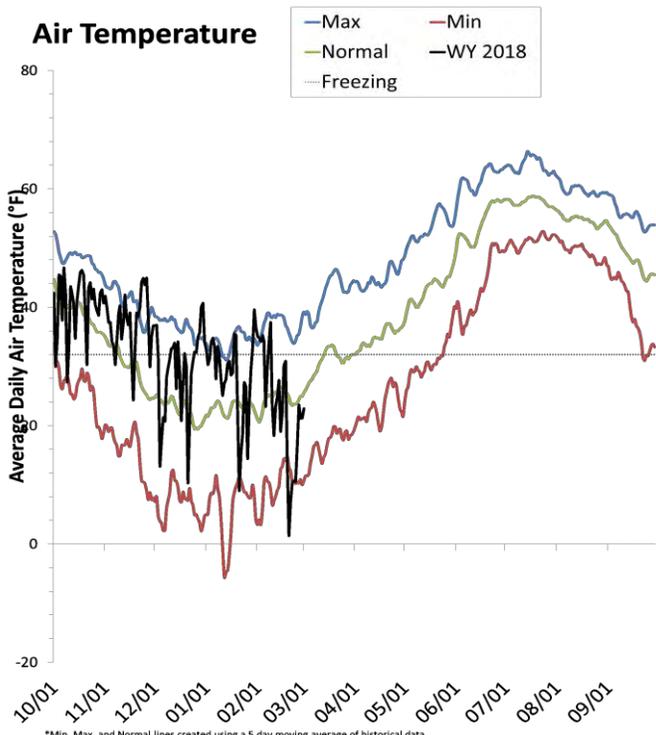
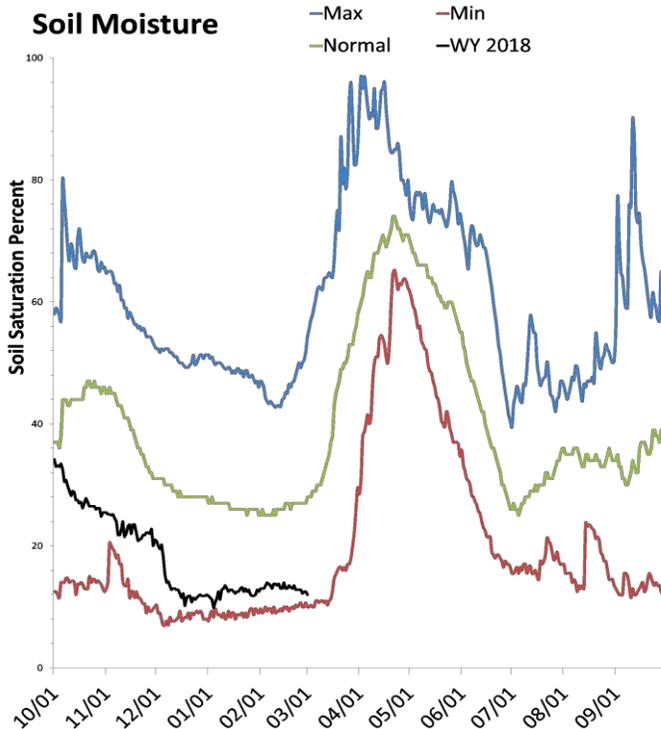
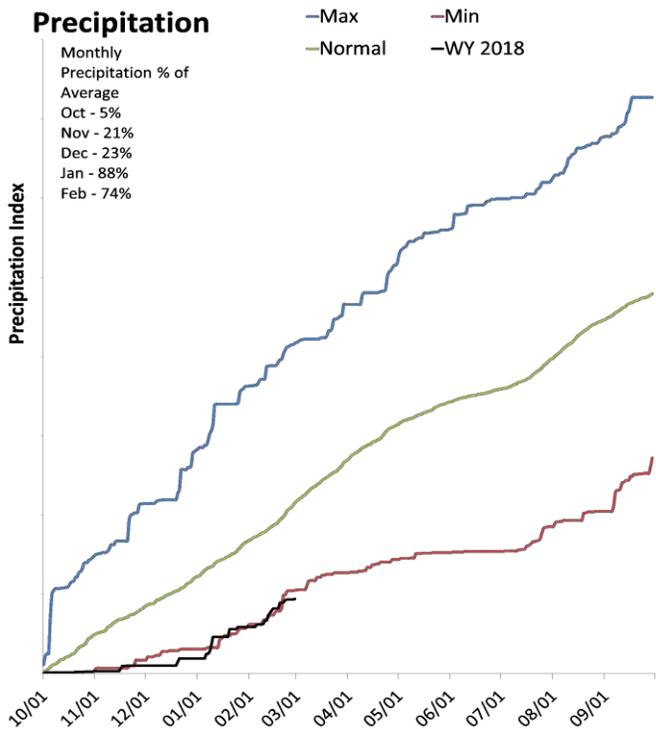
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

# Escalante River Basin

March 1, 2018

Precipitation in February was below average at 75%, which brings the seasonal accumulation (Oct-Feb) to 44% of average. Soil moisture is at 12% compared to 40% last year.



