Utah Climate and Water Report

November 1, 2020

Settlement Canyon Reservoir, Tooele County

Photo by Dave Eiriksson

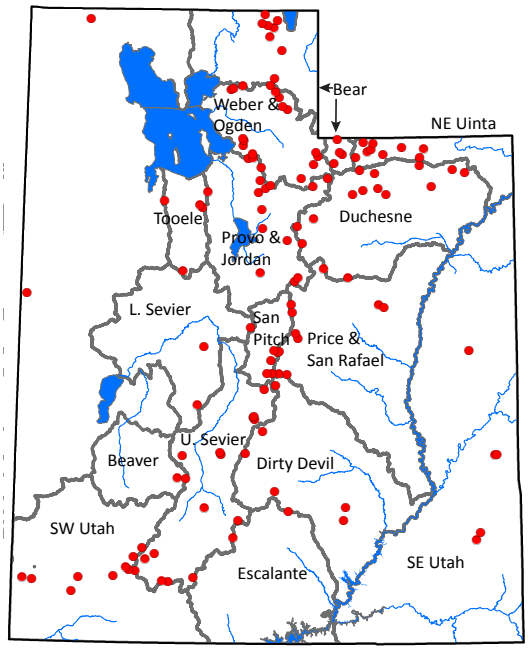
Report Contents

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.

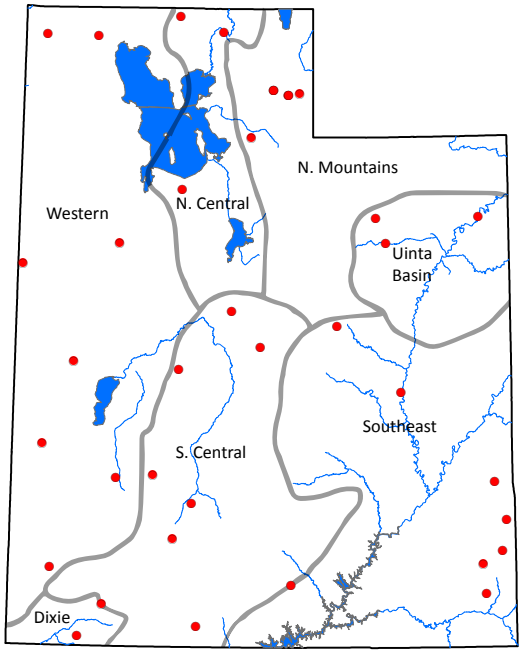
SNOTEL

- 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, 2020

*This report has been reorganized to better reflect two distinct geographic areas being monitored – the low elevation valley sites (**S**oil **C**limate **A**nalysis **N**etwork) that are critical for agricultural production and operations, and the high elevation mountainous areas where water supply is generated (**SNO**w**TEL**emetry). 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 jordan.clayton@usda.gov.*

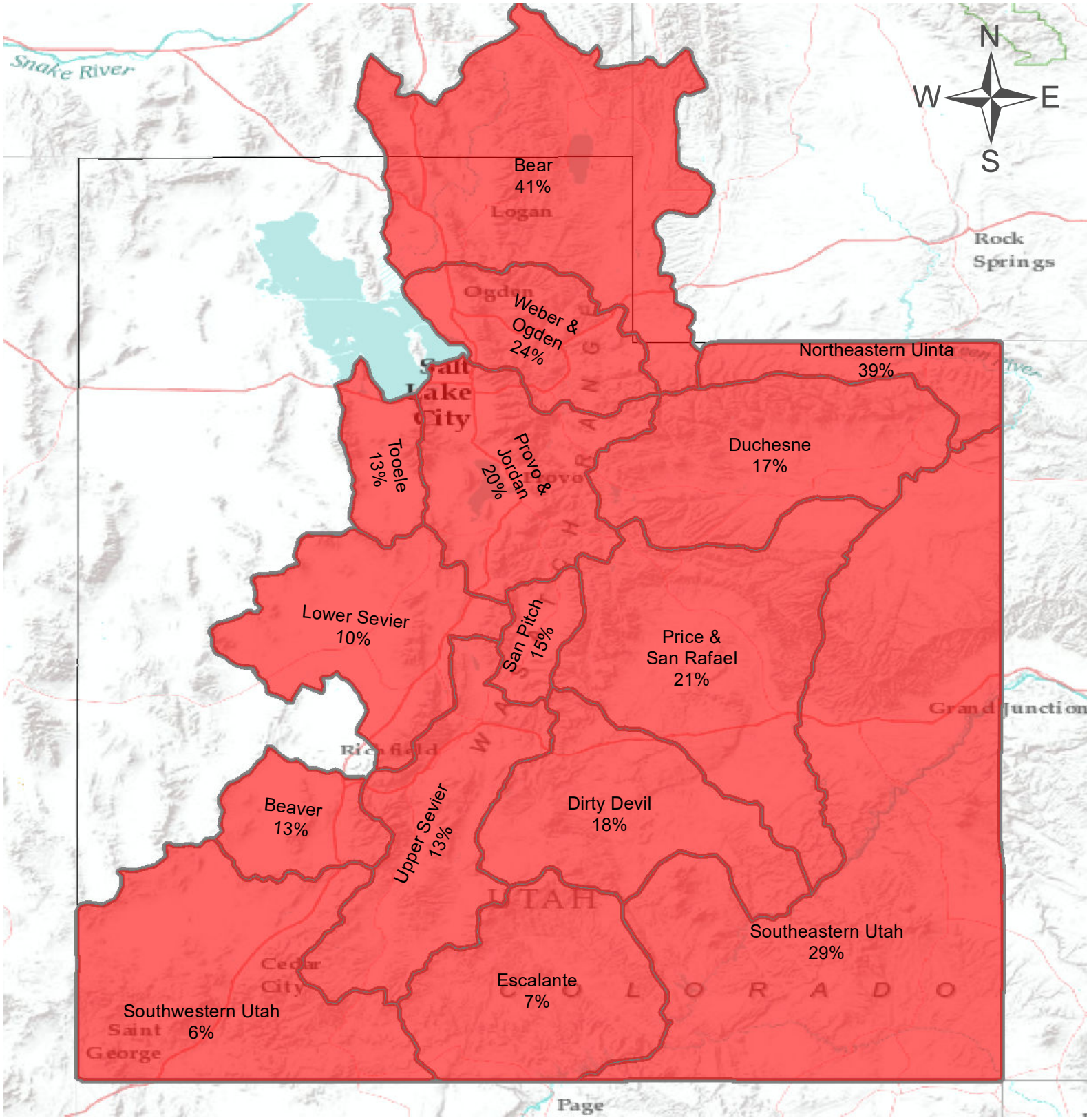
Current Valley Conditions (SCAN)

The 2021 water year is off to a poor start in Utah's Valley locations, with most basins recording no accumulated precipitation. The statewide accumulated precipitation during October is just a scant 0.1 inches. This is reflected in the very low soil moisture levels in almost all locations. The continued dryness is also reflected in the extended fire season and extreme drought conditions. All of the state is now in Moderate Drought (D1) or worse, and unfortunately 28.8% of the state is in the Exceptional Drought (D4) category (which is the worst rating given). Hopefully, the coming weather pattern change will start to erase some of these deficits, but it will take more than this one storm cycle to begin to improve Utah's drought situation.

Current Mountain Conditions (SNOTEL)

While the 2020 water year in Utah started off with promising snowpack conditions last winter, the spring and summer seasons provided extremely low amounts of mountain precipitation. We need the 2021 water year to perform better! Unfortunately, October did not start things off the way we would have hoped… Precipitation at Utah's SNOTEL sites was only 23% of average in October. Statewide soil moisture is at record lows- currently only 21% of saturation and well below the previous observed levels for this time of year*. Reservoir storage is at 61% of capacity, down 13% from last year. Most regions' Water Availability Indices (WAI), which combine current reservoir storage with streamflow for major Utah watersheds, are well below normal except for the Bear River basin and its subwatersheds and a couple other areas (which are close to average). Several basins in Utah have exceptionally low WAI values, including the Blacks Fork, Eastern Uintas, Lower Sevier, Beaver, Moab, and San Pitch. Utah is in critical need for replenishing snow! So… everyone say it together now: "Snow! Snow! Snow! Snow!" No idea if that will work, but why not try?

* For soil moisture data at Utah's SNOTEL sites, the period of record for observations generally extends back to the early 2000s, which is shorter than for snow and precipitation data. That said, there has been significant variation over that time period which allows us to characterize the current dry soils as a significant anomaly.



Statewide Precipitation

As of November 1, 2020:

23% of Normal Precipitation

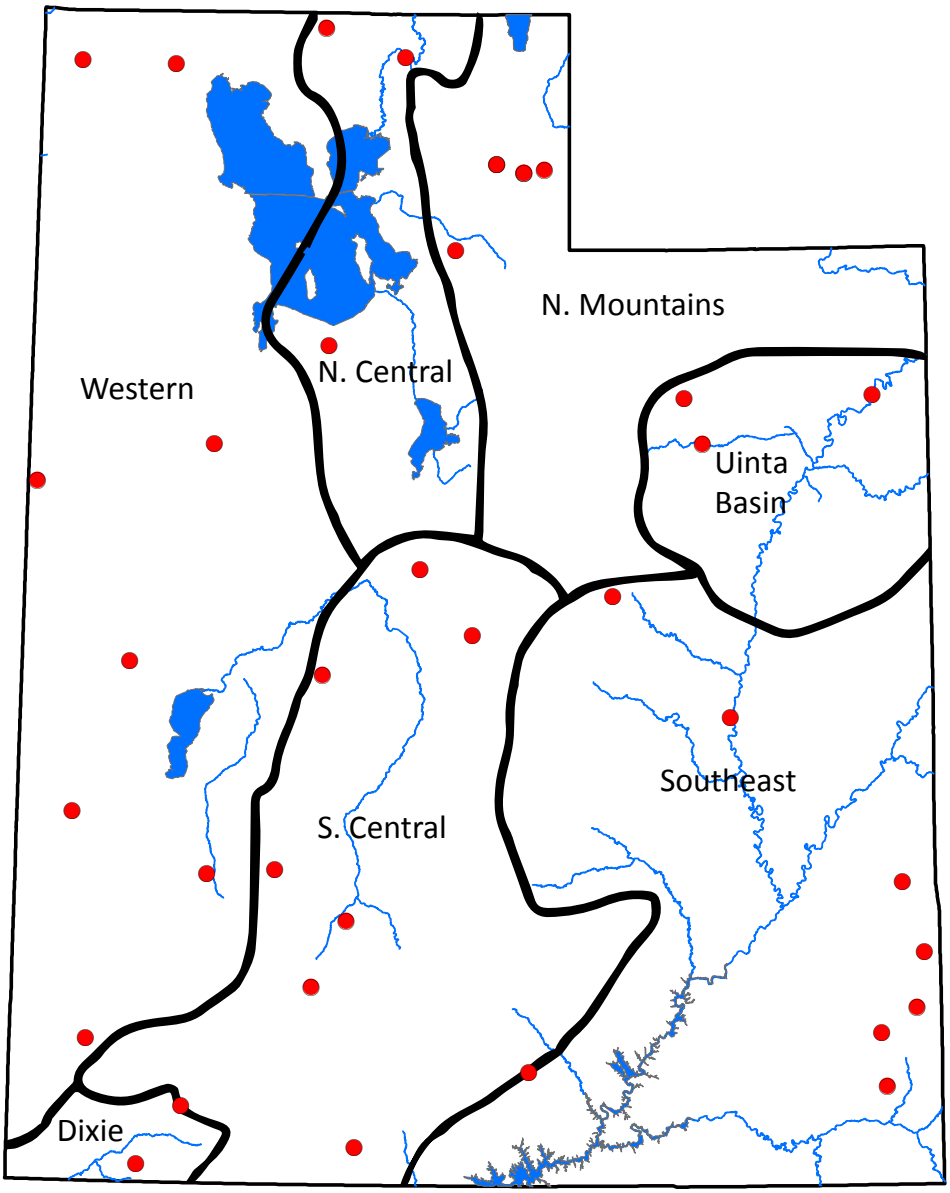
23% of Normal Precipitation Last Month

0 10 20 40 60 80 100
Miles

% of Normal

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

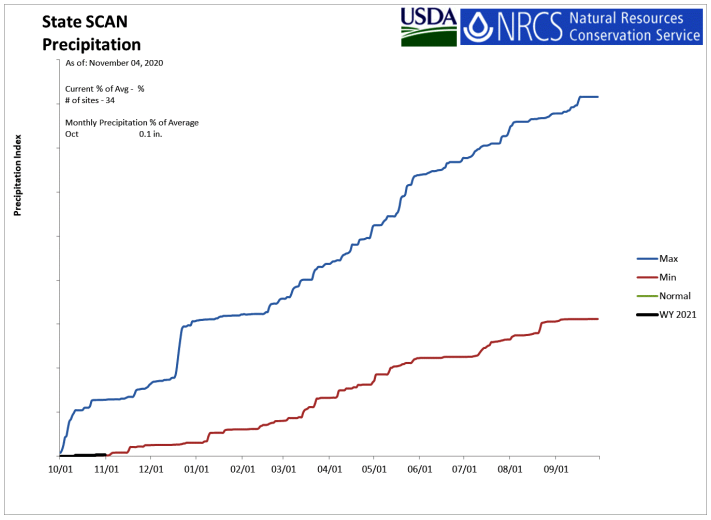
SCAN portion of report

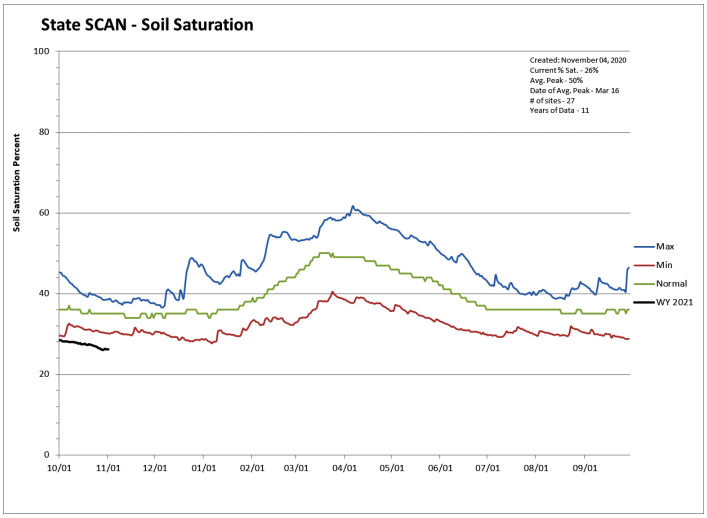


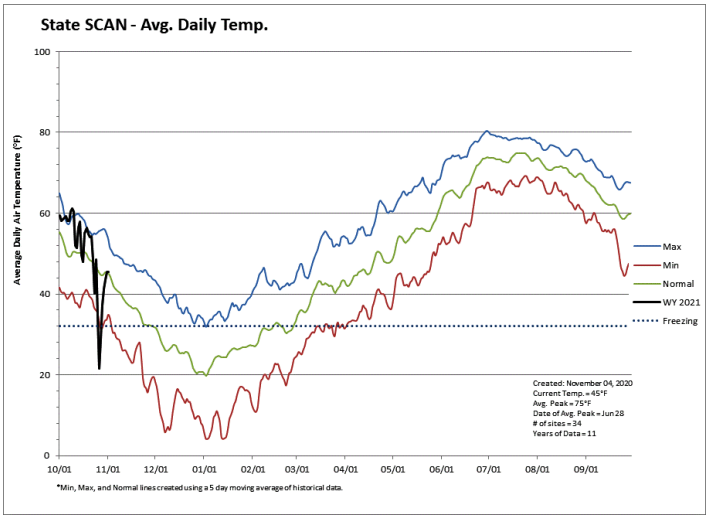
Statewide SCAN

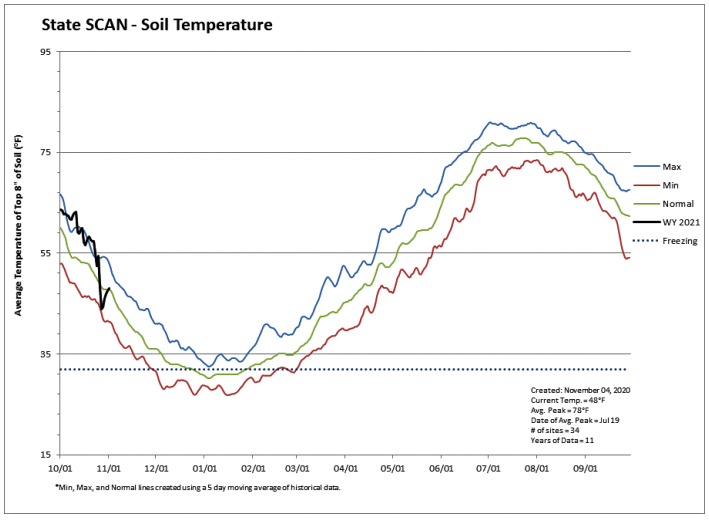
November 1, 2020

The average precipitation at SCAN sites within Utah was 0.1 inches in October, which brings the seasonal accumulation (Oct-Oct) to 0.1 inches. Soil moisture is at 26% compared to 28% last year.





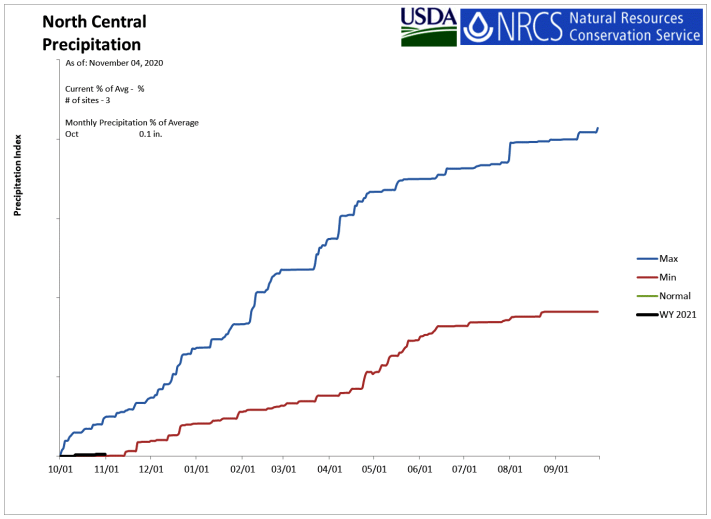


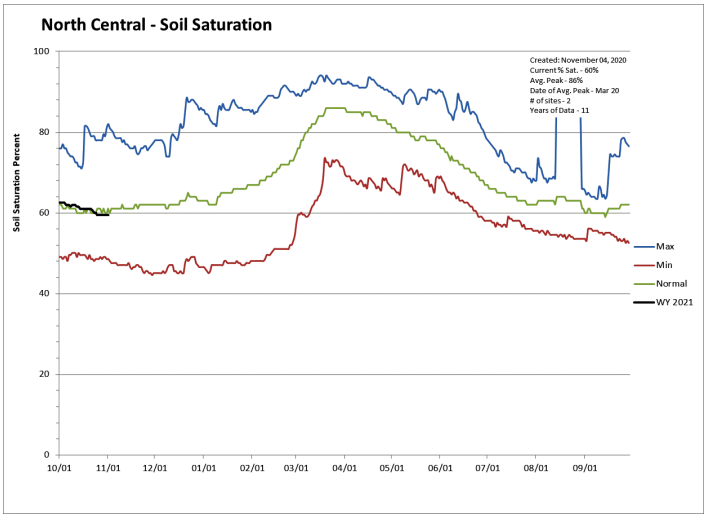


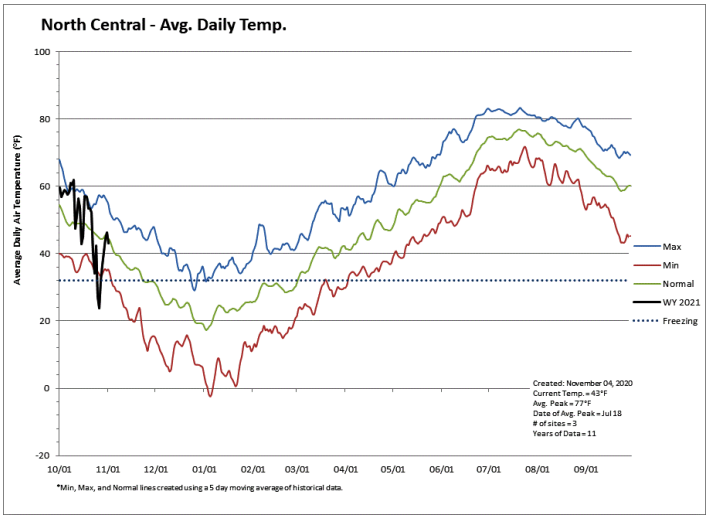
North Central

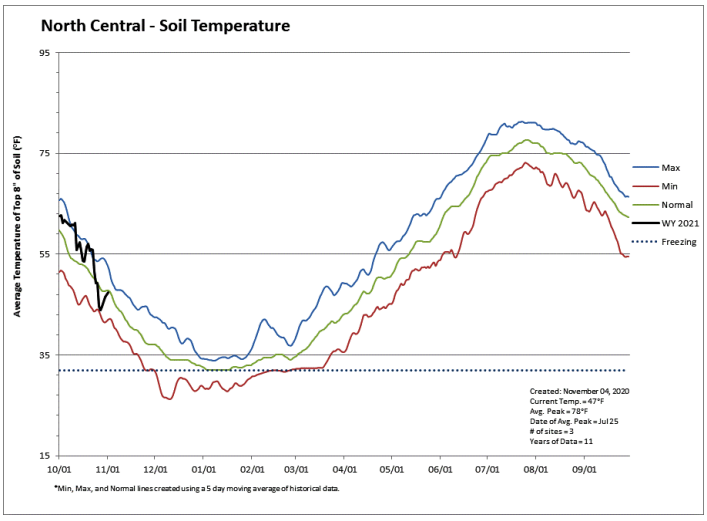
November 1, 2020

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 60% compared to 74% last year.





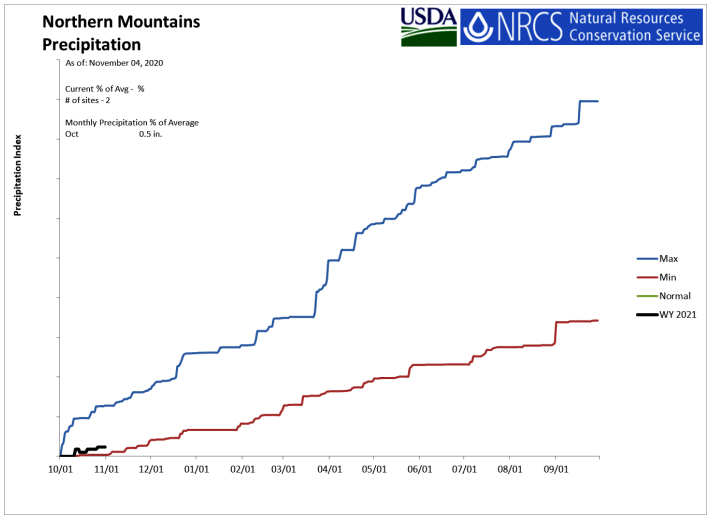


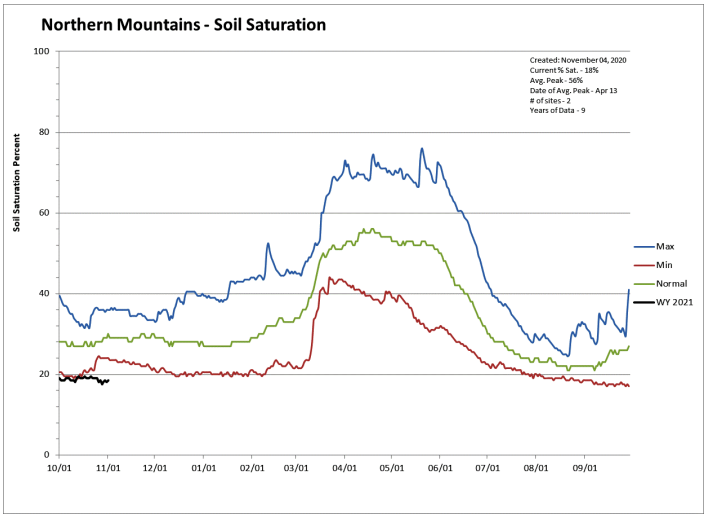


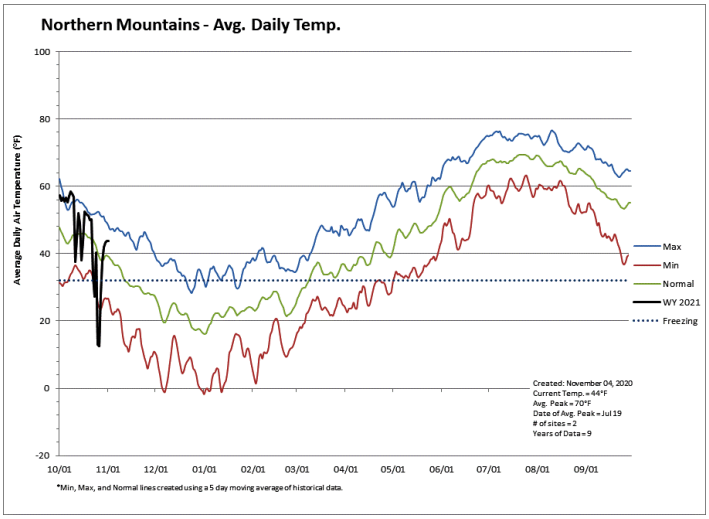
Northern Mountains

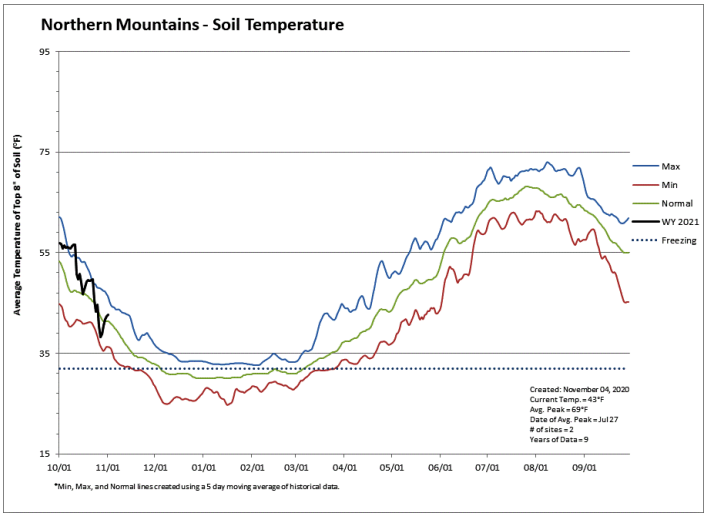
November 1, 2020

The average precipitation in October at SCAN sites within the basin was 0.5 inches, which brings the seasonal accumulation (Oct-Oct) to 0.5 inches. Soil moisture is at 19% compared to 23% last year.





