Utah Water Supply Outlook Report

May 1, 2020

Woodruff Creek Reservoir, near Woodruff, UT

Photo by Brandon Todd, NRCS

Water Supply Outlook Reports
and Federal - State - Private Cooperative Snow Surveys

For more water supply and resource management information, contact: your local Natural Resources Conservation Service Office or:
Snow Surveys
245 N Jimmy Doolittle Rd, SLC Utah, 84116. Phone (385)285-3118
Email Address: jordan.clayton@usda.gov

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snowcourses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in statistical and simulation models to prepare runoff forecasts. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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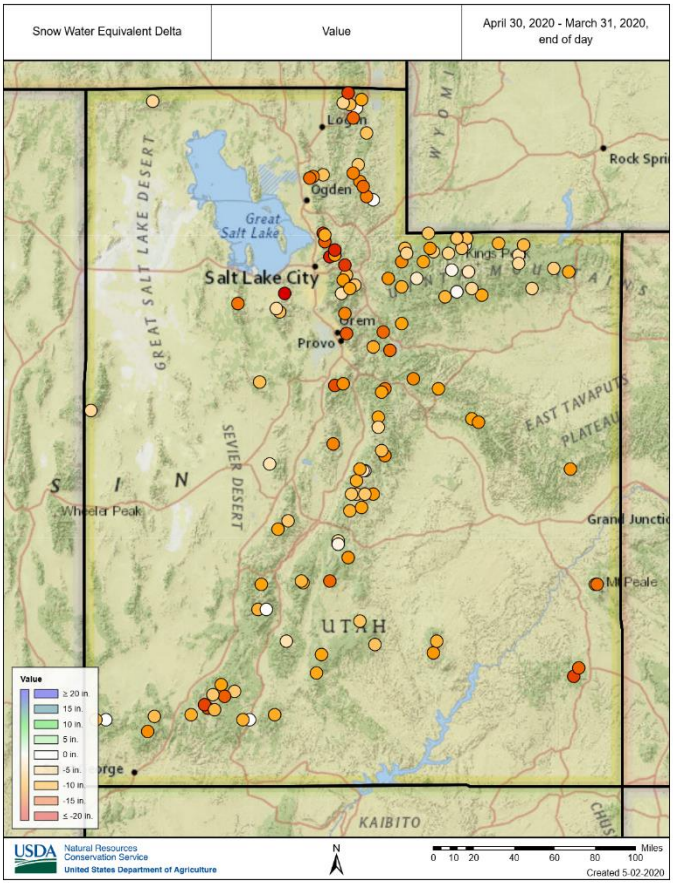
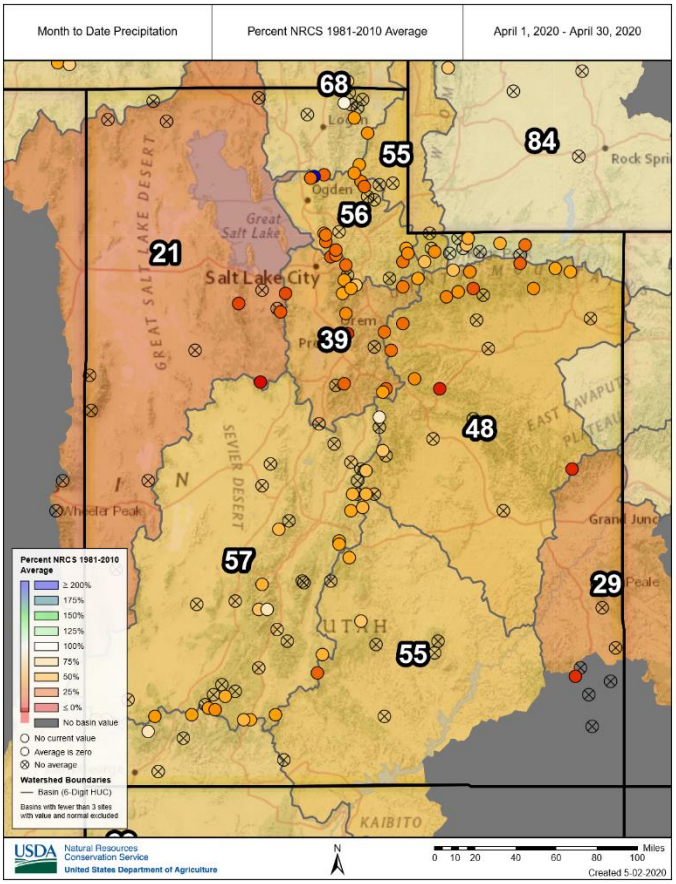
STATE OF UTAH GENERAL OUTLOOK
May 1, 2020

SUMMARY

While Utah's statewide snow water equivalent (SWE) had been hovering around average for a while, April did not deliver its typical amount of precipitation. As of May 1st the statewide SWE is 78% of normal. By comparison, at the beginning of April the statewide SWE was 107%. This change resulted from a well below average amount of precipitation for the month and widespread early melting of Utah's snowpack. Shown below (left) is the change in SWE at Utah's SNOTEL sites from March 31st to April 30th. The darker orange and red shades correspond to larger SWE loss. While it is common for these sites to lose SWE during this time period, the magnitude of loss is larger than normal at most locations.





The disappointing amount of snow and rain received in April is shown above (right) with a map of the percent of normal precipitation for the month as observed at Utah's SNOTEL sites (circles) and river basins (numbers). The predominantly orange and red shades on the map are indicative of the well below average—in many cases, less than 50 percent—amount of snow and rain delivered to Utah's mountains this last month.

Still, many locations in Utah did quite well this winter overall. This year's winners for SNOTEL sites with the highest peak SWE were all in the Wasatch Front and Bear River headwaters. Snowbird took the prize at 46.3" SWE, Tony Grove Lake came in second at 41.7", Farmington was third (31.8"), Lookout Peak was fourth (31.3"), and Ben Lomond Peak was fifth (30.7"). At the low end of the spectrum, the Utah SNOTEL sites with the lowest peak SWE this winter were Little Grassy, Gooseberry RS, Oak Creek, and Long Valley Jct—all are in the southern half of the state and peaked at less than 6" SWE. A few records were approached or broken: this year's peak SWE was the highest ever recorded at the Hole-in-Rock SNOTEL (north slope of the Uinta Mountains, peak was 12.0" SWE), and the second highest at the Dry Fork SNOTEL (east slope of the Oquirrh

Mountains, 21.9” SWE). Conversely, this was the second worst winter recorded at the Gooseberry RS SNOTEL (Fish Lake Hightop Plateau).

We are now well past the typical peak statewide snow accumulation on April 6th. Though Utah’s snowpack has fallen apart recently, it is not uncommon for Utah’s snowpack to rapidly decline before May 1st. While we always hate to see it go, Utah’s streams and reservoirs will still benefit from the fairly good winter; at its peak, statewide SWE was above average at 16.7”. Early meltwater from this year’s snow has already begun to replenish the state’s water supply infrastructure: reservoir storage is at 84% of capacity statewide compared to 72% last year.

May 1 streamflow forecasts range from 39% to 100% for all locations in Utah. The lowest expected runoff volumes, in terms of percent normal, are predicted for the Price River and its tributaries, several Weber River tributaries, the Strawberry River, and streams near Moab and Monticello. At the other end, the forecasts for several tributaries of the Bear River basin are more optimistic, with around 90-100% of average flow expected during the runoff period. Note that this report includes volumetric forecasts for the May – July runoff period as well as revised April – July predictions based on current conditions and observations over the last month. The large drop in SWE during April has led to substantial reductions in predicted runoff across the state for both forecast periods.

As of May 1, Surface Water Supply Indices (SWSI, combining reservoir storage and forecast streamflow) are highest for the Western Uintas, Provo, Price, and Upper Sevier watersheds and lowest for the Eastern Uintas, Moab, and San Pitch drainages.

SNOWPACK

Statewide snowpack is below normal at 78% compared to 142% last year. The basins with the highest remaining percent normal SWE are Southwestern Utah (120%), the Northeastern Uintas (104%), and the Bear River basin (93%).

PRECIPITATION

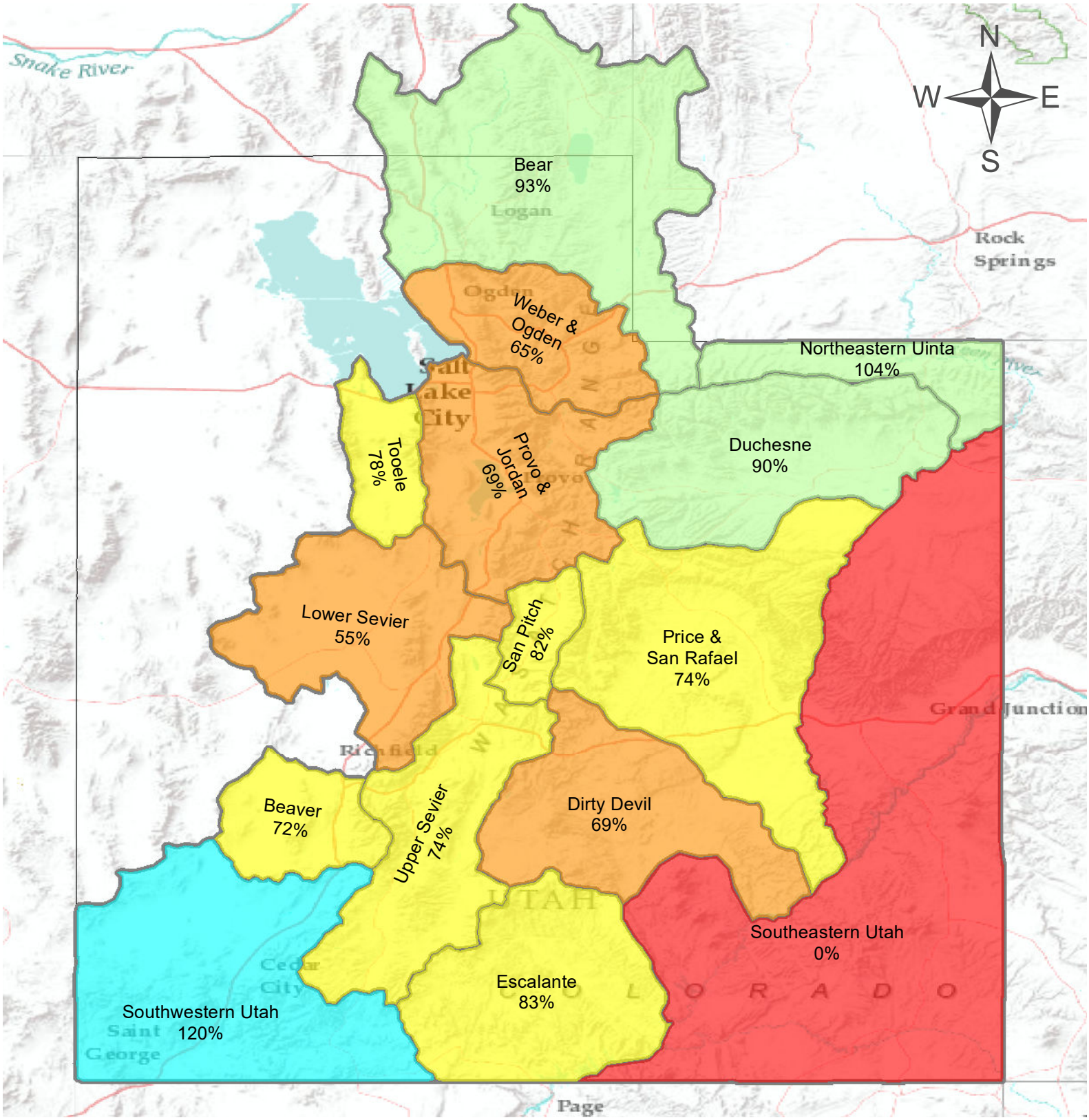
April precipitation across the state was well below average at 50%, which brings the seasonal accumulation (Oct-Apr) to 87% of average. All Utah watersheds are between 81% and 100% of average except for the Tooele-Vernon basin which is slightly lower at 71%.

RESERVOIRS

Reservoir storage is at 84% of capacity statewide compared to 72% last year. Most small reservoirs, as well as some of Utah’s medium-size reservoirs, will likely fill this year after the snow melts.

STREAMFLOW

May 1 streamflow forecasts for both April to July and May to July are significantly reduced from predictions included in our April 1 Water Supply Outlook Report. These reductions are due to early melting of the snowpack and poor April precipitation. Specific values are included in this report for each major watershed in Utah.



Statewide Snow Water Equivalent

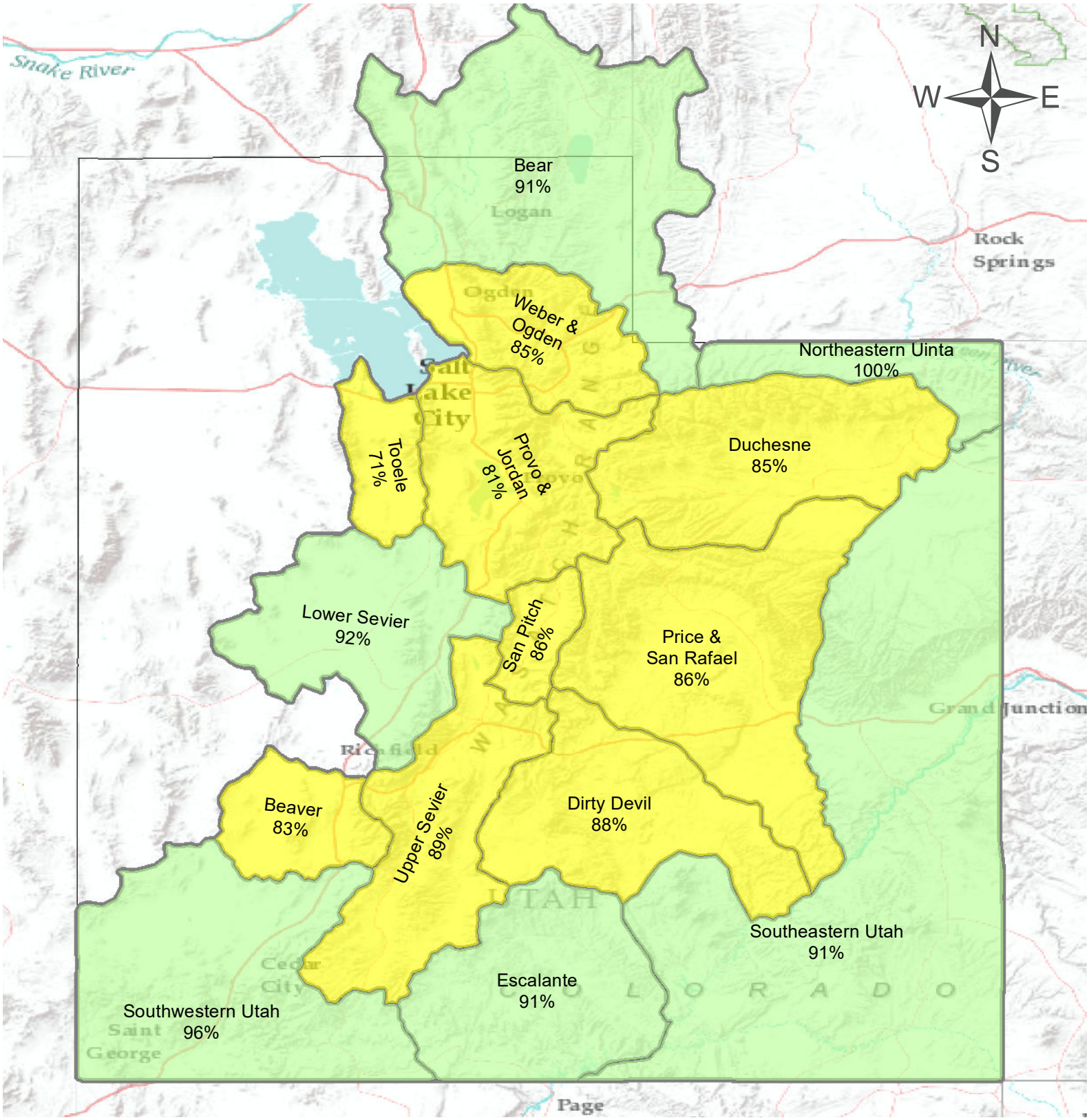
As of May 1, 2020:

78% of Normal Snow Water Equivalent

0 10 20 40 60 80 100 Miles

% of Normal

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



Statewide Precipitation

As of May 1, 2020:

87% of Normal Precipitation

50% of Normal Precipitation Last Month

0 10 20 40 60 80 100 Miles

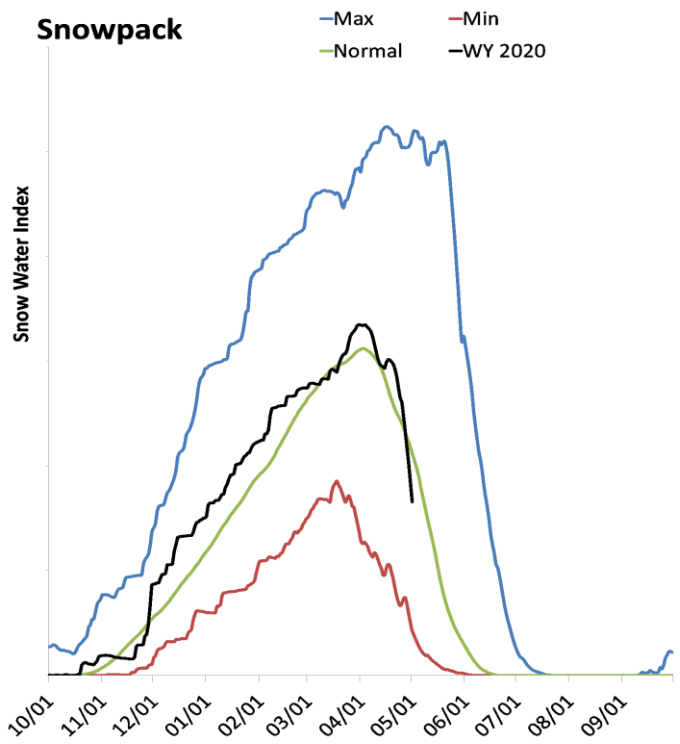
% of Normal

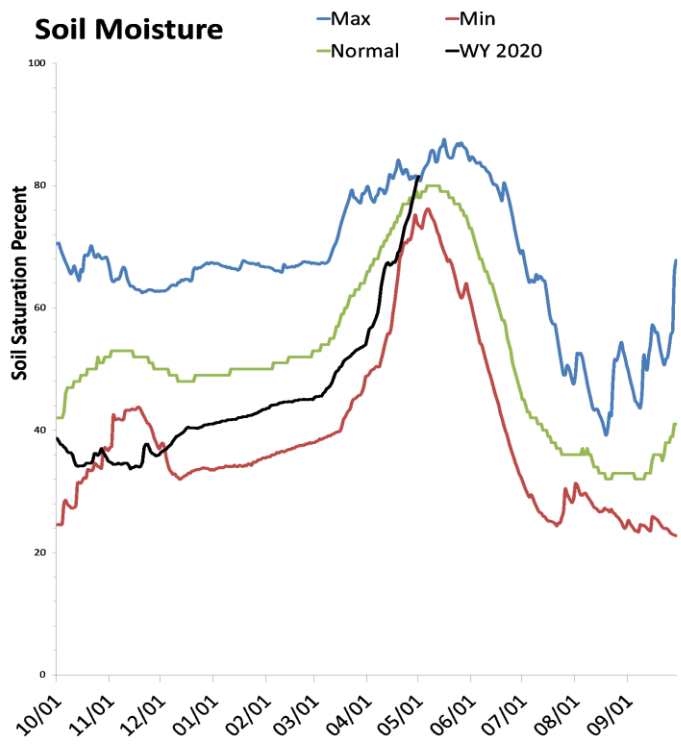
- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%

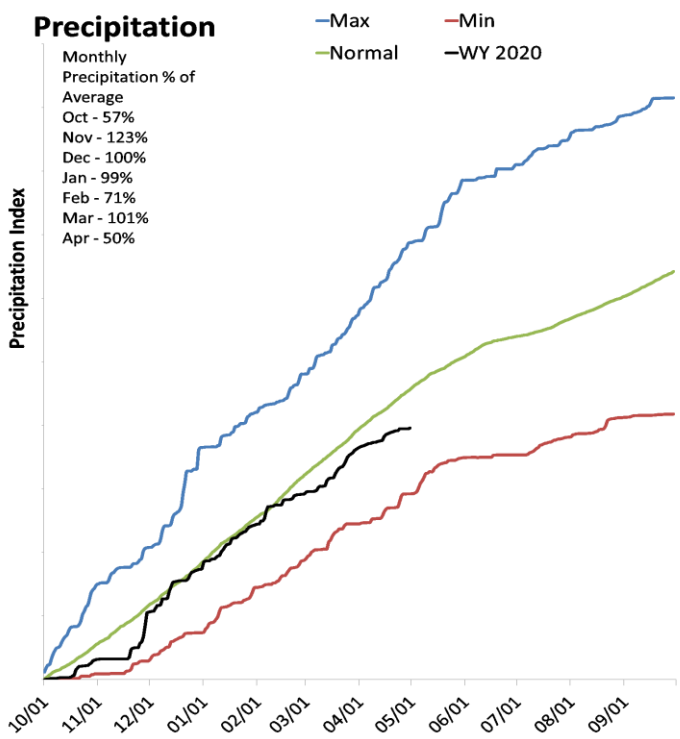
Statewide Utah

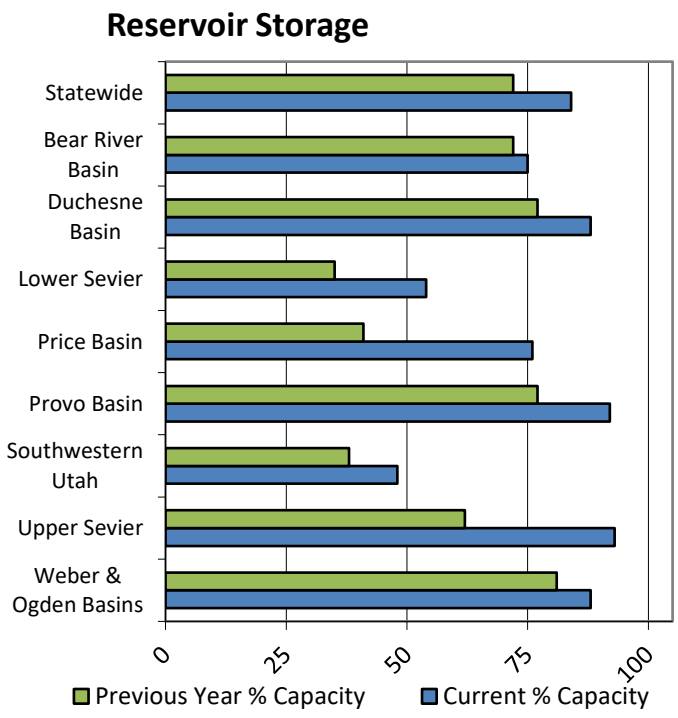
May 1, 2020

Snowpack in Utah is below normal at 78% of normal, compared to 142% last year. Precipitation in April was much below average at 50%, which brings the seasonal accumulation (Oct-Apr) to 87% of average. Soil moisture is at 81% compared to 81% last year. Reservoir storage is at 84% of capacity, compared to 72% last year. Forecast streamflow volumes range from 39% to 100% of average.









SNOTEL Data

May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF ^	*KAF ^*	*KAF ^*	*%*		
Bear River	**957.4**	**105.0**	**1062.4**	**66**	**1.32**	**00, 87, 19, 12**
Woodruff Narrows	**58.3**	**87.0**	**145.3**	**49**	**-0.1**	**87, 81, 08, 10**
Little Bear	**14.2**	**19.0**	**33.2**	**48**	**-0.14**	**18, 16, 10, 08**
Ogden River	**98.0**	**57.0**	**155.0**	**56**	**0.51**	**10, 89, 16, 85**
Weber River	**385.8**	**170.0**	**555.8**	**54**	**0.3**	**08, 81, 10, 96**
Provo River	**1269.6**	**72.0**	**1341.6**	**70**	**1.7**	**12, 10, 09, 96**
Western Uinta	**190.7**	**87.0**	**277.7**	**76**	**2.13**	**98, 87, 19, 97**
Eastern Uinta	**32.6**	**56.1**	**88.7**	**29**	**-1.73**	**03, 81, 15, 92**
Blacks Fork	**15.7**	**75.0**	**90.7**	**42**	**-0.66**	**91, 18, 06, 15**
Smiths Fork	**6.6**	**25.0**	**31.6**	**55**	**0.44**	**97, 91, 01, 14**
Price River	**53.6**	**21.0**	**74.6**	**71**	**1.73**	**87, 17, 97, 99**
Joe's Valley	**47.8**	**40.0**	**87.8**	**56**	**0.51**	**10, 93, 09, 08**
Ferron Creek	**7.2**	**27.0**	**34.2**	**37**	**-1.12**	**00, 07, 15, 04**
Moab	**1.7**	**1.9**	**3.7**	**32**	**-1.47**	**14, 00, 03, 10**
Upper Sevier	**113.1**	**50.0**	**163.1**	**68**	**1.52**	**06, 87, 84, 88**
San Pitch	**9.6**	**11.8**	**21.4**	**32**	**-1.52**	**13, 17, 01, 89**
Lower Sevier	**128.3**	**74.0**	**202.3**	**46**	**-0.3**	**13, 93, 19, 96**
Beaver River	**21.8**	**18.0**	**39.8**	**59**	**0.71**	**96, 06, 81, 87**
Virgin River	**40.9**	**28.0**	**68.9**	**52**	**0.14**	**08, 09, 97, 00**

**EOM, end of month; # SWSI, surface water supply index; ^KAF, thousand acre-feet.*

What is a Surface Water Supply Index?

The Surface Water Supply Index (SWSI) is a predictive indicator of total surface water availability within a watershed for the spring and summer water use seasons. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow which are based on current snowpack and other hydrologic variables. SWSI 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. SWSI's are calculated in this fashion to be consistent with other hydroclimatic indicators such as the Palmer Drought Index and the Precipitation index.

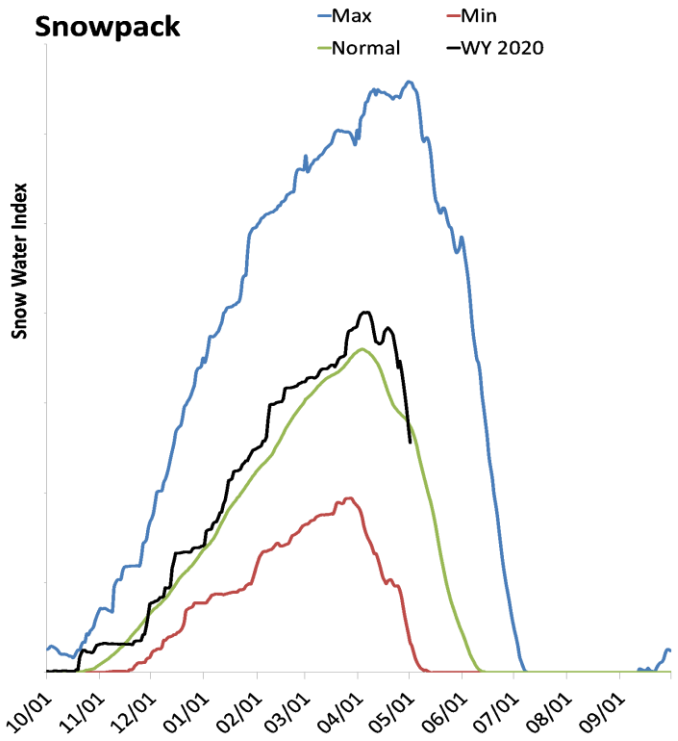
Utah Snow Surveys has also chosen to display the SWSI value as well as a PERCENT CHANCE OF NON-EXCEEDANCE. While this is a cumbersome name, it has the simplest application. It can be best thought of as a scale of 1 to 99 with 1 being the drought of record (driest possible conditions) and 99 being the 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 SWSI 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 SWSI 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.

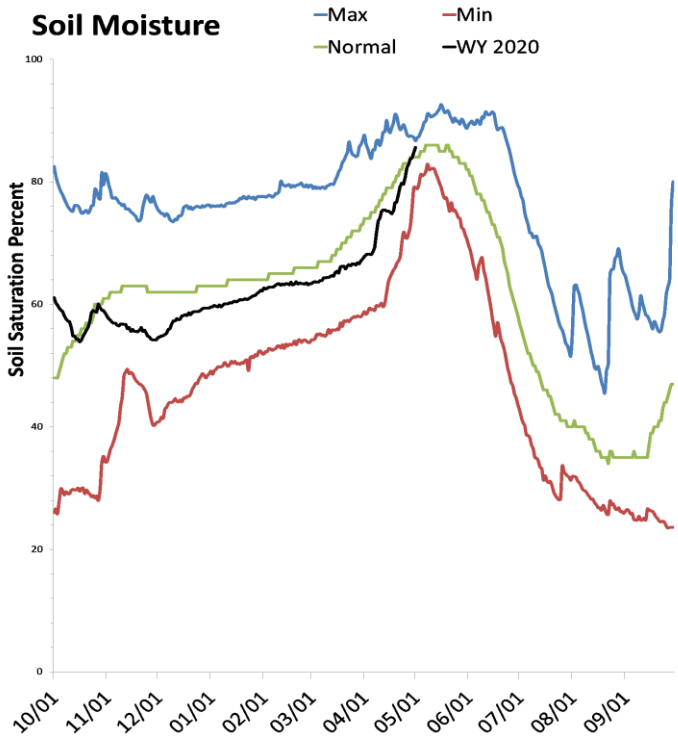
For more information on the SWSI go to: www.ut.nrcs.usda.gov/snow/ on the water supply page. The entire period of historical record for reservoir storage and streamflow is available.

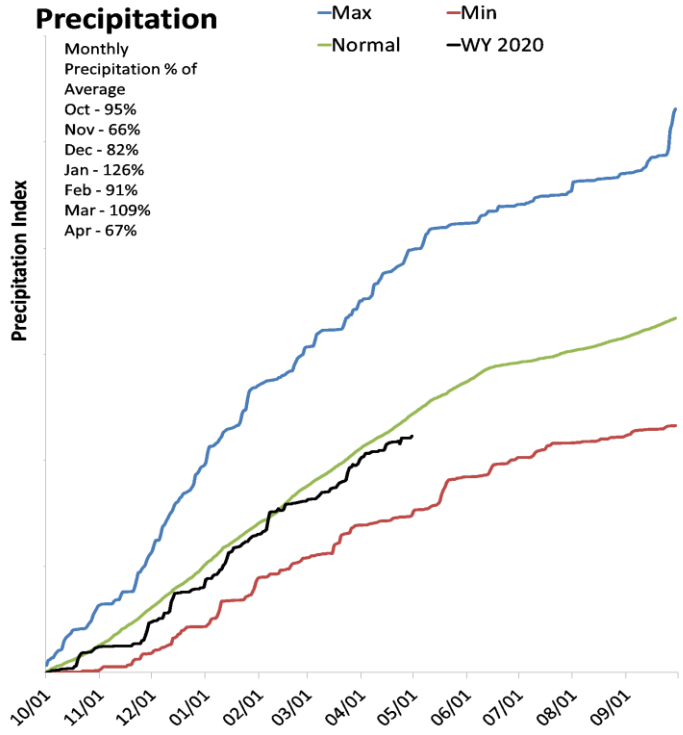
Bear River Basin

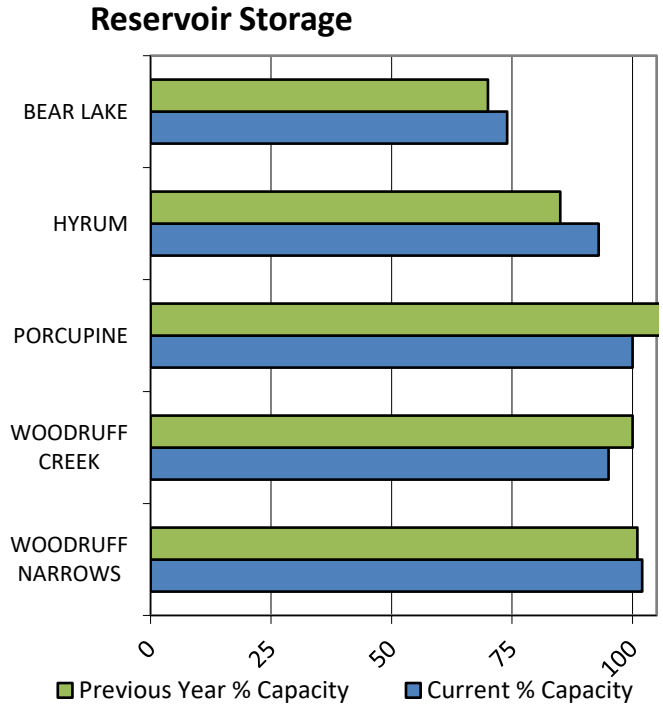
May 1, 2020

Snowpack in the Bear River Basin is near normal at 93% of normal, compared to 118% last year. Precipitation in April was much below average at 67%, which brings the seasonal accumulation (Oct-Apr) to 91% of average. Soil moisture is at 85% compared to 84% last year. Reservoir storage is at 75% of capacity, compared to 72% last year. Forecast streamflow volumes range from 59% to 100% of average. The surface water supply index is 66% for the Bear River, 49% for the Woodruff Narrows, 48% for the Little Bear.