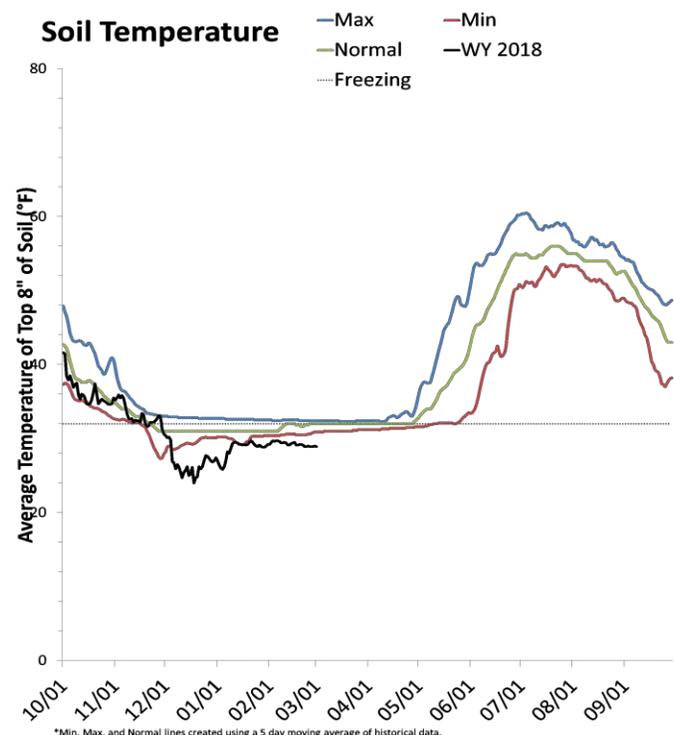
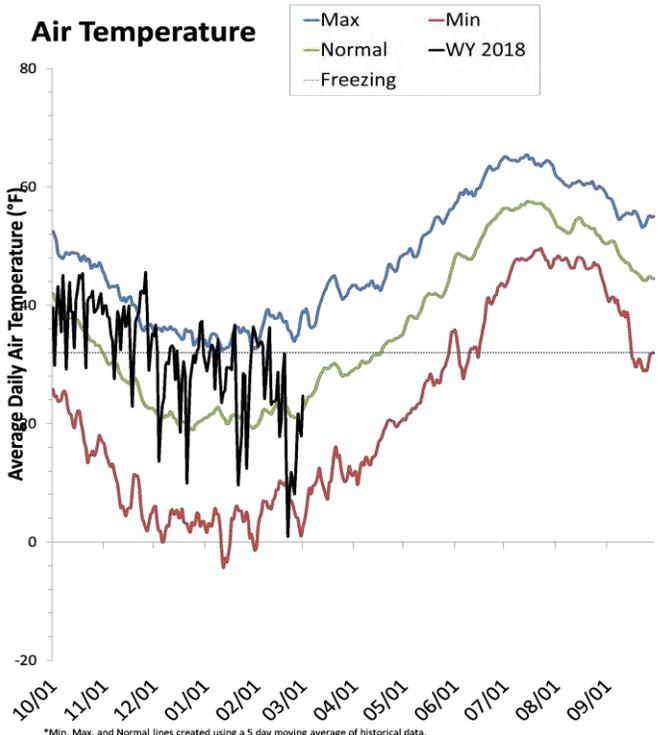
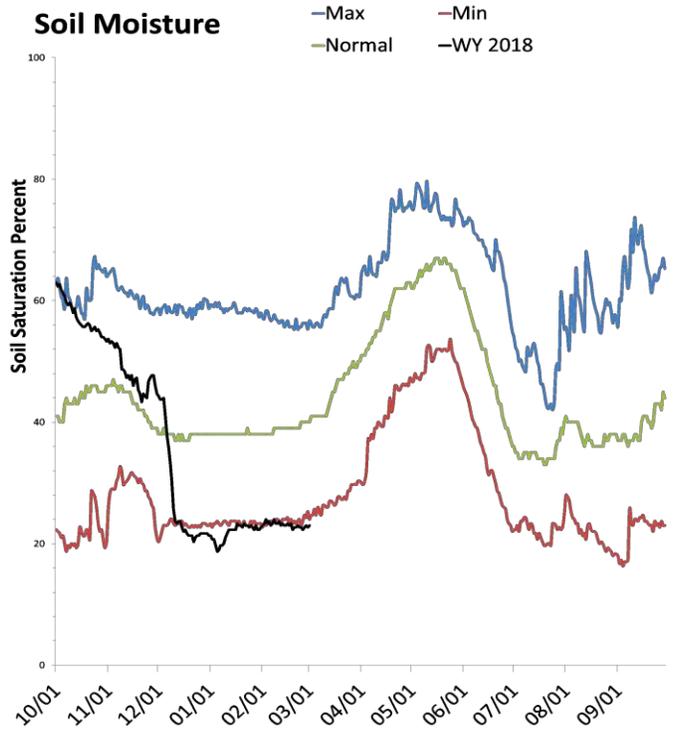
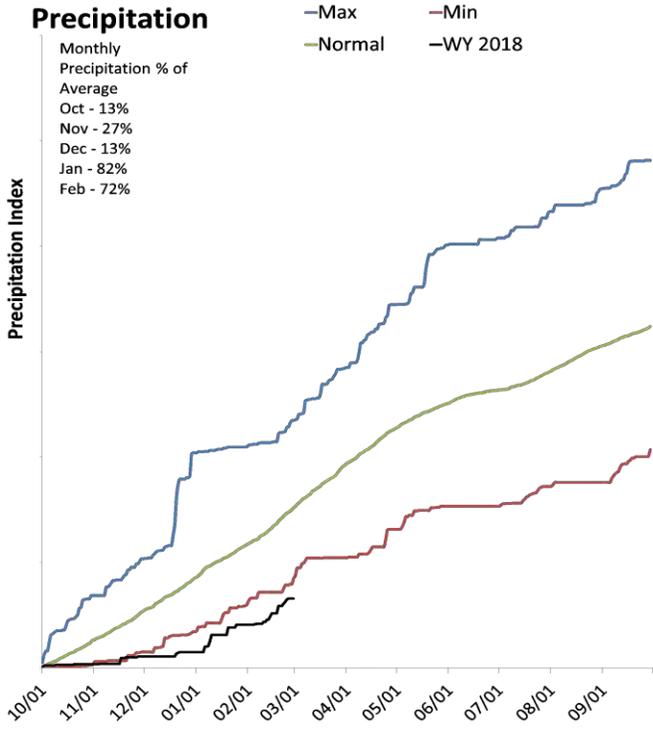
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