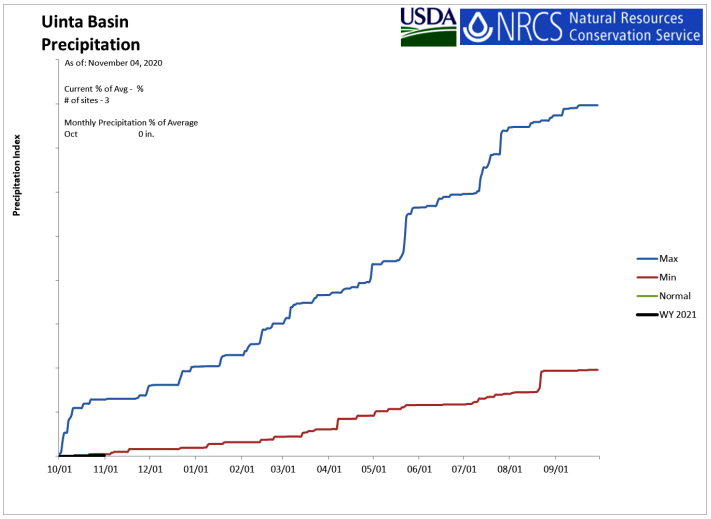


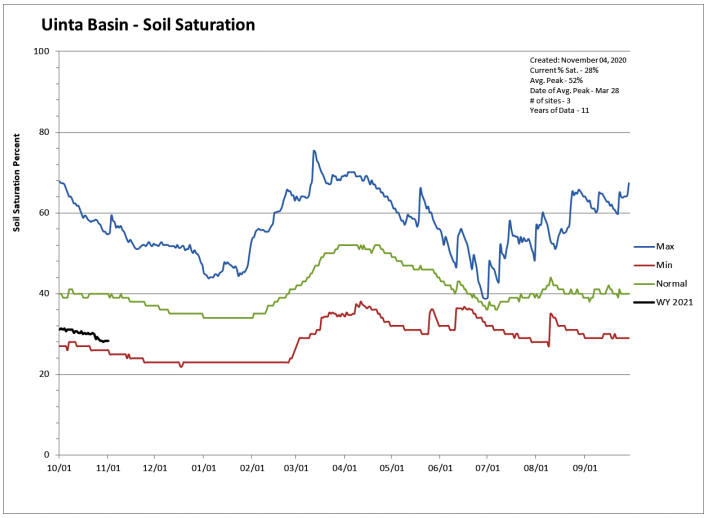


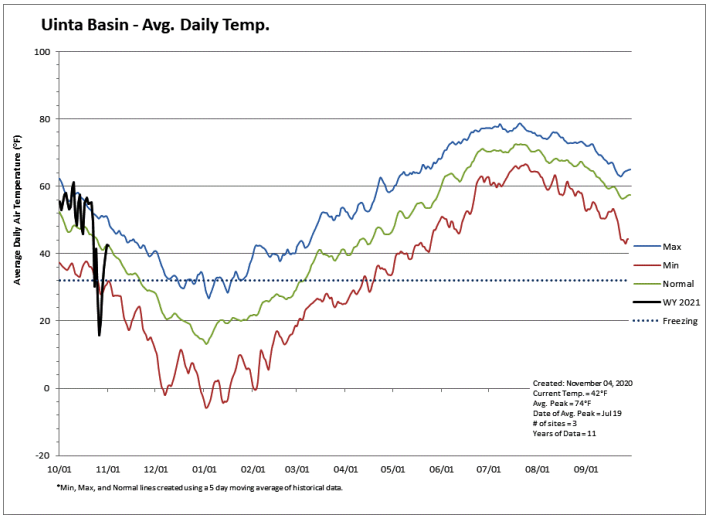
Uinta Basin

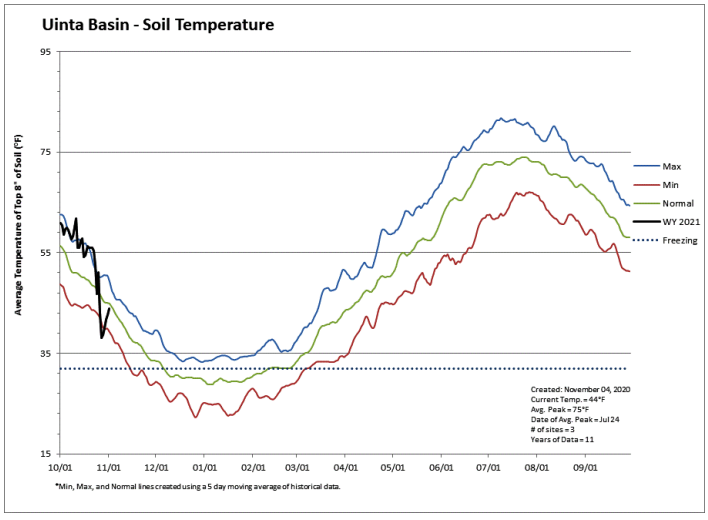
November 1, 2020

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 28% compared to 28% last year.





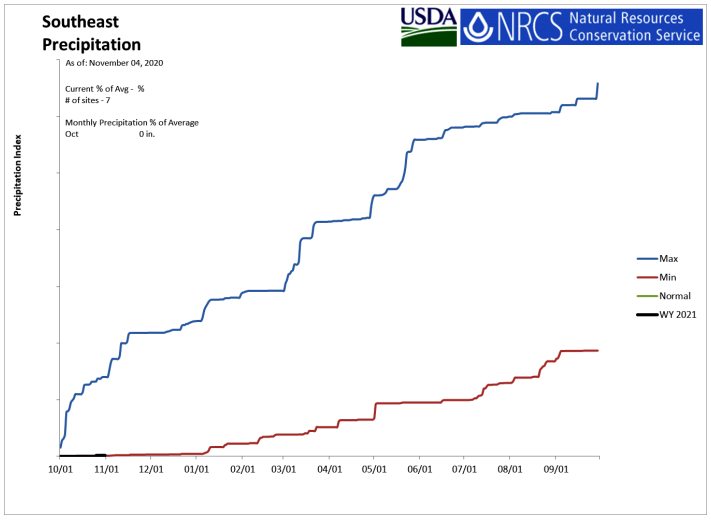


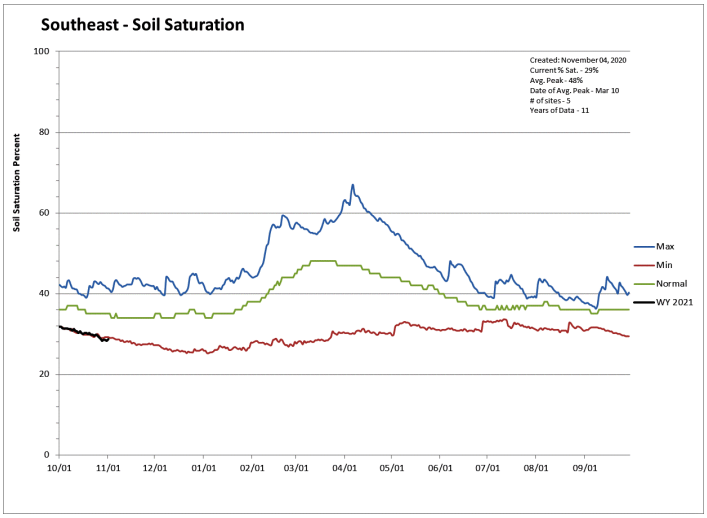


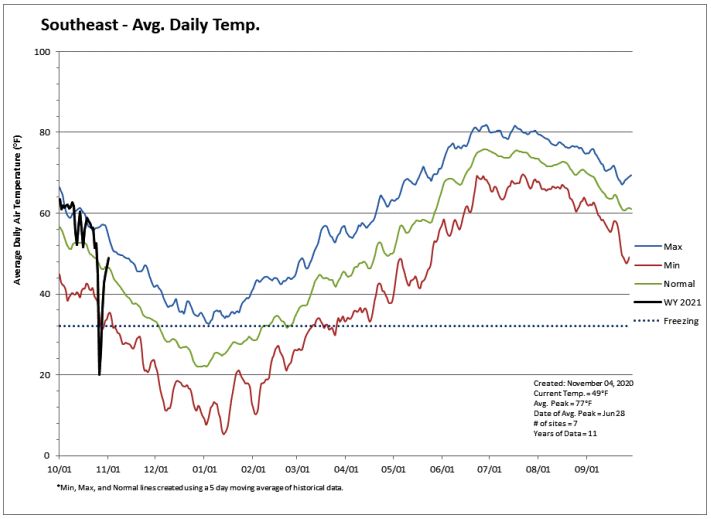
Southeast

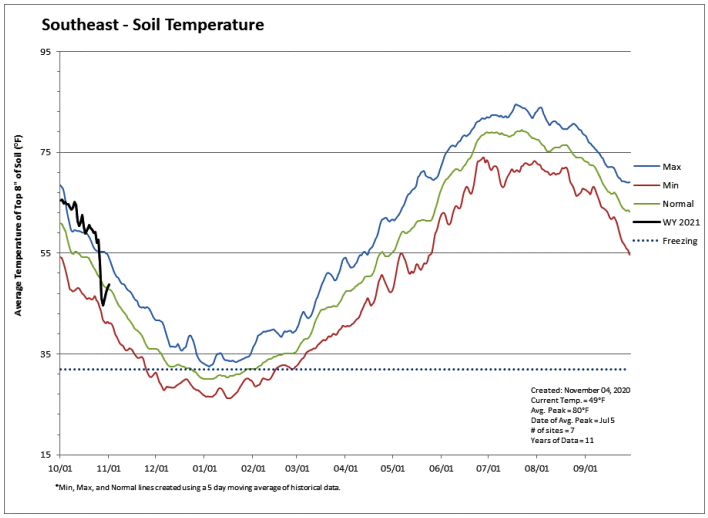
November 1, 2020

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 29% compared to 29% last year.





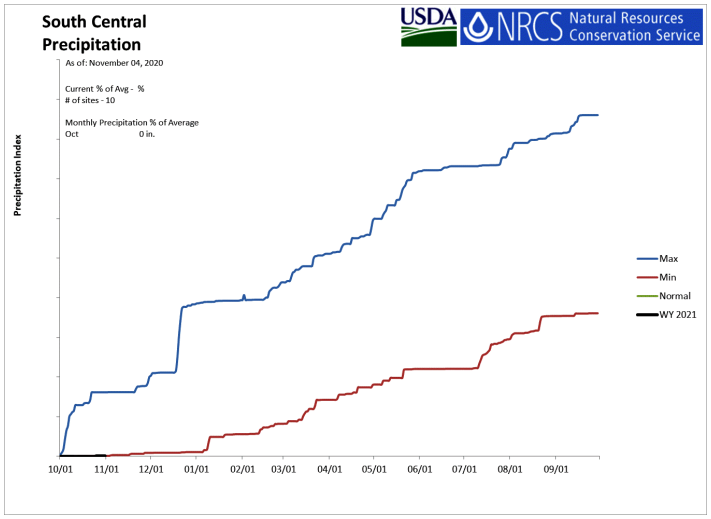


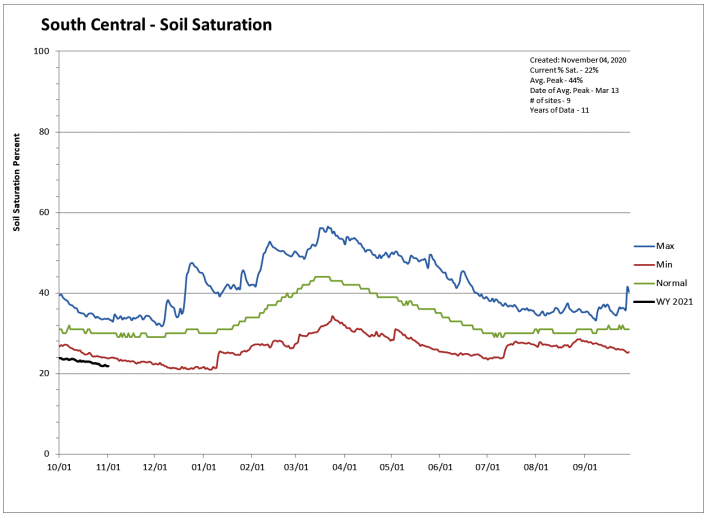


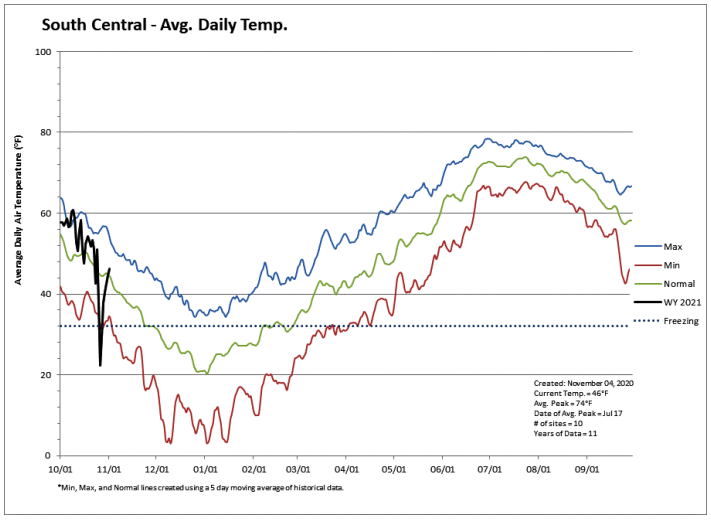
South Central

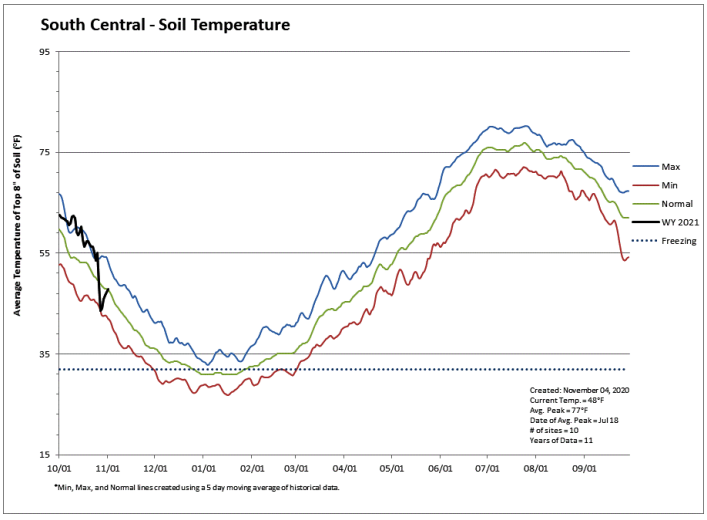
November 1, 2020

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 22% compared to 25% last year.





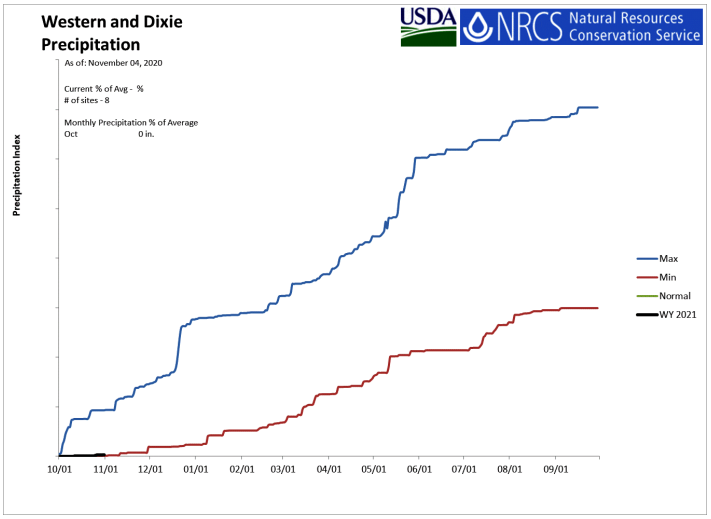


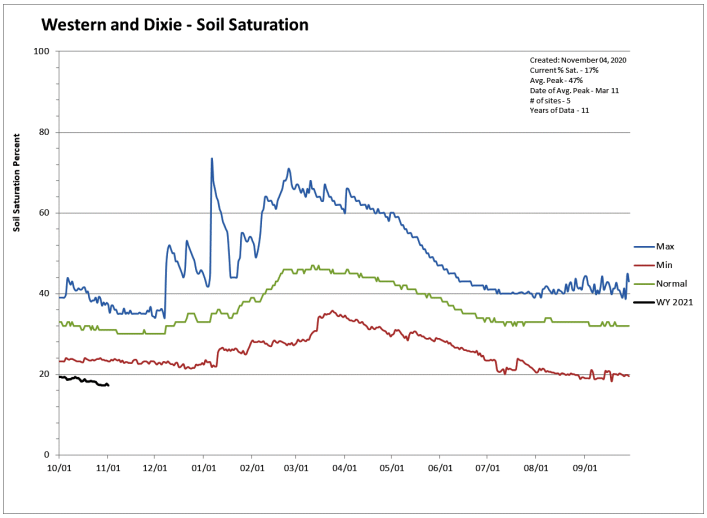


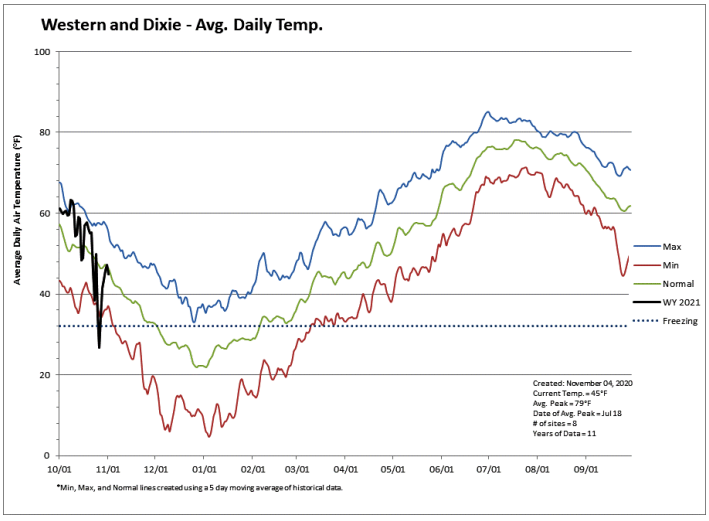
Western and Dixie

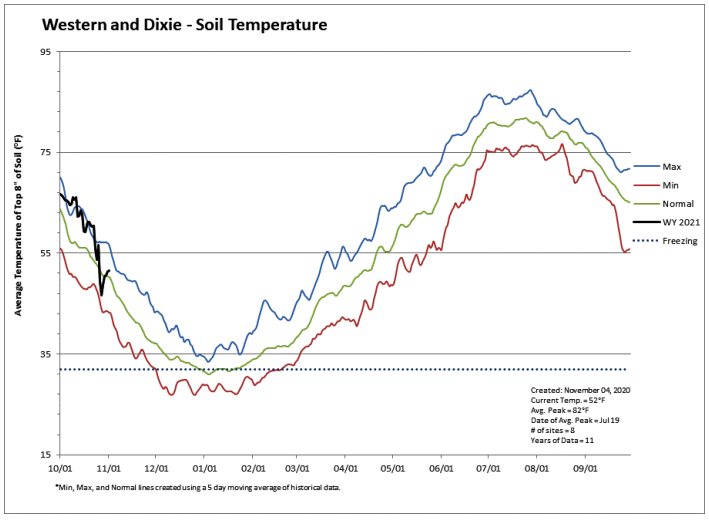
November 1, 2020

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 17% compared to 18% last year.

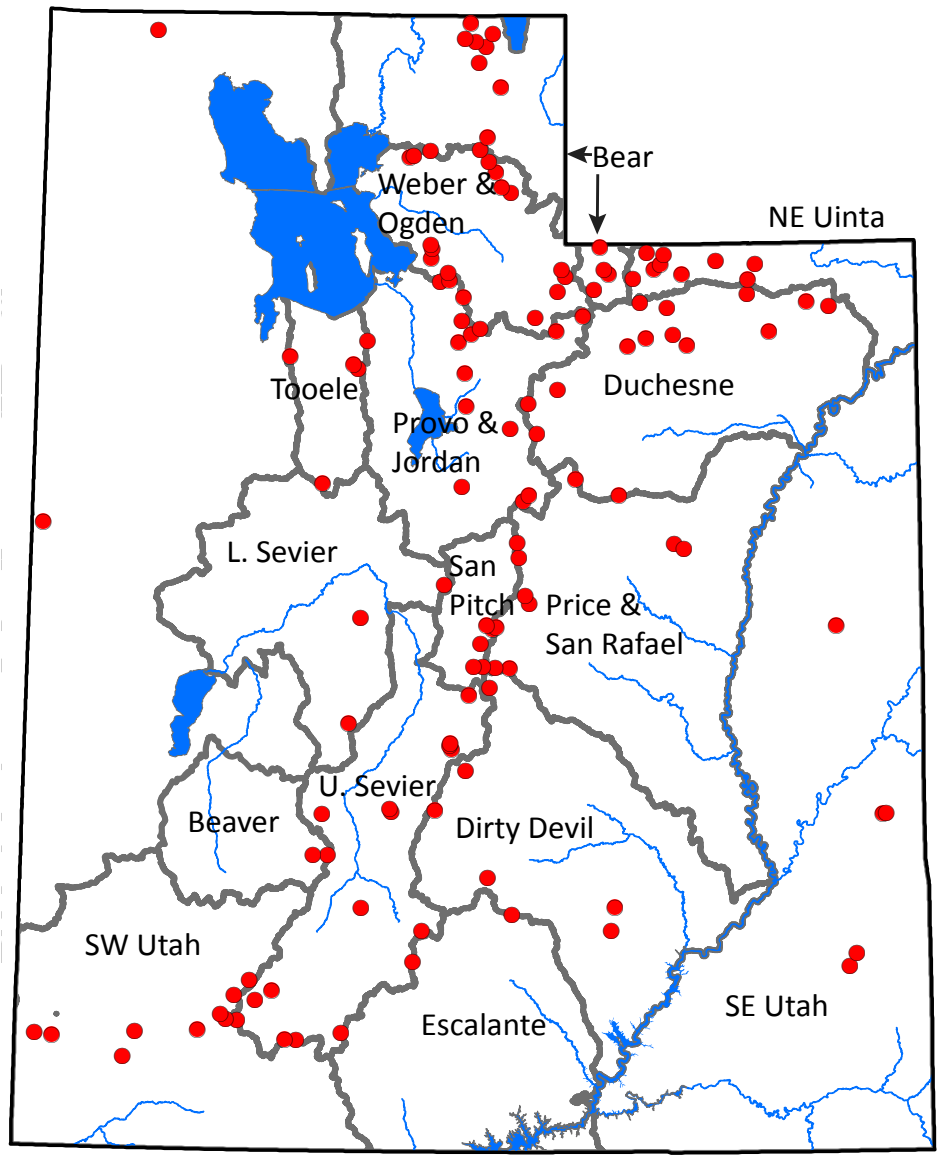








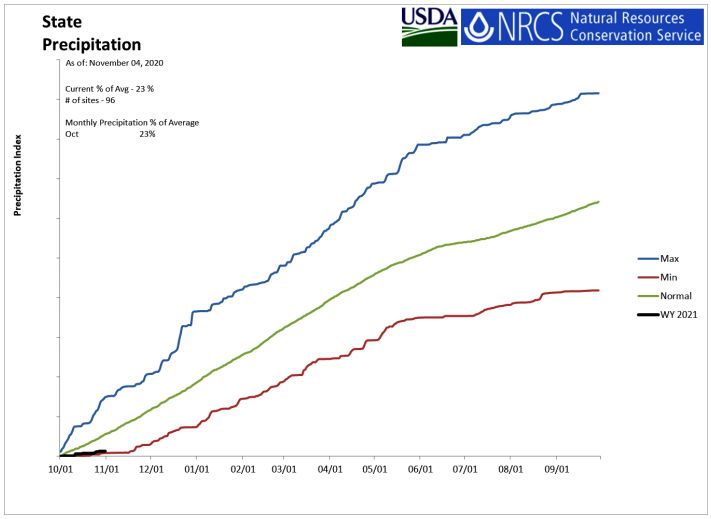
SNOTEL portion of report

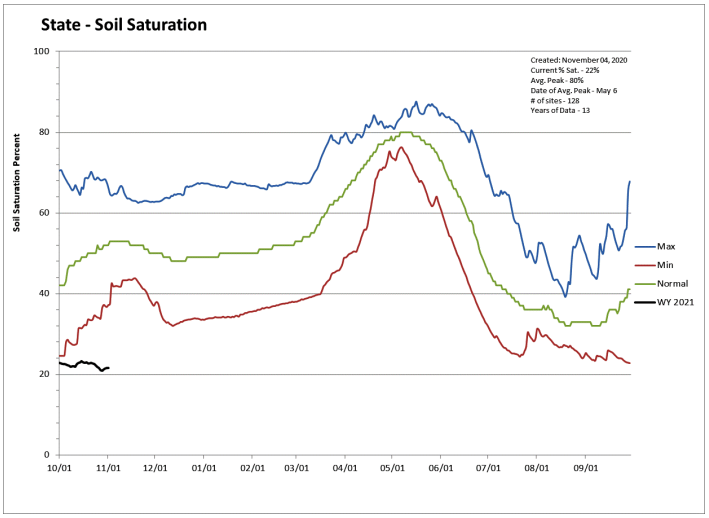


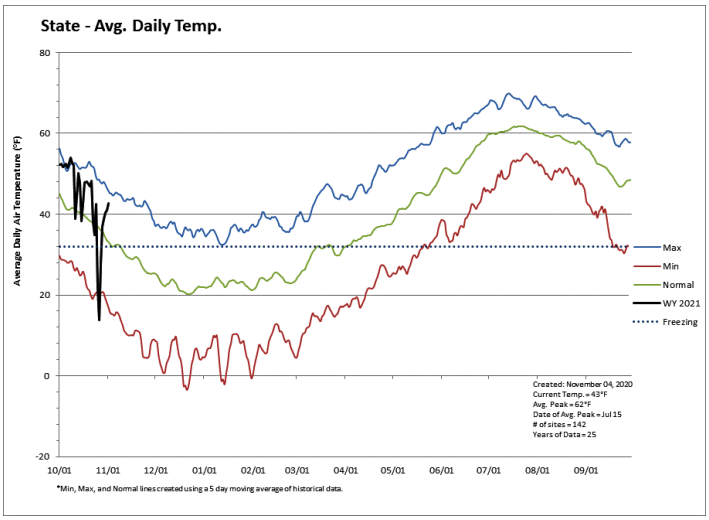
Statewide SNOTEL

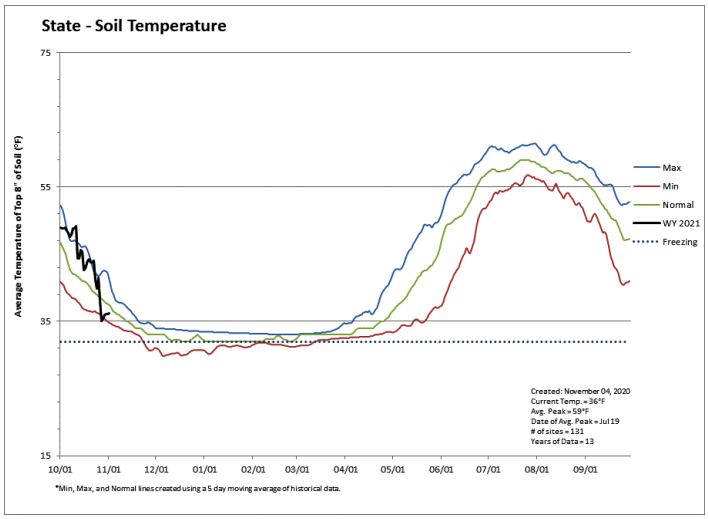
November 1, 2020

Precipitation at SNOTEL sites during October was much below average at 23%, which brings the seasonal accumulation (Oct-Oct) to 23% of average. Soil moisture is at 21% compared to 35% last year. Reservoir storage is at 61% of capacity, compared to 74% last year.