SNOTEL Data

Data Current as of: 5/6/2020 11:33:06 AM

Bear River
Streamflow Forecasts - May 1, 2020

Bear River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Bear R nr UT-WY State Line								
	APR-JUL	71	84	93	83%	102	115	112
	APR-SEP	74	89	99	80%	109	124	123
	MAY-JUL	66	79	87	84%	95	107	104
	MAY-SEP	70	84	93	80%	103	117	116
Bear R ab Resv nr Woodruff								
	APR-JUL	30	62	84	69%	105	137	121
	APR-SEP	26	62	86	67%	109	145	128
	MAY-JUL	21	51	71	68%	91	120	105
	MAY-SEP	17.6	50	72	65%	95	127	111
Big Ck nr Randolph								
	APR-JUL	0.31	2.3	3.6	95%	4.9	6.9	3.8
	MAY-JUL	0.22	1.64	2.8	90%	4	5.7	3.1
Smiths Fk nr Border								
	APR-JUL	71	81	88	99%	95	105	89
	APR-SEP	83	95	103	99%	111	123	104
	MAY-JUL	62	72	79	99%	86	96	80
	MAY-SEP	75	86	94	99%	102	113	95
Bear R bl Stewart Dam								
	APR-JUL	57	103	135	74%	167	215	183
	APR-SEP	59	112	148	72%	184	235	205
	MAY-JUL	30	75	105	72%	135	180	146
	MAY-SEP	30	82	118	70%	154	205	169
Little Bear at Paradise								
	APR-JUL	16.7	24	29	64%	34	41	45
	MAY-JUL	6.7	14	19	59%	24	31	32
Logan R nr Logan								
	APR-JUL	89	101	109	98%	117	129	111
	MAY-JUL	75	87	96	100%	104	116	96
Blacksmith Fk nr Hyrum								
	APR-JUL	21	32	39	91%	46	57	43
	MAY-JUL	12.7	22	29	94%	36	46	31

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bear Lake	957.4	917.2	651.7	1302.0
Hyrum Reservoir	14.2	13.0	14.1	15.3
Porcupine Reservoir	11.3	13.2	10.1	11.3
Woodruff Creek	3.8	4.0	3.8	4.0
Woodruff Narrows Reservoir	58.3	58.0	45.5	57.3
Basin-wide Total	1045.0	1005.4	725.2	1389.9
# of reservoirs	5	5	5	5

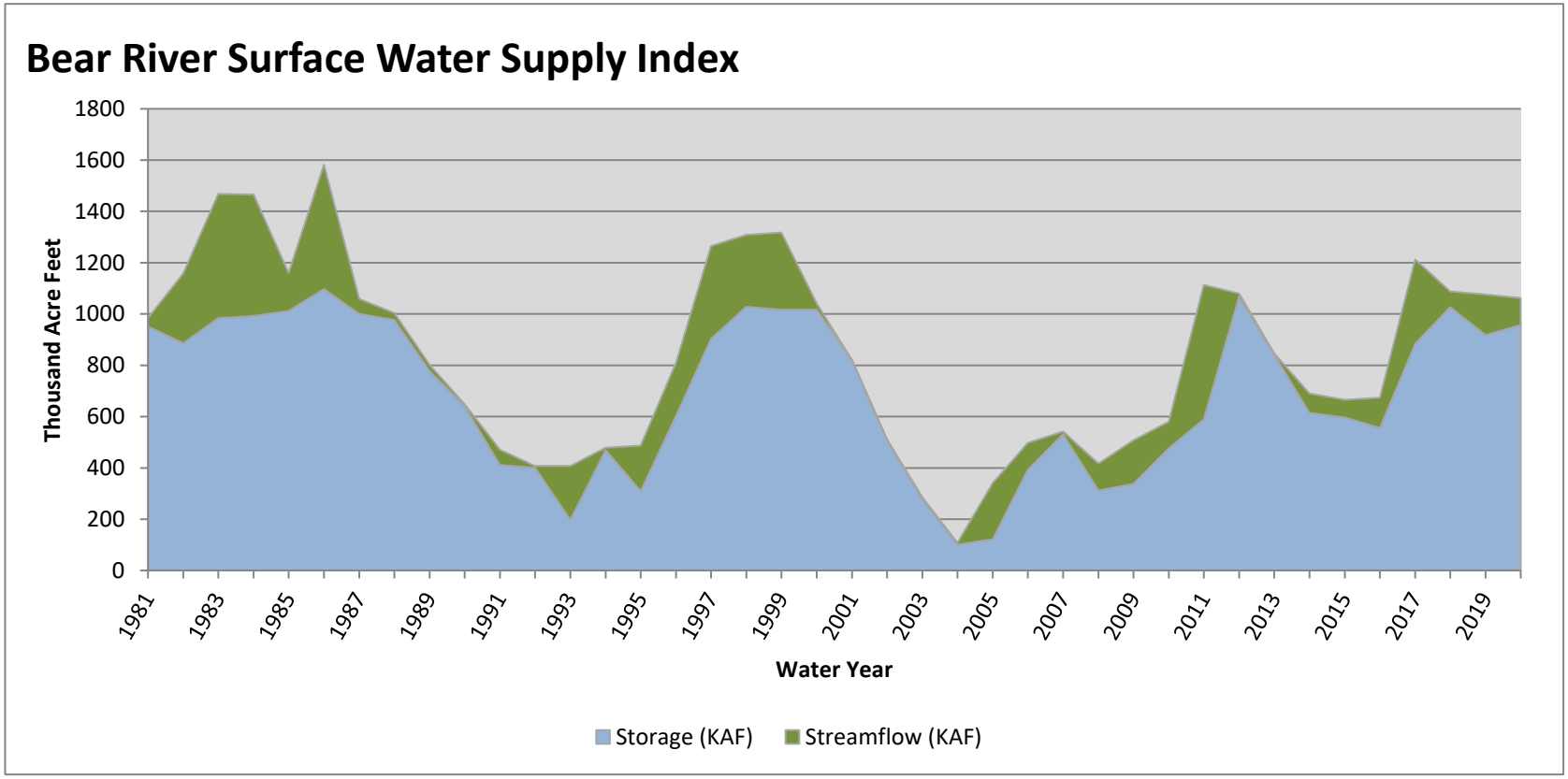
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Upper Bear	4	90%	131%
Middle Bear	7	101%	112%
Lower Bear	2	83%	129%
Logan River	9	92%	114%

May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Bear River	**957.42**	**105.00**	**1062.42**	**66**	**1.32**	**00, 87, 19, 12**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

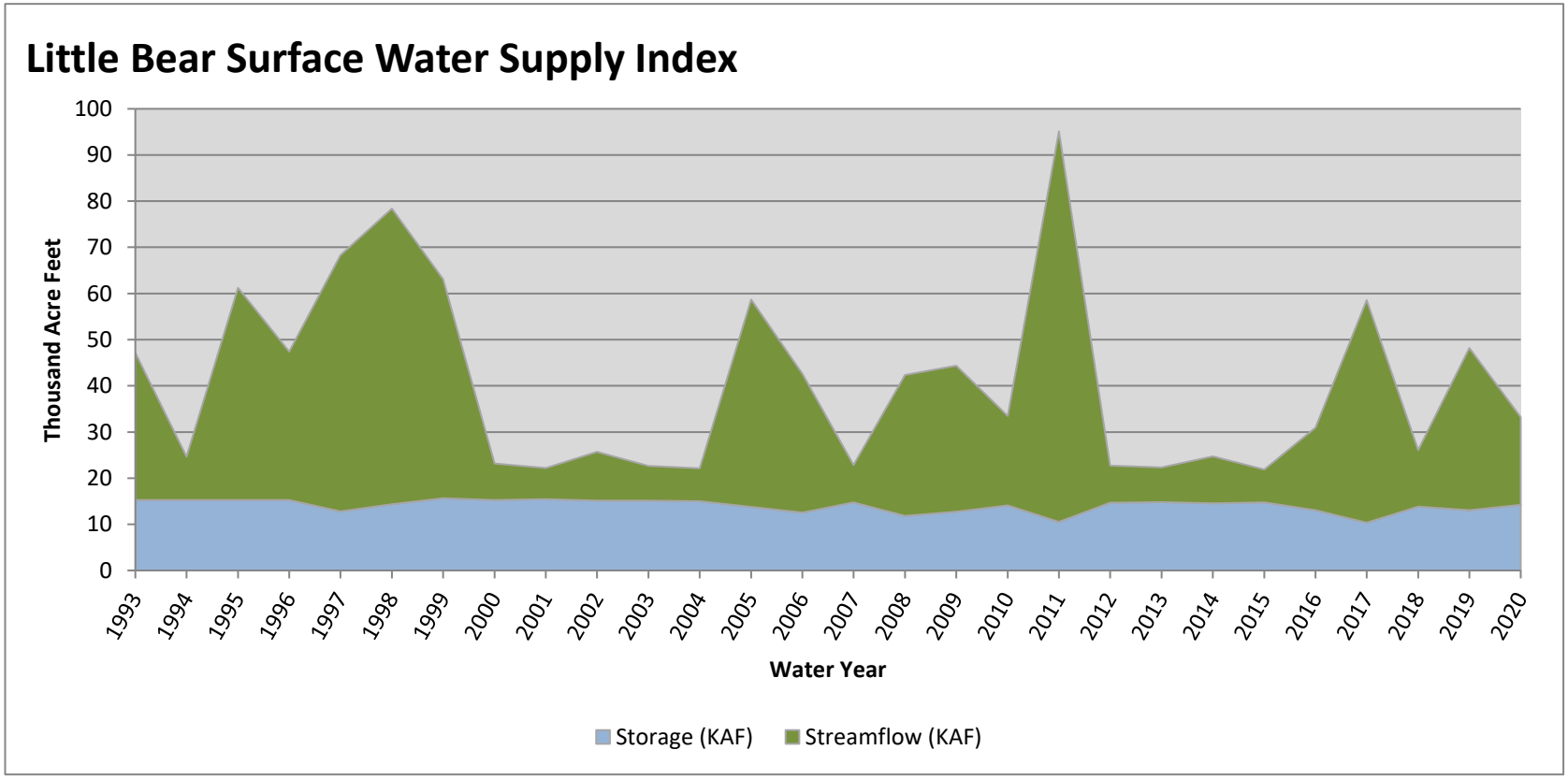


May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Little Bear	**14.22**	**19.00**	**33.22**	**48**	**-0.14**	**18, 16, 10, 08**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

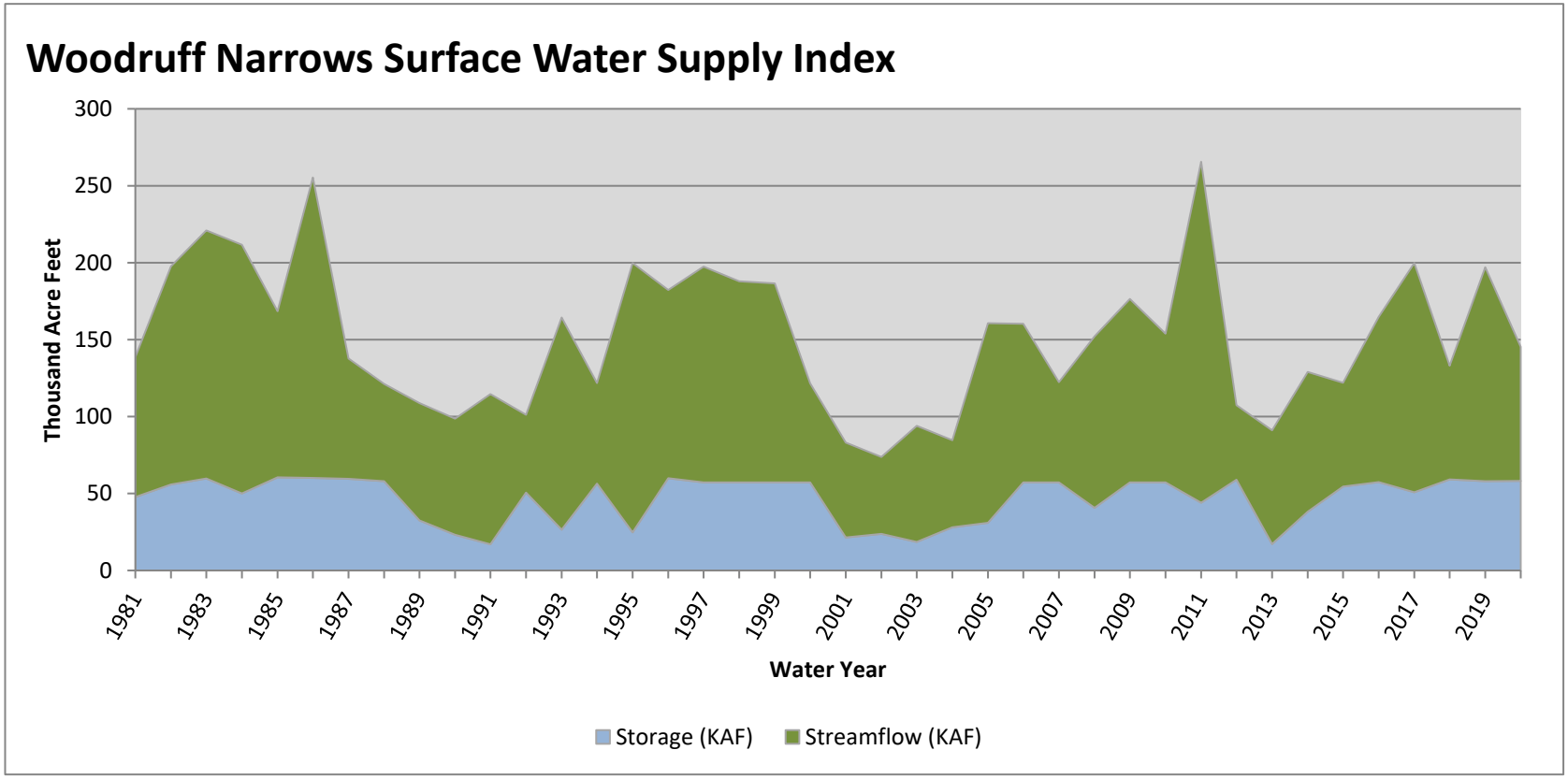


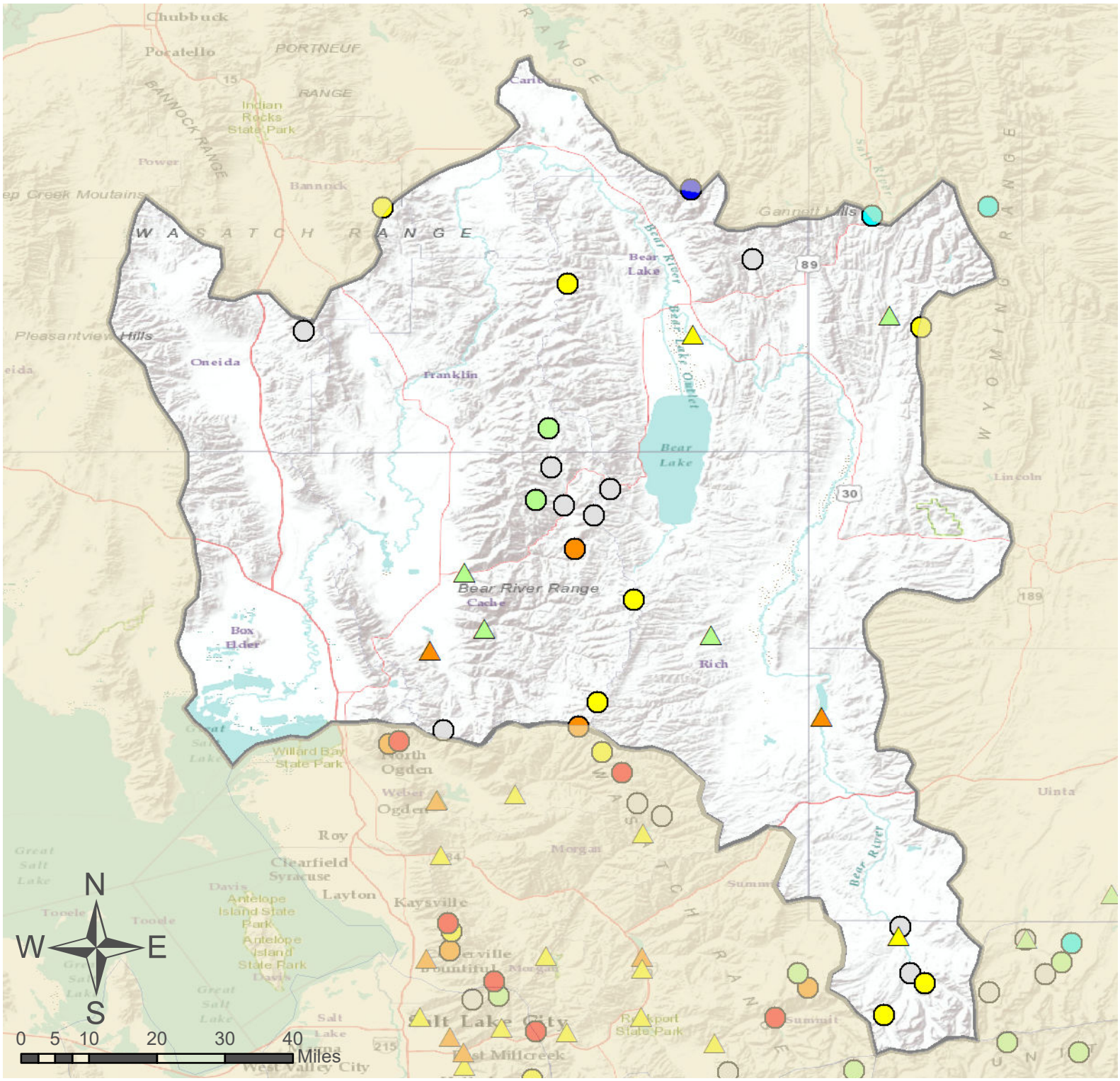
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Woodruff Narrows	**58.30**	**87.00**	**145.30**	**49**	**-0.1**	**87, 81, 08, 10**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





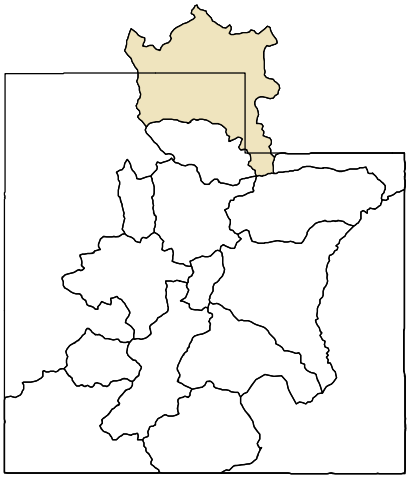
Bear River Basin

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



As of May 1, 2020:

93% of Normal SWE

91% of Normal Precipitation

67% of Normal Precipitation Last Month

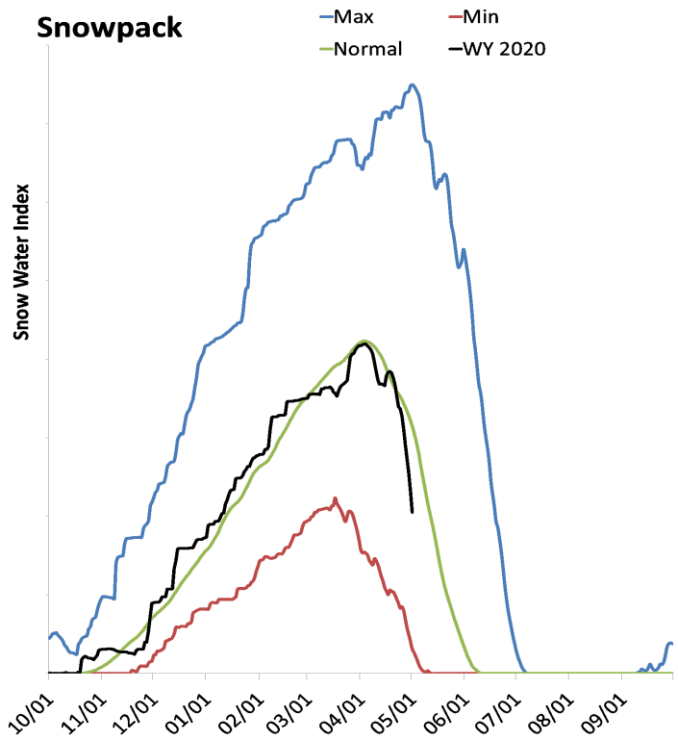
85% Saturation Soil Moisture

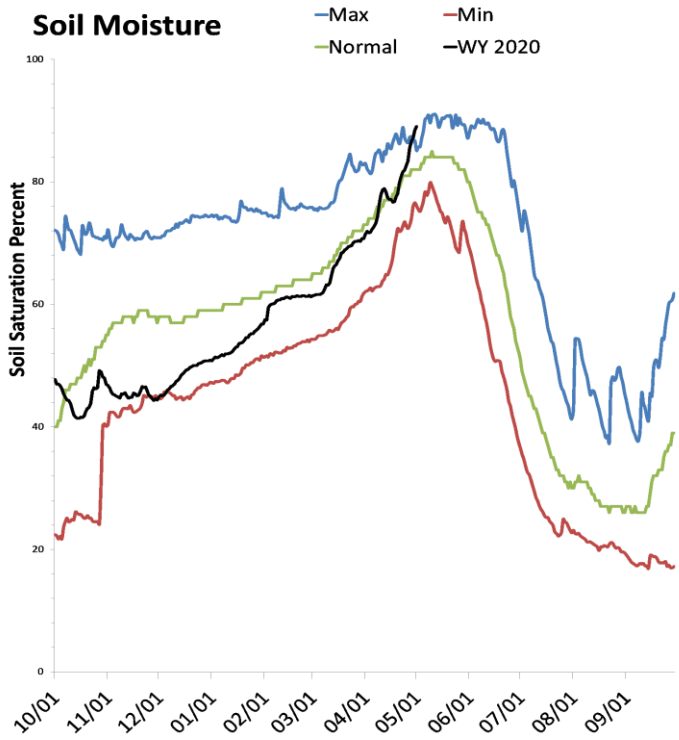
Bear River Basin

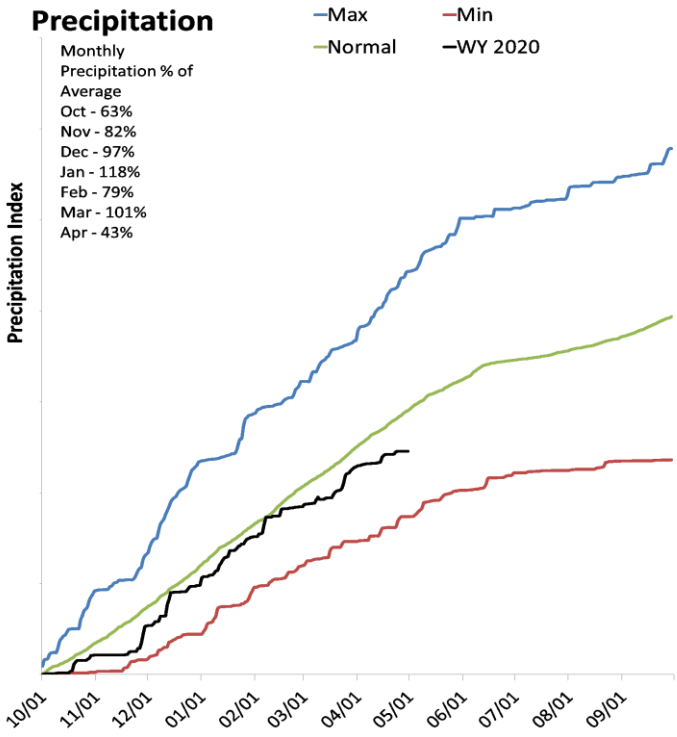
Weber & Ogden River Basins

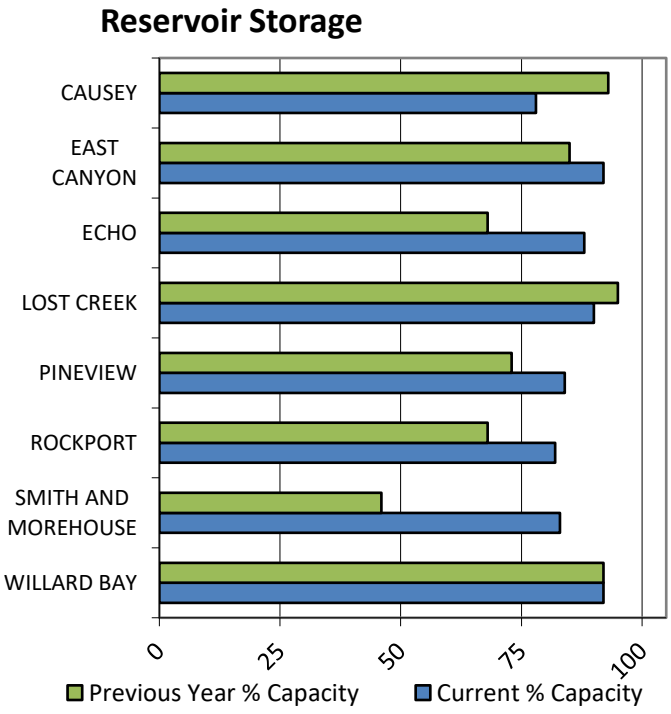
May 1, 2020

Snowpack in the Weber & Ogden River Basins is much below normal at 65% of normal, compared to 132% last year. Precipitation in April was much below average at 43%, which brings the seasonal accumulation (Oct-Apr) to 85% of average. Soil moisture is at 88% compared to 84% last year. Reservoir storage is at 88% of capacity, compared to 81% last year. Forecast streamflow volumes range from 54% to 82% of average. The surface water supply index is 56% for the Ogden River, 54% for the Weber River.









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Data Current as of: 5/6/2020 11:33:13 AM

Weber Ogden Rivers
Streamflow Forecasts - May 1, 2020

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

Weber Ogden Rivers	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Smith & Morehouse Resv Inflow								
	APR-JUL	22	24	26	76%	28	30	34
Weber R nr Oakley								
	APR-JUL	70	83	91	78%	99	112	117
	MAY-JUL	61	74	82	77%	91	104	106
Rockport Reservoir Inflow								
	APR-JUL	63	79	90	73%	101	117	123
	MAY-JUL	53	68	79	75%	89	104	106
Chalk Ck at Coalville								
	APR-JUL	5.9	17.3	25	61%	33	44	41
	MAY-JUL	2.5	13.5	21	62%	28	40	34
Weber R nr Coalville								
	APR-JUL	59	78	91	72%	104	123	126
	MAY-JUL	51	67	78	74%	90	106	106
Echo Reservoir Inflow								
	APR-JUL	42	82	109	66%	136	176	166
	MAY-JUL	33	68	92	61%	116	151	152
Lost Ck Reservoir Inflow								
	APR-JUL	2.3	6.7	9.7	80%	12.7	17.1	12.1
	MAY-JUL	0.5	4.4	7	82%	9.6	13.5	8.5
East Canyon Ck nr Jeremy Ranch								
	APR-JUL	5.2	8.5	10.8	71%	13.1	16.4	15.2
	MAY-JUL	0.82	4.1	7.3	72%	10.5	15.1	10.2
East Canyon Ck nr Morgan								
	APR-JUL	10.1	16	20	71%	24	30	28
	MAY-JUL	6.2	10.6	13.6	70%	16.6	21	19.4
Weber R at Gateway								
	APR-JUL	56	145	198	63%	265	355	315
	MAY-JUL	58	129	170	71%	225	295	240
SF Ogden R nr Huntsville								
	APR-JUL	28	36	41	73%	46	54	56
	MAY-JUL	16.9	23	28	70%	32	38	40
Pineview Reservoir Inflow								
	APR-JUL	33	64	84	71%	104	135	118
	MAY-JUL	18.7	42	57	75%	73	96	76
Wheeler Ck nr Huntsville								
	APR-JUL	1.35	2.6	3.5	56%	4.4	5.6	6.3
	MAY-JUL	0.11	1.46	2.4	56%	3.3	4.6	4.3
Centerville Ck								
	APR-JUL	0.56	0.72	0.84	62%	0.95	1.12	1.35
	MAY-JUL	0.25	0.45	0.58	54%	0.72	0.92	1.07

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Causey Reservoir	5.5	6.6	5.0	7.1
East Canyon Reservoir	45.4	42.1	40.4	49.5
Echo Reservoir	65.2	50.1	54.4	73.9
Lost Creek Reservoir	20.3	21.5	14.6	22.5
Pineview Reservoir	92.5	80.0	79.9	110.1
Rockport Reservoir	49.7	41.5	40.1	60.9
Willard Bay	198.5	196.9	158.7	215.0
Smith And Morehouse Reservoir	6.7	3.7	4.5	8.1
Basin-wide Total	483.8	442.3	397.6	547.1
# of reservoirs	8	8	8	8

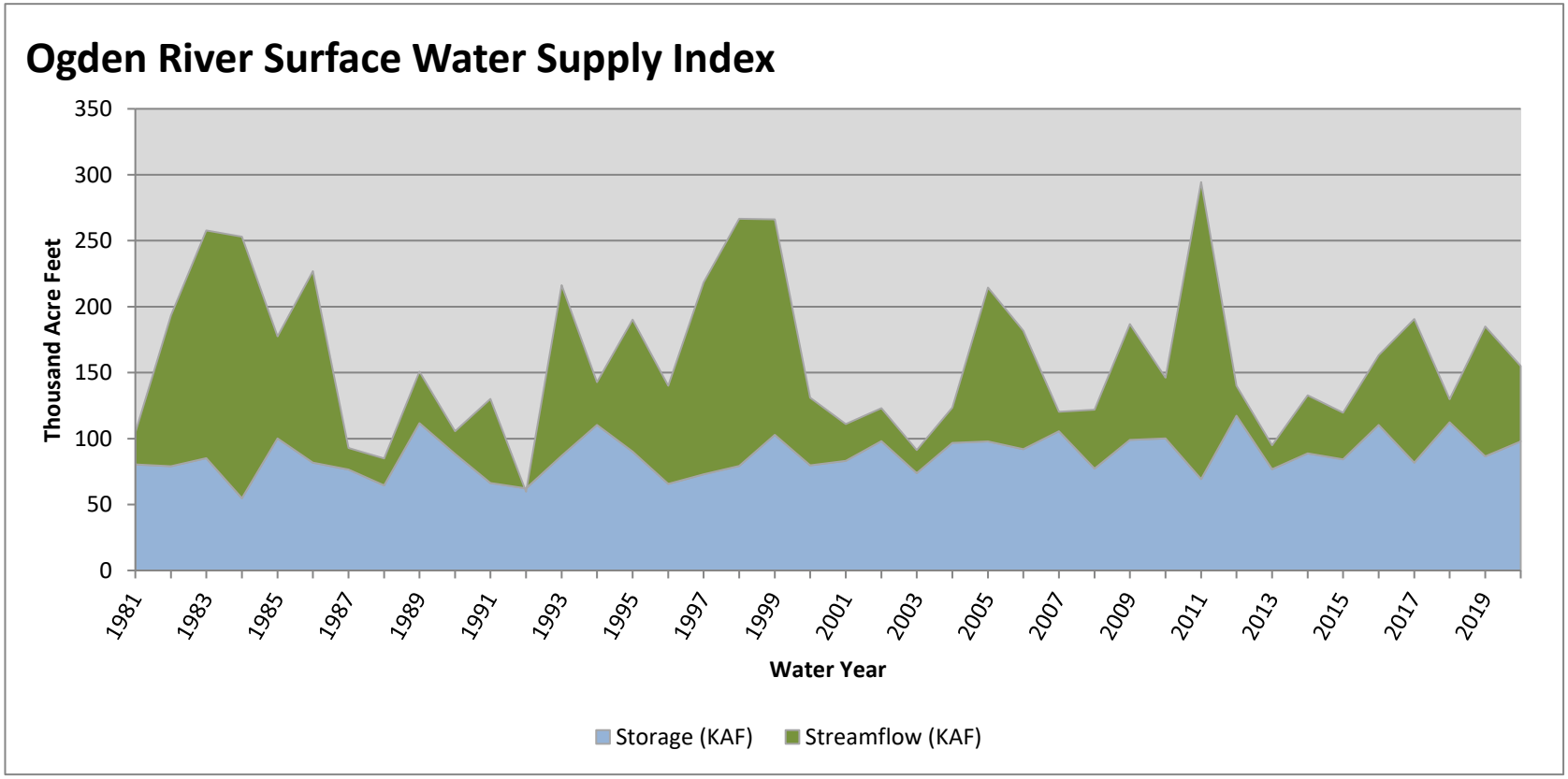
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Upper Weber	10	80%	136%
Lower Weber	7	62%	132%
Ogden River	5	54%	122%
Lost Creek	3	71%	127%

May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Ogden River	**97.96**	**57.00**	**154.96**	**56**	**0.51**	**10, 89, 16, 85**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

