



Utah Climate and Water Report

November 1, 2017



Above Donkey Reservoir SNOTEL

Photo by Kent Sutcliffe

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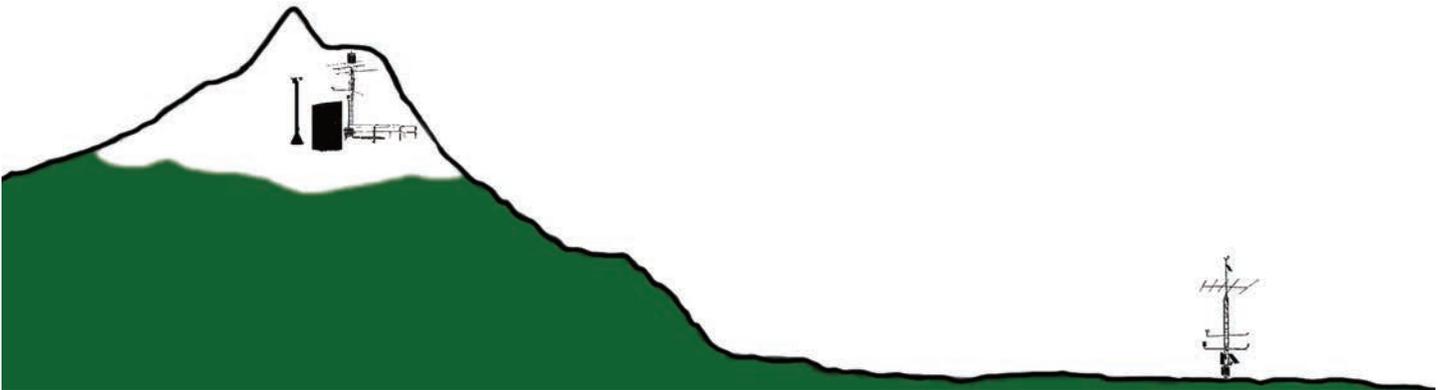
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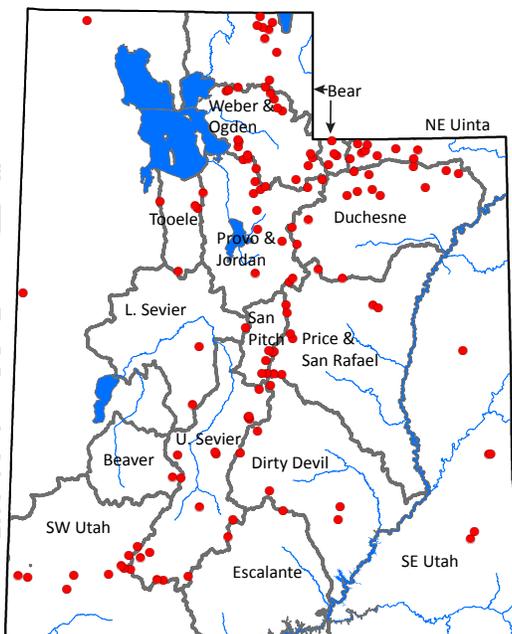
Utah Climate and Water Report

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.



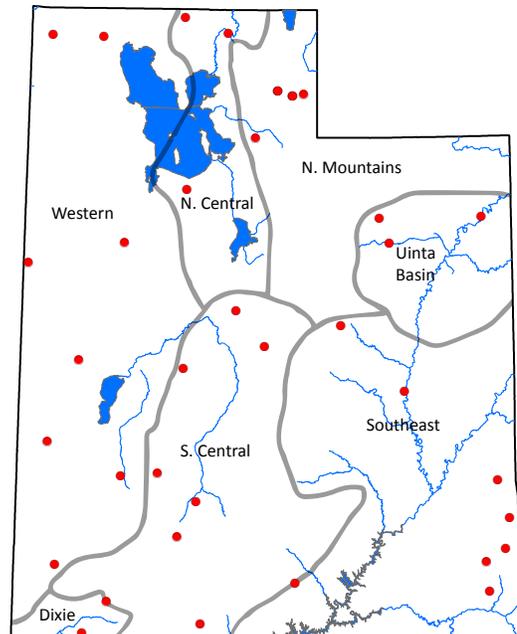
SNOTEL

- 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

November 1, 2017

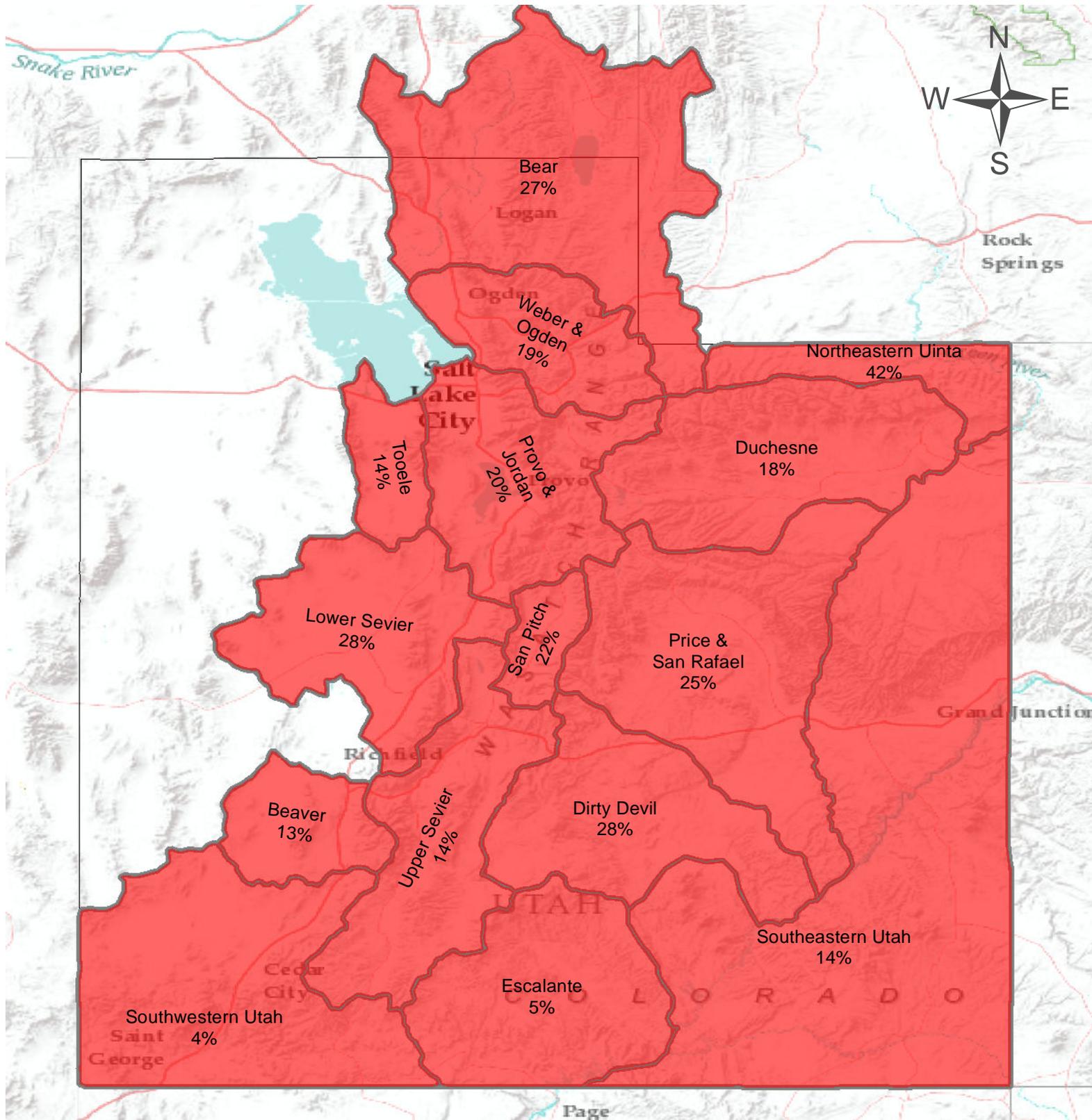
*This report has been reorganized to better reflect two distinct geographic areas being monitored – the low elevation valley sites (**Soil Climate Analysis Network**) that are critical for agricultural production and operations, and the high elevation mountainous areas where water supply is generated (**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 Randy.Julander@ut.usda.gov.*

Current Valley Conditions (SCAN)

There was basically no precipitation at the lower elevation SCAN sites during October, with only the Uinta Basin and Northern Mountain Regions registering any precipitation at all. Obviously this is an extremely dry start to the water year, especially in the Southern Regions. Soil moisture levels reflect the dry conditions at an average of 31% of saturation. This is significantly drier than last years' 38% of saturation and reflects a new minimum for this time of year. Both air and soil temperatures have remained relatively steady this past month reflecting the overall mild conditions through the month. As of November 1st, both soil and air temperature were significantly above normal statewide at SCAN sites.

Current Mountain Conditions (SNOTEL)

October was about as dry as it can get with precipitation at just 20% of average statewide. Actually, that 20% of average statewide looks pretty good compared to the 4% to 5% of average across Southern Utah. Warm conditions and no precipitation means soil moisture also decreased: statewide, soils are at 48% of saturation compared with 59% last year, and down 7% from just last month. Ah, the memorable quote from the Princess Bride movie – “get used to disappointment”. Not all is bad news, however, as streamflow continues at average or even a bit above-average for many areas of the state. Reservoir storage is at 70% of capacity, well above last year's figure of 46% of capacity. Given current streamflow, reservoir storage could increase to substantially higher levels than the current 70% as storage slowly increases over the winter months, and that could be a bonus for next spring should we have a poor snow year. The seasonal climate outlook from the Climate Prediction Center (NOAA) suggests that Utah will have a warmer than normal winter with the chance of above normal precipitation in the north and no clear prediction for precipitation in Southern Utah. As one might recall from last year, snowfall came very late in the season but when it did, came with great intensity and led to an exceptional water year in the north. Overall water supply conditions are in good shape, due mostly to streamflow and reservoir storage.



Statewide Precipitation

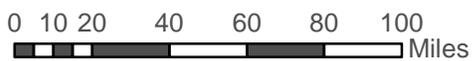
As of November 1, 2017:

20% of Normal Precipitation

20% of Normal Precipitation Last Month

% of Normal

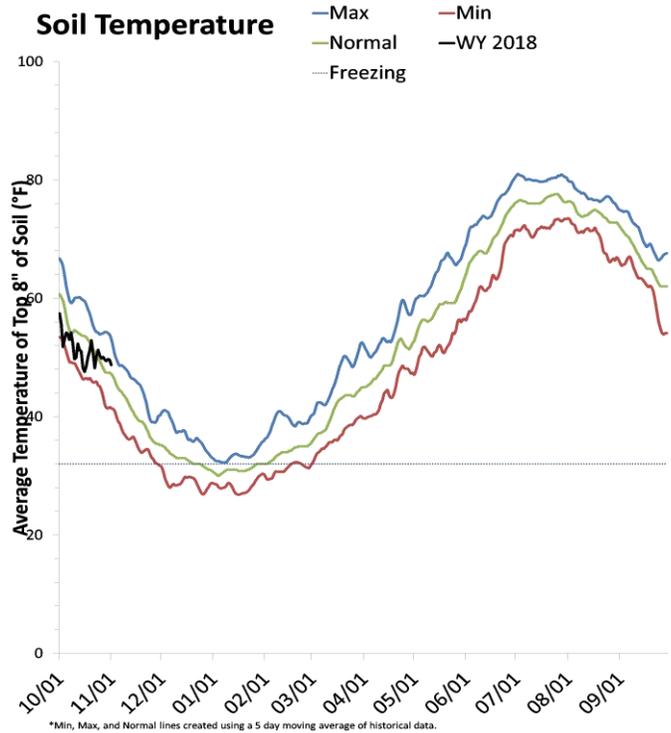
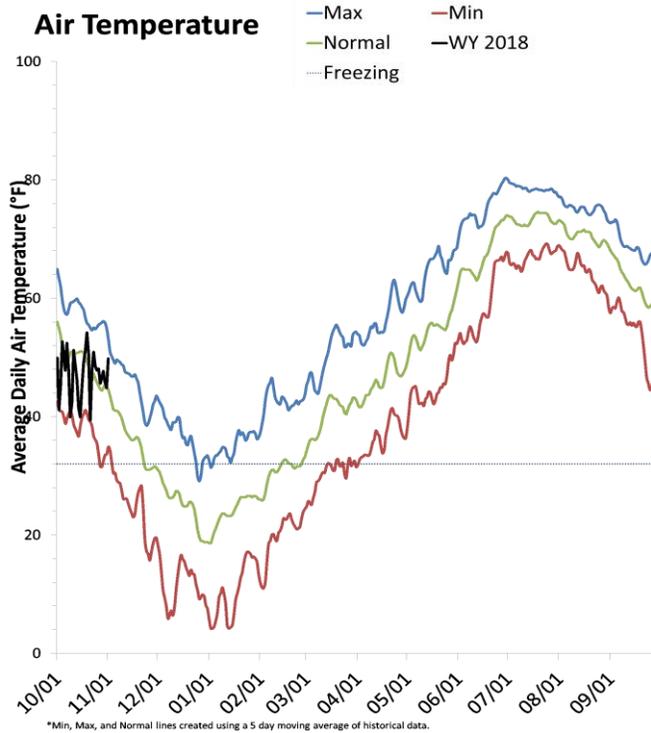
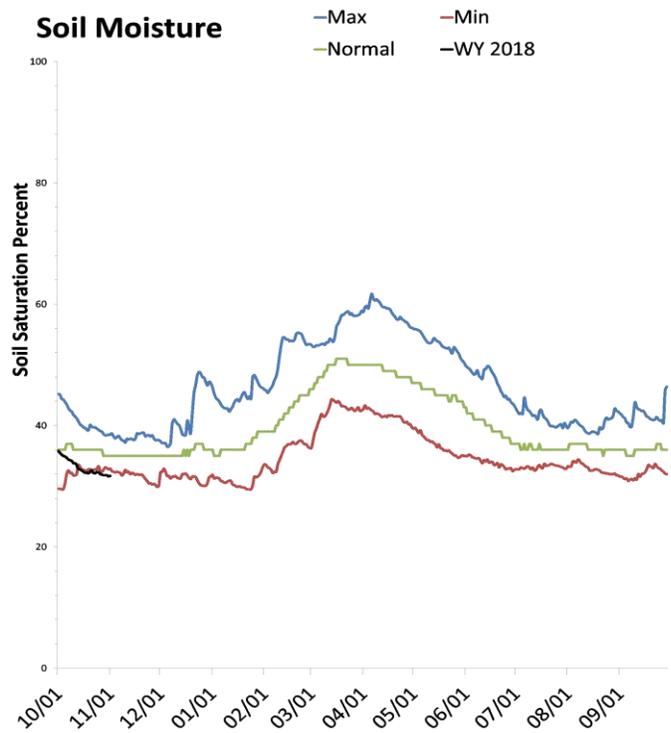
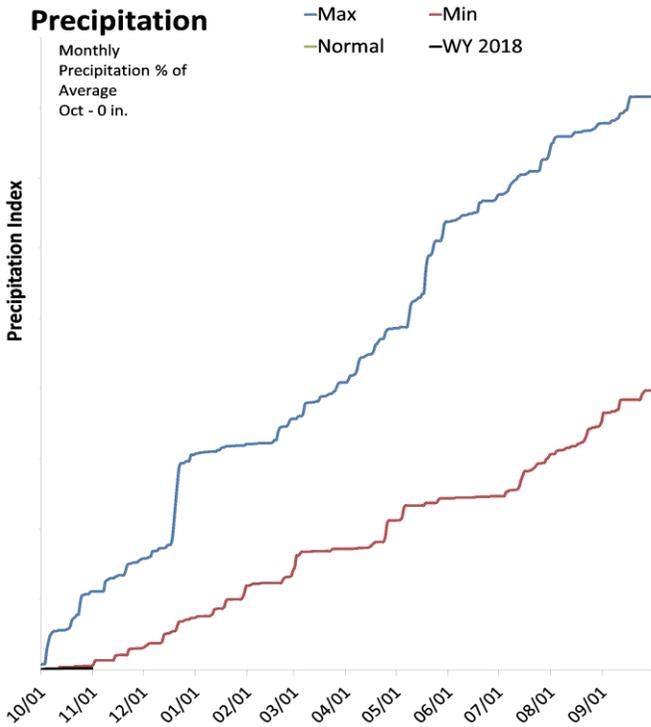
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%



Statewide SCAN

November 1, 2017

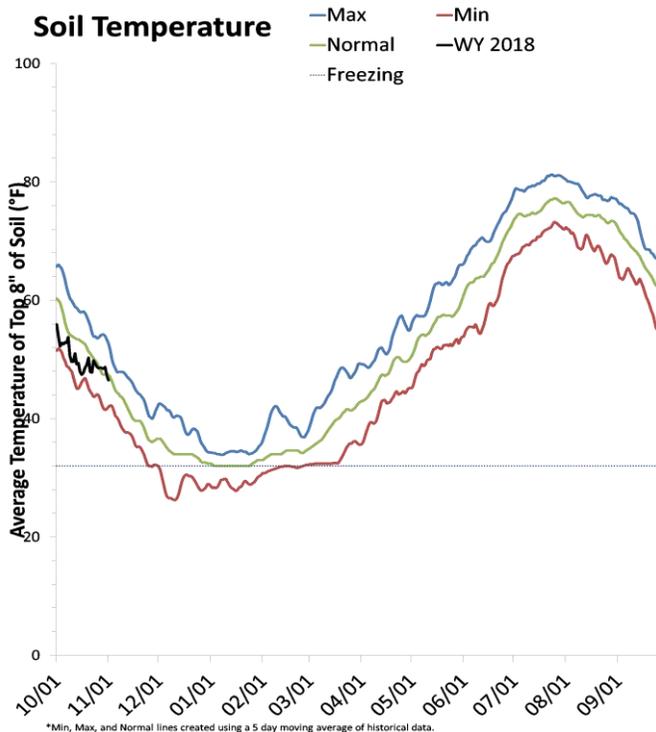
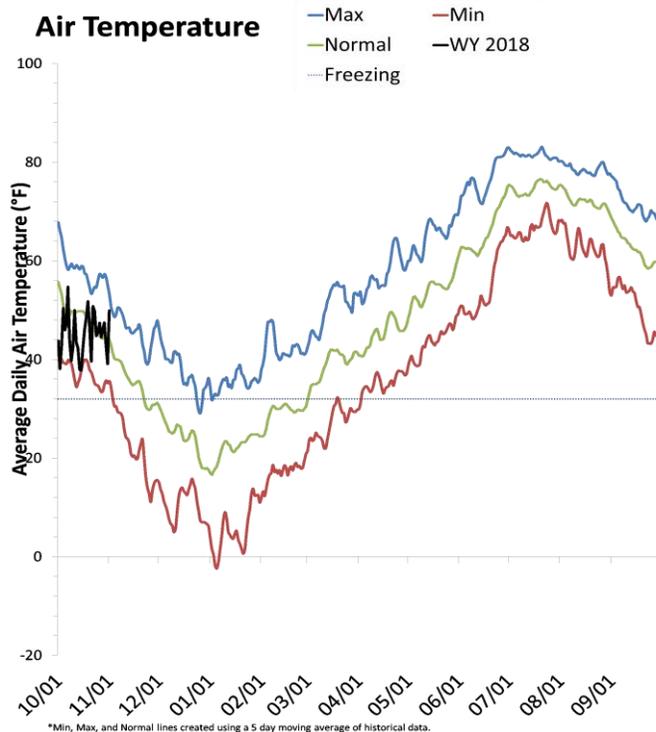
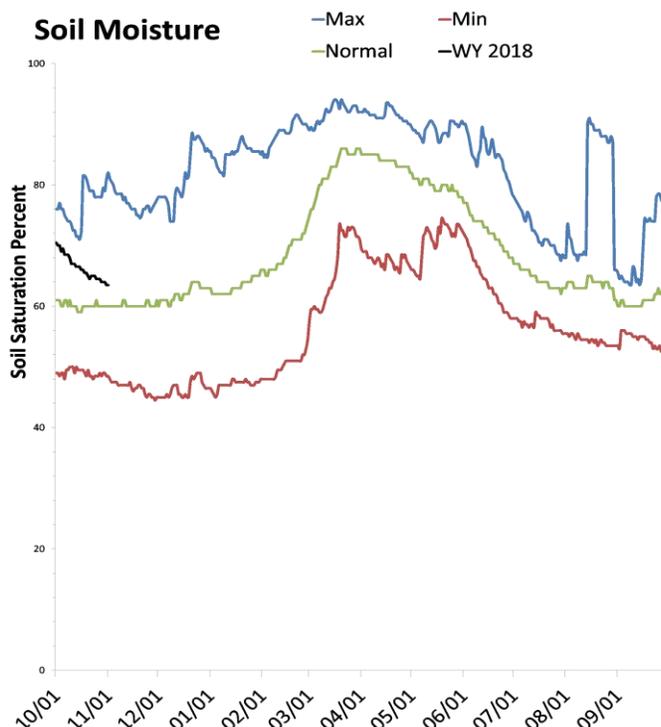
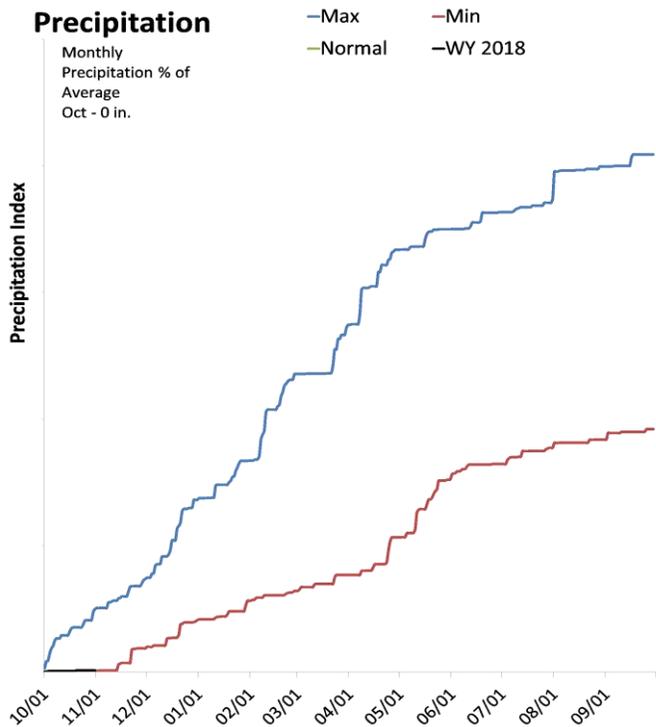
The average precipitation at SCAN sites within Utah was 0 inches in October, which brings the seasonal accumulation (Oct-Oct) to 0 inches. Soil moisture is at 31% compared to 38% last year.



North Central

November 1, 2017

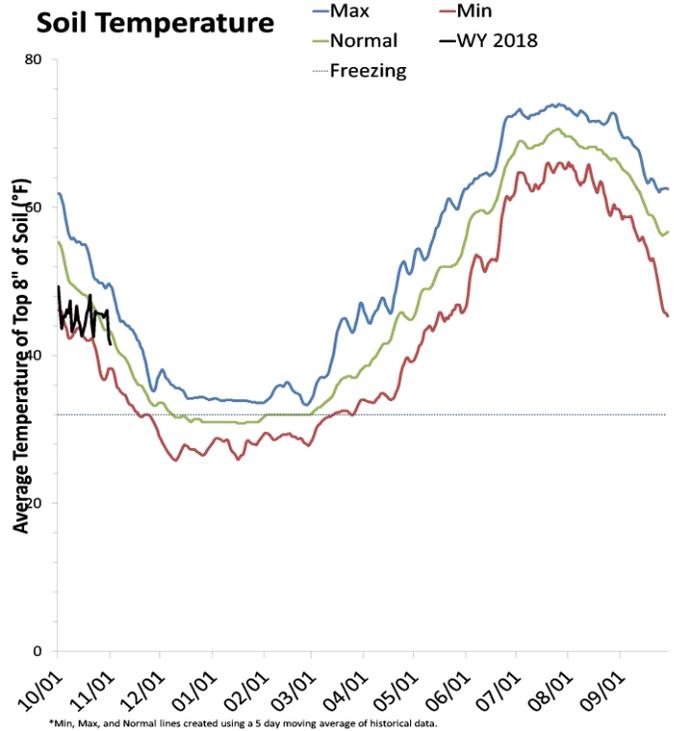
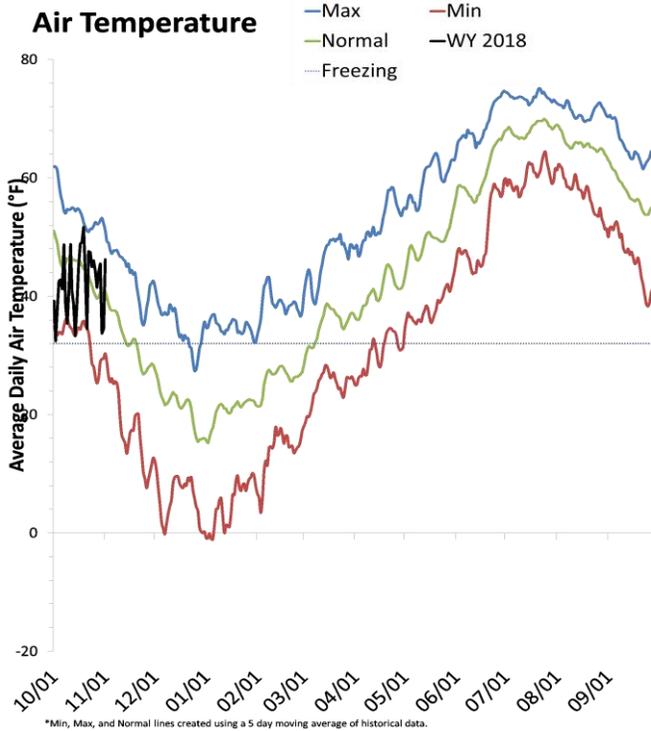
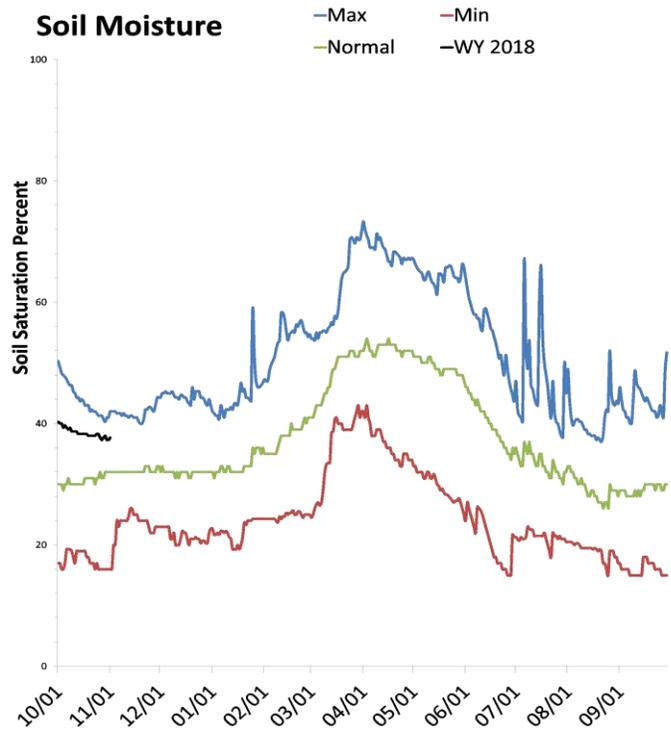
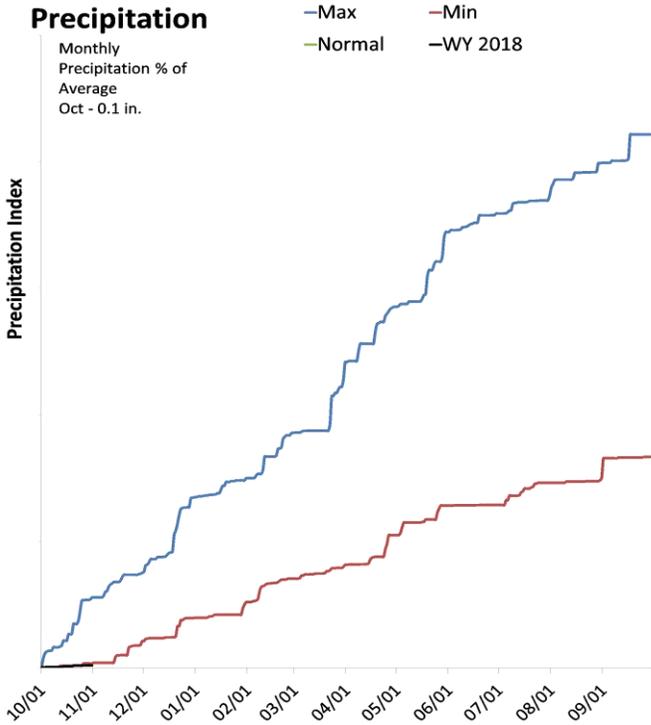
The average precipitation in October at SCAN sites within the basin was 0 inches, which brings the seasonal accumulation (Oct-Oct) to 0 inches. Soil moisture is at 64% compared to 81% last year.