# Beaver River Basin

March 1, 2018

Precipitation in February was below average at 72%, which brings the seasonal accumulation (Oct-Feb) to 43% of average. Soil moisture is at 23% compared to 53% last year. Reservoir storage is at 47% of capacity, compared to 43% last year. The water availability index for the Beaver River is 44%.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

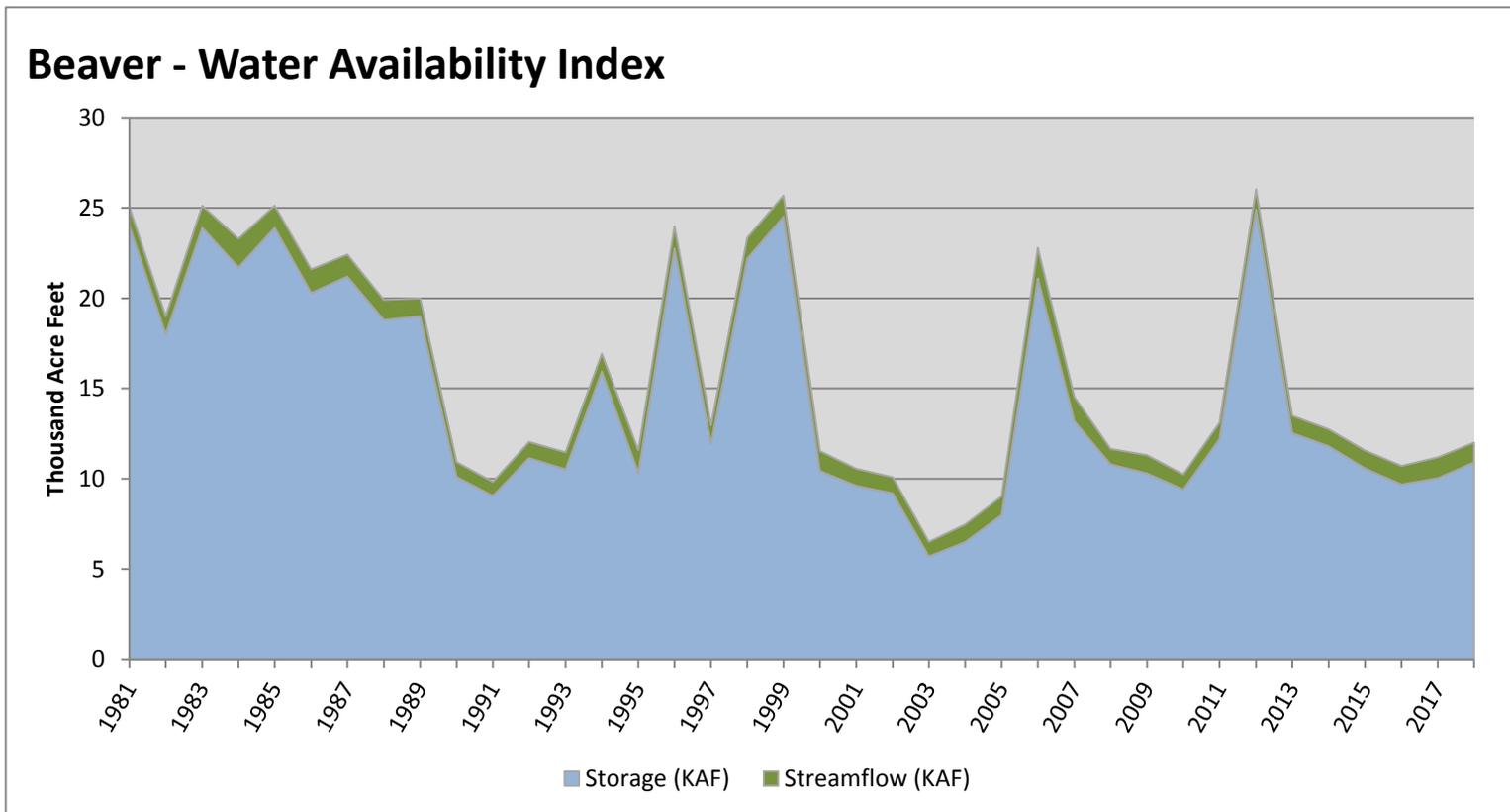
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Beaver</b>	<b>10.91</b>	<b>1.09</b>	<b>12.00</b>	<b>44</b>	<b>-0.53</b>	<b>95, 08, 92, 14</b>