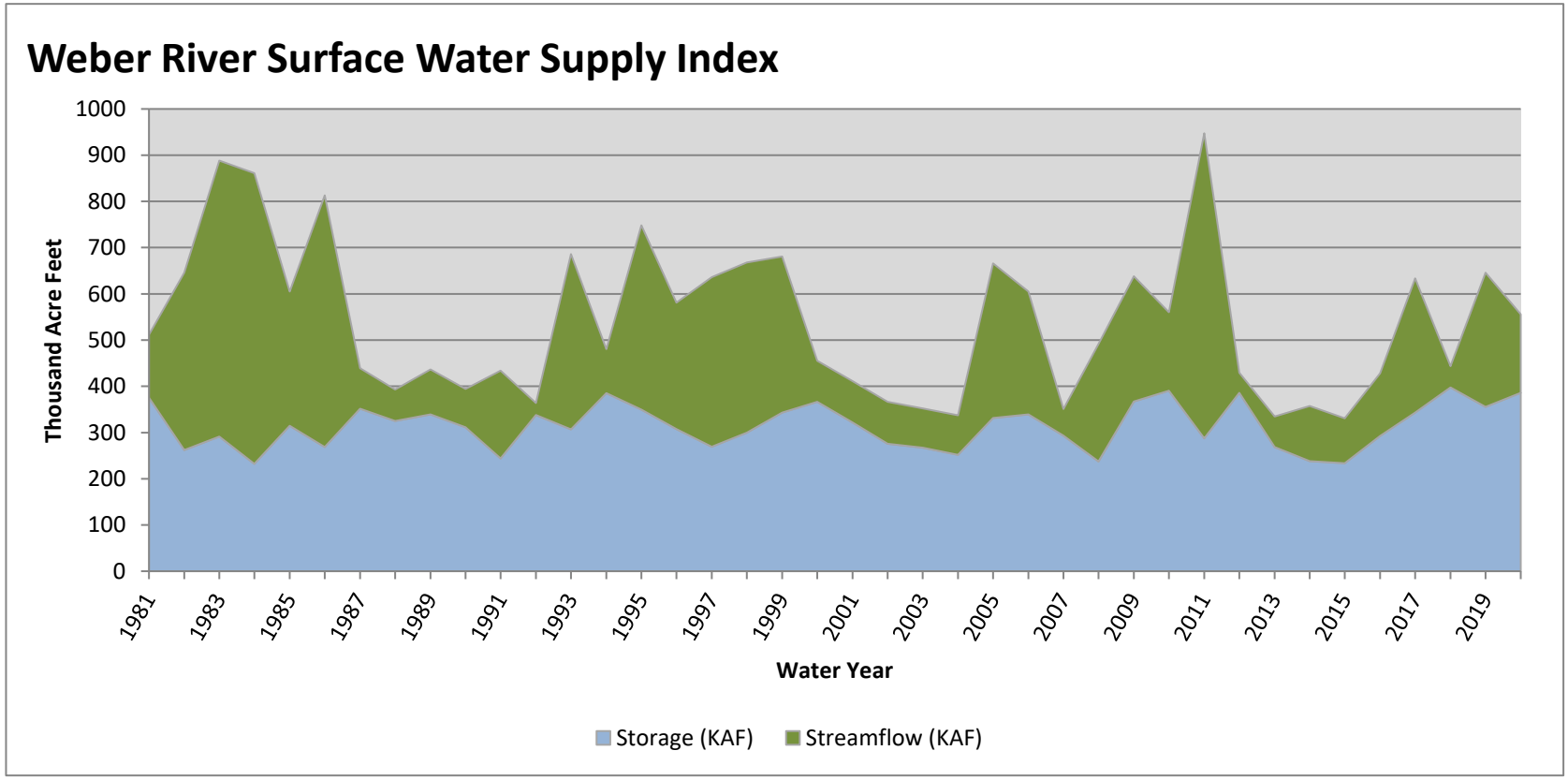


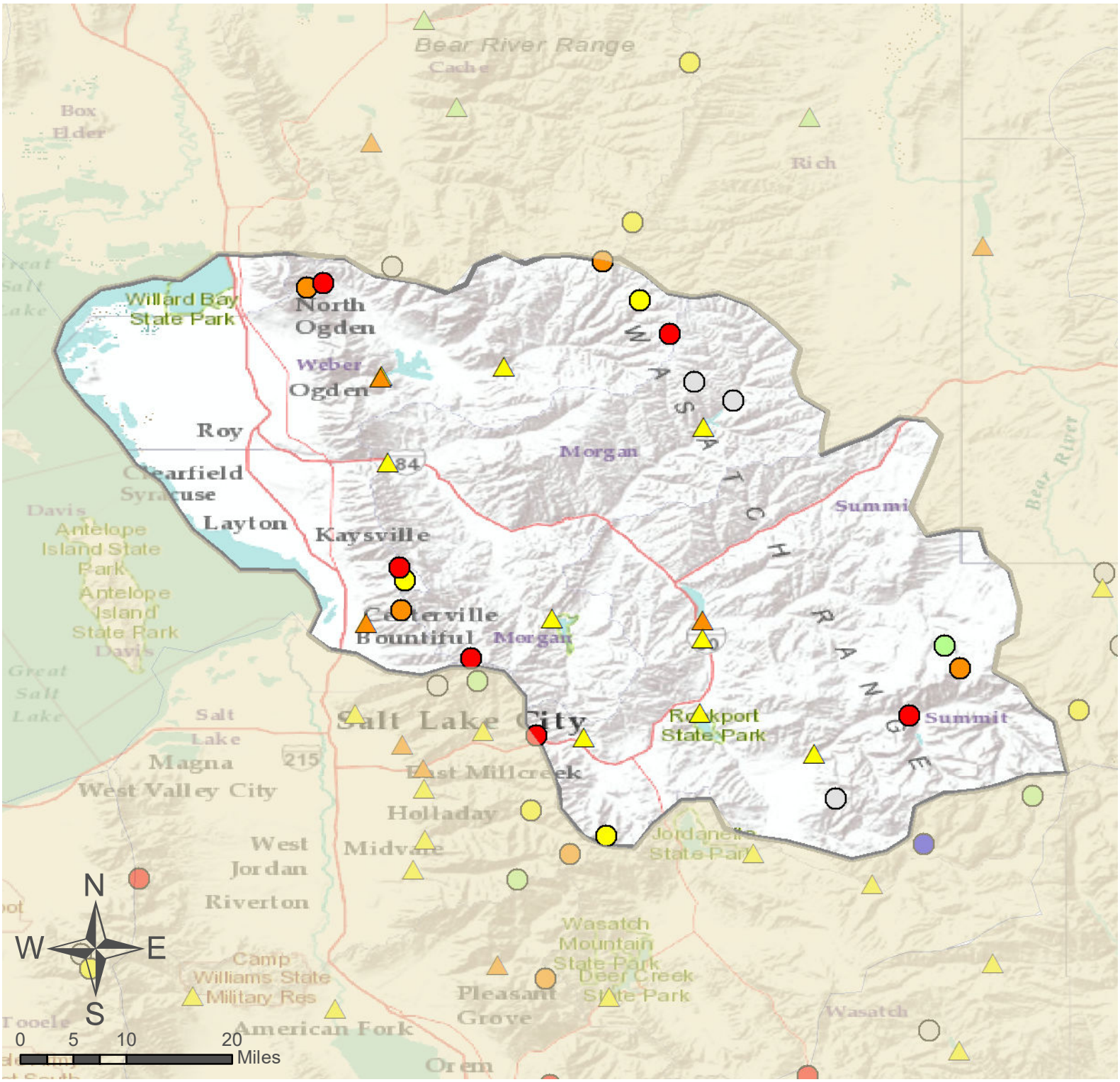
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Weber River	**385.84**	**170.00**	**555.84**	**54**	**0.3**	**08, 81, 10, 96**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





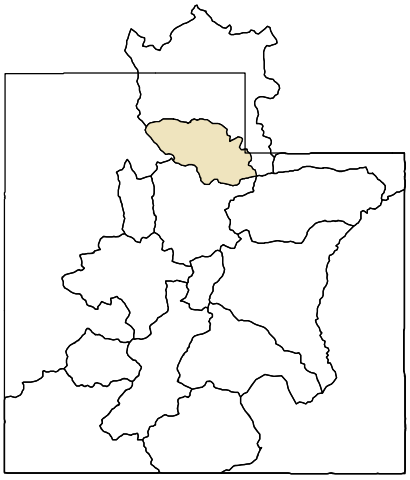
Weber & Ogden River Basins

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



<u>As of May 1, 2020:</u>

65% of Normal SWE

85% of Normal Precipitation

43% of Normal Precipitation Last Month

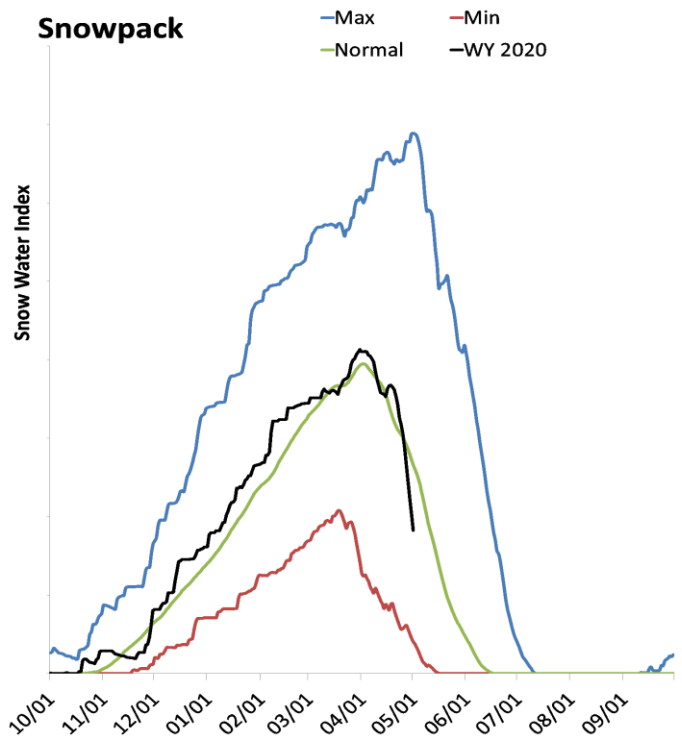
88% Saturation Soil Moisture

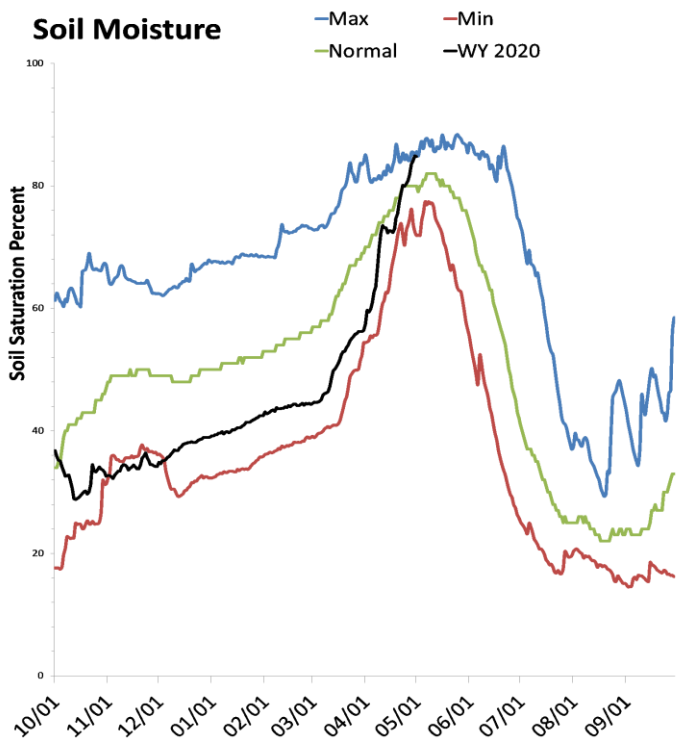
Weber & Ogden River Basins

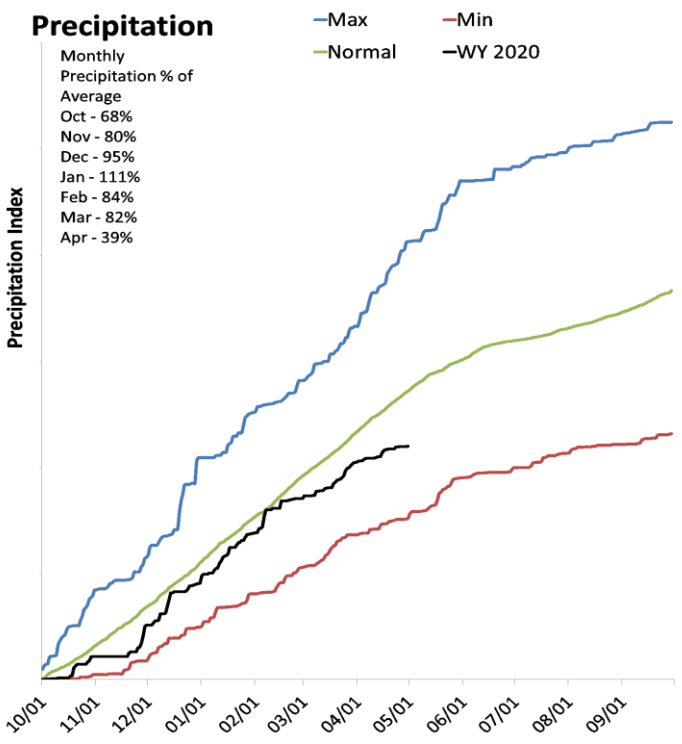
Provo & Jordan River Basins

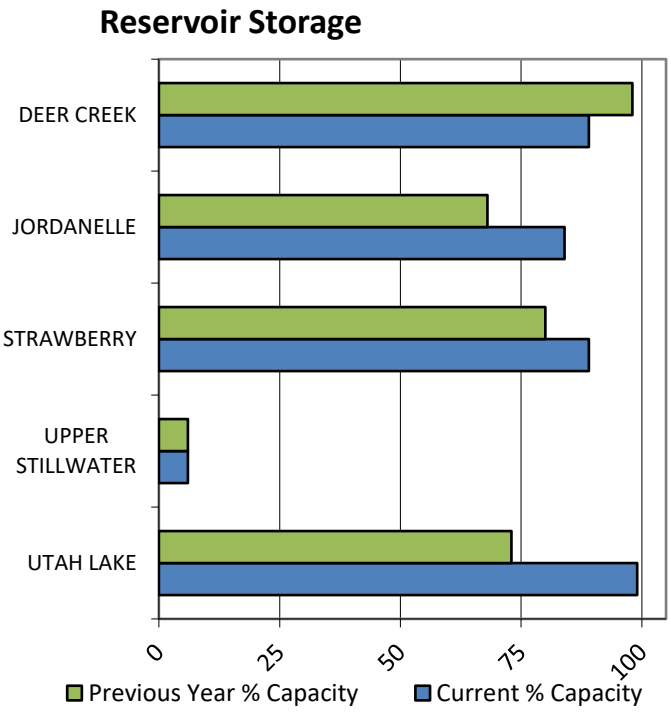
May 1, 2020

Snowpack in the Provo & Jordan River Basins is much below normal at 69% of normal, compared to 151% last year. Precipitation in April was much below average at 39%, which brings the seasonal accumulation (Oct-Apr) to 81% of average. Soil moisture is at 84% compared to 85% last year. Reservoir storage is at 92% of capacity, compared to 77% last year. Forecast streamflow volumes range from 52% to 88% of average. The surface water supply index is 70% for the Provo River.









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Provo Jordan Rivers
Streamflow Forecasts - May 1, 2020

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

Provo Jordan Rivers	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Provo R at Woodland								
	APR-JUL	64	79	80	80%	103	122	100
	MAY-JUL	49	63	72	81%	81	95	89
Provo R at Hailstone								
	APR-JUL	49	64	76	70%	89	109	108
	MAY-JUL	44	57	67	71%	78	94	94
Provo R bl Deer Ck Dam								
	APR-JUL	50	68	81	70%	94	112	116
	MAY-JUL	38	55	66	70%	77	94	94
Spanish Fk at Castilla								
	APR-JUL	4.1	19.2	48	70%	77	119	69
	MAY-JUL	3.8	12.4	39	72%	65	104	54
American Fk ab Upper Powerplant								
	APR-JUL	7.9	13.4	17.2	54%	21	27	32
	MAY-JUL	7	12.2	15.7	52%	19.3	24	30
Utah Lake Inflow								
	APR-JUL	15.9	85	200	75%	285	500	265
	MAY-JUL	11.5	65	142	74%	240	370	192
W Canyon Ck nr Cedar Fort								
	APR-JUL	0.36	0.86	1.2	68%	1.54	2	1.76
	MAY-JUL	0.31	0.78	1.1	71%	1.42	1.89	1.54
Little Cottonwood Ck nr SLC								
	APR-JUL	21	25	29	76%	33	39	38
	MAY-JUL	22	25	27	73%	29	33	37
Big Cottonwood Ck nr SLC								
	APR-JUL	21	27	31	86%	35	41	36
	MAY-JUL	18.5	24	27	82%	31	36	33
Mill Ck nr SLC								
	APR-JUL	2.2	4.2	5.6	88%	7	9	6.4
	MAY-JUL	1.74	3.5	4.7	80%	5.8	7.6	5.9
Parleys Ck nr SLC								
	APR-JUL	4.6	8.4	11	77%	13.6	17.4	14.2
	MAY-JUL	3.2	6.5	8.7	68%	10.9	14.2	12.8
Dell Fk nr SLC								
	APR-JUL	0.43	2.9	4.5	82%	6.1	8.6	5.5
	MAY-JUL	0.35	1.51	3	77%	4.5	6.7	3.9
Emigration Ck nr SLC								
	APR-JUL	0.17	1.77	2.8	70%	3.9	5.5	4
	MAY-JUL	0.16	0.96	1.9	61%	2.8	4.2	3.1
City Ck nr SLC								
	APR-JUL	2.9	5	6.5	84%	8	10.1	7.7
	MAY-JUL	2.2	4.2	5.5	75%	6.8	8.8	7.3
Salt Ck at Nephi								
	APR-JUL	2.2	4.2	5.5	58%	6.8	8.8	9.5
	MAY-JUL	2.4	4	5.1	67%	6.2	7.8	7.6

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Deer Creek Reservoir	133.3	146.6	122.0	149.7
Strawberry Reservoir	986.8	883.4	678.4	1105.9
Utah Lake	866.1	631.4	830.9	870.9
Jordanelle Reservoir	270.2	217.9	247.1	314.0
Basin-wide Total	2256.4	1879.3	1878.4	2440.5
# of reservoirs	4	4	4	4

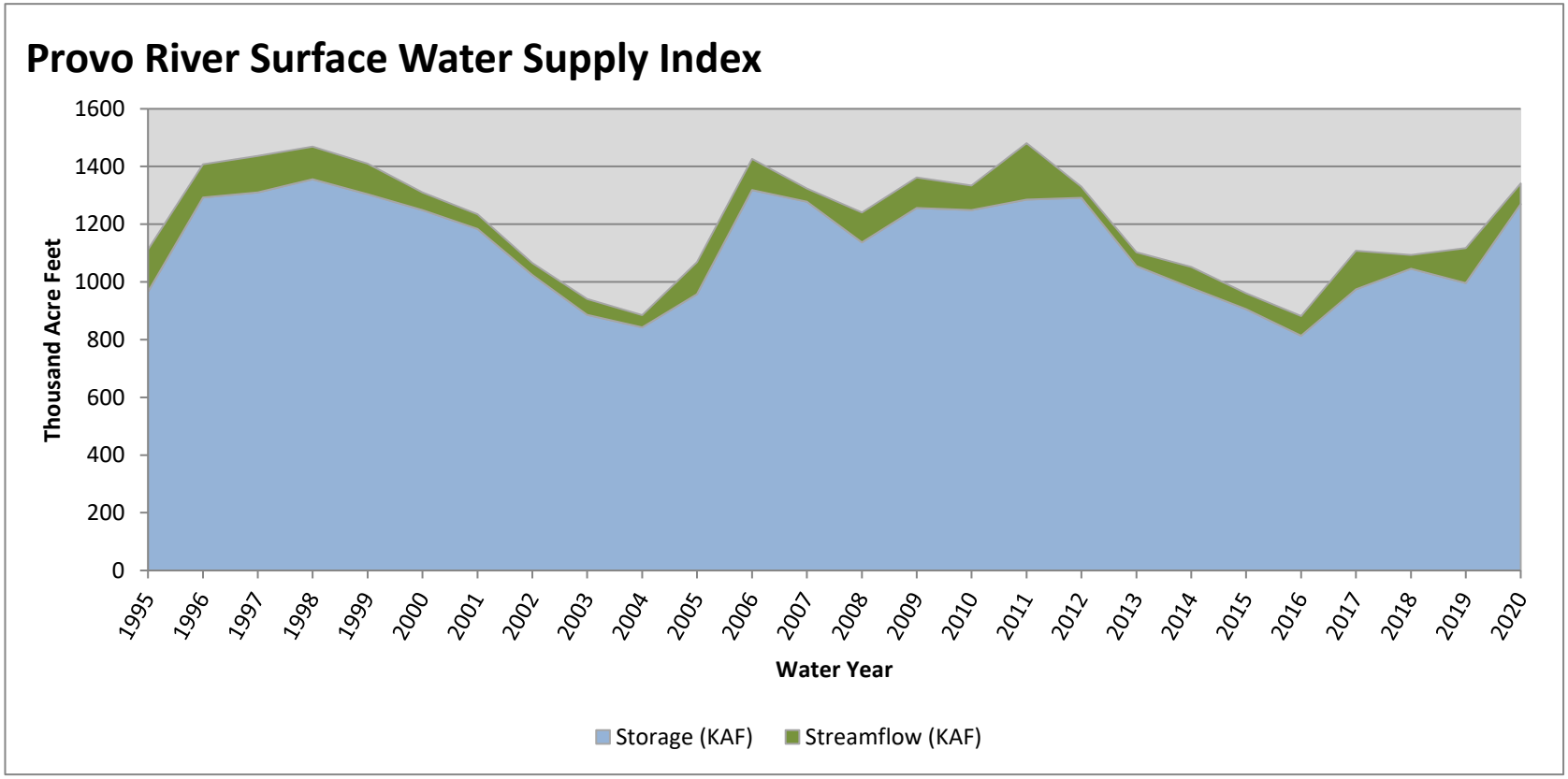
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Provo River	7	75%	151%
Jordan River	16	86%	136%
Utah Lake	13	75%	146%
Spanish Fork River	5	25%	168%
Six Creeks	15	88%	136%
Cottonwood Creeks	7	93%	129%