Northern Mountains

November 1, 2017

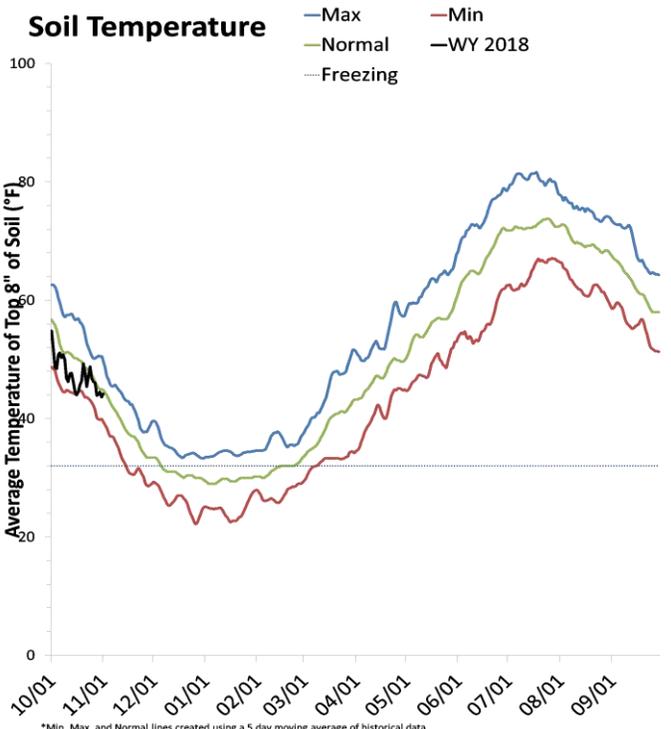
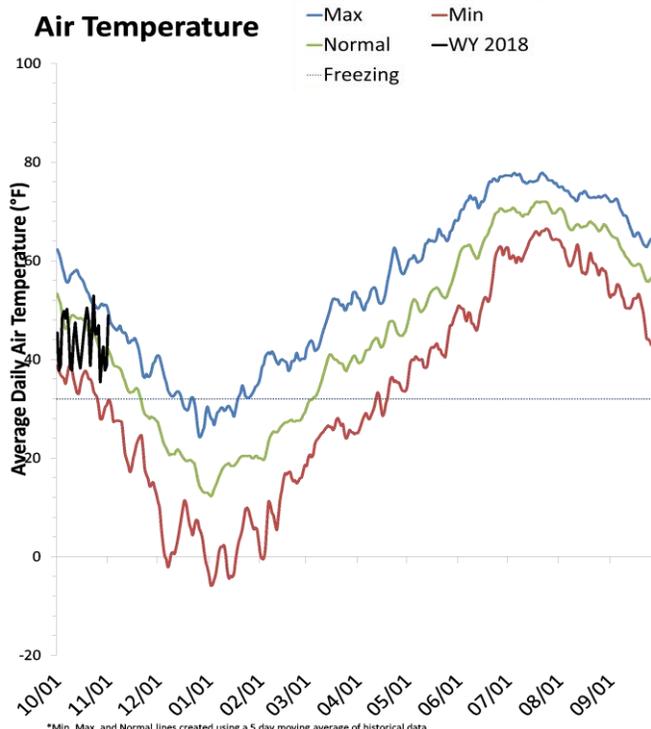
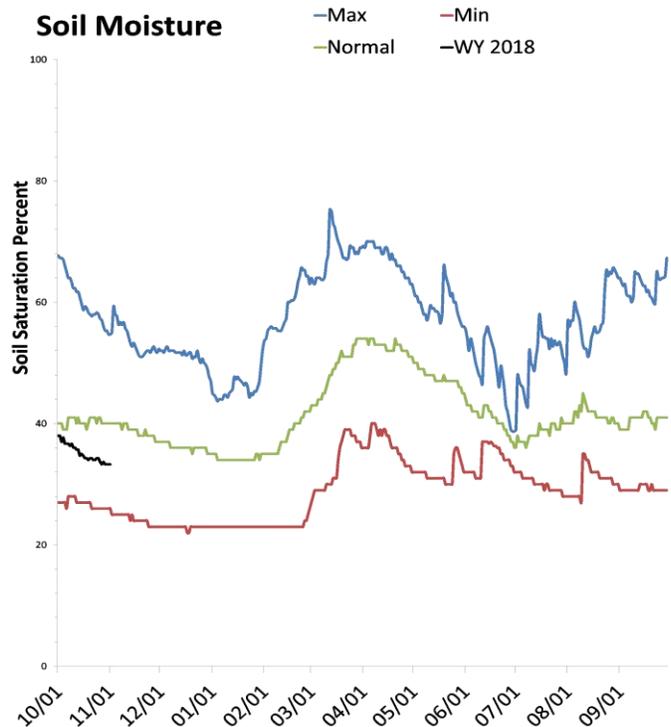
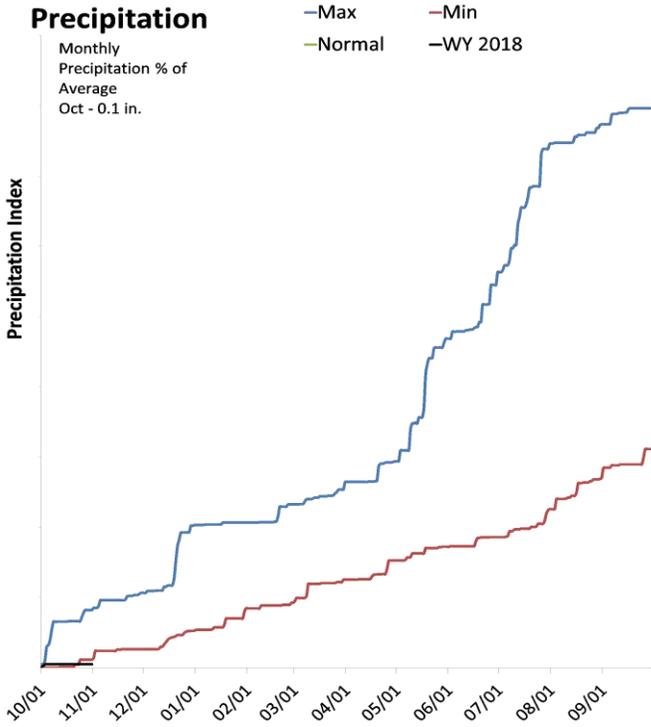
The average precipitation in October at SCAN sites within the basin was 0.1 inches, which brings the seasonal accumulation (Oct-Oct) to 0.1 inches. Soil moisture is at 38% compared to 42% last year.



Uinta Basin

November 1, 2017

The average precipitation in October at SCAN sites within the basin was 0.1 inches, which brings the seasonal accumulation (Oct-Oct) to 0.1 inches. Soil moisture is at 33% compared to 54% last year.



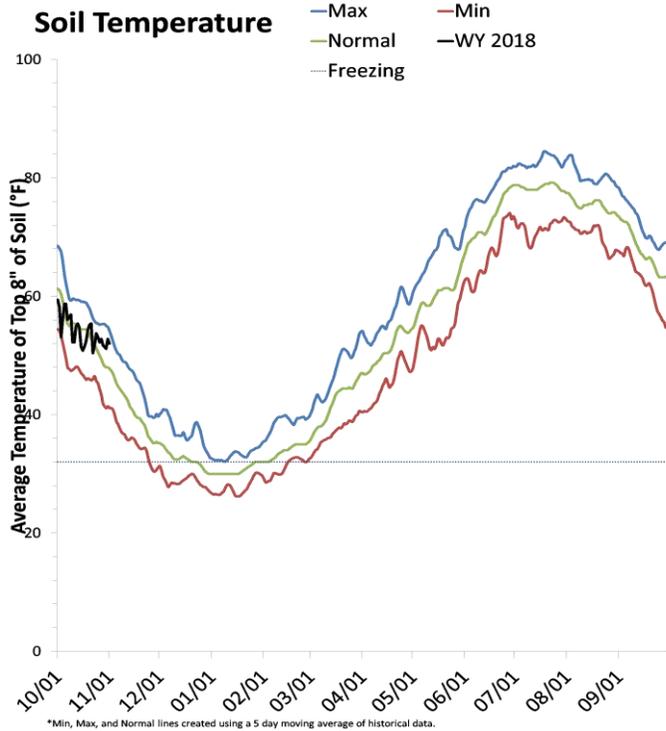
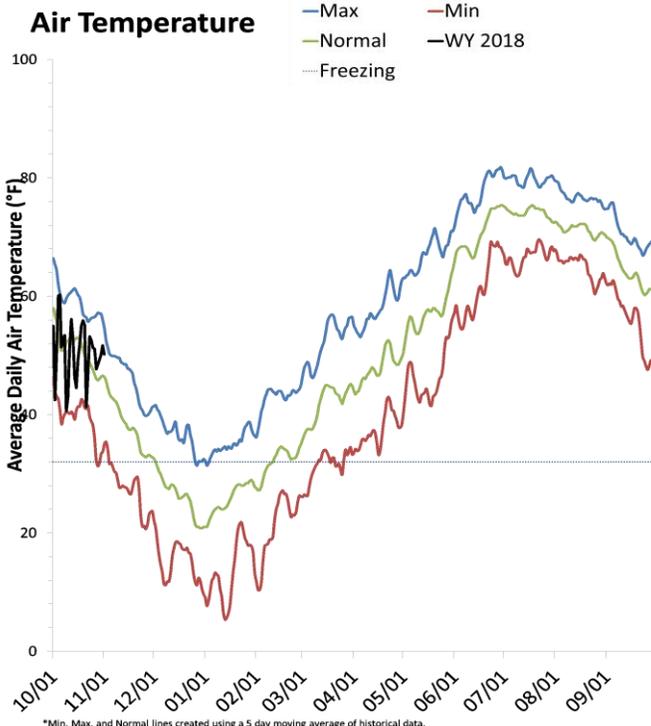
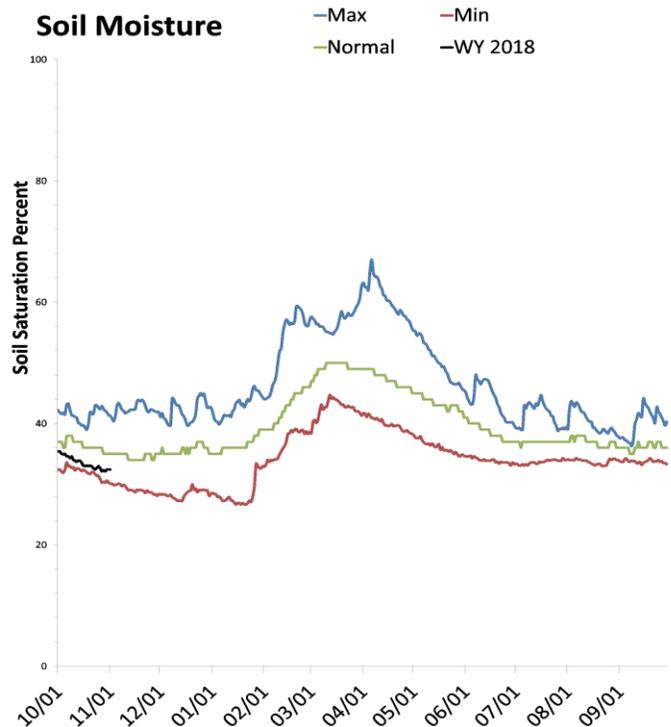
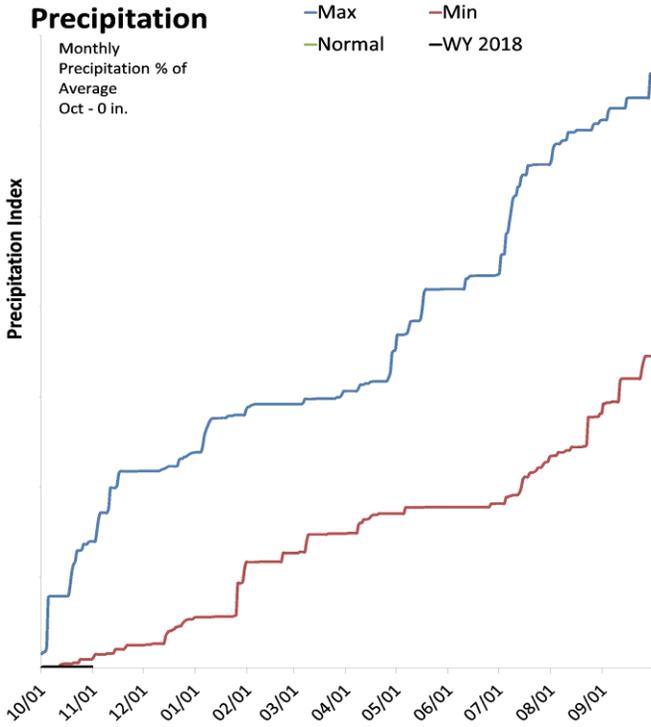
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

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

Southeast

November 1, 2017

The average precipitation in October at SCAN sites within the basin was 0 inches, which brings the seasonal accumulation (Oct-Oct) to 0 inches. Soil moisture is at 33% compared to 38% last year.



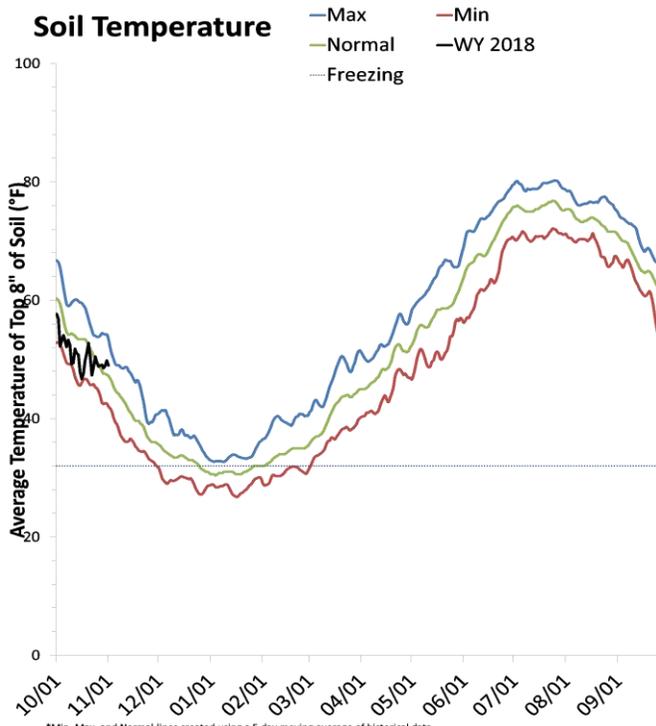
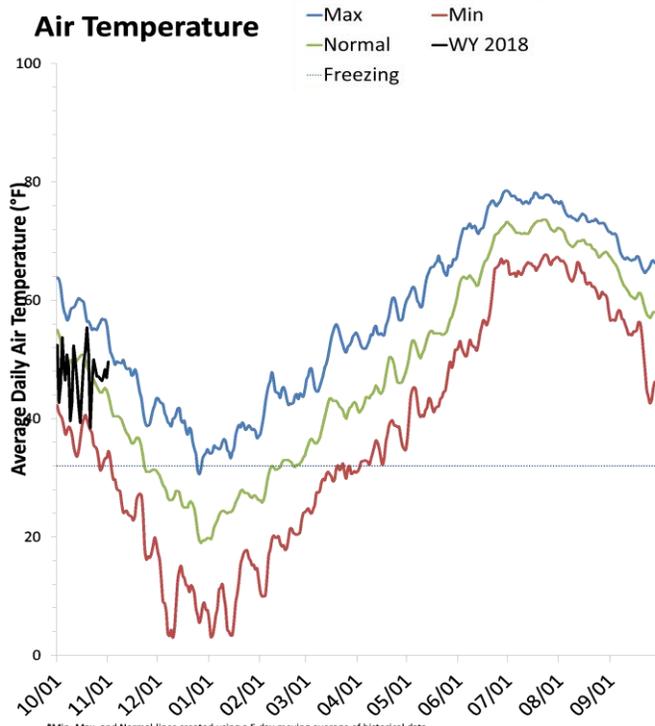
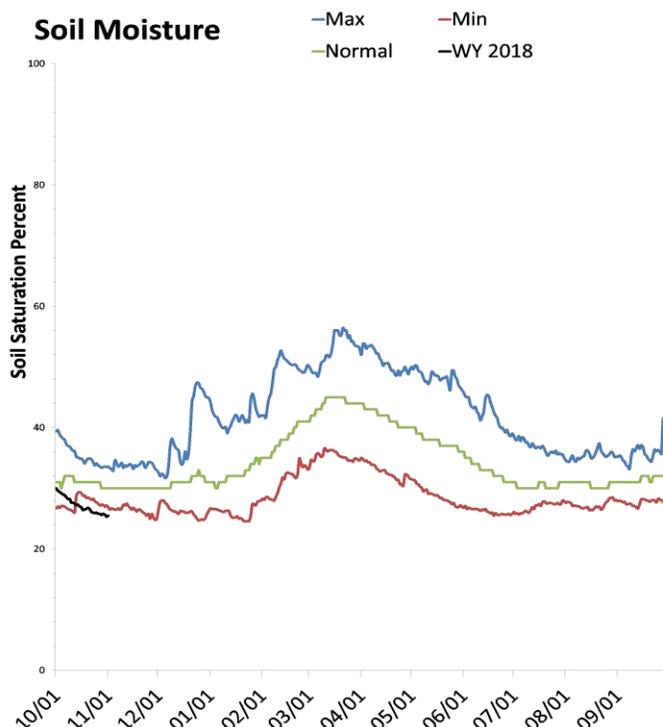
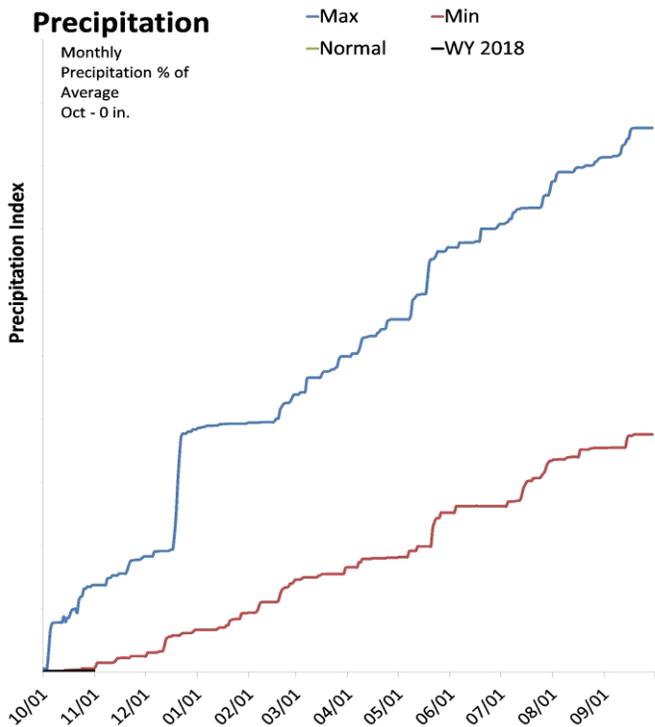
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

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South Central

November 1, 2017

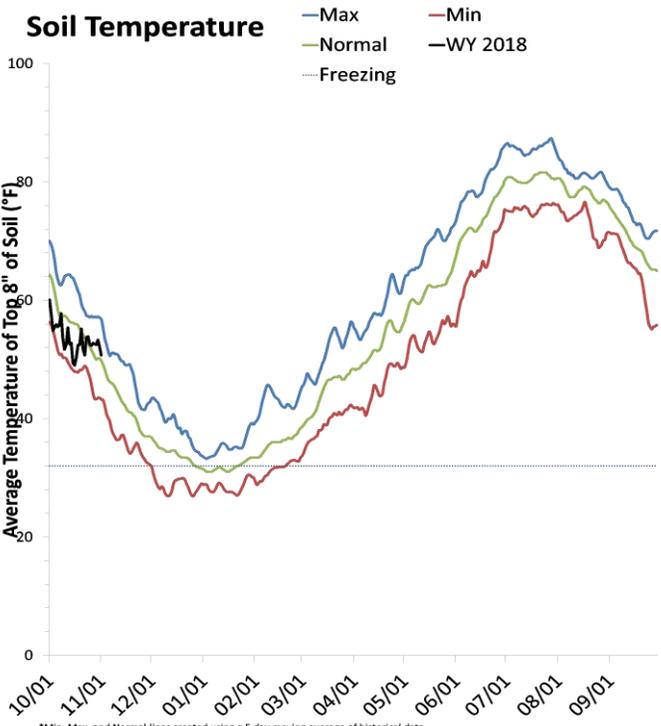
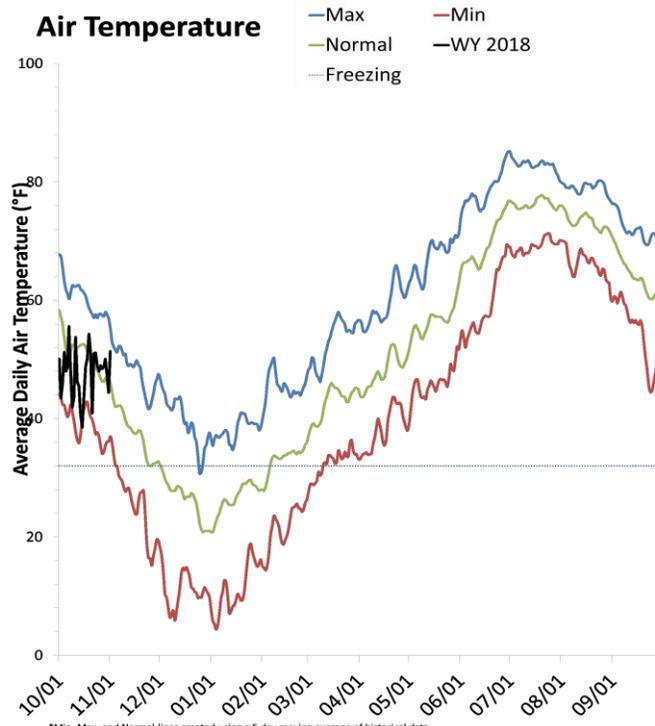
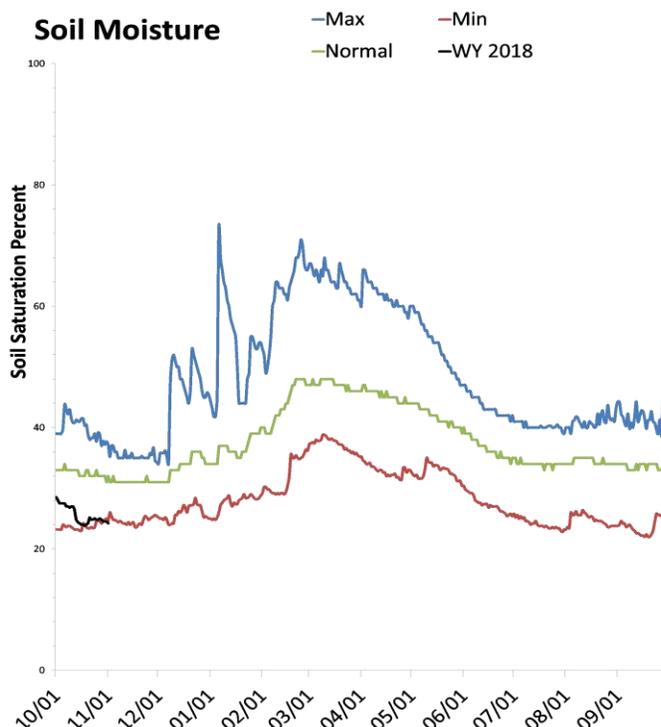
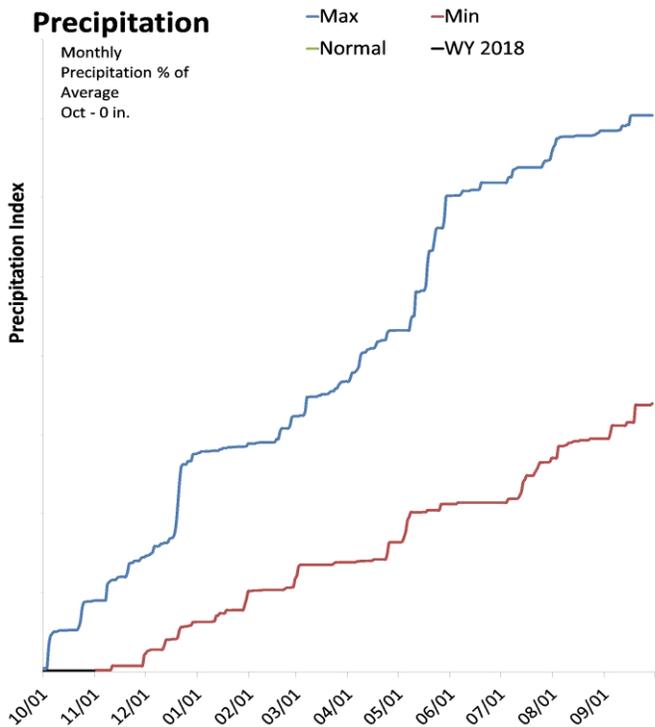
The average precipitation in October at SCAN sites within the basin was 0 inches, which brings the seasonal accumulation (Oct-Oct) to 0 inches. Soil moisture is at 26% compared to 31% last year.



Western and Dixie

November 1, 2017

The average precipitation in October at SCAN sites within the basin was 0 inches, which brings the seasonal accumulation (Oct-Oct) to 0 inches. Soil moisture is at 23% compared to 25% last year.



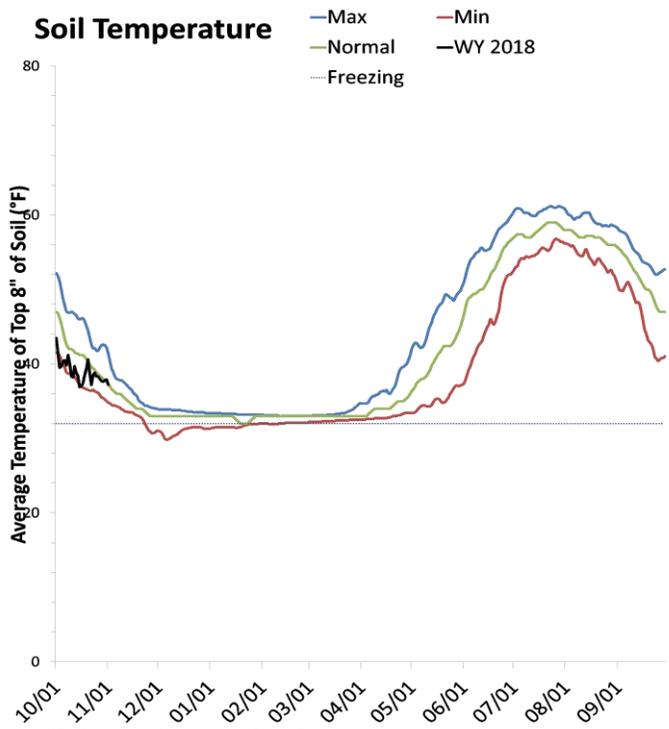
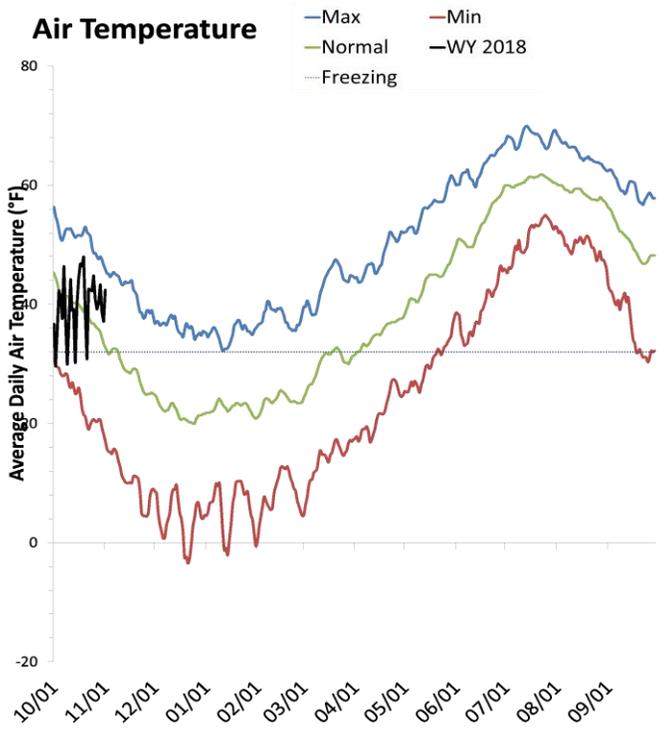
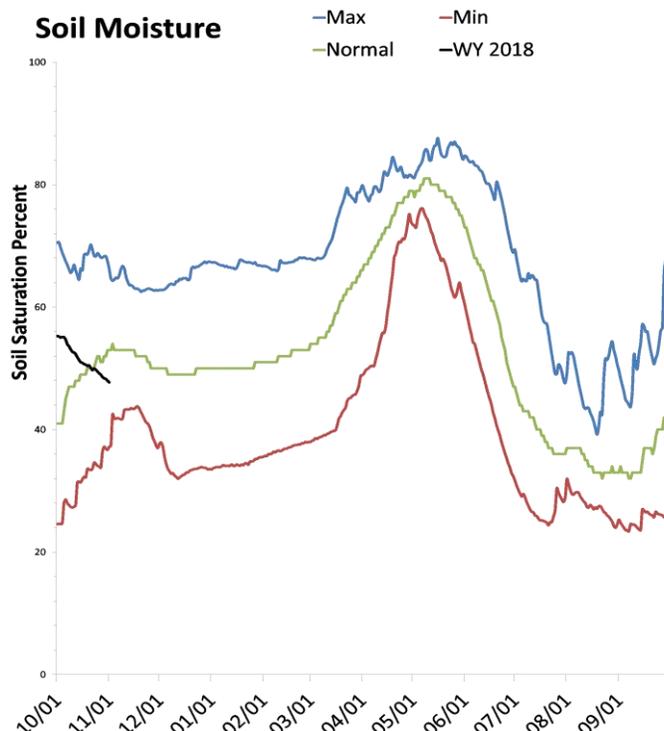
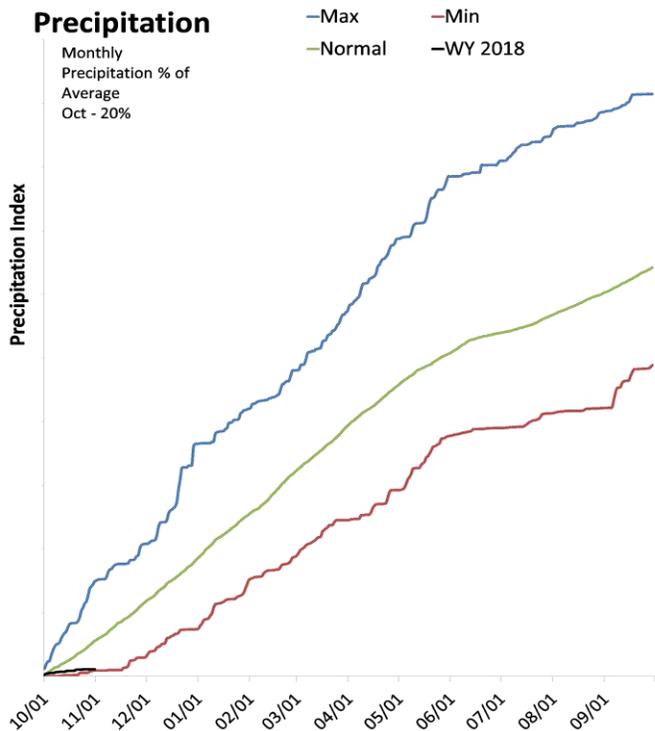
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

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Statewide SNOTEL

November 1, 2017

Precipitation at SNOTEL sites during October was much below average at 20%, which brings the seasonal accumulation (Oct-Oct) to 20% of average. Soil moisture is at 48% compared to 59% last year. Reservoir storage is at 70% of capacity, compared to 46% last year.