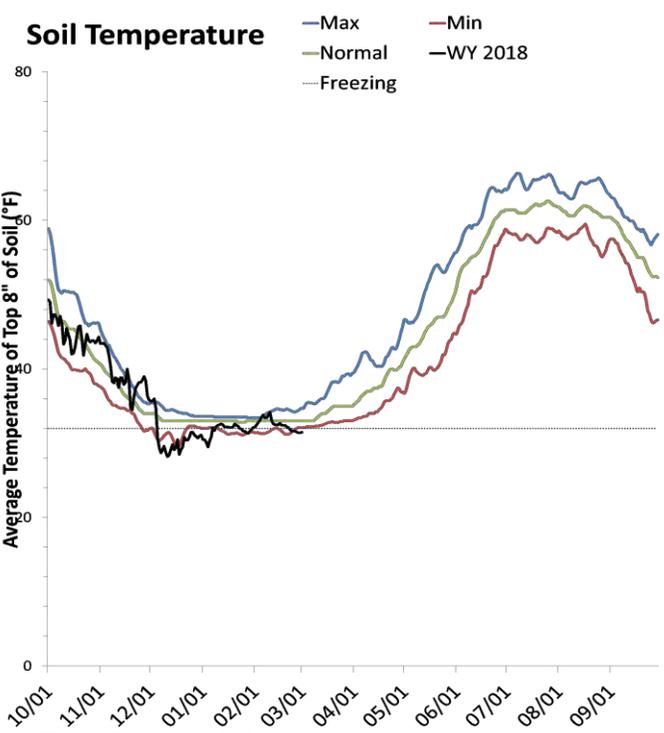
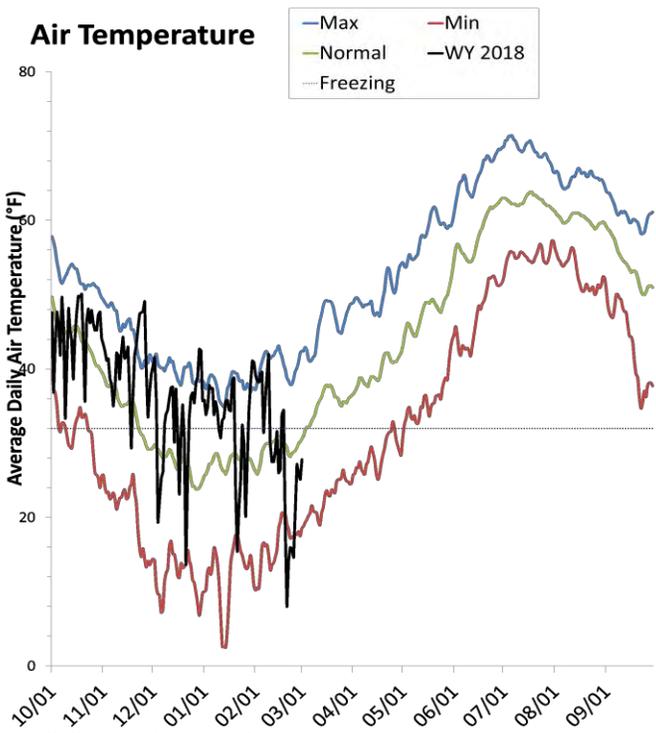
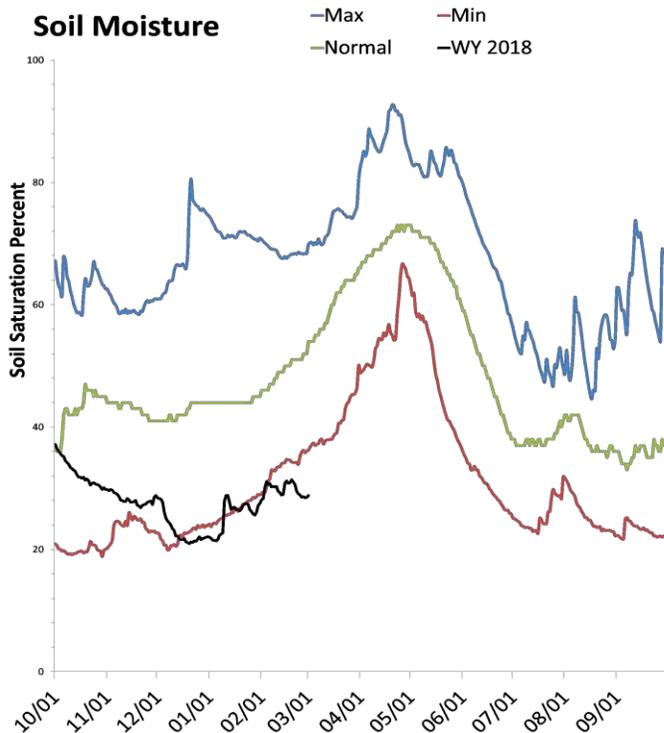
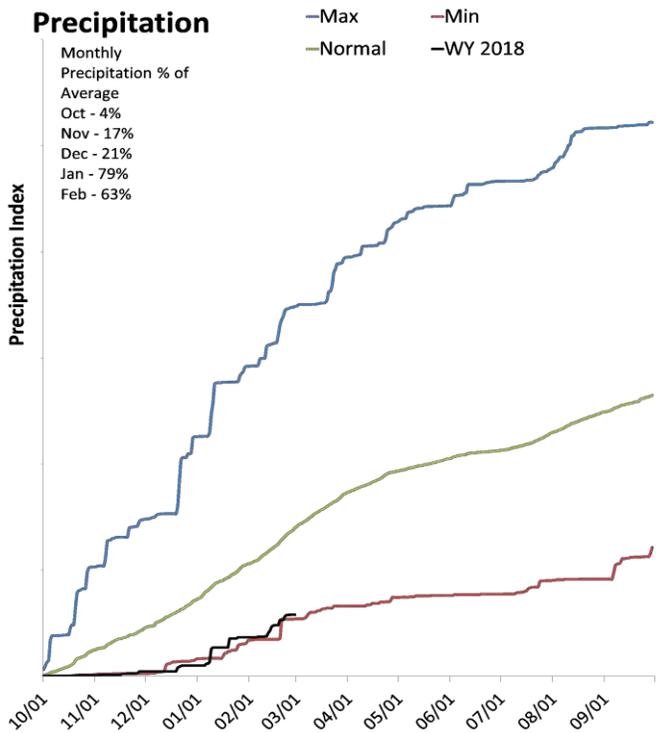
<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