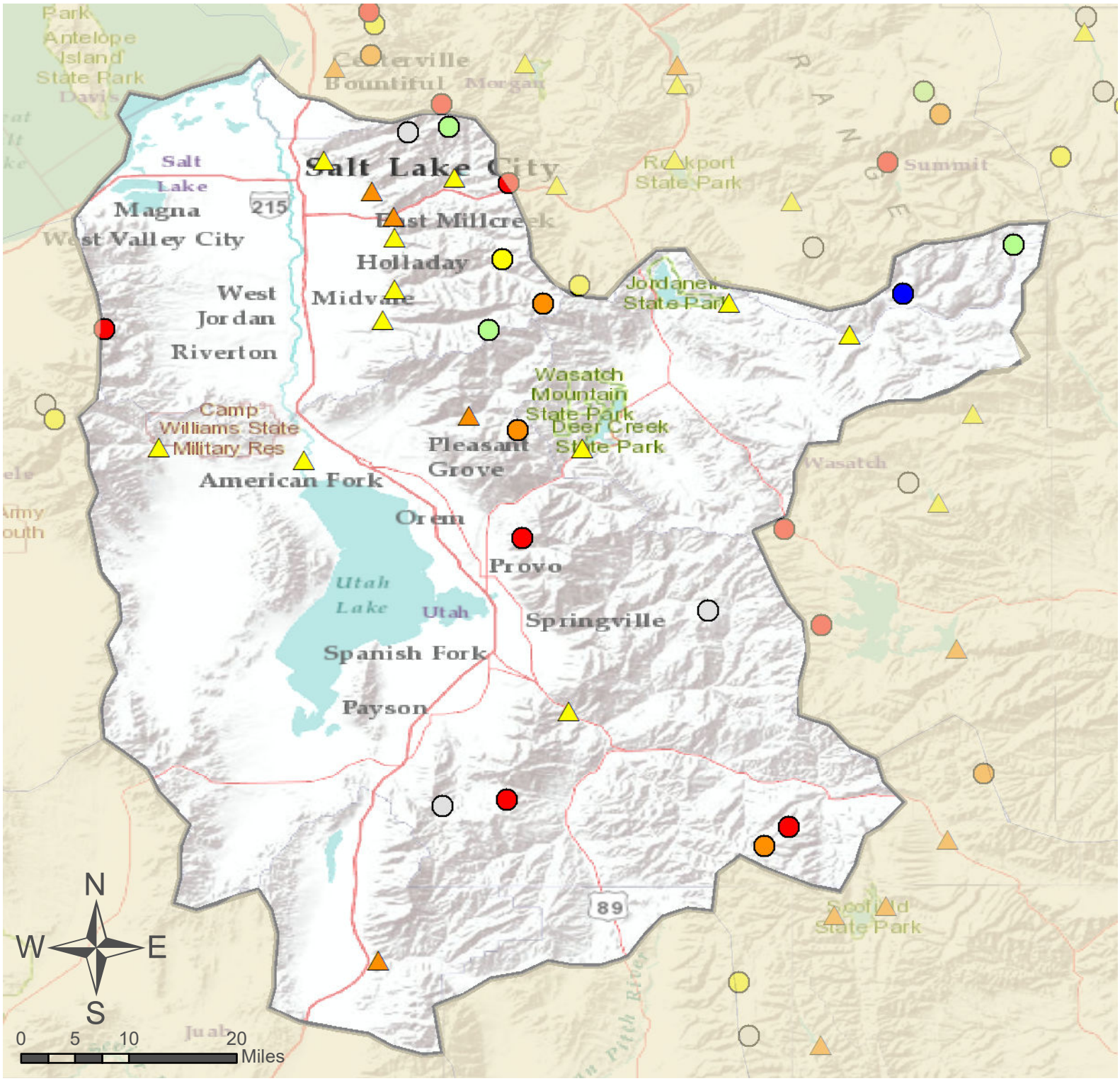
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Provo River	**1269.62**	**72.00**	**1341.62**	**70**	**1.7**	**12, 10, 09, 96**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





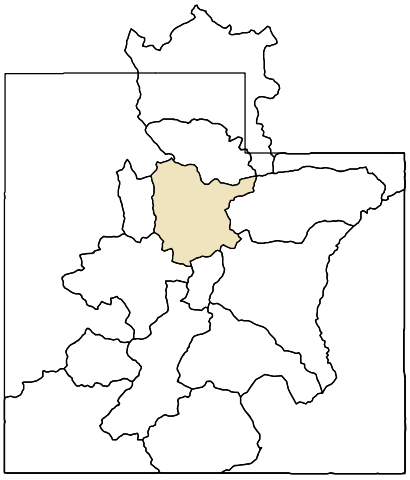
Provo & Jordan River Basins

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



<u>As of May 1, 2020:</u>

69% of Normal SWE

81% of Normal Precipitation

39% of Normal Precipitation Last Month

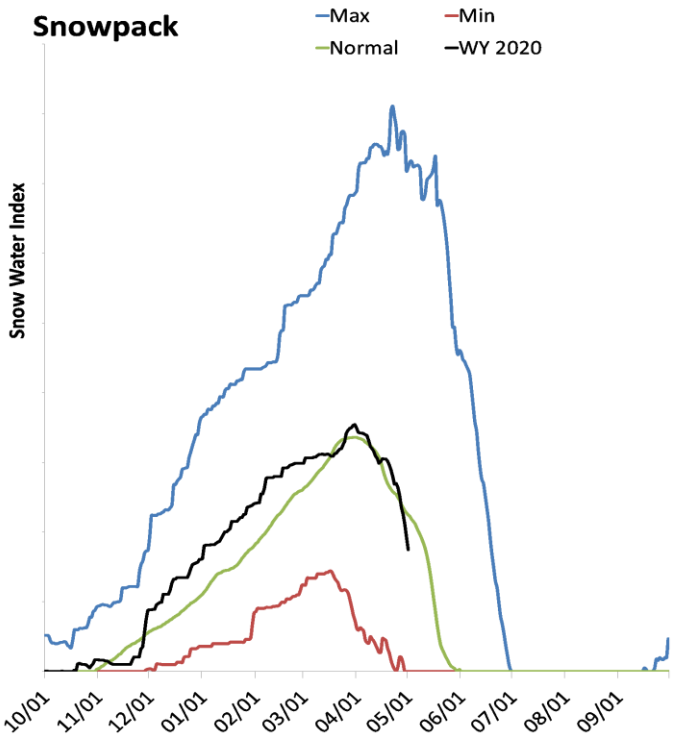
84% Saturation Soil Moisture

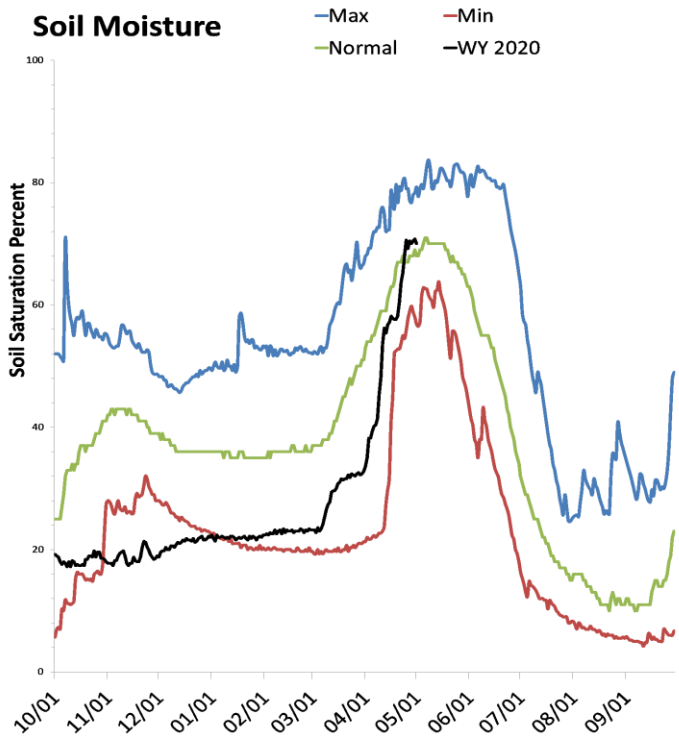
Provo & Jordan River Basins

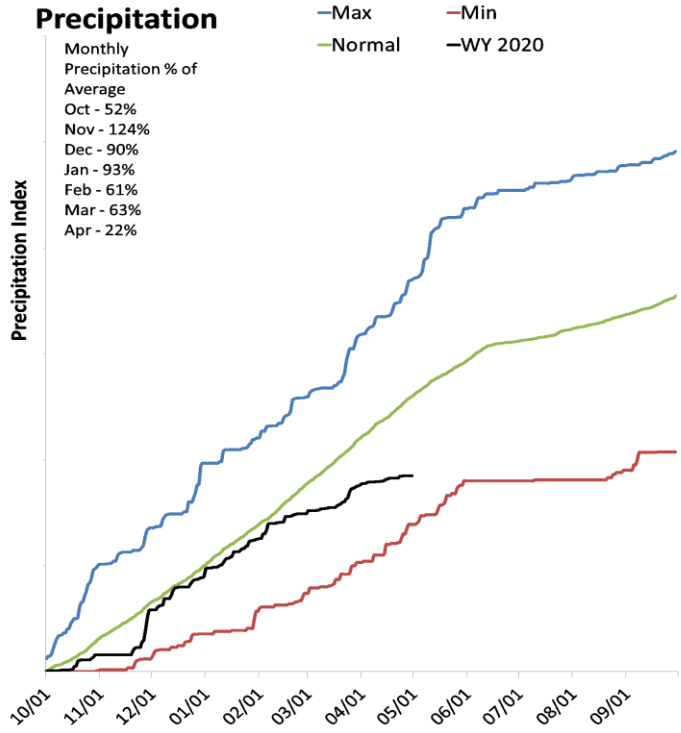
Tooele Valley & West Desert Basins

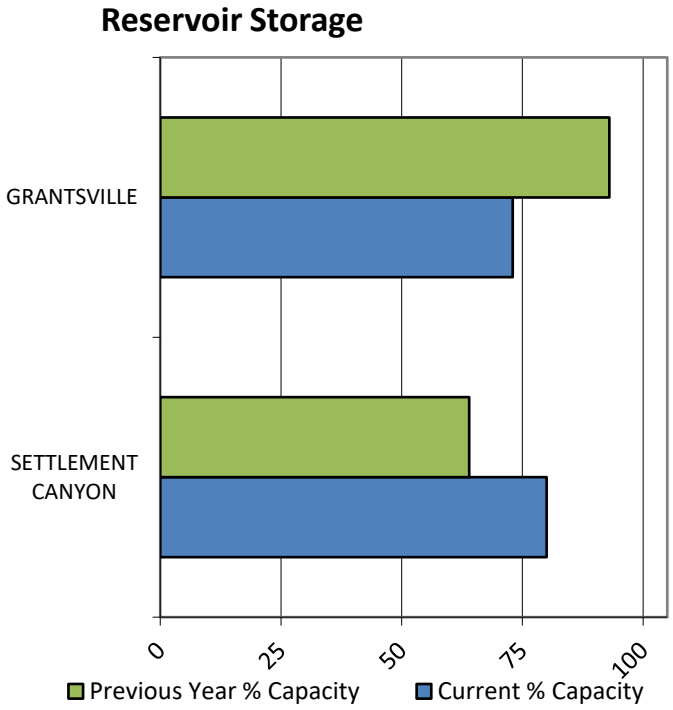
May 1, 2020

Snowpack in the Tooele Valley & West Desert Basins is below normal at 78% of normal, compared to 167% last year. Precipitation in April was much below average at 22%, which brings the seasonal accumulation (Oct-Apr) to 71% of average. Soil moisture is at 70% compared to 70% last year. Reservoir storage is at 75% of capacity, compared to 86% last year. Forecast streamflow volumes range from 58% to 93% of average.









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Tooele Valley West Desert
Streamflow Forecasts - May 1, 2020

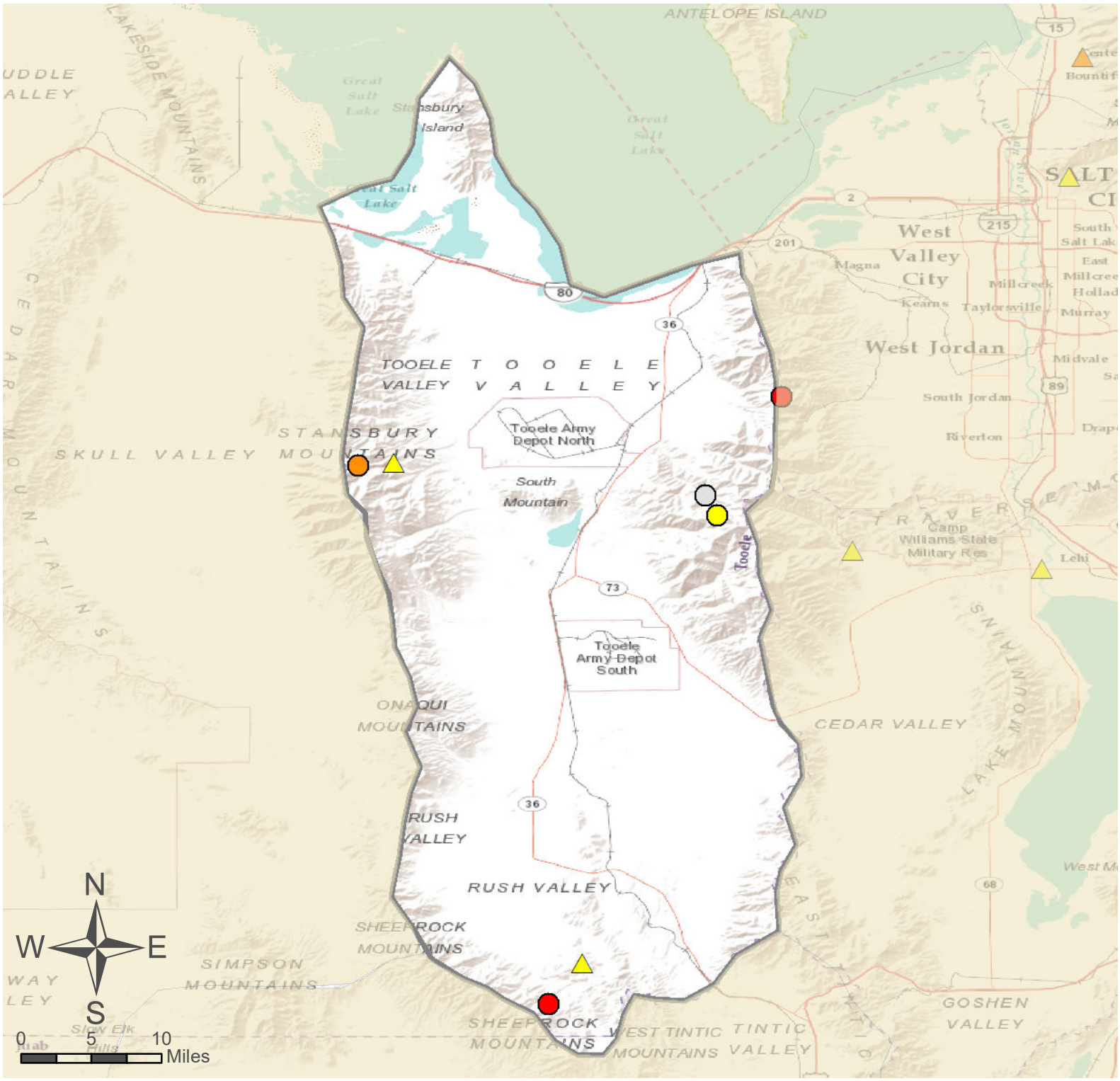
Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Tooele Valley West Desert	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Vernon Ck nr Vernon								
	APR-JUL	0.07	0.4	0.8	58%	1.2	1.79	1.39
	MAY-JUL	0.07	0.4	0.7	69%	1	1.45	1.01
S Willow Ck nr Grantsville								
	APR-JUL	1.35	1.92	2.3	74%	2.7	3.3	3.1
	MAY-JUL	1.25	1.76	2.1	78%	2.4	3	2.7
Dunn Ck nr Park Valley								
	APR-JUL	1.41	2.2	2.7	93%	3.3	4	2.9
	MAY-JUL	1.16	1.92	2.4	92%	2.9	3.7	2.6
W Canyon Ck nr Cedar Fort								
	APR-JUL	0.36	0.86	1.2	68%	1.54	2	1.76
	MAY-JUL	0.31	0.78	1.1	71%	1.42	1.89	1.54

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Settlement Canyon Reservoir	0.8	0.6	0.8	1.0
Grantsville Reservoir	2.4	3.1	2.8	3.3
Basin-wide Total	3.2	3.7	3.6	4.3
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Tooele Valley	3	69%	154%
Raft River	1	76%	114%
Deep Creek	0		
Northwestern Utah	2	64%	151%



