Utah Climate and Water Report

December 1, 2021

Ken's Lake, near Moab

Photo by Jordan Clayton

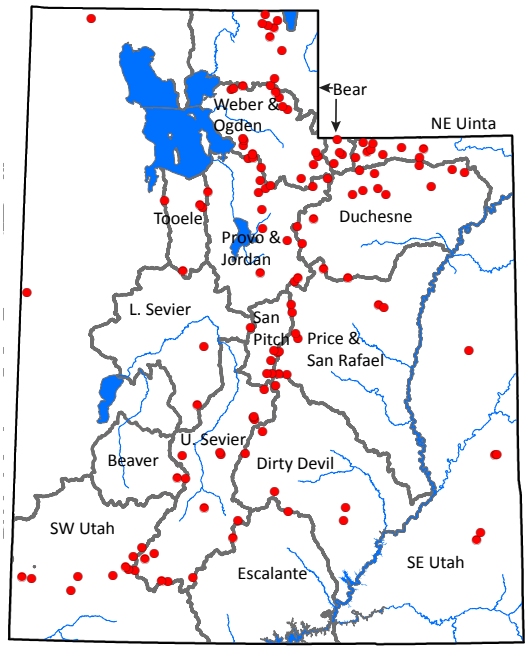
Report Contents

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.

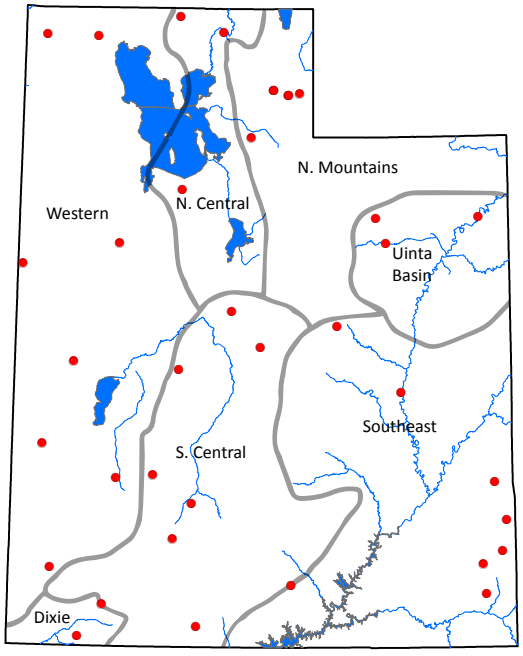
SNOTEL

- 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
December 1, 2021

*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)

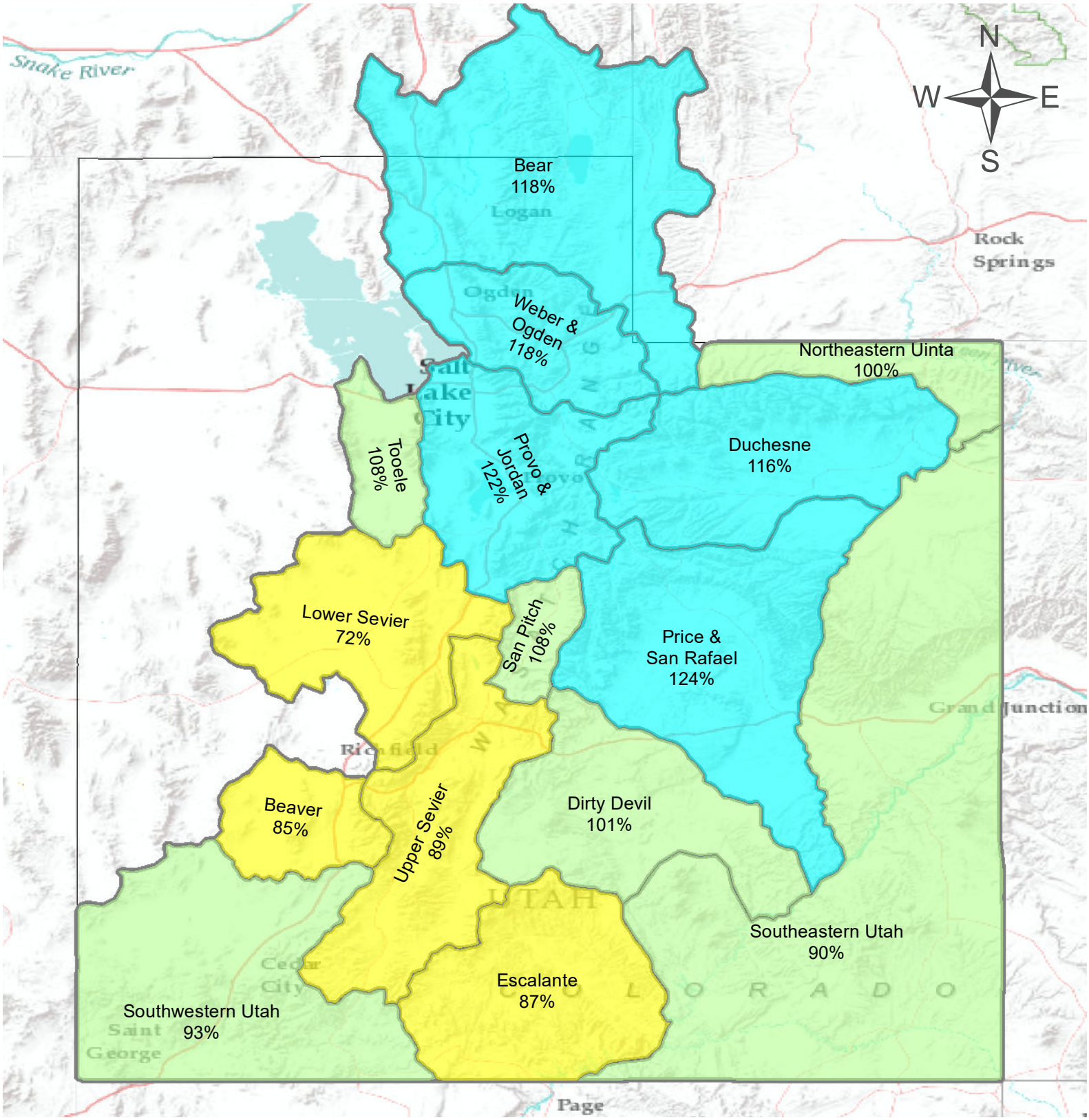
Unfortunately, the water year momentum gathered during October came to a screeching halt in November. With almost no precipitation accumulated in November, the water year total for Utah's valley locations now stands at 2.2 inches. As is often the case, Northern Utah fared the best during the month. Although soil moisture levels decreased during the month, we are still above of last year's levels at this time. Generally, soil temperatures are rising in response to the warm temperatures associated with the dominant high pressure. Drought conditions improved slightly during November; the percentage of Utah experiencing exceptional (D4) drought has dropped from 14% to 10% during the month. Let's hope for a pattern change in December!

Current Mountain Conditions (SNOTEL)

Some of you may remember a weather phenomenon we used to receive in Utah called "snow". It was a lovely substance and provided the vast majority of our water supply each year. It was also useful for sledding, skiing, photography, and pegging your younger sibling with snowballs. If you happen to know where our snow went, can you please get in touch?

In all seriousness, November's precipitation in Utah was very disappointing and as a result our snowpack levels in Utah's mountains are quite low. As of December 1st, the statewide snow water equivalent was only 32% of median, which is particularly disappointing after the outstanding start to our water year. November precipitation in Utah's mountain locations was well below normal at 38%. Statewide soil moisture in Utah's mountains is still above average at 56% of saturation but has dropped significantly due to the warm, dry November. The soil moisture conditions vary regionally—whereas most watersheds in northern Utah continue to have fairly wet soils, several basins in southern Utah (especially Upper and Lower Sevier) are below average for this time of year.

Utah's reservoir storage is currently at 49% of capacity, which is 13% lower than last year at this time, causing our Water Availability Indices (WAIs) to remain at alarmingly-low levels (bottom 20th percentile) for 10 of Utah's 18 major basins. Our reservoir levels will not increase substantially until next spring when we receive the water stored in this winter's snowpack, so water managers will need to continue to be diligent.



Statewide Precipitation

As of December 1, 2021:

111% of Normal Precipitation

38% 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%

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	*KAF^*	*KAF^*	*KAF^*	*%*		
Bear River	**527**	**4.2**	**531**	**45**	**-0.4**	**01, 15, 13, 14**
Woodruff Narrows	**10.5**	**4.2**	**14.8**	**31**	**-1.6**	**88, 13, 81, 18**
Little Bear	**6.5**	**1.9**	**8.4**	**10**	**-3.3**	**03, 15, 01, 14**
Ogden	**25.0**	**2.0**	**27.0**	**7**	**-3.6**	**92, 00, 03, 90**
Weber	**78.2**	**7.9**	**86.1**	**19**	**-2.6**	**12, 18, 03, 00**
Provo River	**259.4**	**3.7**	**263.2**	**7**	**-3.6**	**13, 15, 07, 03**
Western Uinta	**159.9**	**3.4**	**163.3**	**60**	**0.8**	**09, 93, 15, 01**
Eastern Uinta	**15.6**	**2.3**	**17.9**	**10**	**-3.4**	**89, 02, 13, 20**
Blacks Fork	**7.4**	**3.2**	**10.6**	**59**	**0.8**	**08, 19, 17, 93**
Price	**14.4**	**0.3**	**14.7**	**33**	**-1.4**	**07, 13, 08, 96**
Smiths Creek	**4.7**	**1.0**	**5.6**	**45**	**-0.4**	**08, 04, 09, 05**
Joes Valley	**21.5**	**0.9**	**22.4**	**5**	**-3.8**	**02, 90, 92, 18**
Moab	**0.9**	**0.3**	**1.2**	**57**	**0.6**	**91, 01, 13, 07**
Upper Sevier River	**22.1**	**4.9**	**27.0**	**14**	**-3.0**	**92, 91, 90, 09**
San Pitch	**0.0**	**0.3**	**0.3**	**10**	**-3.4**	**92, 03, 12, 15**
Lower Sevier	**31.8**	**6.8**	**38.6**	**10**	**-3.4**	**03, 18, 17, 10**
Beaver	**2.6**	**1.1**	**3.7**	**7**	**-3.6**	**03, 02, 01, 04**
Virgin River	**28.4**	**6.4**	**34.8**	**40**	**-0.8**	**15, 20, 18, 07**

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

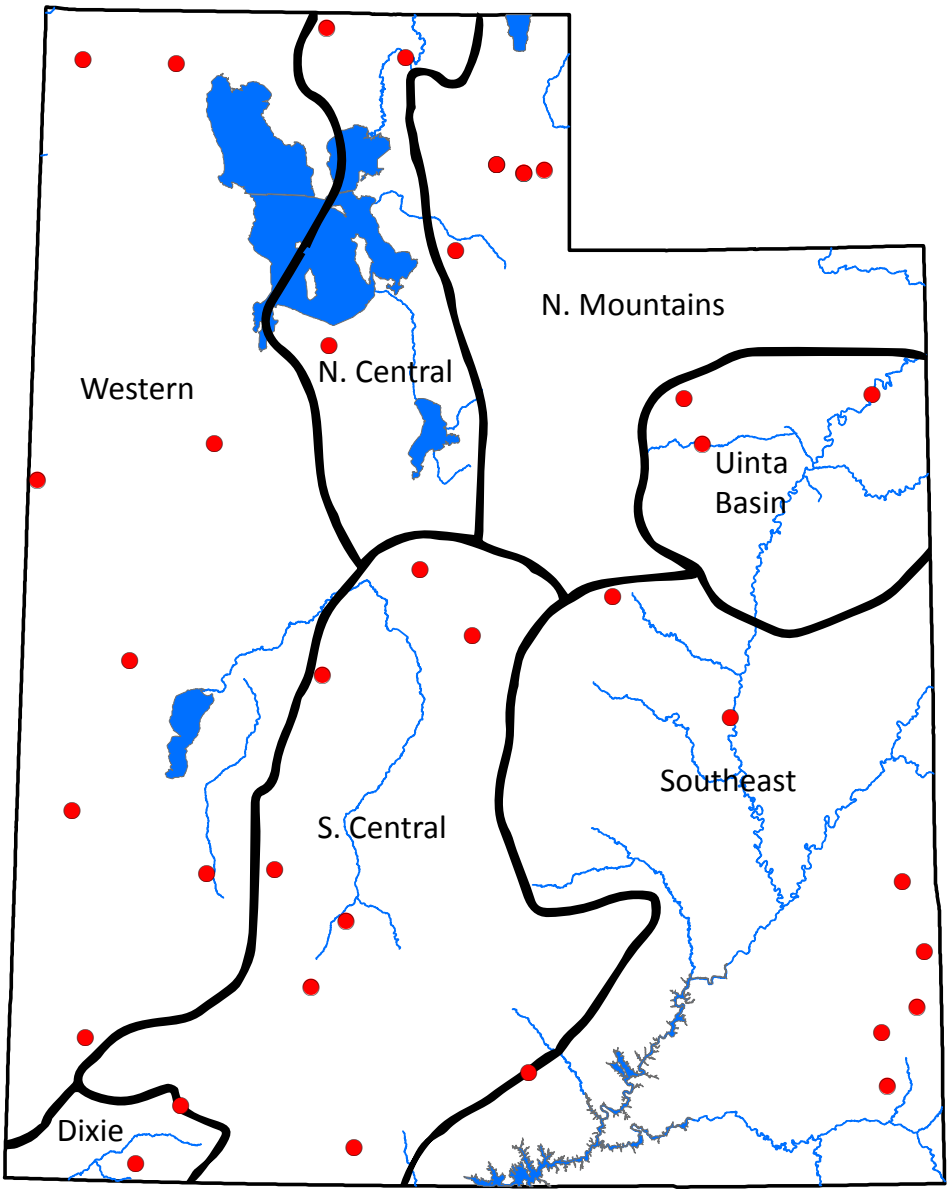
What is a Water Availability Index?

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: https://www.nrcs.usda.gov/wps/portal/nrcs/main/ut/snow/ on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

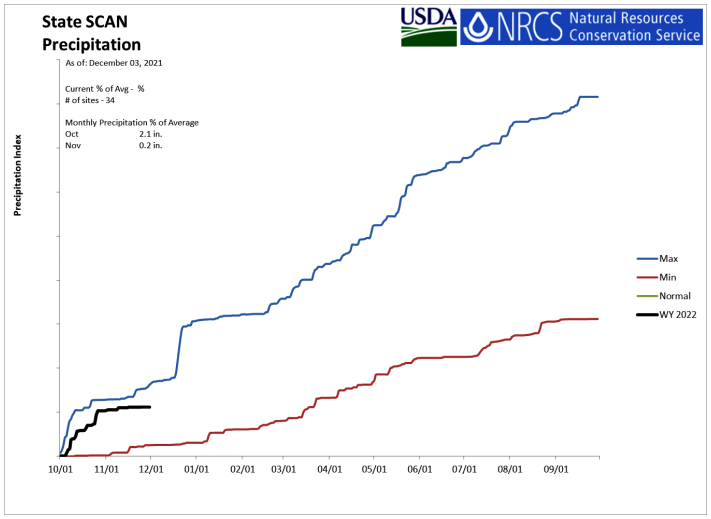
SCAN portion of report

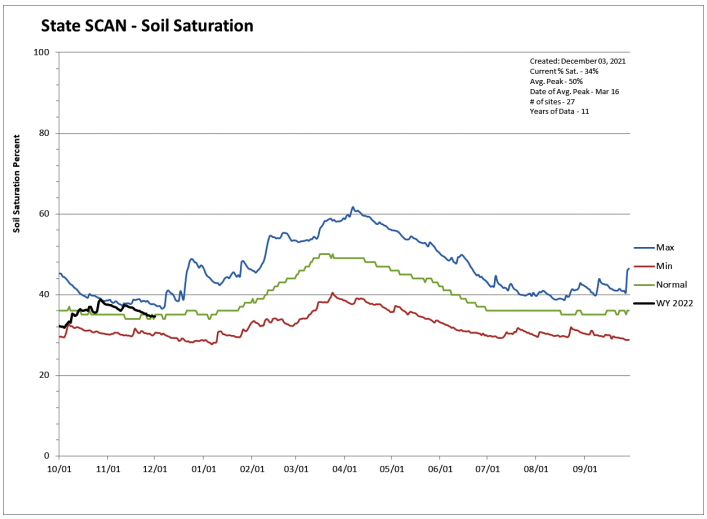


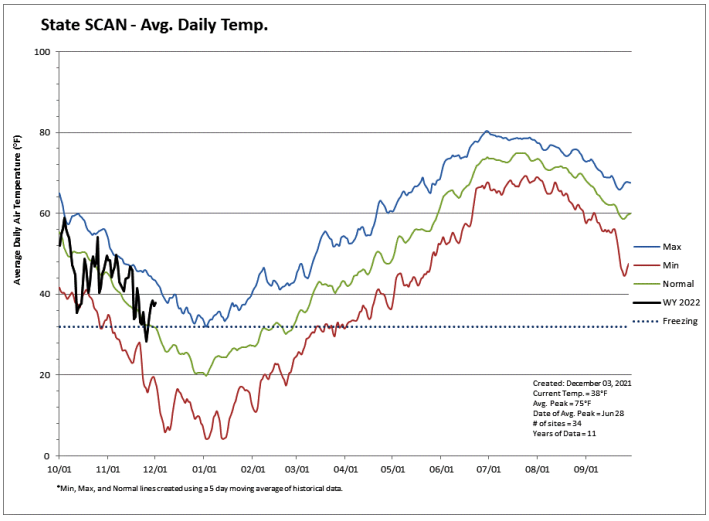
Statewide SCAN

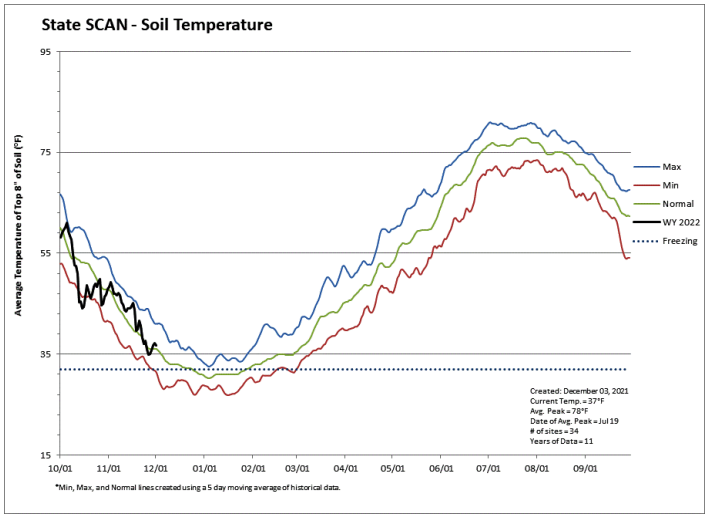
December 1, 2021

The average precipitation at SCAN sites within Utah was 0.2 inches in November, which brings the seasonal accumulation (Oct-Nov) to 2.2 inches. Soil moisture is at 33% compared to 26% last year.





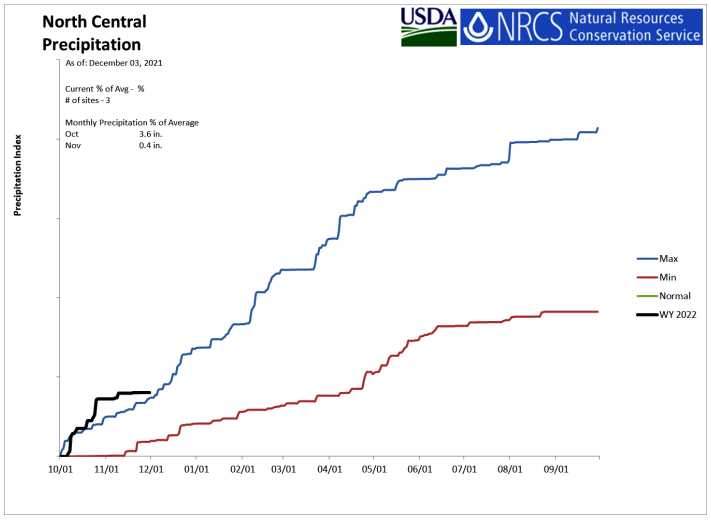


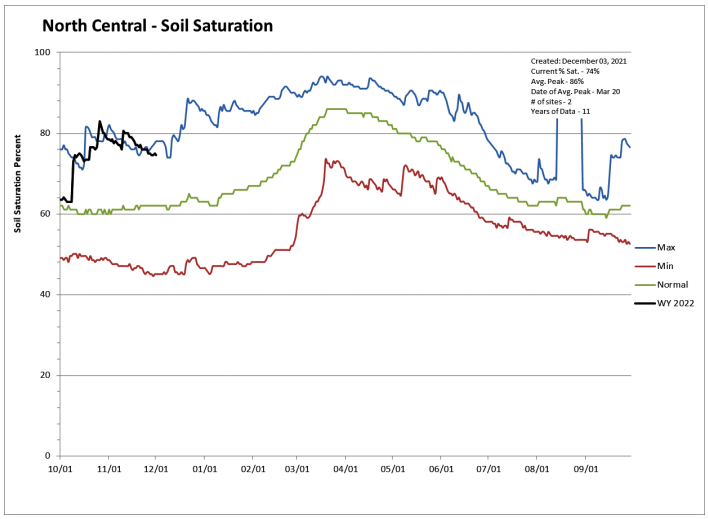


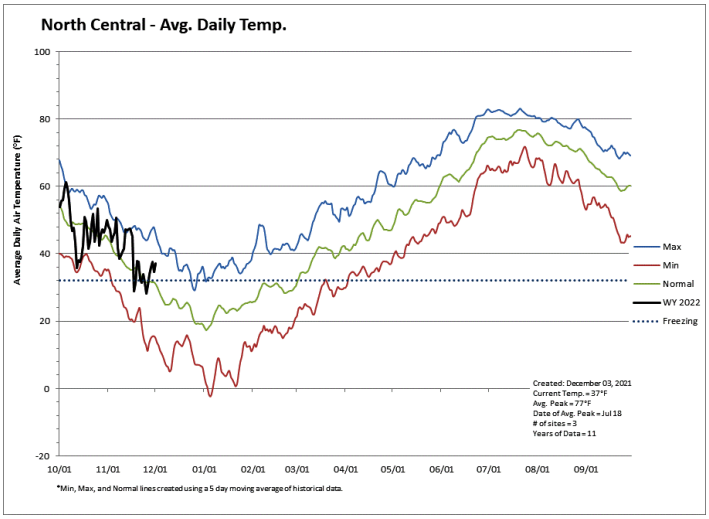
North Central

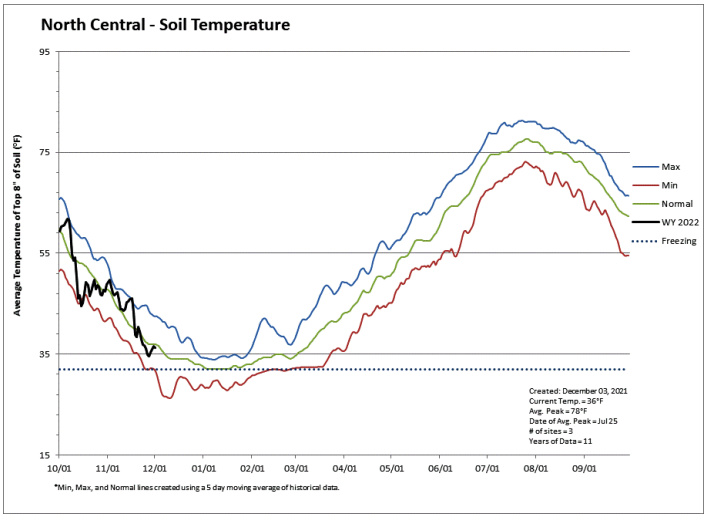
December 1, 2021

The average precipitation in November at SCAN sites within the basin was 0.4 inches, which brings the seasonal accumulation (Oct-Nov) to 4 inches. Soil moisture is at 75% compared to 61% last year.