# Southwestern Utah

March 1, 2018

Precipitation in February was much below average at 63%, which brings the seasonal accumulation (Oct-Feb) to 41% of average. Soil moisture is at 29% compared to 59% last year. Reservoir storage is at 55% of capacity, compared to 46% last year. The water availability index for the Virgin River is 41%.



\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

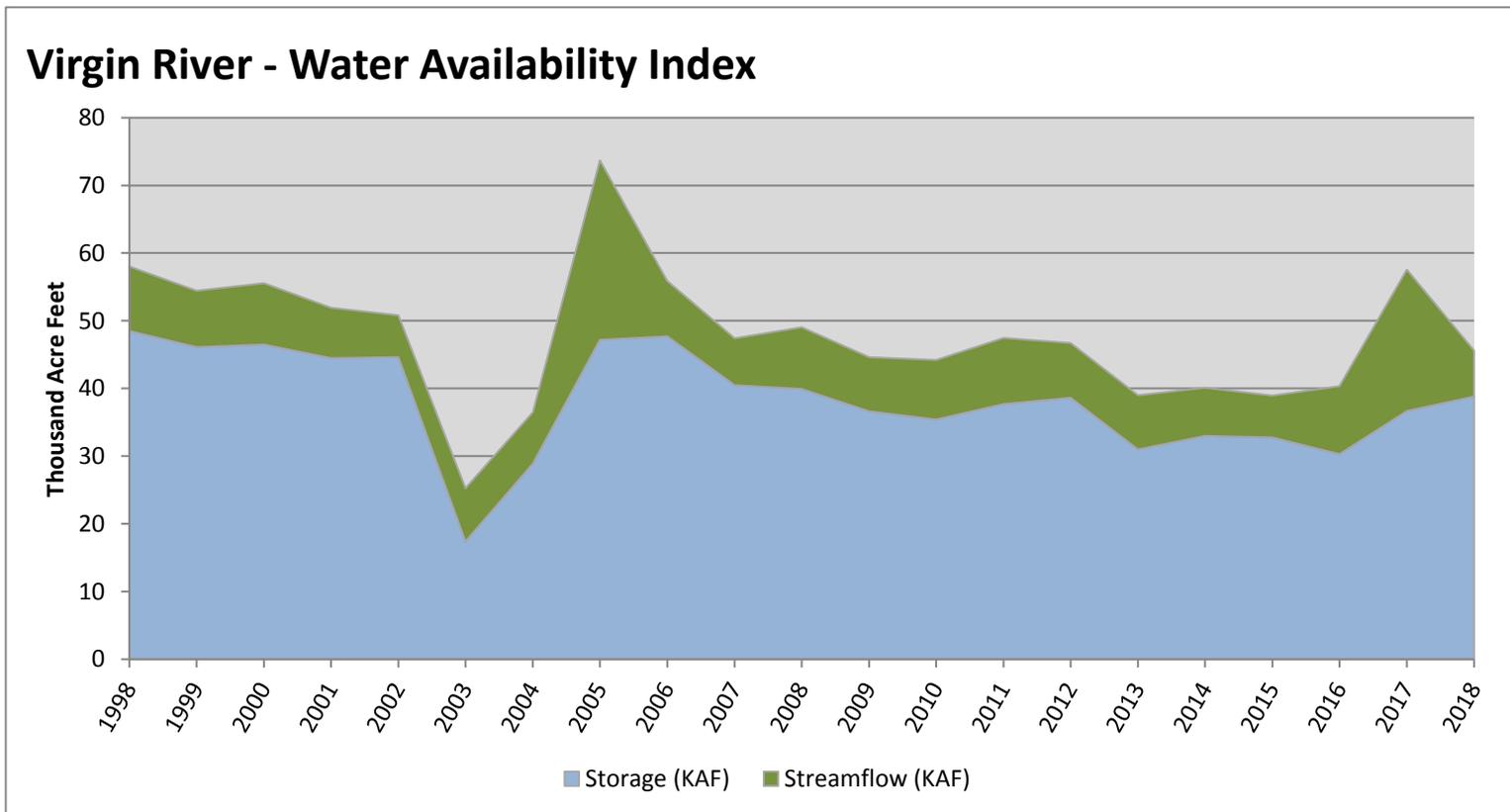
\*Min, Max, and Normal lines created using a 5 day moving average of historical data.