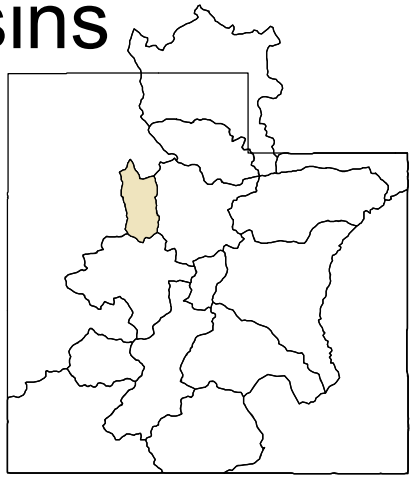
Tooele Valley & West Desert Basins

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



<u>As of May 1, 2020:</u>

78% of Normal SWE

71% of Normal Precipitation

22% of Normal Precipitation Last Month

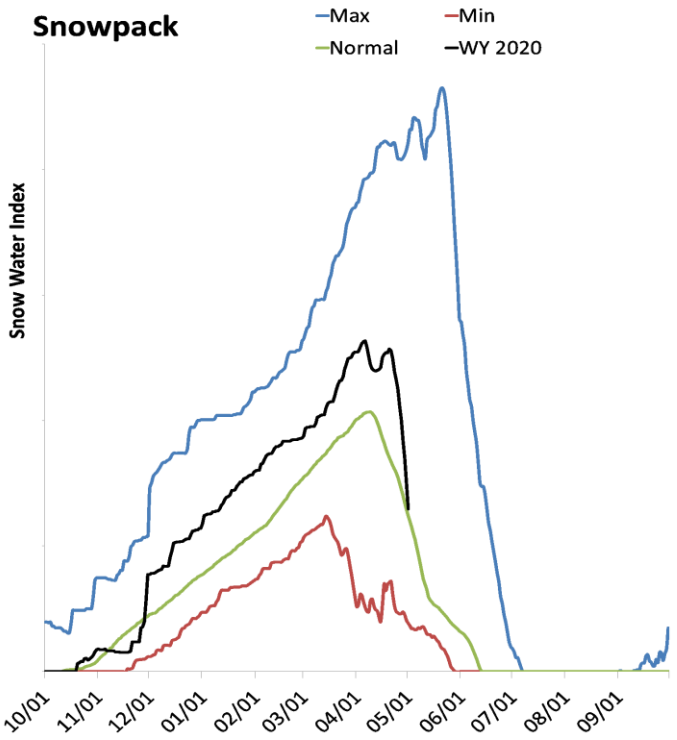
70% Saturation Soil Moisture

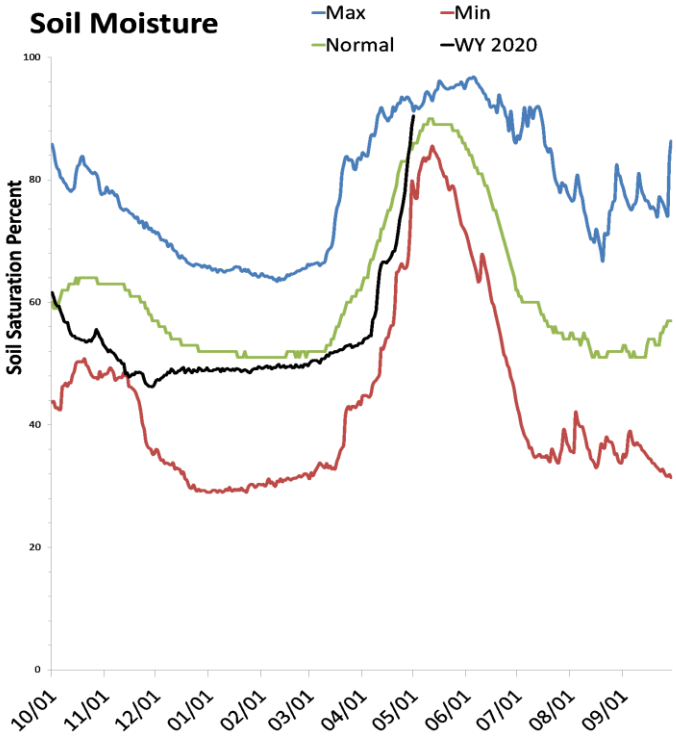
Tooele Valley & West Desert Basins

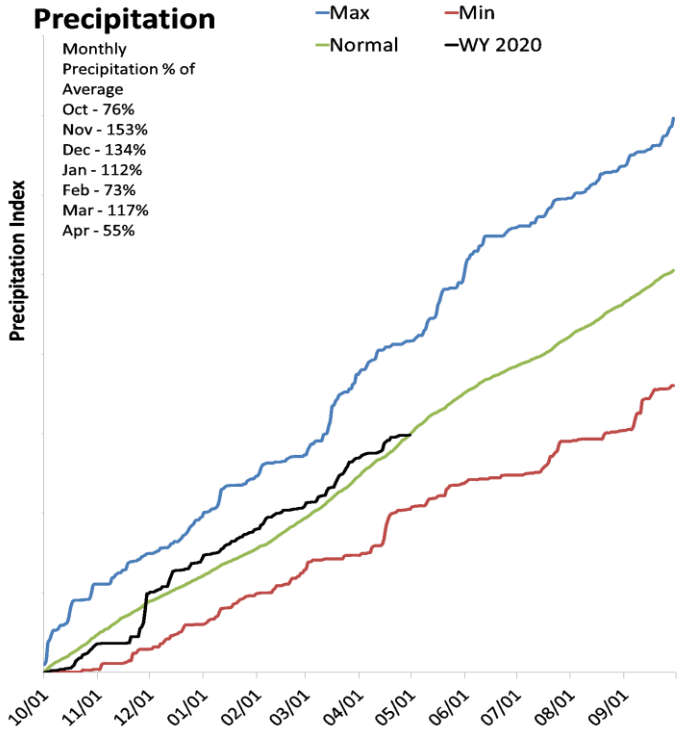
Northeastern Uinta Basin

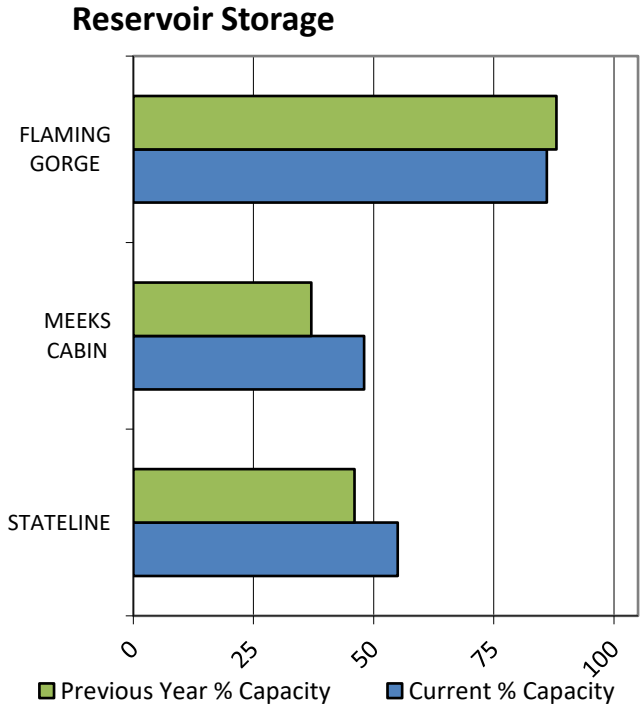
May 1, 2020

Snowpack in the Northeastern Uinta Basin is near normal at 104% of normal, compared to 123% last year. Precipitation in April was much below average at 56%, which brings the seasonal accumulation (Oct-Apr) to 100% of average. Soil moisture is at 88% compared to 85% last year. Reservoir storage is at 85% of capacity, compared to 88% last year. Forecast streamflow volumes range from 82% to 96% of average. The surface water supply index is 42% for the Blacks Fork, 55% for the Smiths Creek.









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Data Current as of: 5/6/2020 11:33:32 AM

Northeastern Uintas
Streamflow Forecasts - May 1, 2020

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

Northeastern Uintas	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Blacks Fk nr Robertson								
	APR-JUL	60	71	79	92%	87	98	86
	MAY-JUL	56	67	75	91%	83	94	82
EF of Smiths Fork nr Robertson [2]								
	APR-JUL	16.5	22	26	96%	30	36	27
	MAY-JUL	15.5	21	25	96%	29	35	26
Flaming Gorge Reservoir Inflow [2]								
	APR-JUL	535	715	840	86%	960	1130	980
	MAY-JUL	420	600	725	86%	845	1020	845
Ashley Ck nr Vernal								
	APR-JUL			42	84%			50
	MAY-JUL	27	34	40	85%	45	55	47
Big Brush Ck ab Red Fleet Reservoir								
	APR-JUL	11.6	14.8	17.2	82%	19.8	24	21
	MAY-JUL	10.5	13.7	16.1	88%	18.7	23	18.4

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Flaming Gorge Reservoir	3207.0	3302.6	3039.0	3749.0
Stateline Reservoir	6.6	5.5	6.3	12.0
Meeks Cabin Reservoir	15.7	11.9	16.5	32.5
Basin-wide Total	3229.3	3320.0	3061.8	3793.5
# of reservoirs	3	3	3	3

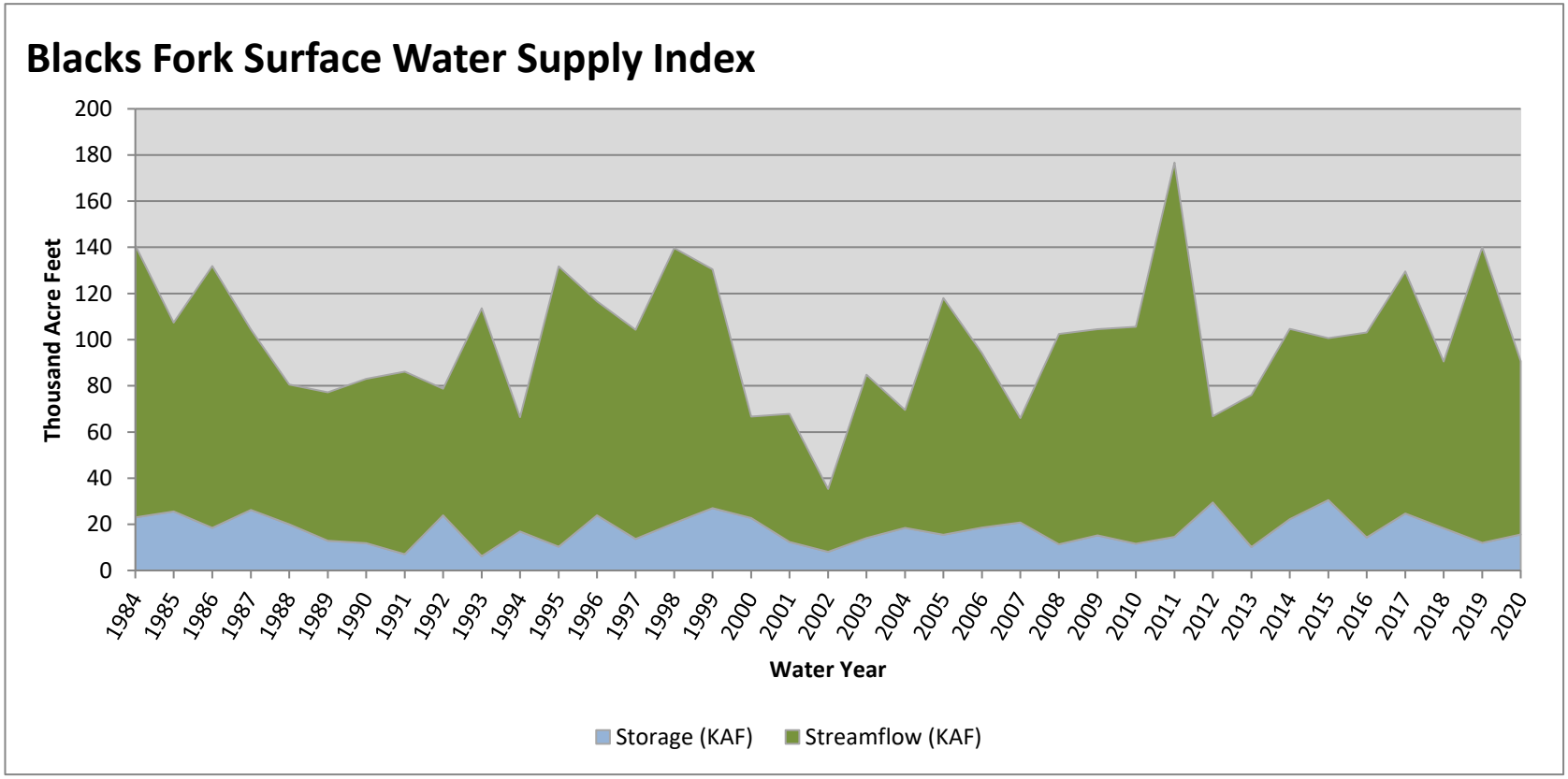
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Blacks Fork River	3	103%	124%
Upper Green	2	101%	96%
Ashley Brush Creeks	4	99%	146%

May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Blacks Fork	**15.66**	**75.00**	**90.66**	**42**	**-0.66**	**91, 18, 06, 15**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

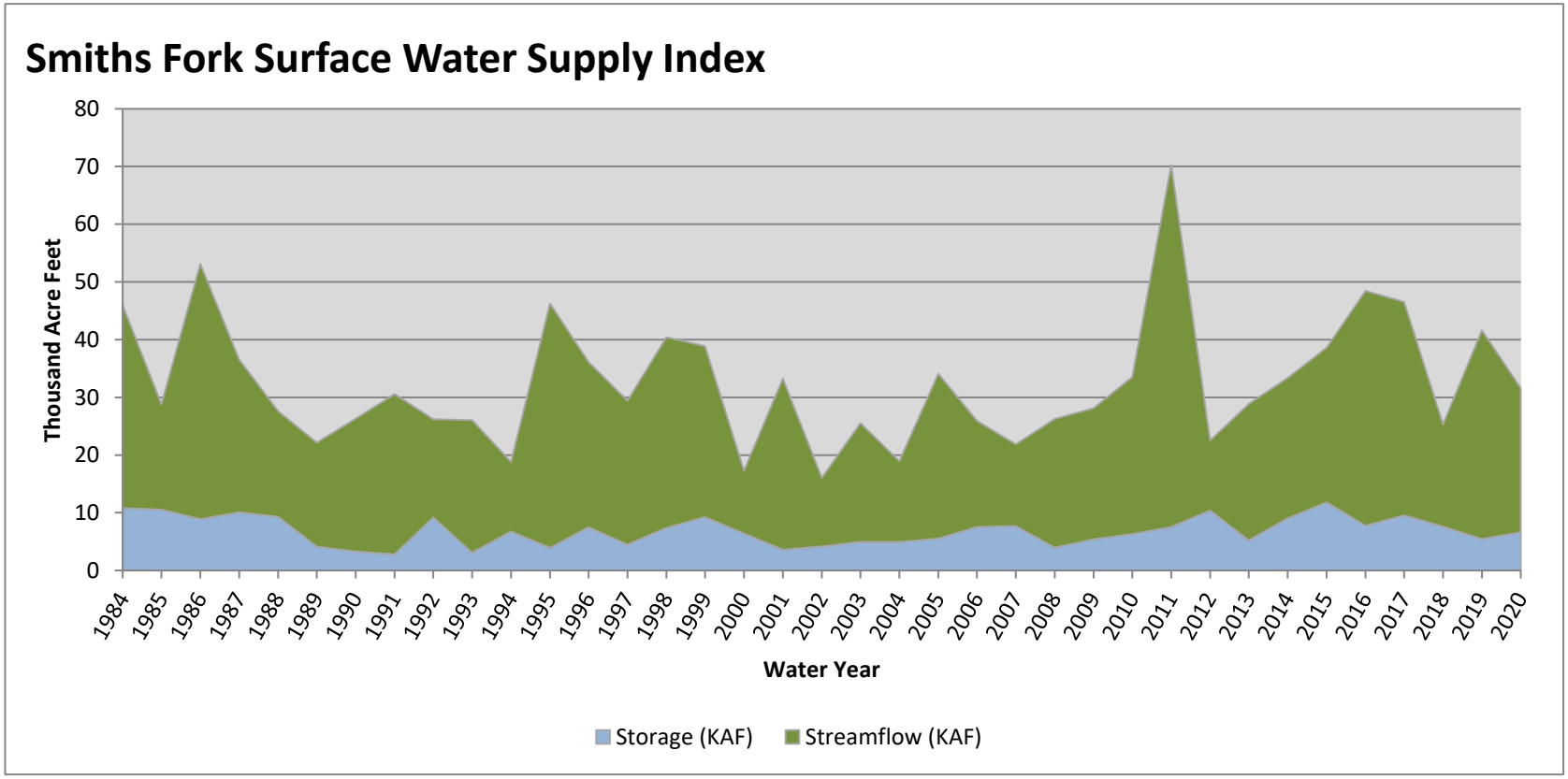


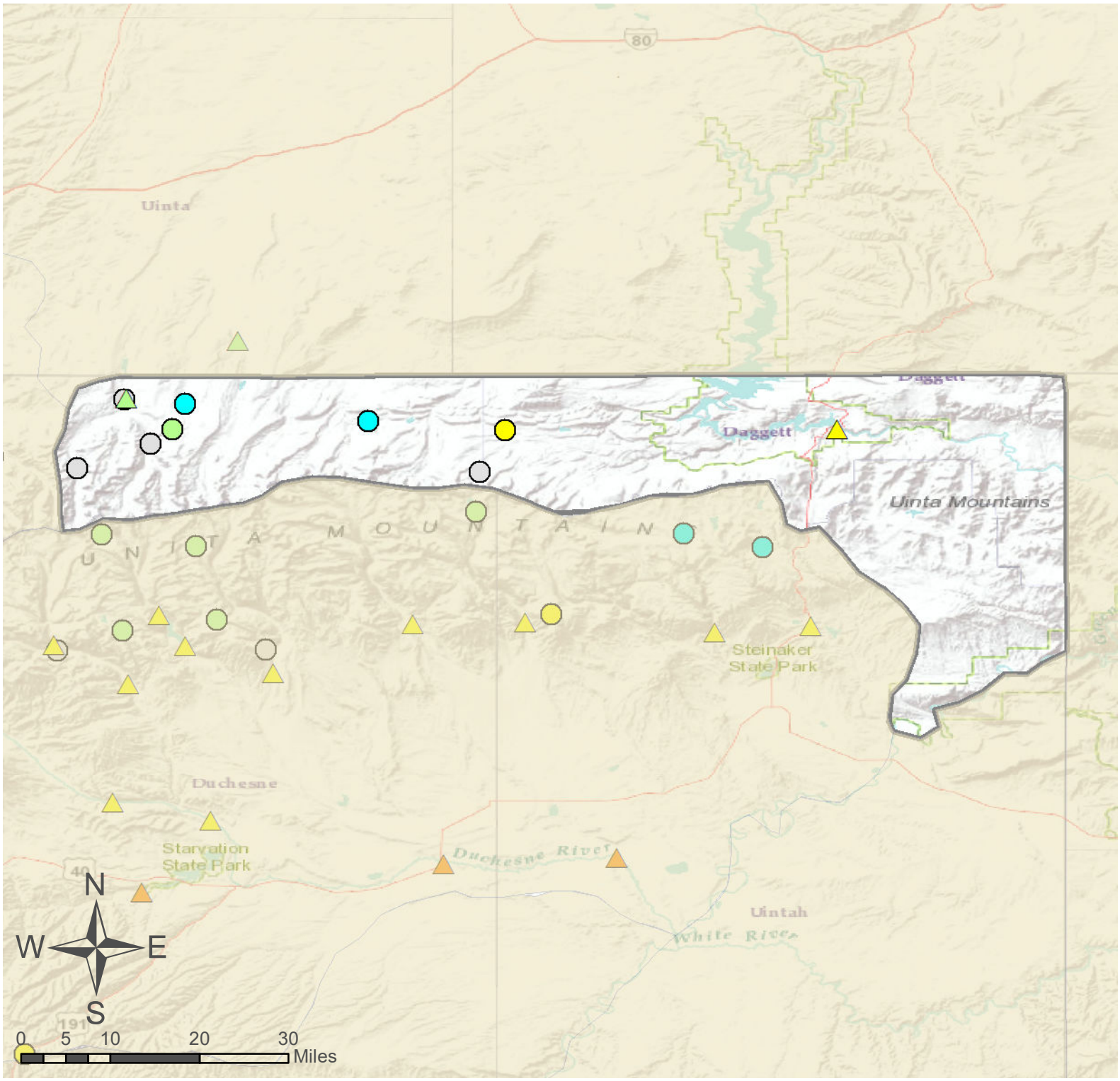
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Smiths Fork	**6.60**	**25.00**	**31.60**	**55**	**0.44**	**97, 91, 01, 14**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