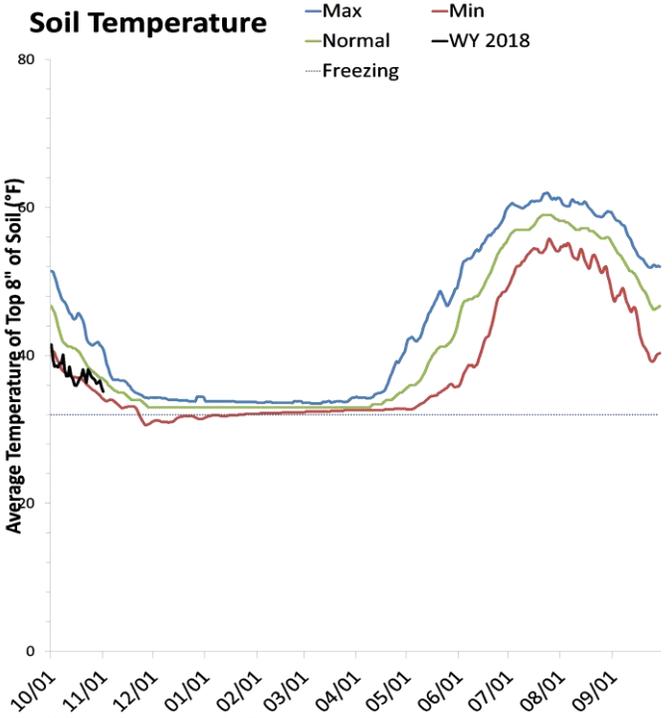
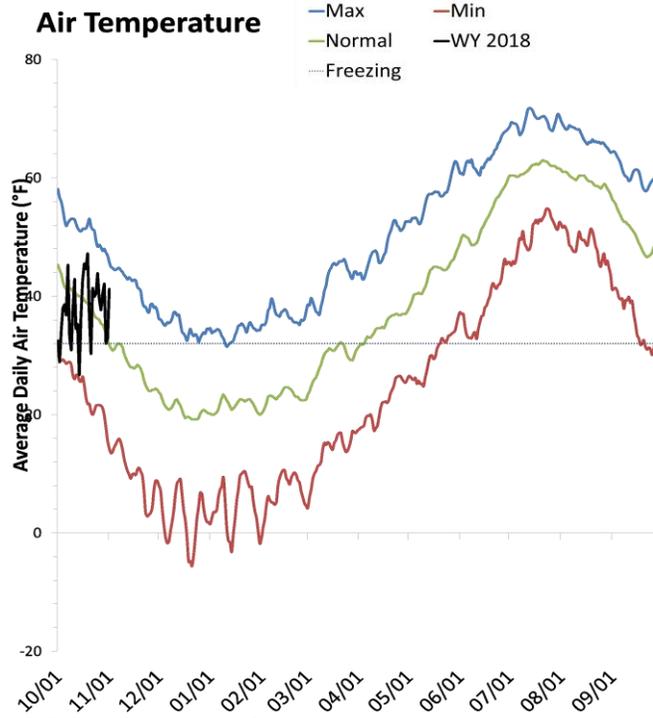
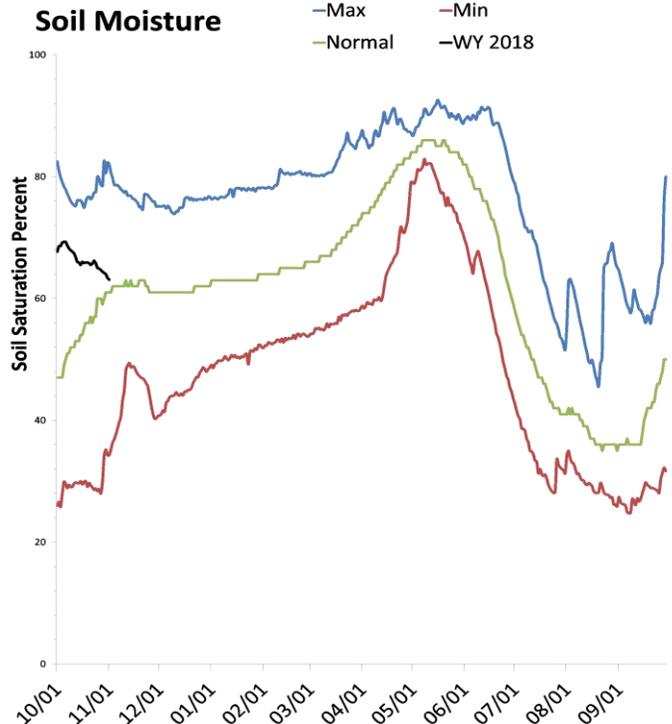
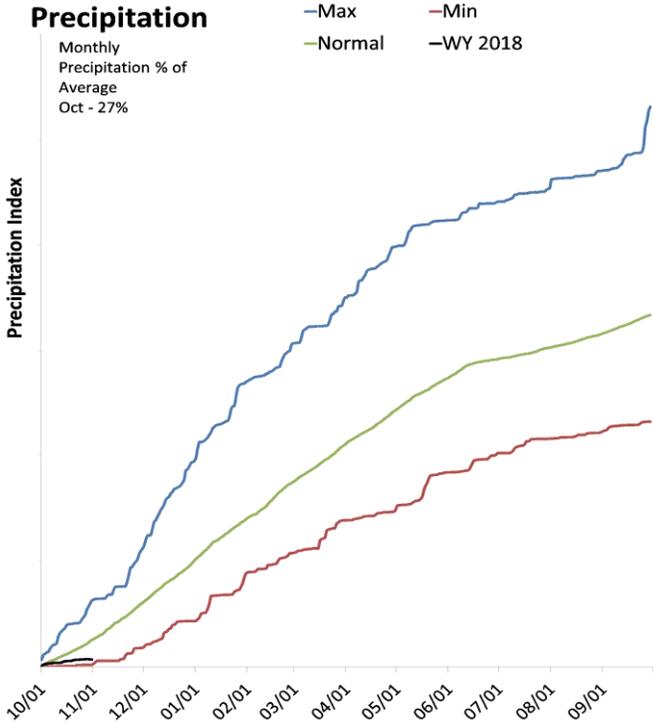
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

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

Bear River Basin

November 1, 2017

Precipitation in October was much below average at 27%, which brings the seasonal accumulation (Oct-Oct) to 27% of average. Soil moisture is at 63% compared to 77% last year. Reservoir storage is at 83% of capacity, compared to 36% last year. The water availability index for the Bear River is 87%, 71% for Woodruff Narrows and 85% for the Little Bear.



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

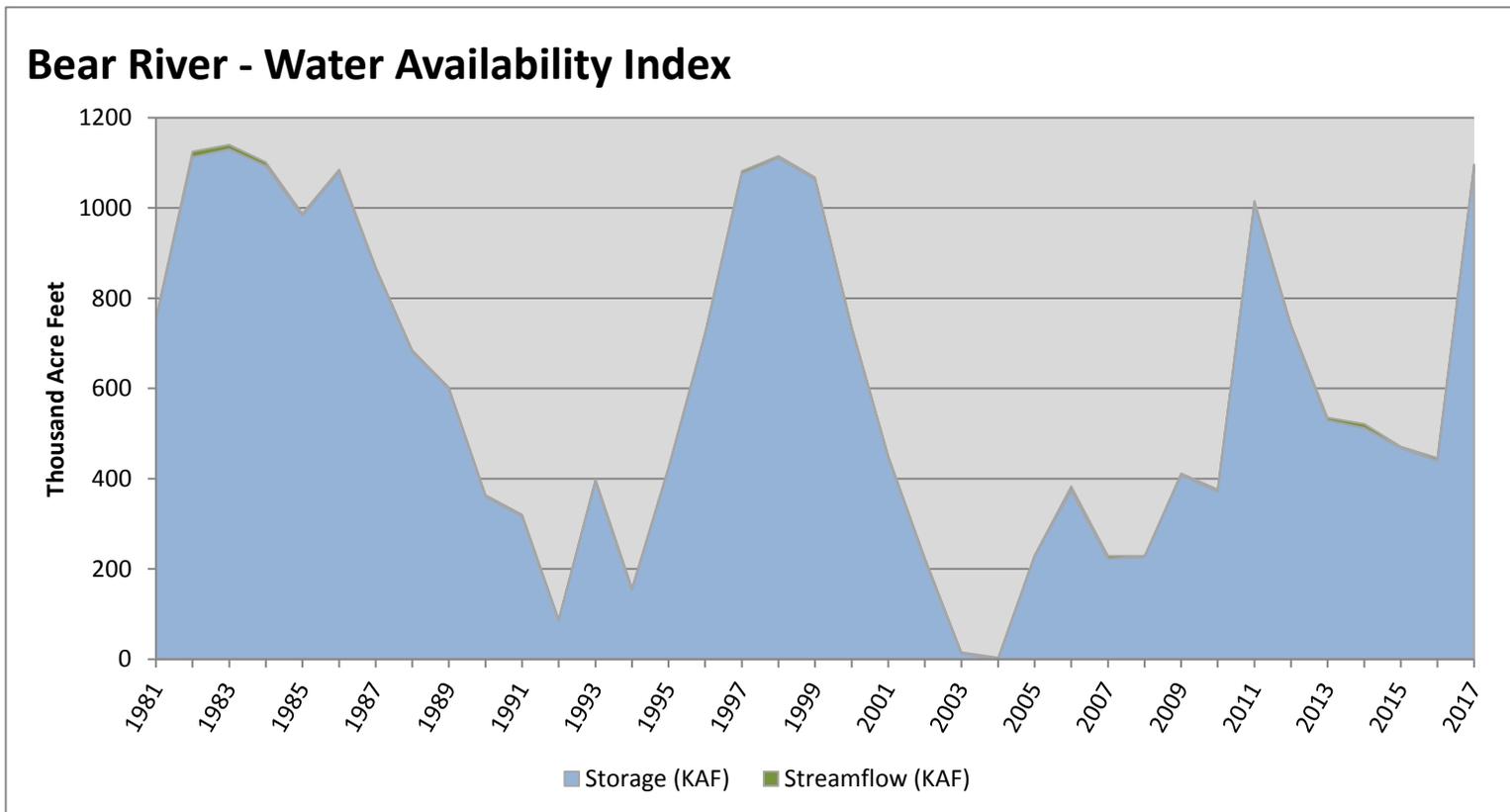
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|-------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Bear River | 1090.72 | 5.43 | 1096.15 | 87 | 3.07 | 97, 86, 84, 98 |

^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.

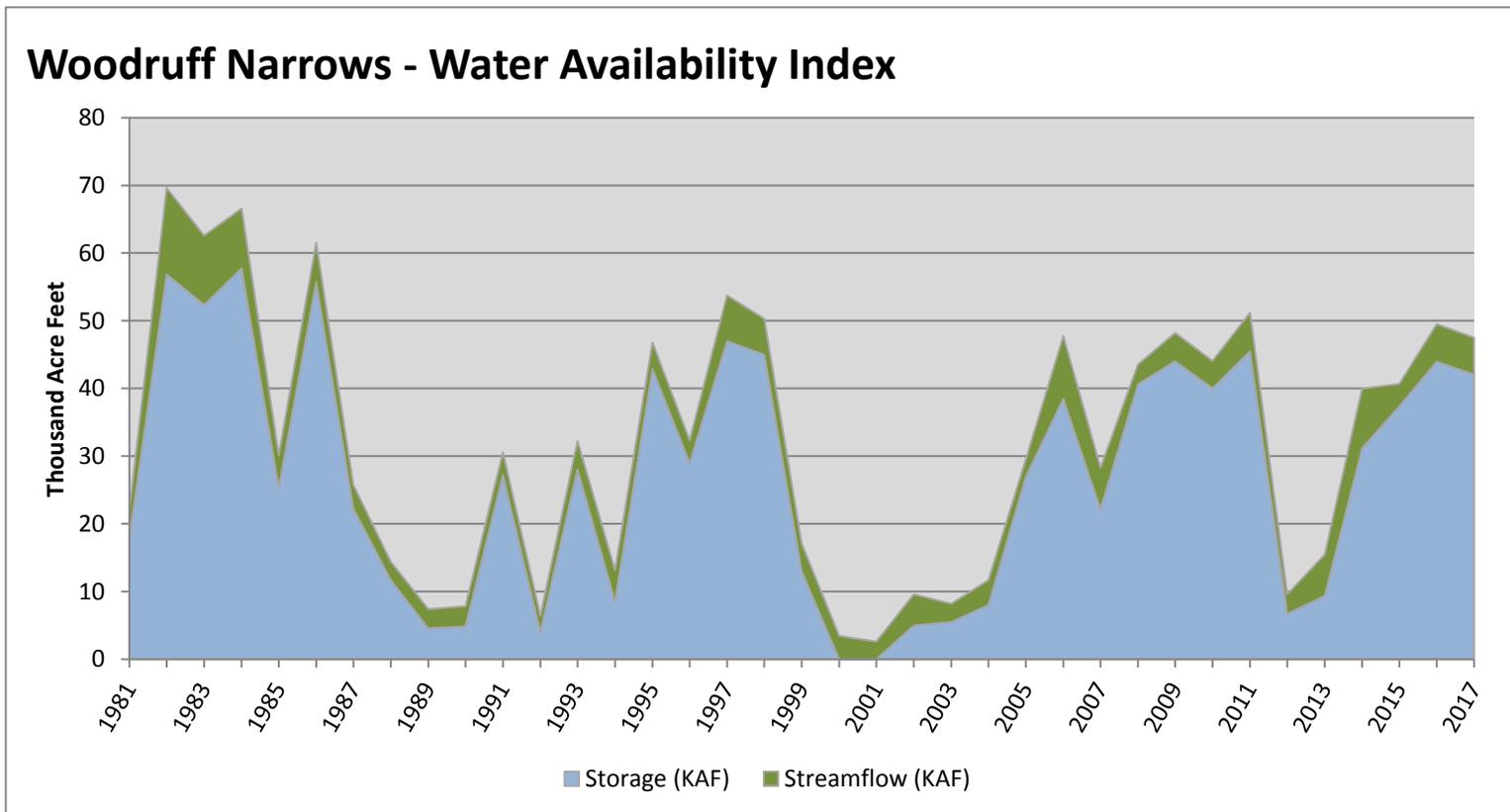


November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|-------------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Woodruff Narrows | 42.07 | 5.43 | 47.50 | 71 | 1.75 | 10, 95, 06, 09 |

^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.

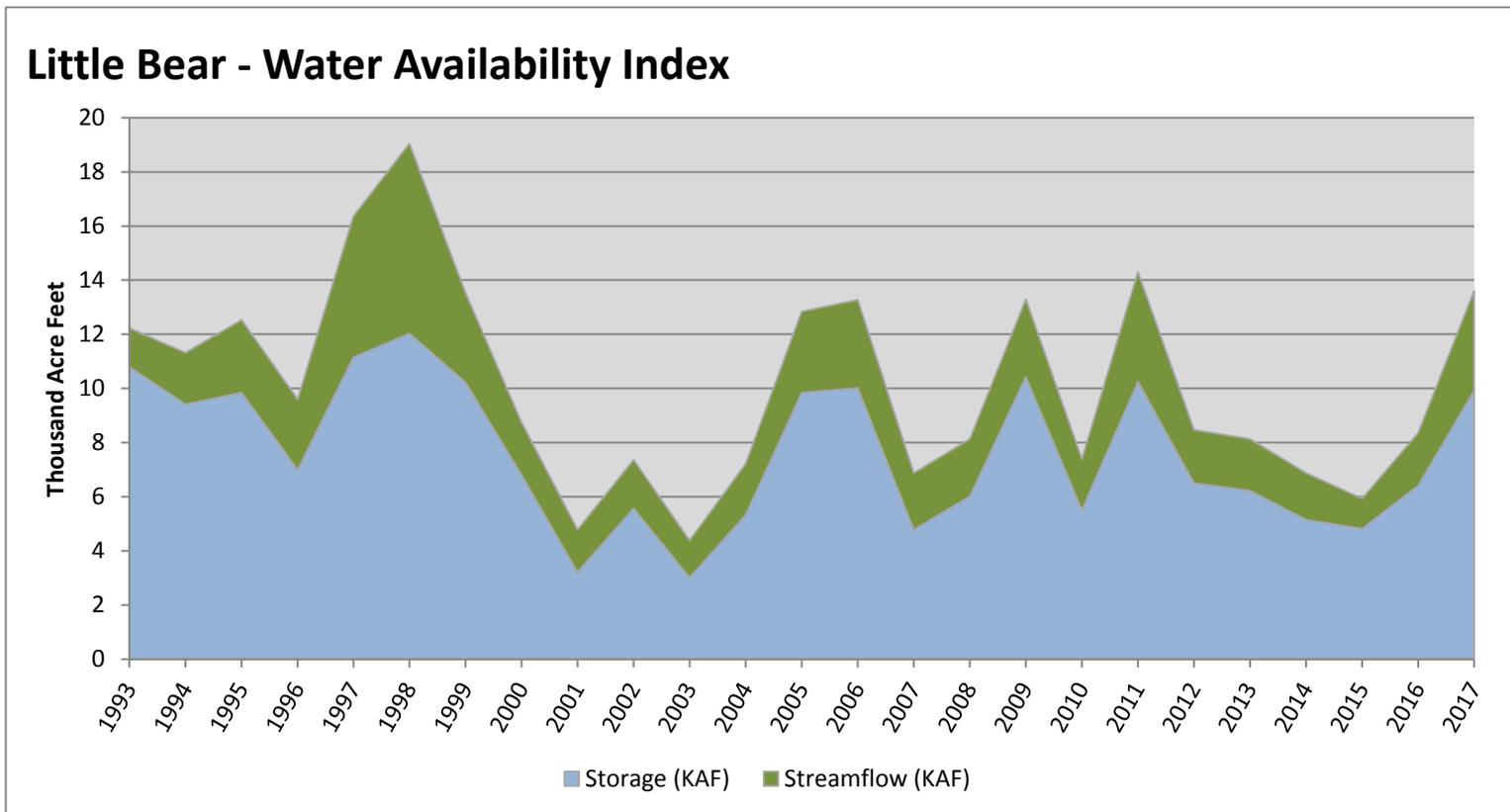


November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|--------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Little Bear | 9.91 | 3.69 | 13.60 | 85 | 2.88 | 09, 99, 11, 97 |

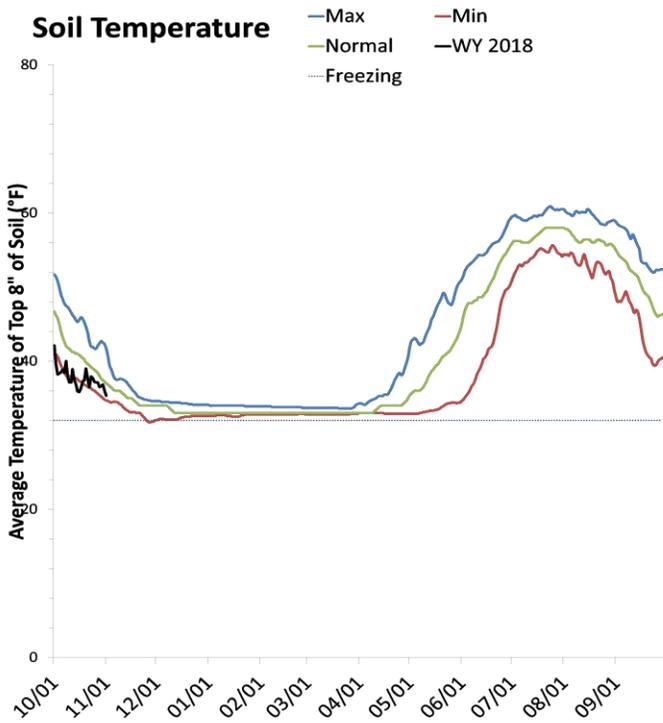
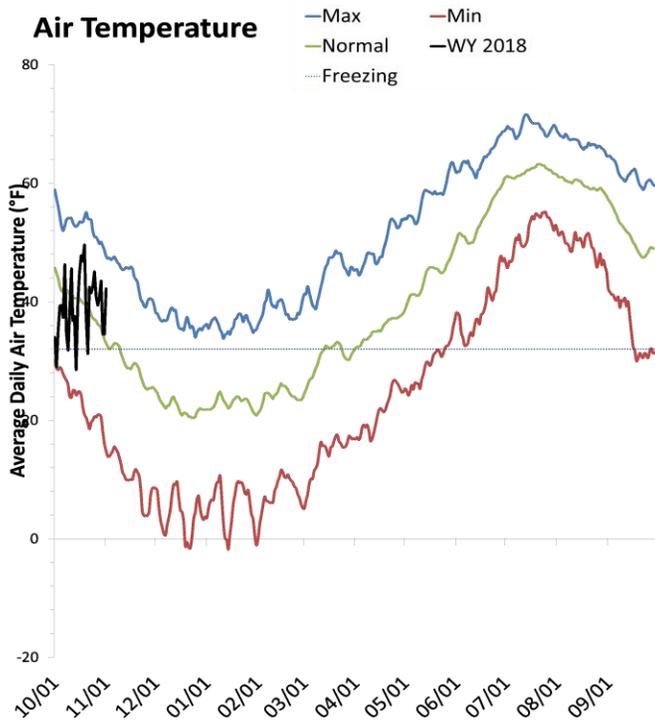
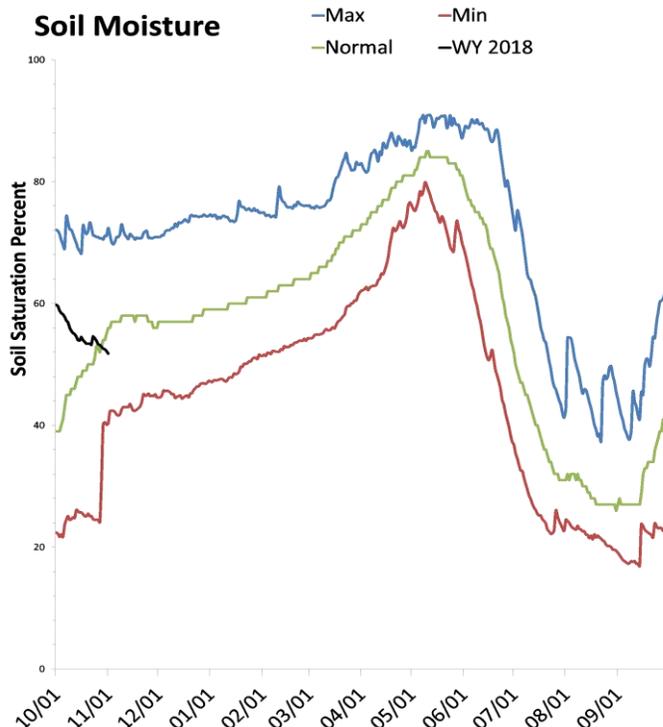
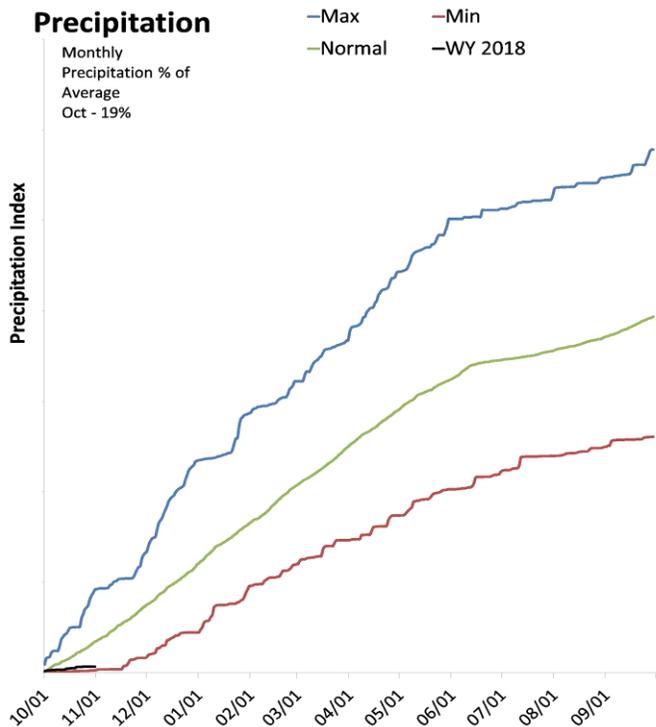
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



Weber & Ogden River Basins

November 1, 2017

Precipitation in October was much below average at 19%, which brings the seasonal accumulation (Oct-Oct) to 19% of average. Soil moisture is at 52% compared to 64% last year. Reservoir storage is at 70% of capacity, compared to 51% last year. The water availability index for the Ogden River is 82% and 82% for the Weber River.



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

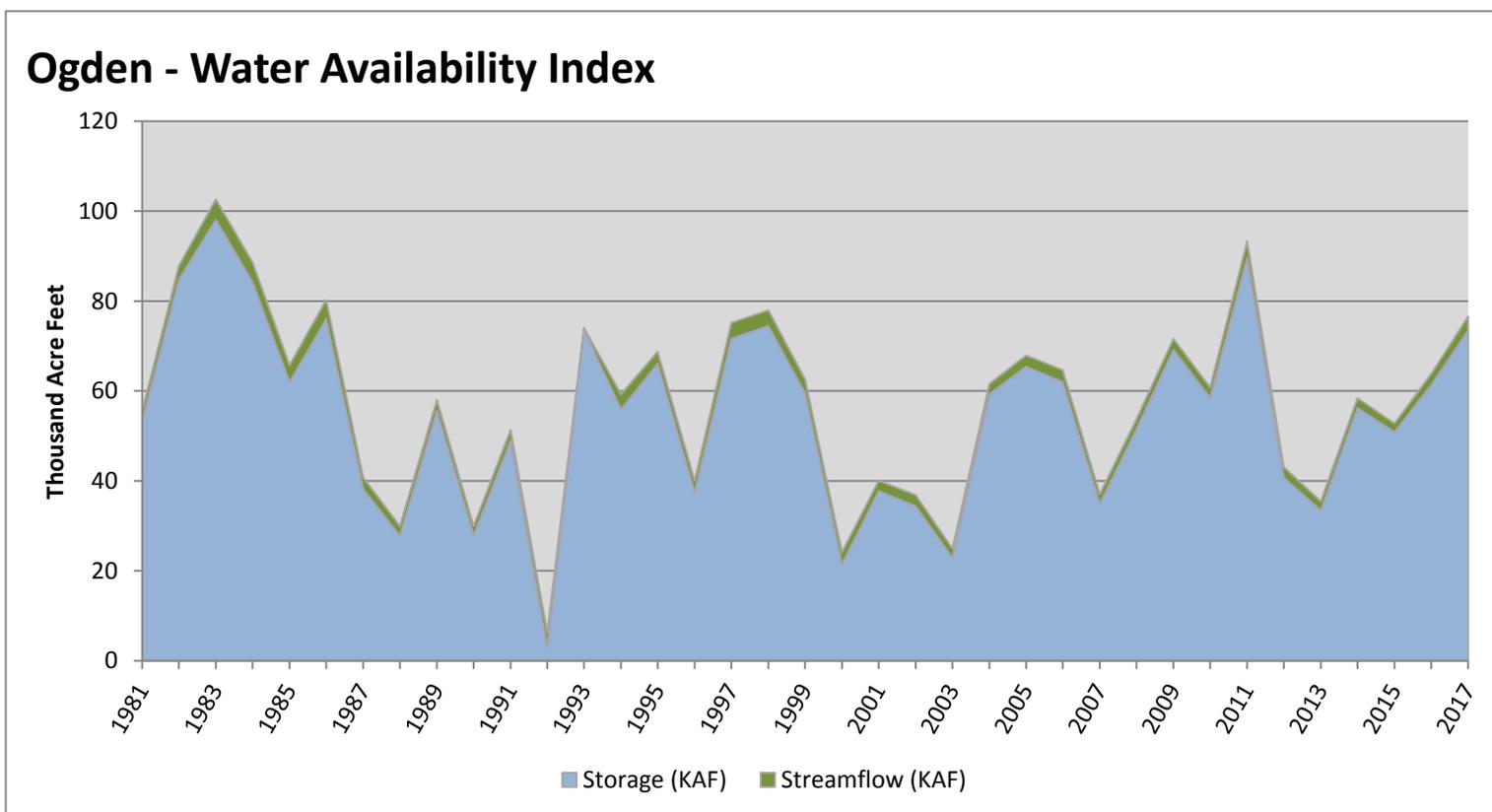
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|-----------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Ogden | 73.40 | 3.18 | 76.58 | 82 | 2.63 | 93, 97, 98, 86 |

^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.