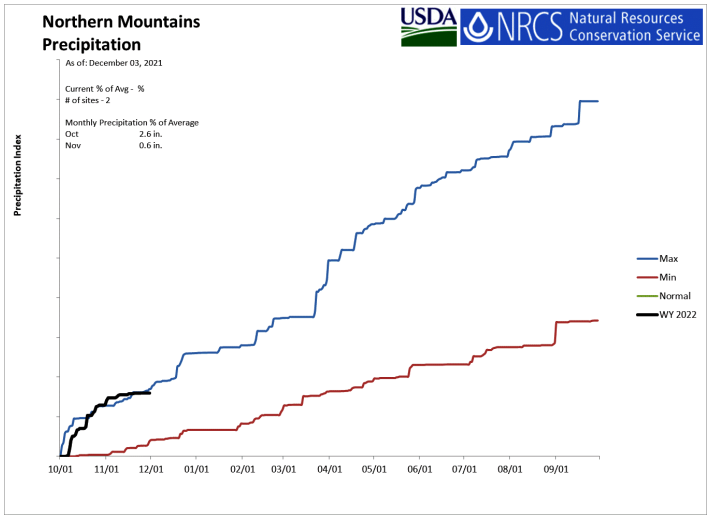


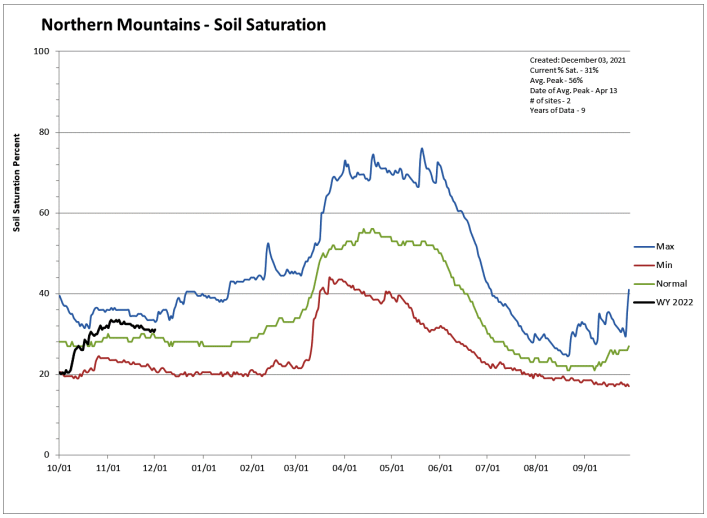


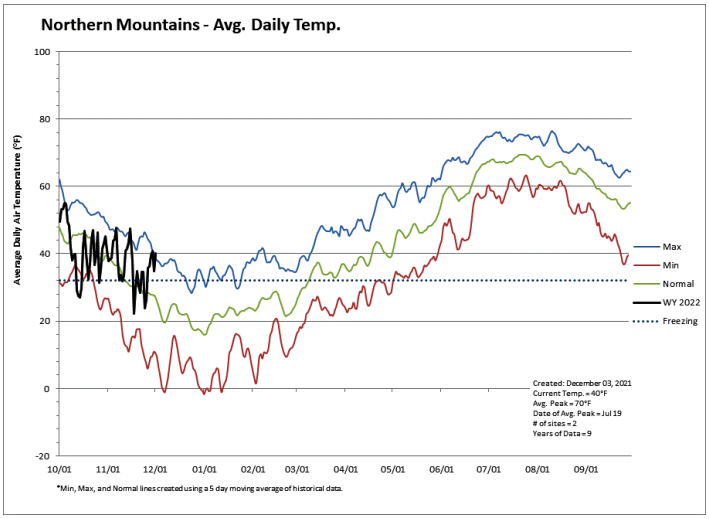
Northern Mountains

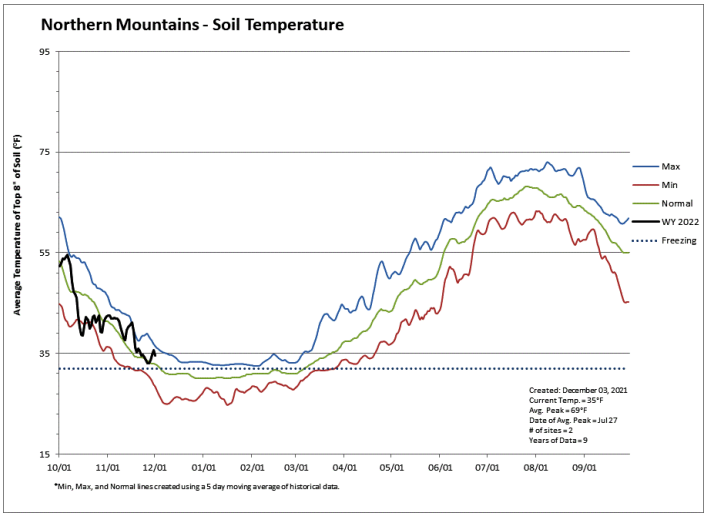
December 1, 2021

The average precipitation in November at SCAN sites within the basin was 0.6 inches, which brings the seasonal accumulation (Oct-Nov) to 3.2 inches. Soil moisture is at 31% compared to 20% last year.





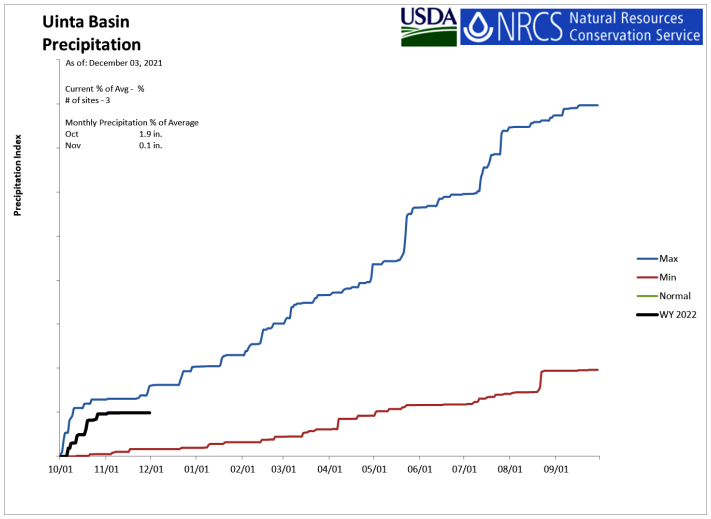


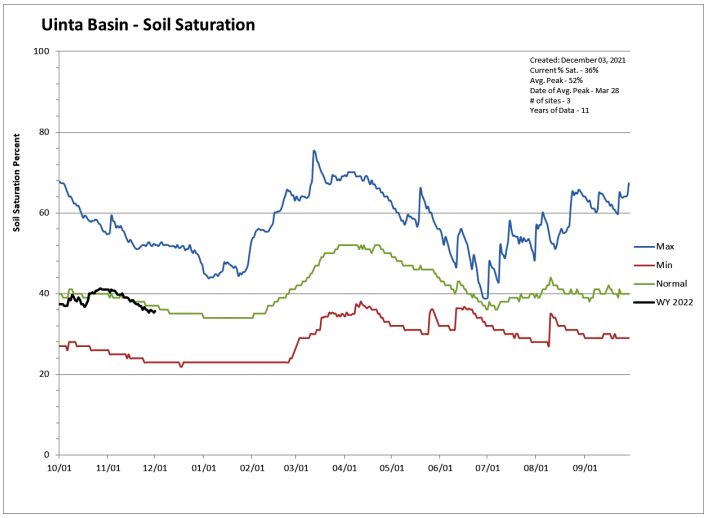


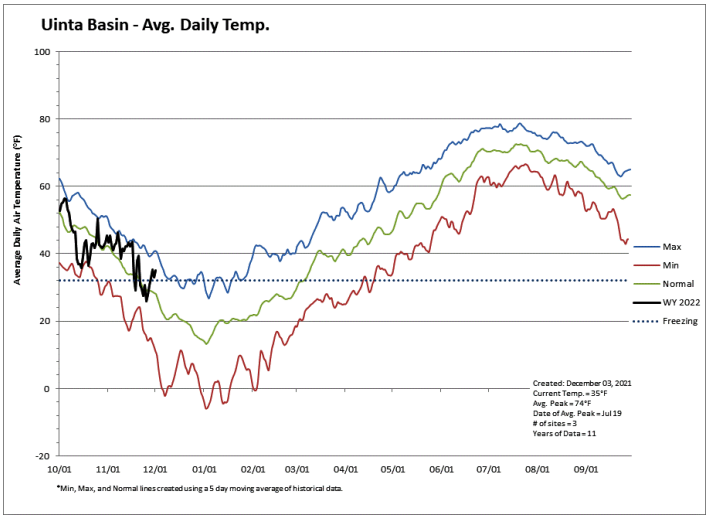
Uinta Basin

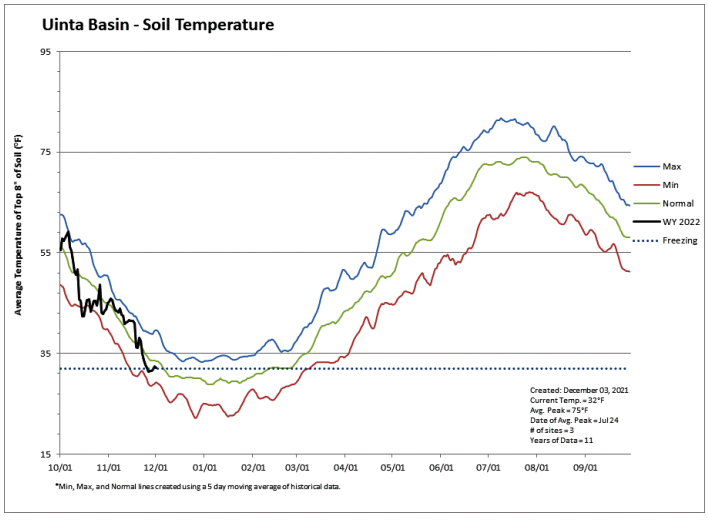
December 1, 2021

The average precipitation in November at SCAN sites within the basin was 0.1 inches, which brings the seasonal accumulation (Oct-Nov) to 2 inches. Soil moisture is at 35% compared to 27% last year.





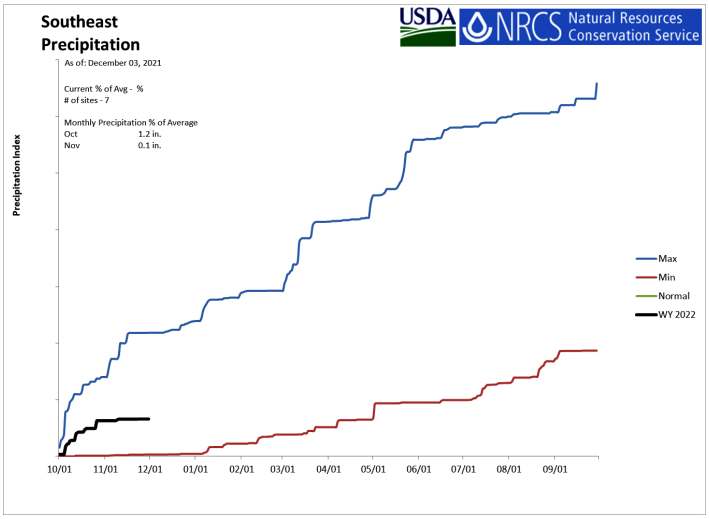


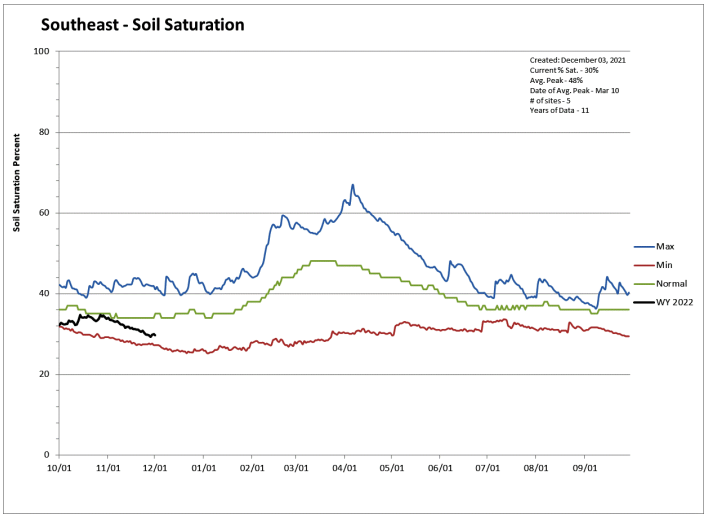


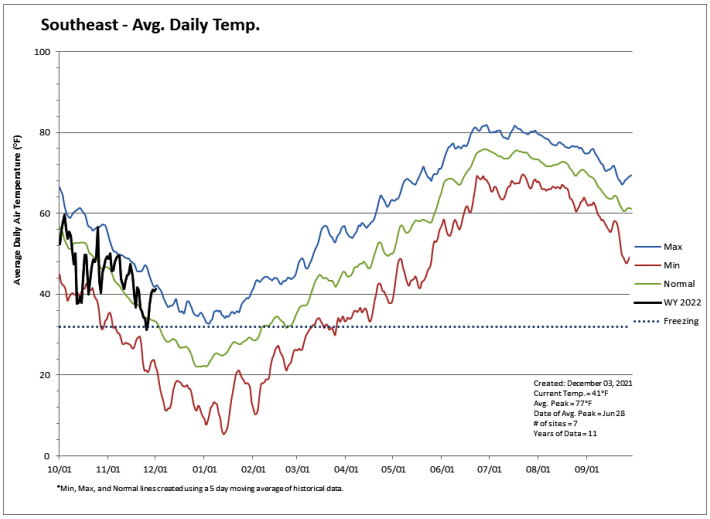
Southeast

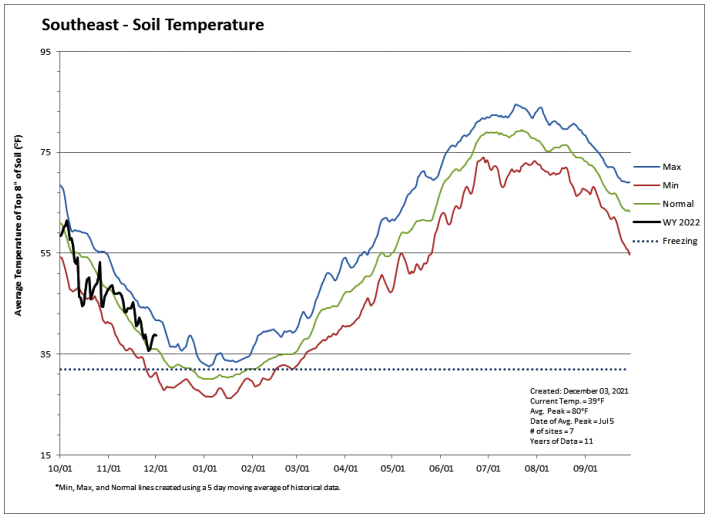
December 1, 2021

The average precipitation in November at SCAN sites within the basin was 0.1 inches, which brings the seasonal accumulation (Oct-Nov) to 1.3 inches. Soil moisture is at 30% compared to 28% last year.





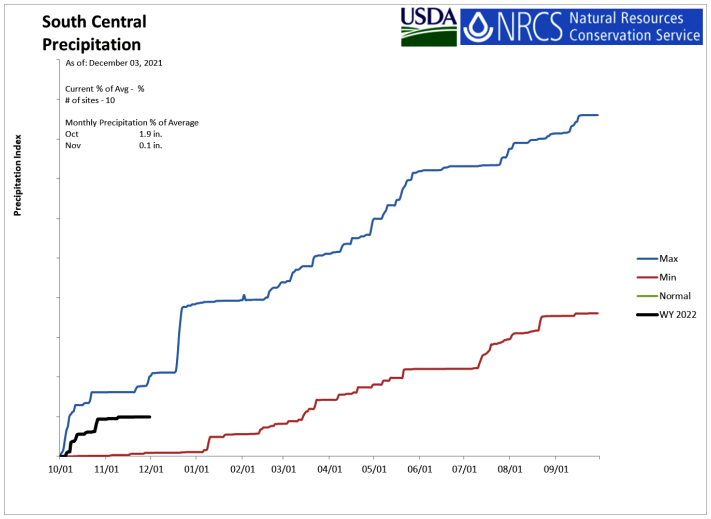


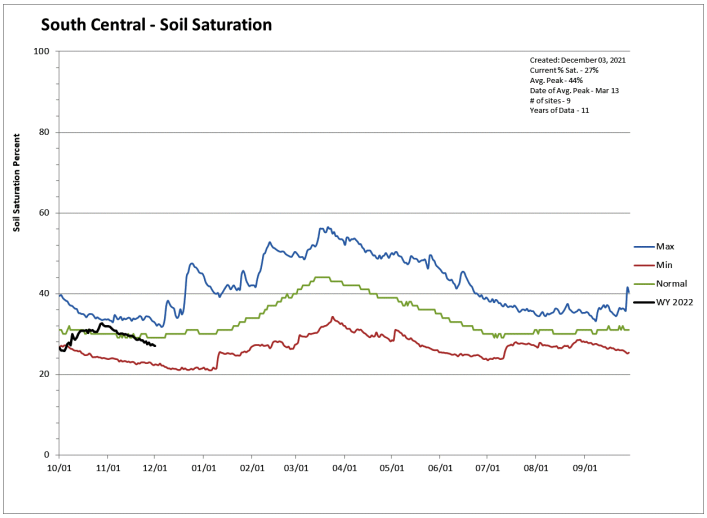


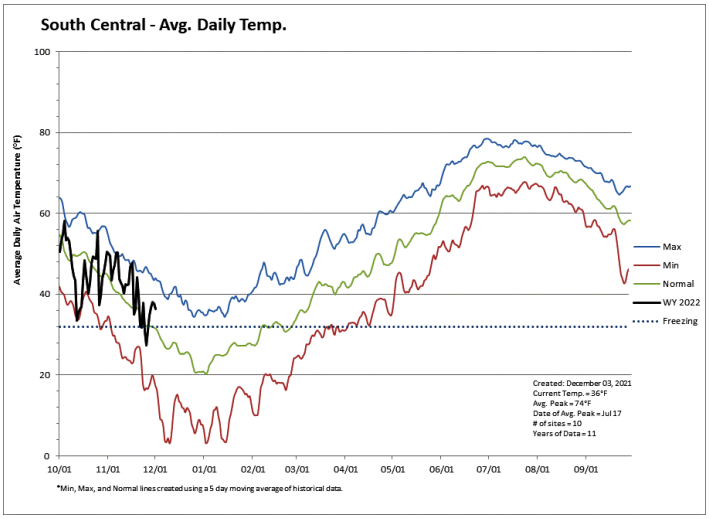
South Central

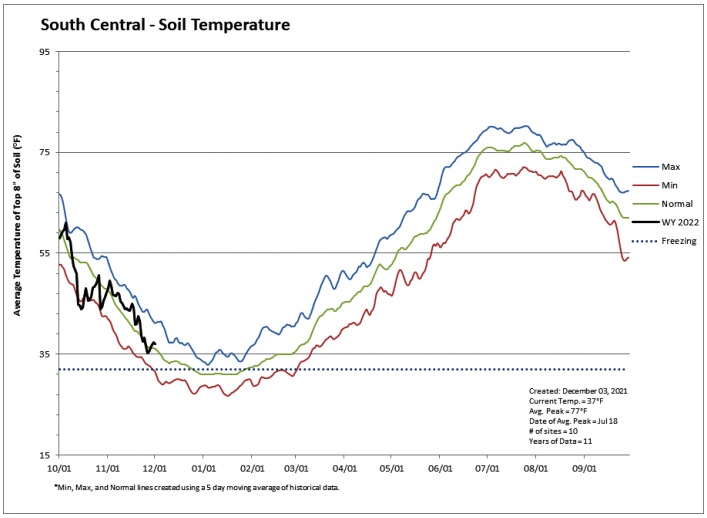
December 1, 2021

The average precipitation in November at SCAN sites within the basin was 0.1 inches, which brings the seasonal accumulation (Oct-Nov) to 2 inches. Soil moisture is at 27% compared to 22% last year.





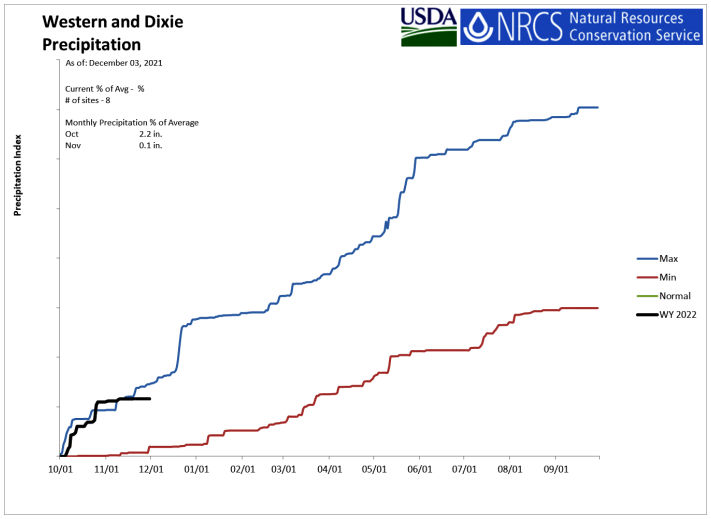


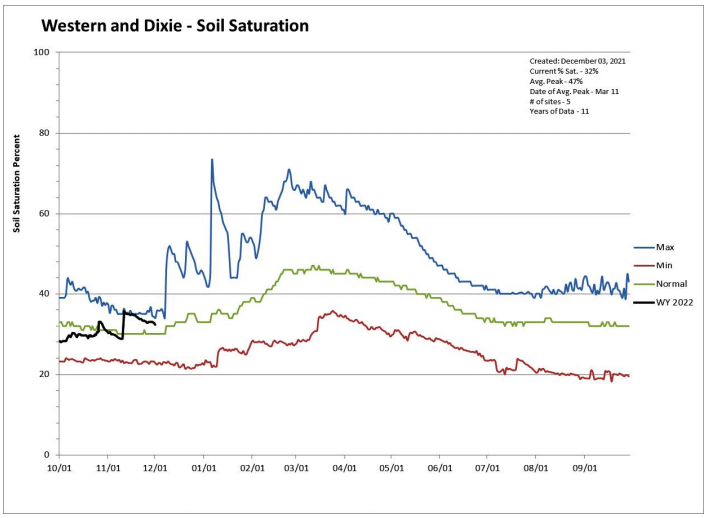


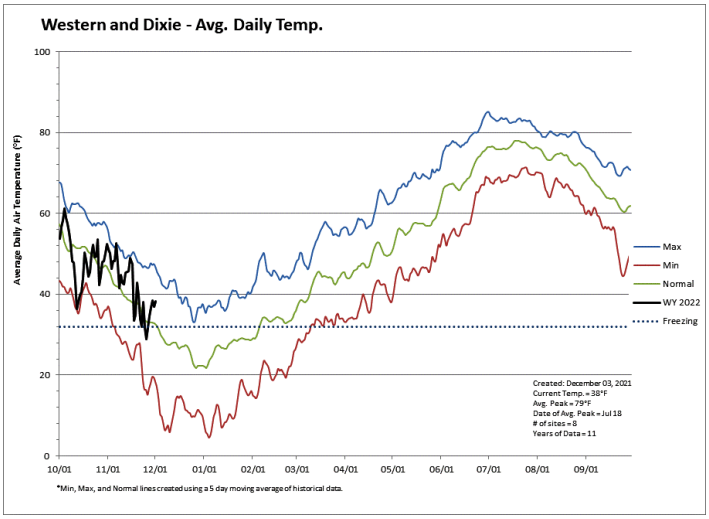
Western and Dixie

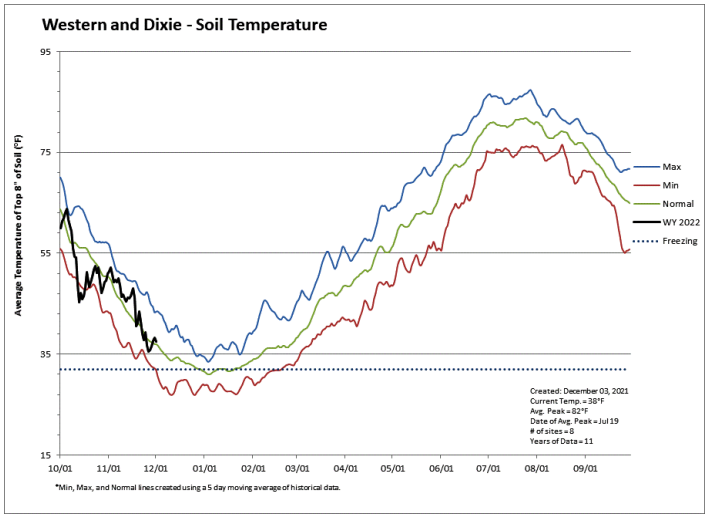
December 1, 2021

The average precipitation in November at SCAN sites within the basin was 0.1 inches, which brings the seasonal accumulation (Oct-Nov) to 2.3 inches. Soil moisture is at 26% compared to 17% last year.