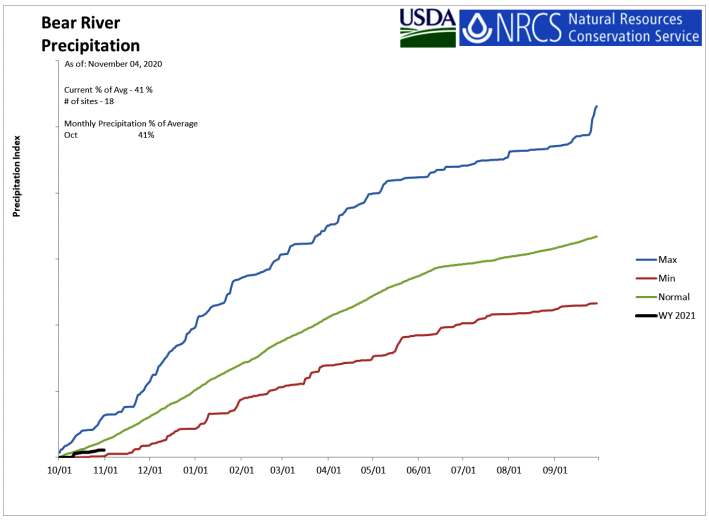


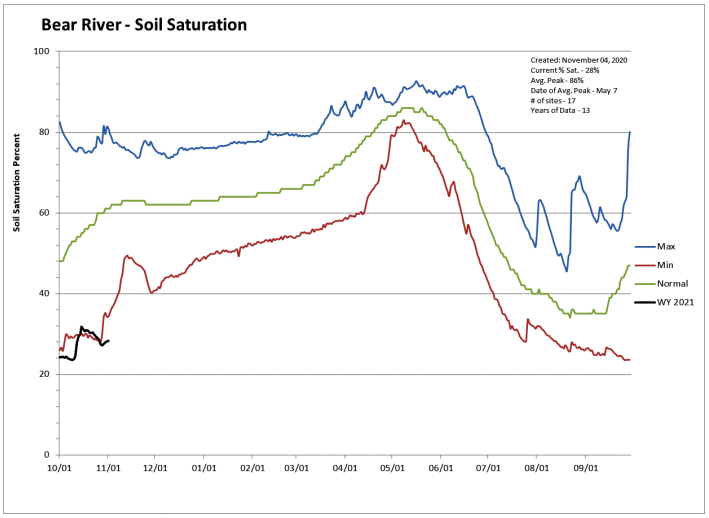


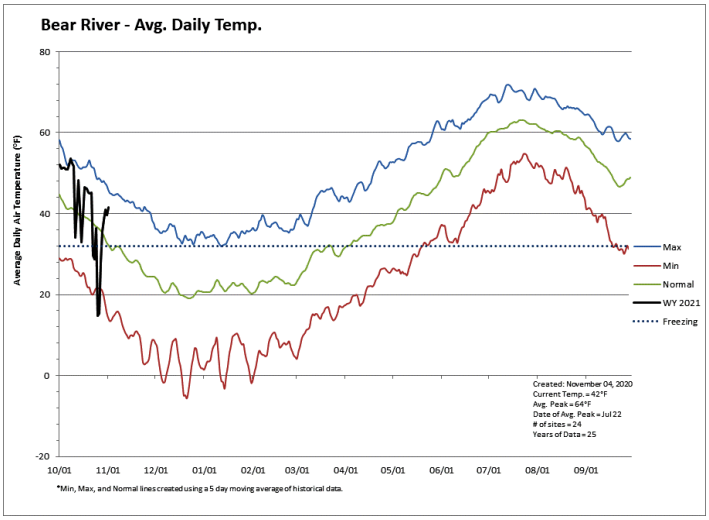
Bear River Basin

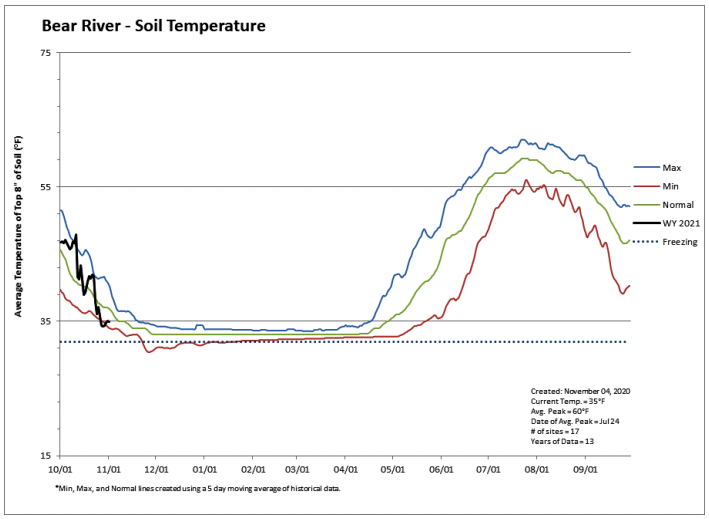
November 1, 2020

Precipitation in October was much below average at 41%, which brings the seasonal accumulation (Oct-Oct) to 41% of average. Soil moisture is at 28% compared to 58% last year. Reservoir storage is at 59% of capacity, compared to 69% last year. The water availability index for the Bear River is 66%, 44% for Woodruff Narrows and 55% for the Little Bear.









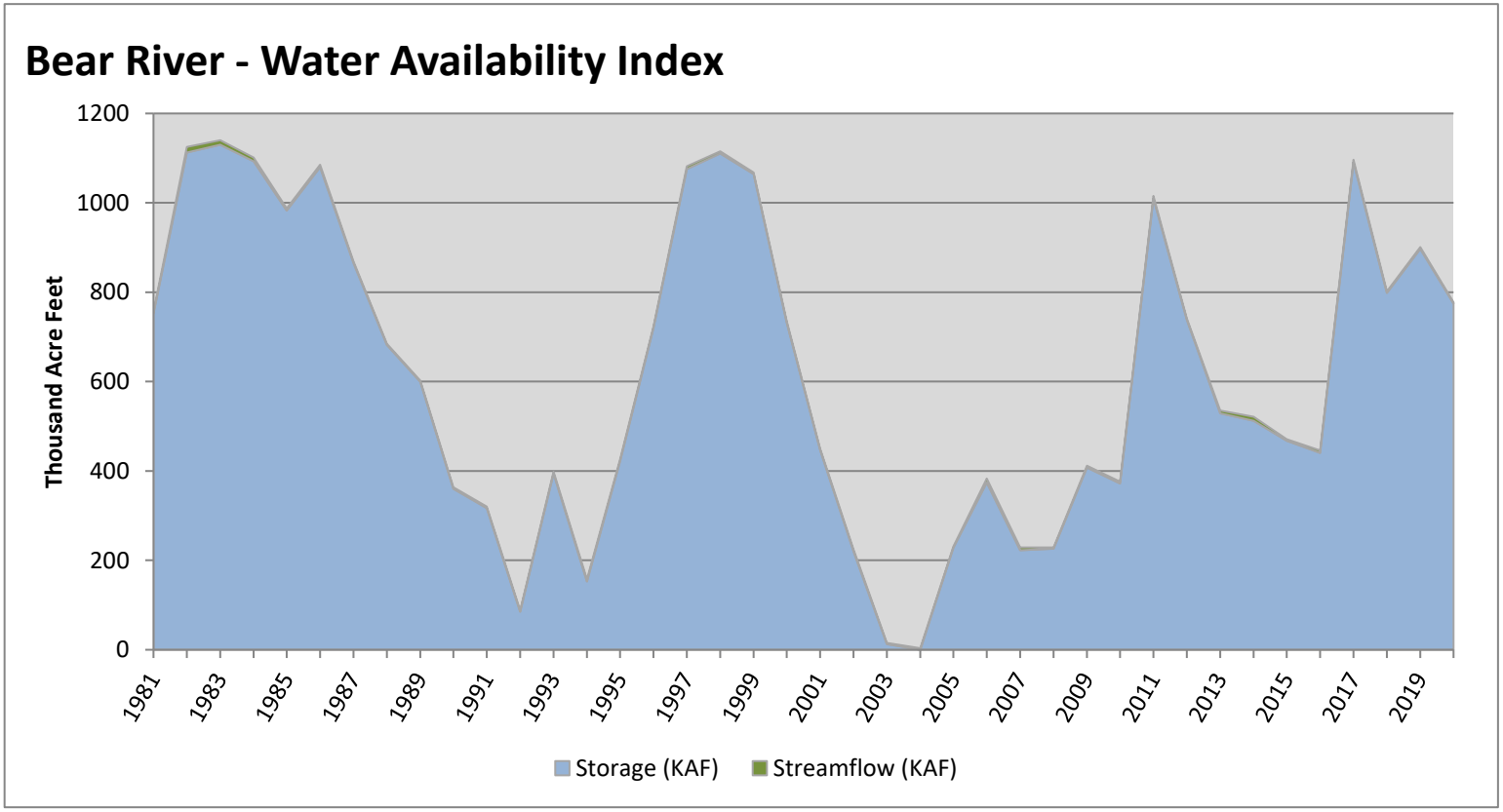
SNOTEL Data

November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Bear River	**775.01**	**2.33**	**777.34**	**66**	**1.32**	**12, 81, 18, 87**

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

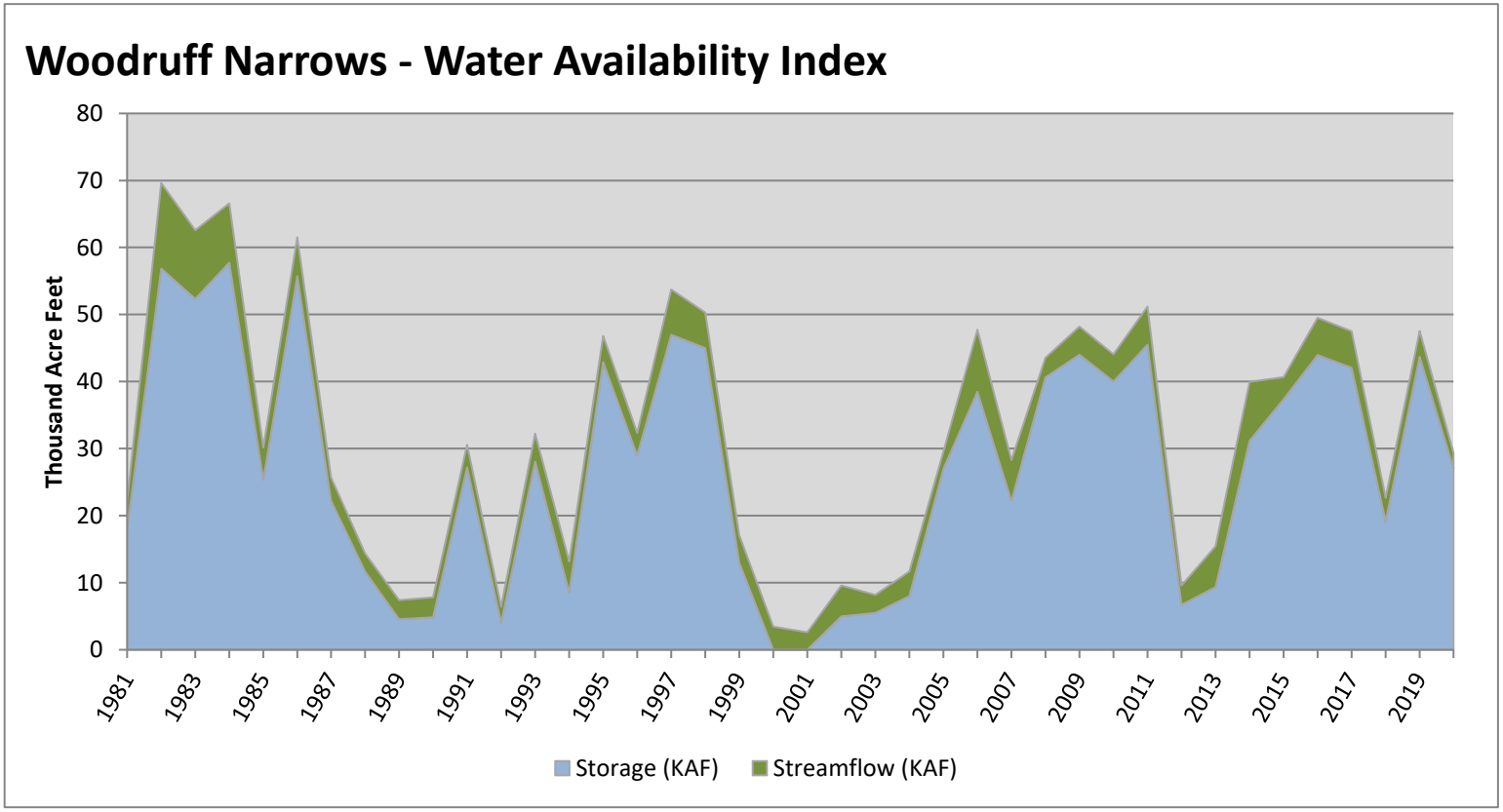


November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Woodruff Narrows	**27.02**	**2.33**	**29.35**	**44**	**-0.51**	**87, 07, 05, 85**

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

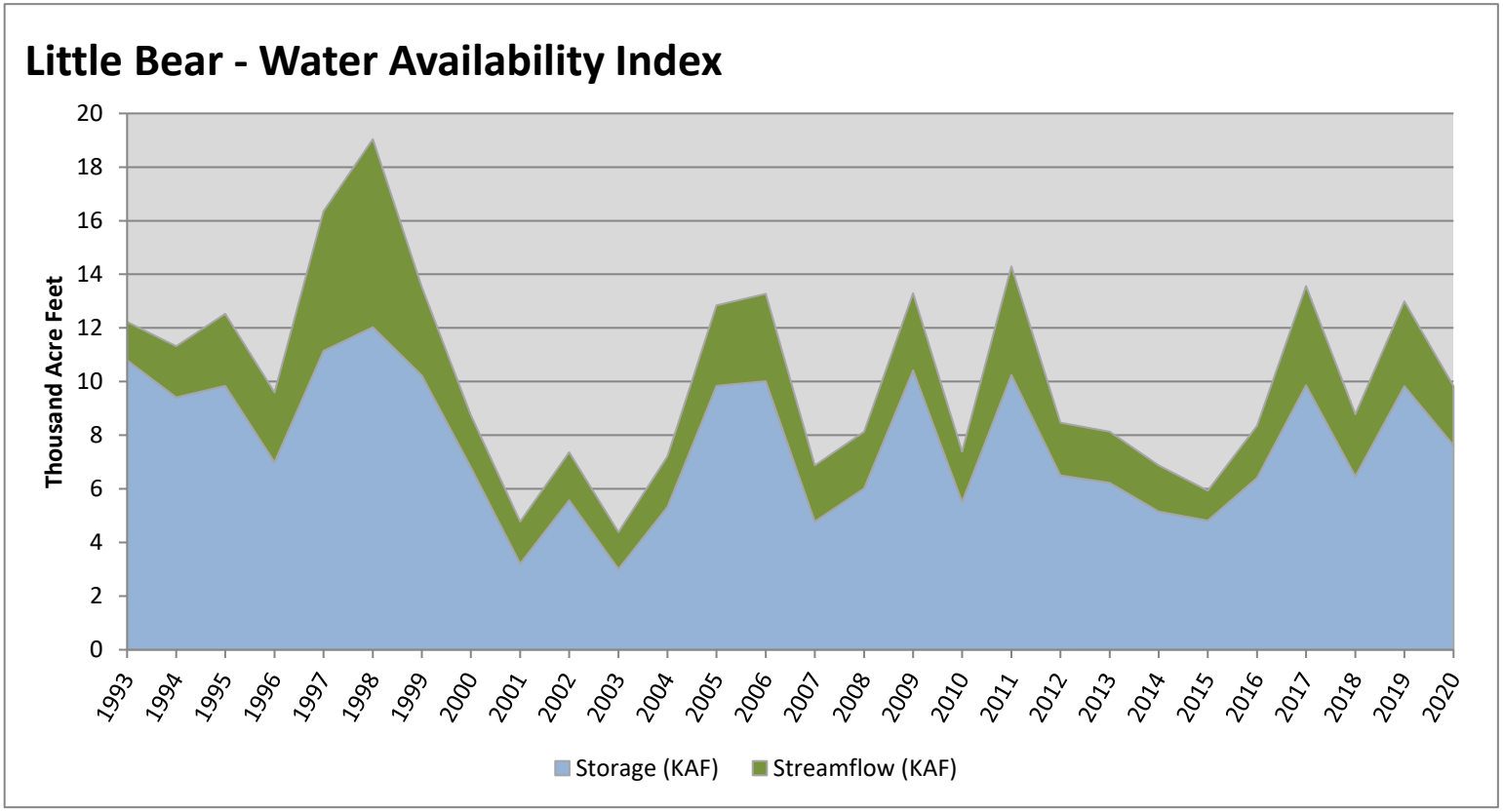


November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Little Bear	**7.62**	**2.21**	**9.83**	**55**	**0.43**	**18, 96, 94, 93**

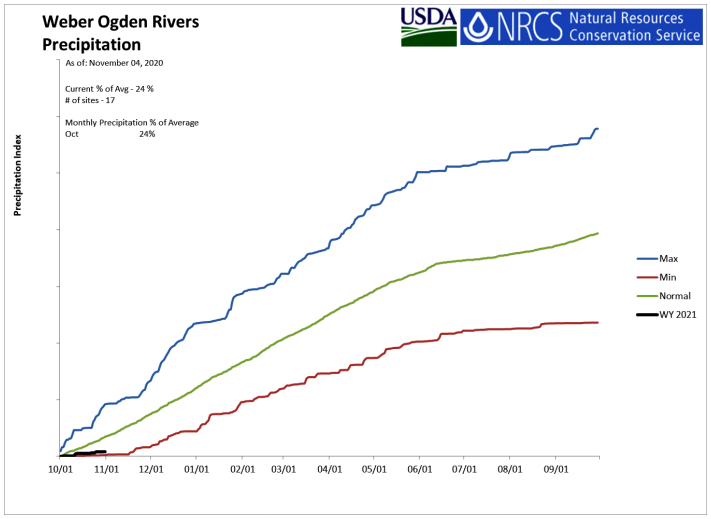
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

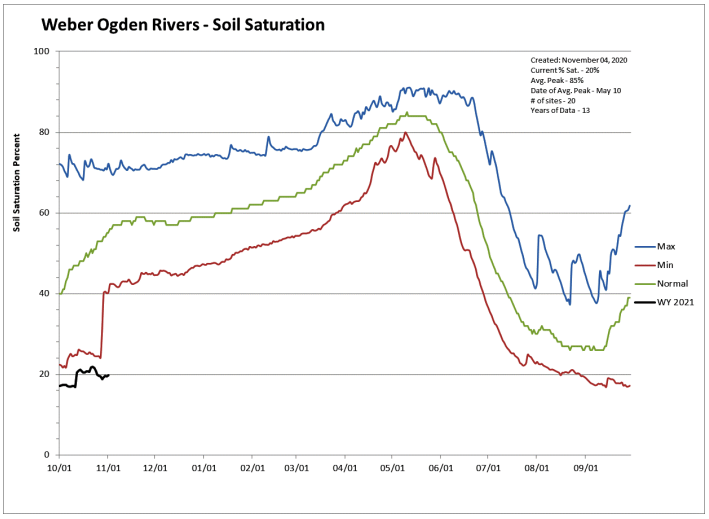


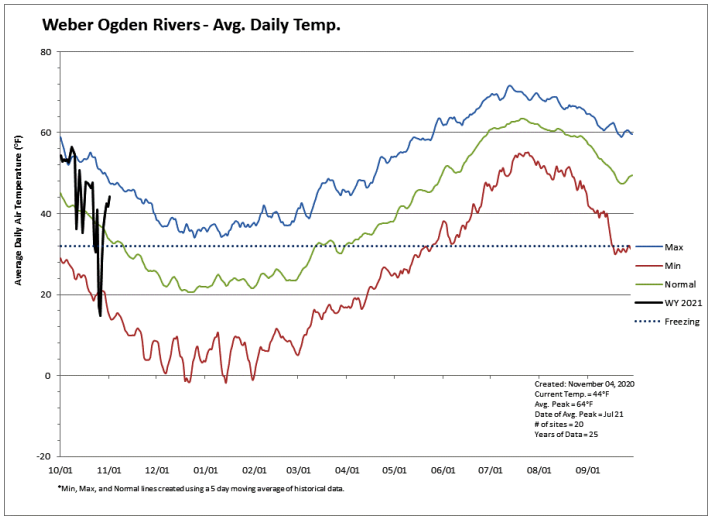
Weber & Ogden River Basins

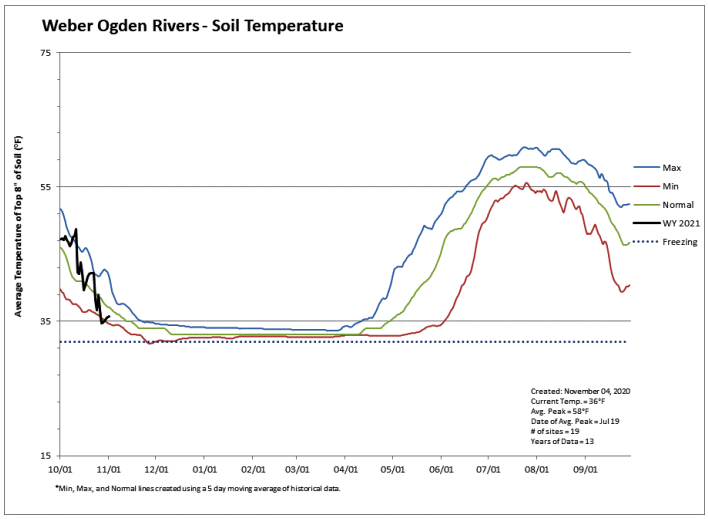
November 1, 2020

Precipitation in October was much below average at 24%, which brings the seasonal accumulation (Oct-Oct) to 24% of average. Soil moisture is at 20% compared to 47% last year. Reservoir storage is at 50% of capacity, compared to 72% last year. The water availability index for the Ogden River is 34% and 32% for the Weber River.