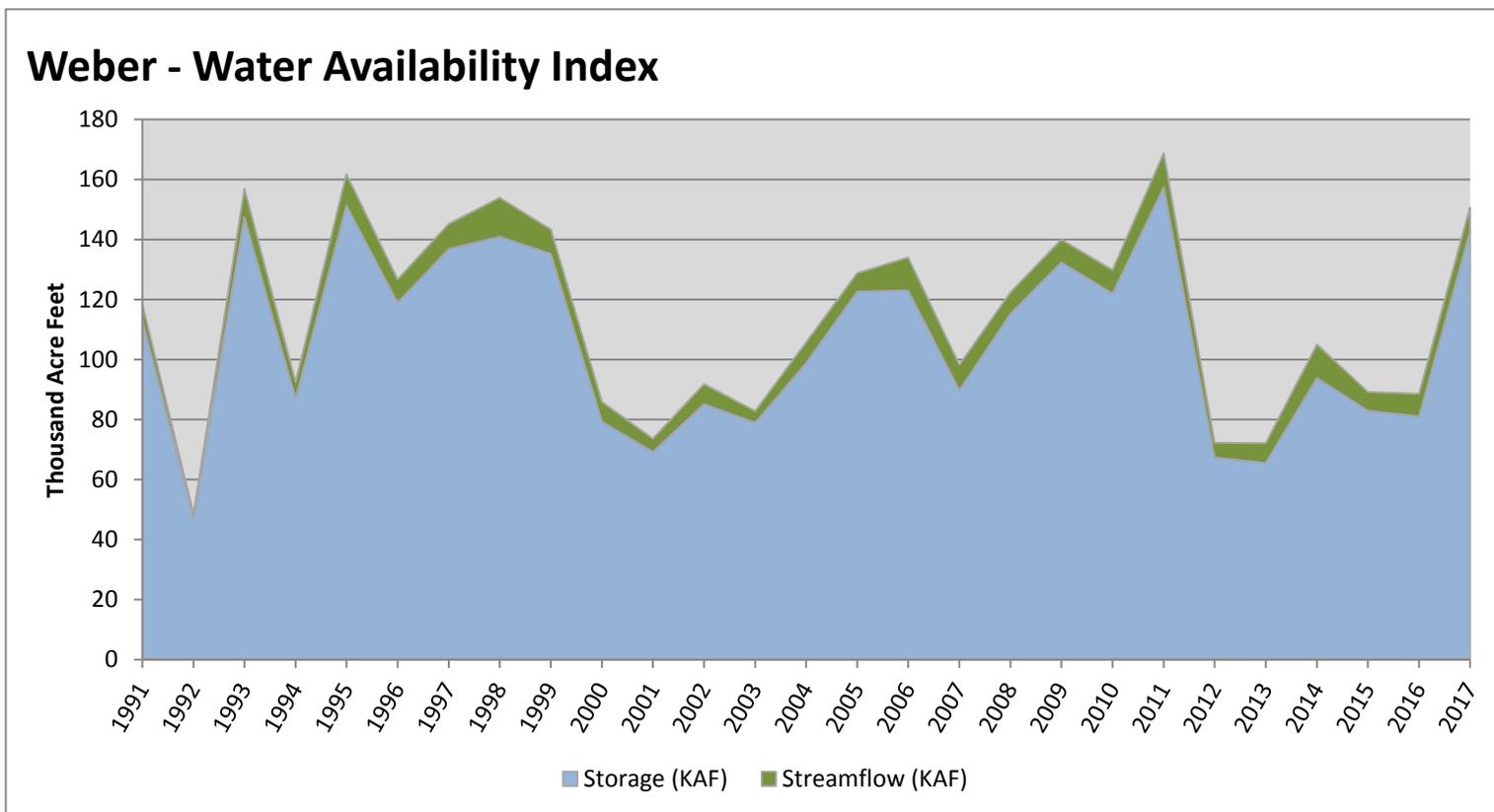


November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|-----------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Weber | 142.59 | 8.02 | 150.61 | 82 | 2.68 | 99, 97, 98, 93 |

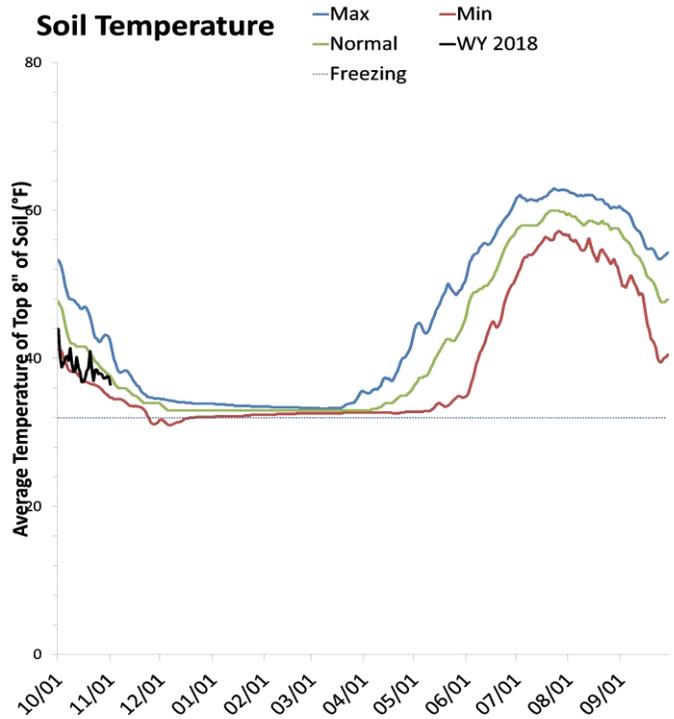
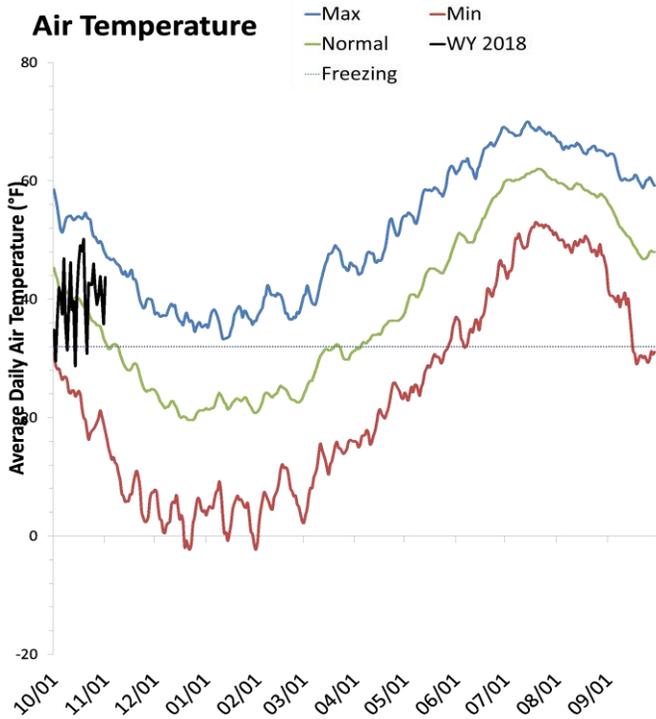
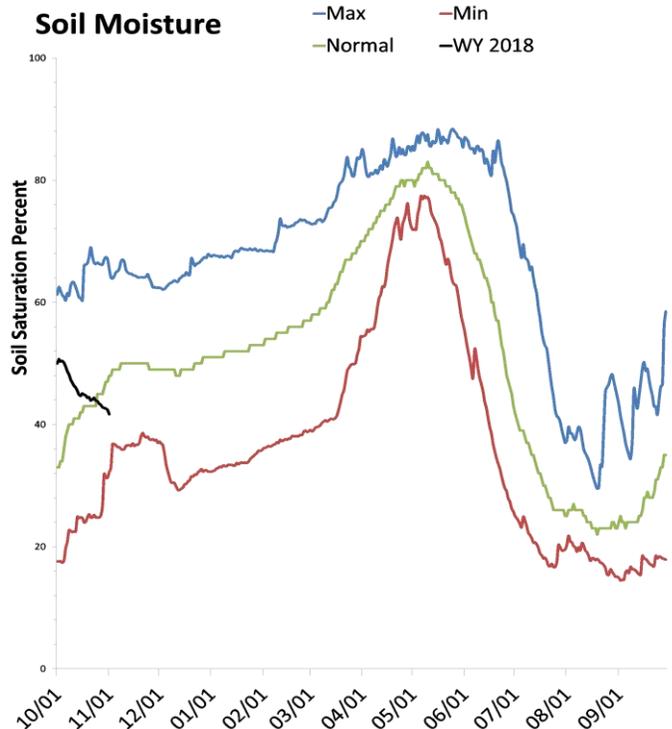
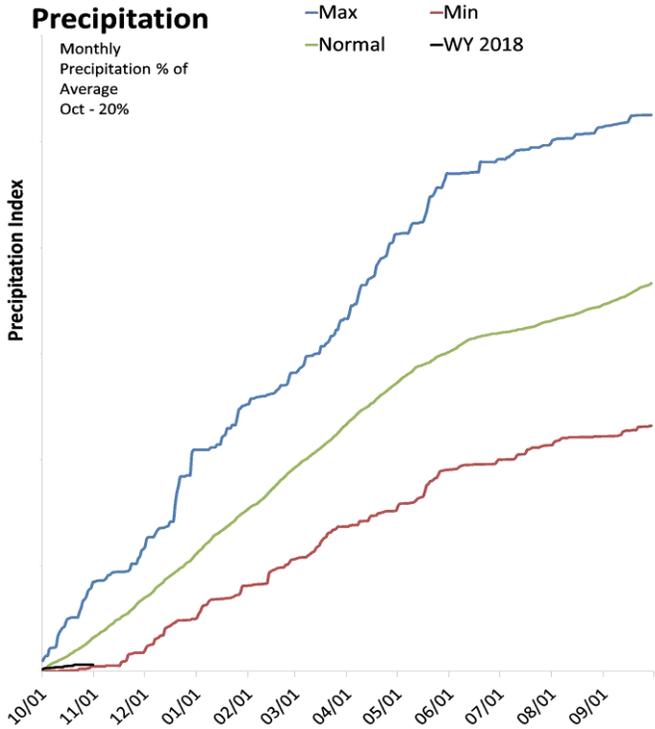
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



Provo & Jordan River Basins

November 1, 2017

Precipitation in October was much below average at 20%, which brings the seasonal accumulation (Oct-Oct) to 20% of average. Soil moisture is at 42% compared to 54% last year. Reservoir storage is at 74% of capacity, compared to 55% last year. The water availability index for the Provo River is 83%.



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

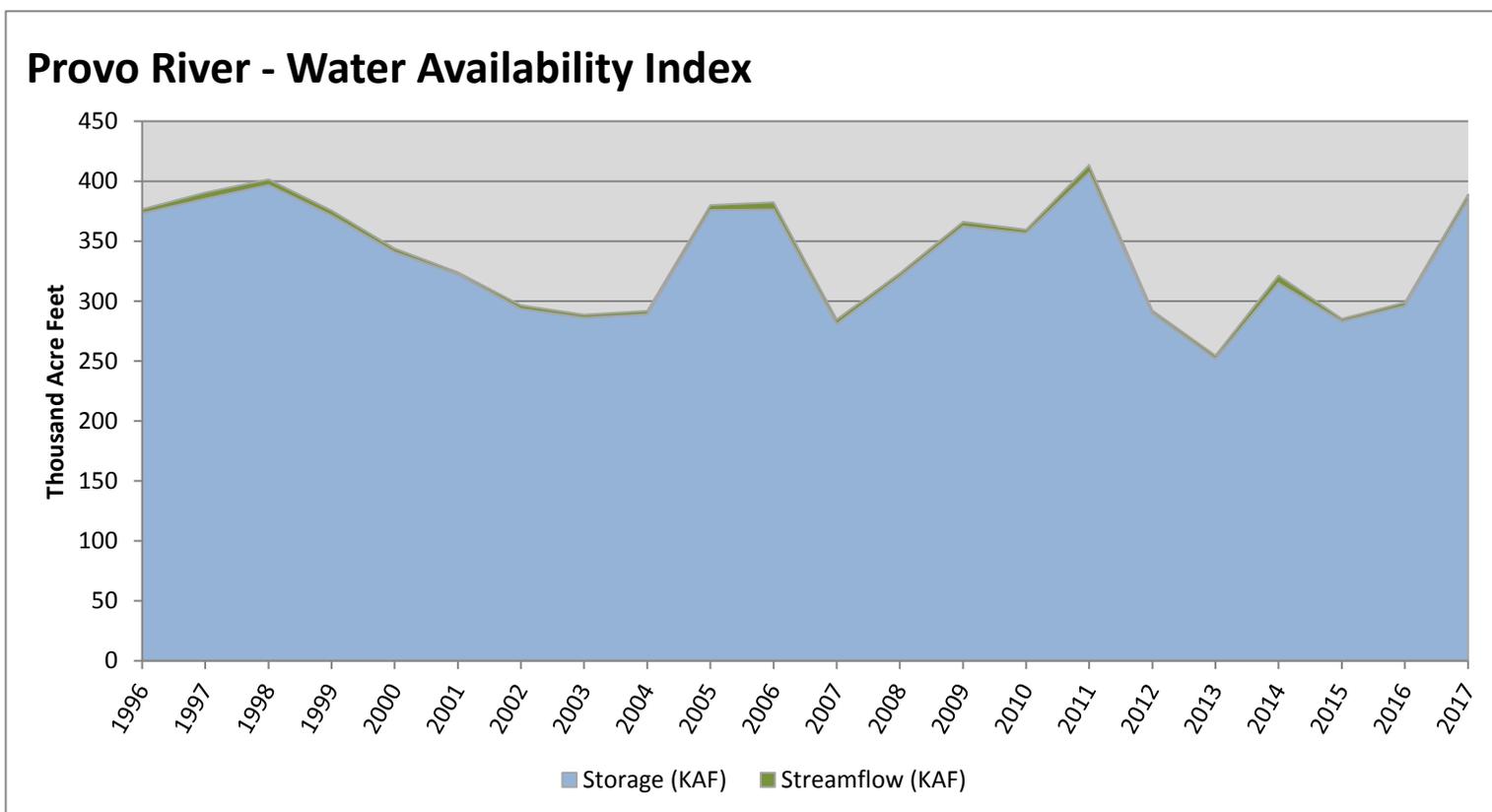
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|--------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Provo River | 384.23 | 4.71 | 388.94 | 83 | 2.72 | 05, 06, 97, 98 |

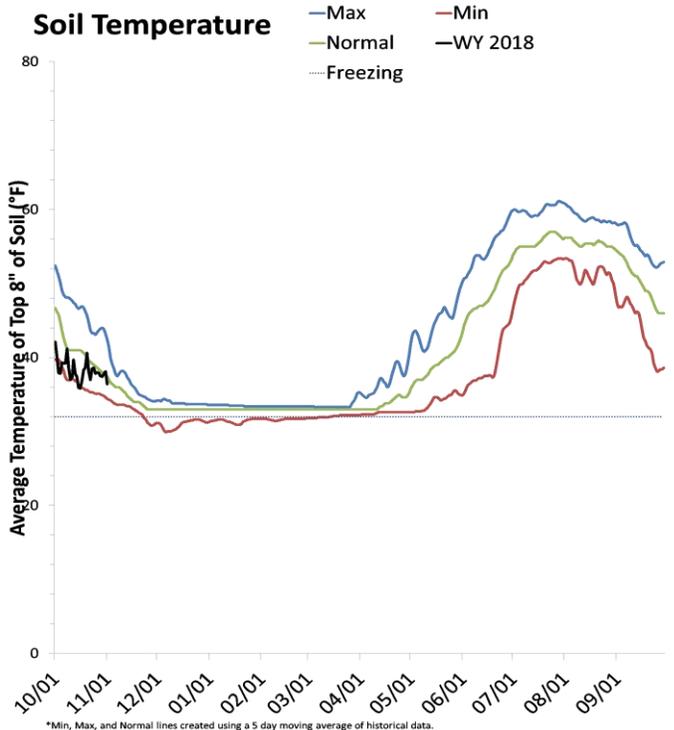
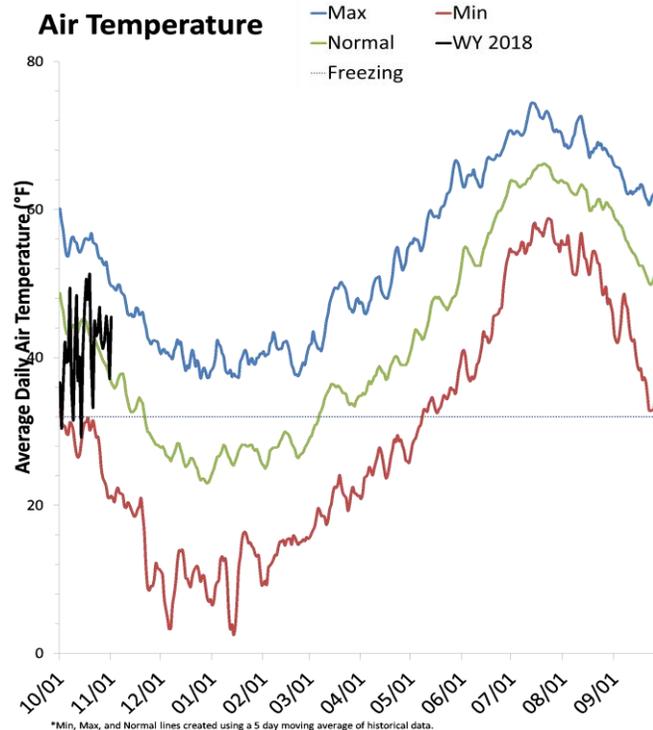
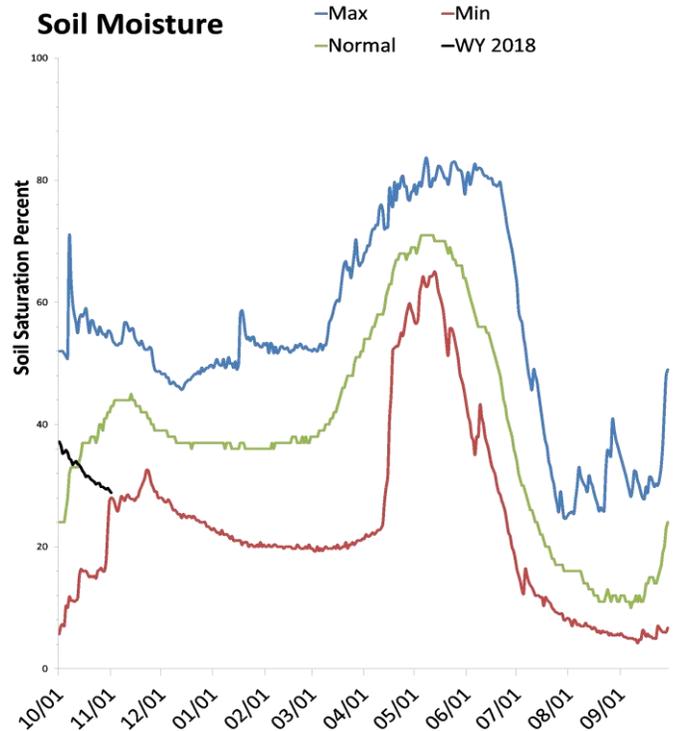
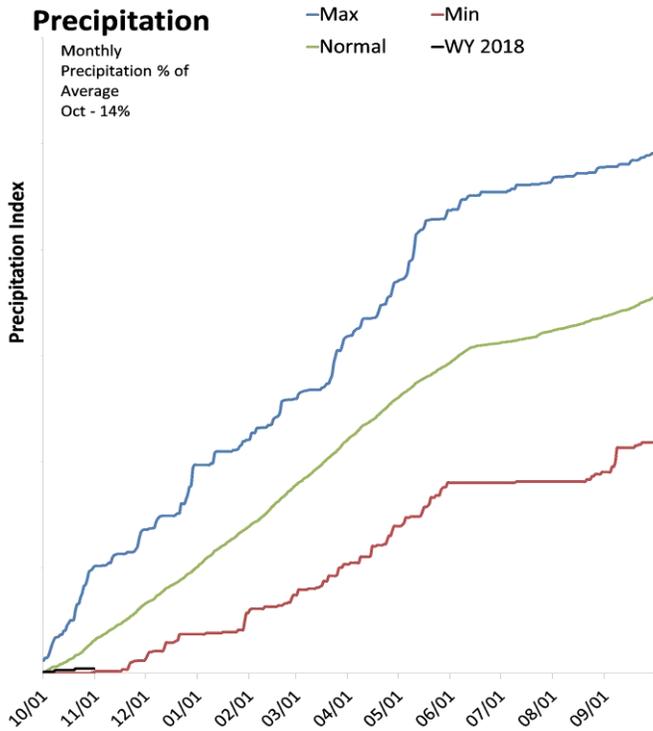
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



Tooele Valley & West Desert Basins

November 1, 2017

Precipitation in October was much below average at 14%, which brings the seasonal accumulation (Oct-Oct) to 14% of average. Soil moisture is at 29% compared to 34% last year. Reservoir storage is at 30% of capacity, compared to 19% last year.



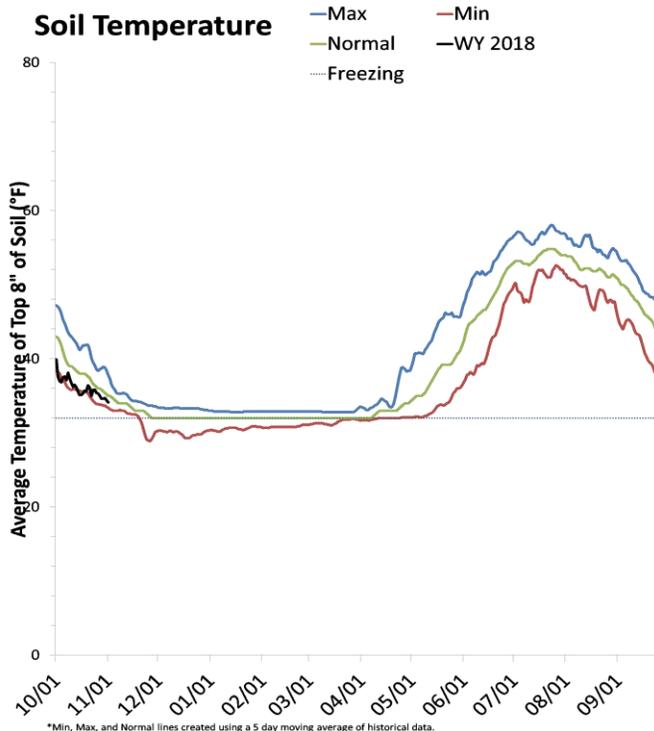
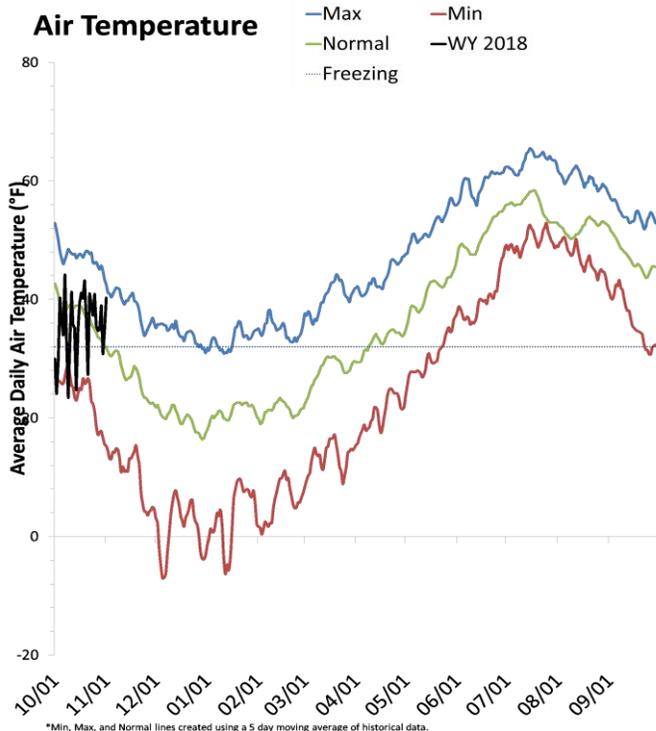
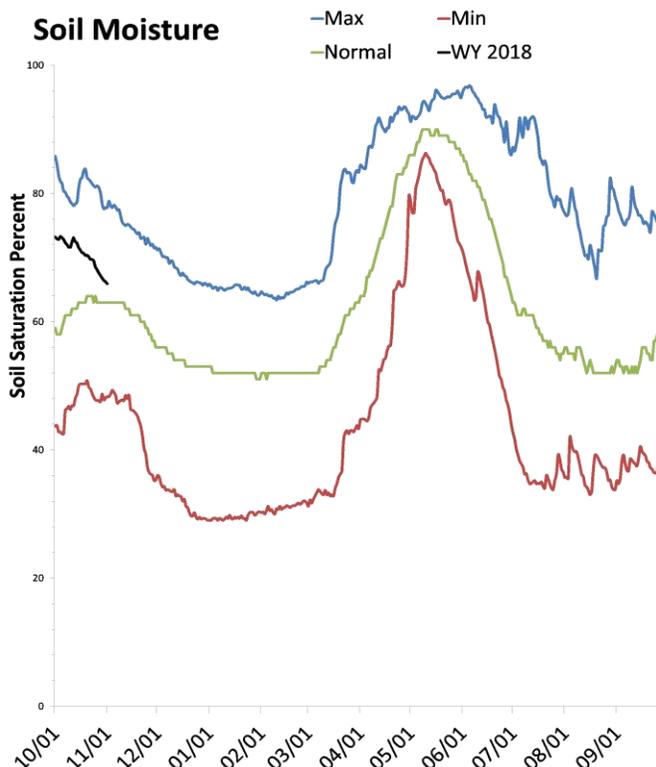
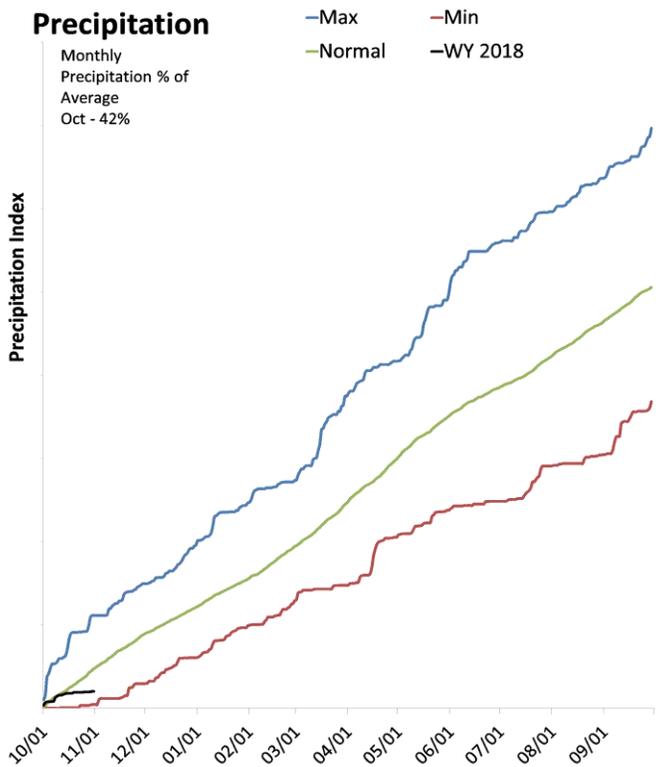
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

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

Northeastern Uinta Basin

November 1, 2017

Precipitation in October was much below average at 42%, which brings the seasonal accumulation (Oct-Oct) to 42% of average. Soil moisture is at 66% compared to 71% last year. Reservoir storage is at 92% of capacity, compared to 84% last year. The water availability index for Blacks Fork is 54% and 47% for Smiths Creek.



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

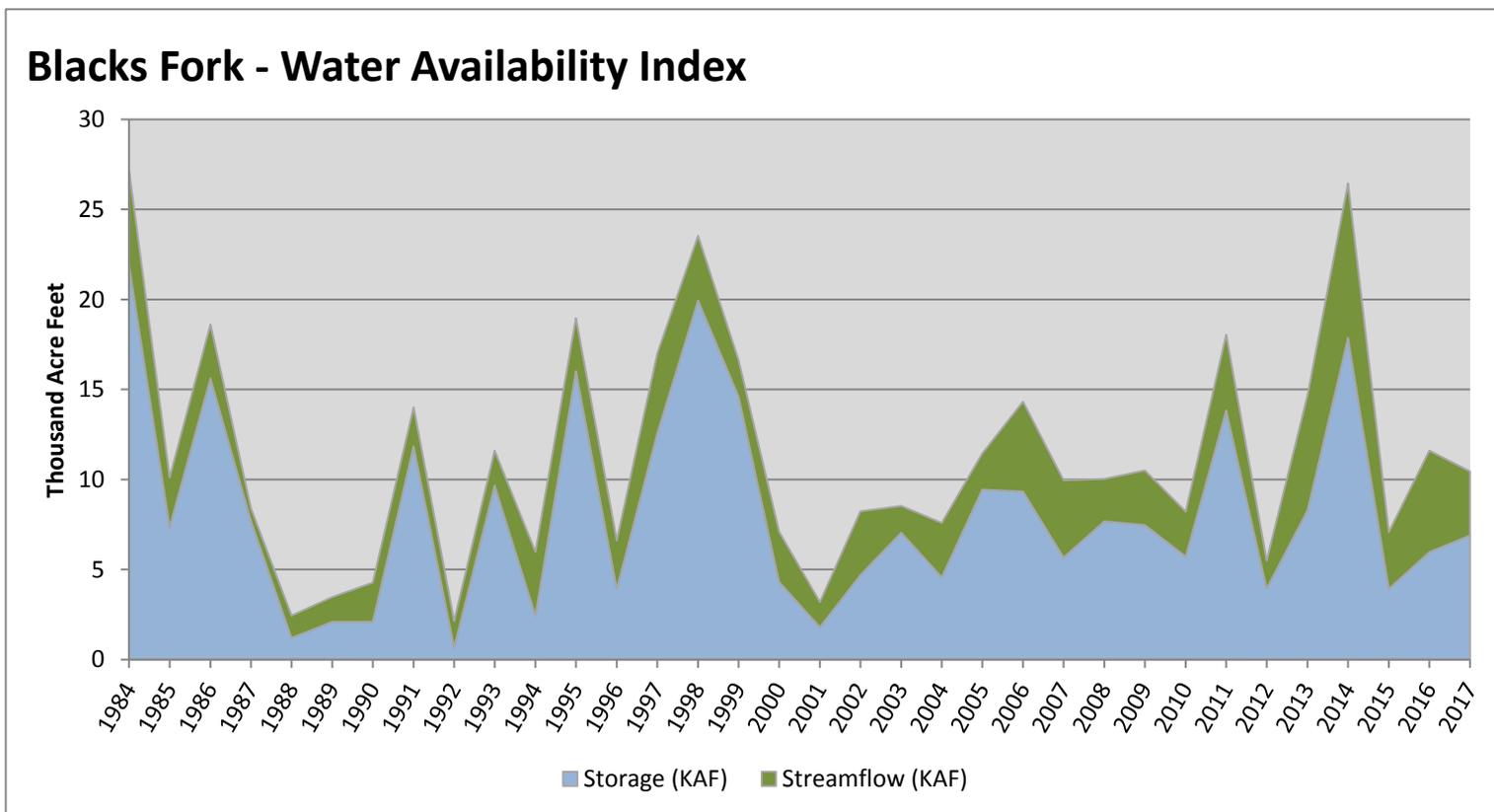
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|--------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Blacks Fork | 6.89 | 3.57 | 10.46 | 54 | 0.36 | 08, 85, 09, 05 |

^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.