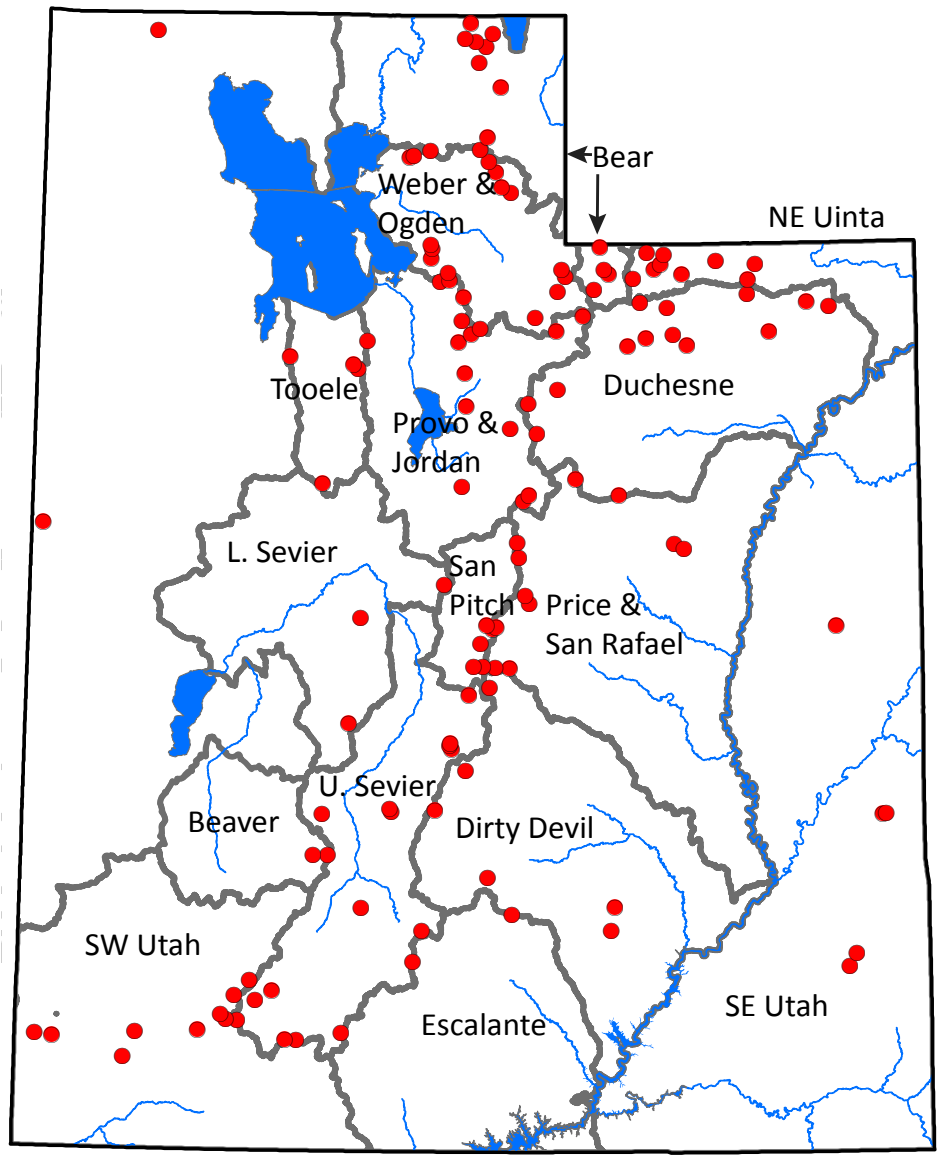








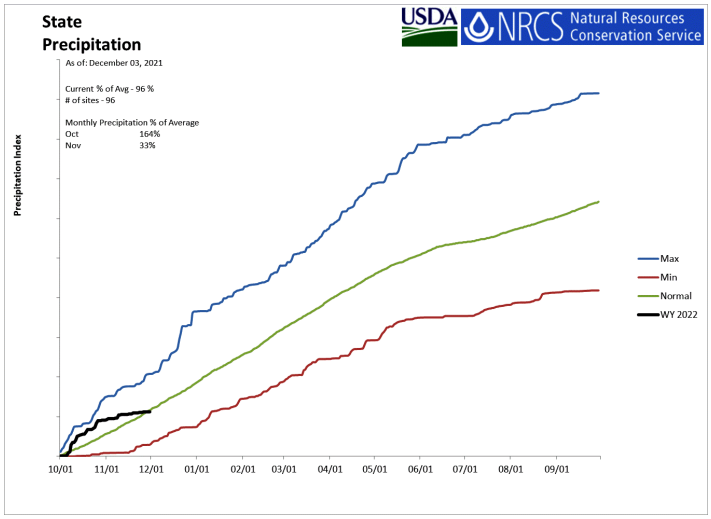
SNOTEL portion of report

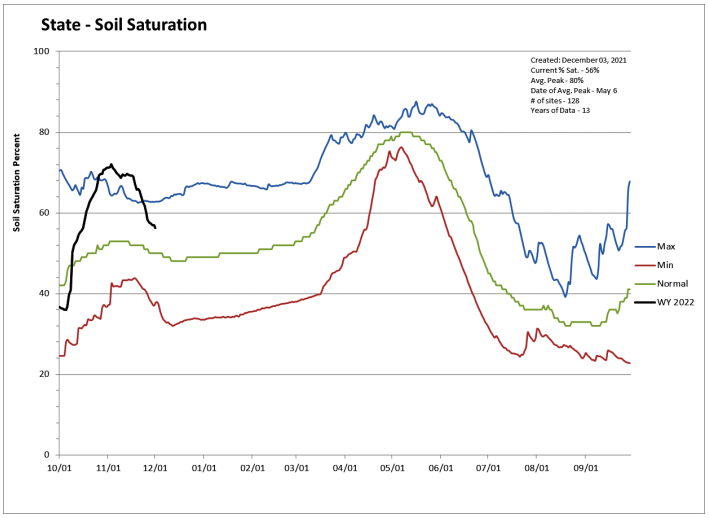


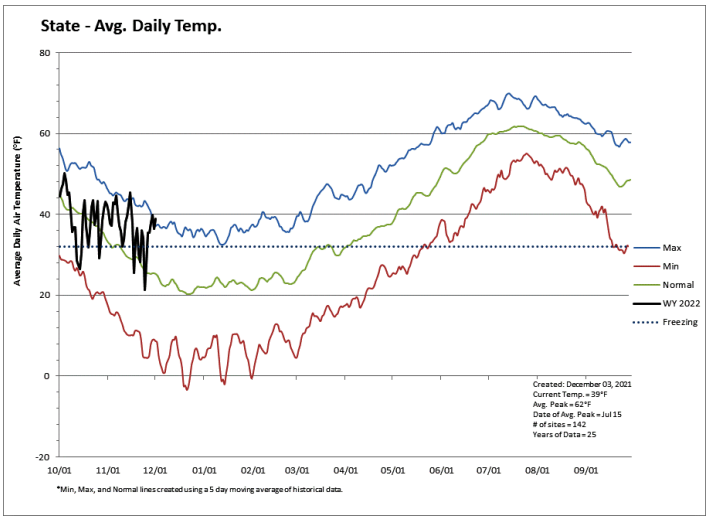
Statewide SNOTEL

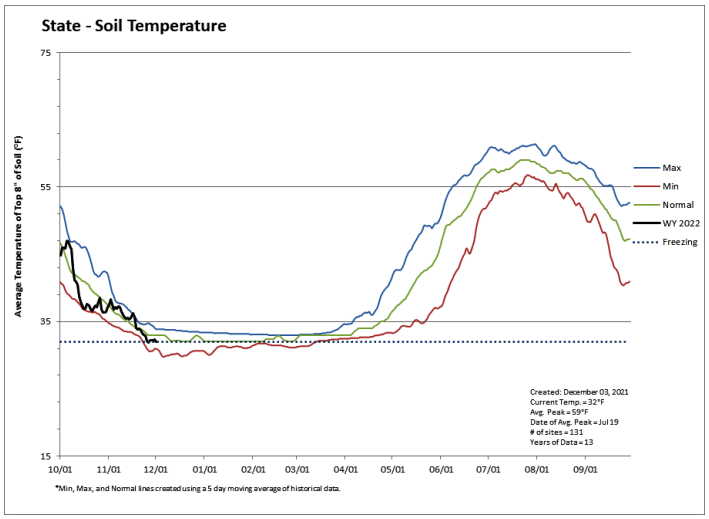
December 1, 2021

Precipitation at SNOTEL sites during November was much below average at 38%, which brings the seasonal accumulation (Oct-Nov) to 111% of average. Soil moisture is at 56% compared to 26% last year. Reservoir storage is at 49% of capacity, compared to 62% last year.





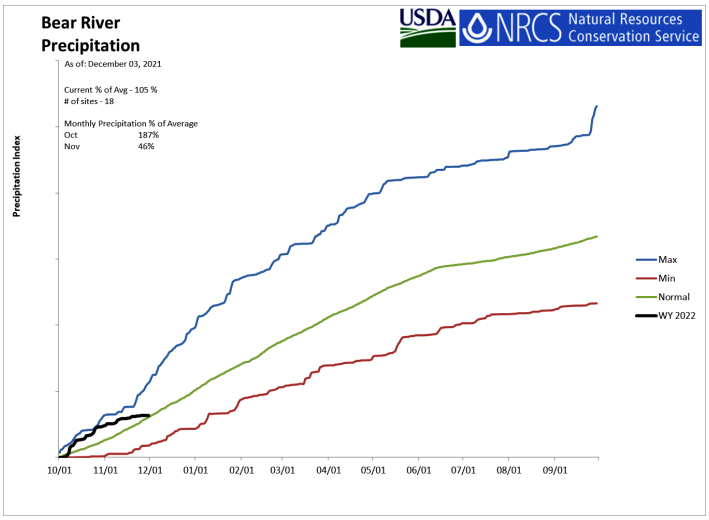


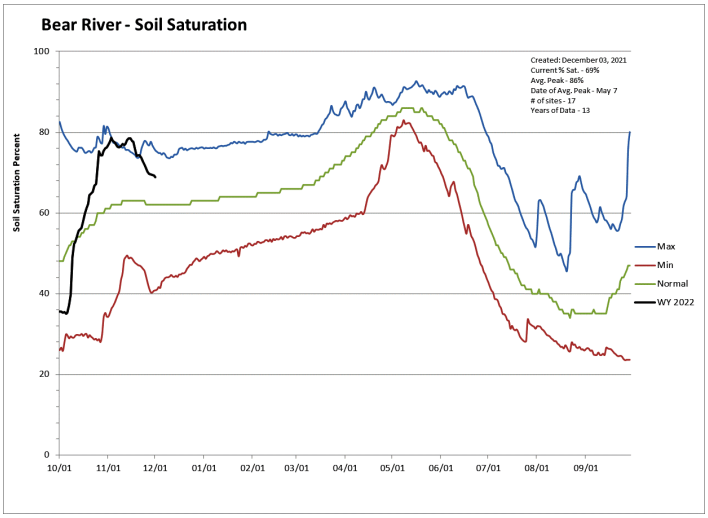


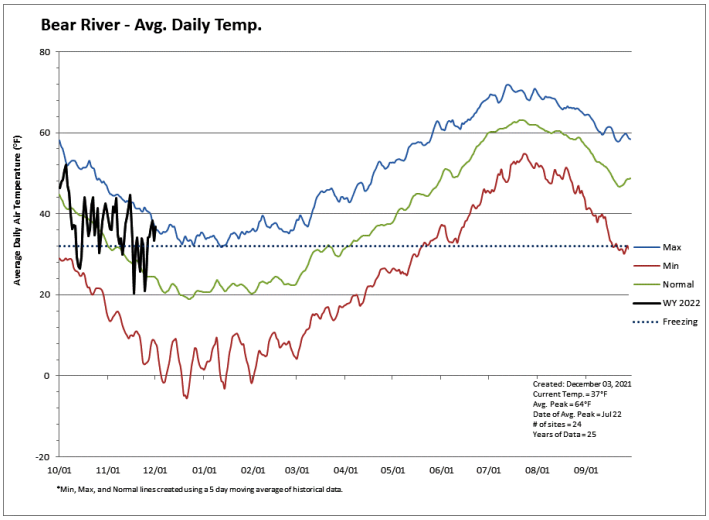
Bear River Basin

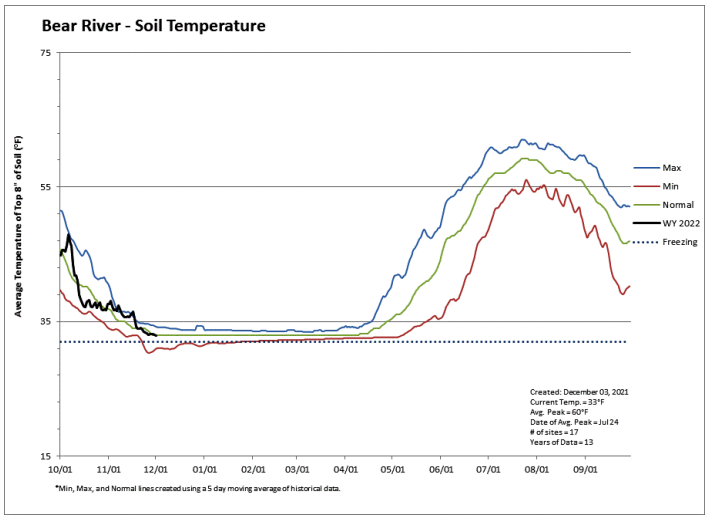
December 1, 2021

Precipitation in November was much below average at 54%, which brings the seasonal accumulation (Oct-Nov) to 118% of average. Soil moisture is at 69% compared to 40% last year. Reservoir storage is at 40% of capacity, compared to 60% last year. The water availability index for the Bear River is 45%, 31% for Woodruff Narrows and 10% for the Little Bear.









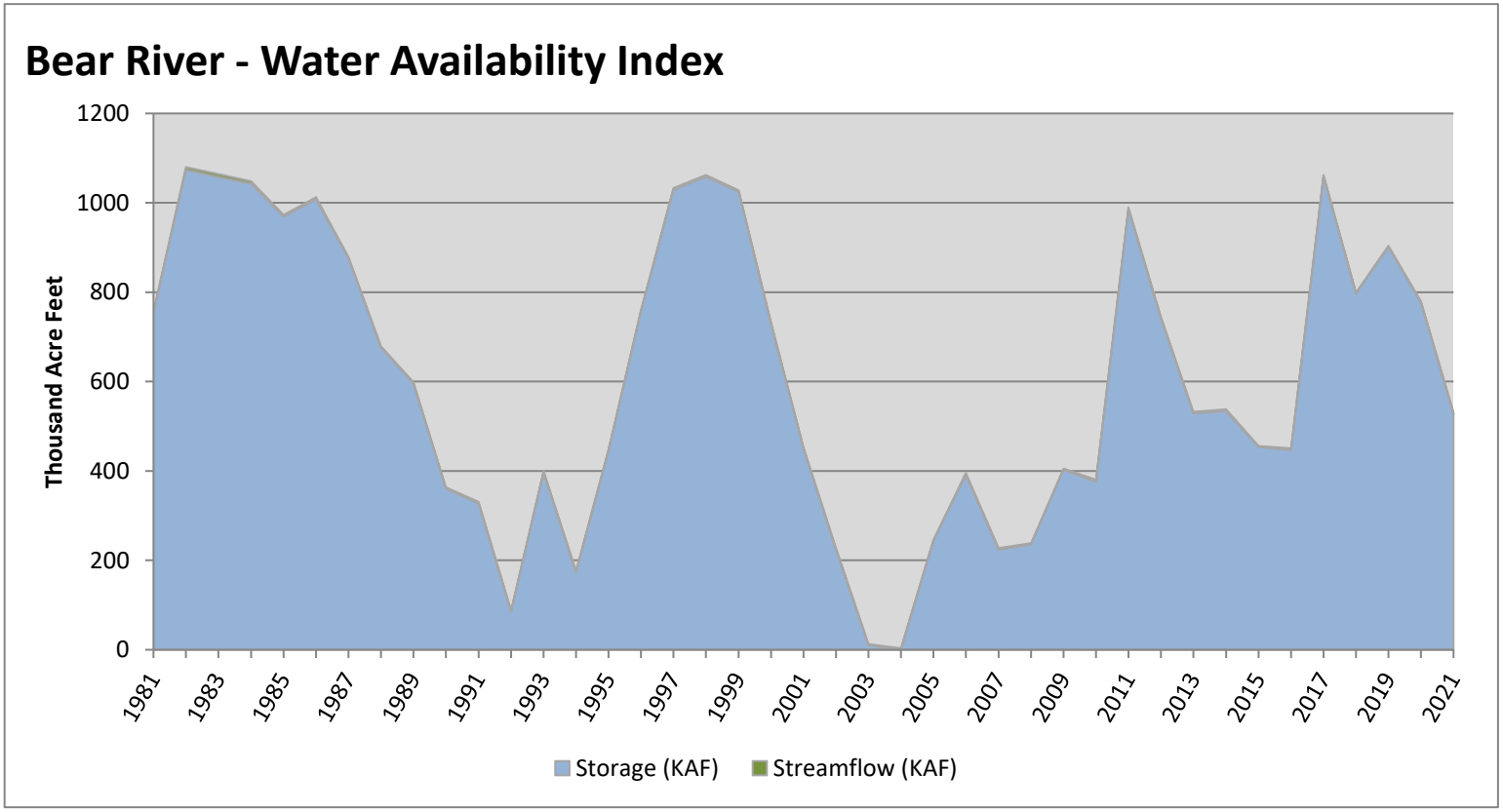
SNOTEL Data

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Bear River	**526.99**	**4.23**	**531.22**	**45**	**-0.4**	**01, 15, 13, 14**

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

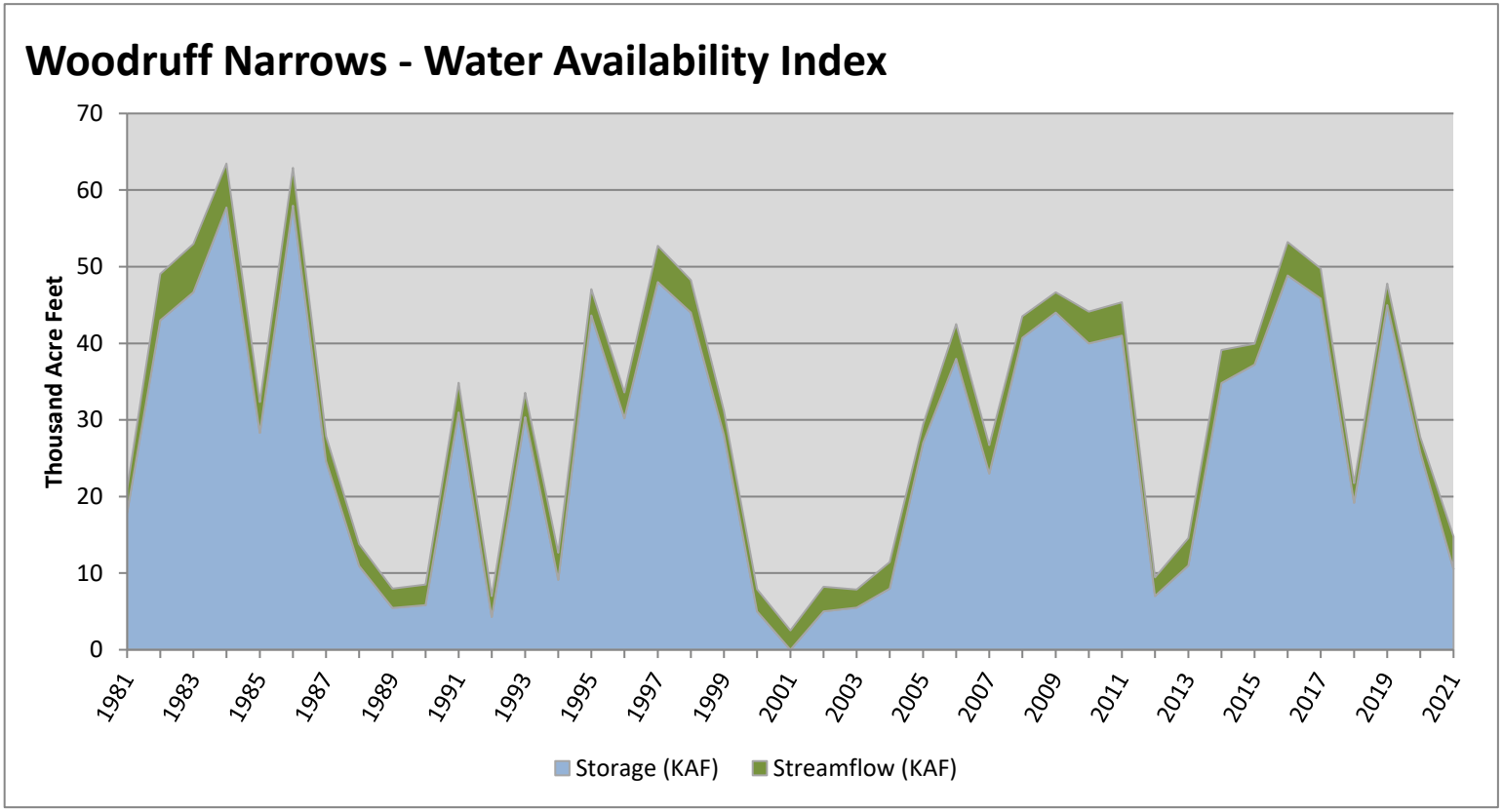


December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Woodruff Narrows	**10.53**	**4.23**	**14.76**	**31**	**-1.59**	**88, 13, 81, 18**

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

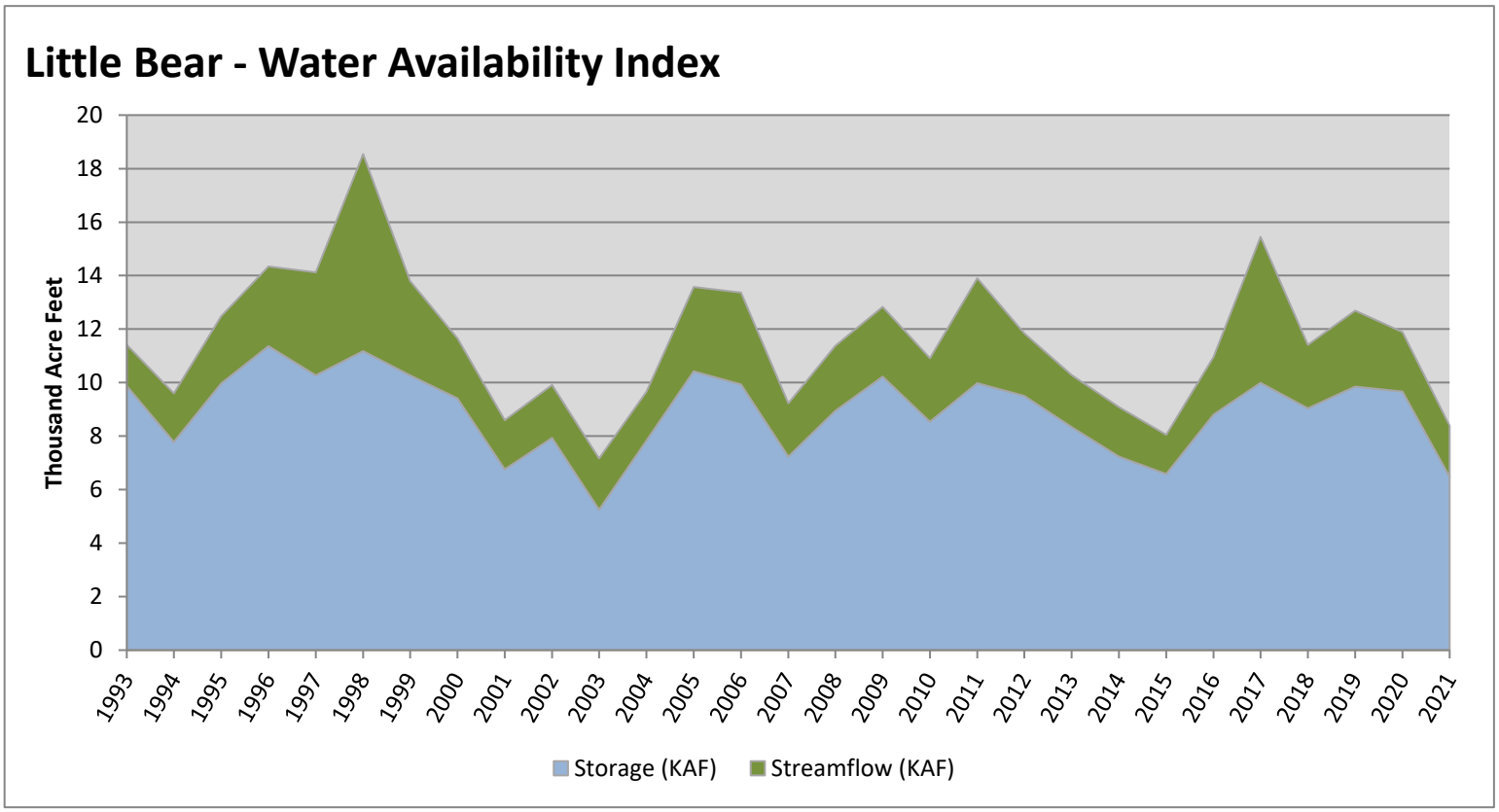


December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Little Bear	**6.48**	**1.91**	**8.39**	**10**	**-3.33**	**03, 15, 01, 14**

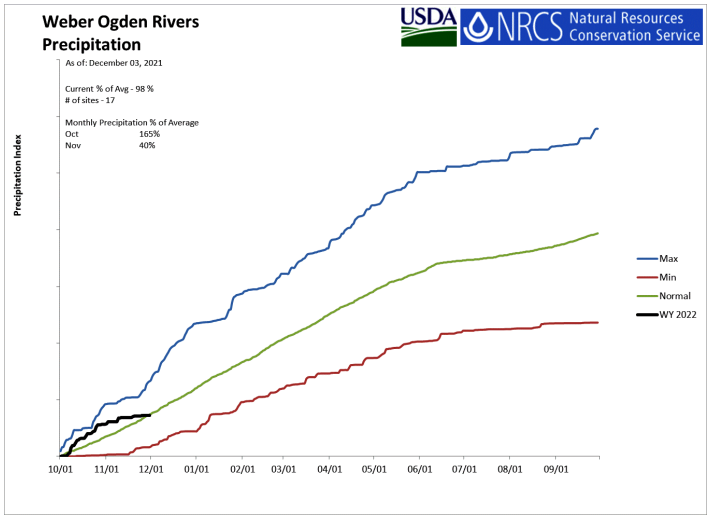
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

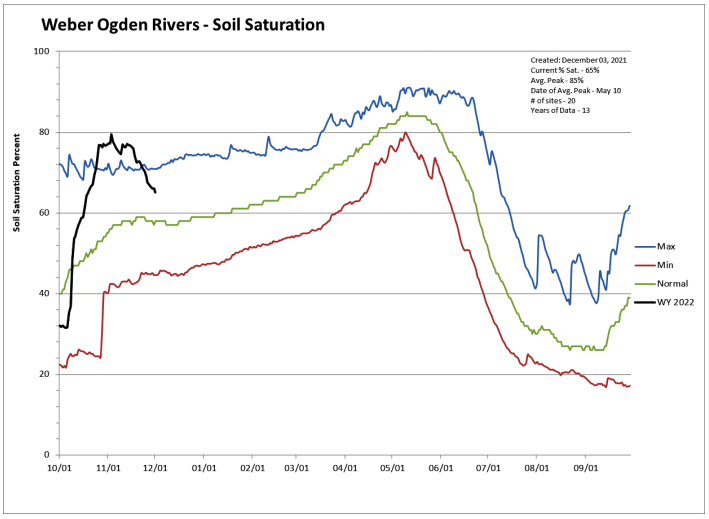


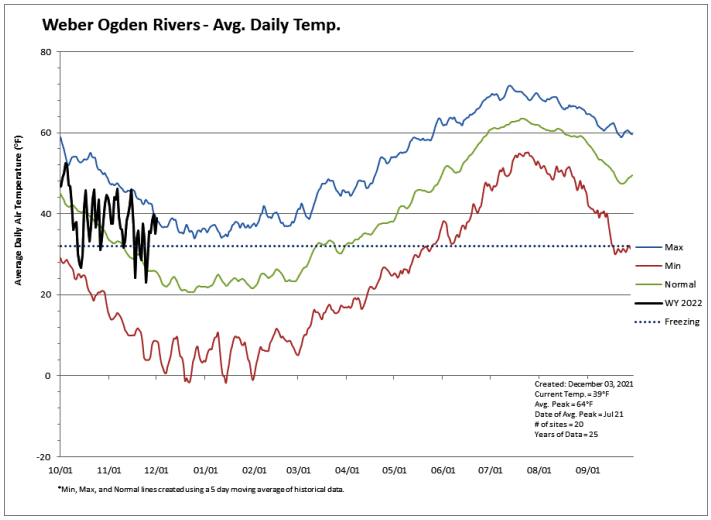
Weber & Ogden River Basins

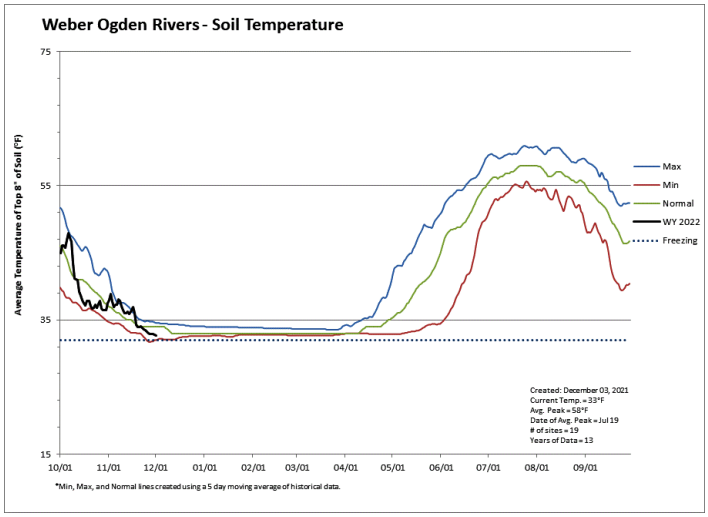
December 1, 2021

Precipitation in November was much below average at 48%, which brings the seasonal accumulation (Oct-Nov) to 118% of average. Soil moisture is at 65% compared to 31% last year. Reservoir storage is at 31% of capacity, compared to 43% last year. The water availability index for the Ogden River is 7% and 19% for the Weber River.