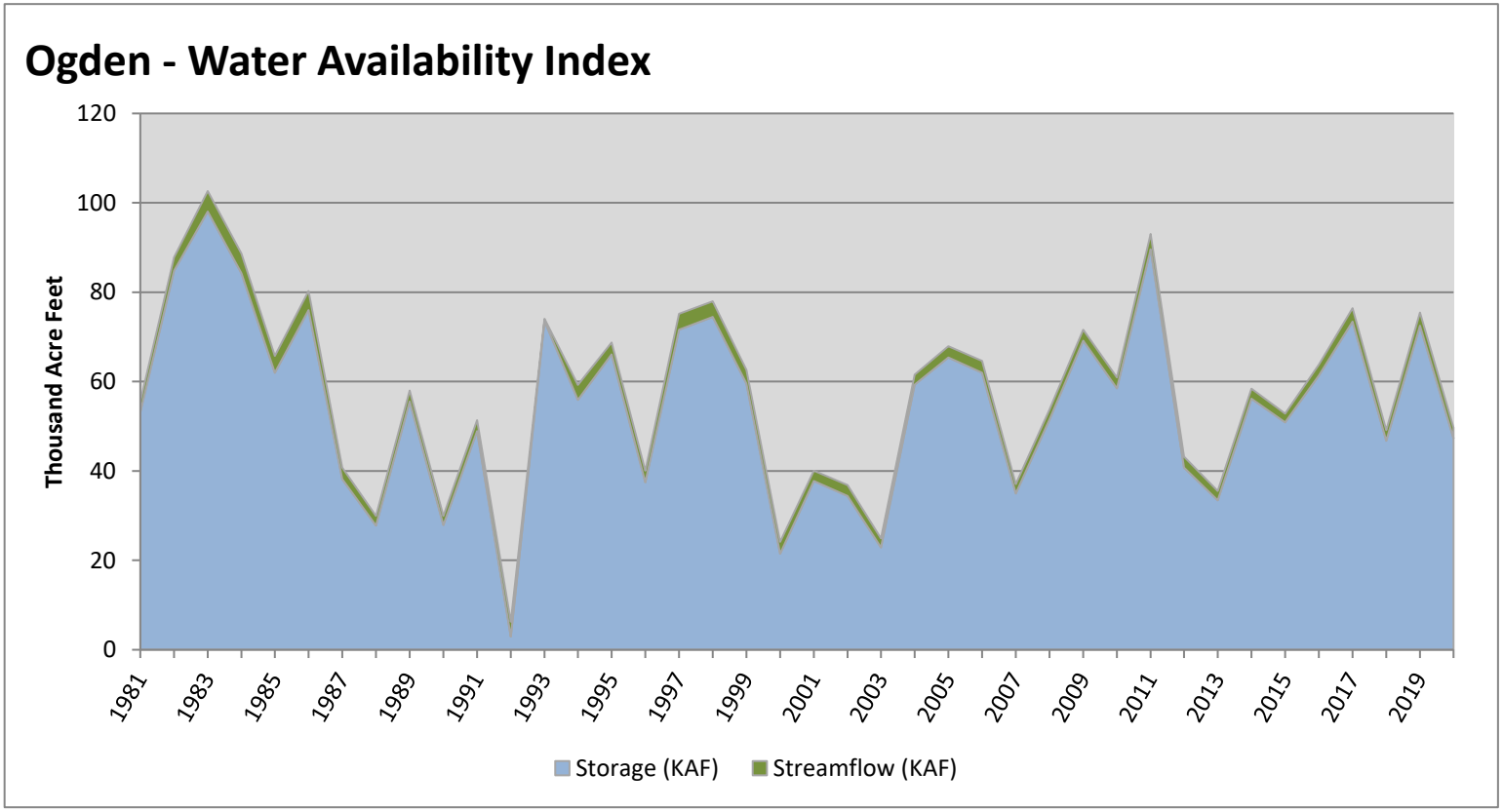
SNOTEL Data

November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Ogden	**47.34**	**2.38**	**49.72**	**34**	**-1.32**	**12, 18, 91, 15**

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

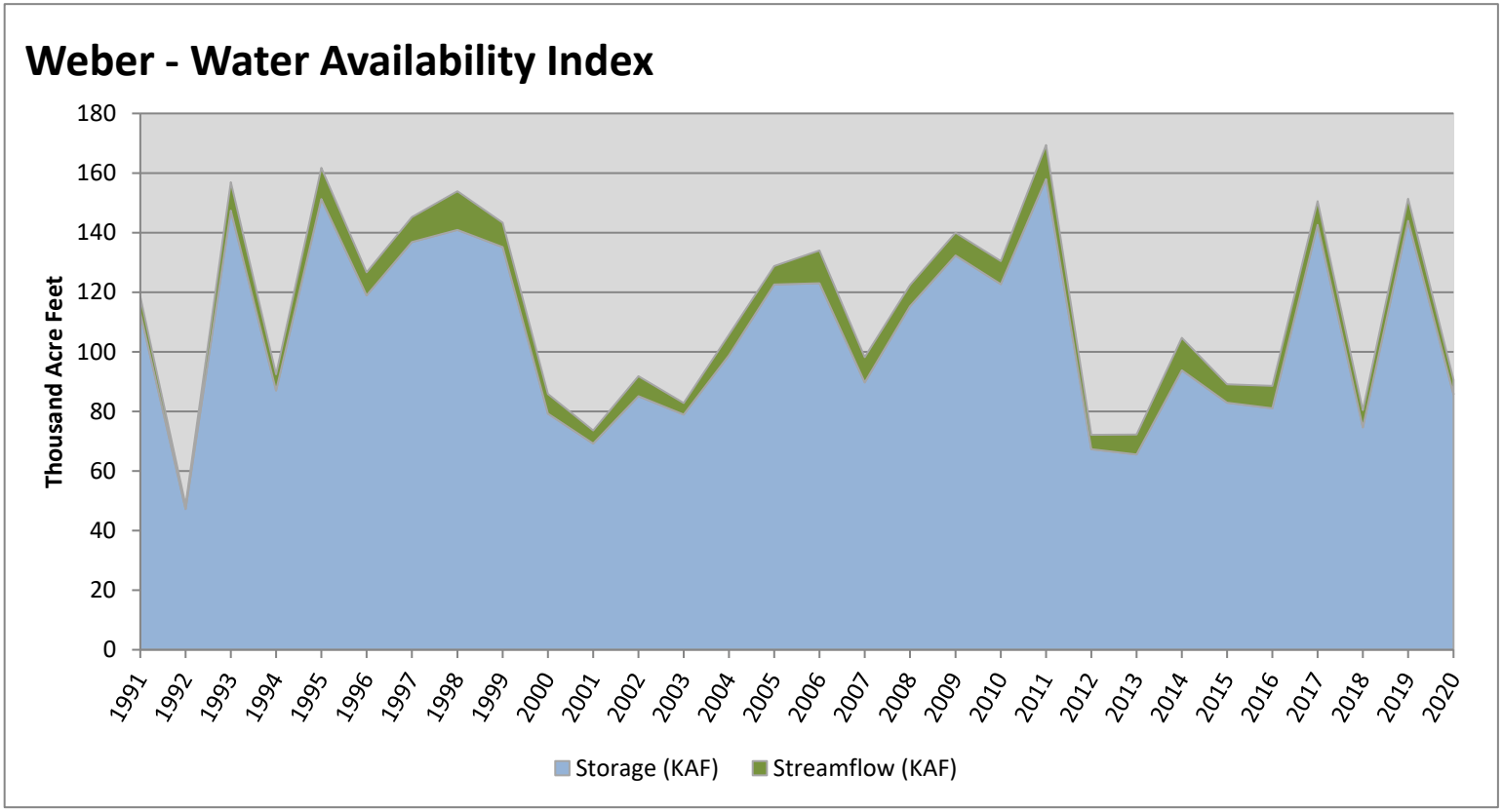


November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Weber	**85.71**	**4.98**	**90.69**	**32**	**-1.48**	**16, 15, 02, 94**

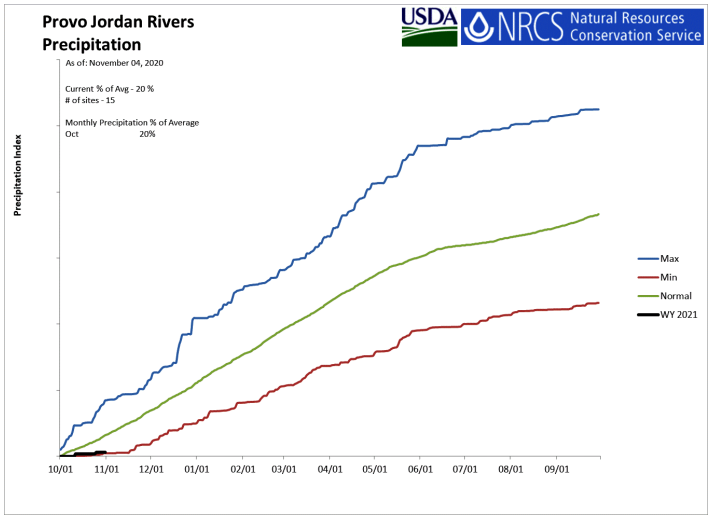
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

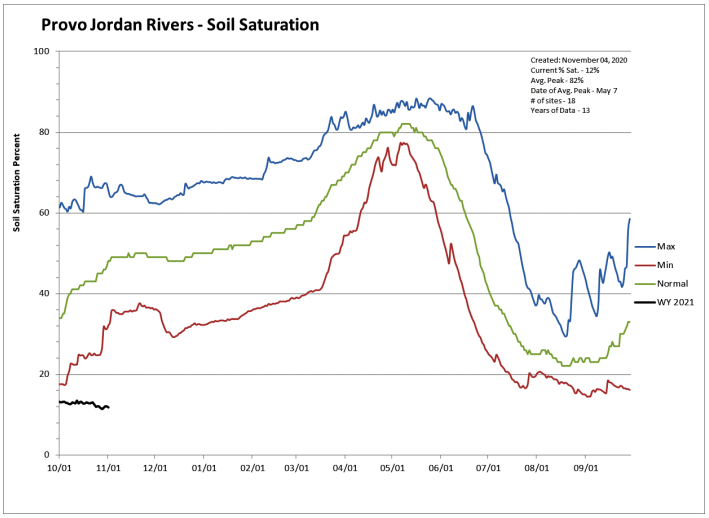


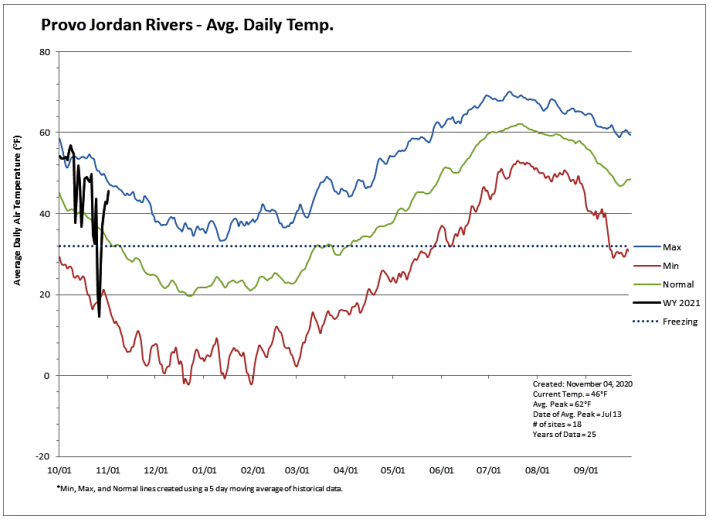
Provo & Jordan River Basins

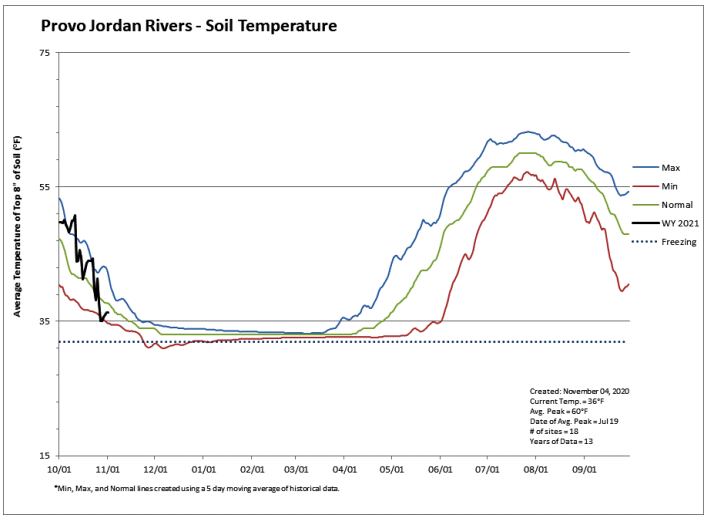
November 1, 2020

Precipitation in October was much below average at 20%, which brings the seasonal accumulation (Oct-Oct) to 20% of average. Soil moisture is at 12% compared to 33% last year. Reservoir storage is at 75% of capacity, compared to 84% last year. The water availability index for the Provo River is 38%.









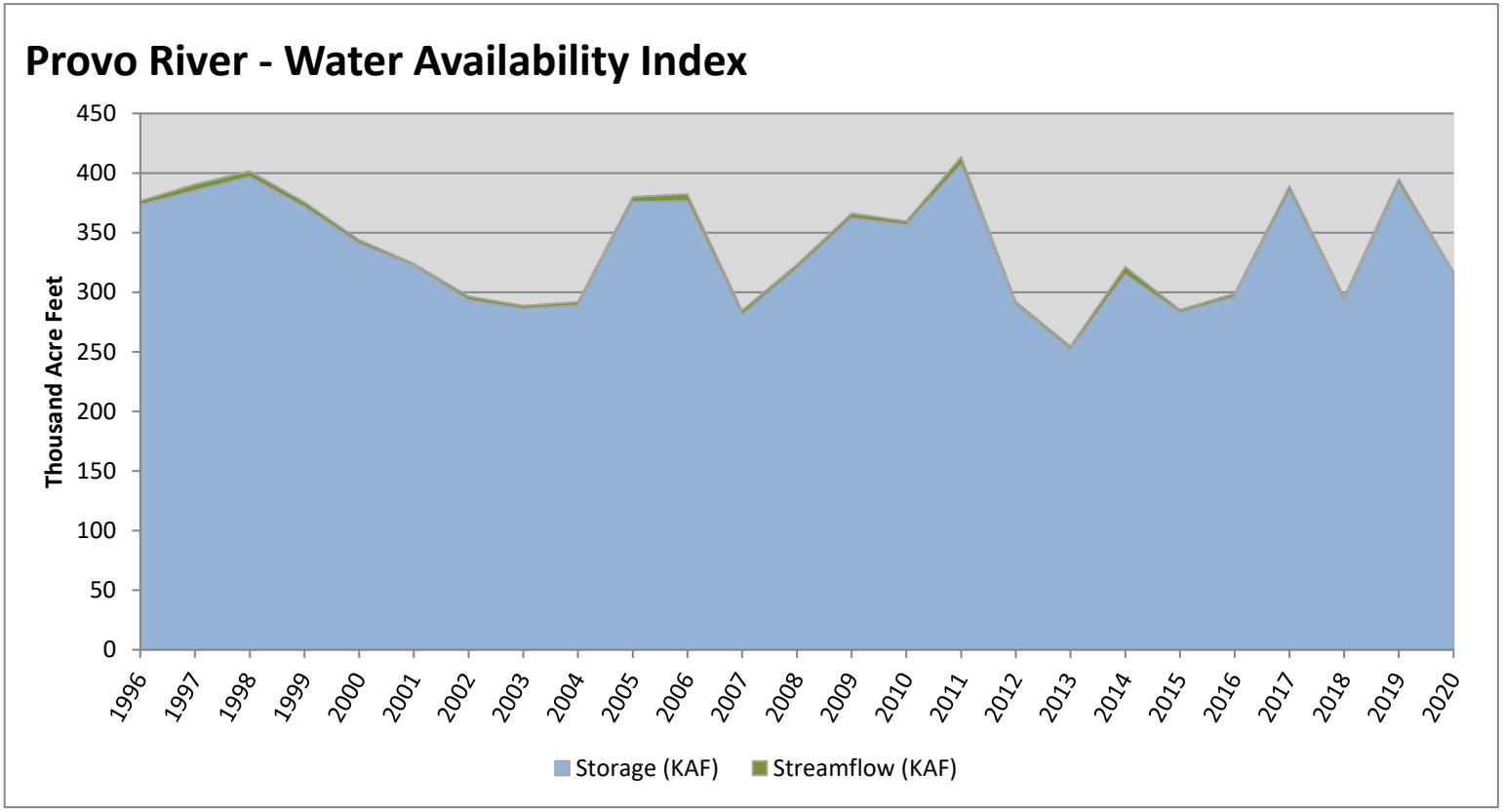
SNOTEL Data

November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Provo River	**315.44**	**1.90**	**317.34**	**38**	**-0.96**	**02, 16, 14, 08**

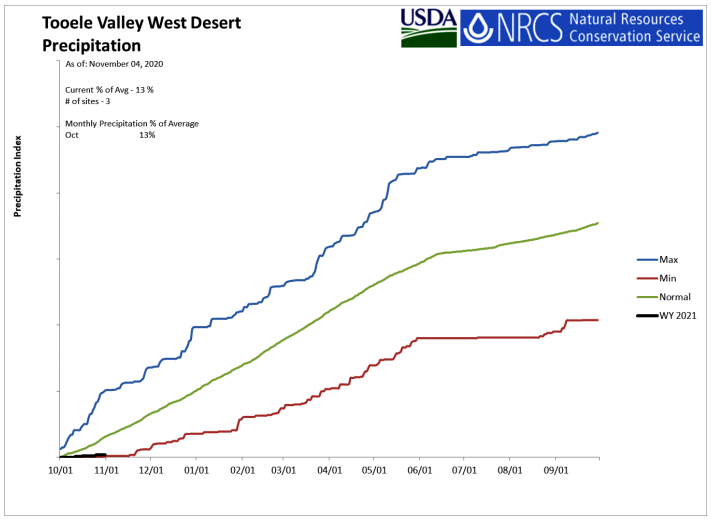
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

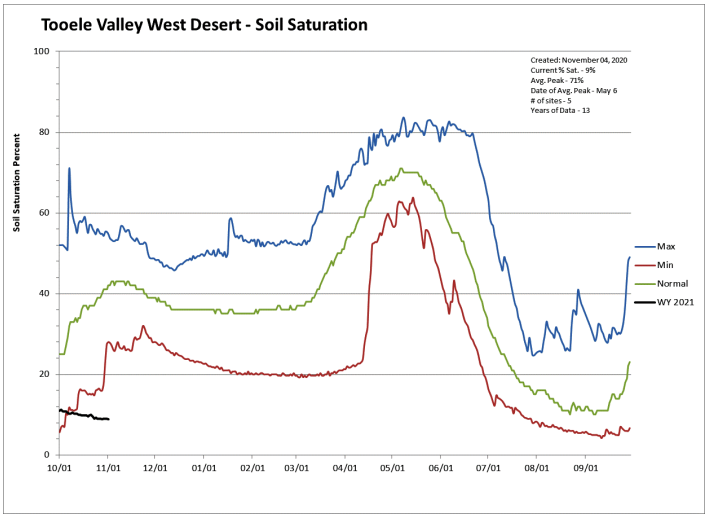


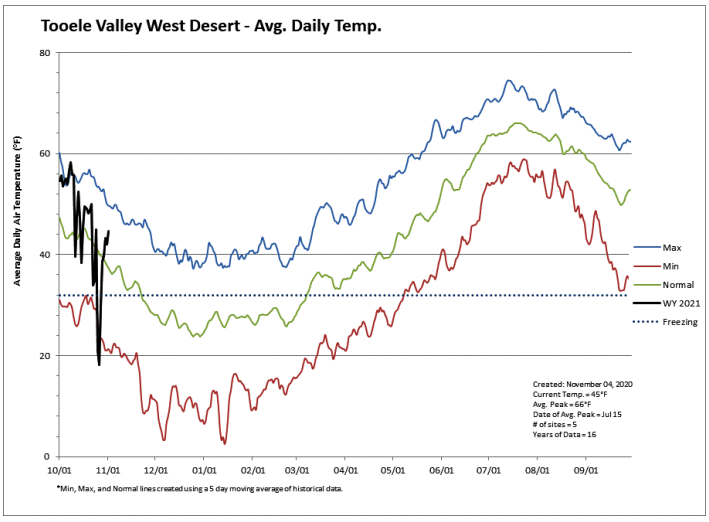
Tooele Valley & West Desert Basins

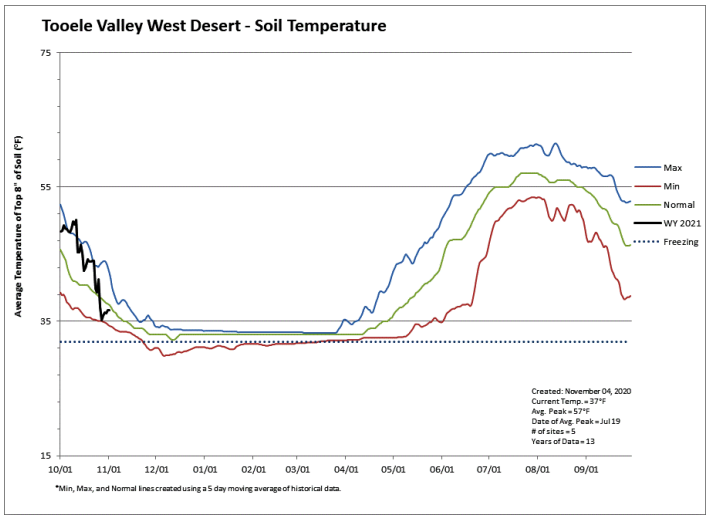
November 1, 2020

Precipitation in October was much below average at 13%, which brings the seasonal accumulation (Oct-Oct) to 13% of average. Soil moisture is at 9% compared to 18% last year. Reservoir storage is at 30% of capacity, compared to 43% last year.







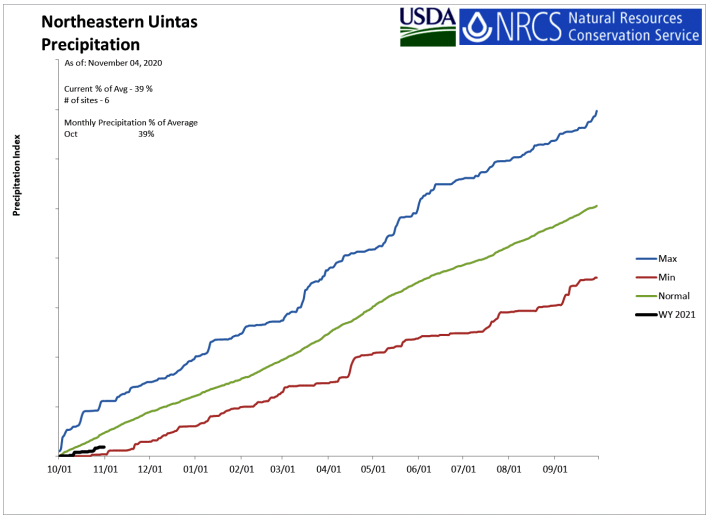


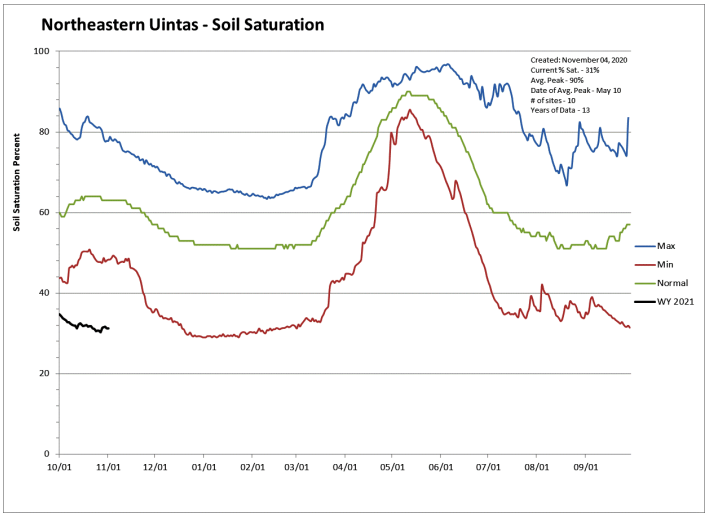
SNOTEL Data

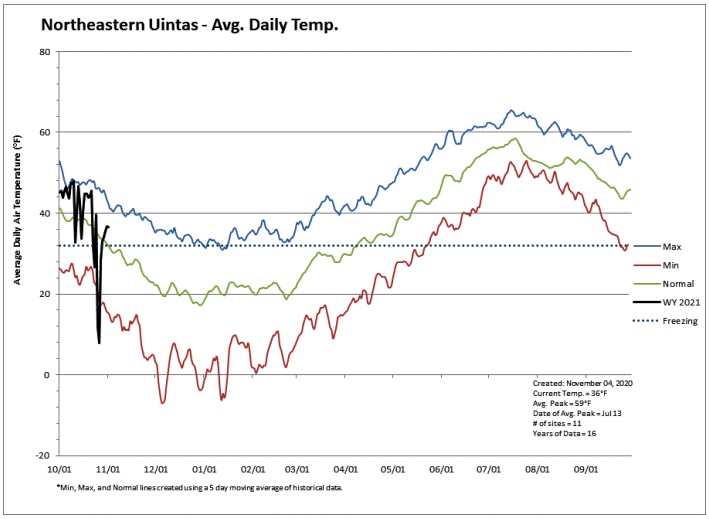
Northeastern Uinta Basin

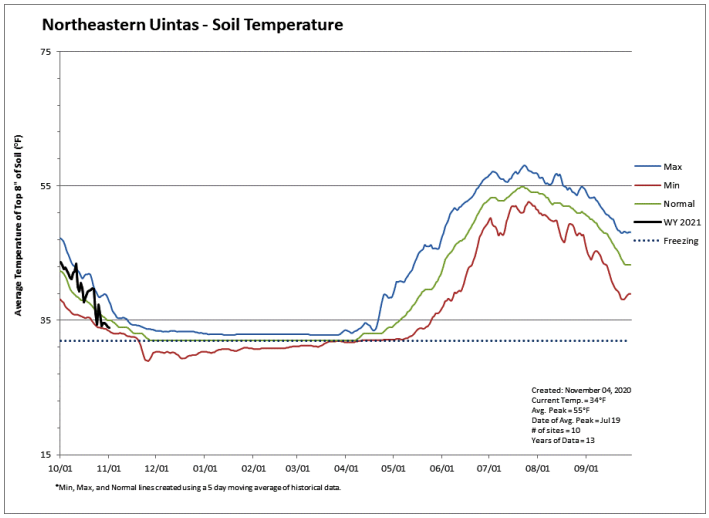
November 1, 2020

Precipitation in October was much below average at 39%, which brings the seasonal accumulation (Oct-Oct) to 39% of average. Soil moisture is at 30% compared to 49% last year. Reservoir storage is at 84% of capacity, compared to 90% last year. The water availability index for Blacks Fork is 8% and 38% for Smiths Creek.