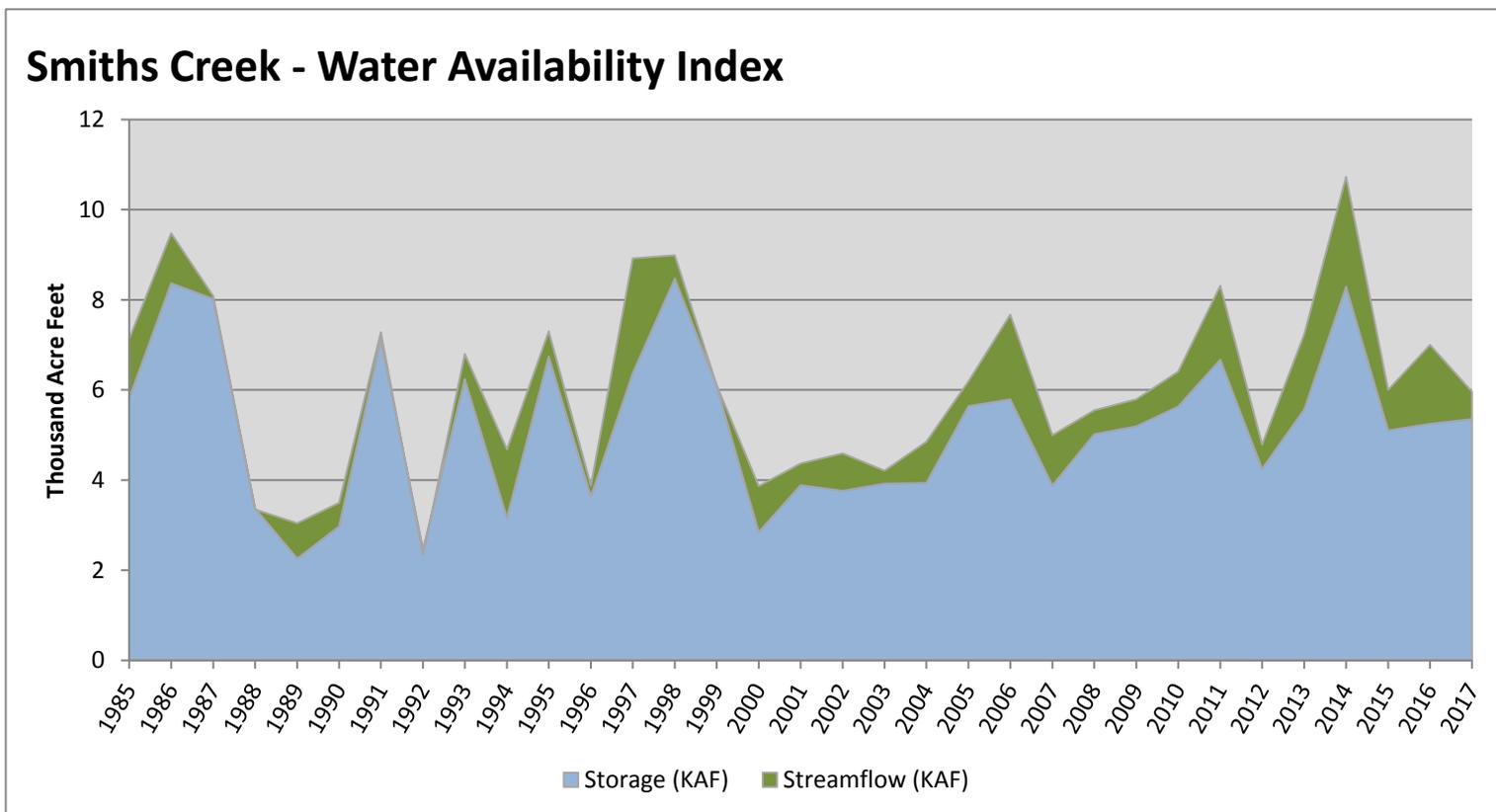


November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|---------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Smiths Creek | 5.35 | 0.61 | 5.96 | 47 | -0.25 | 08, 09, 15, 99 |

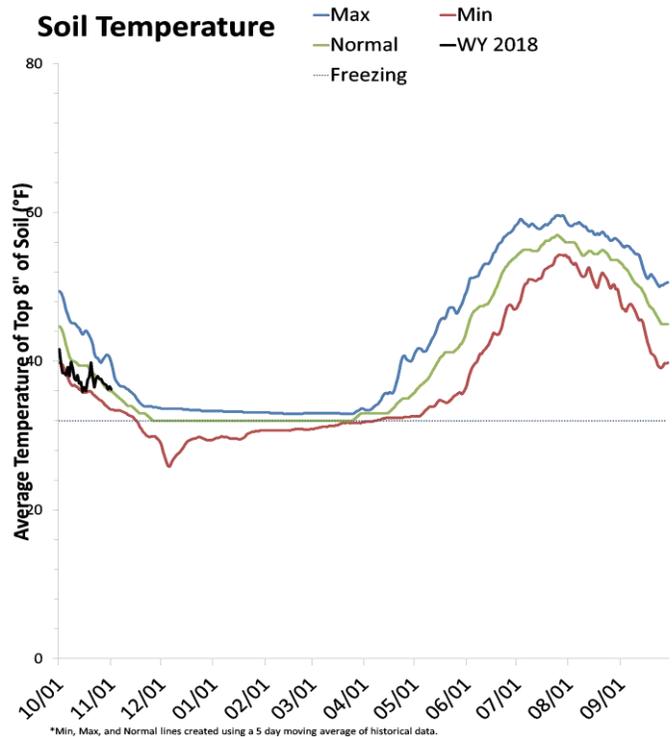
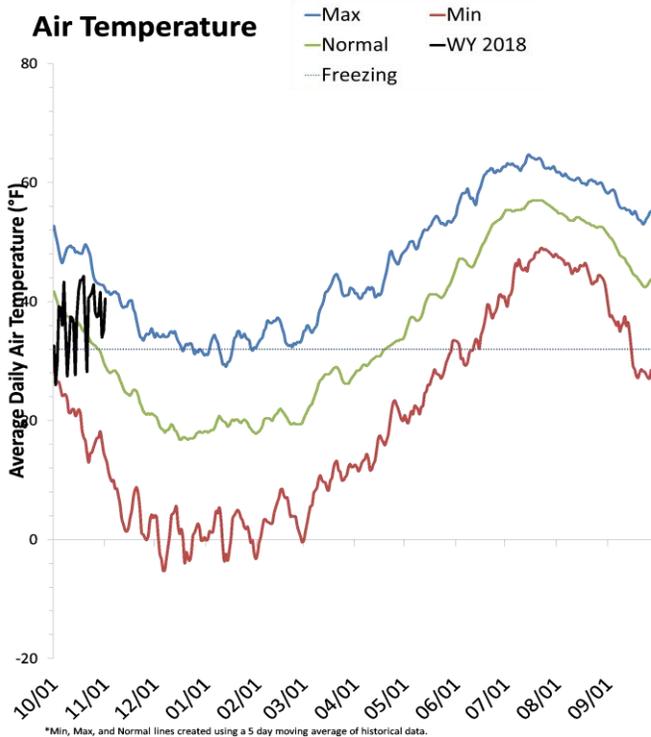
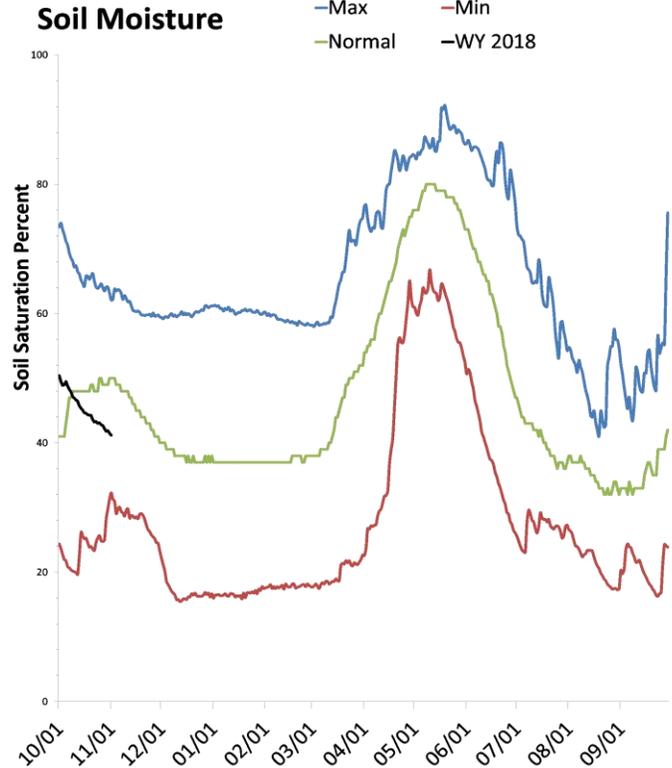
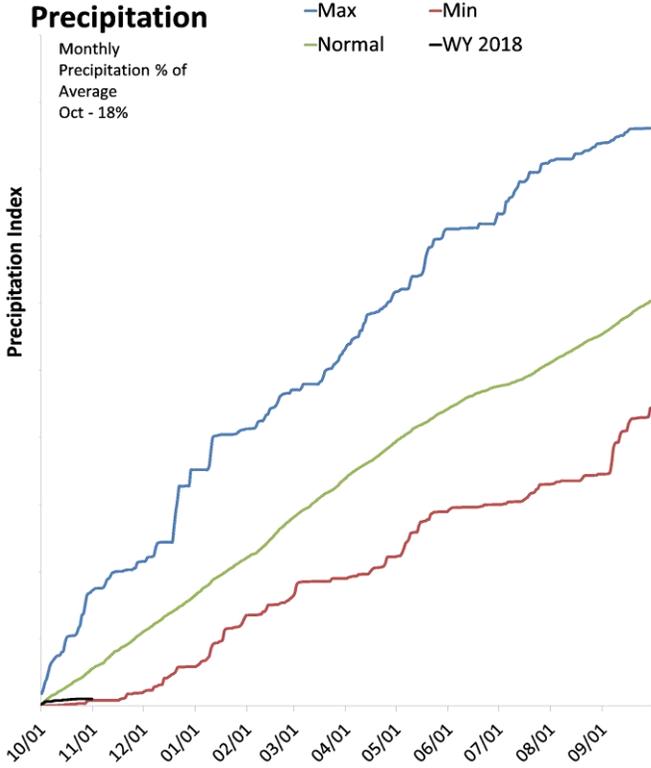
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



Duchesne River Basin

November 1, 2017

Precipitation in October was much below average at 18%, which brings the seasonal accumulation (Oct-Oct) to 18% of average. Soil moisture is at 41% compared to 62% last year. Reservoir storage is at 80% of capacity, compared to 69% last year. The water availability index for the Western Uintas is 77% and 42% for the Eastern Uintas.

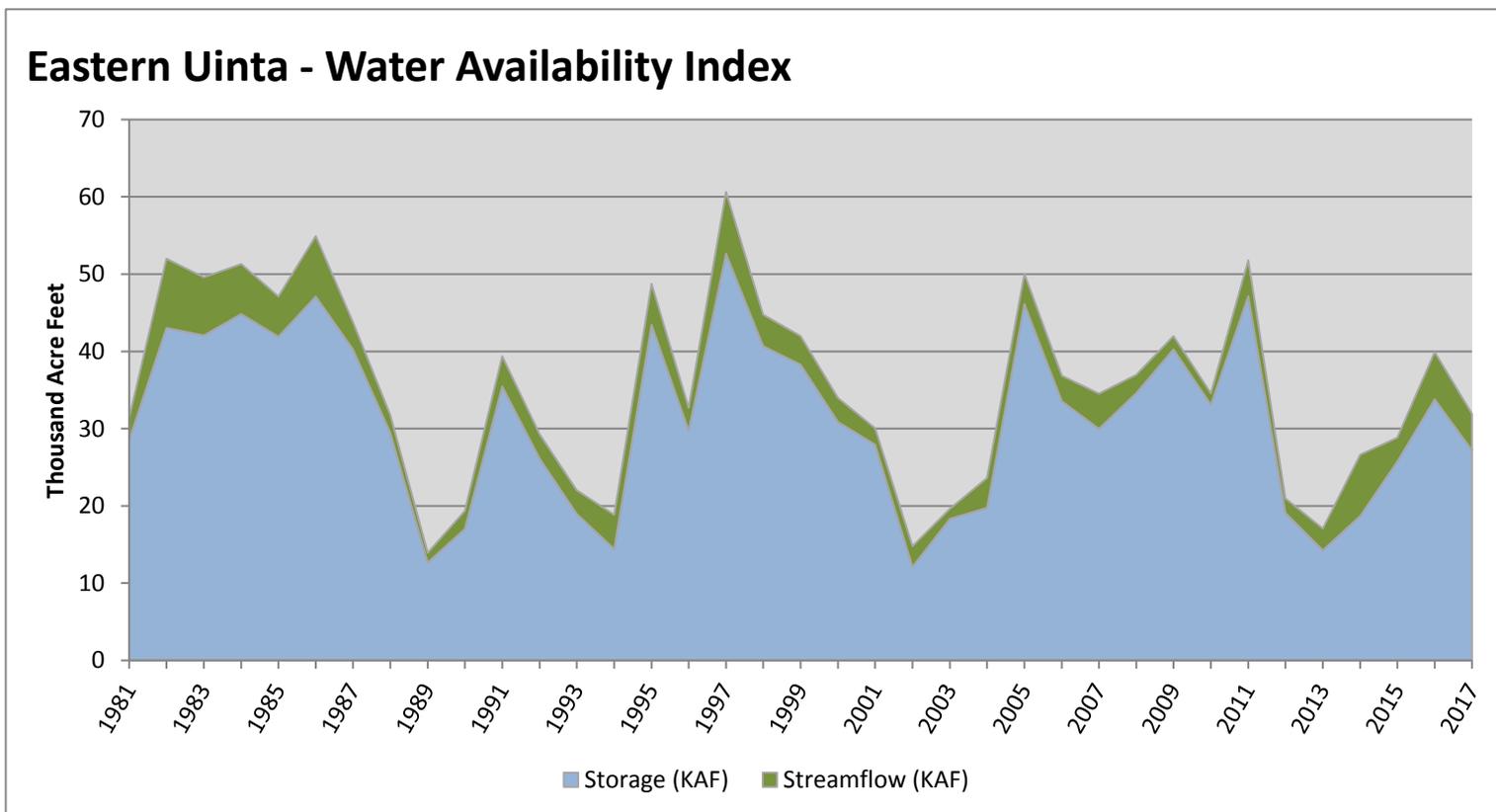


November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|----------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Eastern Uinta | 27.20 | 4.74 | 31.94 | 42 | -0.66 | 81, 88, 96, 00 |

^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.

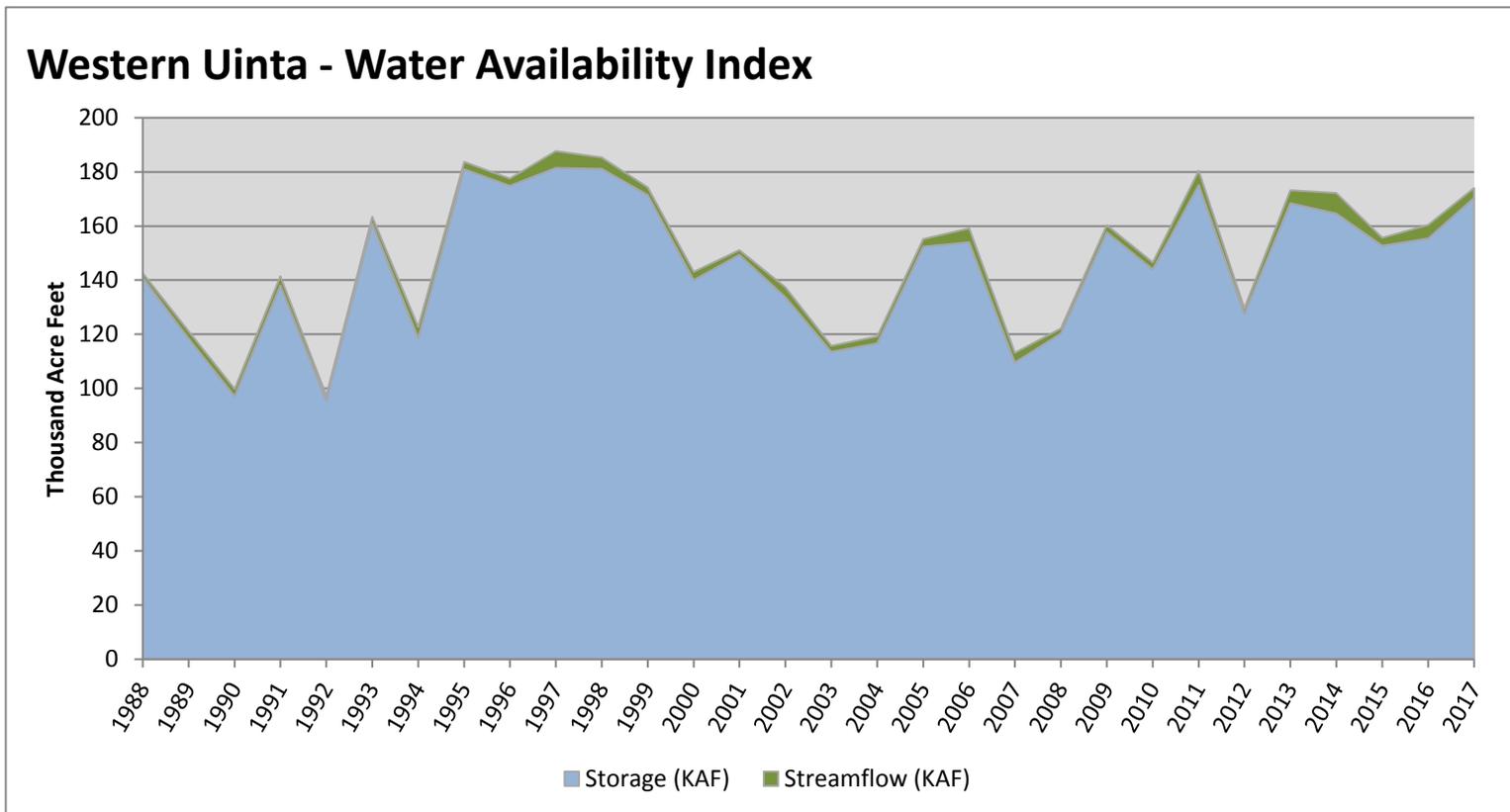


November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|----------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Western Uinta | 170.46 | 3.53 | 173.99 | 77 | 2.28 | 14, 13, 99, 96 |

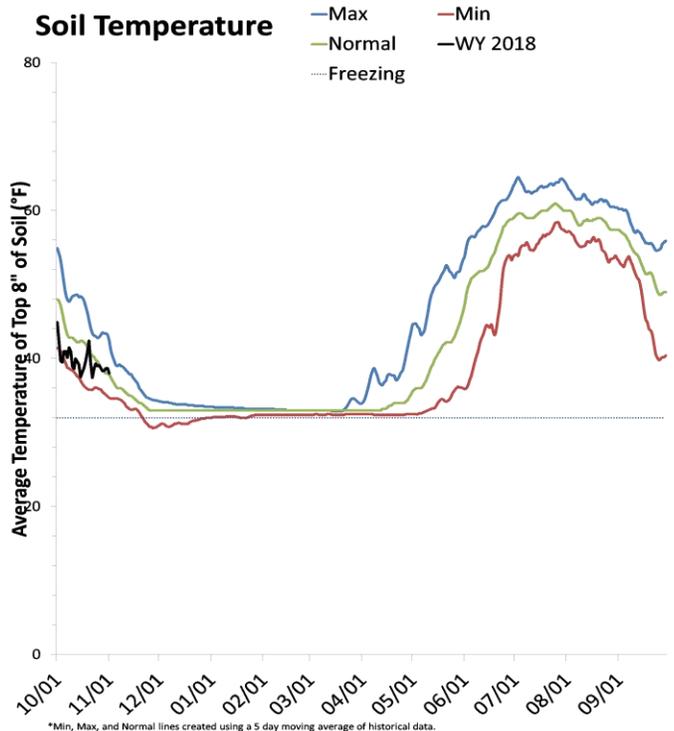
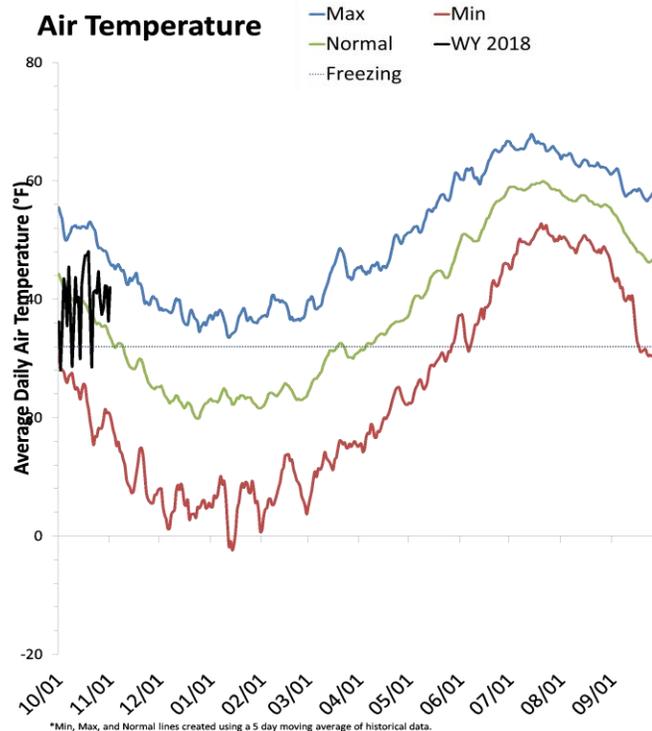
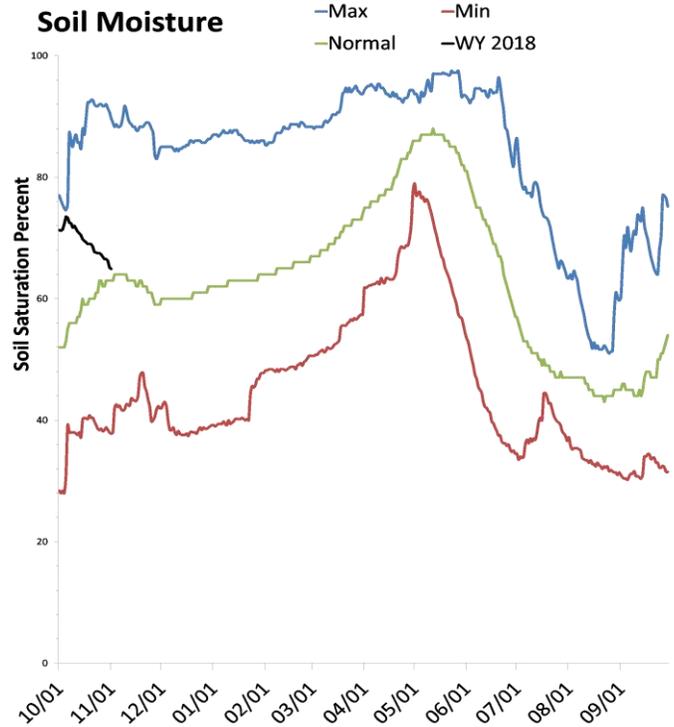
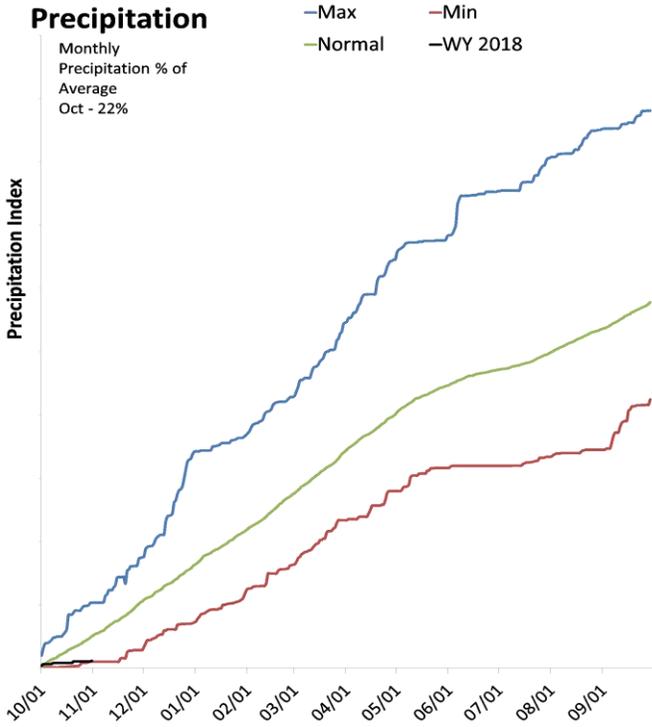
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



San Pitch River Basin

November 1, 2017

Precipitation in October was much below average at 22%, which brings the seasonal accumulation (Oct-Oct) to 22% of average. Soil Moisture is at 65% compared to 75% last year. Reservoir storage is at 0% of capacity, compared to 0% last year. The water availability index for the San Pitch is 26%.



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

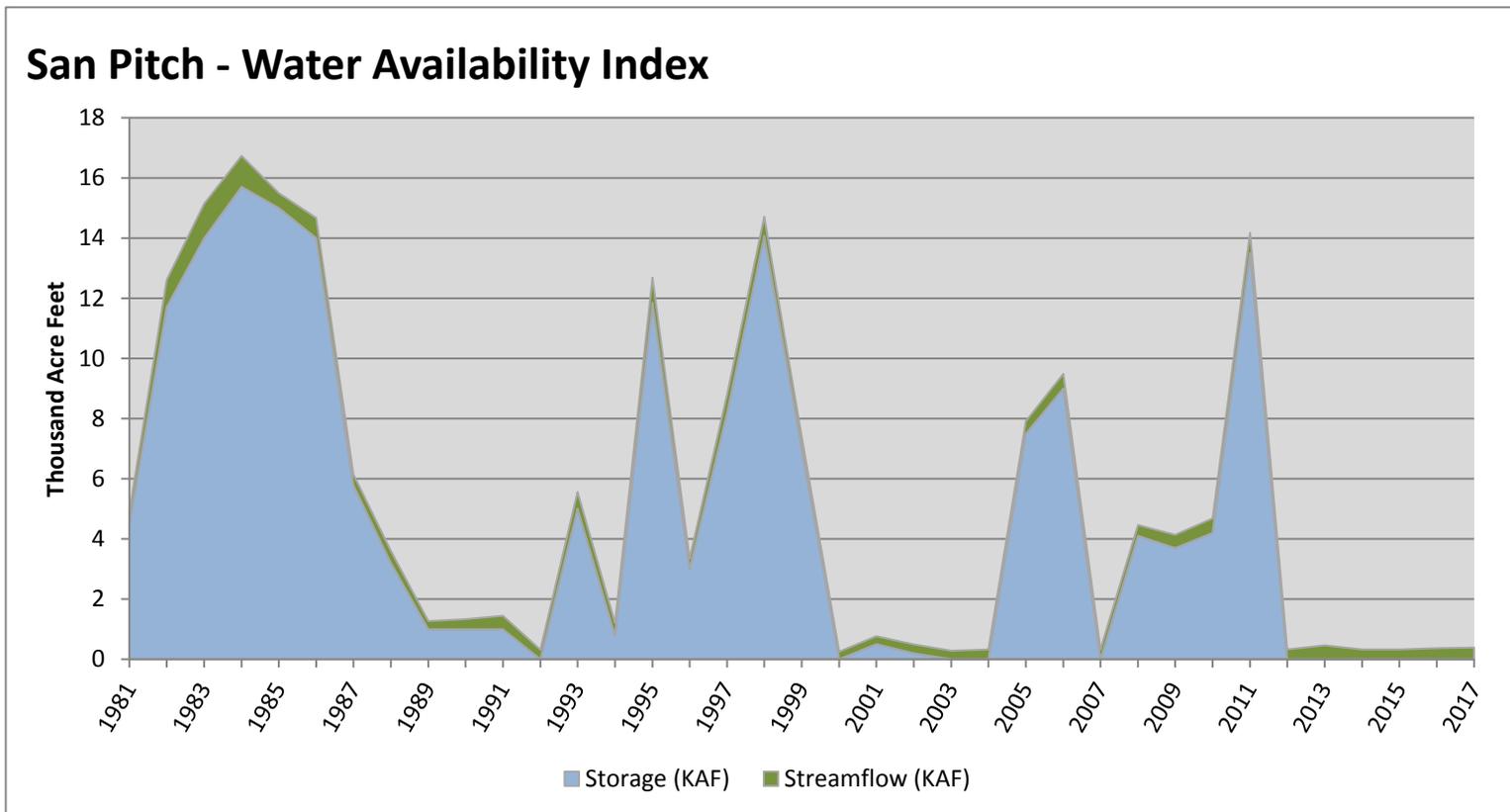
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| San Pitch | 0.00 | 0.39 | 0.39 | 26 | -1.97 | 14, 16, 13, 02 |