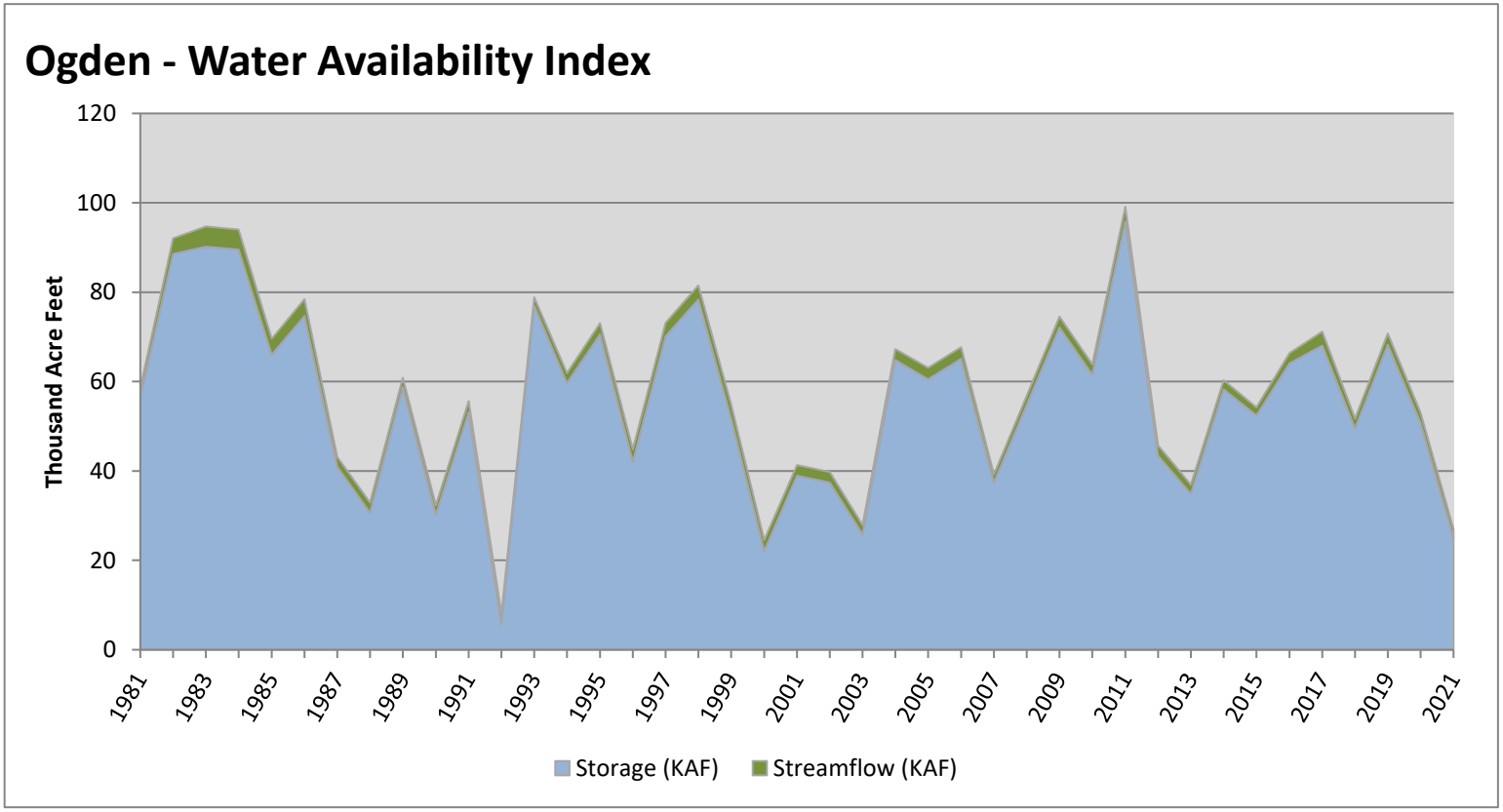
SNOTEL Data

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Ogden	**25.04**	**1.96**	**27.00**	**7**	**-3.57**	**92, 00, 03, 90**

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

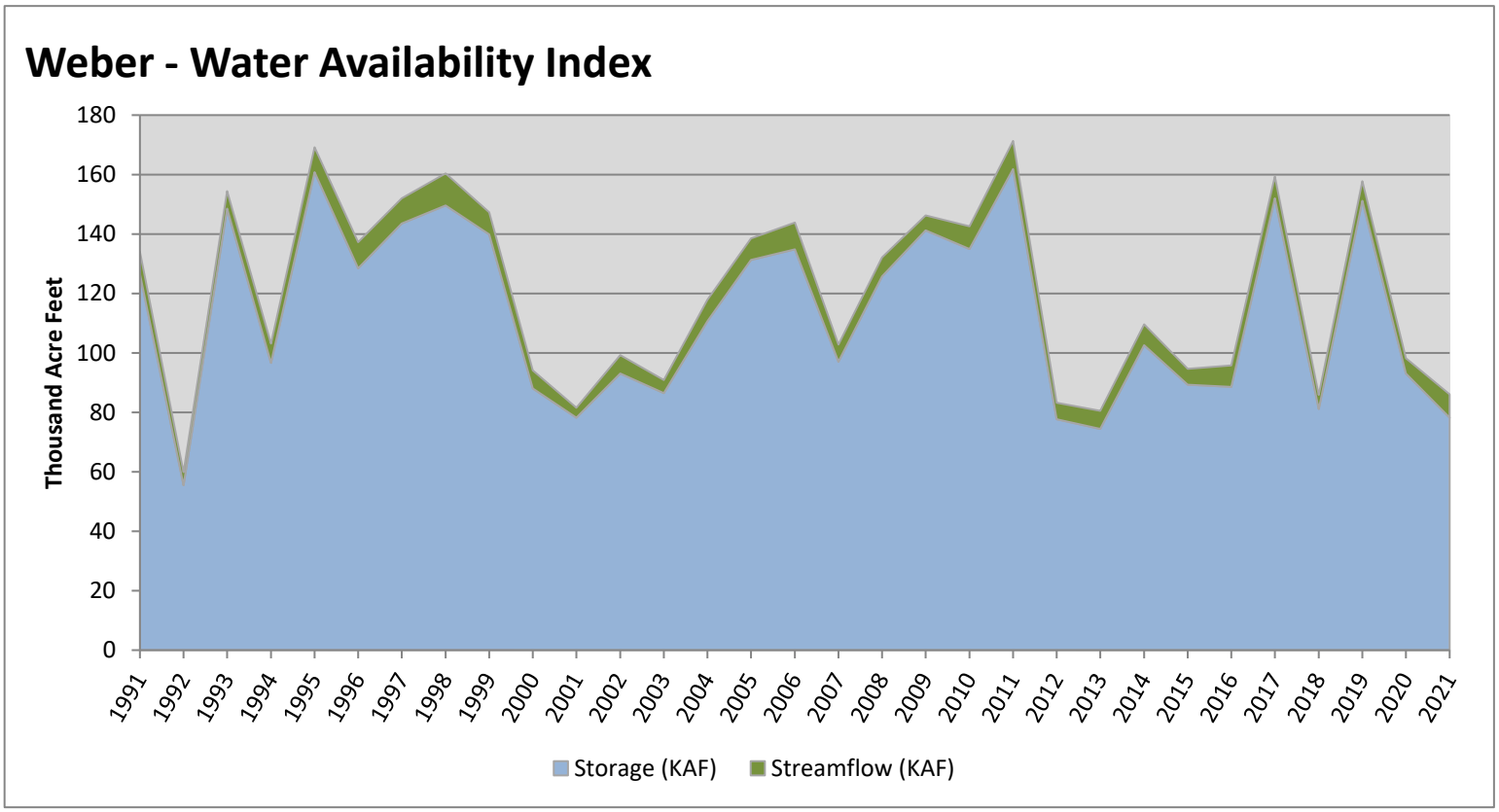


December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Weber	**78.20**	**7.87**	**86.07**	**19**	**-2.6**	**12, 18, 03, 00**

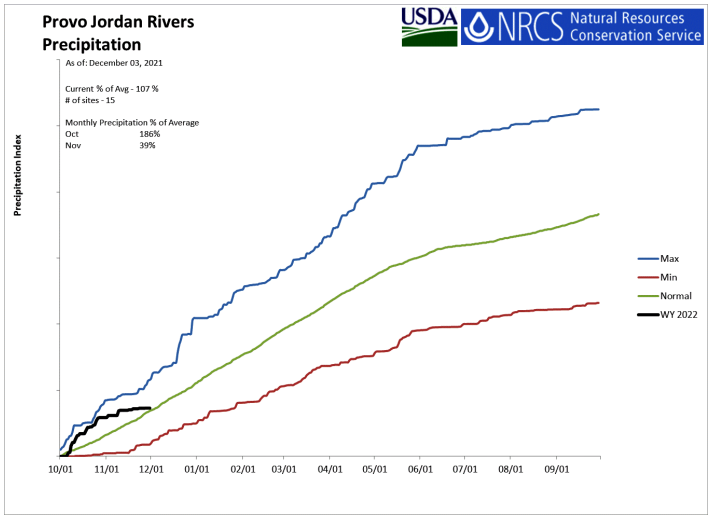
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

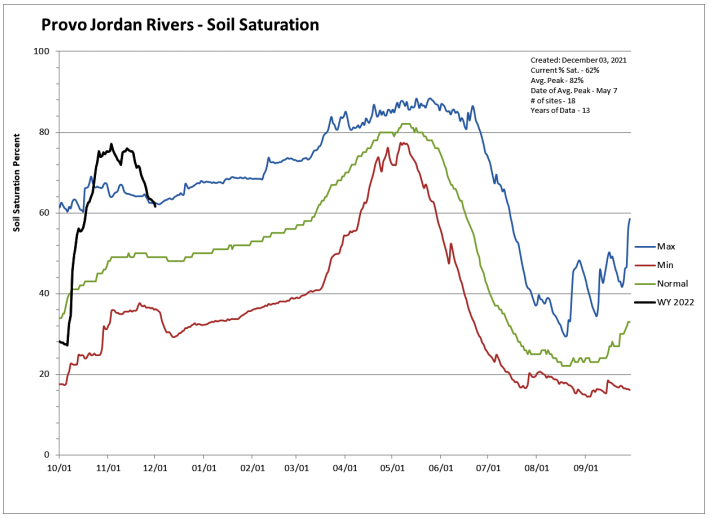


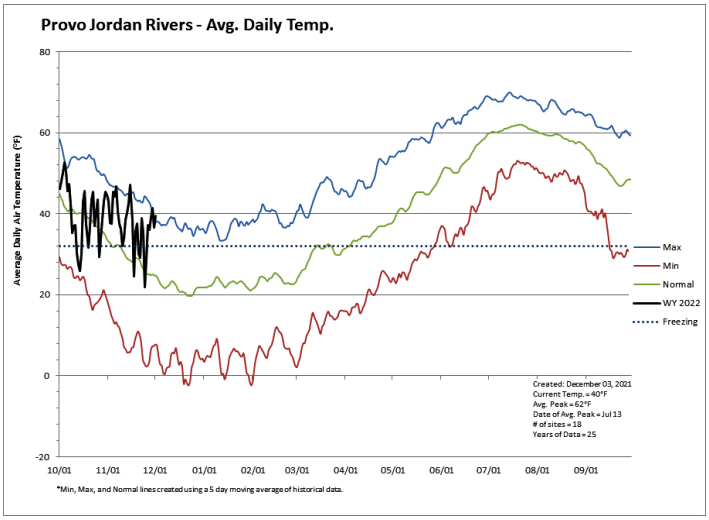
Provo & Jordan River Basins

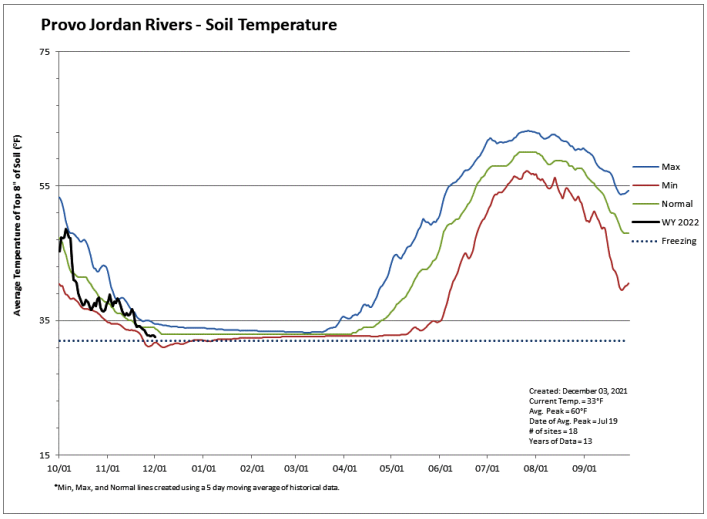
December 1, 2021

Precipitation in November was much below average at 43%, which brings the seasonal accumulation (Oct-Nov) to 122% of average. Soil moisture is at 62% compared to 21% last year. Reservoir storage is at 63% of capacity, compared to 73% last year. The water availability index for the Provo River is 7%.









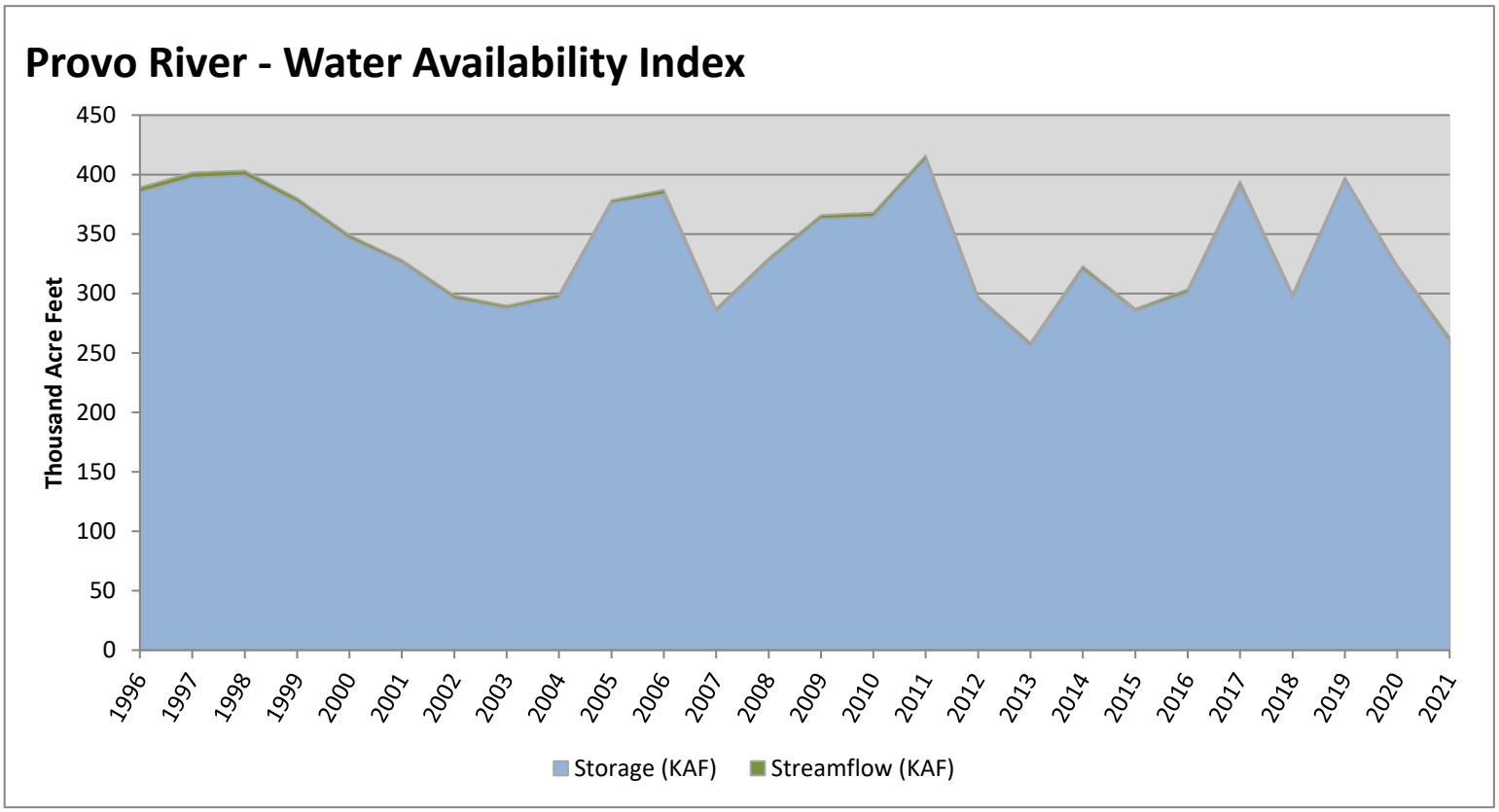
SNOTEL Data

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Provo River	**259.44**	**3.71**	**263.15**	**7**	**-3.55**	**13, 15, 07, 03**

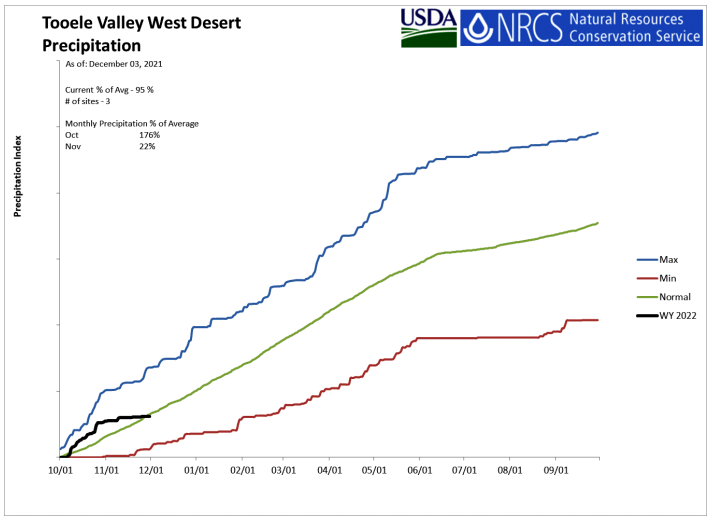
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

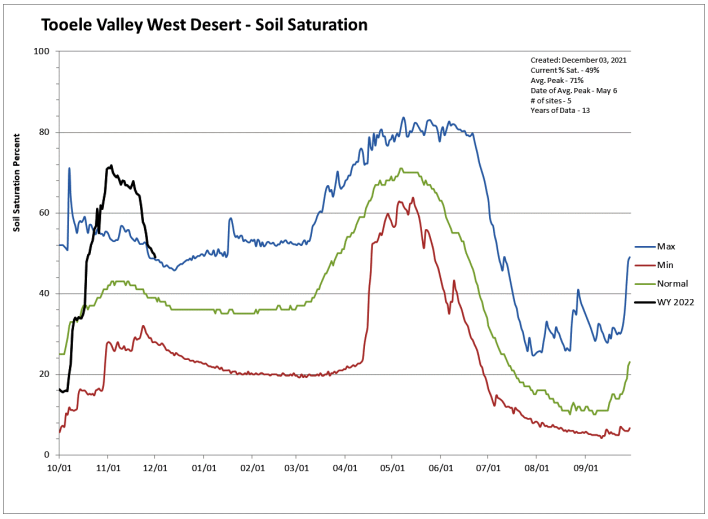


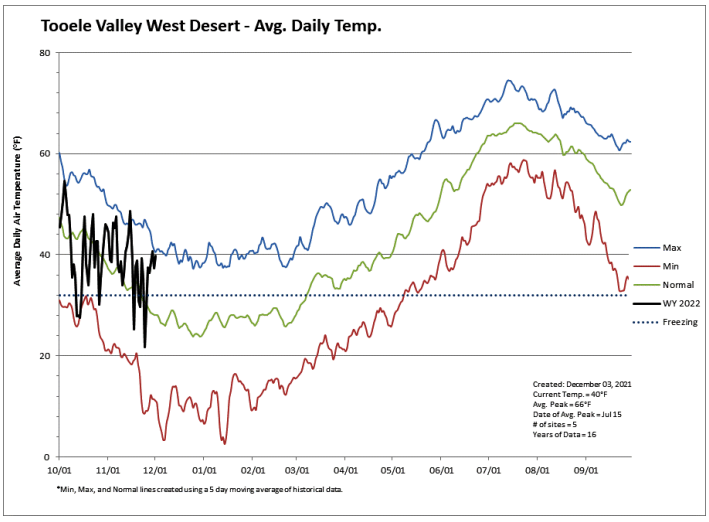
Tooele Valley & West Desert Basins

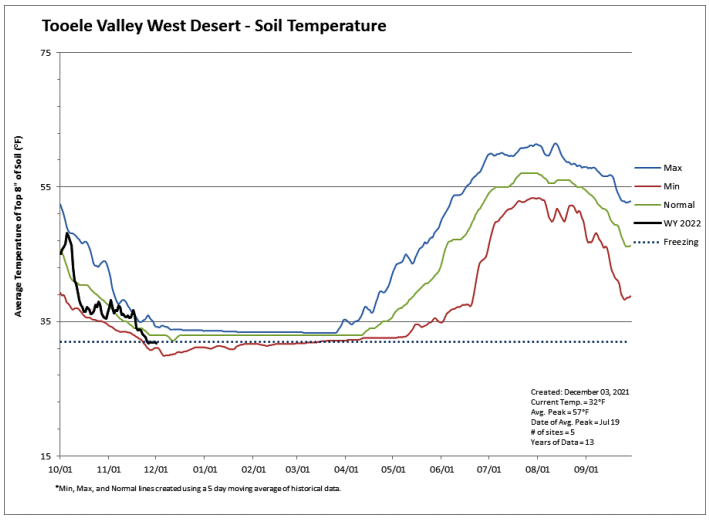
December 1, 2021

Precipitation in November was much below average at 24%, which brings the seasonal accumulation (Oct-Nov) to 108% of average. Soil moisture is at 41% compared to 13% last year. Reservoir storage is at 43% of capacity, compared to 37% last year.







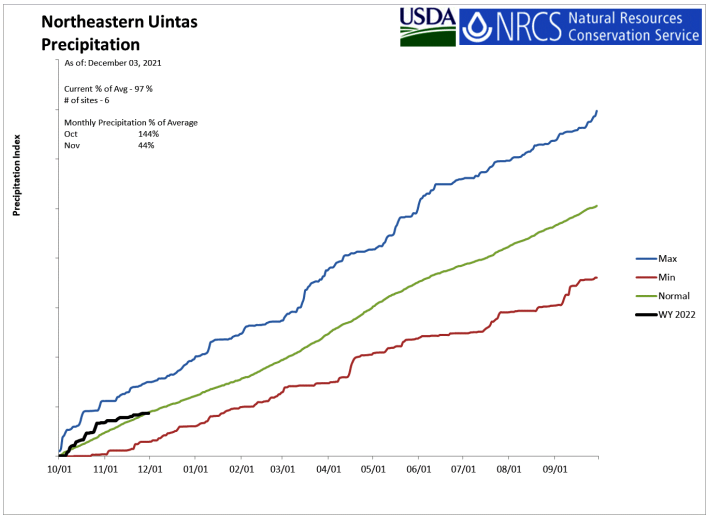


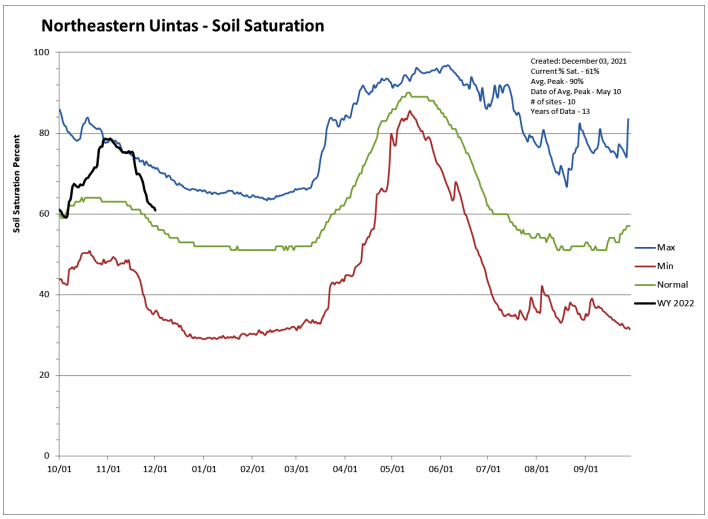
SNOTEL Data

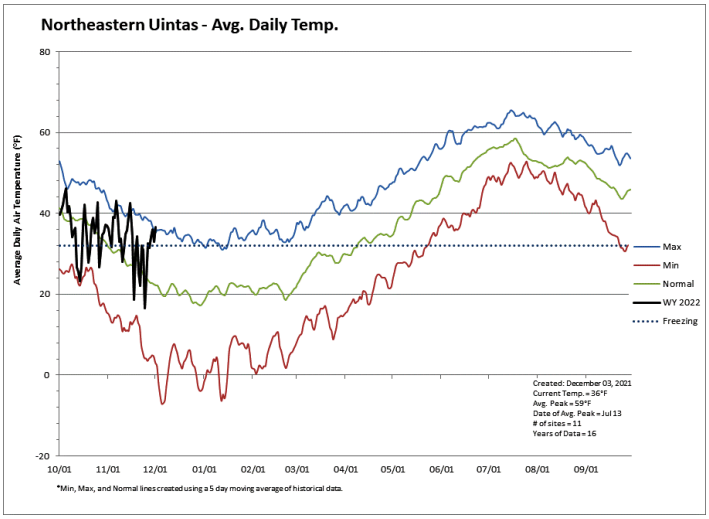
Northeastern Uinta Basin

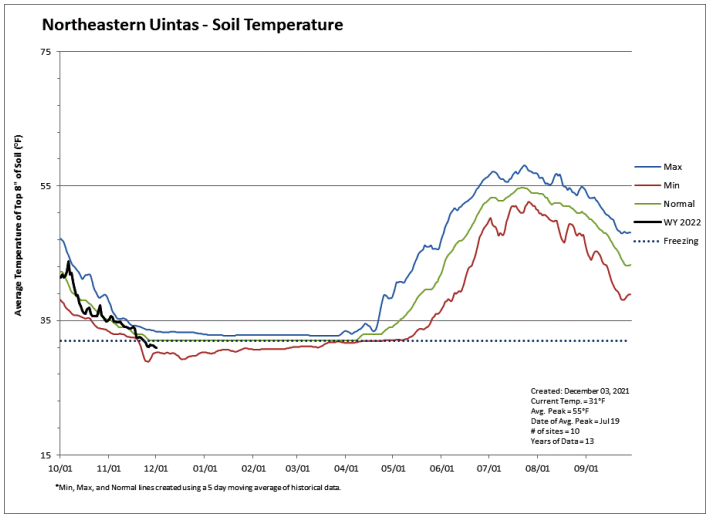
December 1, 2021

Precipitation in November was much below average at 43%, which brings the seasonal accumulation (Oct-Nov) to 100% of average. Soil moisture is at 57% compared to 30% last year. Reservoir storage is at 78% of capacity, compared to 84% last year. The water availability index for Blacks Fork is 59% and 45% for Smiths Creek.