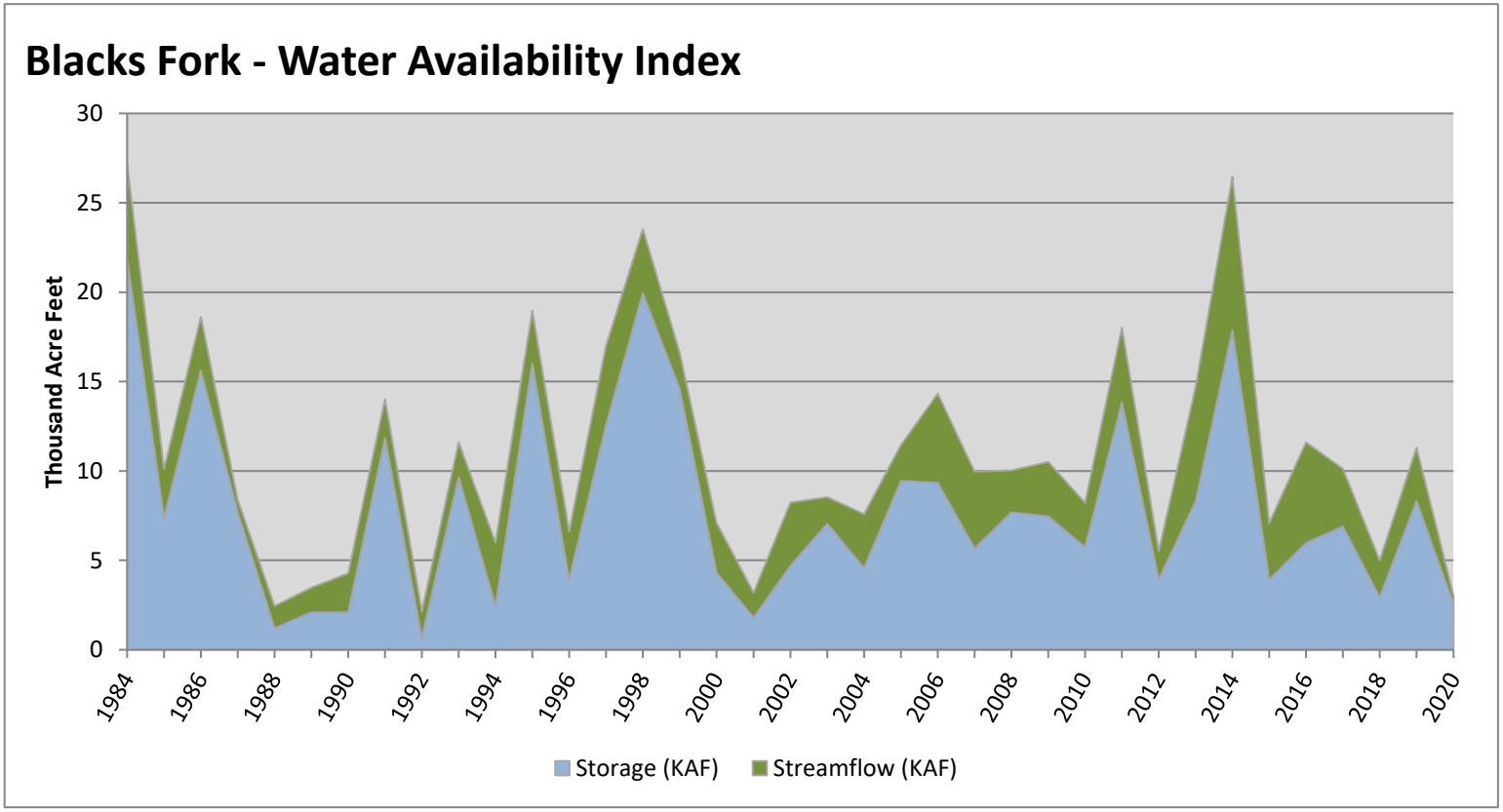
SNOTEL Data

November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Blacks Fork	**2.54**	**0.50**	**3.04**	**8**	**-3.51**	**92, 88, 01, 89**

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

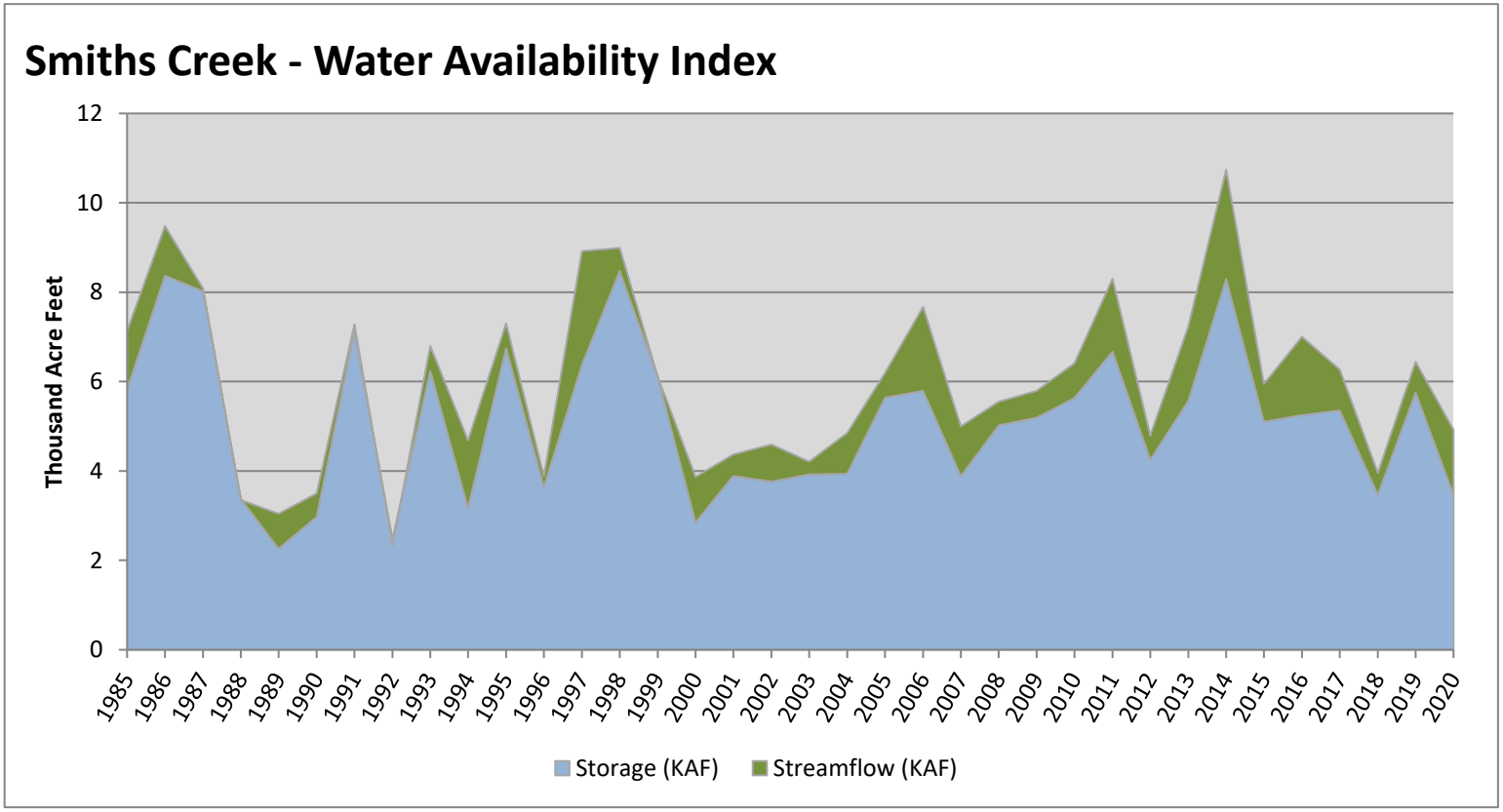


November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Smiths Creek	**3.46**	**1.46**	**4.92**	**38**	**-1.01**	**12, 04, 07, 08**

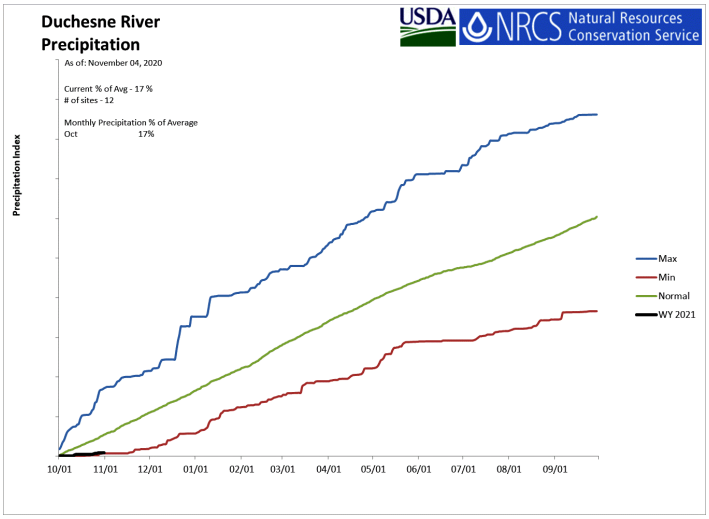
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

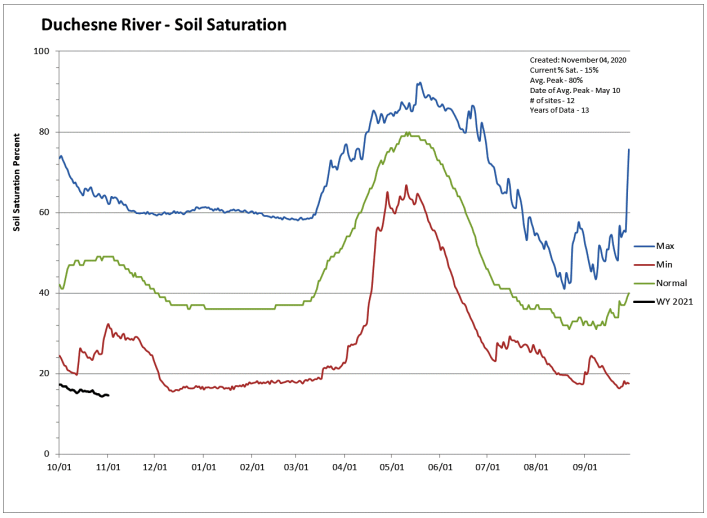


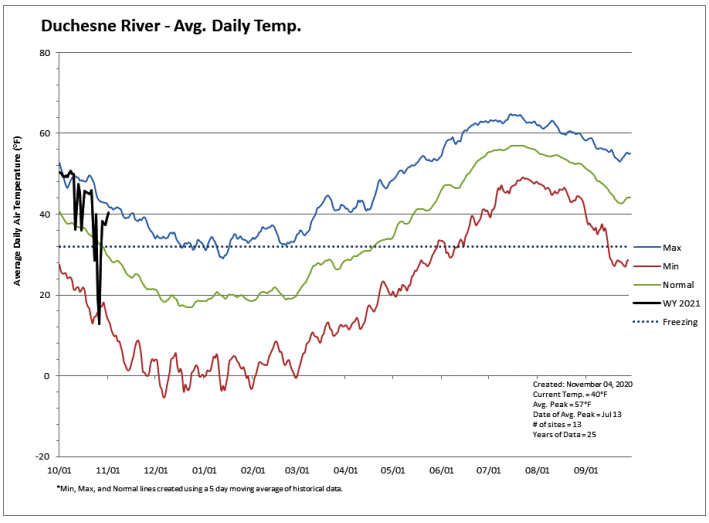
Duchesne River Basin

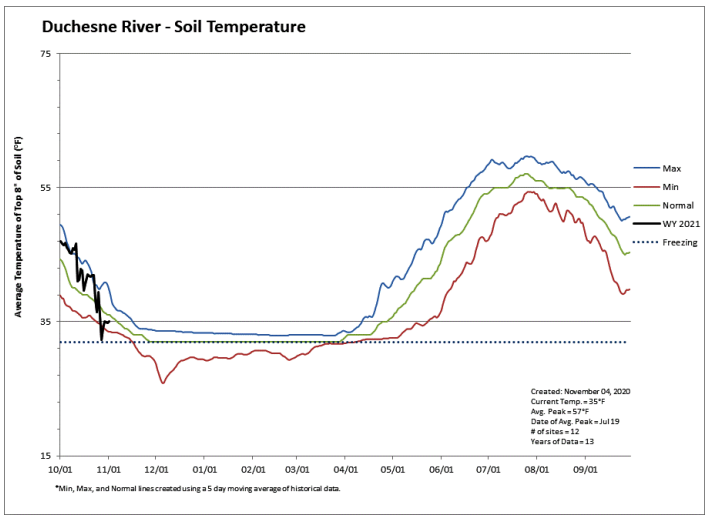
November 1, 2020

Precipitation in October was much below average at 17%, which brings the seasonal accumulation (Oct-Oct) to 17% of average. Soil moisture is at 15% compared to 34% last year. Reservoir storage is at 77% of capacity, compared to 83% last year. The water availability index for the Western Uintas is 35% and 12% for the Eastern Uintas.









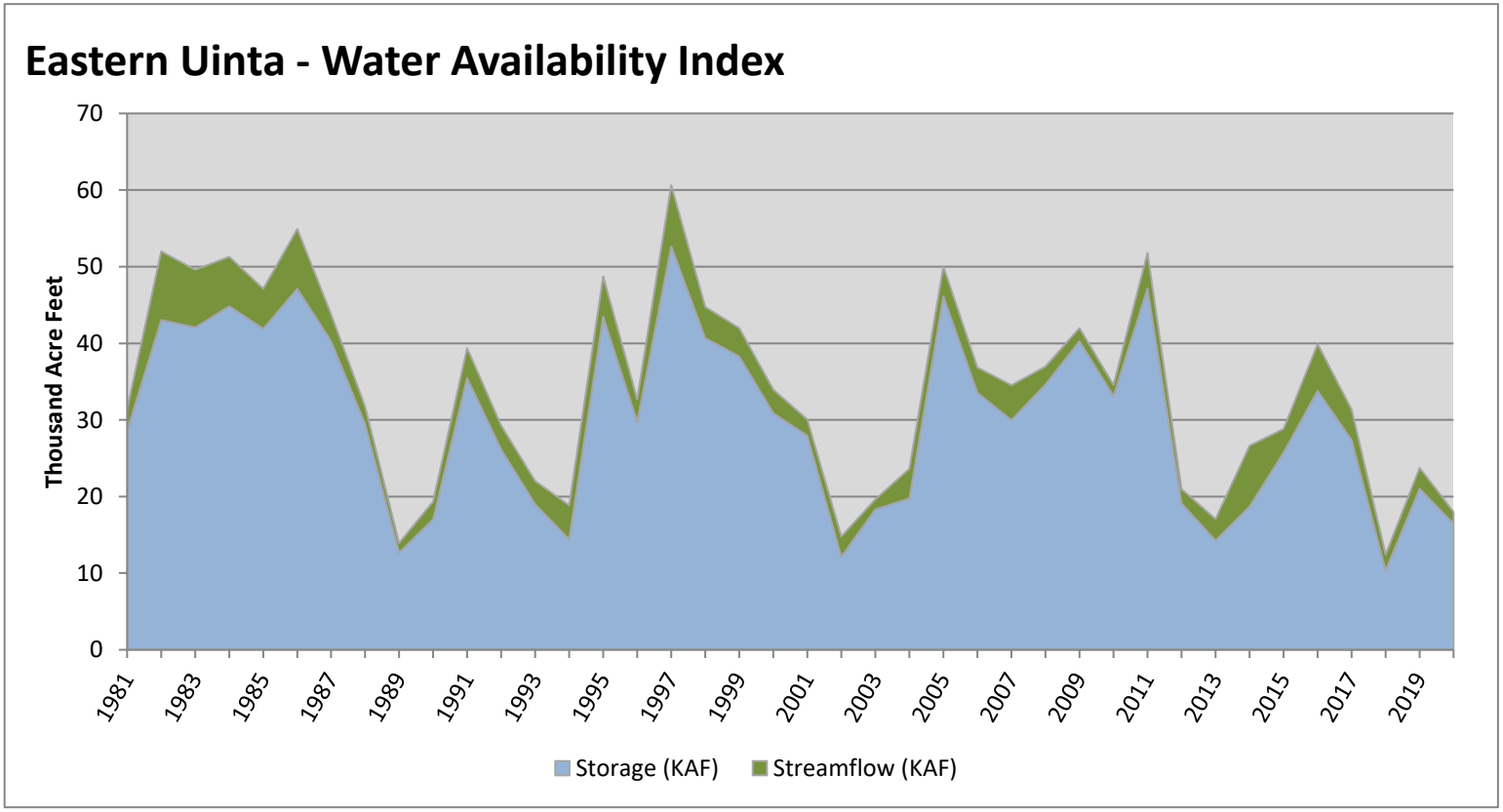
SNOTEL Data

November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Eastern Uinta	**16.45**	**1.53**	**17.98**	**12**	**-3.15**	**02, 13, 94, 90**

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

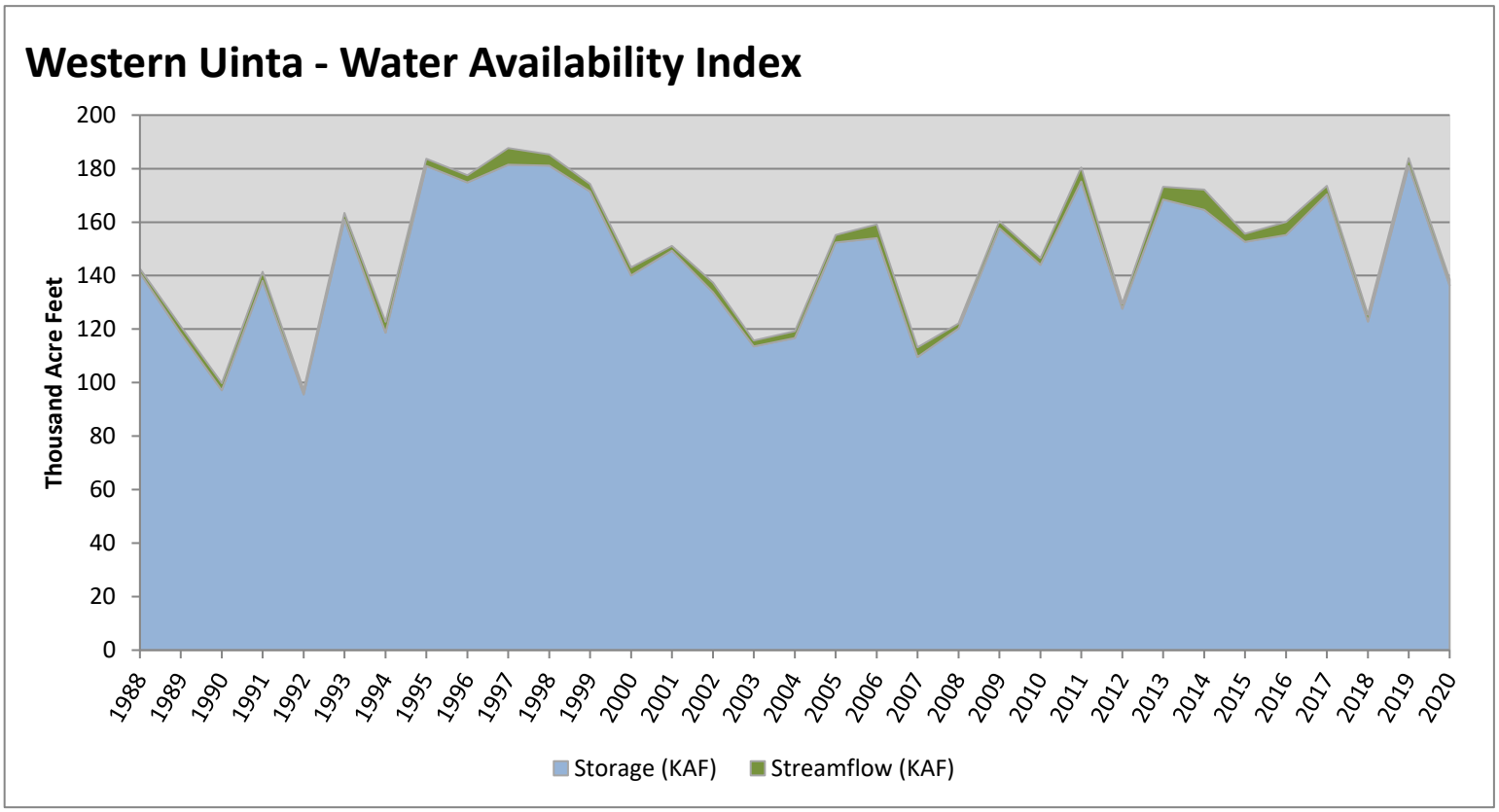


November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Western Uinta	**136.31**	**2.33**	**138.64**	**35**	**-1.23**	**12, 02, 91, 88**

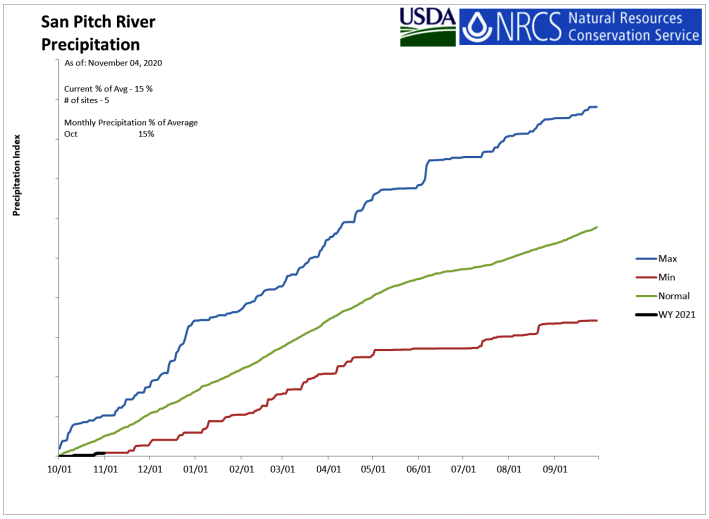
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

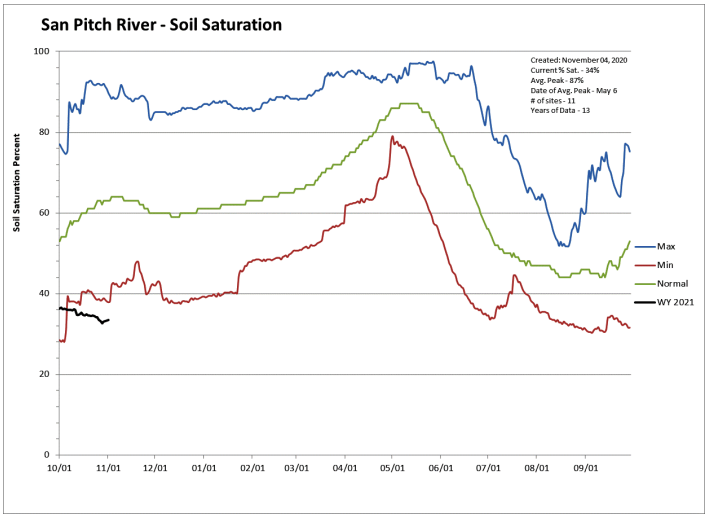


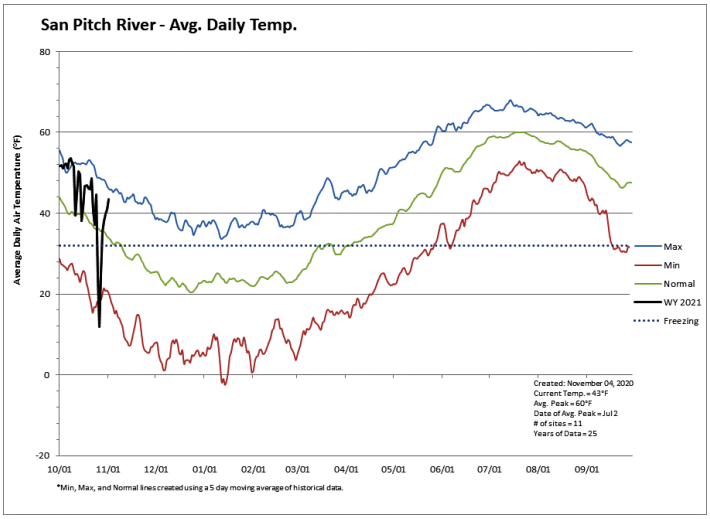
San Pitch River Basin

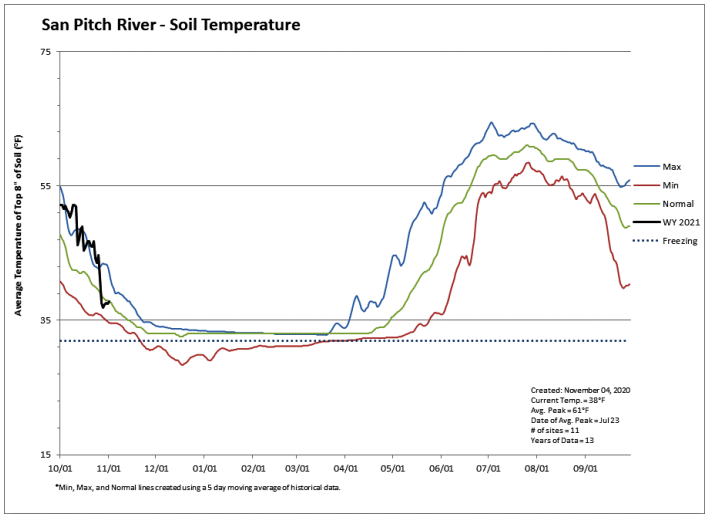
November 1, 2020

Precipitation in October was much below average at 15%, which brings the seasonal accumulation (Oct-Oct) to 15% of average. Soil Moisture is at 33% compared to 40% last year. Reservoir storage is at 0% of capacity, compared to 24% last year.The water availability index for the San Pitch is 24%.