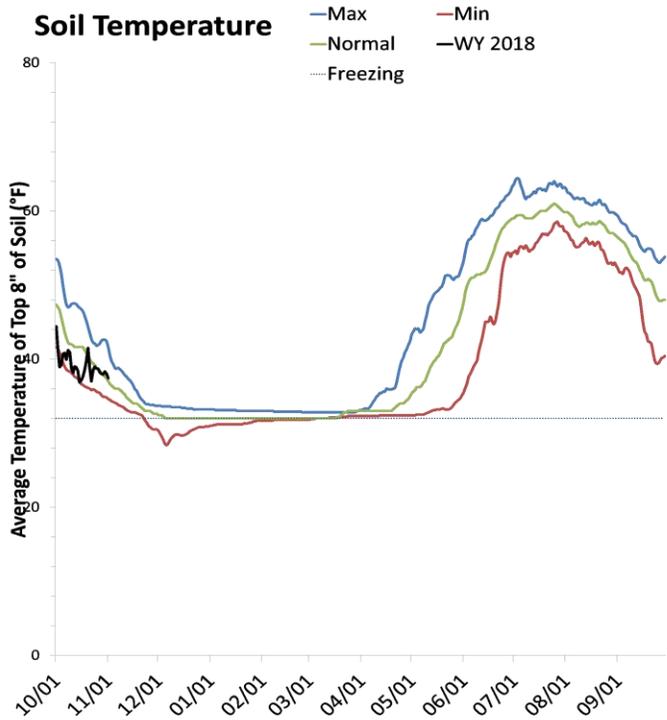
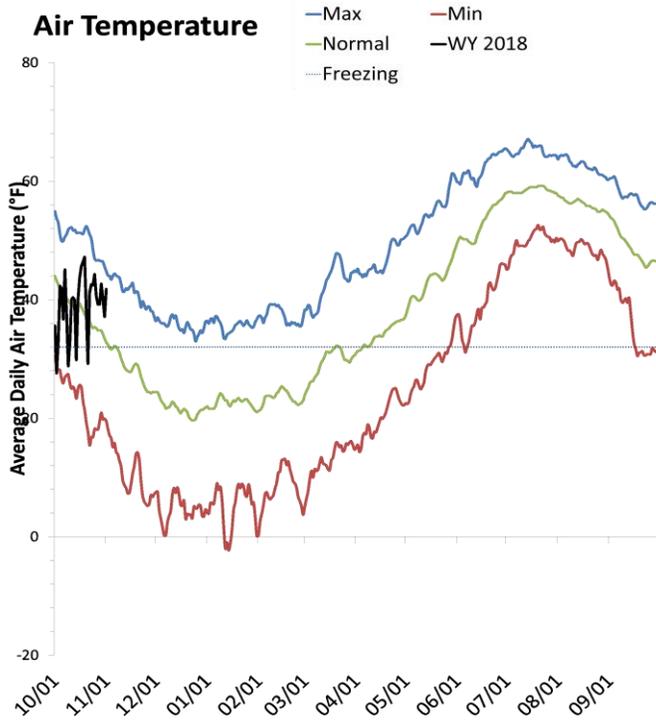
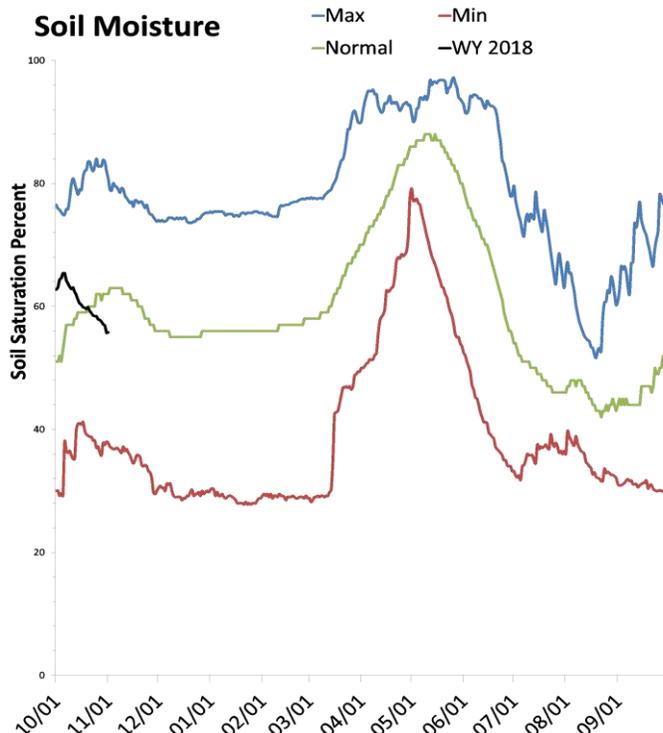
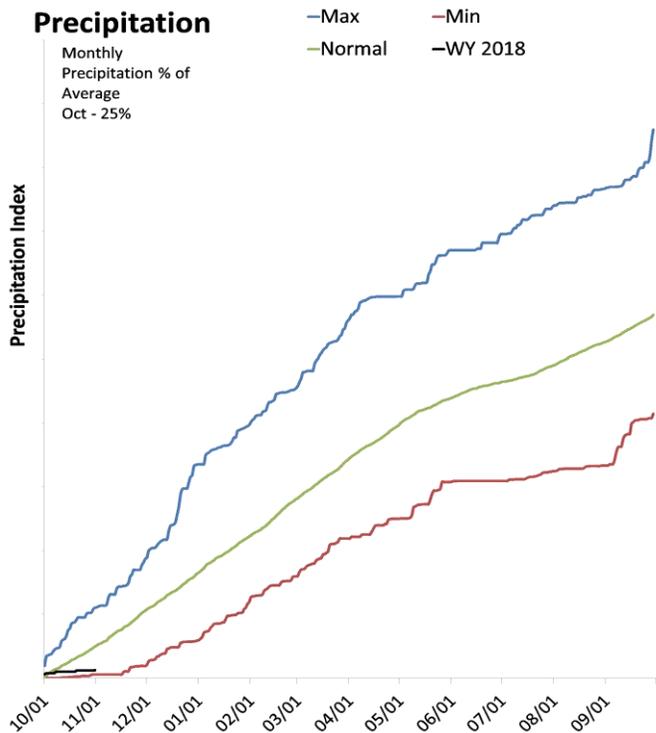
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



Price & San Rafael Basins

November 1, 2017

Precipitation in October was much below average at 25%, which brings the seasonal accumulation (Oct-Oct) to 25% of average. Soil moisture is at 56% compared to 77% last year. Reservoir storage is at 65% of capacity, compared to 34% last year. The water availability index for the Price River is 87%, and 79% for Joe's Valley.



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

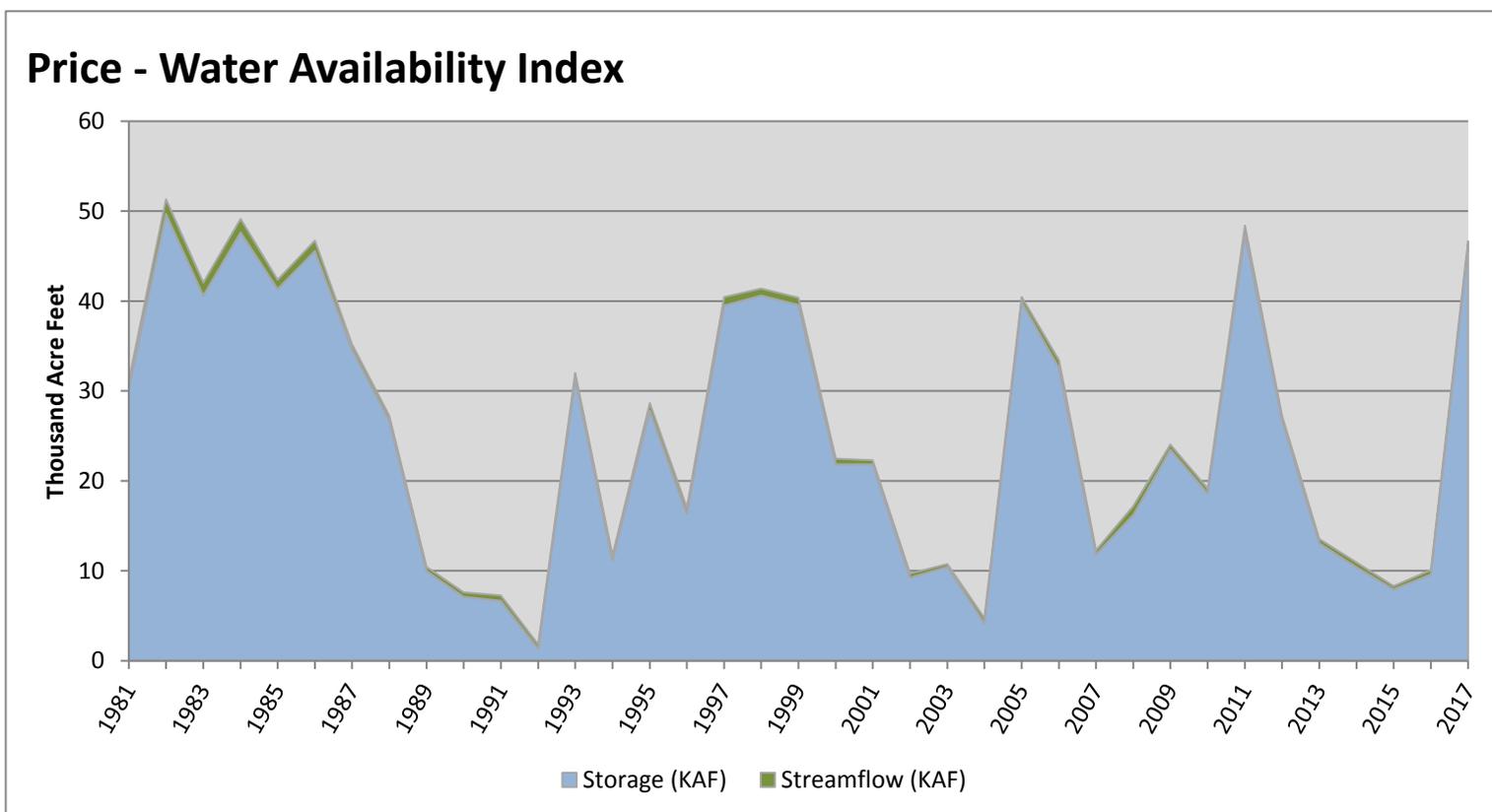
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|-----------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Price | 46.06 | 0.60 | 46.66 | 87 | 3.07 | 83, 85, 86, 11 |

^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.

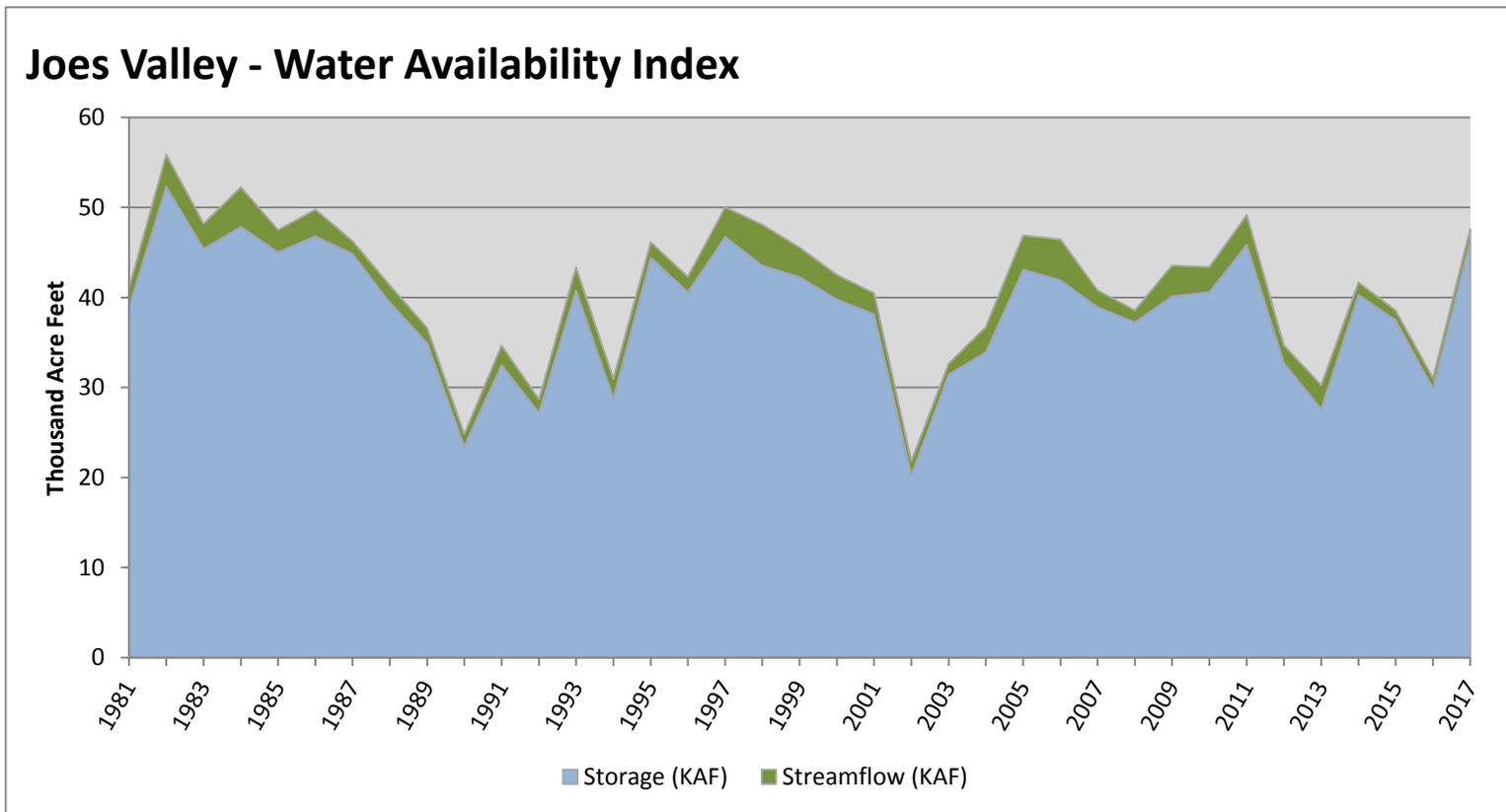


November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|---------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Joese Valley | 46.22 | 1.37 | 47.59 | 79 | 2.41 | 05, 85, 98, 83 |

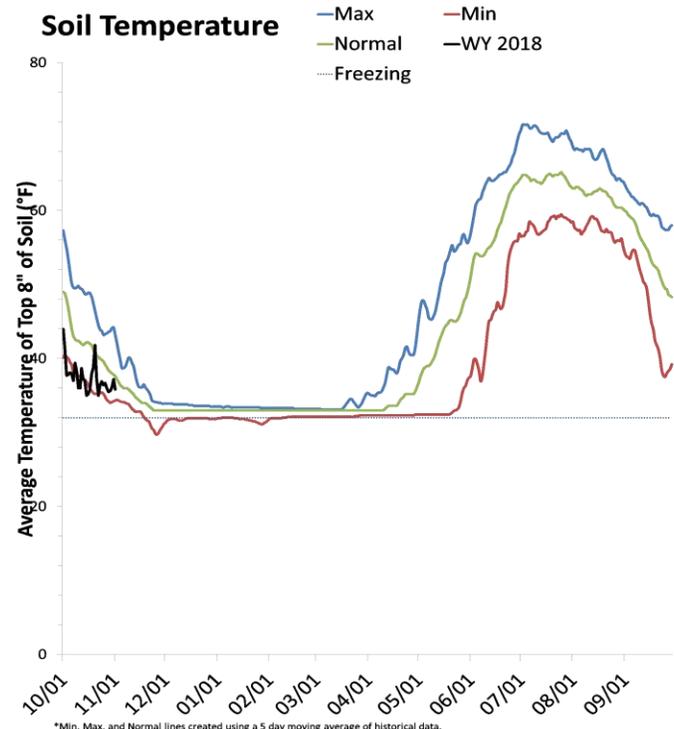
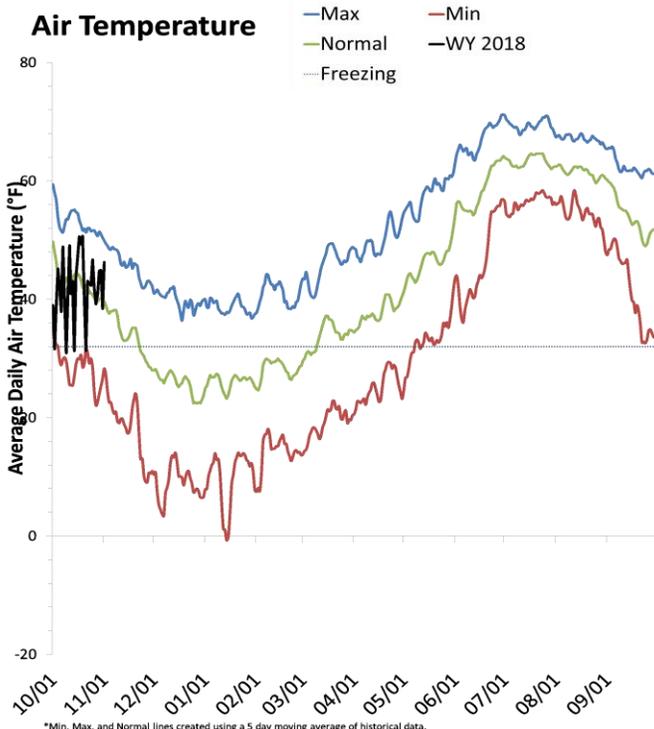
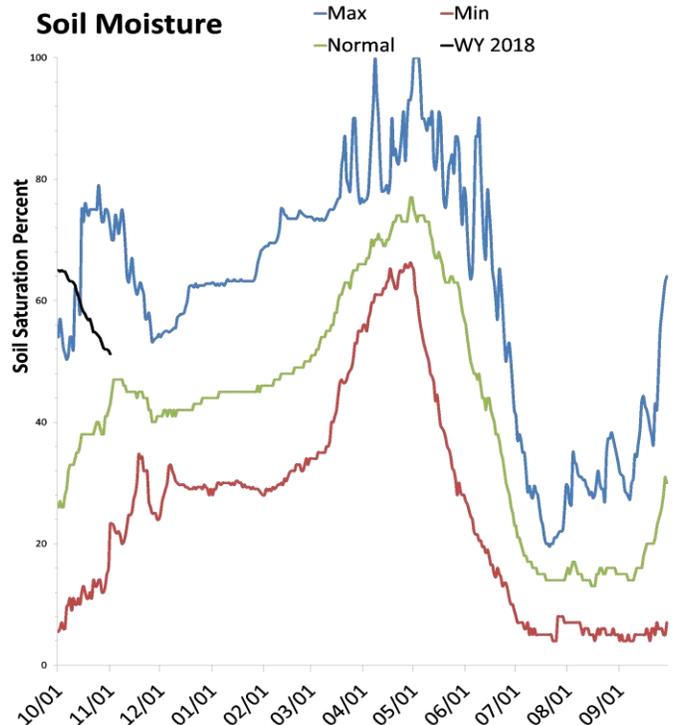
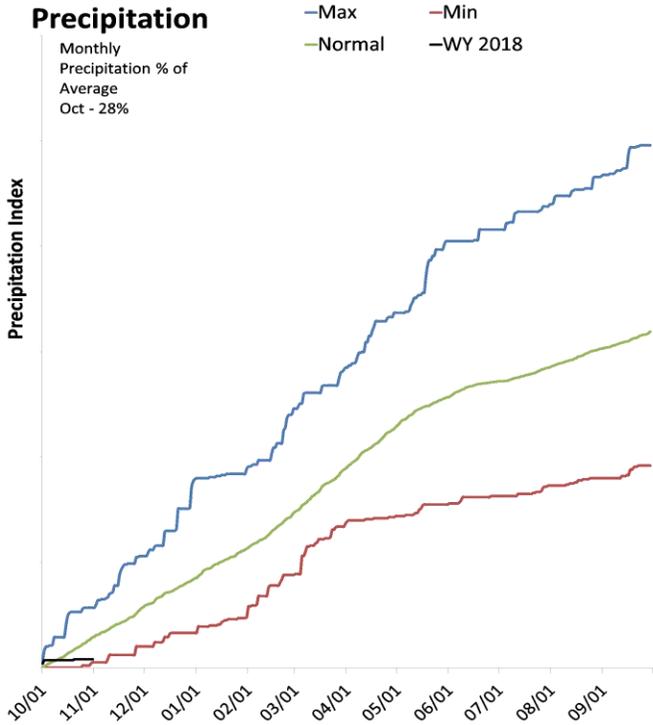
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



Lower Sevier Basin

November 1, 2017

Precipitation in October was much below average at 28%, which brings the seasonal accumulation (Oct-Oct) to 28% of average. Soil moisture is at 52% compared to 35% last year. Reservoir storage is at 11% of capacity, compared to 4% last year. The water availability index for the Lower Sevier is 11%.



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

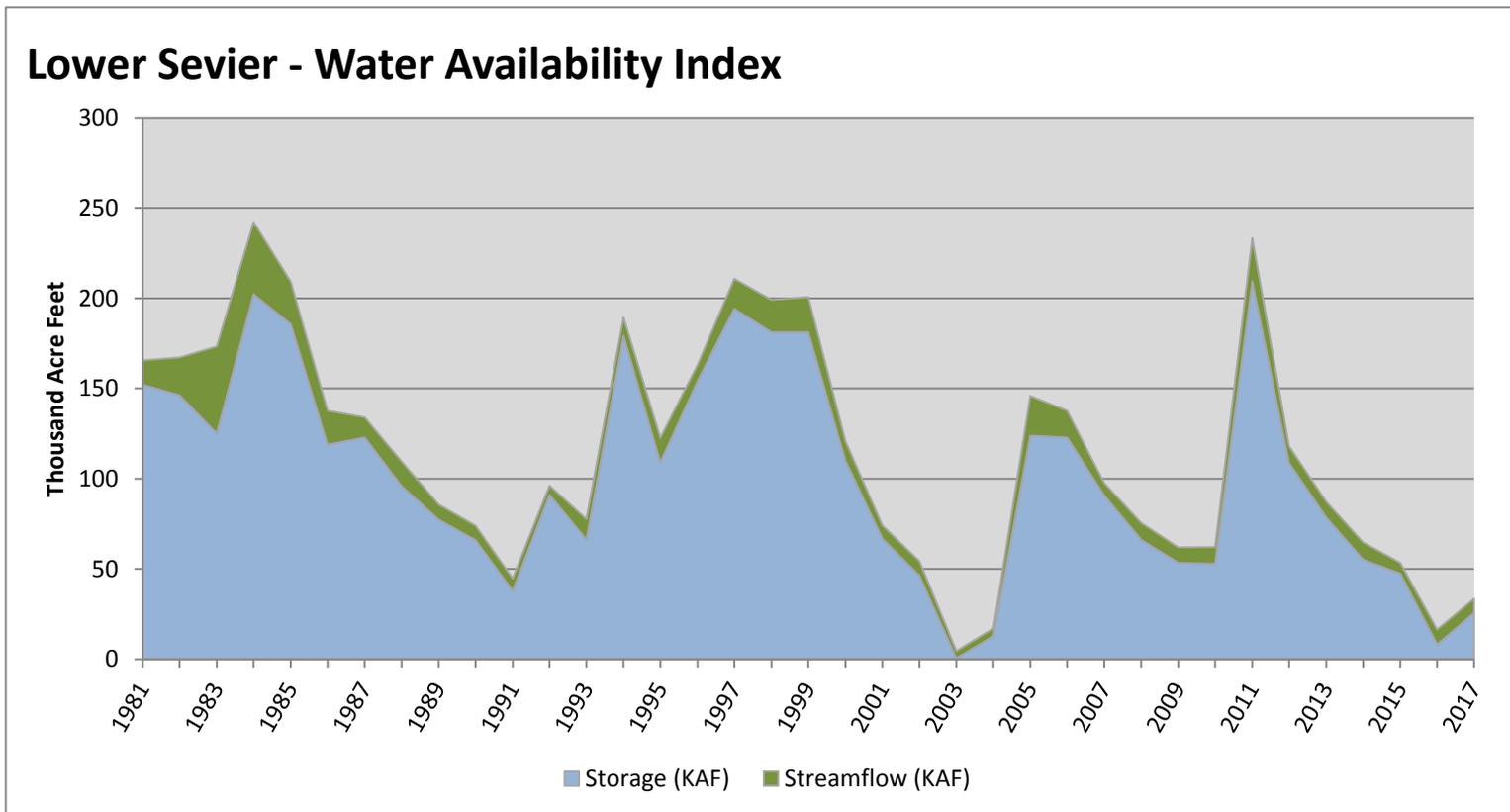
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|---------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Lower Sevier | 25.71 | 7.74 | 33.45 | 11 | -3.29 | 16, 04, 91, 15 |

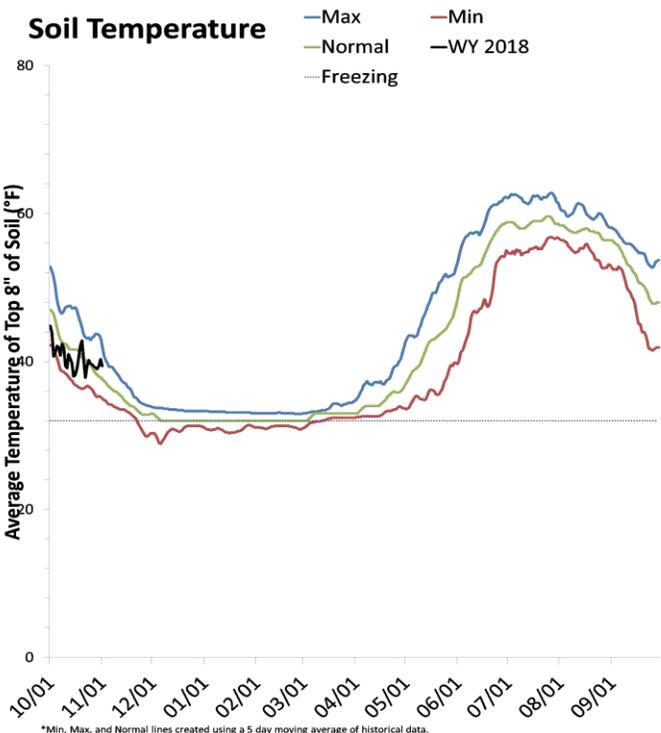
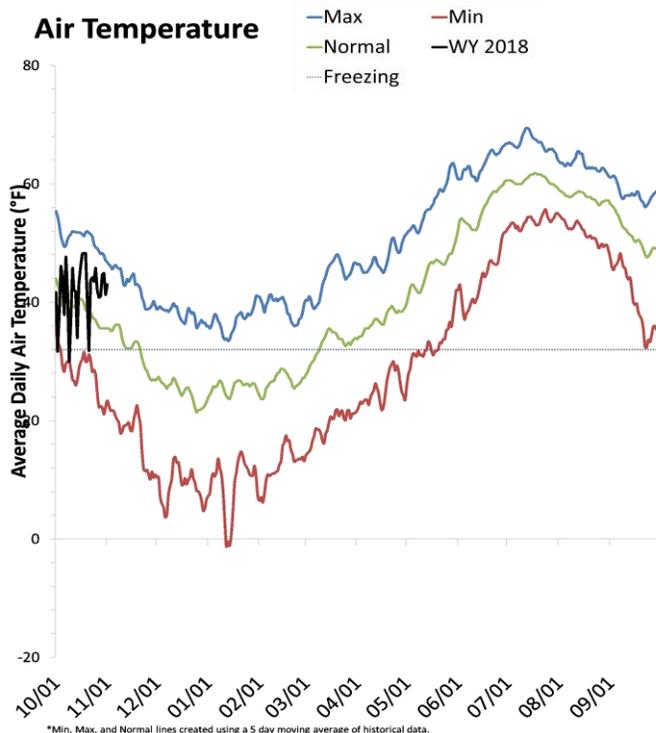
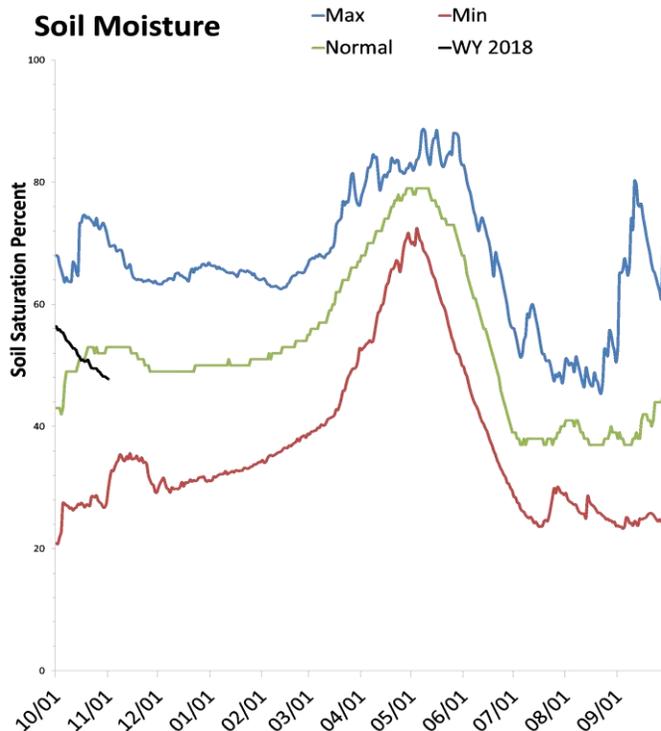
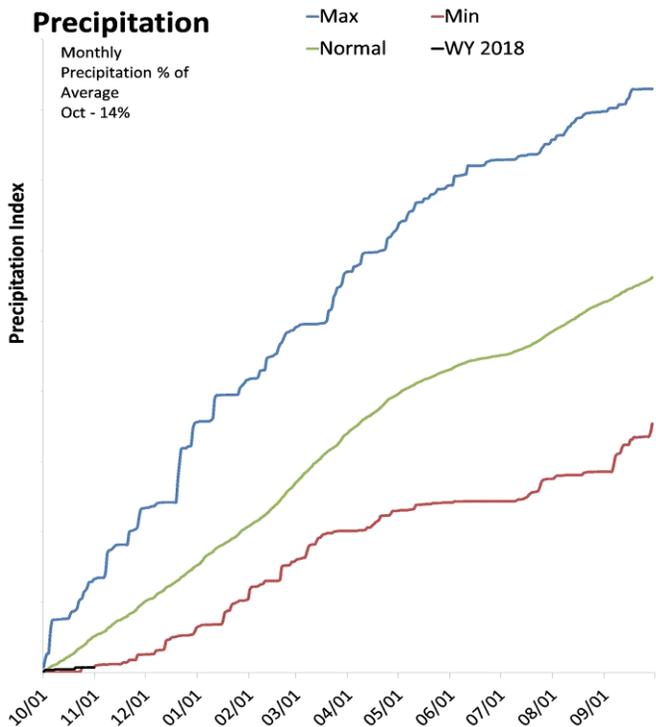
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



Upper Sevier Basin

November 1, 2017

Precipitation in October was much below average at 14%, which brings the seasonal accumulation (Oct-Oct) to 14% of average. Soil moisture is at 48% compared to 46% last year. Reservoir storage is at 33% of capacity, compared to 20% last year. The water availability index for the Upper Sevier is 53%.