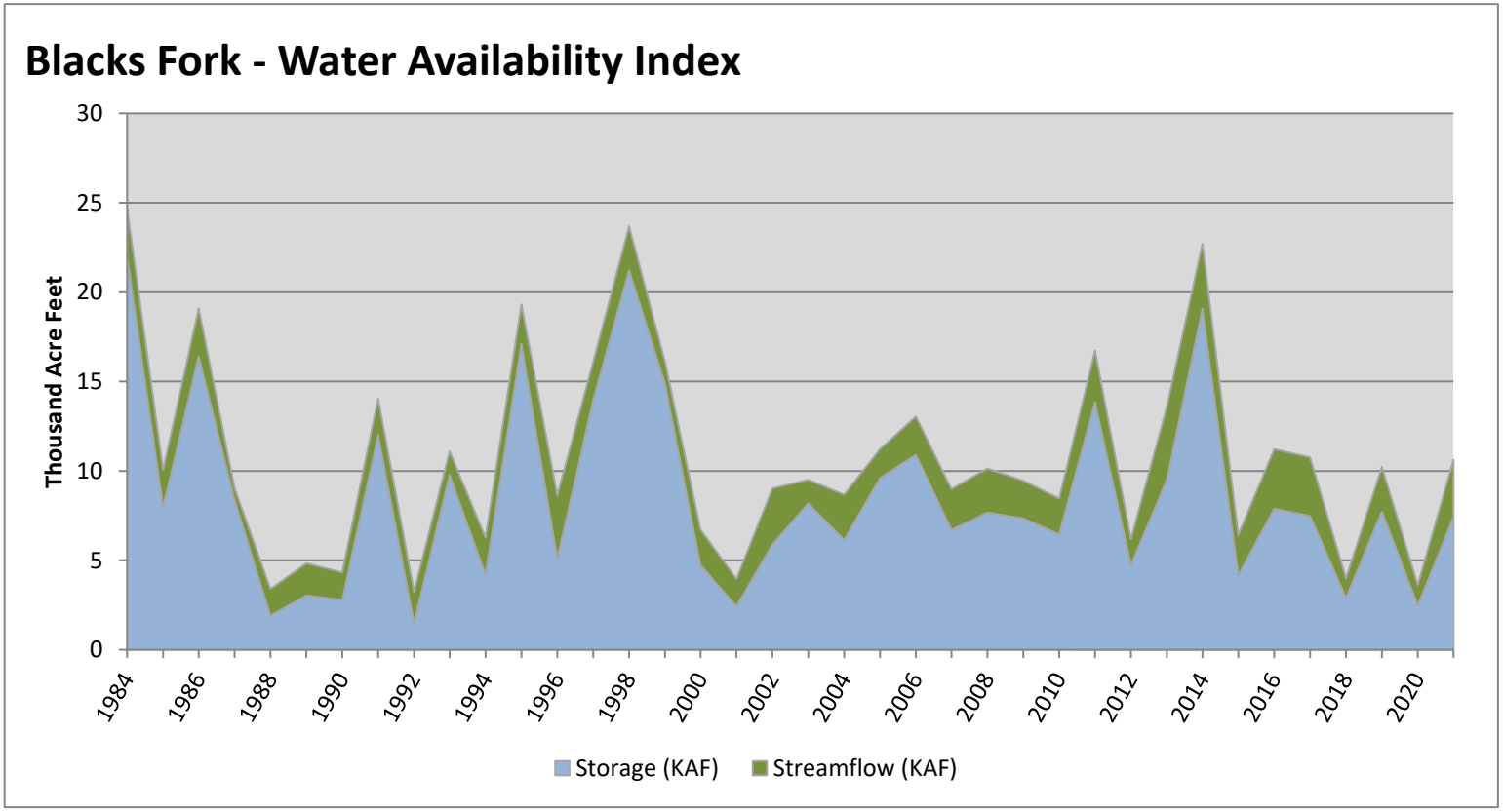
SNOTEL Data

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Blacks Fork	**7.44**	**3.19**	**10.63**	**59**	**0.75**	**08, 19, 17, 93**

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

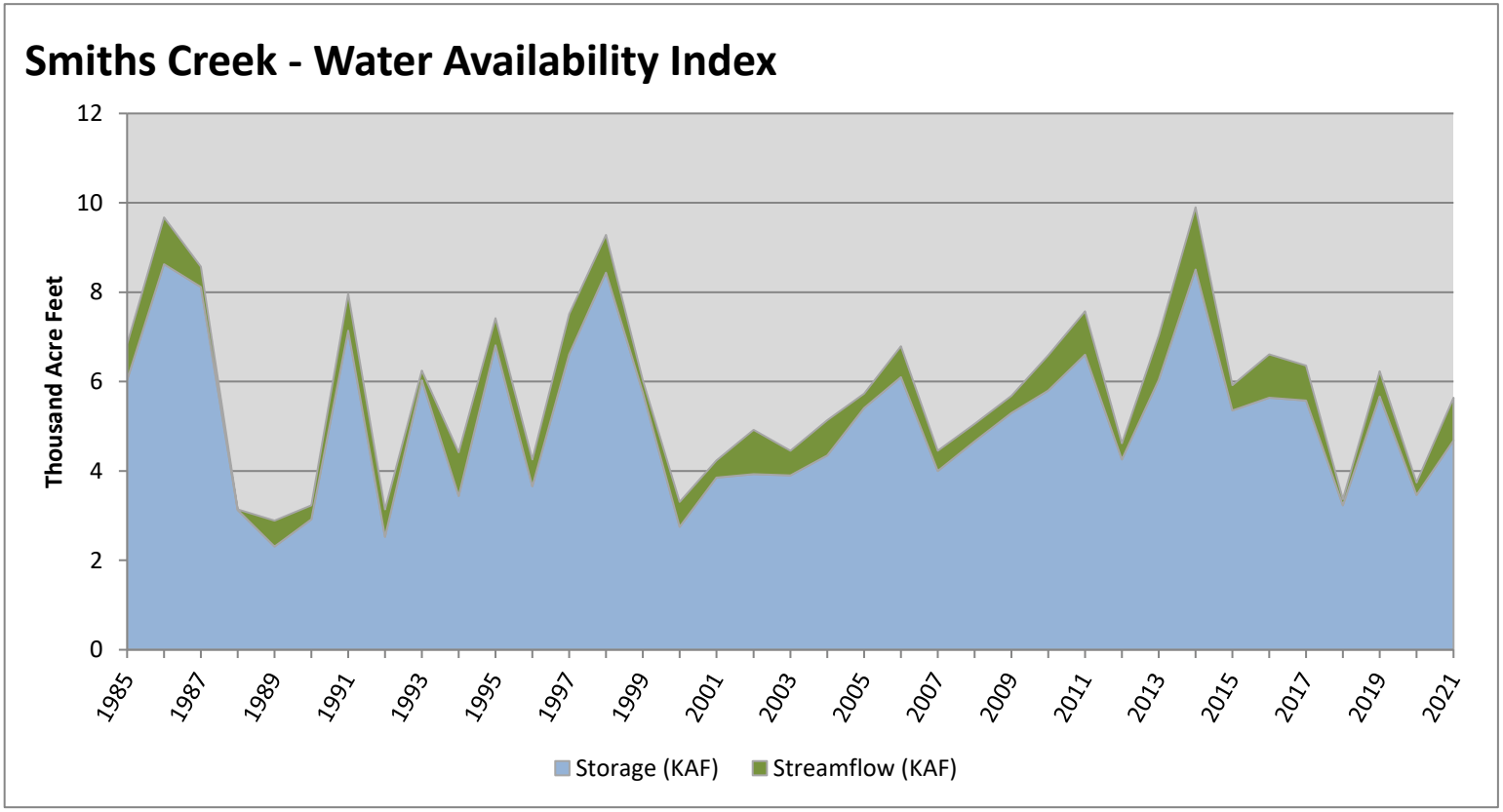


December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Smiths Creek	**4.68**	**0.96**	**5.64**	**45**	**-0.44**	**08, 04, 09, 05**

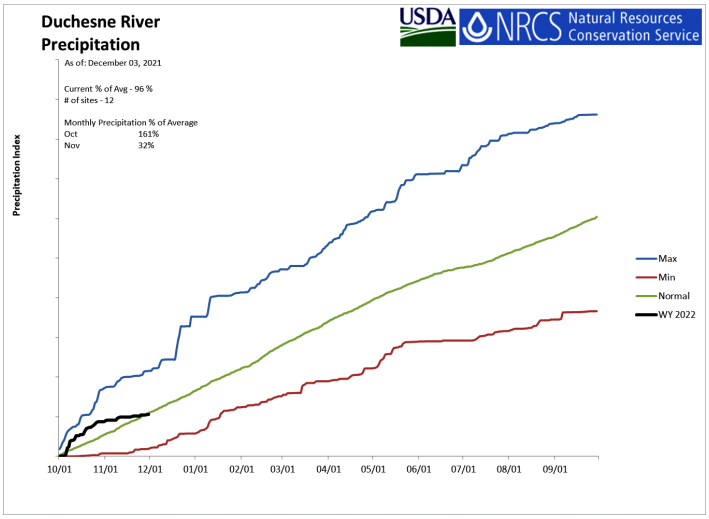
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

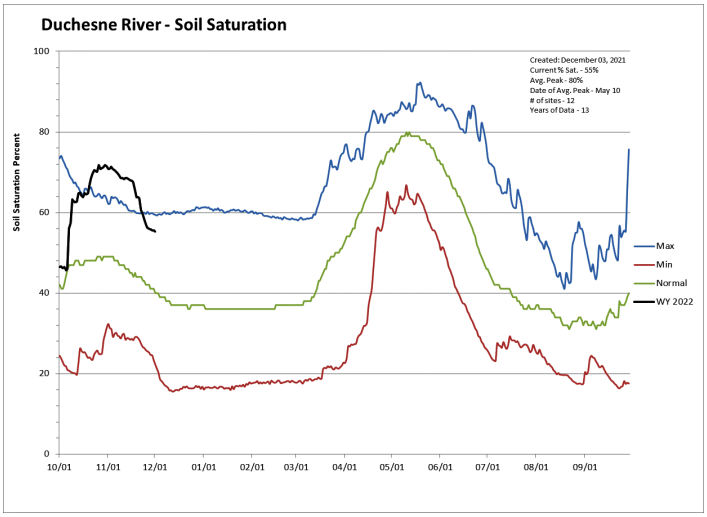


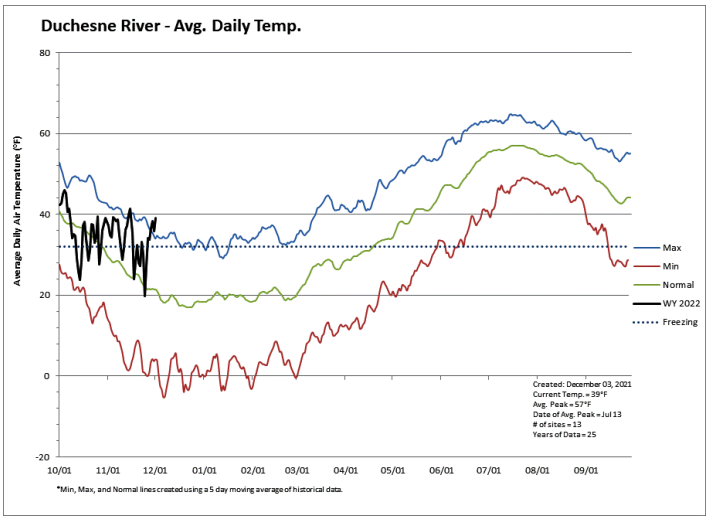
Duchesne River Basin

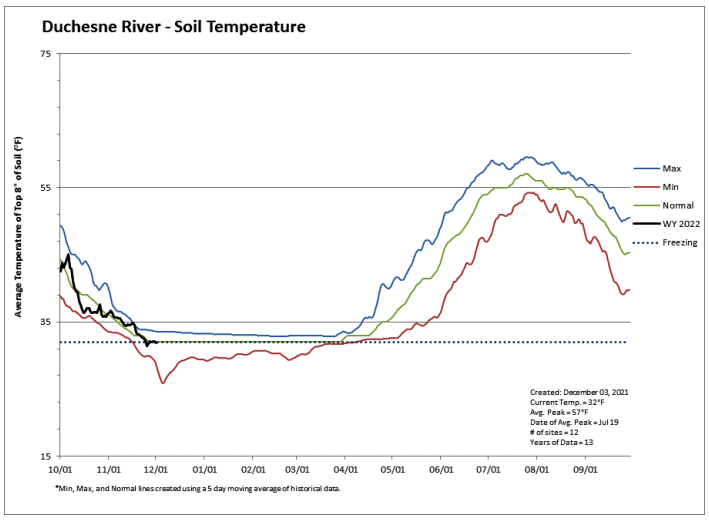
December 1, 2021

Precipitation in November was much below average at 37%, which brings the seasonal accumulation (Oct-Nov) to 116% of average. Soil moisture is at 55% compared to 16% last year. Reservoir storage is at 71% of capacity, compared to 78% last year. The water availability index for the Western Uintas is 60% and 10% for the Eastern Uintas.









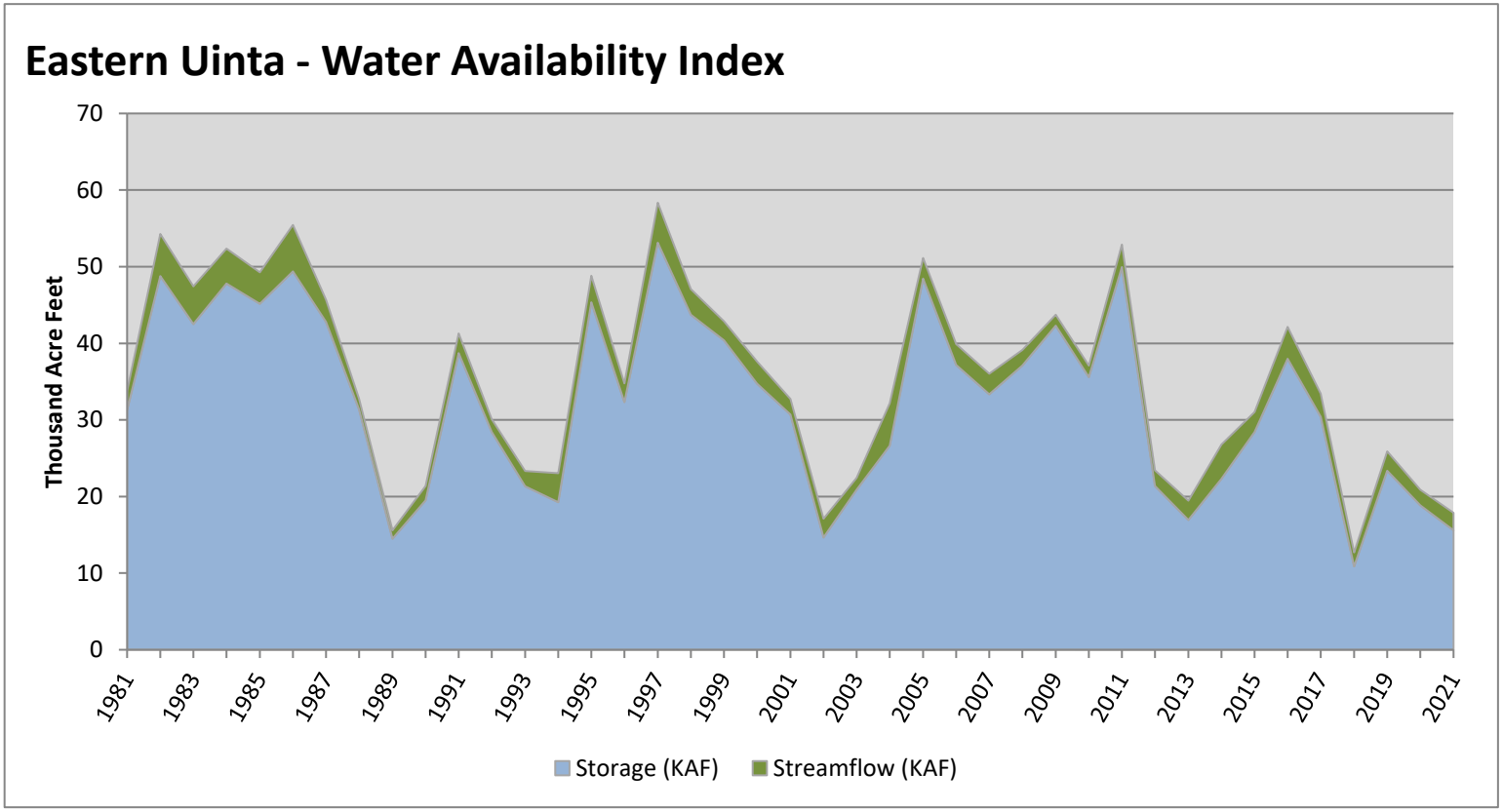
SNOTEL Data

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Eastern Uinta	**15.59**	**2.27**	**17.86**	**10**	**-3.37**	**89, 02, 13, 20**

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

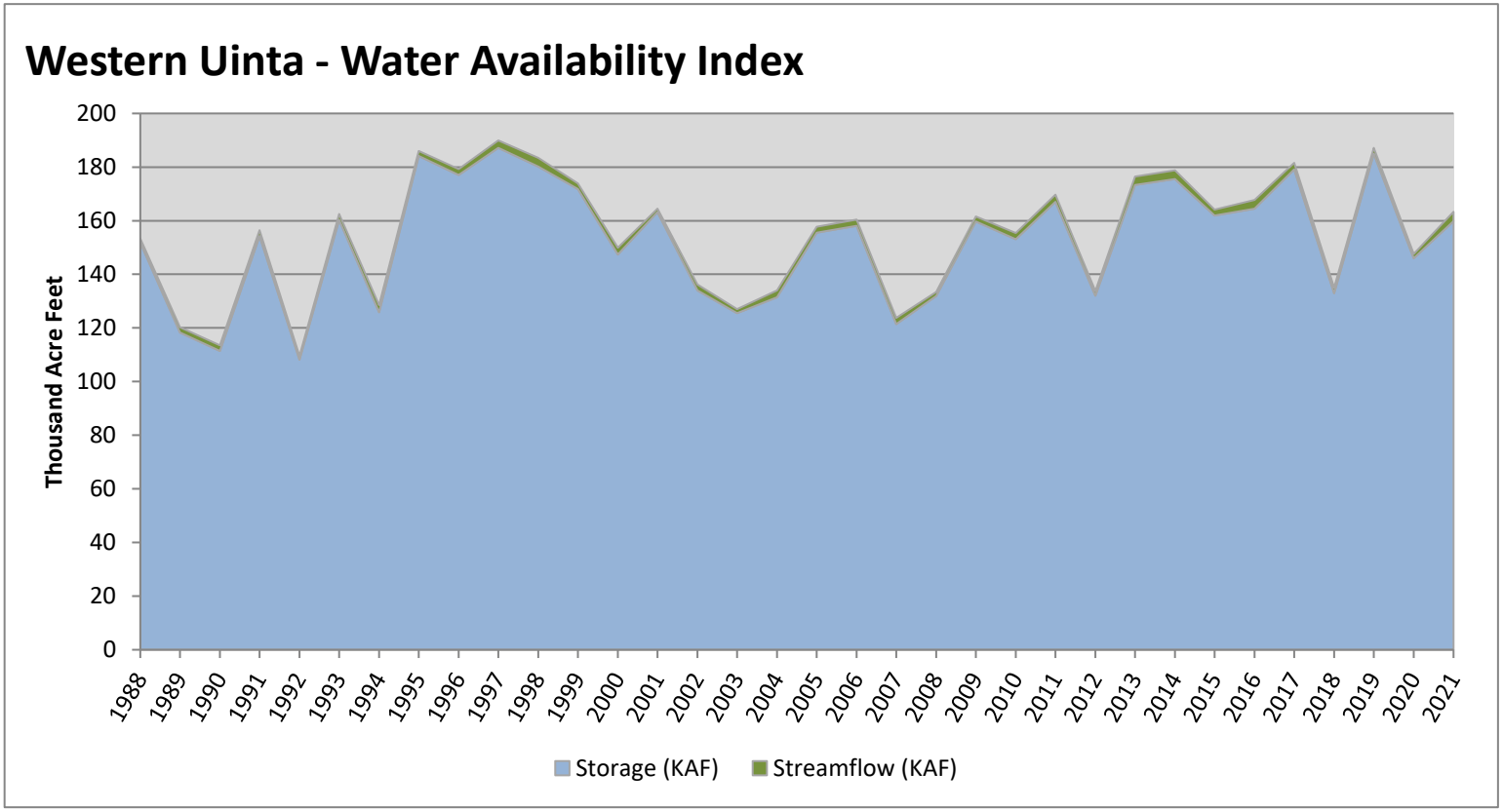


December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Western Uinta	**159.86**	**3.44**	**163.30**	**60**	**0.83**	**09, 93, 15, 01**

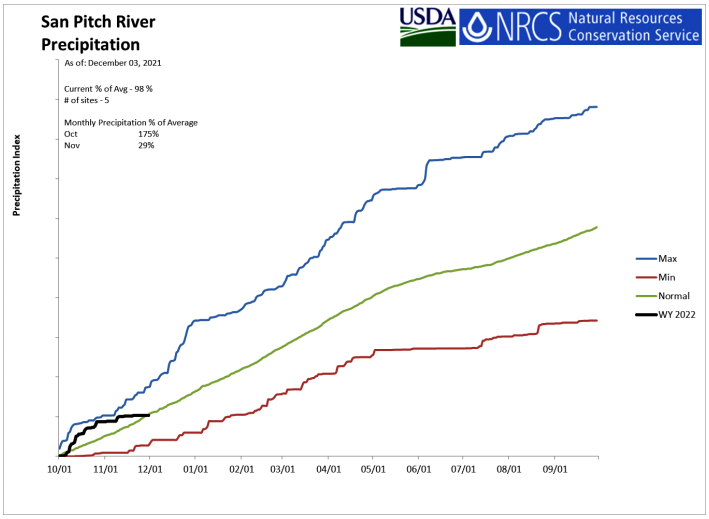
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

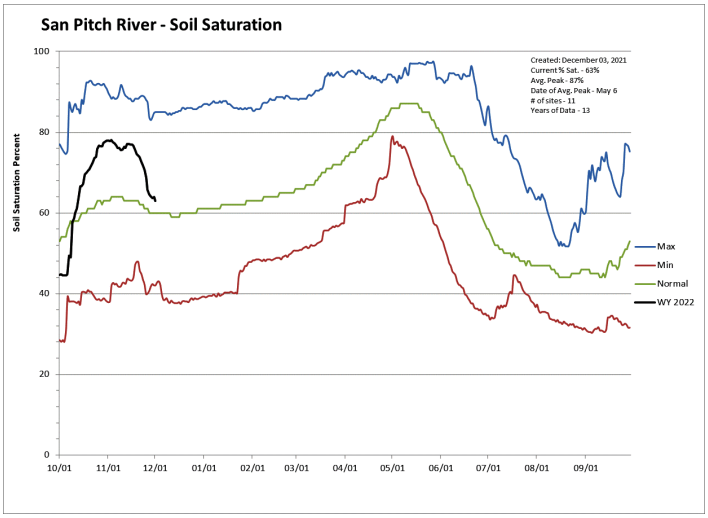


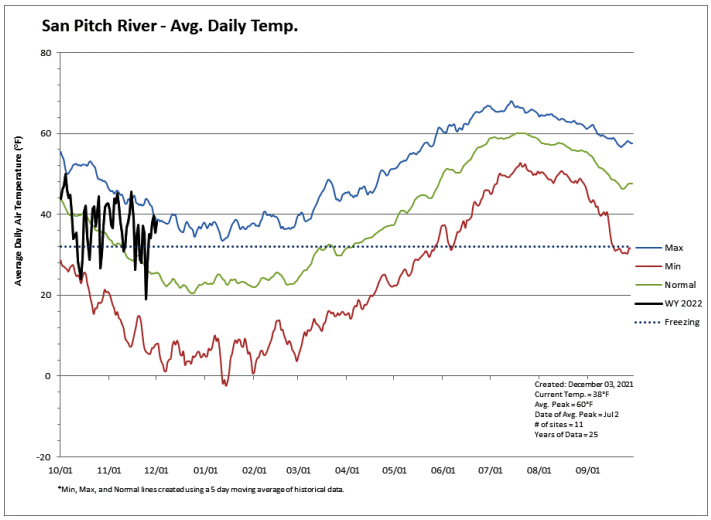
San Pitch River Basin

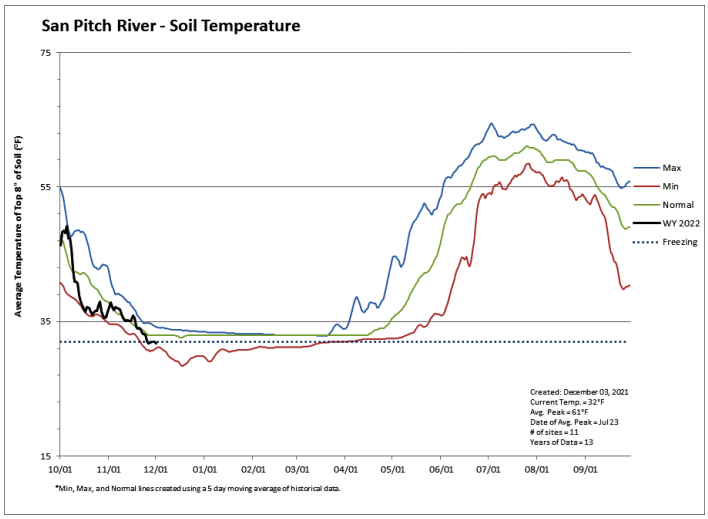
December 1, 2021

Precipitation in November was much below average at 32%, which brings the seasonal accumulation (Oct-Nov) to 108% of average. Soil Moisture is at 63% compared to 35% last year. Reservoir storage is at 0% of capacity, compared to 0% last year.The water availability index for the San Pitch is 10%.