March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM <sup>^</sup> Storage	February Flow	Storage + Flow	Percentile	WAI <sup>#</sup>	Years with similiar WAI
	KAF <sup>^</sup>	KAF <sup>^</sup>	KAF <sup>^</sup>	%		
<b>Virgin River</b>	<b>38.81</b>	<b>6.78</b>	<b>45.59</b>	<b>41</b>	<b>-0.76</b>	<b>10, 09, 12, 07</b>

<sup>^</sup>EOM, end of month; <sup>#</sup>WAI, Water Availability Index; <sup>^</sup>KAF, thousand acre-feet.



March 1, 2018

## Water Availability Index

Basin or Region	Feb EOM* Storage	February Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
<b>Bear River</b>	<b>992</b>	<b>2.0</b>	<b>994</b>	<b>87</b>	<b>3.1</b>	<b>86, 98, 12, 83</b>
<b>Woodruff Narrows</b>	<b>51.6</b>	<b>2.0</b>	<b>53.6</b>	<b>85</b>	<b>2.9</b>	<b>00, 98, 17, 86</b>
<b>Little Bear</b>	<b>11.9</b>	<b>3.3</b>	<b>15.2</b>	<b>70</b>	<b>1.7</b>	<b>15, 96, 07, 95</b>
<b>Ogden</b>	<b>82.3</b>	<b>2.7</b>	<b>85.0</b>	<b>90</b>	<b>3.3</b>	<b>82, 94, 99, 12</b>
<b>Weber</b>	<b>176.6</b>	<b>5.8</b>	<b>182.4</b>	<b>93</b>	<b>3.6</b>	<b>12, 94, 10, 07</b>
<b>Provo River</b>	<b>398.8</b>	<b>2.9</b>	<b>401.8</b>	<b>88</b>	<b>3.1</b>	<b>99, 06, 98, 12</b>
<b>Western Uinta</b>	<b>197.6</b>	<b>1.7</b>	<b>199.4</b>	<b>91</b>	<b>3.4</b>	<b>94, 12, 00, 15</b>
<b>Eastern Uinta</b>	<b>37.2</b>	<b>2.2</b>	<b>39.4</b>	<b>38</b>	<b>-1.0</b>	<b>89, 02, 05, 81</b>
<b>Blacks Fork</b>	<b>11.1</b>	<b>1.9</b>	<b>12.9</b>	<b>58</b>	<b>0.7</b>	<b>94, 86, 17, 06</b>
<b>Price</b>	<b>51.4</b>	<b>0.6</b>	<b>52.0</b>	<b>92</b>	<b>3.5</b>	<b>81, 85, 12, 87</b>
<b>Smiths Creek</b>	<b>6.2</b>	<b>0.6</b>	<b>6.8</b>	<b>63</b>	<b>1.1</b>	<b>07, 11, 17, 96</b>
<b>Joes Valley</b>	<b>45.6</b>	<b>0.9</b>	<b>46.4</b>	<b>72</b>	<b>1.8</b>	<b>96, 81, 99, 86</b>
<b>Moab</b>	<b>1.3</b>	<b>0.3</b>	<b>1.7</b>	<b>63</b>	<b>1.0</b>	<b>08, 15, 92, 88</b>
<b>Upper Sevier River</b>	<b>70.6</b>	<b>8.2</b>	<b>78.8</b>	<b>28</b>	<b>-1.8</b>	<b>09, 17, 15, 90</b>
<b>San Pitch</b>	<b>3.2</b>	<b>0.2</b>	<b>3.4</b>	<b>23</b>	<b>-2.2</b>	<b>04, 91, 14, 05</b>
<b>Lower Sevier</b>	<b>82.6</b>	<b>15.5</b>	<b>98.1</b>	<b>13</b>	<b>-3.1</b>	<b>05, 03, 16, 92</b>
<b>Beaver</b>	<b>10.9</b>	<b>1.1</b>	<b>12.0</b>	<b>44</b>	<b>-0.5</b>	<b>95, 08, 92, 14</b>
<b>Virgin River</b>	<b>38.8</b>	<b>6.8</b>	<b>45.6</b>	<b>41</b>	<b>-0.8</b>	<b>10, 09, 12, 07</b>

\*EOM, end of month; # WAI, water availibilty index; ^KAF, thousand acre-feet.