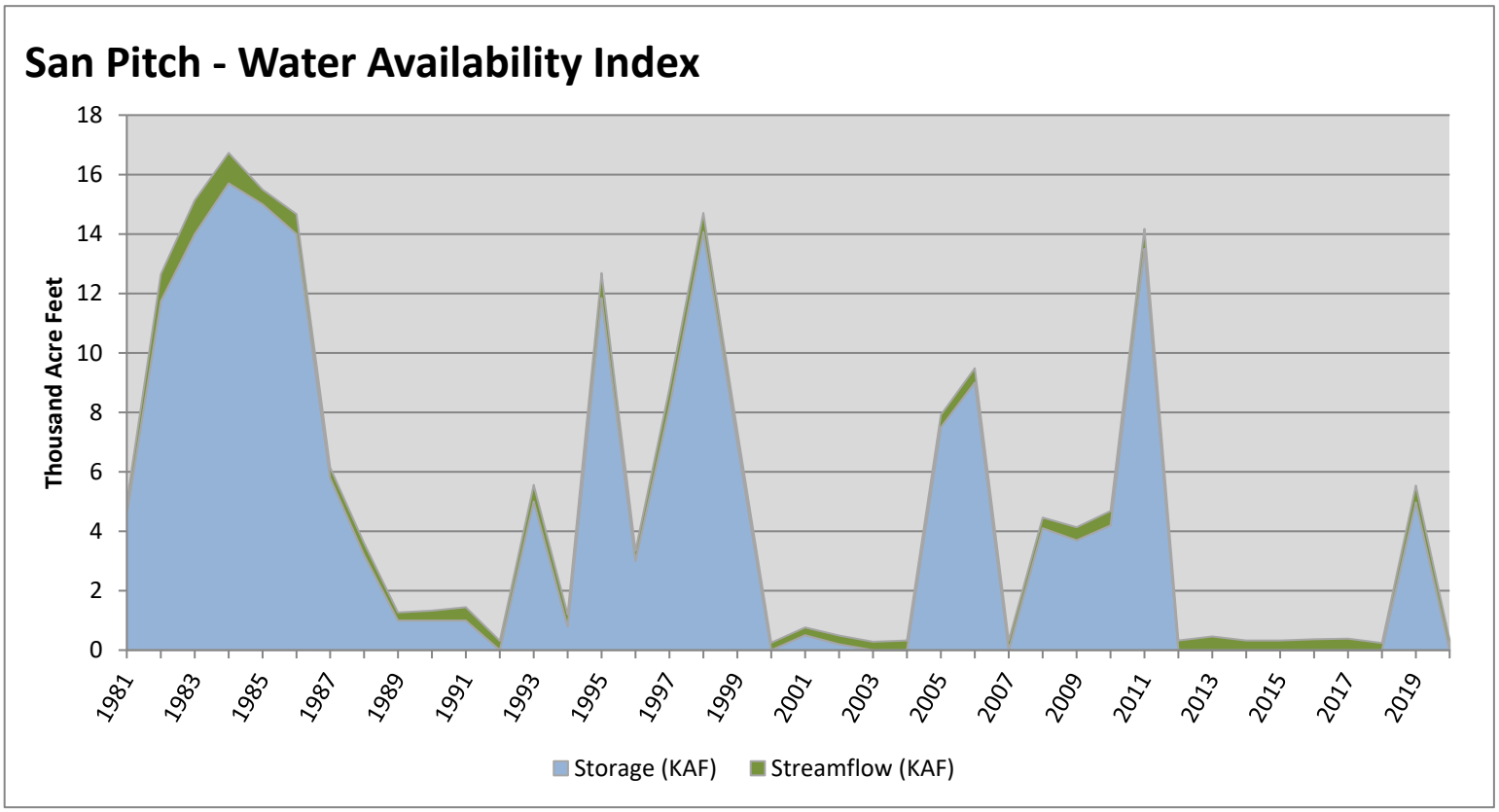
SNOTEL Data

November 1, 2020

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**	**0.36**	**0.36**	**24**	**-2.13**	**12, 14, 16, 17**

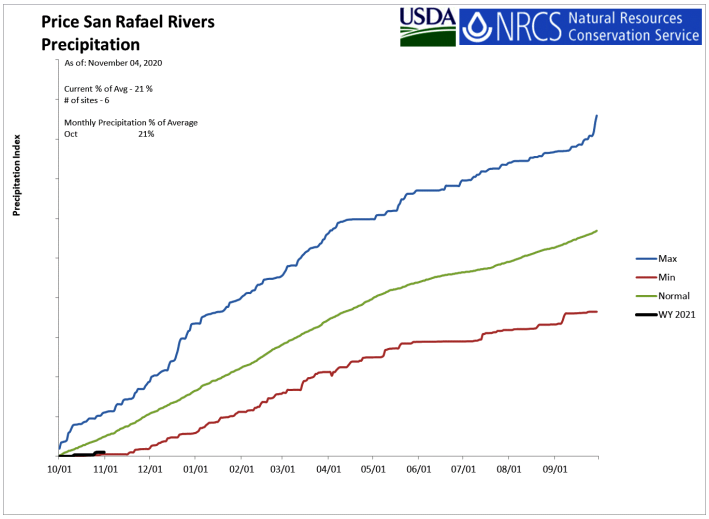
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

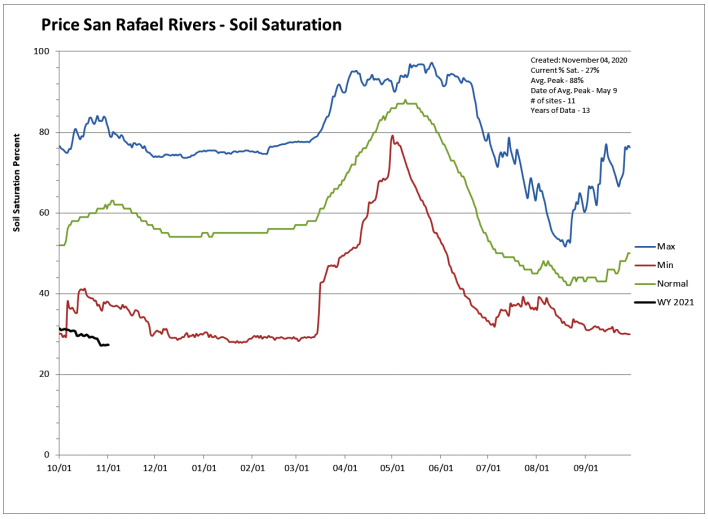


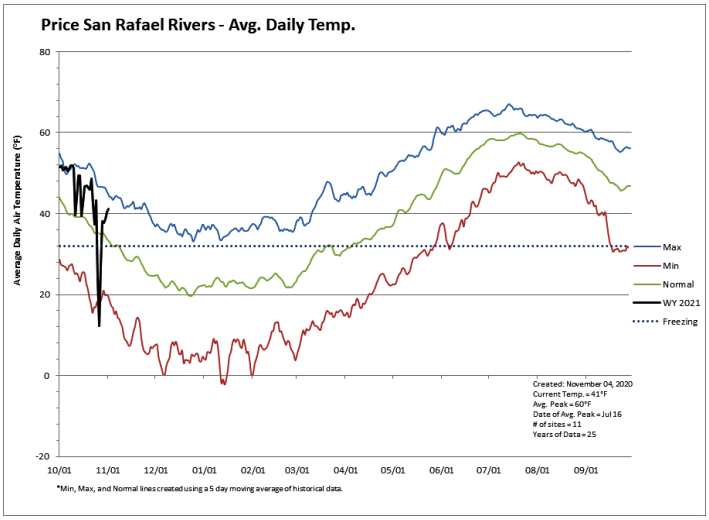
Price & San Rafael Basins

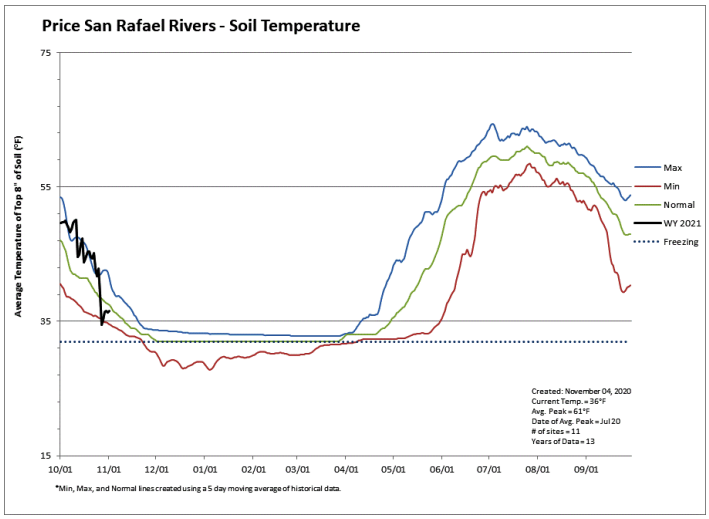
November 1, 2020

Precipitation in October was much below average at 21%, which brings the seasonal accumulation (Oct-Oct) to 21% of average. Soil moisture is at 27% compared to 32% last year. Reservoir storage is at 49% of capacity, compared to 69% last year. The water availability index for the Price River is 59%, and 37% for Joe's Valley.









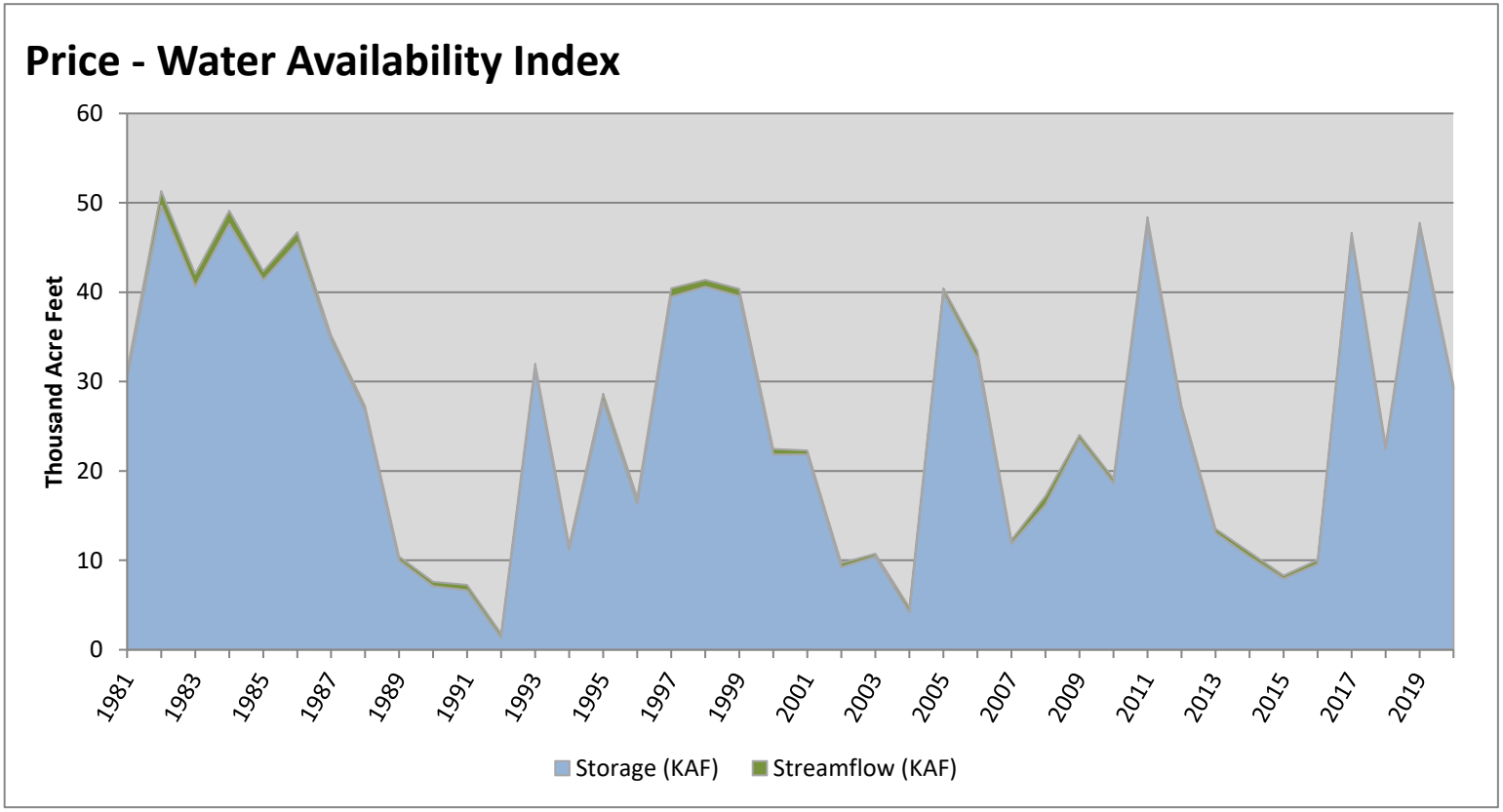
SNOTEL Data

November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Price	**29.18**	**0.33**	**29.51**	**59**	**0.71**	**12, 95, 81, 93**

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

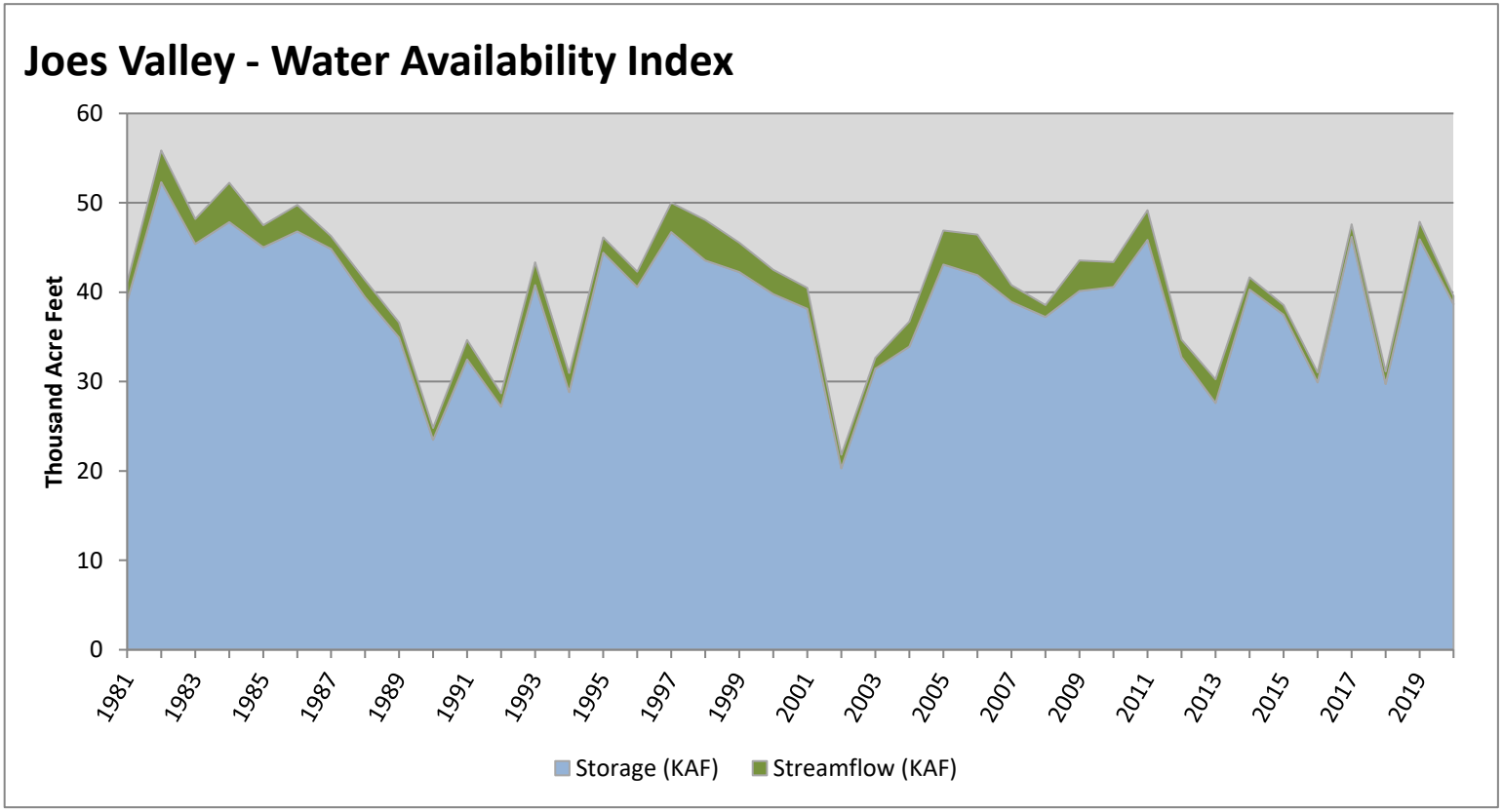


November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Joes Valley	**38.68**	**0.91**	**39.59**	**37**	**-1.12**	**15, 08, 01, 07**

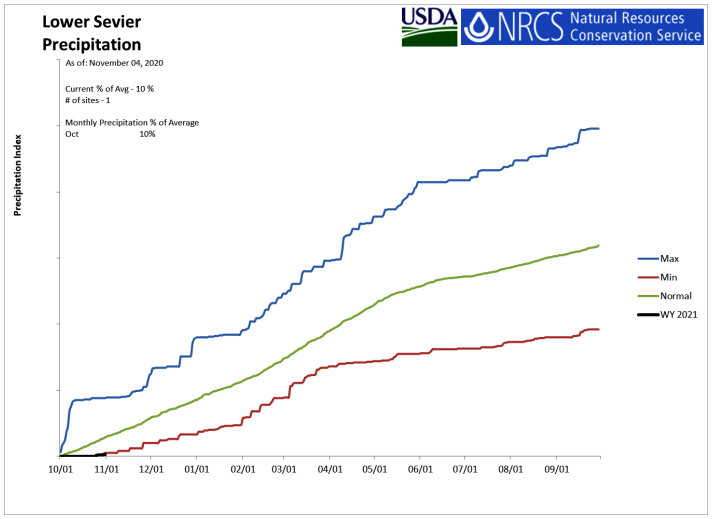
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

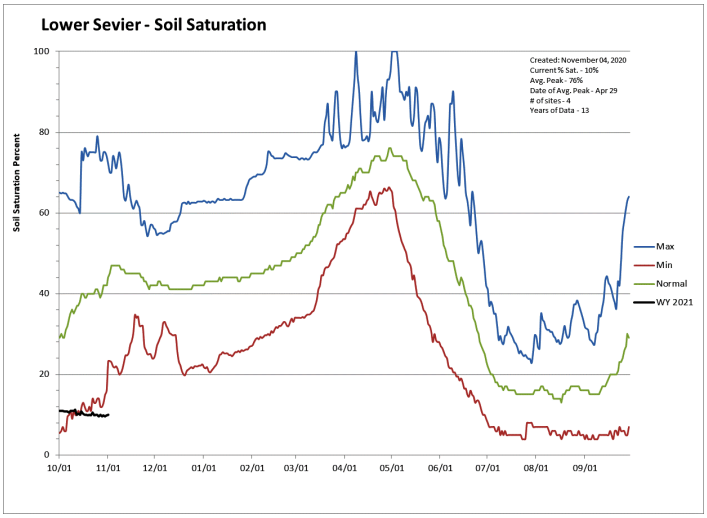


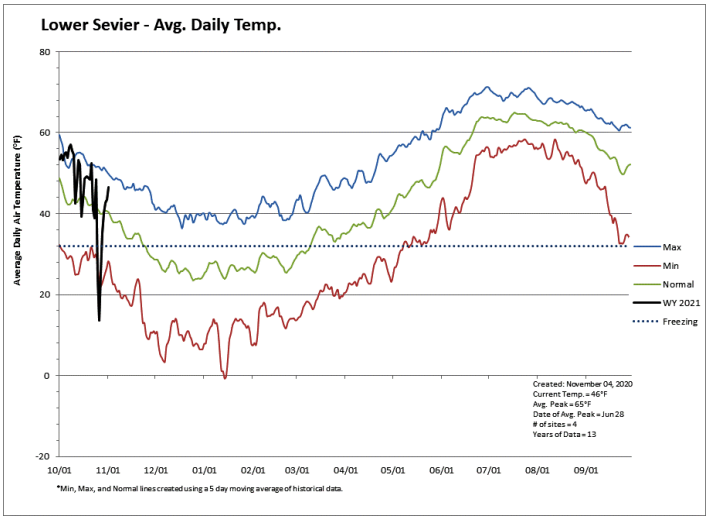
Lower Sevier Basin

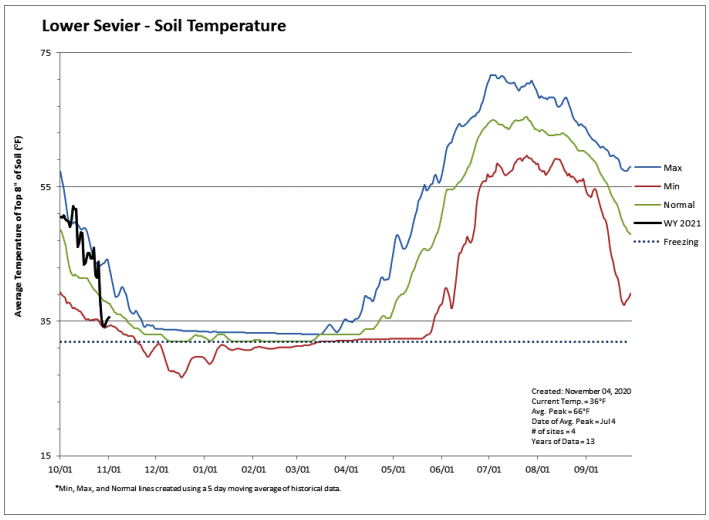
November 1, 2020

Precipitation in October was much below average at 10%, which brings the seasonal accumulation (Oct-Oct) to 10% of average. Soil moisture is at 10% compared to 16% last year. Reservoir storage is at 19% of capacity, compared to 35% last year. The water availability index for the Lower Sevier is 17%.







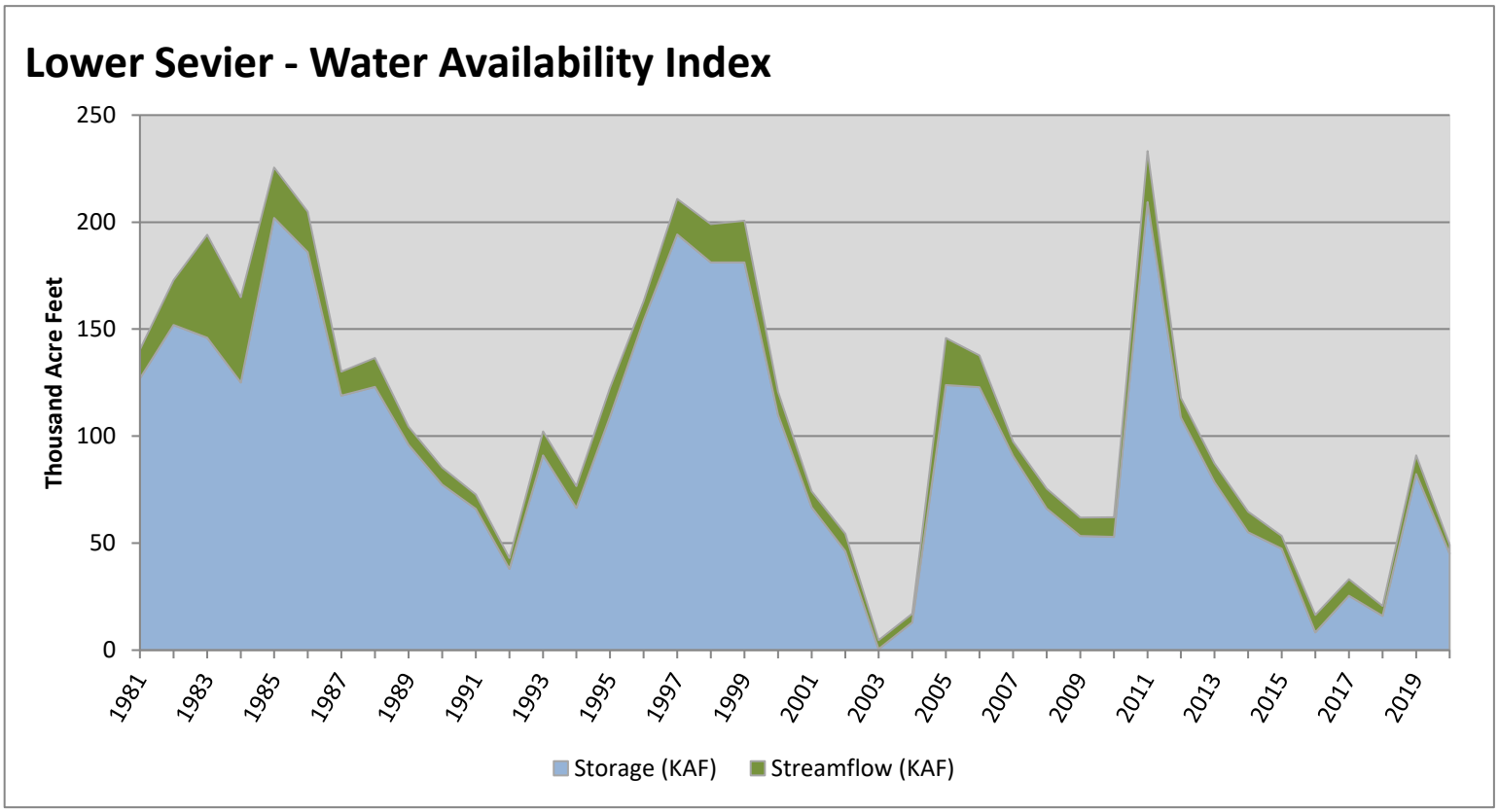


November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Lower Sevier	**45.14**	**4.14**	**49.28**	**17**	**-2.74**	**17, 92, 15, 02**

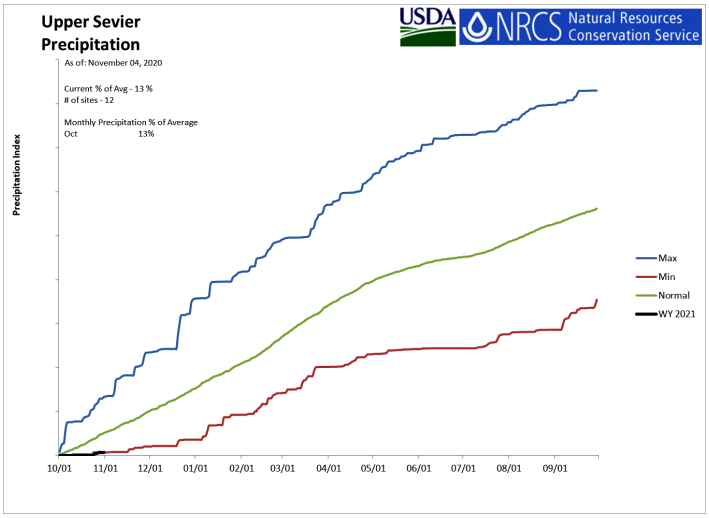
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

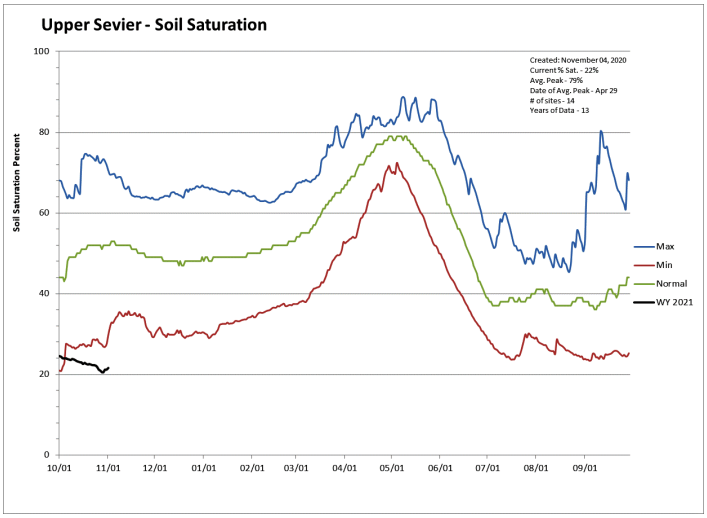


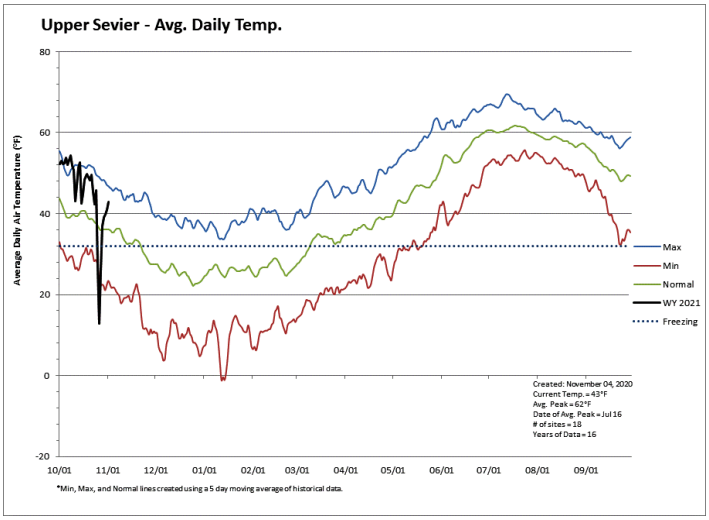
Upper Sevier Basin

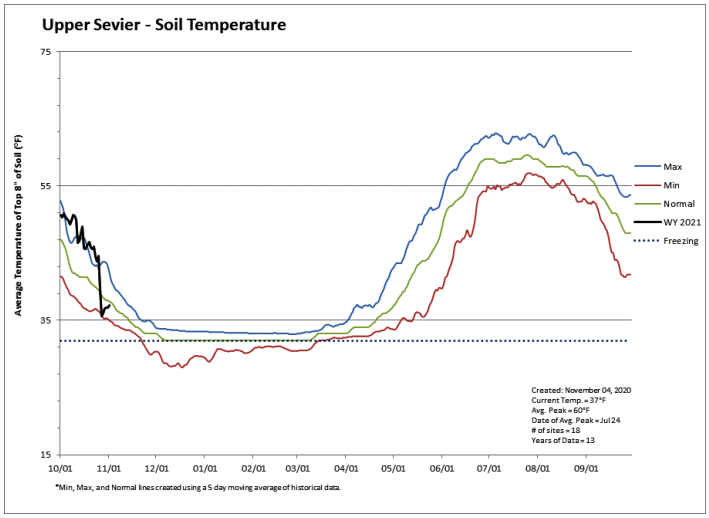
November 1, 2020

Precipitation in October was much below average at 13%, which brings the seasonal accumulation (Oct-Oct) to 13% of average. Soil moisture is at 21% compared to 22% last year. Reservoir storage is at 31% of capacity, compared to 67% last year. The water availability index for the Upper Sevier is 37%.