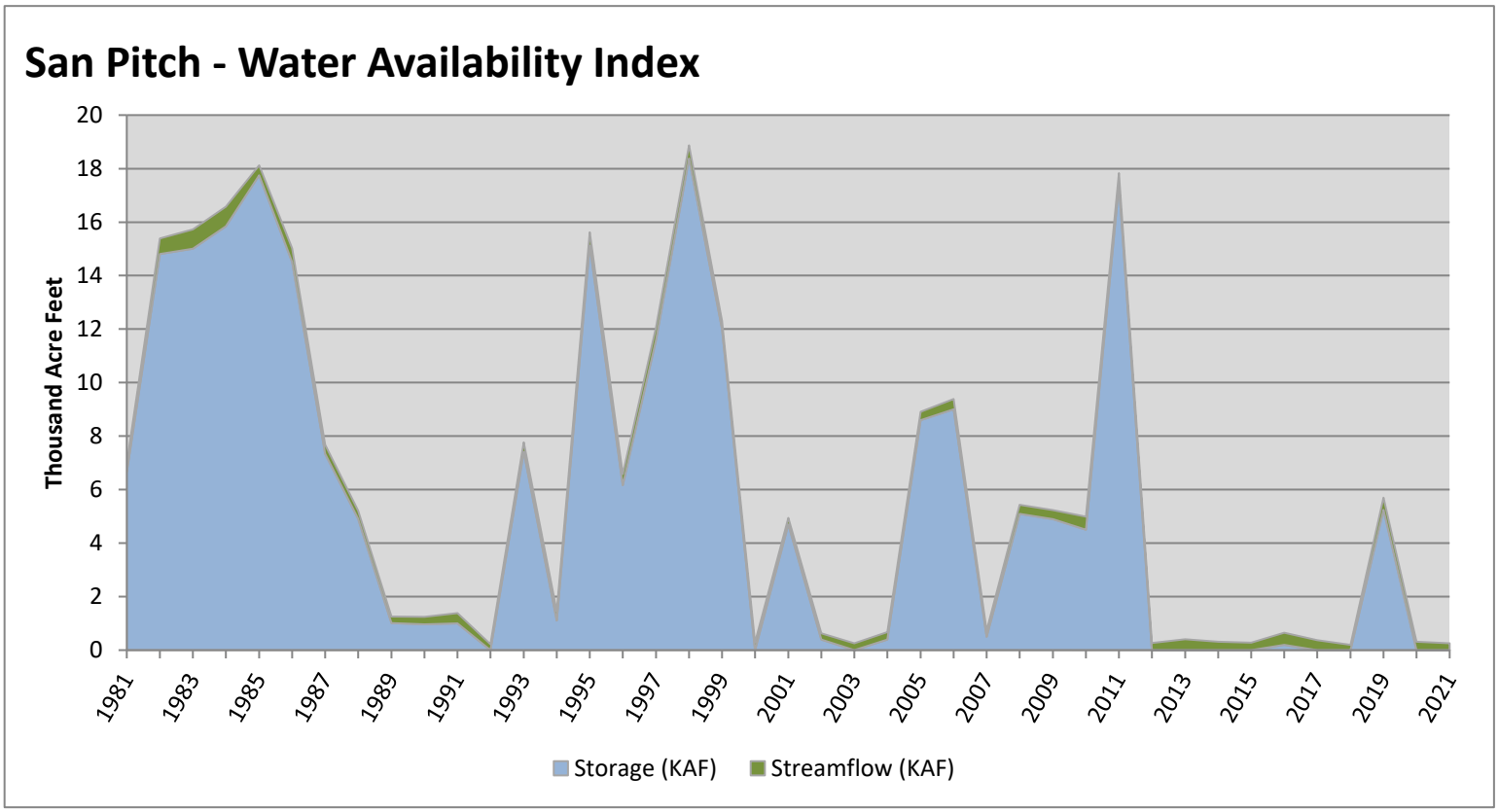
SNOTEL Data

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
San Pitch	**0.00**	**0.26**	**0.26**	**10**	**-3.37**	**92, 03, 12, 15**

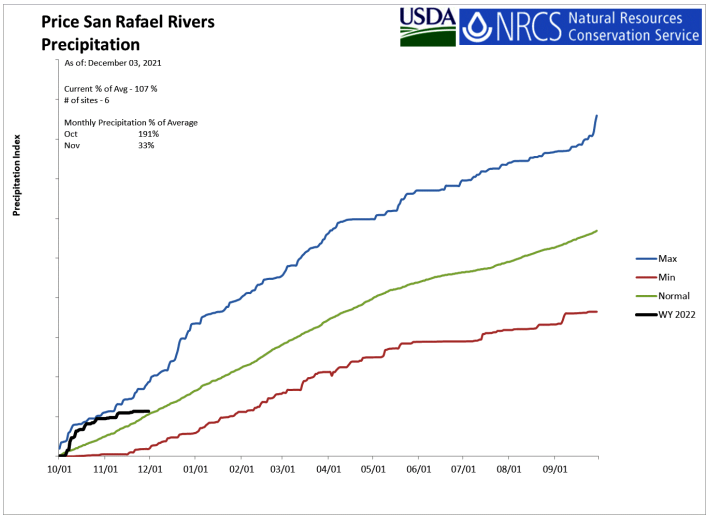
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

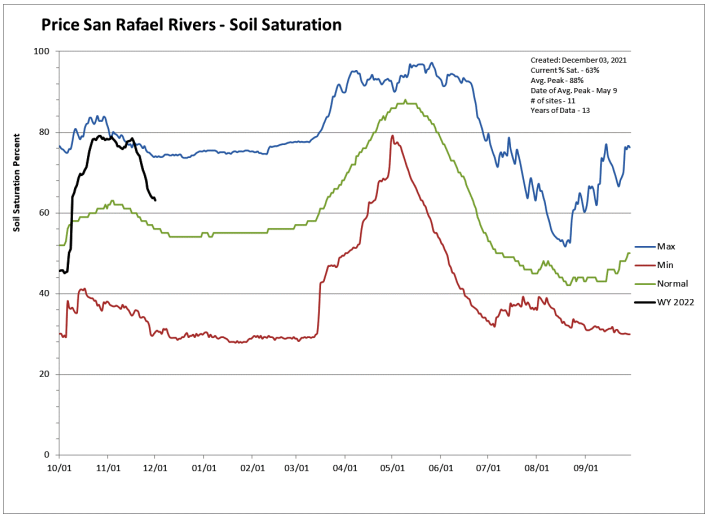


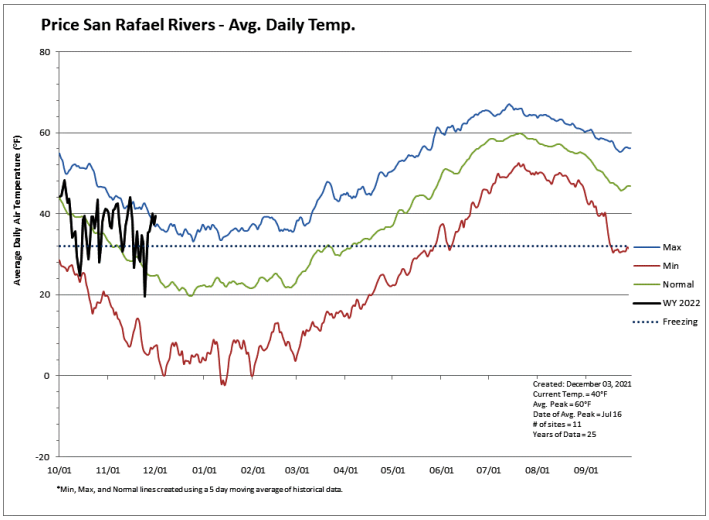
Price & San Rafael Basins

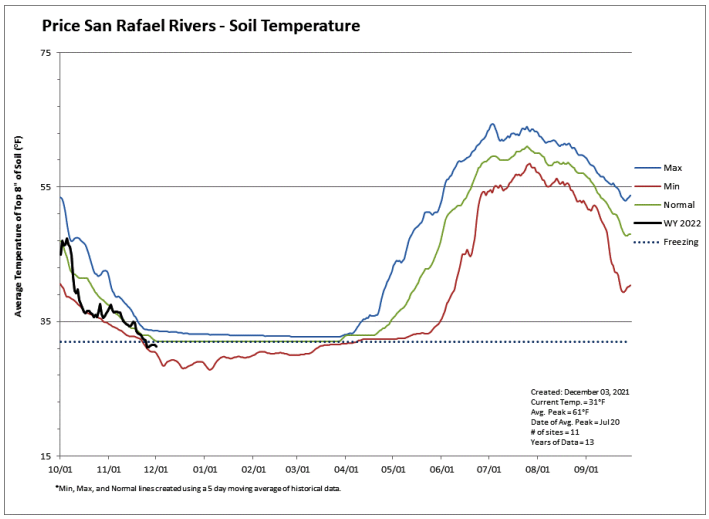
December 1, 2021

Precipitation in November was much below average at 37%, which brings the seasonal accumulation (Oct-Nov) to 124% of average. Soil moisture is at 63% compared to 26% last year. Reservoir storage is at 29% of capacity, compared to 53% last year. The water availability index for the Price River is 33%, and 5% for Joe's Valley.









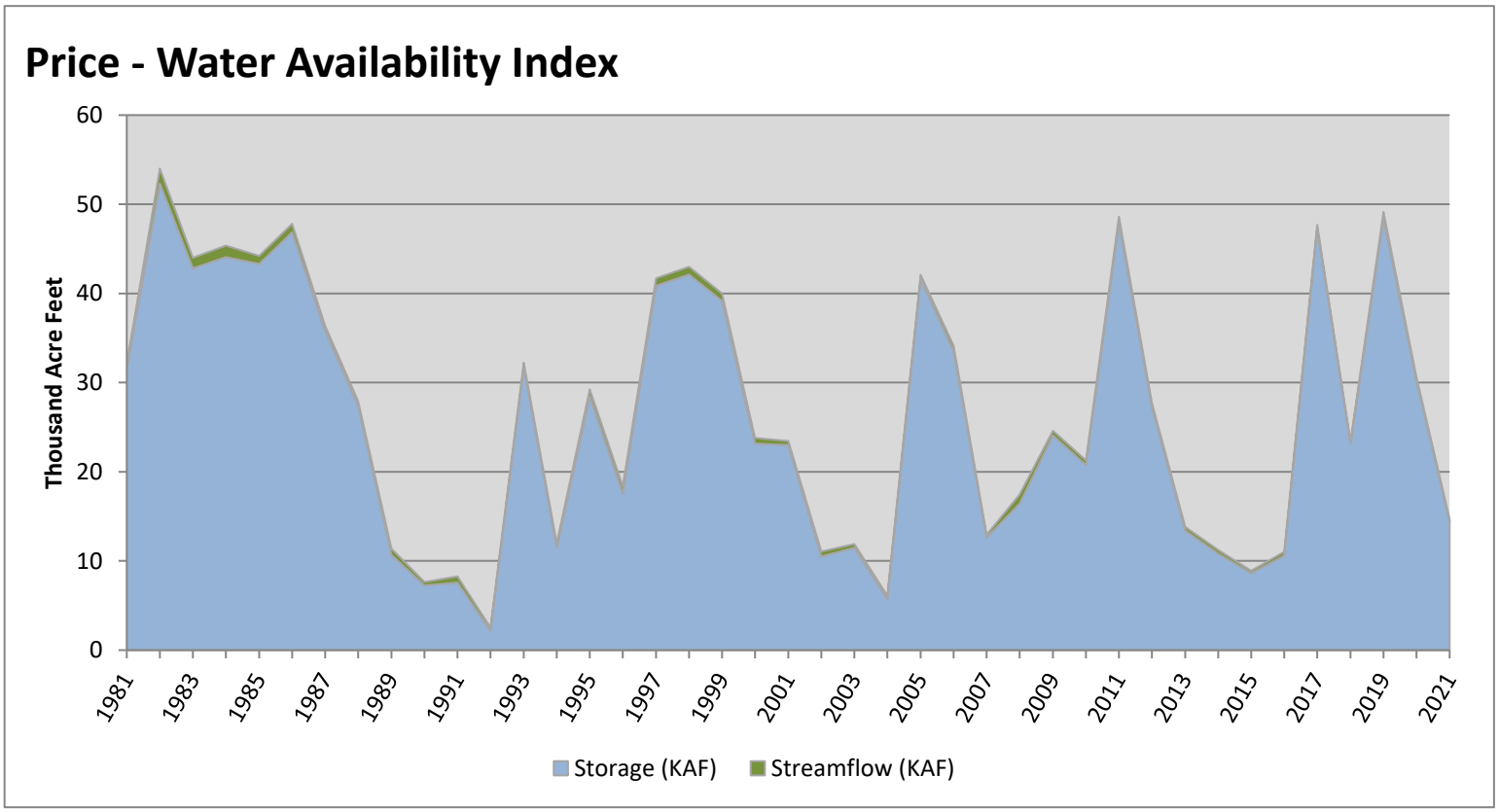
SNOTEL Data

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Price	**14.41**	**0.30**	**14.71**	**33**	**-1.39**	**07, 13, 08, 96**

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

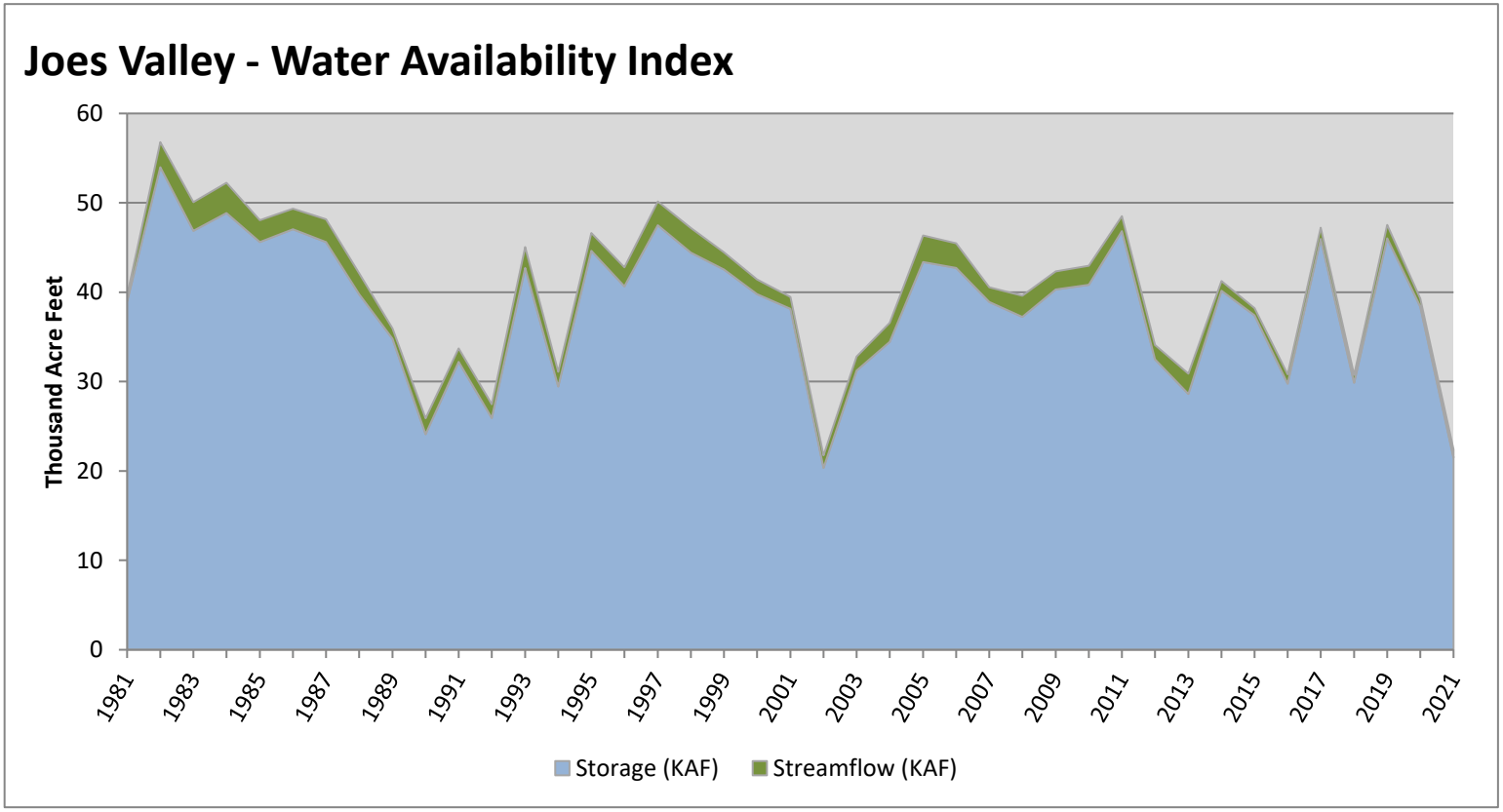


December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Joes Valley	**21.49**	**0.91**	**22.40**	**5**	**-3.77**	**02, 90, 92, 18**

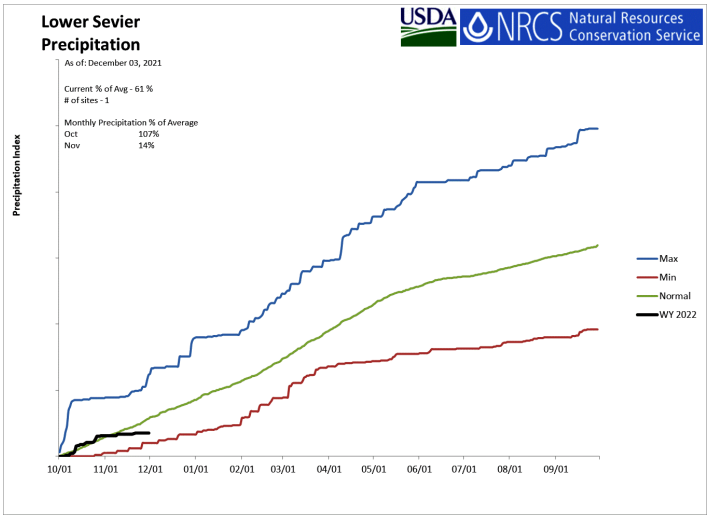
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

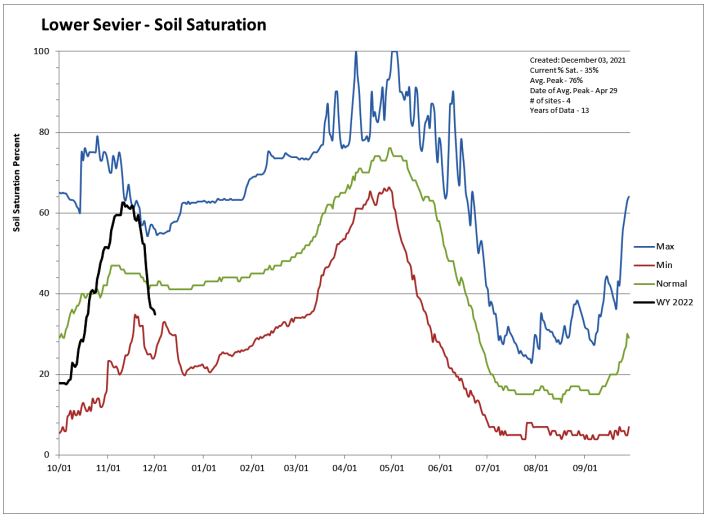


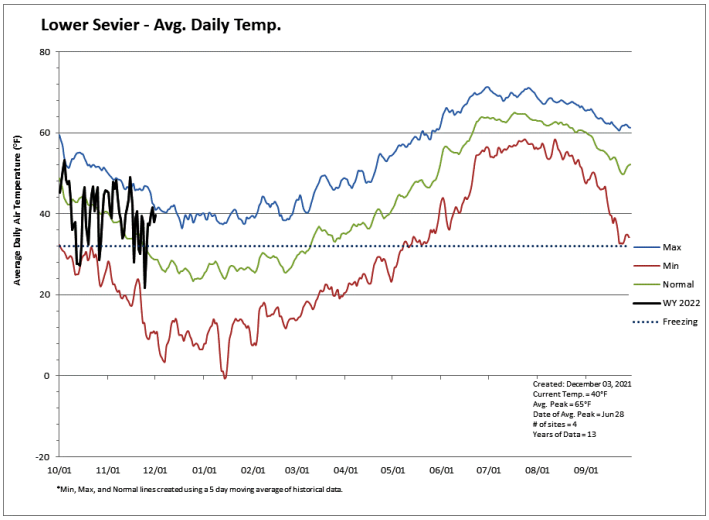
Lower Sevier Basin

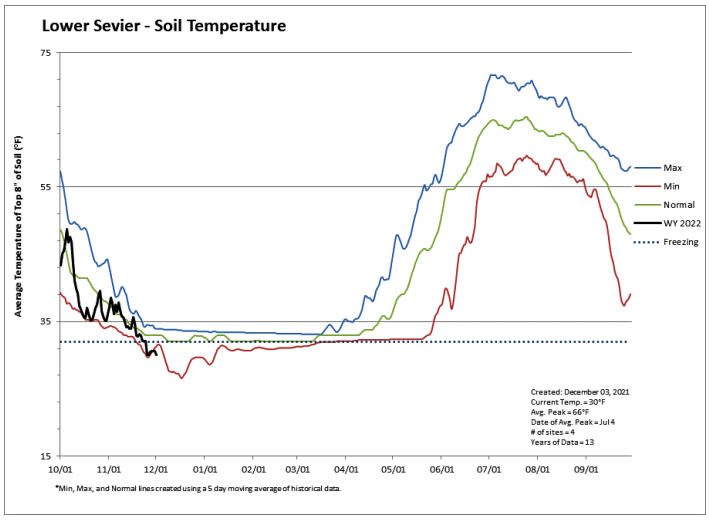
December 1, 2021

Precipitation in November was much below average at 14%, which brings the seasonal accumulation (Oct-Nov) to 72% of average. Soil moisture is at 35% compared to 10% last year. Reservoir storage is at 13% of capacity, compared to 22% last year. The water availability index for the Lower Sevier is 10%.