### What is a Water Availability Index?

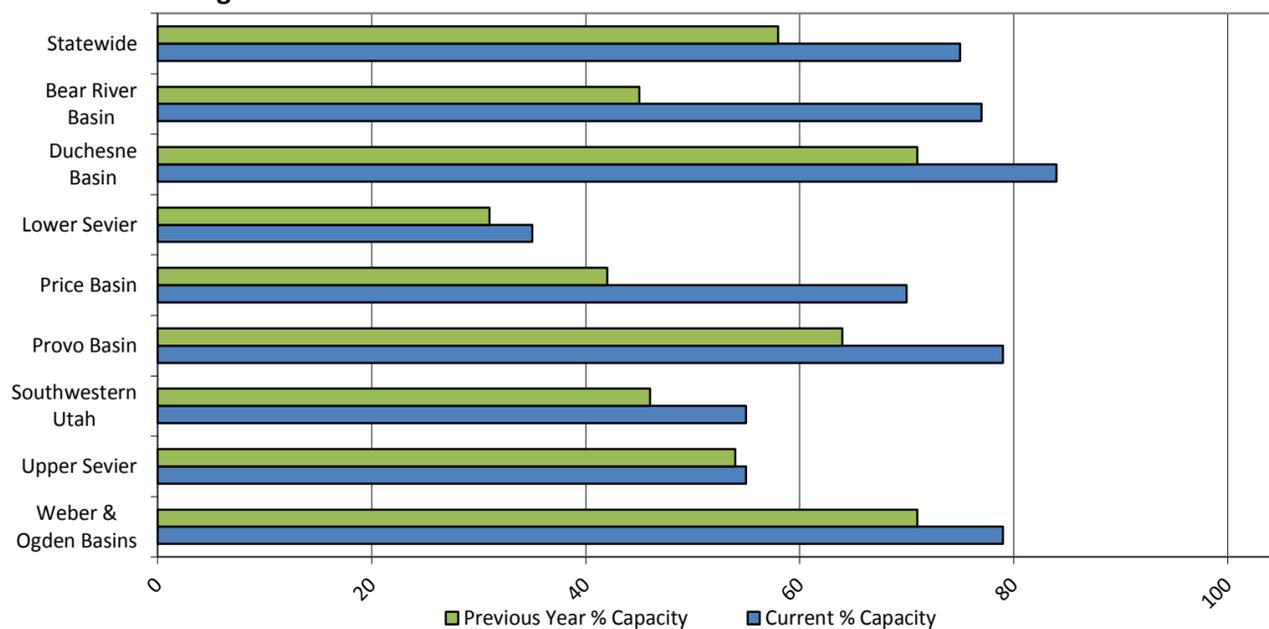
The Water Availability Index (WAI) is an observed hydrologic indicator of current surface water availability within a watershed. The index is calculated by combining current reservoir storage with the previous months streamflow. WAI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry) with a value of zero (0) indicating median water supply as compared to historical analysis. WAI's are calculated in this fashion to be consistent with other hydroclimatic indicators such as the Palmer Drought Index and the Precipitation index.

Utah Snow Surveys has also chosen to display the WAI value as well as a PERCENT CHANCE OF NON-EXCEEDANCE. While this is a cumbersome name, it has the simplest application. It can be best thought of as a scale of 1 to 99 with 1 being the drought of record (driest possible conditions) and 99 being the flood of record (wettest possible conditions) and a value of 50 representing average conditions. This rating scale is a percentile rating as well, for example a WAI of 75% means that this years water supply is greater than 75% of all historical events and that only 25% of the time has it been exceeded. Conversely a WAI of 10% means that 90% of historical events have been greater than this one and that only 10% have had less total water supply. This scale is comparable between basins: a SWSI of 50% means the same relative ranking on watershed A as it does on watershed B, which may not be strictly true of the +4 to -4 scale.

For more information on the WAI go to: [www.ut.nrcs.usda.gov/snow/](http://www.ut.nrcs.usda.gov/snow/) on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