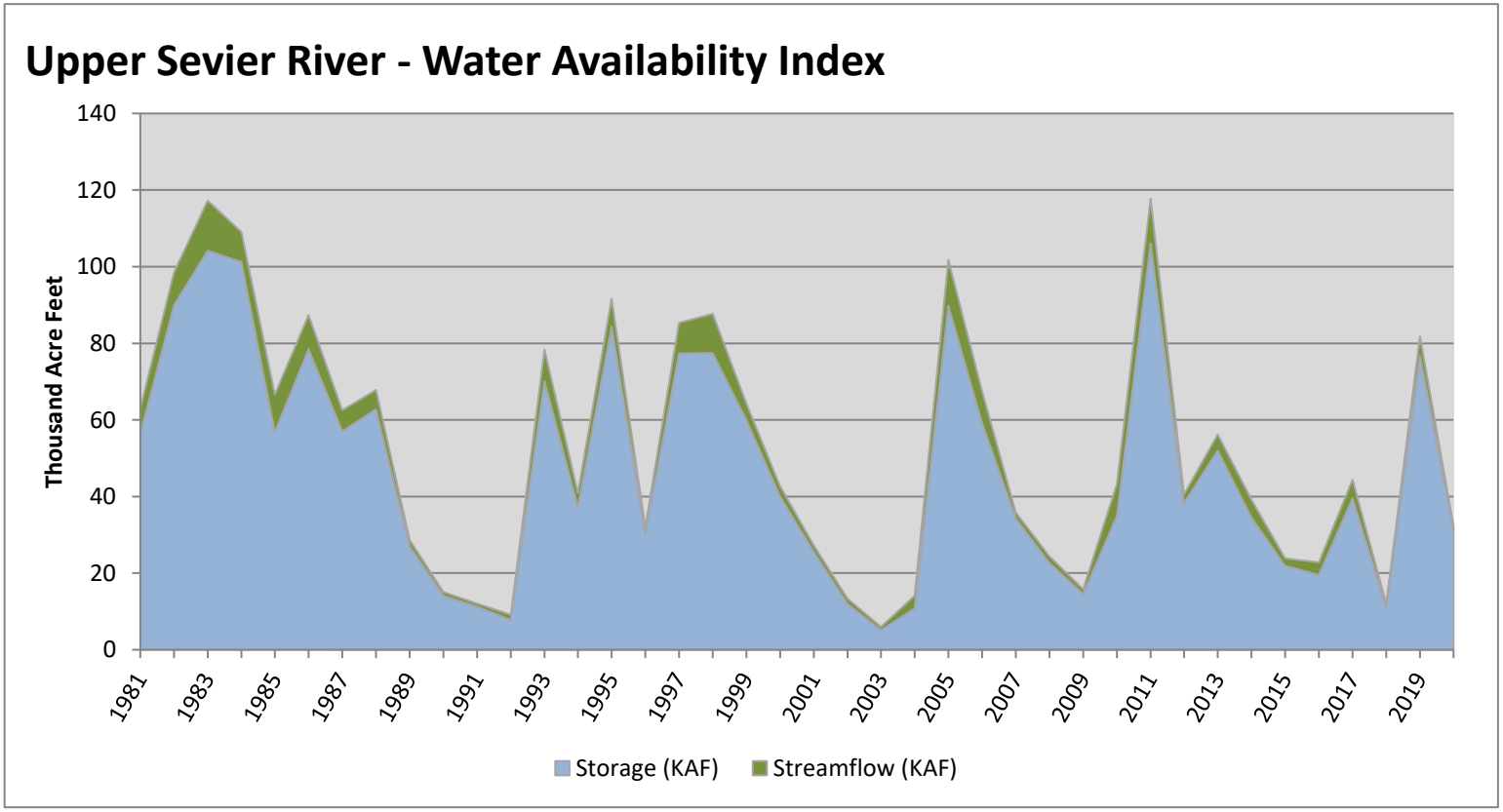


November 1, 2020

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	**31.56**	**0.77**	**32.33**	**37**	**-1.12**	**89, 96, 07, 14**

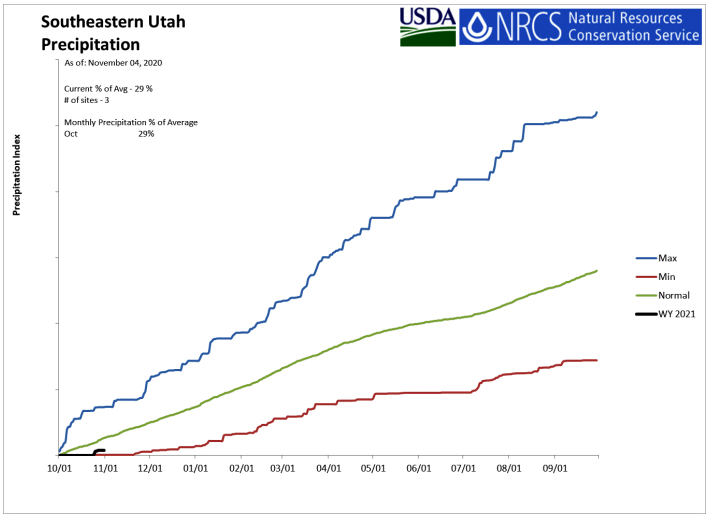
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

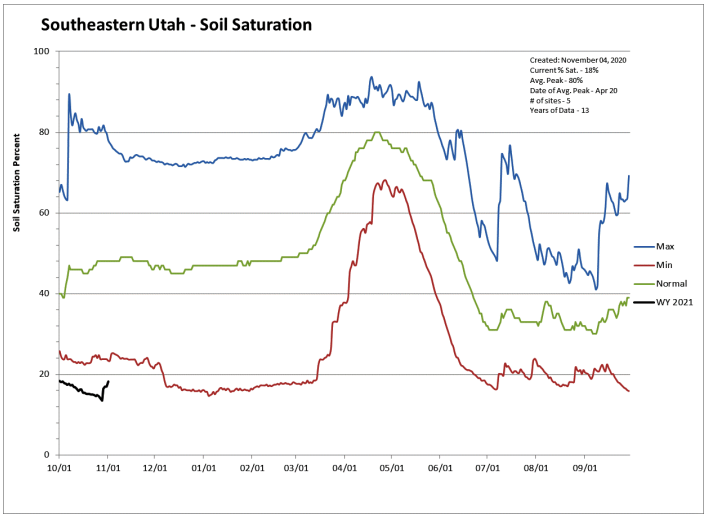


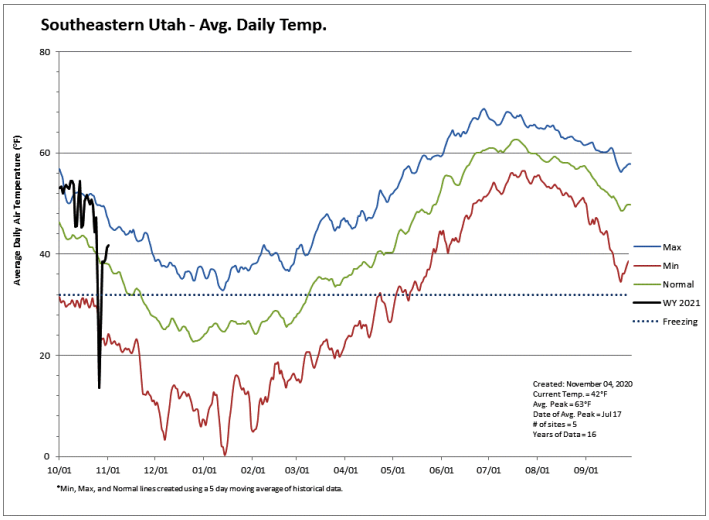
Southeastern Utah

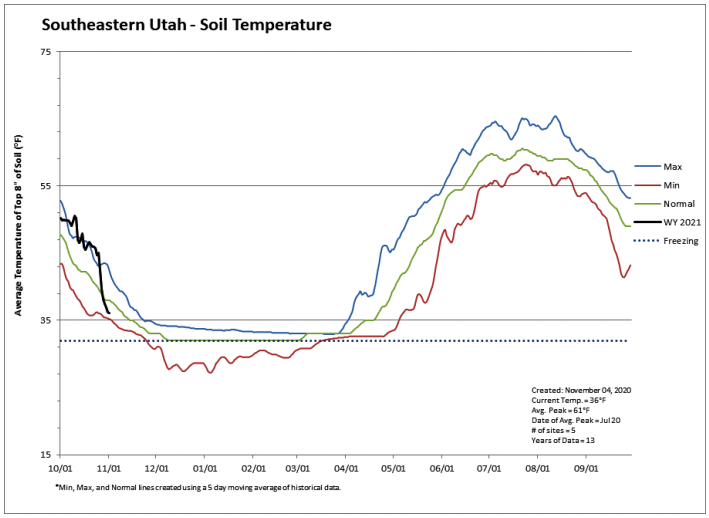
November 1, 2020

Precipitation in October was much below average at 29%, which brings the seasonal accumulation (Oct-Oct) to 29% of average. Soil moisture is at 18% compared to 13% last year. Reservoir storage is at 15% of capacity, compared to 67% last year. The water availability index for Moab is 21%.









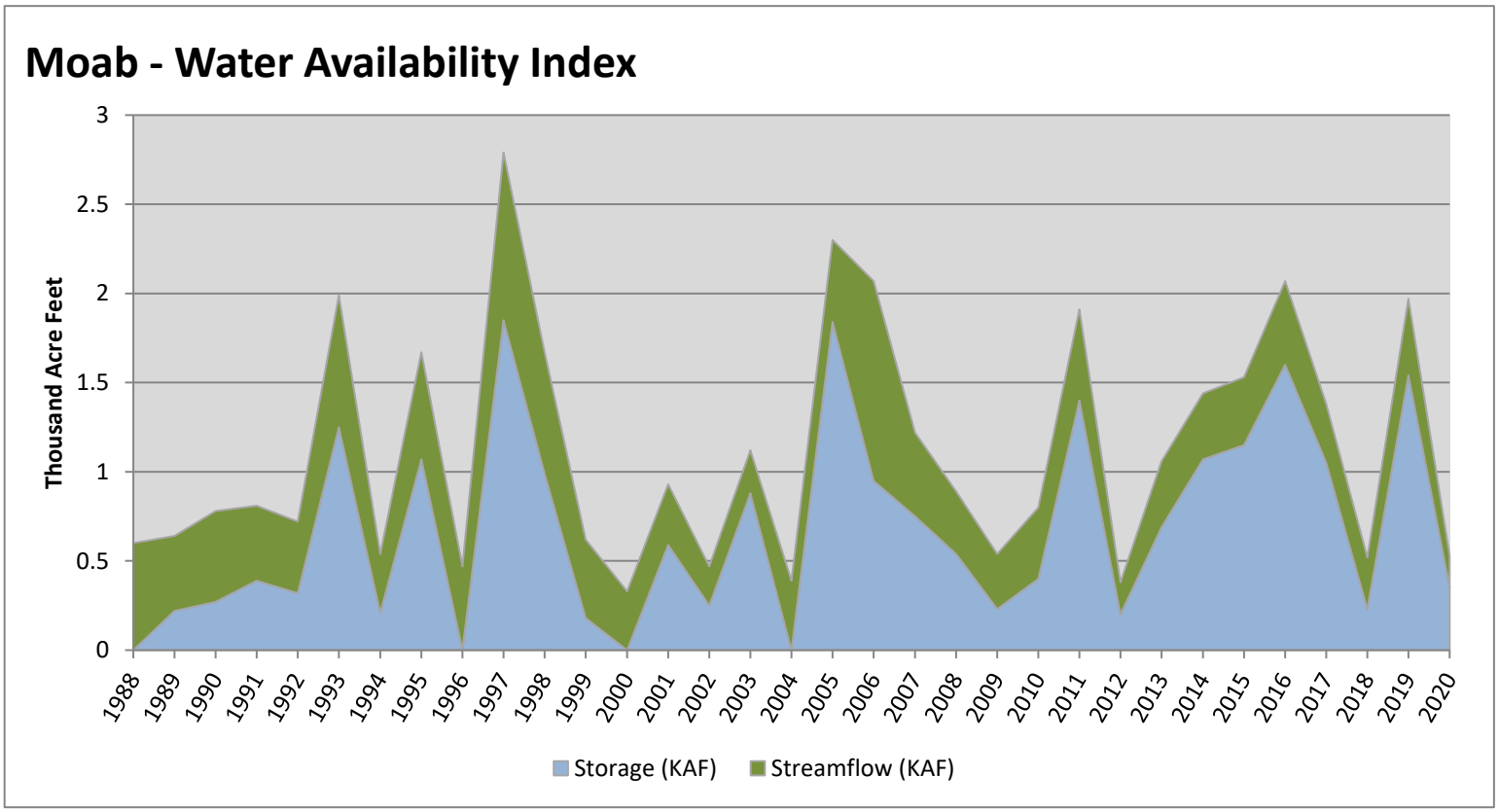
SNOTEL Data

November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Moab	**0.35**	**0.18**	**0.53**	**21**	**-2.45**	**02, 18, 94, 09**

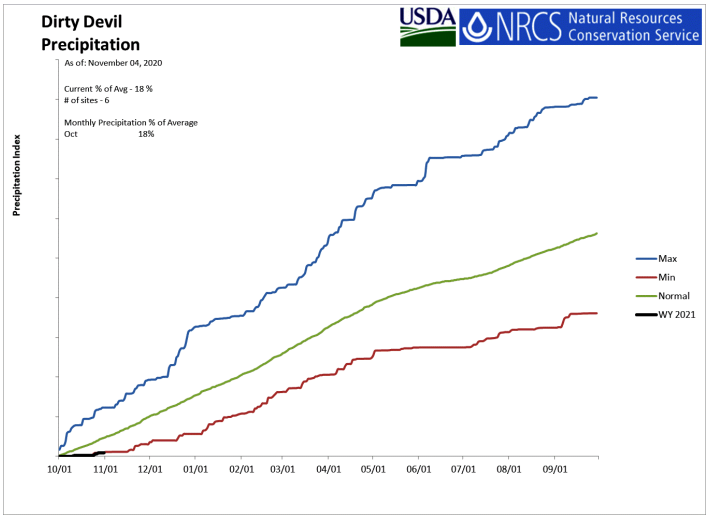
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

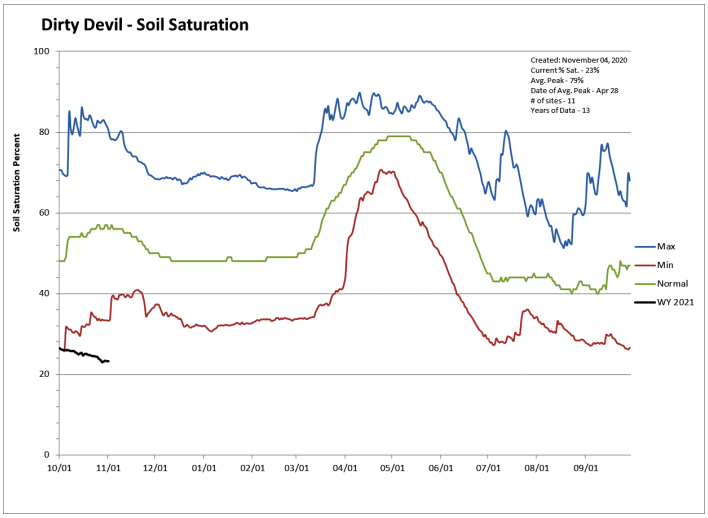


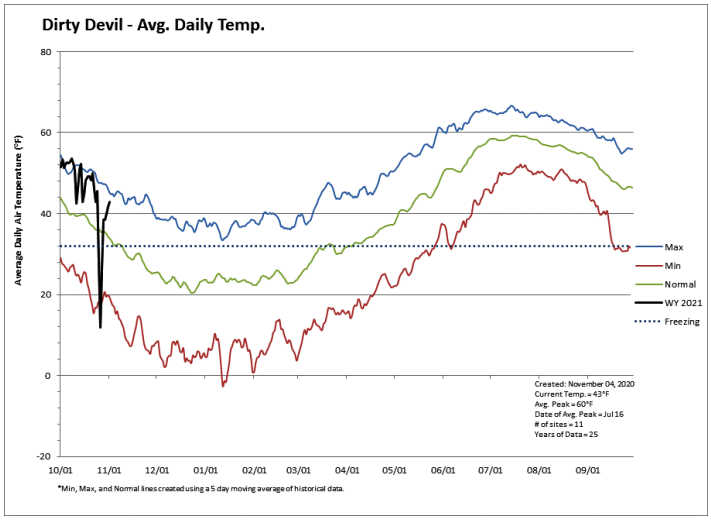
Dirty Devil Basin

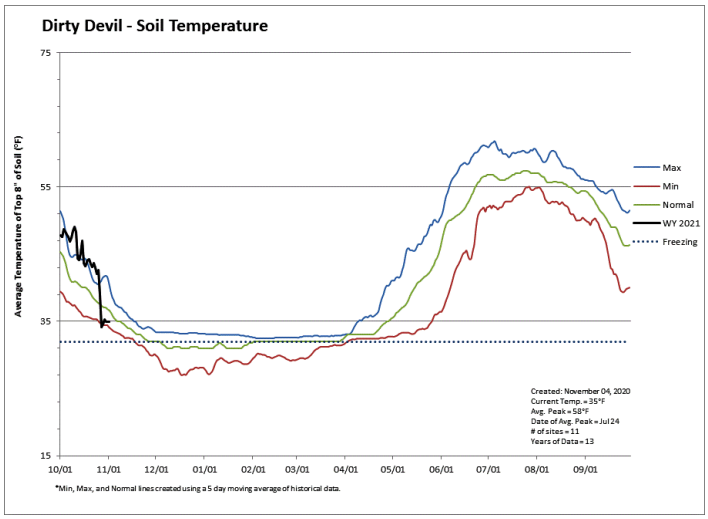
November 1, 2020

Precipitation in October was much below average at 18%, which brings the seasonal accumulation (Oct-Oct) to 18% of average. Soil moisture is at 23% compared to 26% last year.







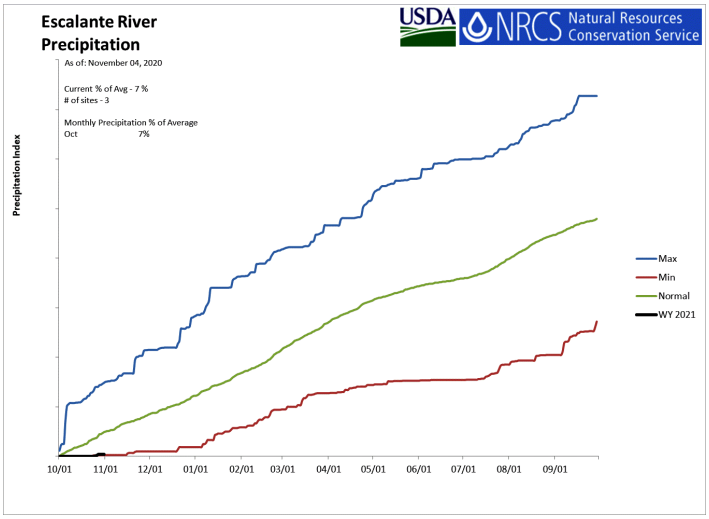


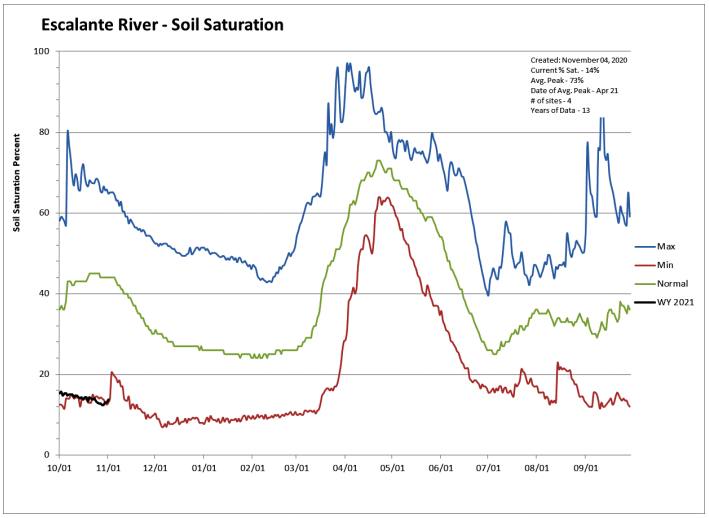
SNOTEL Data

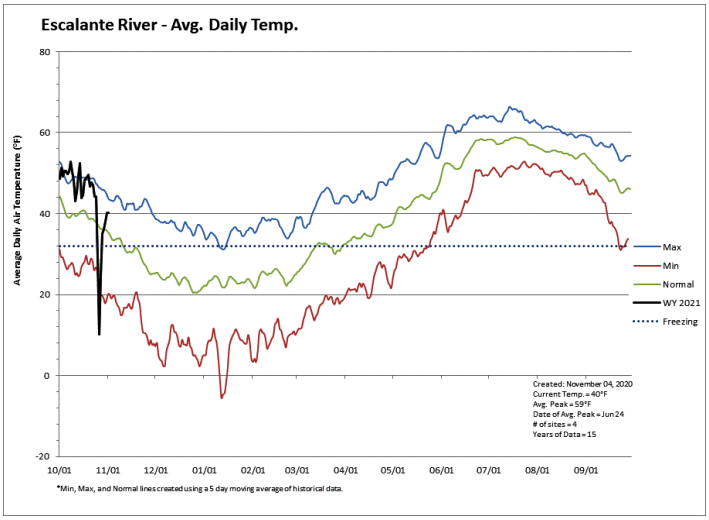
Escalante River Basin

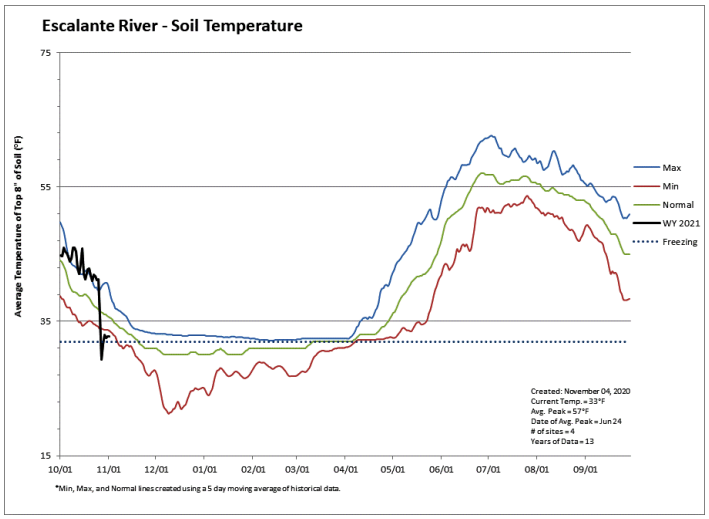
November 1, 2020

Precipitation in October was much below average at 7%, which brings the seasonal accumulation (Oct-Oct) to 7% of average. Soil moisture is at 13% compared to 12% last year.