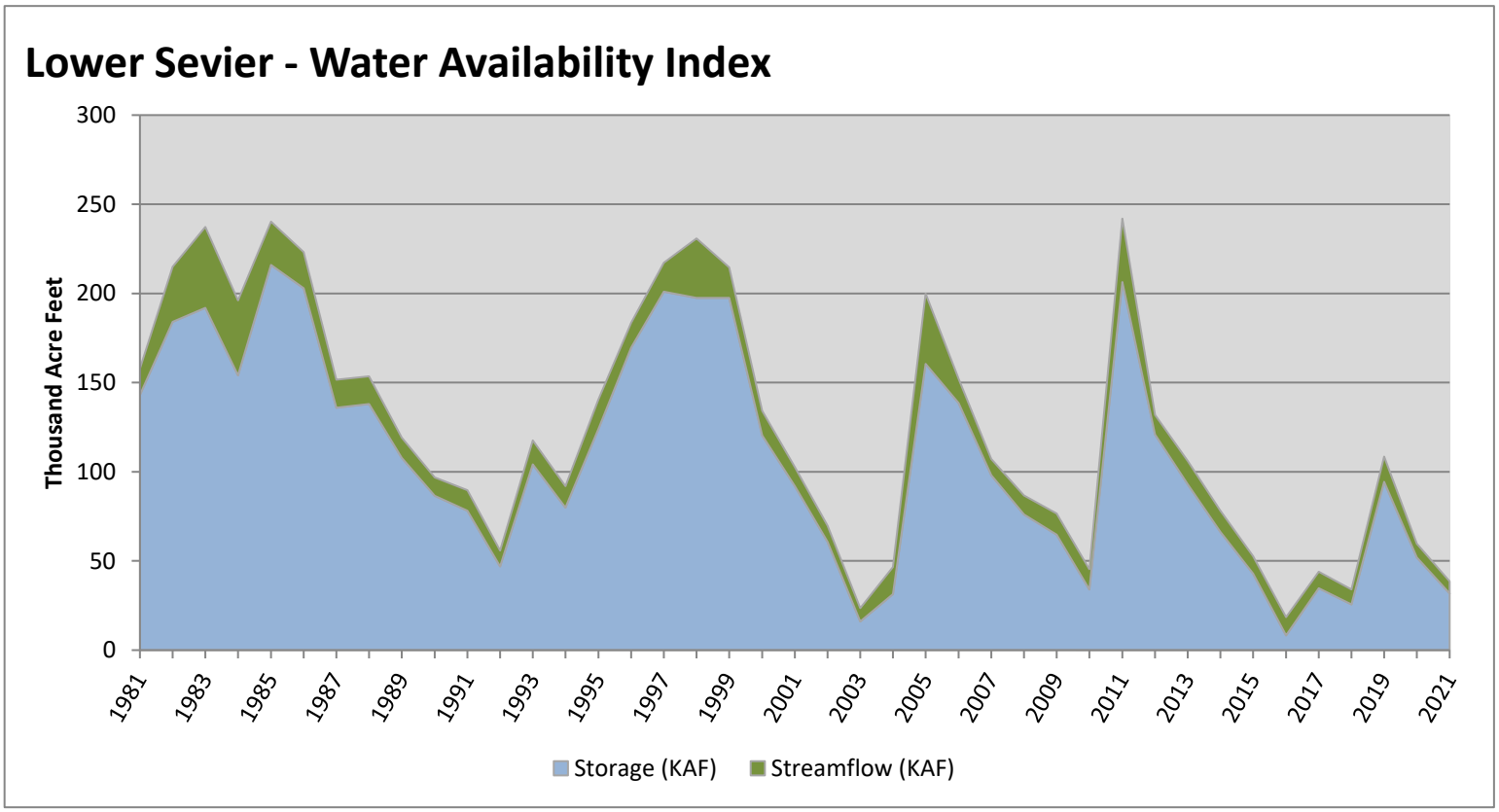
SNOTEL Data

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Lower Sevier	**31.79**	**6.81**	**38.60**	**10**	**-3.37**	**03, 18, 17, 10**

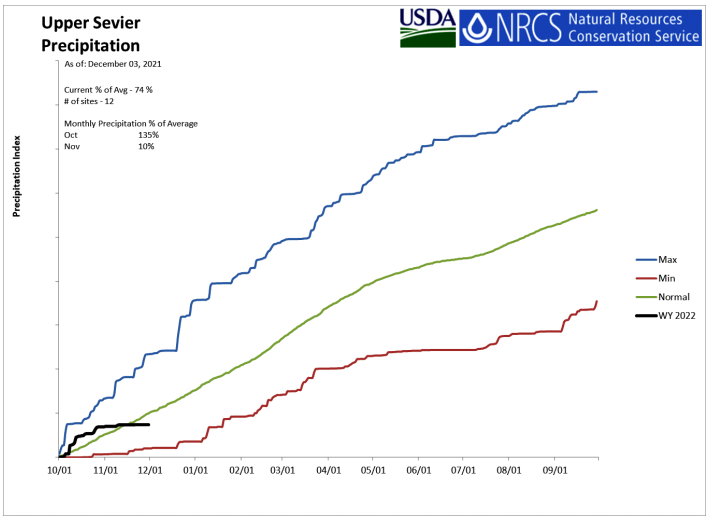
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

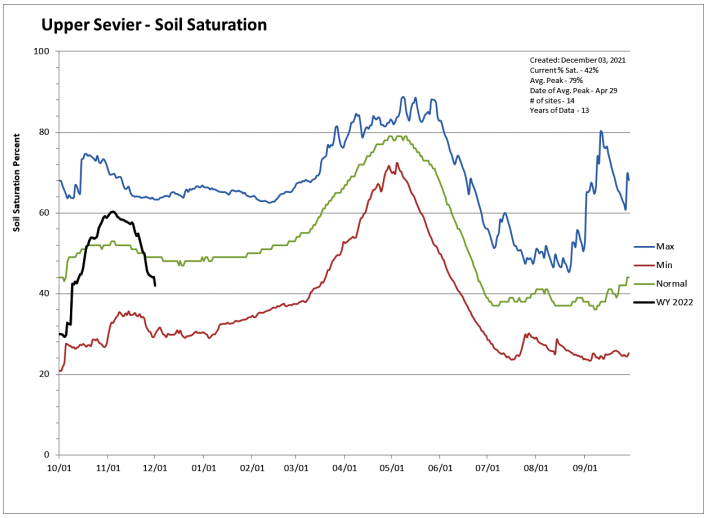


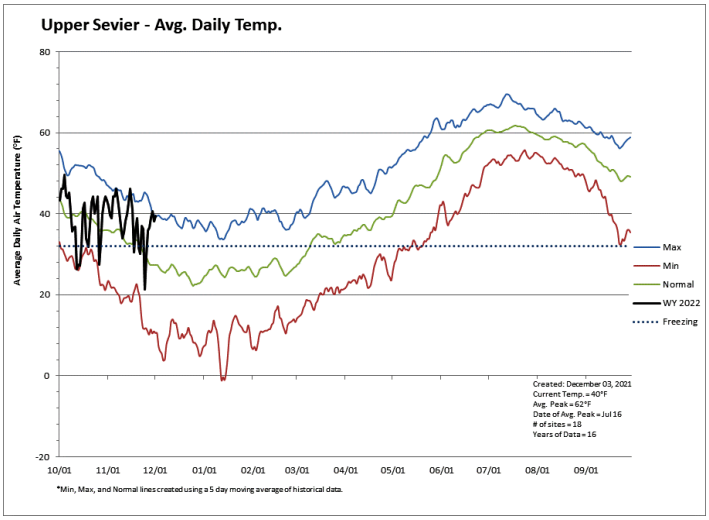
Upper Sevier Basin

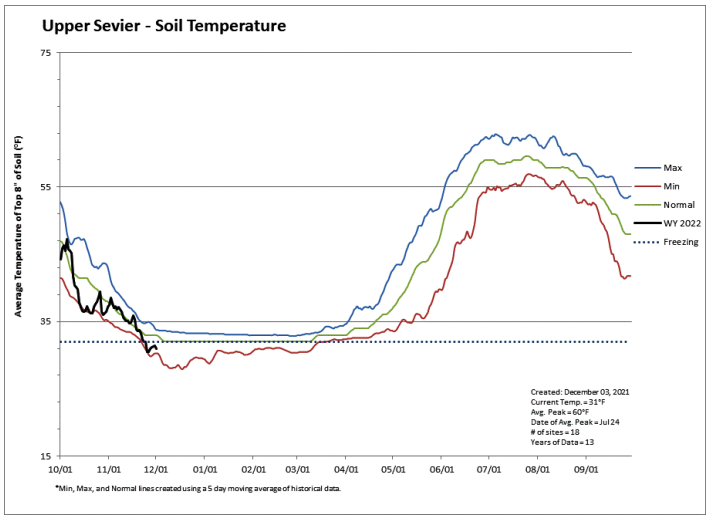
December 1, 2021

Precipitation in November was much below average at 11%, which brings the seasonal accumulation (Oct-Nov) to 89% of average. Soil moisture is at 44% compared to 22% last year. Reservoir storage is at 18% of capacity, compared to 37% last year. The water availability index for the Upper Sevier is 14%.









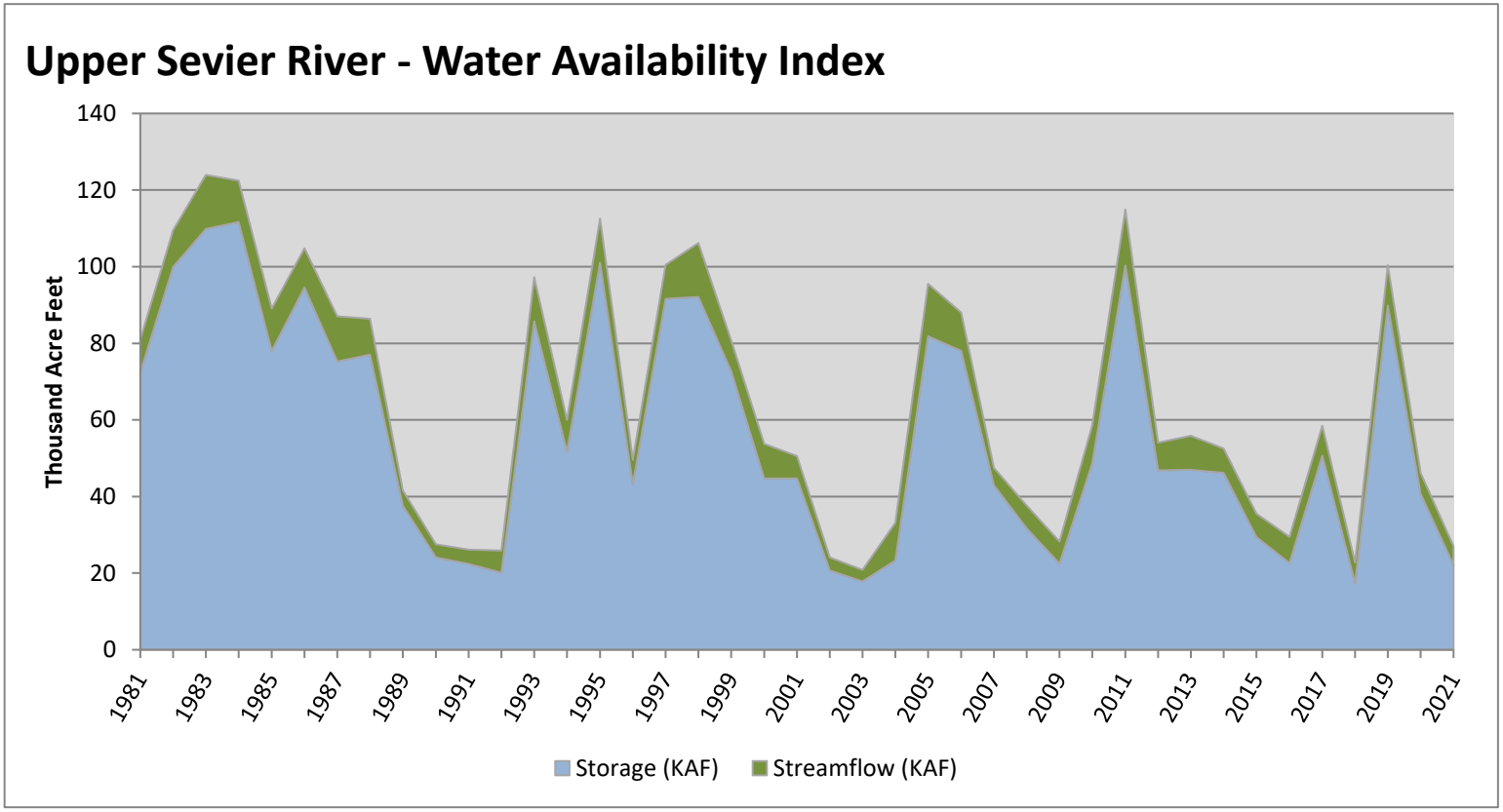
SNOTEL Data

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Upper Sevier River	**22.11**	**4.93**	**27.04**	**14**	**-2.98**	**92, 91, 90, 09**

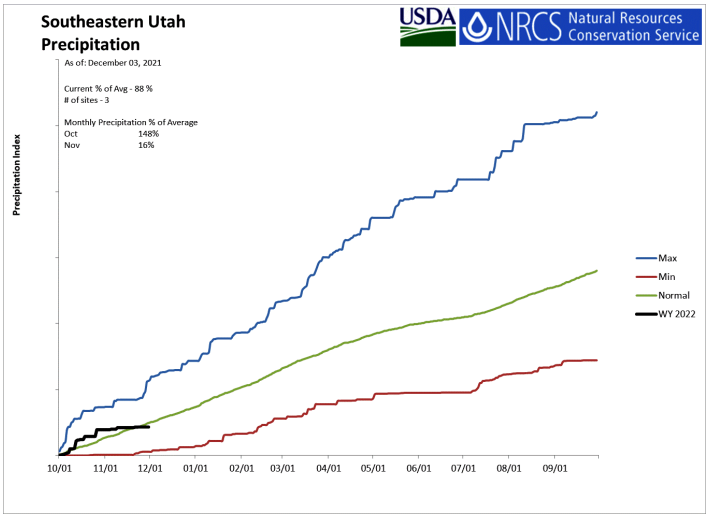
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

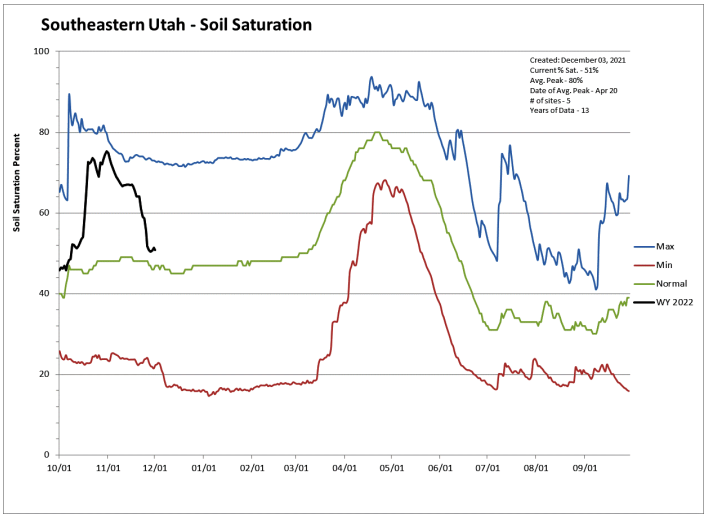


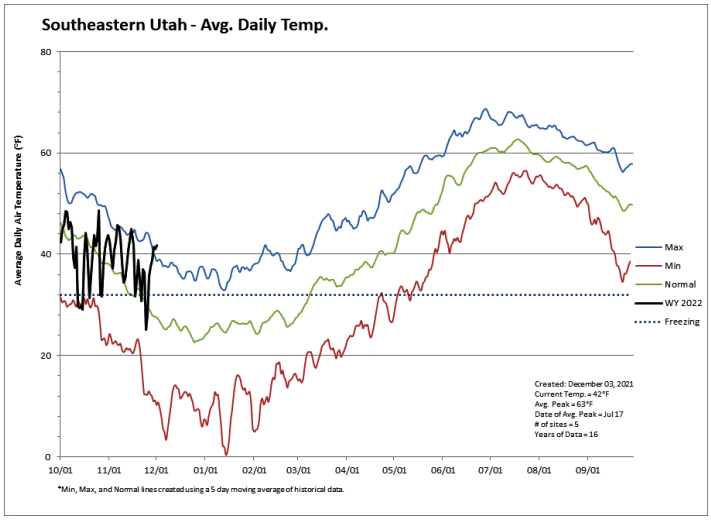
Southeastern Utah

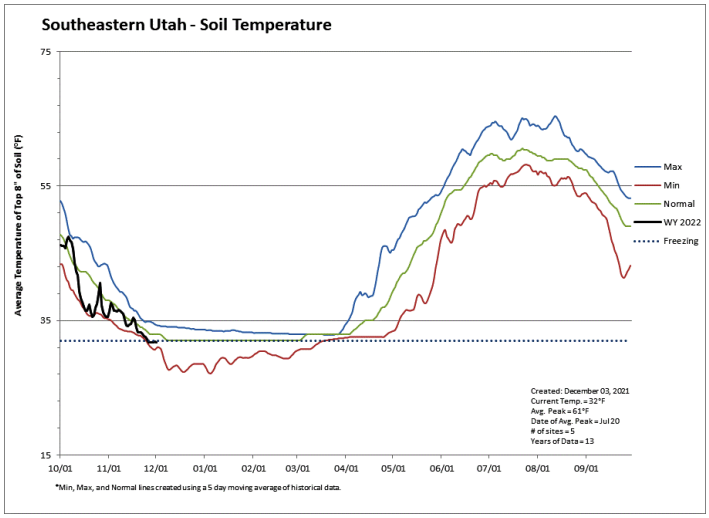
December 1, 2021

Precipitation in November was much below average at 14%, which brings the seasonal accumulation (Oct-Nov) to 90% of average. Soil moisture is at 51% compared to 23% last year. Reservoir storage is at 37% of capacity, compared to 19% last year. The water availability index for Moab is 57%.









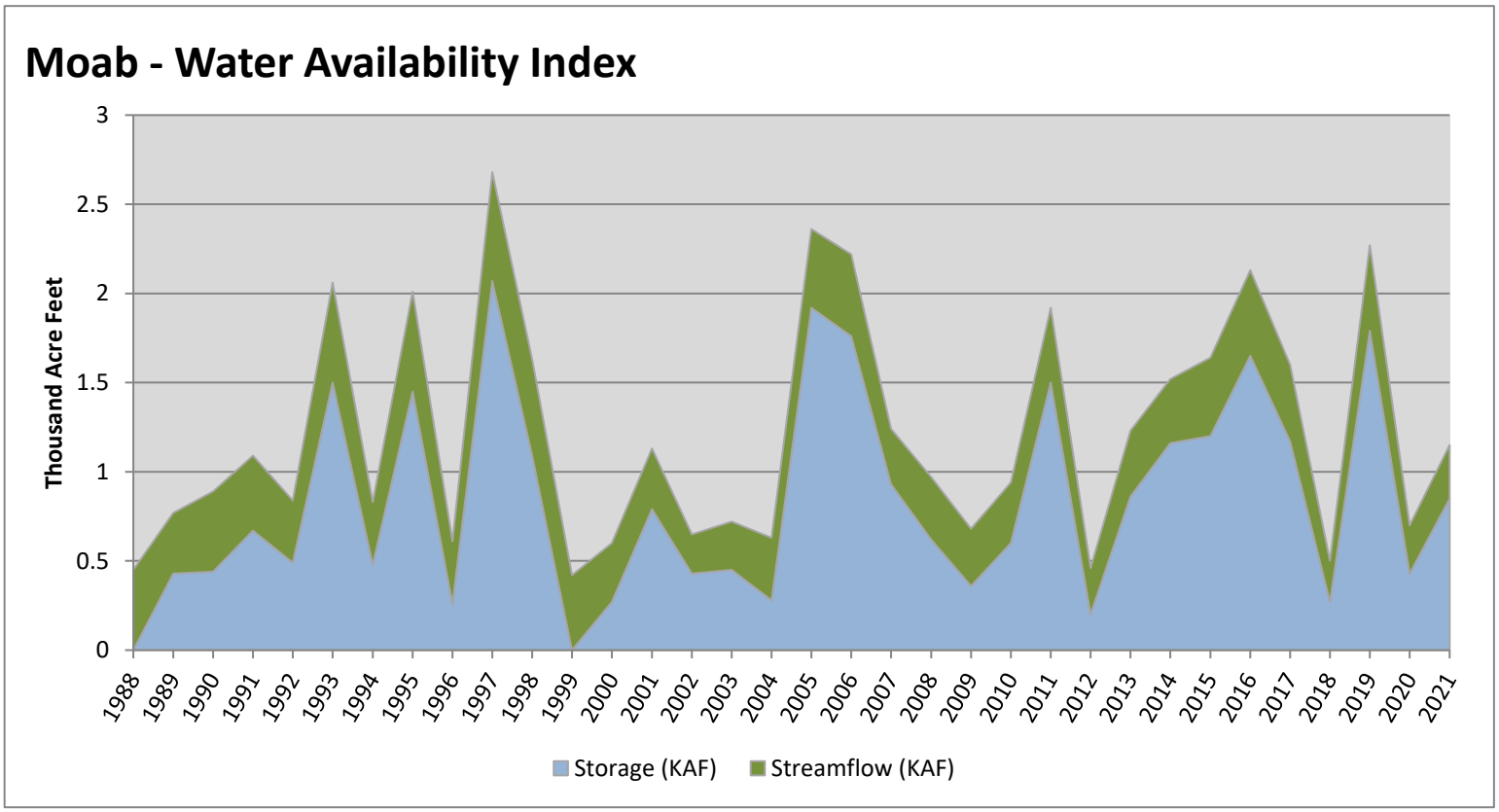
SNOTEL Data

December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Moab	**0.85**	**0.30**	**1.15**	**57**	**0.6**	**91, 01, 13, 07**

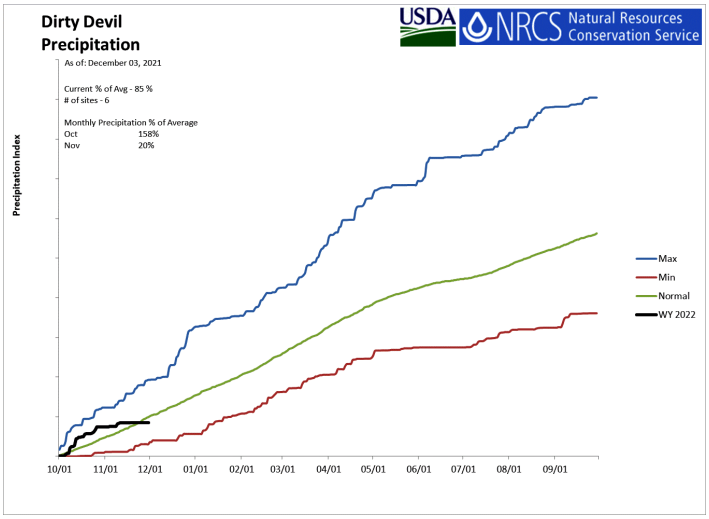
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

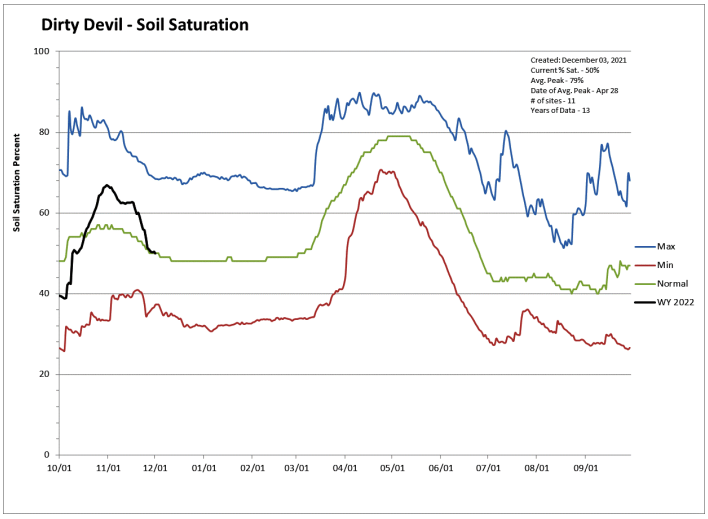


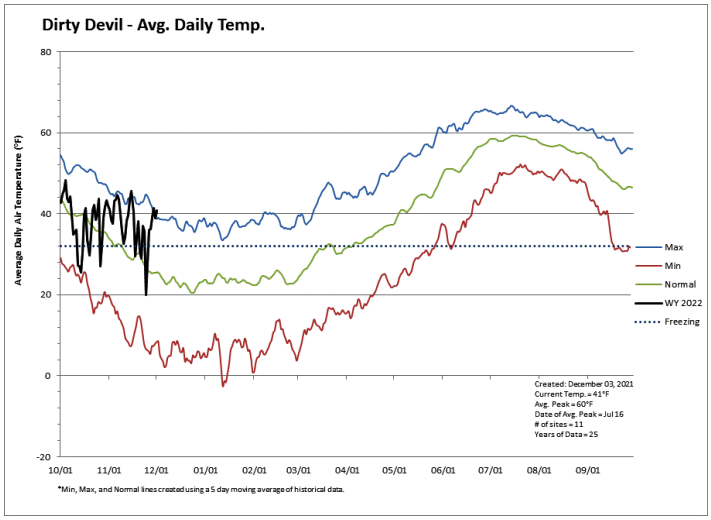
Dirty Devil Basin

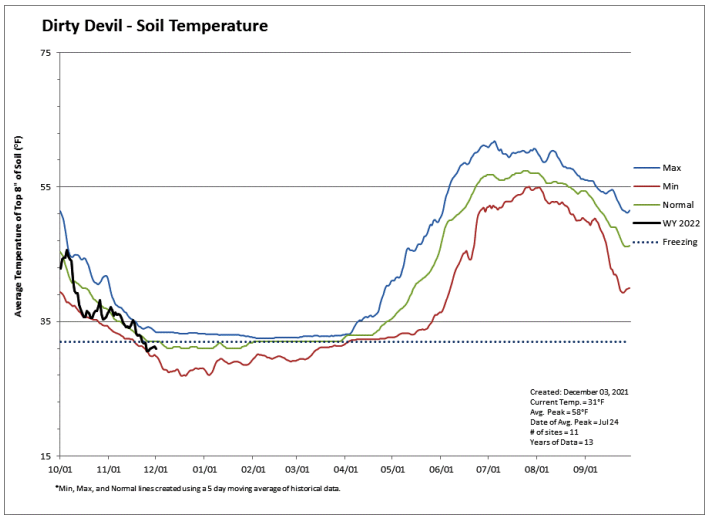
December 1, 2021

Precipitation in November was much below average at 24%, which brings the seasonal accumulation (Oct-Nov) to 101% of average. Soil moisture is at 50% compared to 22% last year.







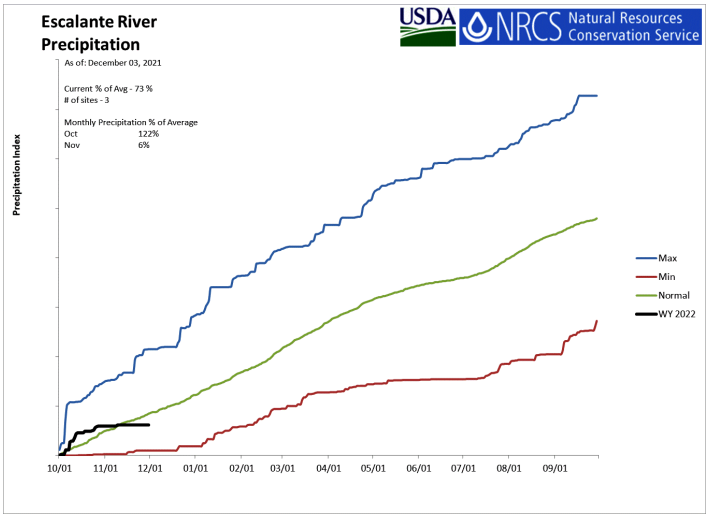


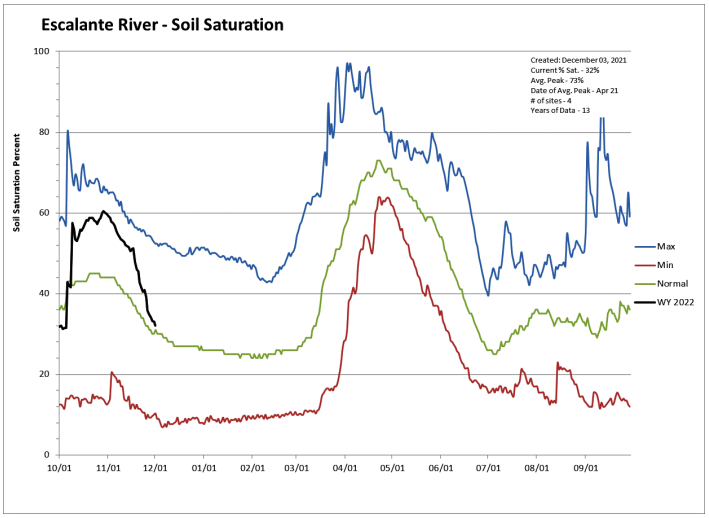
SNOTEL Data

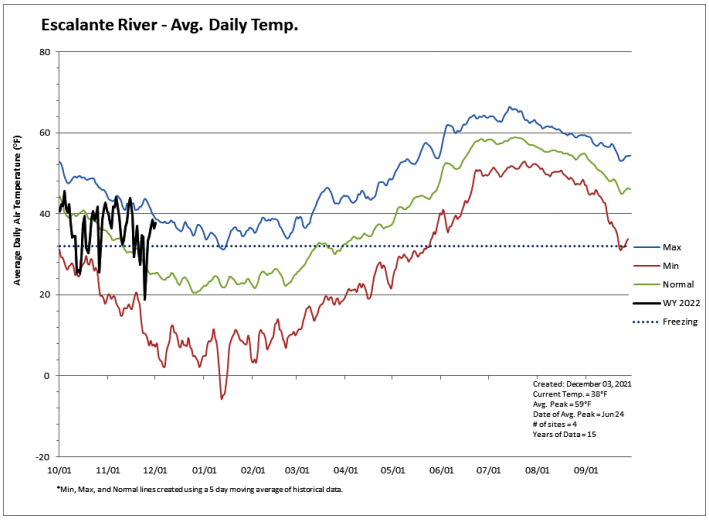
Escalante River Basin

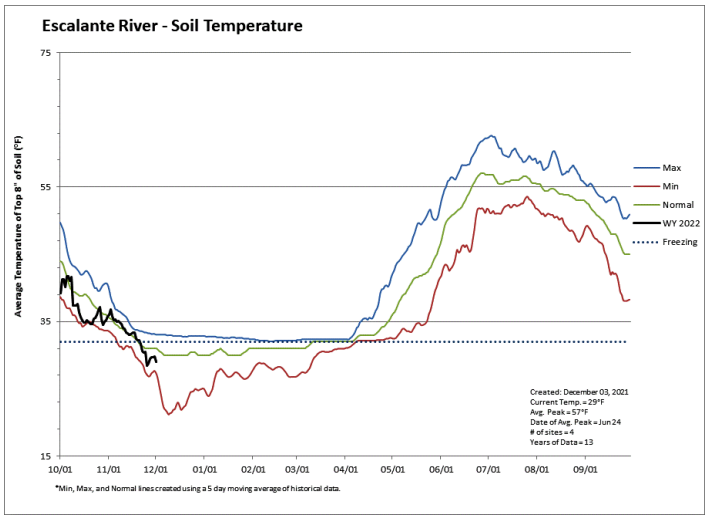
December 1, 2021

Precipitation in November was much below average at 6%, which brings the seasonal accumulation (Oct-Nov) to 87% of average. Soil moisture is at 33% compared to 11% last year.