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

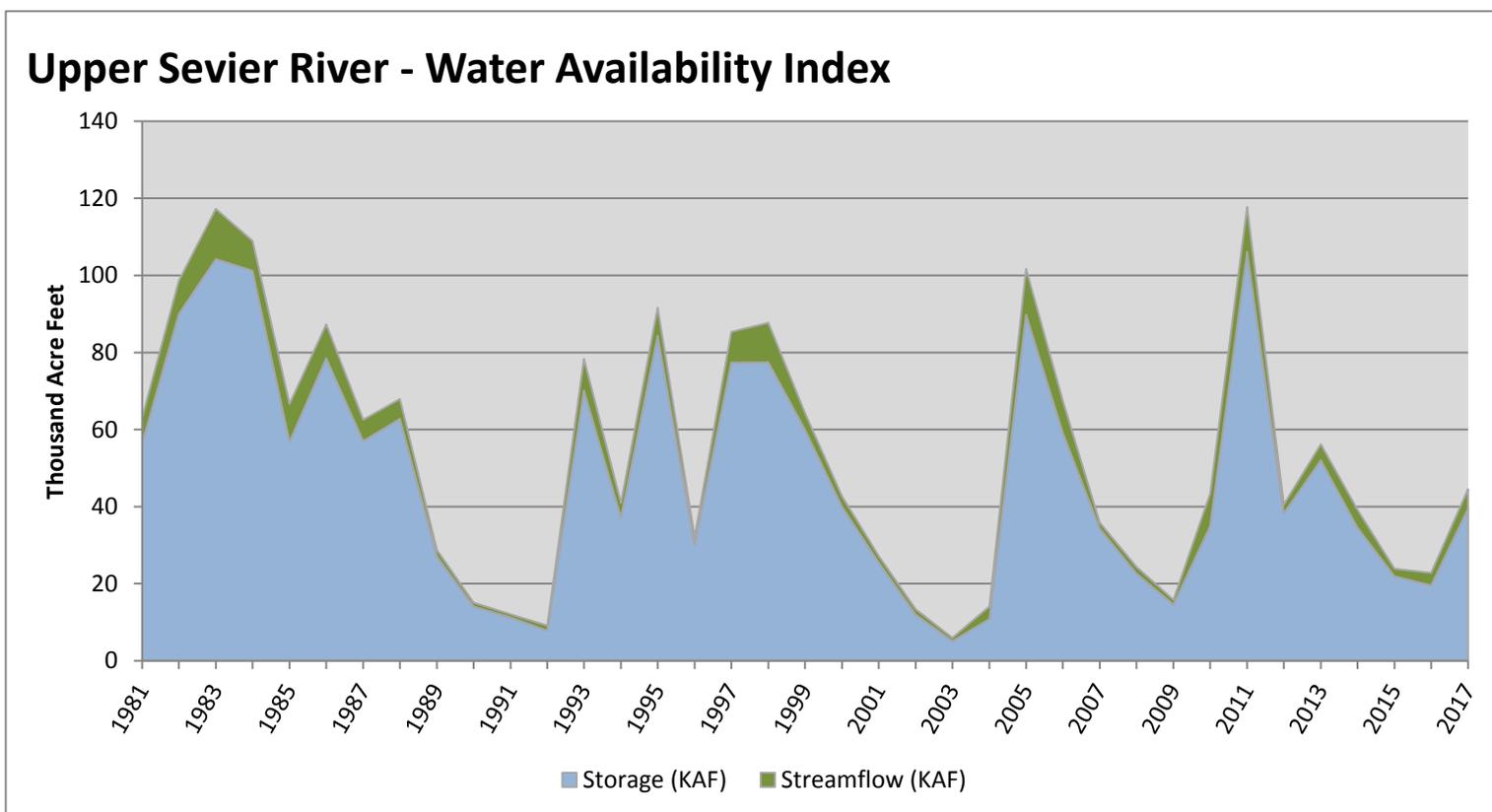
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|---------------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Upper Sevier River | 39.47 | 5.07 | 44.54 | 53 | 0.22 | 00, 10, 13, 87 |

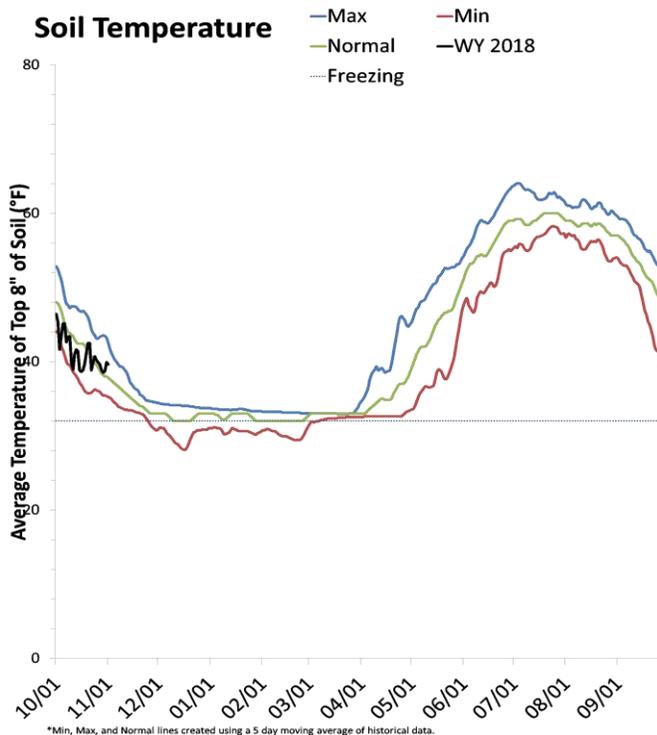
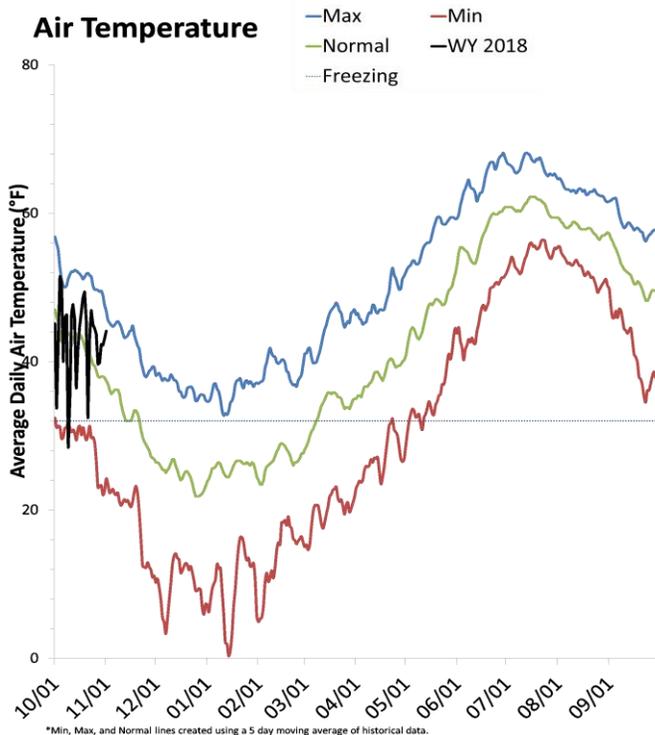
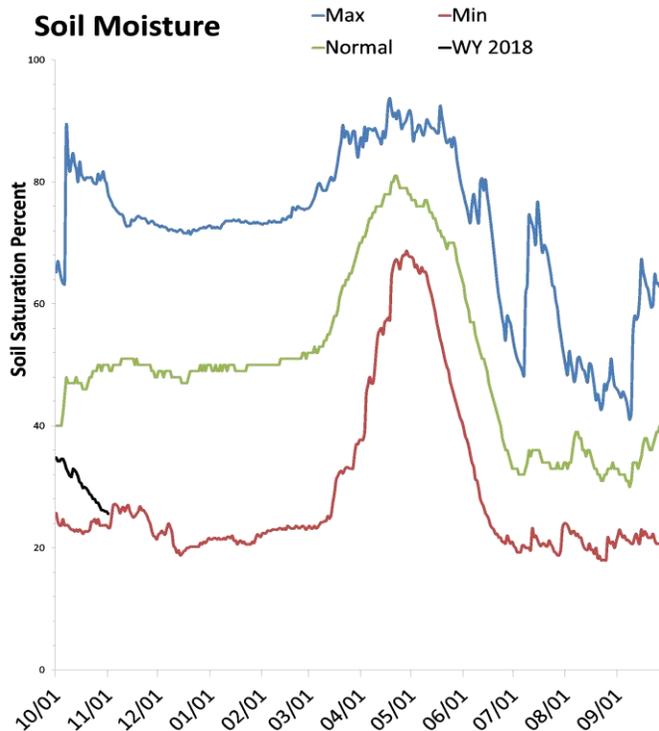
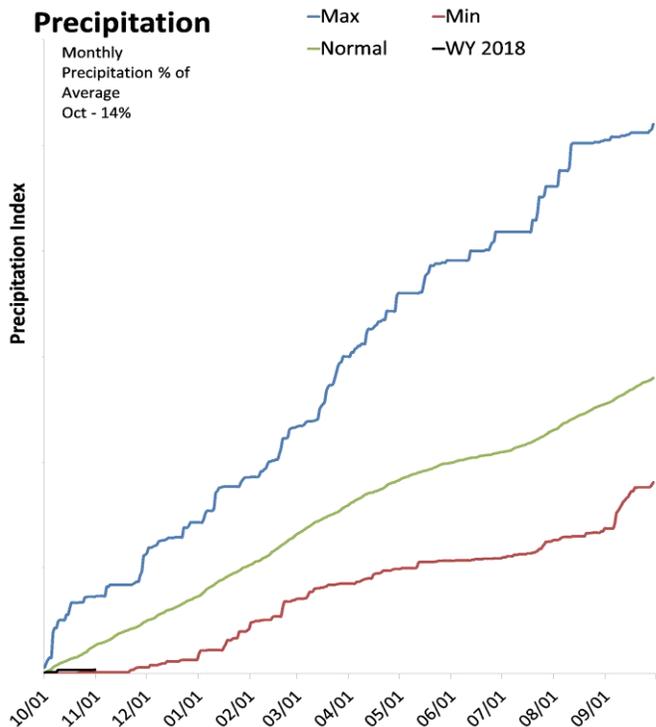
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



Southeastern Utah

November 1, 2017

Precipitation in October was much below average at 14%, which brings the seasonal accumulation (Oct-Oct) to 14% of average. Soil moisture is at 26% compared to 48% last year. Reservoir storage is at 46% of capacity, compared to 70% last year. The water availability index for Moab is 65%.



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

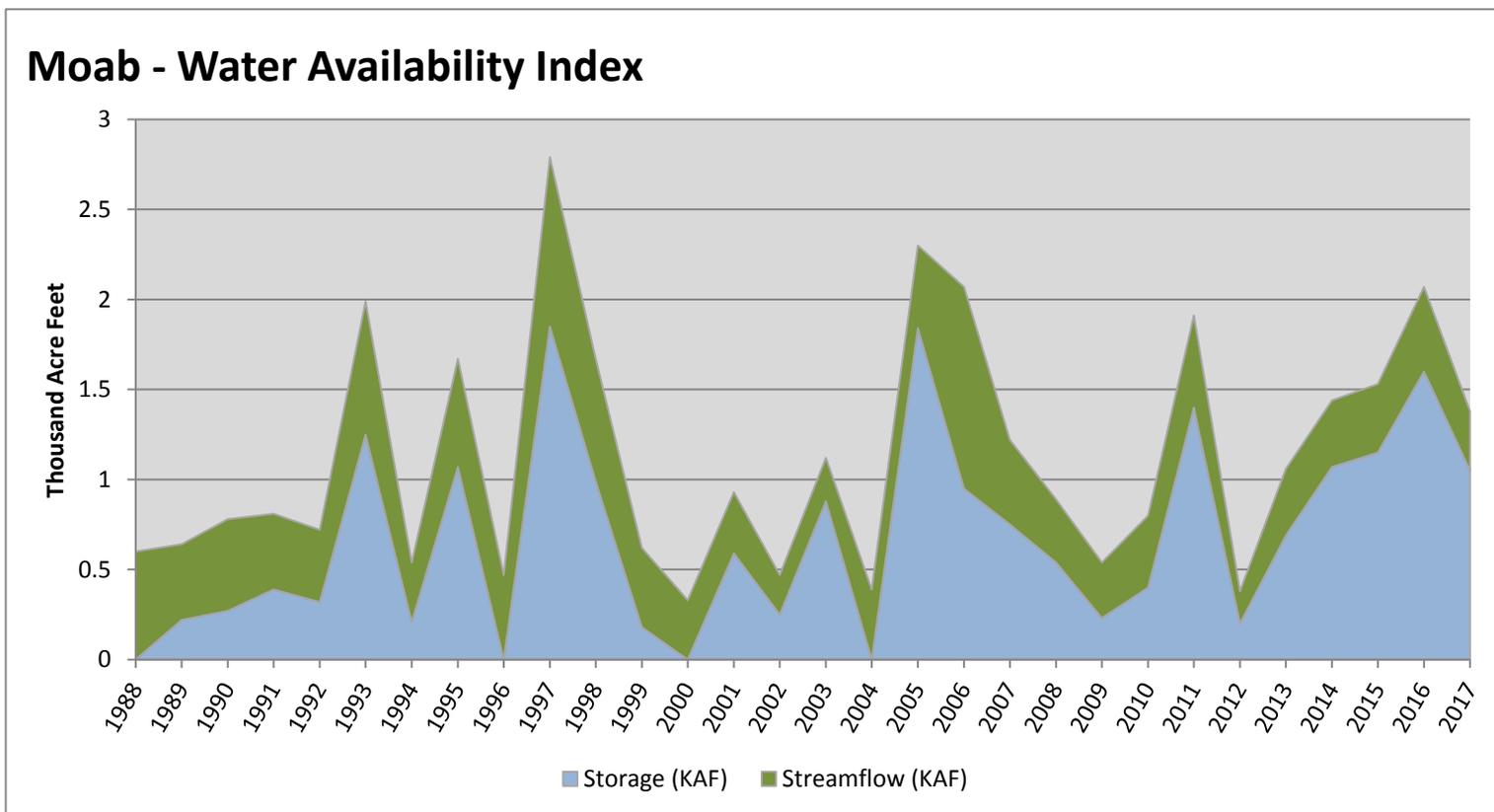
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|-----------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Moab | 1.05 | 0.33 | 1.38 | 65 | 1.21 | 03, 07, 14, 15 |

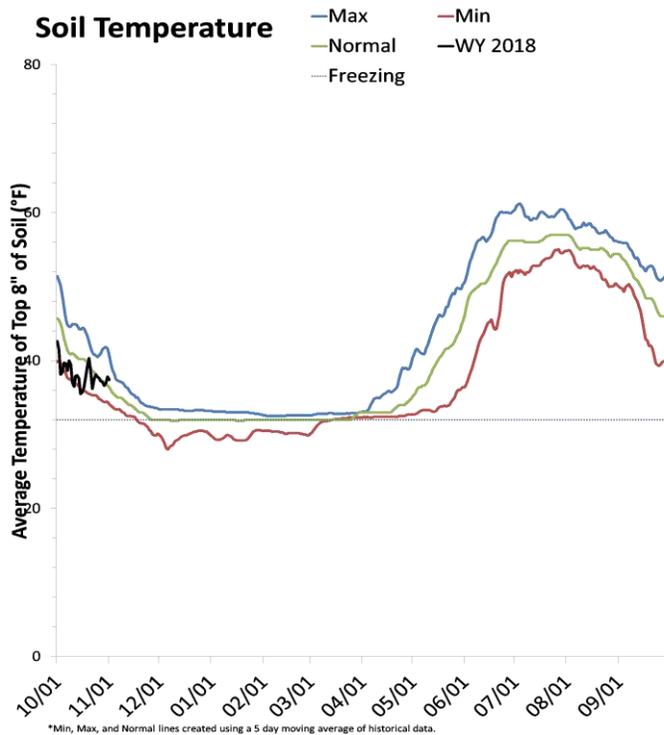
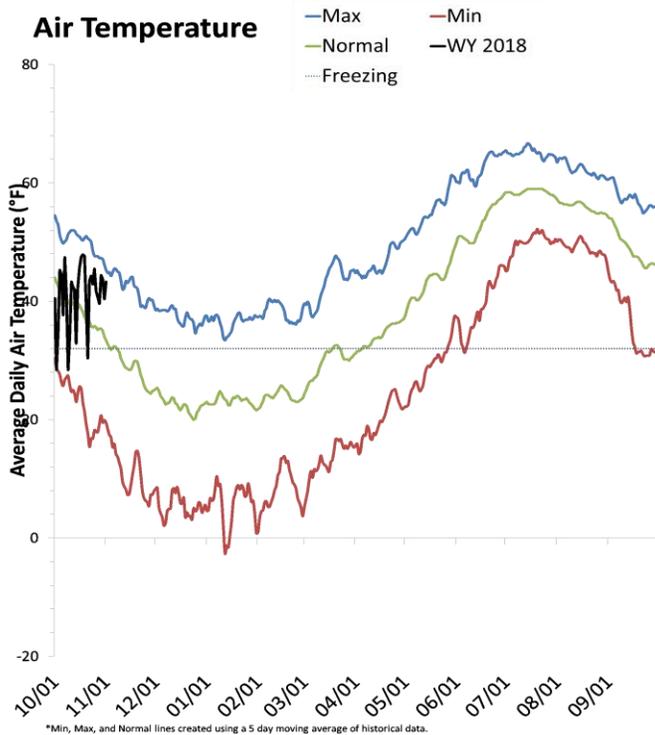
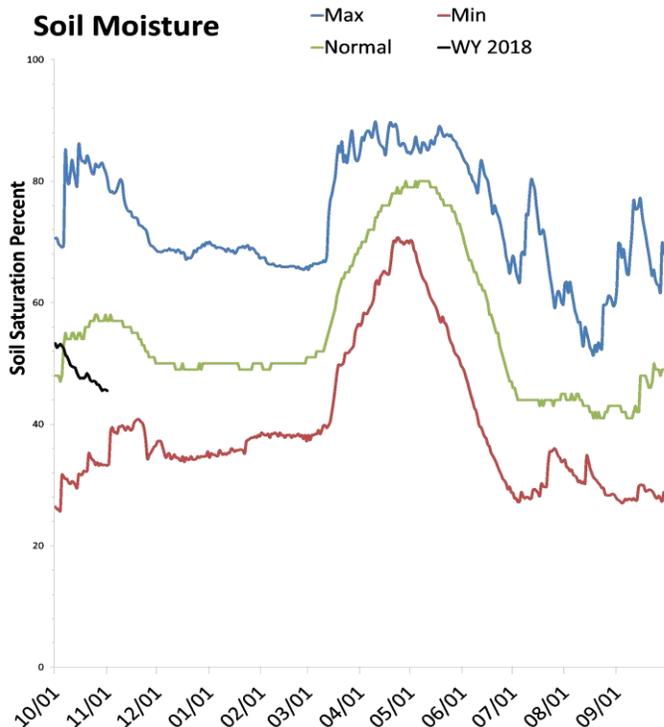
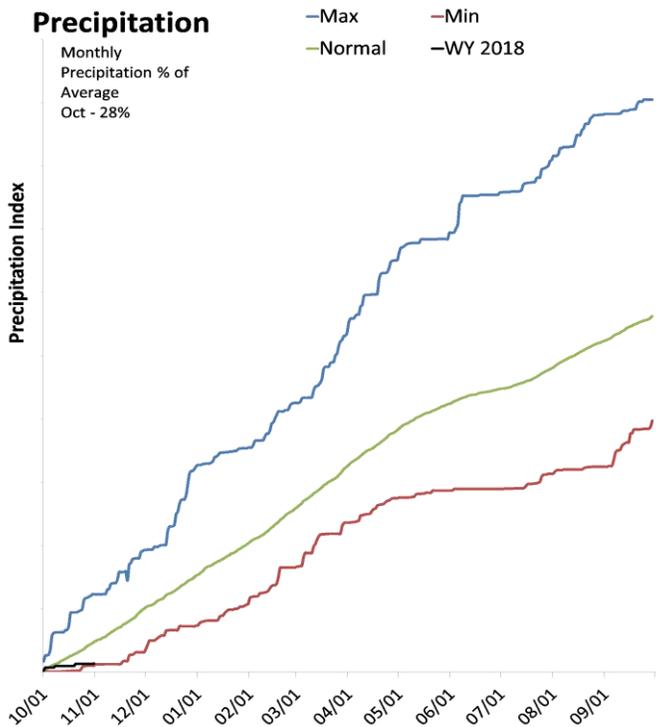
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



Dirty Devil Basin

November 1, 2017

Precipitation in October was much below average at 28%, which brings the seasonal accumulation (Oct-Oct) to 28% of average. Soil moisture is at 46% compared to 56% last year.



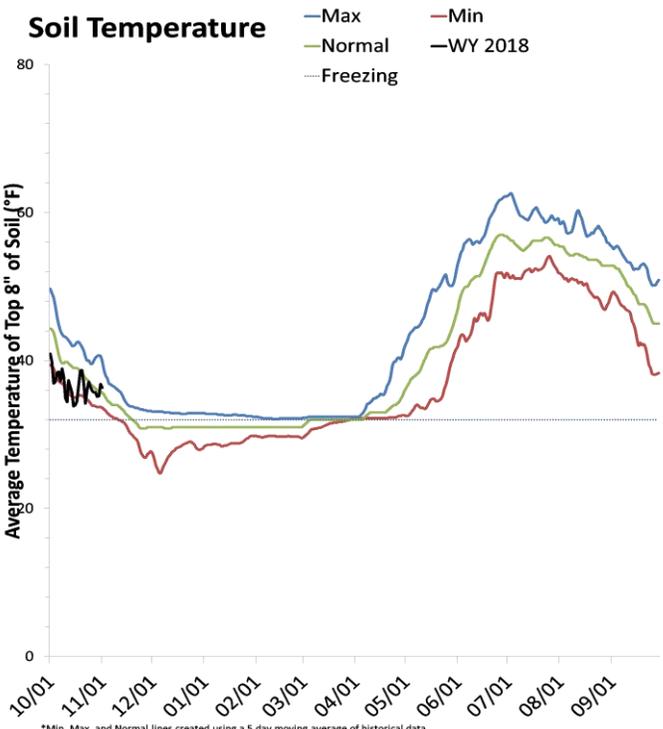
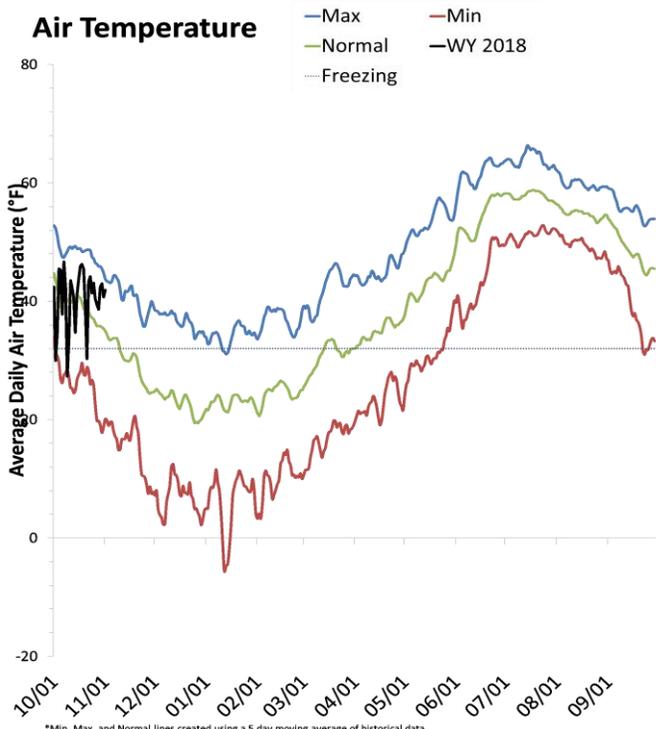
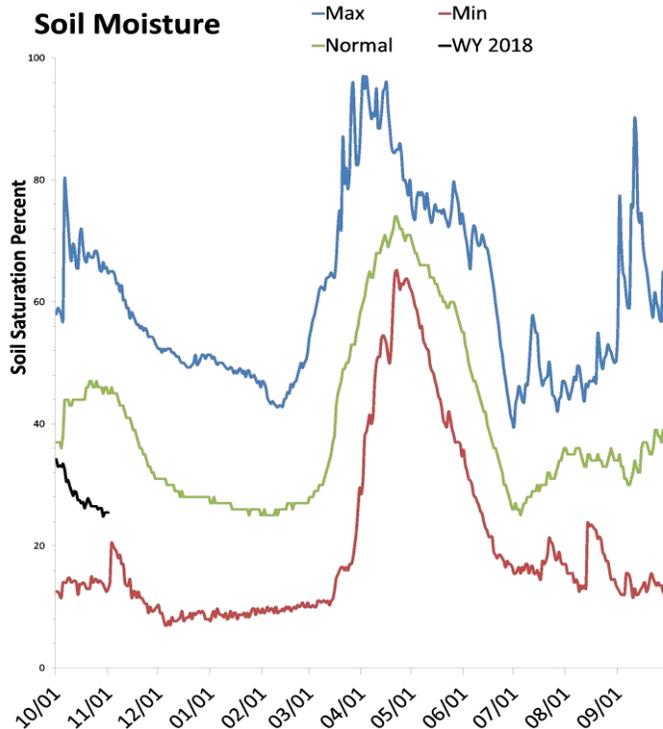
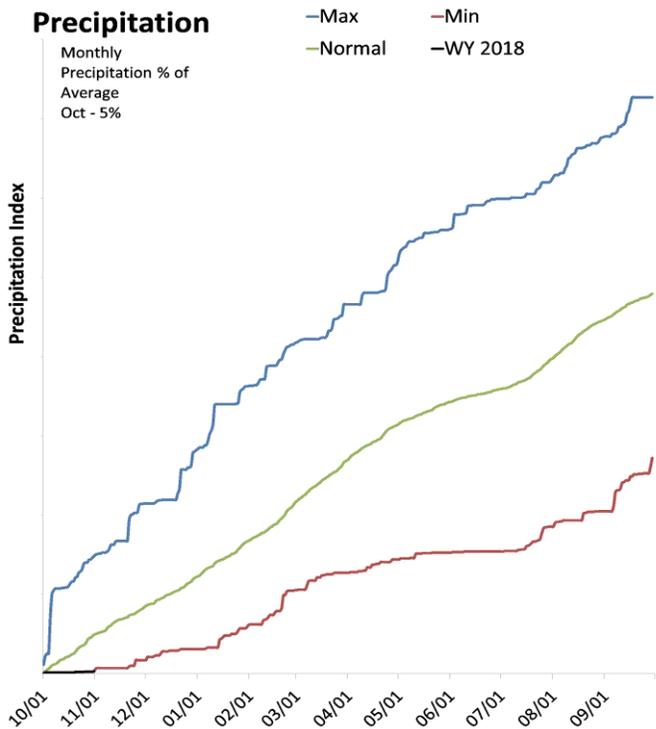
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

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

Escalante River Basin

November 1, 2017

Precipitation in October was much below average at 5%, which brings the seasonal accumulation (Oct-Oct) to 5% of average. Soil moisture is at 26% compared to 48% last year.