<b>Reservoir Storage Summary for the end of February 2018</b>	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
Big Sand Wash Reservoir	25.9	25.6		25.7	101%	100%			
Causey Reservoir	6.0	4.8	3.2	7.1	85%	67%	45%	189%	148%
Cleveland Lake	2.8	1.7		5.4	51%	32%			
Currant Creek Reservoir	14.8	14.2	14.8	15.5	96%	92%	95%	100%	96%
Deer Creek Reservoir	145.8	145.4	112.0	149.7	97%	97%	75%	130%	130%
East Canyon Reservoir	41.2	30.9	34.9	49.5	83%	62%	71%	118%	89%
Echo Reservoir	56.7	36.7	47.9	73.9	77%	50%	65%	118%	77%
Grantsville Reservoir	2.4	1.3	2.1	3.3	72%	40%	64%	114%	62%
Gunlock	8.0	6.5	6.7	10.4	77%	62%	64%	120%	97%
Gunnison Reservoir	3.2	2.3	13.0	20.3	16%	11%	64%	25%	18%
Huntington North Reservoir	5.3	3.7	3.3	4.2	126%	88%	79%	161%	112%
Hyrum Reservoir	11.9	10.3	11.2	15.3	78%	67%	73%	106%	92%
Joes Valley Reservoir	45.6	31.0	40.0	61.6	74%	50%	65%	114%	78%
Jordanelle Reservoir	253.0	190.8	239.4	320.0	79%	60%	75%	106%	80%
Ken's Lake	1.3	1.9	1.3	2.3	58%	83%	54%	106%	153%
Kolob Reservoir	1.2	4.5		5.6	21%	81%			
Lost Creek Reservoir	18.8	16.3	12.2	22.5	84%	73%	54%	154%	134%
Lower Enterprise	1.7	2.4	1.0	2.6	64%	92%	39%	164%	235%
Miller Flat Reservoir	3.8	2.1		5.2	73%	41%			
Millsite	1.2	10.9	10.2	16.7	7%	65%	61%	11%	107%
Minersville Reservoir	10.9	10.0	15.1	23.3	47%	43%	65%	72%	66%
Moon Lake Reservoir	25.6	26.6	26.3	35.8	72%	74%	73%	97%	101%
Otter Creek Reservoir	39.5	36.8	38.6	52.5	75%	70%	74%	102%	95%
Panguitch Lake	9.4	11.8	13.7	22.3	42%	53%	61%	69%	86%
Pineview Reservoir	76.2	60.2	53.0	110.1	69%	55%	48%	144%	114%
Piute Reservoir	31.1	29.9	53.6	71.8	43%	42%	75%	58%	56%
Porcupine Reservoir	11.8	11.8	7.0	11.3	104%	104%	62%	169%	169%
Quail Creek	30.8	30.2	30.0	40.0	77%	75%	75%	103%	101%
Red Fleet Reservoir	20.4	21.3	18.3	25.7	79%	83%	71%	111%	116%
Rockport Reservoir	55.1	34.7	34.8	60.9	91%	57%	57%	158%	100%
Sand Hollow Reservoir	48.5	45.9		50.0	97%	92%			
Scofield Reservoir	51.4	16.6	30.7	65.8	78%	25%	47%	167%	54%
Settlement Canyon Reservoir	0.8	0.5	0.7	1.0	82%	52%	69%	119%	76%
Sevier Bridge Reservoir	82.5	72.1	169.0	236.0	35%	31%	72%	49%	43%
Smith And Morehouse Reservoir	4.7	6.4	3.6	8.1	58%	79%	44%	132%	177%
Starvation Reservoir	163.5	126.8	144.5	165.3	99%	77%	87%	113%	88%
Stateline Reservoir	6.1	6.6	5.2	12.0	51%	55%	43%	118%	127%
Steinaker Reservoir	16.8	23.2	23.1	33.4	50%	70%	69%	73%	101%
Strawberry Reservoir	931.8	785.0	660.5	1105.9	84%	71%	60%	141%	119%
Upper Enterprise	1.7	3.7	3.9	10.0	17%	37%	39%	42%	95%
Upper Stillwater Reservoir	8.5	11.6	7.6	32.5	26%	36%	23%	112%	153%
Utah Lake	611.6	454.5	785.8	870.9	70%	52%	90%	78%	58%
Vernon Creek Reservoir		0.5	0.5	0.6		83%	87%		96%
Willard Bay	173.0	197.2	138.4	215.0	80%	92%	64%	125%	142%
Woodruff Creek	1.5	4.0	2.6	4.0	38%	100%	65%	58%	154%
Woodruff Narrows Reservoir	51.6	53.3	31.6	57.3	90%	93%	55%	163%	169%
Meeks Cabin Reservoir	11.1	12.5	11.9	32.5	34%	38%	37%	93%	105%
Bear Lake	991.5	540.9	594.1	1302.0	76%	42%	46%	167%	91%
Basin-wide Total	4036.1	3097.7	3456.8	5380.3	75%	58%	64%	117%	90%
# of reservoirs	42	42	42	42	42	42	42	42	42

### Reservoir Storage



*Issued by*

**Leonard Jordan**  
**Acting Chief**  
**Natural Resources Conservation Service**  
**U.S. Department of Agriculture**

*Prepared by*

**Snow Survey Staff:**  
**Troy Brosten, Assistant Supervisor**  
**Beau Uriona, Hydrologist**  
**Jordan Clayton, Hydrologist**  
**Kent Sutcliffe, Soil Scientist**

*Released by*

**Timothy Wilson**  
**State Conservationist**  
**Natural Resources Conservation Service**  
**Salt Lake City, Utah**



YOU MAY OBTAIN THIS PRODUCT AS WELL AS CURRENT SNOW, PRECIPITATION, TEMPERATURE AND SOIL MOISTURE, RESERVOIR, SURFACE WATER SUPPLY INDEX, AND OTHER DATA BY VISITING OUR WEB SITE @:  
<https://www.nrcs.usda.gov/wps/portal/nrcs/main/ut/snow/>

Snow Survey, NRCS, USDA  
245 North Jimmy Doolittle Road  
Salt Lake City, UT 84116  
(385) 285-3114



## **Utah Climate and Water Report**

**Natural Resources Conservation Service**  
**Salt Lake City, UT**