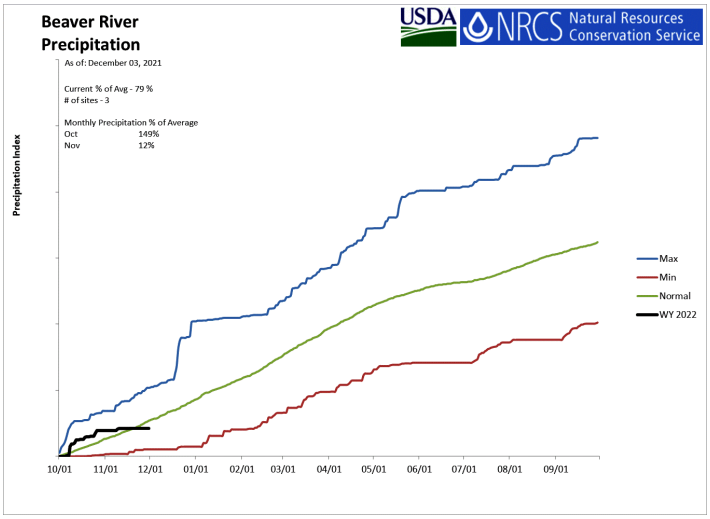


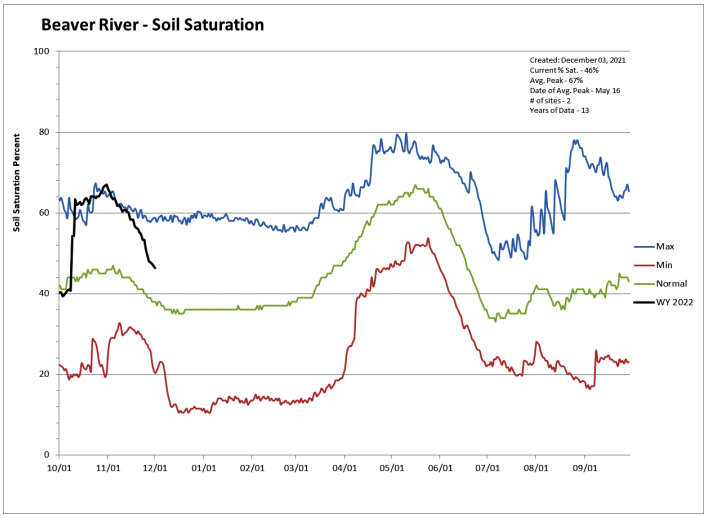


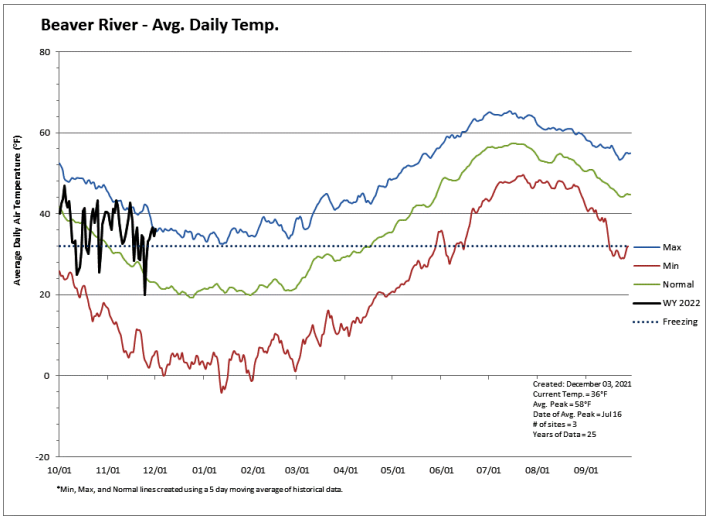
Beaver River Basin

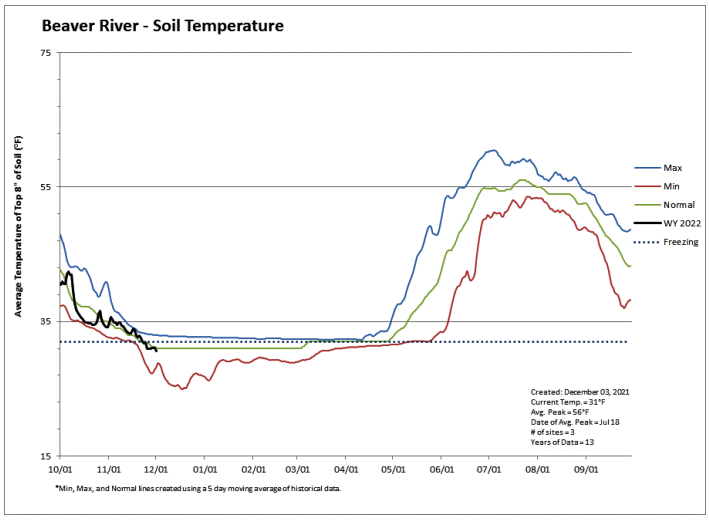
December 1, 2021

Precipitation in November was much below average at 13%, which brings the seasonal accumulation (Oct-Nov) to 85% of average. Soil moisture is at 46% compared to 12% last year. Reservoir storage is at 11% of capacity, compared to 17% last year. The water availability index for the Beaver River is 7%.







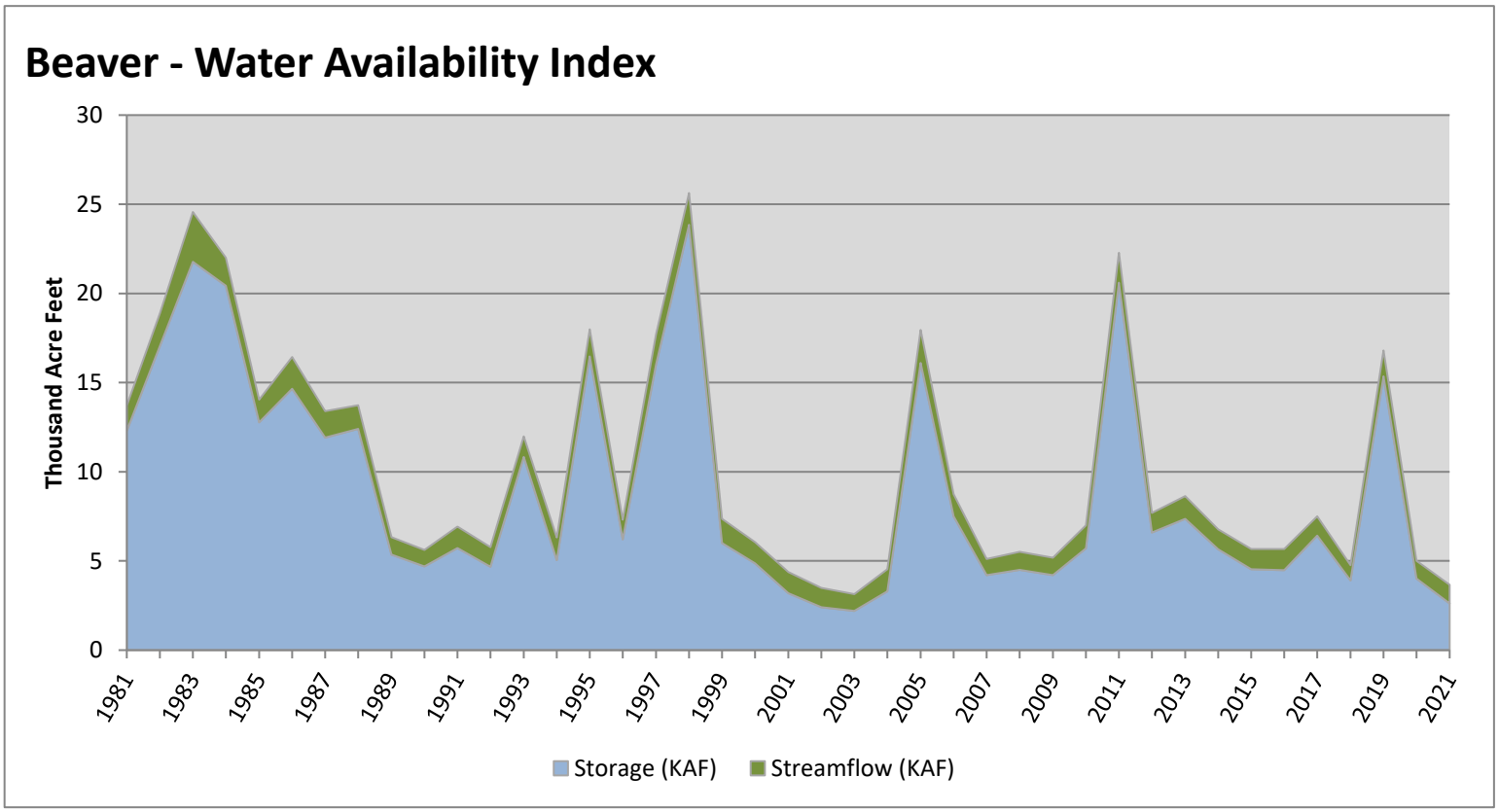


December 1, 2021

Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Beaver	**2.61**	**1.06**	**3.67**	**7**	**-3.57**	**03, 02, 01, 04**

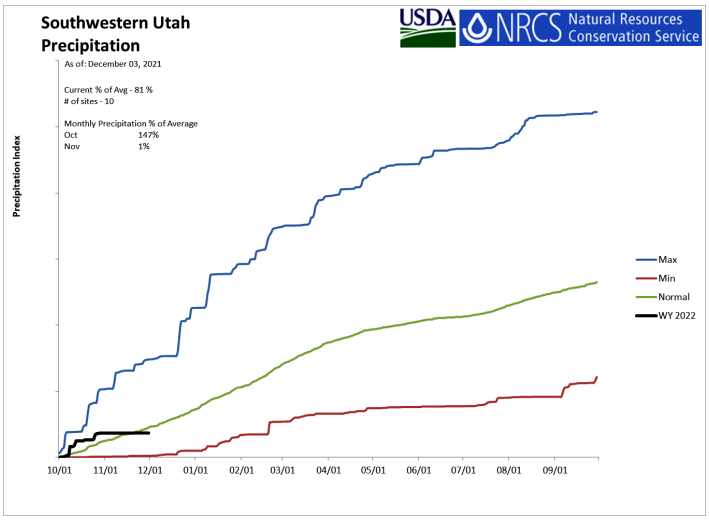
*EOM, end of month; #WAI, Water Availability Index; ^KAF, thousand acre-feet.

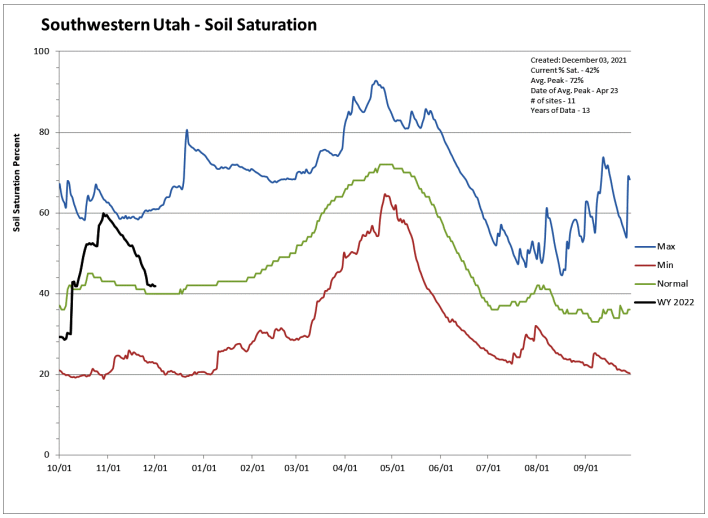


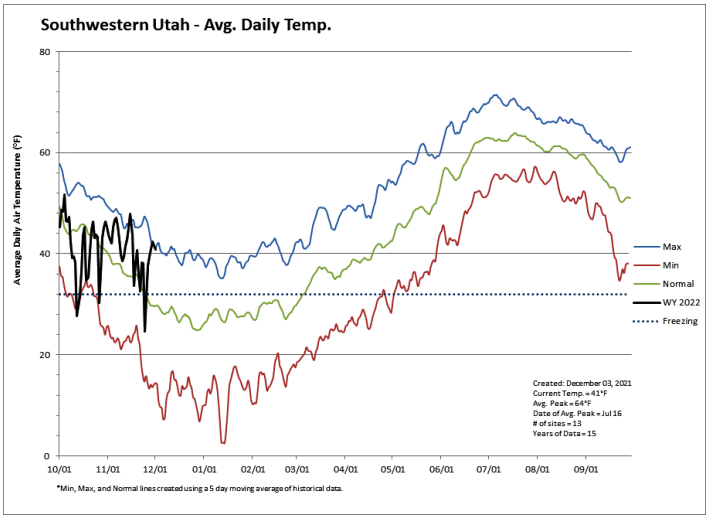
Southwestern Utah

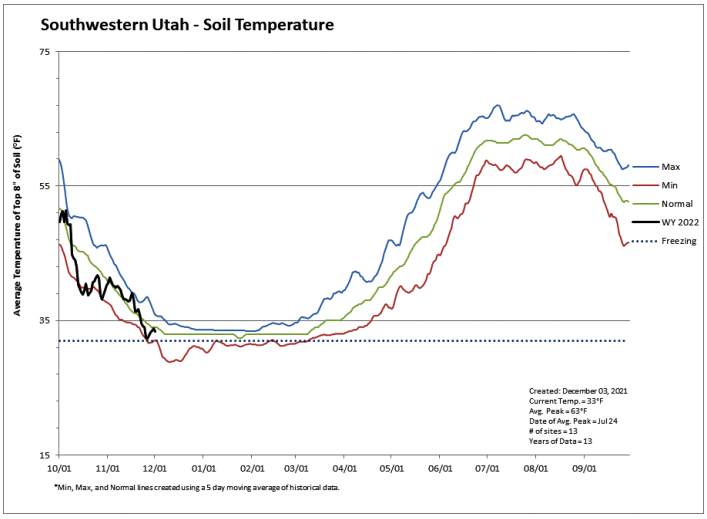
December 1, 2021

Precipitation in November was much below average at 2%, which brings the seasonal accumulation (Oct-Nov) to 93% of average. Soil moisture is at 42% compared to 20% last year. Reservoir storage is at 47% of capacity, compared to 49% last year. The water availability index for the Virgin River is 40%.







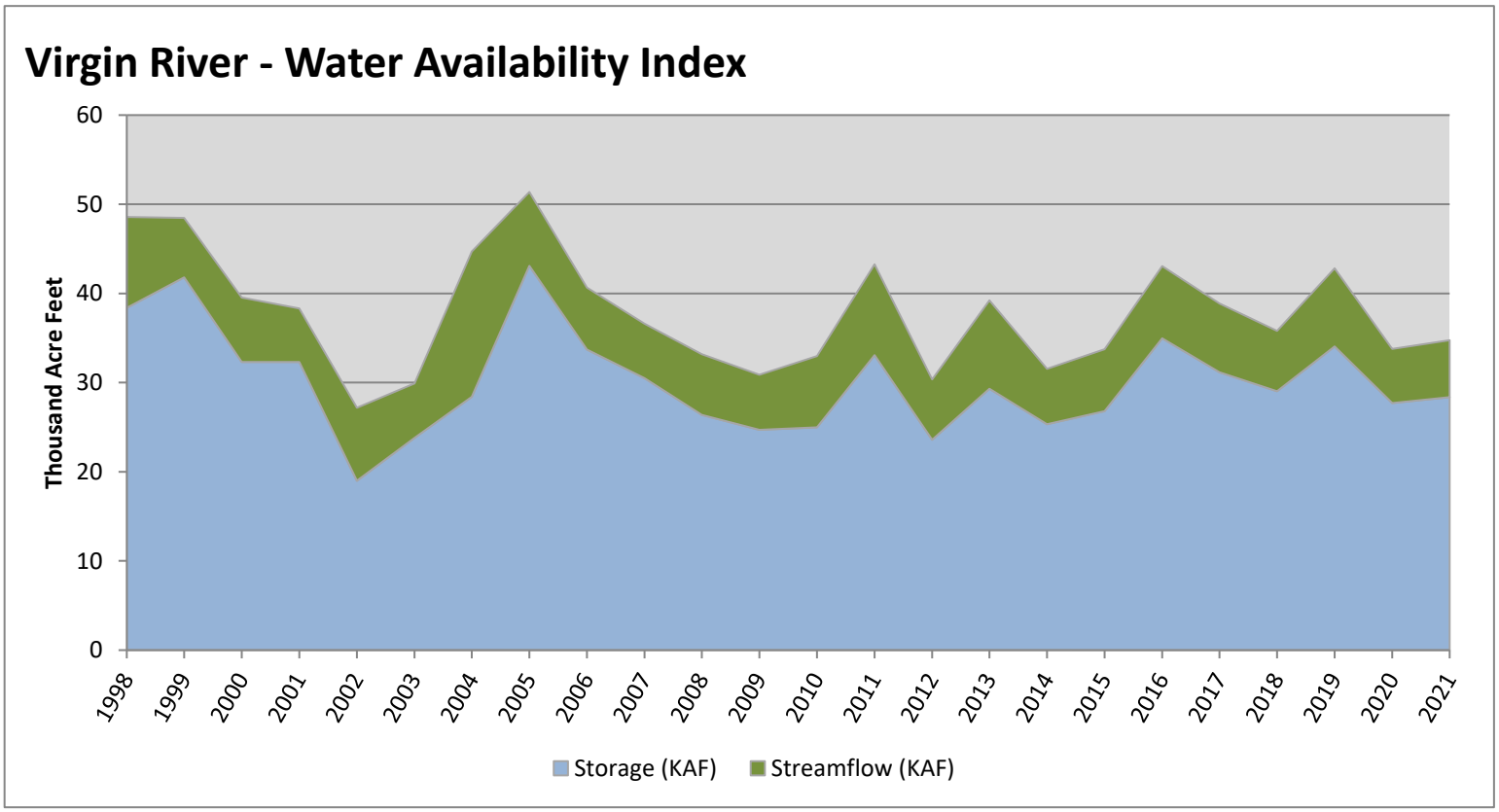


December 1, 2021

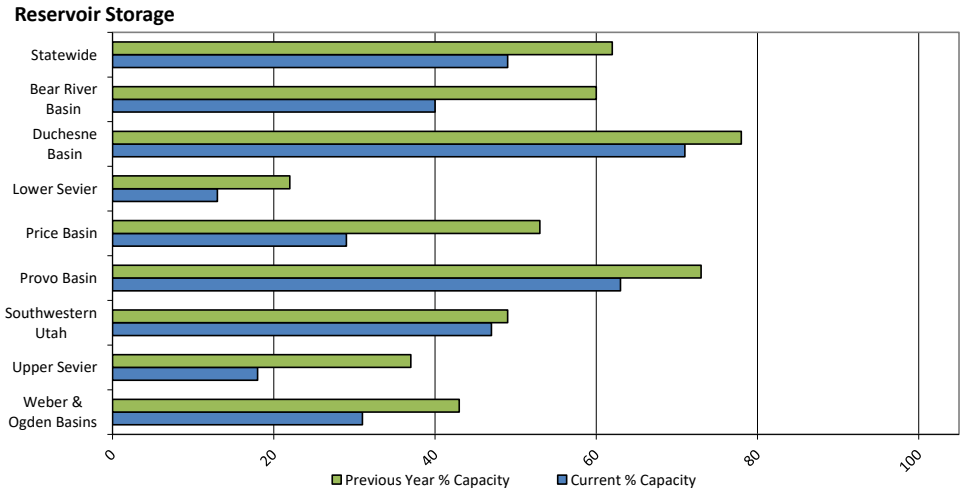
Water Availability Index

Basin or Region	Nov EOM* Storage	November Flow	Storage + Flow	Percentile	WAI#	Years with similiar WAI
	KAF^	KAF^	KAF^	%		
Virgin River	**28.36**	**6.40**	**34.76**	**40**	**-0.83**	**15, 20, 18, 07**

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



Reservoir Storage Summary for the end of November 2021	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	8.2	4.9		25.7	32%	19%			
Causey Reservoir	3.7	3.0	3.2	7.1	53%	43%	45%	117%	95%
Cleveland Lake	0.4	0.9		5.4	7%	17%			
Currant Creek Reservoir	15.0	14.7	14.7	15.5	97%	95%	95%	102%	100%
Deer Creek Reservoir	99.3	99.4	102.7	149.7	66%	66%	69%	97%	97%
East Canyon Reservoir	24.2	29.4	30.7	49.5	49%	59%	62%	79%	96%
Echo Reservoir	16.5	18.0	33.7	73.9	22%	24%	46%	49%	54%
Grantsville Reservoir	1.6	1.2	1.1	3.3	47%	37%	33%	142%	110%
Gunlock	4.3	4.7	5.8	10.4	42%	45%	56%	75%	81%
Gunnison Reservoir	0.0	0.0	4.5	20.3	0%	0%	22%	0%	0%
Huntington North Reservoir	1.7	1.8	1.9	4.2	41%	43%	46%	89%	92%
Hyrum Reservoir	6.5	9.7	8.8	15.3	42%	63%	58%	74%	110%
Joes Valley Reservoir	21.5	38.4	37.3	61.6	35%	62%	61%	58%	103%
Jordanelle Reservoir	160.2	222.0	198.9	314.0	51%	71%	63%	81%	112%
Ken's Lake	0.9	0.4	0.9	2.3	37%	19%	39%	96%	49%
Kolob Reservoir	2.9	4.7		5.6	51%	84%			
Lost Creek Reservoir	9.2	14.4	11.7	22.5	41%	64%	52%	79%	123%
Lower Enterprise	0.9	0.1	0.5	2.6	34%	2%	20%	172%	11%
Miller Flat Reservoir	1.4	1.3		5.2	27%	24%			44%
Millsite	3.8	3.6	8.6	16.7	21%	21%	51%	41%	41%
Minersville Reservoir	2.6	4.0	7.8	23.3	11%	17%	33%	33%	51%
Moon Lake Reservoir	18.7	9.7	16.2	35.8	52%	27%	45%	115%	60%
Otter Creek Reservoir	12.6	18.7	23.7	52.5	24%	36%	45%	53%	79%
Panguitch Lake	4.5	14.2	10.1	22.3	20%	64%	45%	45%	141%
Pineview Reservoir	21.3	47.7	50.6	110.1	19%	43%	46%	42%	94%
Piute Reservoir	9.6	21.9	26.7	71.8	13%	31%	37%	36%	82%
Porcupine Reservoir	3.9	5.8	6.6	11.3	34%	52%	58%	58%	88%
Quail Creek	24.0	23.0	24.9	40.0	60%	58%	62%	97%	93%
Red Fleet Reservoir	9.4	14.7	16.7	25.7	36%	57%	65%	56%	88%
Rockport Reservoir	21.6	28.9	34.1	60.9	36%	47%	56%	63%	85%
Sand Hollow Reservoir	36.5	40.9		50.0	73%	82%			
Scofield Reservoir	14.4	30.2	23.0	65.8	22%	46%	35%	63%	131%
Settlement Canyon Reservoir	0.3	0.4	0.5	1.0	27%	36%	46%	58%	79%
Sevier Bridge Reservoir	31.8	52.1	95.7	236.0	13%	22%	41%	33%	54%
Smith And Morehouse Reservoir	6.8	2.4	4.1	8.1	83%	29%	51%	165%	58%
Starvation Reservoir	114.5	125.5	125.6	164.1	70%	76%	77%	91%	100%
Stateline Reservoir	4.7	3.5	5.1	12.0	39%	29%	43%	92%	68%
Steinaker Reservoir	6.2	4.1	14.7	33.4	19%	12%	44%	42%	28%
Strawberry Reservoir	809.3	919.4	808.0	1105.9	73%	83%	73%	100%	114%
Upper Enterprise	0.6	3.0	2.0	10.0	6%	30%	20%	30%	152%
Upper Stillwater Reservoir	26.6	10.8	12.0	32.5	82%	33%	37%	222%	90%
Utah Lake	457.8	548.0	593.0	870.9	53%	63%	68%	77%	92%
Willard Bay	78.0	135.3	128.2	215.0	36%	63%	60%	61%	106%
Woodruff Creek	1.6	2.0	1.2	4.0	39%	50%	31%	128%	165%
Woodruff Narrows Reservoir	10.5	25.8		57.3	18%	45%			
Meeks Cabin Reservoir	7.4	2.5		32.5	23%	8%			
Bear Lake	527.0	777.7	513.0	1302.0	40%	60%	39%	103%	152%
Basin-wide Total	2495.0	3125.0	2871.7	5051.6	49%	62%	57%	87%	109%



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Utah Climate and Water Report

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Salt Lake City, UT