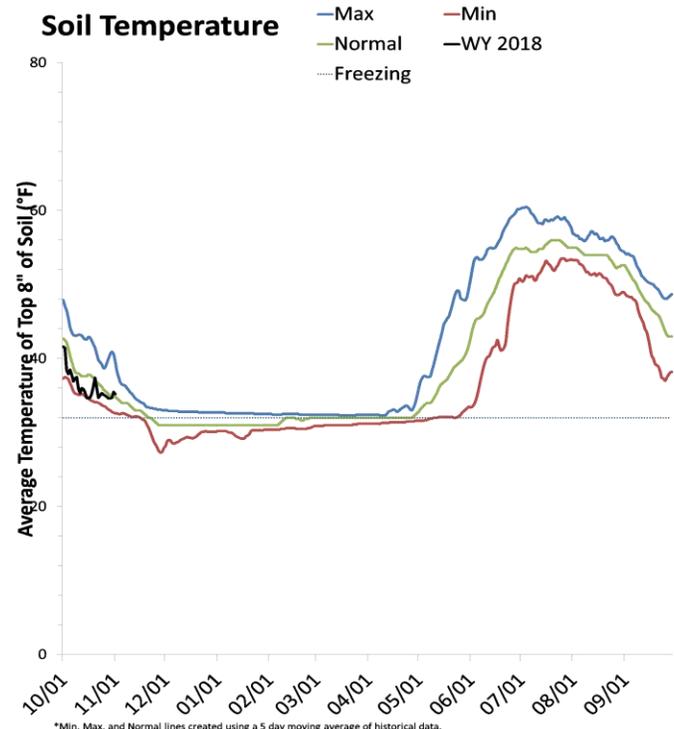
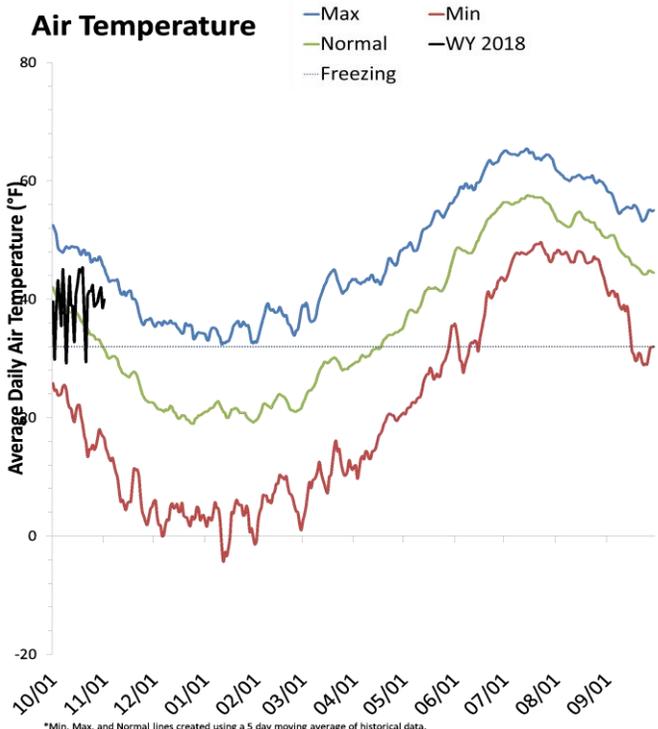
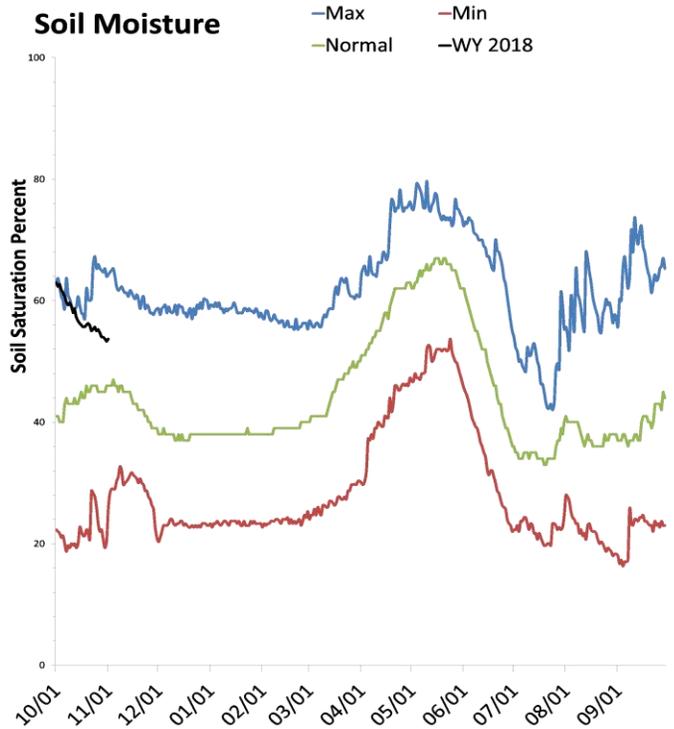
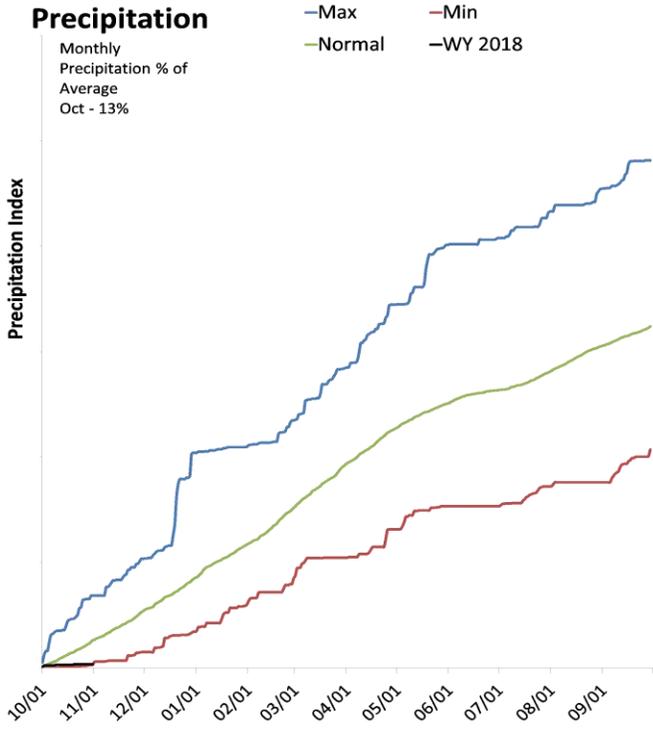
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

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

Beaver River Basin

November 1, 2017

Precipitation in October was much below average at 13%, which brings the seasonal accumulation (Oct-Oct) to 13% of average. Soil moisture is at 53% compared to 43% last year. Reservoir storage is at 9% of capacity, compared to 13% last year. The water availability index for the Beaver River is 11%.



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

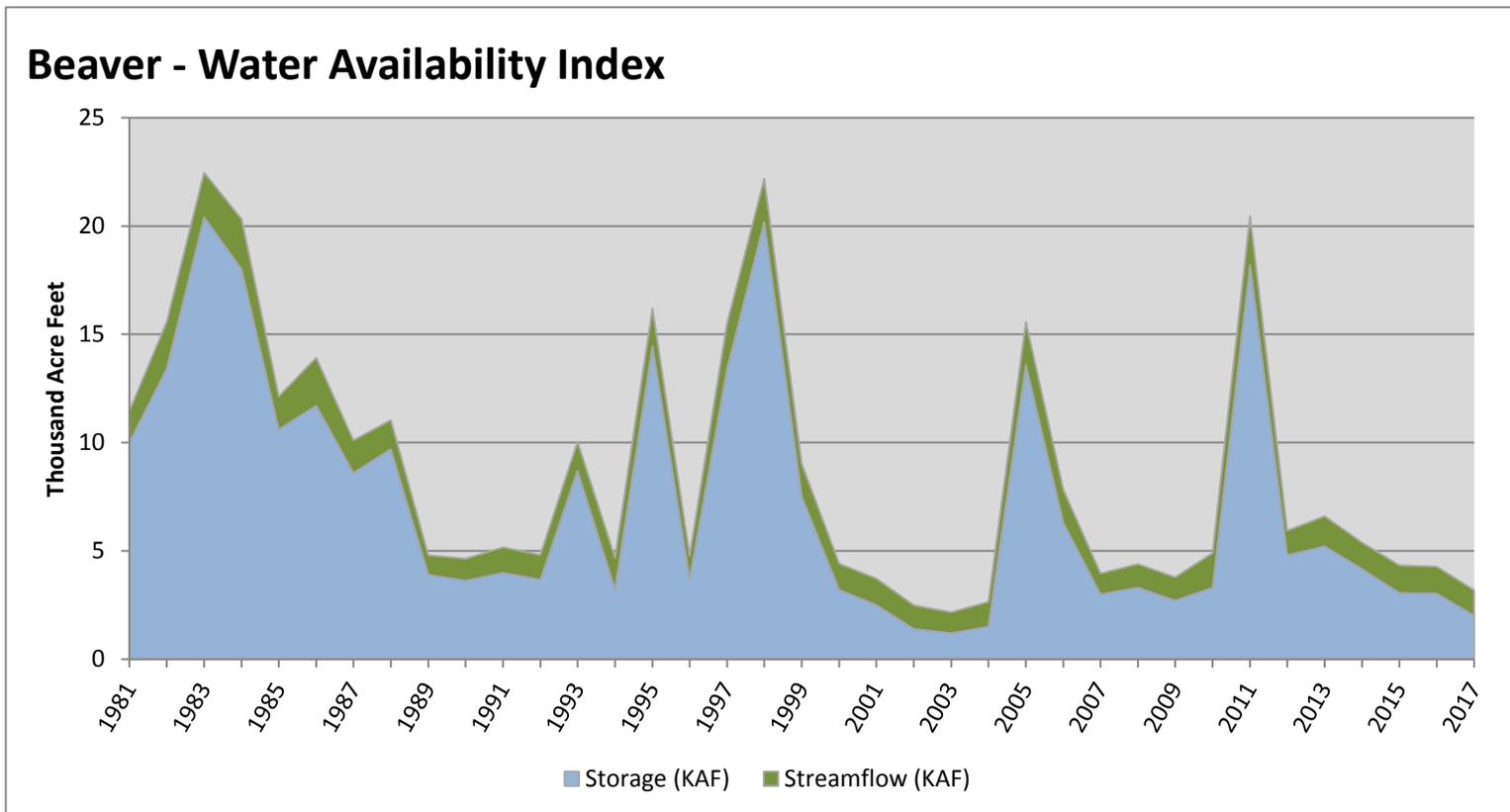
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|-----------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Beaver | 2.00 | 1.18 | 3.18 | 11 | -3.29 | 02, 04, 01, 09 |

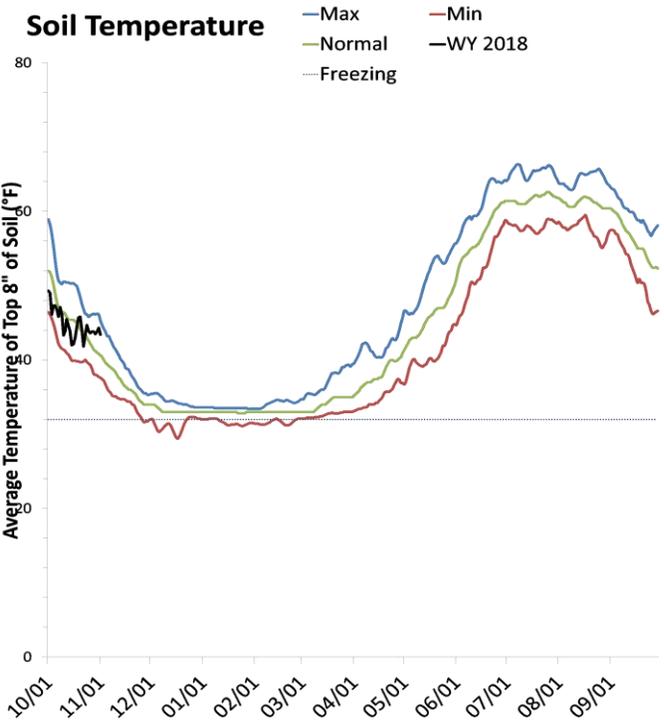
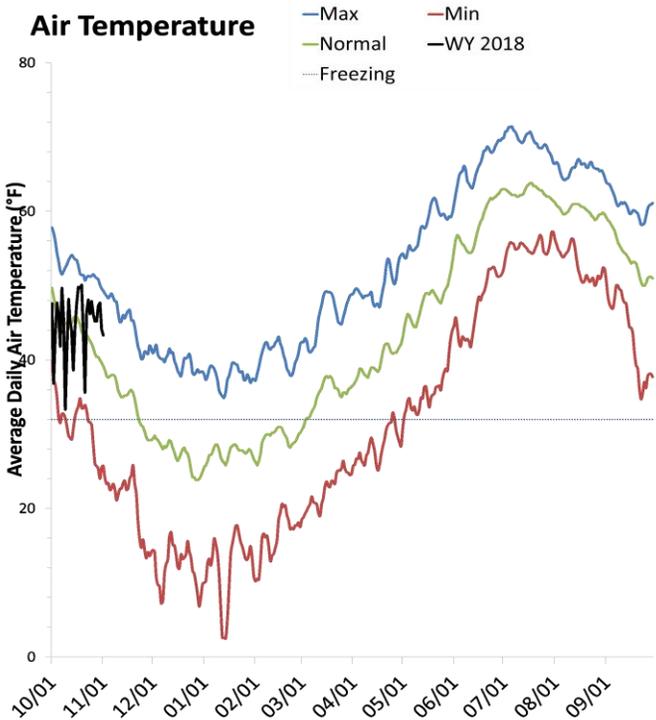
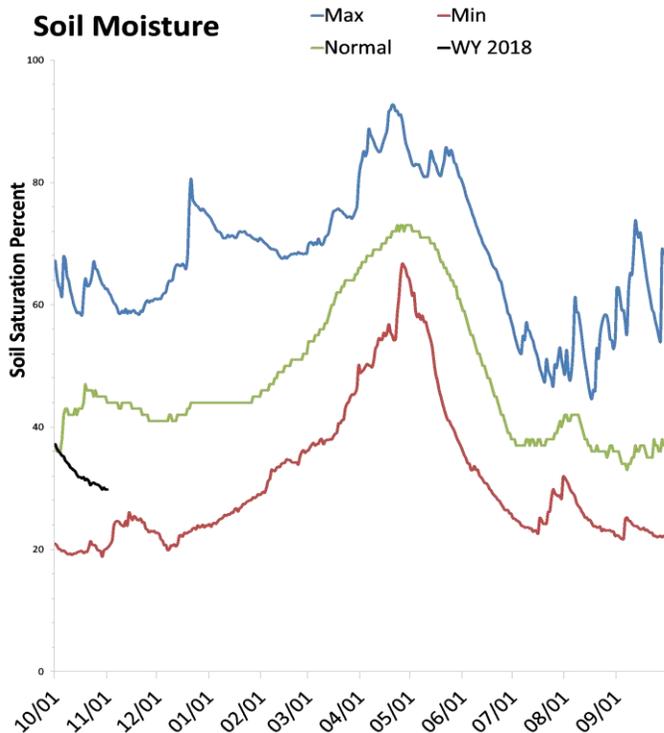
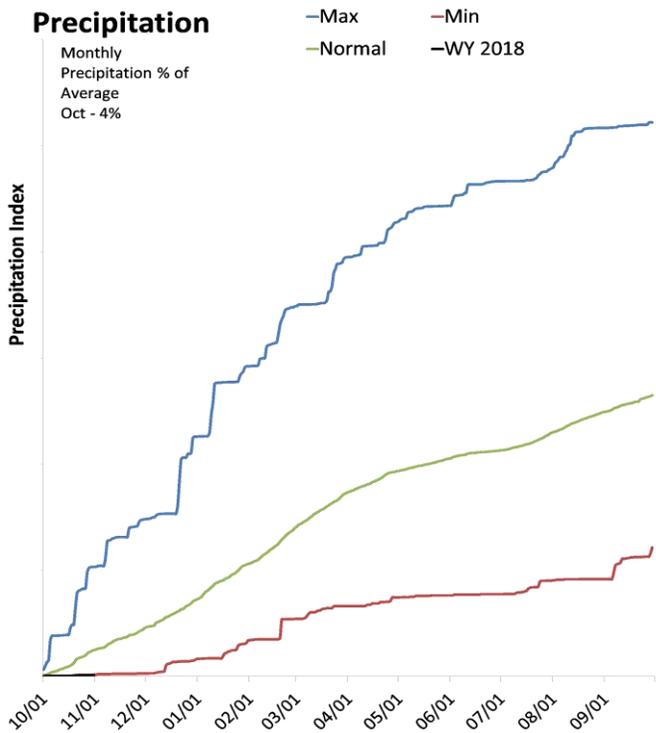
^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



Southwestern Utah

November 1, 2017

Precipitation in October was much below average at 4%, which brings the seasonal accumulation (Oct-Oct) to 4% of average. Soil moisture is at 30% compared to 39% last year. Reservoir storage is at 60% of capacity, compared to 52% last year. The water availability index for the Virgin River is 52%.



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

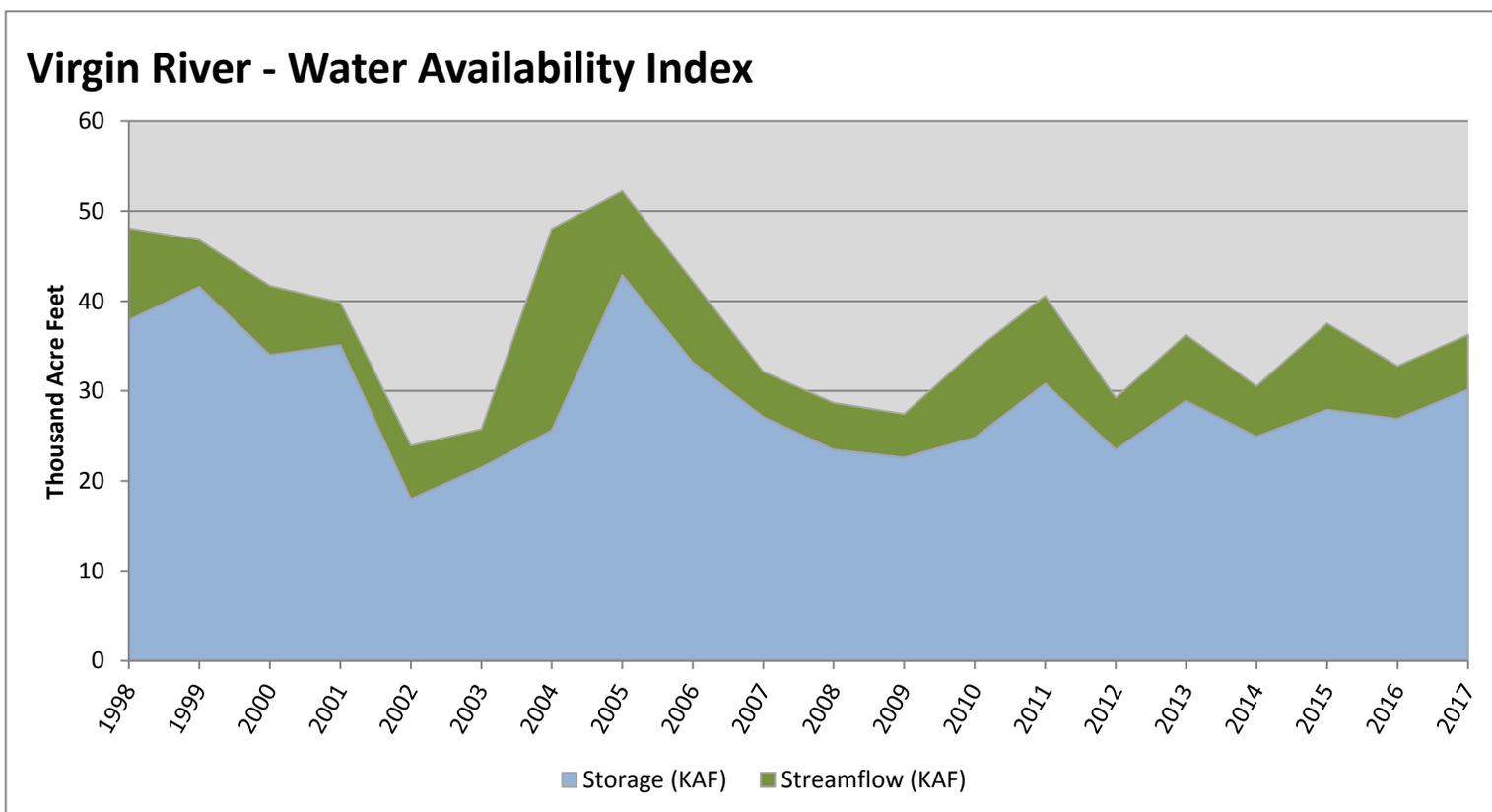
*Min, Max, and Normal lines created using a 5 day moving average of historical data.

November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM [*] Storage | October Flow | Storage + Flow | Percentile | WAI [#] | Years with similiar WAI |
|---------------------|------------------------------|------------------|------------------|------------|------------------|-------------------------|
| | KAF [^] | KAF [^] | KAF [^] | % | | |
| Virgin River | 30.15 | 6.12 | 36.27 | 52 | 0.2 | 10, 13, 15, 01 |

^{*}EOM, end of month; [#]WAI, Water Availability Index; [^]KAF, thousand acre-feet.



November 1, 2017

Water Availability Index

| Basin or Region | Oct EOM* Storage | October Flow | Storage + Flow | Percentile | WAI# | Years with similiar WAI |
|---------------------------|---------------------|--------------|----------------|------------|-------------|-------------------------|
| | KAF^ | KAF^ | KAF^ | % | | |
| Bear River | 1091 | 5.4 | 1096 | 87 | 3.1 | 97, 86, 84, 98 |
| Woodruff Narrows | 42.1 | 5.4 | 47.5 | 71 | 1.8 | 10, 95, 06, 09 |
| Little Bear | 9.9 | 3.7 | 13.6 | 85 | 2.9 | 09, 99, 11, 97 |
| Ogden | 73.4 | 3.2 | 76.6 | 82 | 2.6 | 93, 97, 98, 86 |
| Weber | 142.6 | 8.0 | 150.6 | 82 | 2.7 | 99, 97, 98, 93 |
| Provo River | 384.2 | 4.7 | 388.9 | 83 | 2.7 | 05, 06, 97, 98 |
| Western Uinta | 170.5 | 3.5 | 174.0 | 77 | 2.3 | 14, 13, 99, 96 |
| Eastern Uinta | 27.2 | 4.7 | 31.9 | 42 | -0.7 | 81, 88, 96, 00 |
| Blacks Fork | 6.9 | 3.6 | 10.5 | 54 | 0.4 | 08, 85, 09, 05 |
| Price | 46.1 | 0.6 | 46.7 | 87 | 3.1 | 83, 85, 86, 11 |
| Smiths Creek | 5.4 | 0.6 | 6.0 | 47 | -0.3 | 08, 09, 15, 99 |
| Joes Valley | 46.2 | 1.4 | 47.6 | 79 | 2.4 | 05, 85, 98, 83 |
| Moab | 1.1 | 0.3 | 1.4 | 65 | 1.2 | 03, 07, 14, 15 |
| Upper Sevier River | 39.5 | 5.1 | 44.5 | 53 | 0.2 | 00, 10, 13, 87 |
| San Pitch | 0.0 | 0.4 | 0.4 | 26 | -2.0 | 14, 16, 13, 02 |
| Lower Sevier | 25.7 | 7.7 | 33.5 | 11 | -3.3 | 16, 04, 91, 15 |
| Beaver | 2.0 | 1.2 | 3.2 | 11 | -3.3 | 02, 04, 01, 09 |
| Virgin River | 30.2 | 6.1 | 36.3 | 52 | 0.2 | 10, 13, 15, 01 |

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

What is a Water Availability Index?

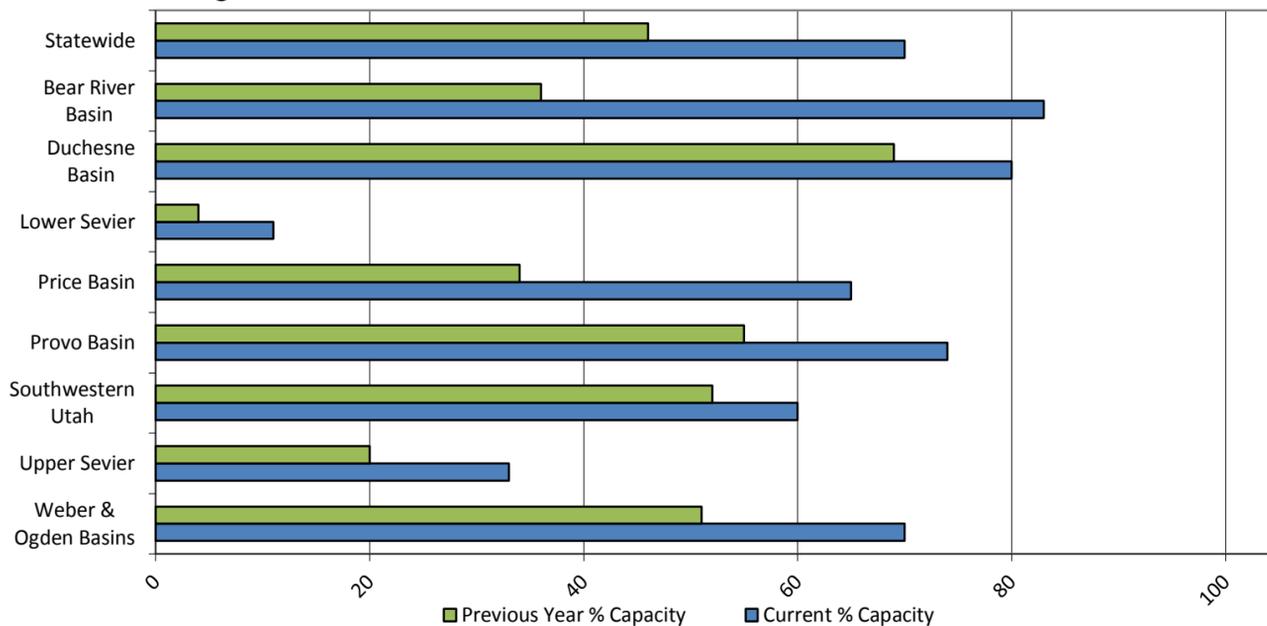
The Water Availability Index (WAI) is an observed hydrologic indicator of current surface water availability within a watershed. The index is calculated by combining current reservoir storage with the previous months streamflow. WAI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry) 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/ on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

| Reservoir Storage Summary for the end of October 2017 | 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 | 11.6 | 11.1 | | 25.7 | 45% | 43% | | | |
| Causey Reservoir | 3.4 | 2.9 | 2.6 | 7.1 | 48% | 41% | 37% | 132% | 113% |
| Cleveland Lake | 2.4 | 1.2 | | 5.4 | 44% | 22% | | | |
| Currant Creek Reservoir | 14.7 | 14.7 | 14.7 | 15.5 | 95% | 95% | 95% | 100% | 100% |
| Deer Creek Reservoir | 125.7 | 107.5 | 93.3 | 149.7 | 84% | 72% | 62% | 135% | 115% |
| East Canyon Reservoir | 36.2 | 21.1 | 32.0 | 49.5 | 73% | 43% | 65% | 113% | 66% |
| Echo Reservoir | 29.1 | 18.3 | 29.7 | 73.9 | 39% | 25% | 40% | 98% | 62% |
| Grantsville Reservoir | 1.0 | 0.5 | 0.8 | 3.3 | 30% | 16% | 25% | 119% | 64% |
| Gunlock | 6.6 | 1.7 | 5.2 | 10.4 | 63% | 17% | 50% | 126% | 33% |
| Gunnison Reservoir | 0.0 | 0.0 | 6.0 | 20.3 | 0% | 0% | 30% | 0% | 0% |
| Huntington North Reservoir | 2.3 | 1.3 | 1.4 | 4.2 | 55% | 31% | 33% | 167% | 95% |
| Hyrum Reservoir | 9.9 | 6.4 | 8.0 | 15.3 | 65% | 42% | 52% | 124% | 80% |
| Joes Valley Reservoir | 46.2 | 29.9 | 39.2 | 61.6 | 75% | 49% | 64% | 118% | 76% |
| Jordanelle Reservoir | 258.5 | 188.5 | 248.3 | 320.0 | 81% | 59% | 78% | 104% | 76% |
| Ken's Lake | 1.1 | 1.6 | 0.7 | 2.3 | 46% | 70% | 30% | 154% | 235% |
| Kolob Reservoir | 5.1 | 5.2 | | 5.6 | 91% | 94% | | | |
| Lost Creek Reservoir | 17.6 | 14.2 | 12.5 | 22.5 | 78% | 63% | 56% | 140% | 113% |
| Lower Enterprise | 0.8 | 0.3 | 0.4 | 2.6 | 31% | 12% | 14% | 216% | 81% |
| Miller Flat Reservoir | 3.4 | 1.5 | | 5.2 | 66% | 29% | | | |
| Millsite | 1.2 | 9.4 | 9.4 | 16.7 | 7% | 56% | 56% | 12% | 100% |
| Minersville Reservoir | 2.0 | 3.0 | 8.6 | 23.3 | 9% | 13% | 37% | 23% | 35% |
| Moon Lake Reservoir | 20.0 | 16.4 | 18.2 | 35.8 | 56% | 46% | 51% | 110% | 90% |
| Otter Creek Reservoir | 25.6 | 19.5 | 25.0 | 52.5 | 49% | 37% | 48% | 102% | 78% |
| Panguitch Lake | 9.4 | 9.9 | 11.4 | 22.3 | 42% | 44% | 51% | 83% | 86% |
| Pineview Reservoir | 70.0 | 58.4 | 51.3 | 110.1 | 64% | 53% | 47% | 136% | 114% |
| Piute Reservoir | 13.9 | 0.1 | 25.3 | 71.8 | 19% | 0% | 35% | 55% | 0% |
| Porcupine Reservoir | 10.8 | 5.2 | 3.9 | 11.3 | 96% | 46% | 35% | 277% | 133% |
| Quail Creek | 23.6 | 25.2 | 22.3 | 40.0 | 59% | 63% | 56% | 106% | 113% |
| Red Fleet Reservoir | 17.8 | 19.3 | 16.8 | 25.7 | 69% | 75% | 65% | 106% | 115% |
| Rockport Reservoir | 55.0 | 22.4 | 37.8 | 60.9 | 90% | 37% | 62% | 145% | 59% |
| Sand Hollow Reservoir | 43.0 | 39.4 | | 50.0 | 86% | 79% | | | |
| Scofield Reservoir | 46.1 | 9.6 | 26.3 | 65.8 | 70% | 15% | 40% | 175% | 37% |
| Settlement Canyon Reservoir | 0.3 | 0.3 | 0.5 | 1.0 | 31% | 30% | 46% | 67% | 65% |
| Sevier Bridge Reservoir | 25.7 | 8.3 | 110.2 | 236.0 | 11% | 4% | 47% | 23% | 8% |
| Smith And Morehouse Reservoir | 4.7 | 5.1 | 3.6 | 8.1 | 58% | 63% | 44% | 132% | 141% |
| Starvation Reservoir | 133.1 | 128.9 | 126.3 | 165.3 | 81% | 78% | 76% | 105% | 102% |
| Stateline Reservoir | 5.3 | 5.2 | 5.7 | 12.0 | 45% | 44% | 48% | 94% | 92% |
| Steinaker Reservoir | 9.4 | 14.5 | 15.6 | 33.4 | 28% | 44% | 47% | 60% | 93% |
| Strawberry Reservoir | 920.7 | 767.9 | 656.2 | 1105.9 | 83% | 69% | 59% | 140% | 117% |
| Upper Enterprise | 1.6 | 0.3 | 1.9 | 10.0 | 16% | 3% | 19% | 84% | 16% |
| Upper Stillwater Reservoir | 17.4 | 10.2 | 14.4 | 32.5 | 53% | 31% | 44% | 121% | 71% |
| Utah Lake | 515.4 | 280.8 | 683.2 | 870.9 | 59% | 32% | 78% | 75% | 41% |
| Vernon Creek Reservoir | | 0.1 | 0.2 | 0.6 | | 20% | 30% | | 66% |
| Willard Bay | 168.1 | 139.1 | 131.1 | 215.0 | 78% | 65% | 61% | 128% | 106% |
| Woodruff Creek | 1.2 | 1.8 | 1.1 | 4.0 | 30% | 46% | 28% | 107% | 165% |
| Woodruff Narrows Reservoir | 42.1 | 43.9 | 23.3 | 57.3 | 73% | 77% | 41% | 181% | 189% |
| Meeks Cabin Reservoir | 6.9 | 6.0 | 9.1 | 32.5 | 21% | 18% | 28% | 76% | 65% |
| Bear Lake | 1090.7 | 440.4 | 595.7 | 1302.0 | 84% | 34% | 46% | 183% | 74% |
| Basin-wide Total | 3790.9 | 2460.0 | 3129.0 | 5380.3 | 70% | 46% | 58% | 121% | 79% |
| # of reservoirs | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |

Reservoir Storage



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