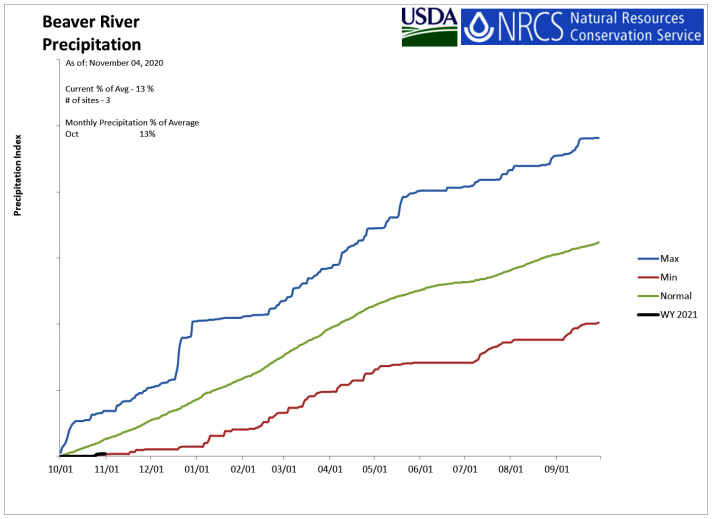


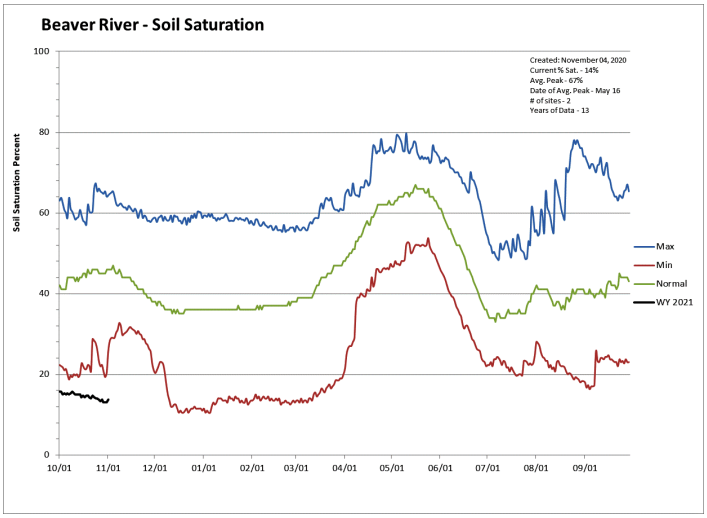


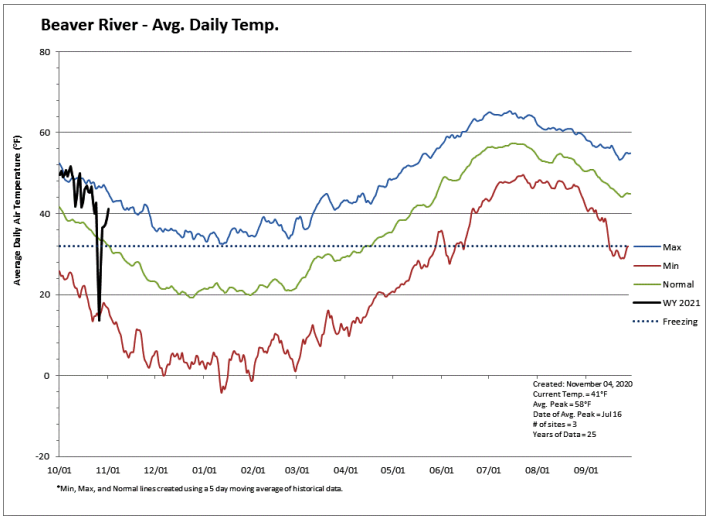
Beaver River Basin

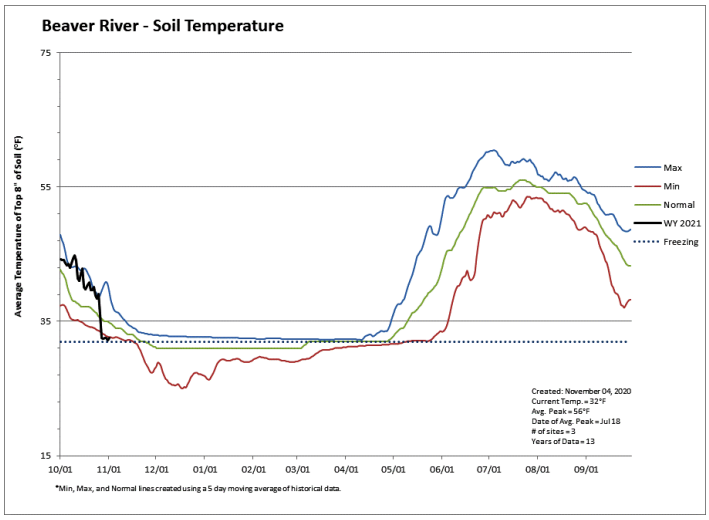
November 1, 2020

Precipitation in October was much below average at 13%, which brings the seasonal accumulation (Oct-Oct) to 13% of average. Soil moisture is at 13% compared to 24% last year. Reservoir storage is at 13% of capacity, compared to 58% last year. The water availability index for the Beaver River is 20%.







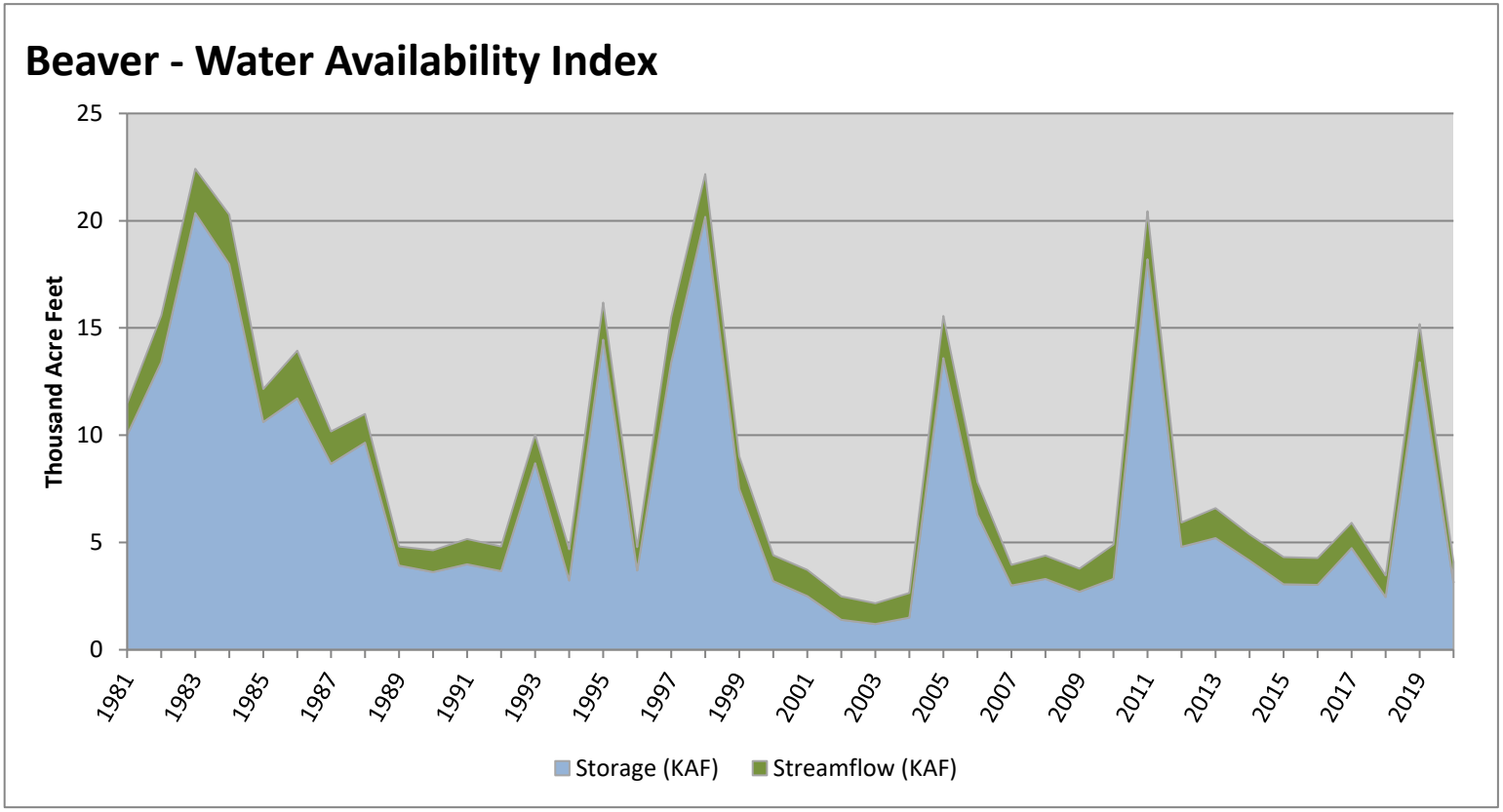


November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Beaver	**3.13**	**0.96**	**4.09**	**20**	**-2.54**	**09, 07, 16, 15**

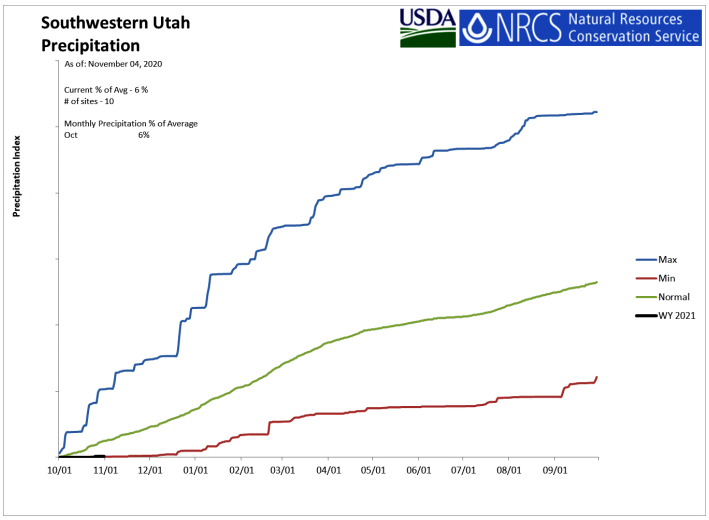
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

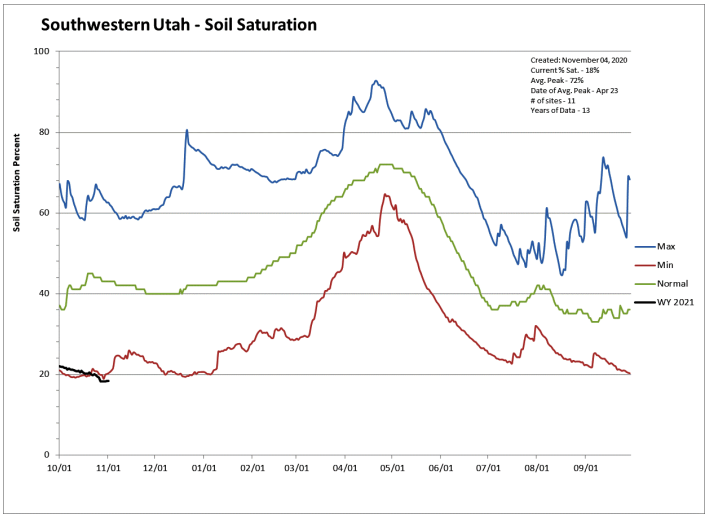


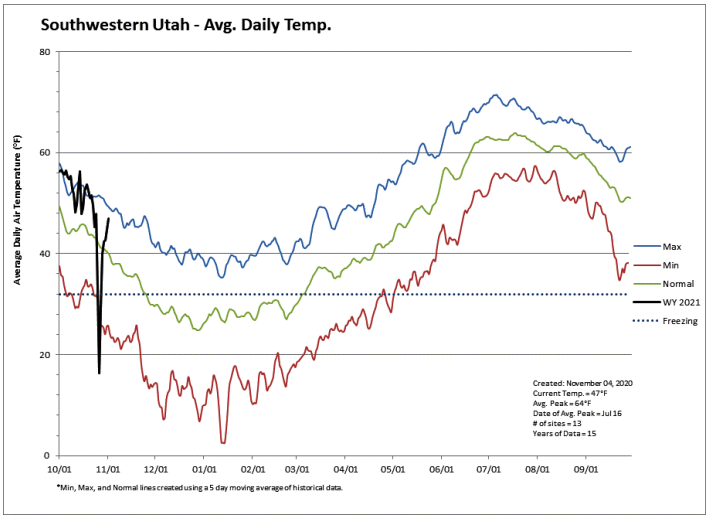
Southwestern Utah

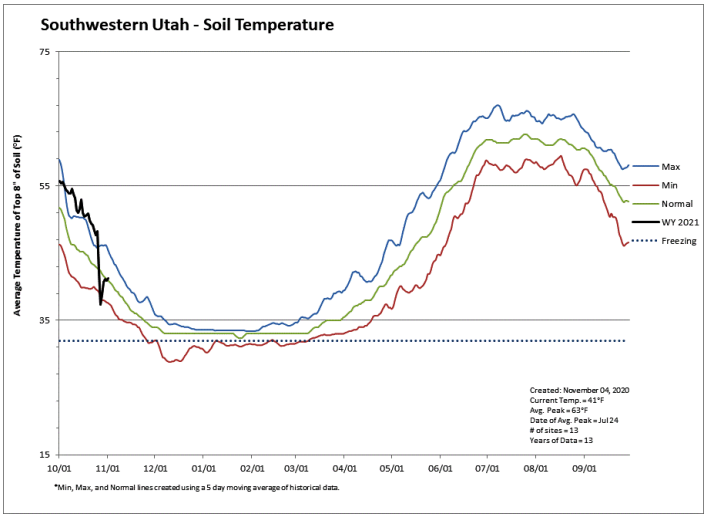
November 1, 2020

Precipitation in October was much below average at 6%, which brings the seasonal accumulation (Oct-Oct) to 6% of average. Soil moisture is at 18% compared to 18% last year. Reservoir storage is at 45% of capacity, compared to 54% last year. The water availability index for the Virgin River is 54%.







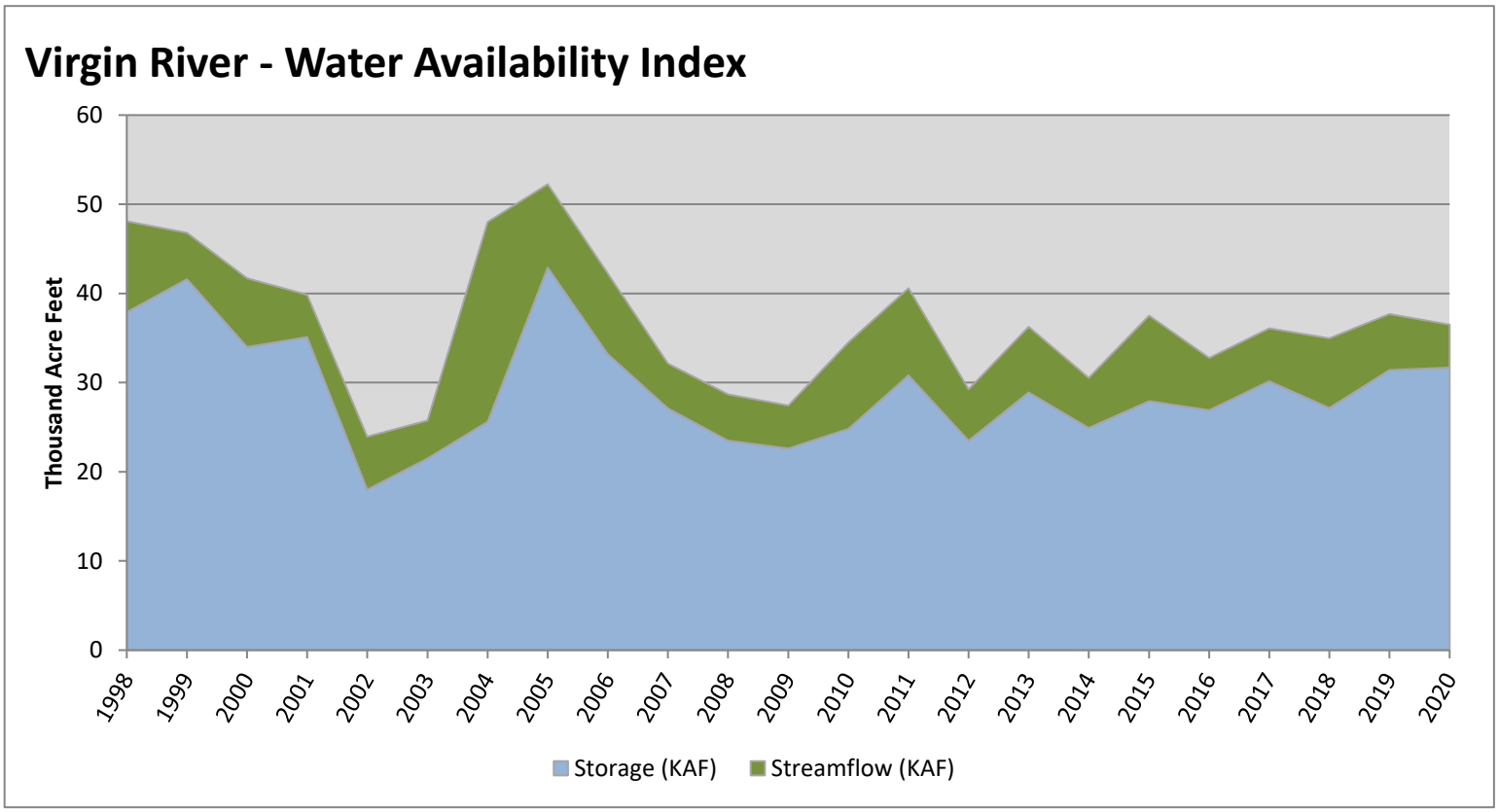


November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Virgin River	**31.68**	**4.82**	**36.50**	**54**	**0.35**	**17, 13, 15, 19**

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



November 1, 2020

Water Availability Index

Basin or Region	Oct EOM* Storage	October Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	*KAF^*	*KAF^*	*KAF^*	*%*		
Bear River	**775**	**2.3**	**777**	**66**	**1.3**	**12, 81, 18, 87**
Woodruff Narrows	**27.0**	**2.3**	**29.4**	**44**	**-0.5**	**87, 07, 05, 85**
Little Bear	**7.6**	**2.2**	**9.8**	**55**	**0.4**	**18, 96, 94, 93**
Ogden	**47.3**	**2.4**	**49.7**	**34**	**-1.3**	**12, 18, 91, 15**
Weber	**85.7**	**5.0**	**90.7**	**32**	**-1.5**	**16, 15, 02, 94**
Provo River	**315.4**	**1.9**	**317.3**	**38**	**-1.0**	**02, 16, 14, 08**
Western Uinta	**136.3**	**2.3**	**138.6**	**35**	**-1.2**	**12, 02, 91, 88**
Eastern Uinta	**16.5**	**1.5**	**18.0**	**12**	**-3.2**	**02, 13, 94, 90**
Blacks Fork	**2.5**	**0.5**	**3.0**	**8**	**-3.5**	**92, 88, 01, 89**
Price	**29.2**	**0.3**	**29.5**	**59**	**0.7**	**12, 95, 81, 93**
Smiths Creek	**3.5**	**1.5**	**4.9**	**38**	**-1.0**	**12, 04, 07, 08**
Joes Valley	**38.7**	**0.9**	**39.6**	**37**	**-1.1**	**15, 08, 01, 07**
Moab	**0.4**	**0.2**	**0.5**	**21**	**-2.5**	**02, 18, 94, 09**
Upper Sevier River	**31.6**	**0.8**	**32.3**	**37**	**-1.1**	**89, 96, 07, 14**
San Pitch	**0.0**	**0.4**	**0.4**	**24**	**-2.1**	**12, 14, 16, 17**
Lower Sevier	**45.1**	**4.1**	**49.3**	**17**	**-2.7**	**17, 92, 15, 02**
Beaver	**3.1**	**1.0**	**4.1**	**20**	**-2.5**	**09, 07, 16, 15**
Virgin River	**31.7**	**4.8**	**36.5**	**54**	**0.4**	**17, 13, 15, 19**

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

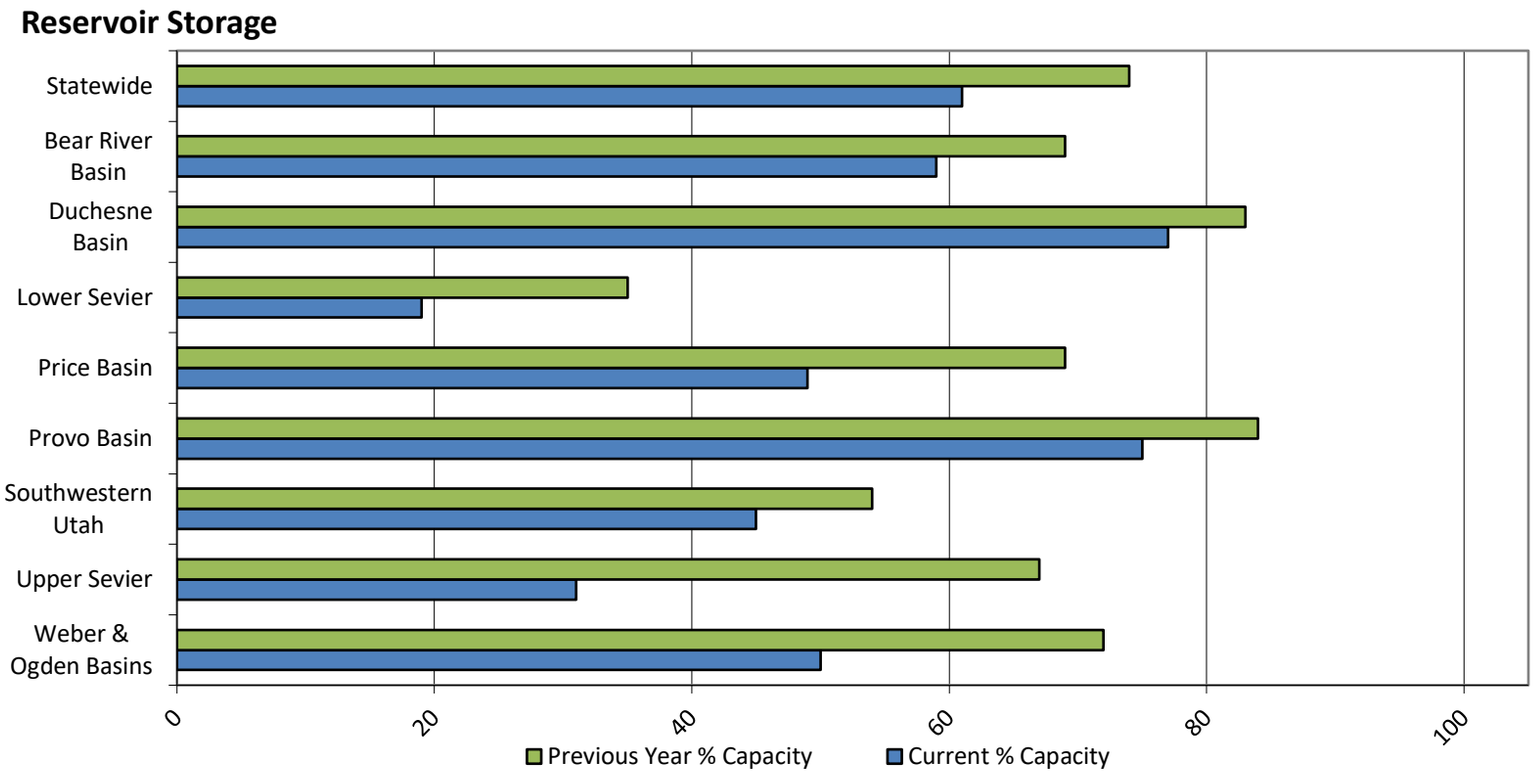
What is a Water Availability Index?

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 2020	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	2.1	9.2		25.7	8%	36%			
Causey Reservoir	2.6	3.3	2.6	7.1	37%	46%	37%	101%	125%
Cleveland Lake	0.8	4.3		5.4	14%	80%			
Currant Creek Reservoir	14.6	14.7	14.7	15.5	94%	95%	95%	100%	100%
Deer Creek Reservoir	91.5	124.4	93.3	149.7	61%	83%	62%	98%	133%
East Canyon Reservoir	28.5	37.3	32.0	49.5	58%	75%	65%	89%	117%
Echo Reservoir	14.3	41.3	29.7	73.9	19%	56%	40%	48%	139%
Grantsville Reservoir	1.0	1.4	0.8	3.3	31%	42%	25%	121%	167%
Gunlock	4.5	6.3	5.2	10.4	43%	60%	50%	87%	121%
Gunnison Reservoir	0.0	5.0	6.0	20.3	0%	24%	30%	0%	83%
Huntington North Reservoir	1.3	3.1	1.4	4.2	31%	74%	33%	94%	224%
Hyrum Reservoir	7.6	9.8	8.0	15.3	50%	64%	52%	95%	123%
Joes Valley Reservoir	38.7	45.9	39.2	61.6	63%	75%	64%	99%	117%
Jordanelle Reservoir	225.3	266.2	248.3	314.0	72%	85%	79%	91%	107%
Ken's Lake	0.3	1.5	0.7	2.3	15%	67%	30%	51%	227%
Kolob Reservoir	4.9	5.2		5.6	87%	94%			
Lost Creek Reservoir	14.4	16.7	12.5	22.5	64%	74%	56%	115%	133%
Lower Enterprise	0.1	0.0	0.4	2.6	2%	0%	14%	15%	0%
Miller Flat Reservoir	1.3	0.0		5.2	24%	0%			
Millsite	3.5	6.0	9.4	16.7	21%	36%	56%	37%	64%
Minersville Reservoir	3.1	13.4	8.6	23.3	13%	58%	37%	36%	156%
Moon Lake Reservoir	8.2	22.8	18.2	35.8	23%	64%	51%	45%	125%
Otter Creek Reservoir	16.1	37.7	25.0	52.5	31%	72%	48%	64%	151%
Panguitch Lake	14.2	21.0	11.4	22.3	64%	94%	51%	125%	184%
Pineview Reservoir	44.7	69.3	51.3	110.1	41%	63%	47%	87%	135%
Piute Reservoir	15.5	39.0	25.3	71.8	22%	54%	35%	61%	154%
Porcupine Reservoir	5.2	8.7	3.9	11.3	46%	77%	35%	133%	223%
Quail Creek	23.0	25.2	22.3	40.0	58%	63%	56%	103%	113%
Red Fleet Reservoir	14.1	18.6	16.8	25.7	55%	72%	65%	84%	111%
Rockport Reservoir	26.2	42.8	37.8	60.9	43%	70%	62%	69%	113%
Sand Hollow Reservoir	37.7	44.8		50.0	75%	90%			
Scofield Reservoir	29.2	47.1	26.3	65.8	44%	72%	40%	111%	179%
Settlement Canyon Reservoir	0.3	0.5	0.5	1.0	29%	46%	46%	63%	100%
Sevier Bridge Reservoir	45.1	82.3	110.2	236.0	19%	35%	47%	41%	75%
Smith And Morehouse Reservoir	2.4	5.9	3.6	8.1	29%	72%	44%	65%	163%
Starvation Reservoir	117.4	139.4	126.3	164.1	72%	85%	77%	93%	110%
Stateline Reservoir	3.5	5.7	5.7	12.0	29%	48%	48%	61%	101%
Steinaker Reservoir	2.6	2.4	15.6	33.4	8%	7%	47%	17%	16%
Strawberry Reservoir	922.7	953.2	656.2	1105.9	83%	86%	59%	141%	145%
Upper Enterprise	3.0	3.0	1.9	10.0	30%	30%	19%	160%	157%
Upper Stillwater Reservoir	10.7	18.8	14.4	32.5	33%	58%	44%	74%	130%
Utah Lake	585.8	716.3	683.2	870.9	67%	82%	78%	86%	105%
Willard Bay	138.5	179.9	131.1	215.0	64%	84%	61%	106%	137%
Woodruff Creek	1.7	2.0	1.1	4.0	42%	50%	28%	150%	179%
Woodruff Narrows Reservoir	27.0	43.7	23.3	57.3	47%	76%	41%	116%	188%
Meeks Cabin Reservoir	2.5	8.3	9.1	32.5	8%	26%	28%	28%	92%
Bear Lake	775.0	897.1	595.7	1302.0	60%	69%	46%	130%	151%
Basin-wide Total	3286.0	3987.0	3129.0	5373.1	61%	74%	58%	105%	127%
# of reservoirs	42.0	42.0	42.0	42.0	42	42	42	42	42
# of reservoirs	42	42	42	42	42	42	42	42	42



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Utah Climate and Water Report

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