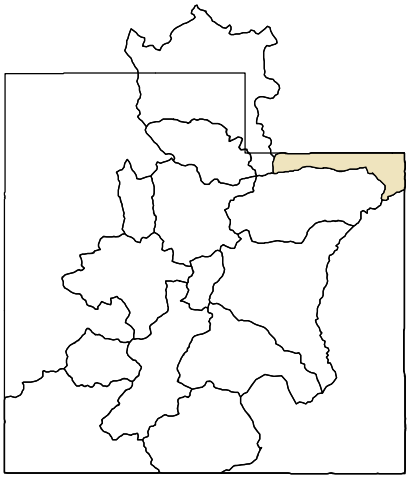
Northeastern Uinta Basin

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



<u>As of May 1, 2020:</u>

104% of Normal SWE

100% of Normal Precipitation

56% of Normal Precipitation Last Month

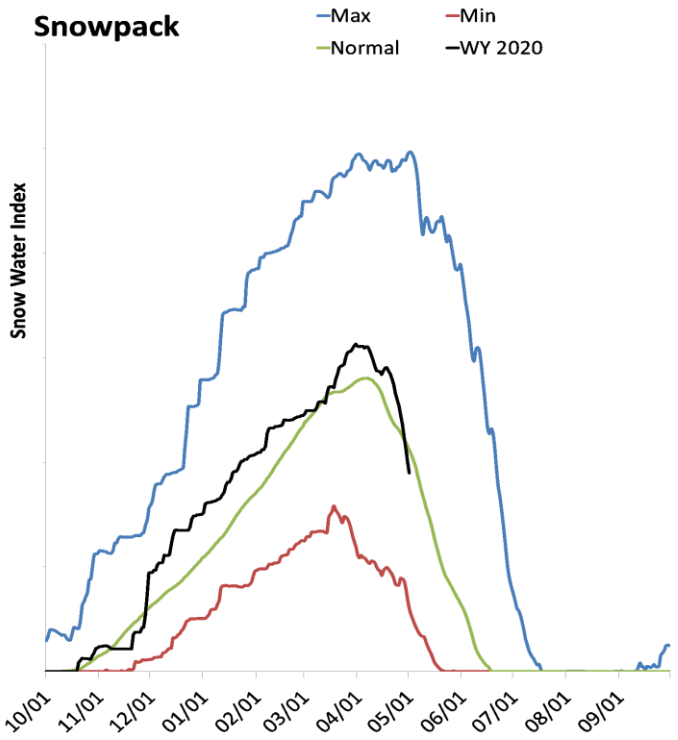
88% Saturation Soil Moisture

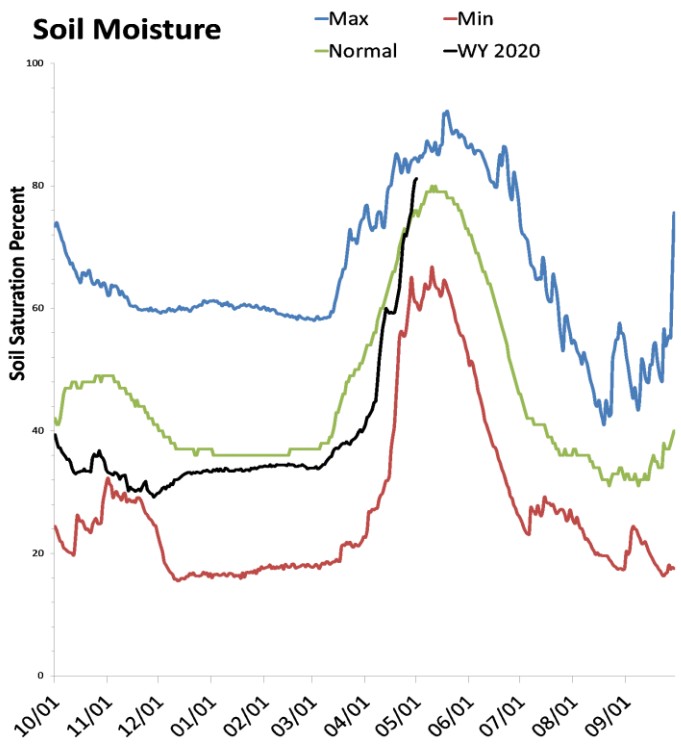
Northeastern Uinta Basin

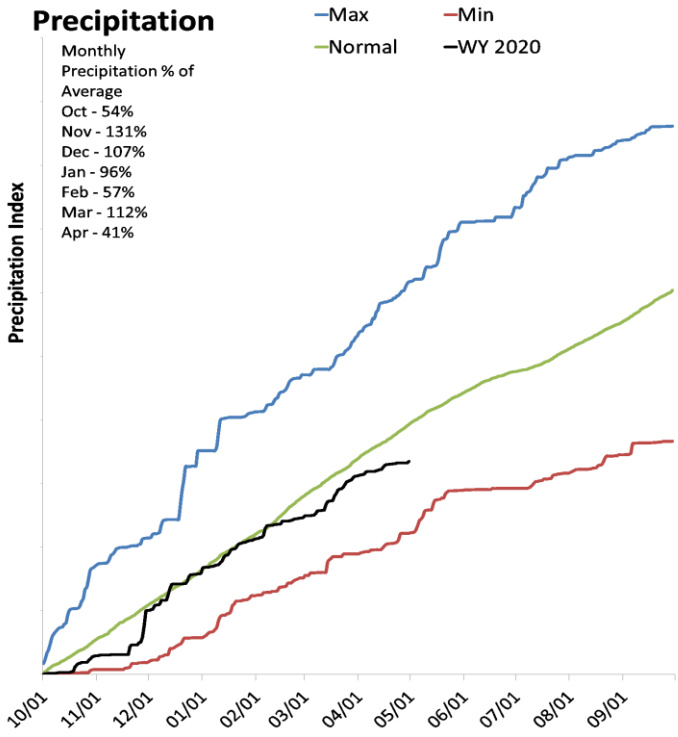
Duchesne River Basin

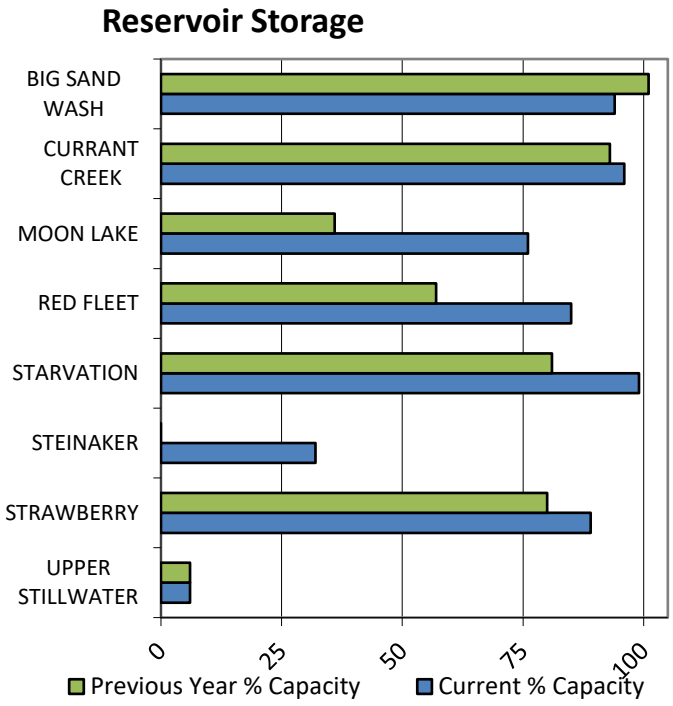
May 1, 2020

Snowpack in the Duchesne River Basin is near average at 90% of normal, compared to 159% last year. Precipitation in April was much below average at 41%, which brings the seasonal accumulation (Oct-Apr) to 85% of average. Soil moisture is at 80% compared to 77% last year. Reservoir storage is at 88% of capacity, compared to 77% last year. Forecast streamflow volumes range from 54% to 88% of average. The surface water supply index is 76% for the Western Uintas, 29% for the Eastern Uintas.









SNOTEL Data

Data Current as of: 5/6/2020 11:33:39 AM

Duchesne River
Streamflow Forecasts - May 1, 2020

Duchesne River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
WF Duchesne R at VAT Diversion								
	APR-JUL	8.9	11.2	13	70%	14.9	18	18.6
	MAY-JUL	7.9	10.2	12	69%	13.9	17	17.3
Duchesne R nr Tabiona [2]								
	APR-JUL	63	74	83	77%	92	106	108
	MAY-JUL	55	66	75	77%	84	98	98
Upper Stillwater Reservoir Inflow[2]								
	APR-JUL	52	59	64	86%	69	78	74
	MAY-JUL	49	56	61	86%	66	75	71
Rock Ck nr Mountain Home [2]								
	APR-JUL	61	69	74	84%	80	89	88
	MAY-JUL	57	65	70	83%	76	85	84
Duchesne R ab Knight Diversion [2]								
	APR-JUL	121	141	155	79%	170	194	195
	MAY-JUL	108	128	142	79%	157	181	179
Currant Ck Reservoir Inflow[2]								
	APR-JUL	10.5	13	15	75%	17.1	21	20
	MAY-JUL	7.5	10	12	70%	14.1	17.6	17.1
Strawberry R nr Soldier Springs [2]								
	APR-JUL	13.1	23	29	50%	36	45	58
	MAY-JUL	8.6	18.4	25	54%	32	41	46
Strawberry R nr Duchesne [2]								
	APR-JUL	35	49	60	54%	73	93	112
	MAY-JUL	25	39	50	55%	63	83	91
Lake Fork R ab Moon Lake Reservoir								
	APR-JUL	39	47	53	87%	60	70	61
	MAY-JUL	36	44	50	86%	57	67	58
Lake Fk R Bl Moon Lk nr Mountain Home[2]								
	APR-JUL	45	51	55	83%	60	67	66
	MAY-JUL	42	48	52	83%	57	64	63
Yellowstone R nr Altonah								
	APR-JUL	40	47	52	85%	57	66	61
	MAY-JUL	36	43	48	84%	53	62	57
Duchesne R at Myton [2]								
	APR-JUL	141	185	220	67%	255	315	330
	MAY-JUL	119	163	197	68%	235	295	290
Uinta R bl Powerplant Diversion nr Neola[2]								
	APR-JUL	43	53	60	81%	68	80	74
	MAY-JUL	40	50	57	80%	65	77	71
Whiterocks R nr Whiterocks								
	APR-JUL	29	36	42	78%	48	57	54
	MAY-JUL	27	34	40	78%	46	55	51
Duchesne R nr Randlett [2]								
	APR-JUL	149	205	250	65%	300	380	385
	MAY-JUL	125	181	225	65%	275	355	345
Ashley Ck nr Vernal								
	APR-JUL			42	84%			50
	MAY-JUL	27	34	40	85%	45	55	47
Big Brush Ck ab Red Fleet Reservoir								
	APR-JUL	11.6	14.8	17.2	82%	19.8	24	21
	MAY-JUL	10.5	13.7	16.1	88%	18.7	23	18.4

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Steinaker Reservoir	10.8	-3.7	25.3	33.4
Red Fleet Reservoir	21.7	14.6	19.8	25.7
Big Sand Wash Reservoir	24.2	25.9		25.7
Upper Stillwater Reservoir	1.9	2.0	2.9	32.5
Starvation Reservoir	163.3	133.1	151.9	164.1
Moon Lake Reservoir	27.3	12.9	27.6	35.8
Currant Creek Reservoir	14.9	14.4	14.9	15.5
Strawberry Reservoir	986.8	883.4	678.4	1105.9
Basin-wide Total	1216.1	1060.4	895.5	1379.5
# of reservoirs	6	6	6	6

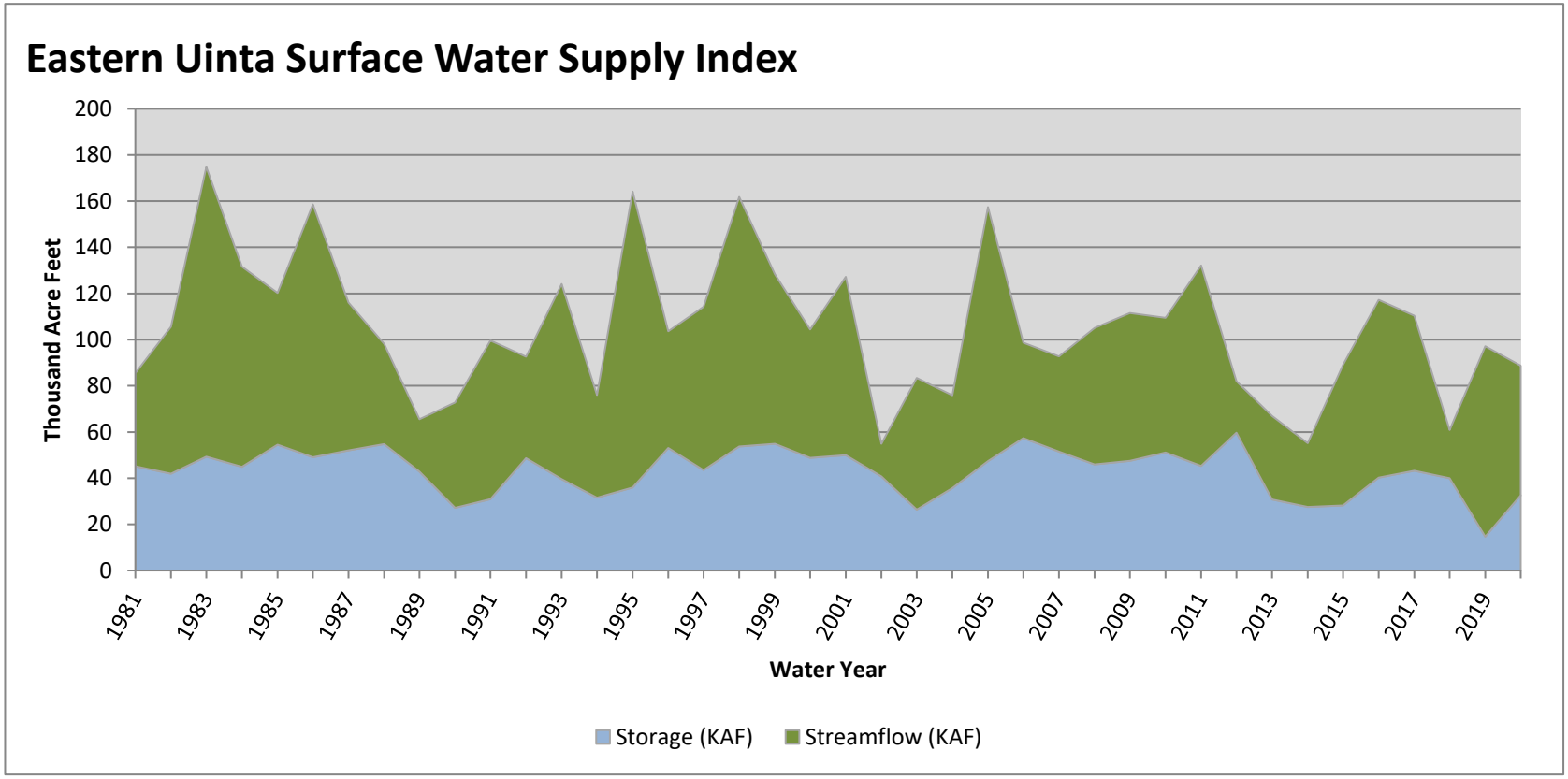
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Strawberry River	5	38%	259%
Lakefork Yellowstone Rivers	7	98%	144%
Uinta Whiterocks River	2	90%	136%

May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Eastern Uinta	**32.57**	**56.10**	**88.67**	**29**	**-1.73**	**03, 81, 15, 92**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

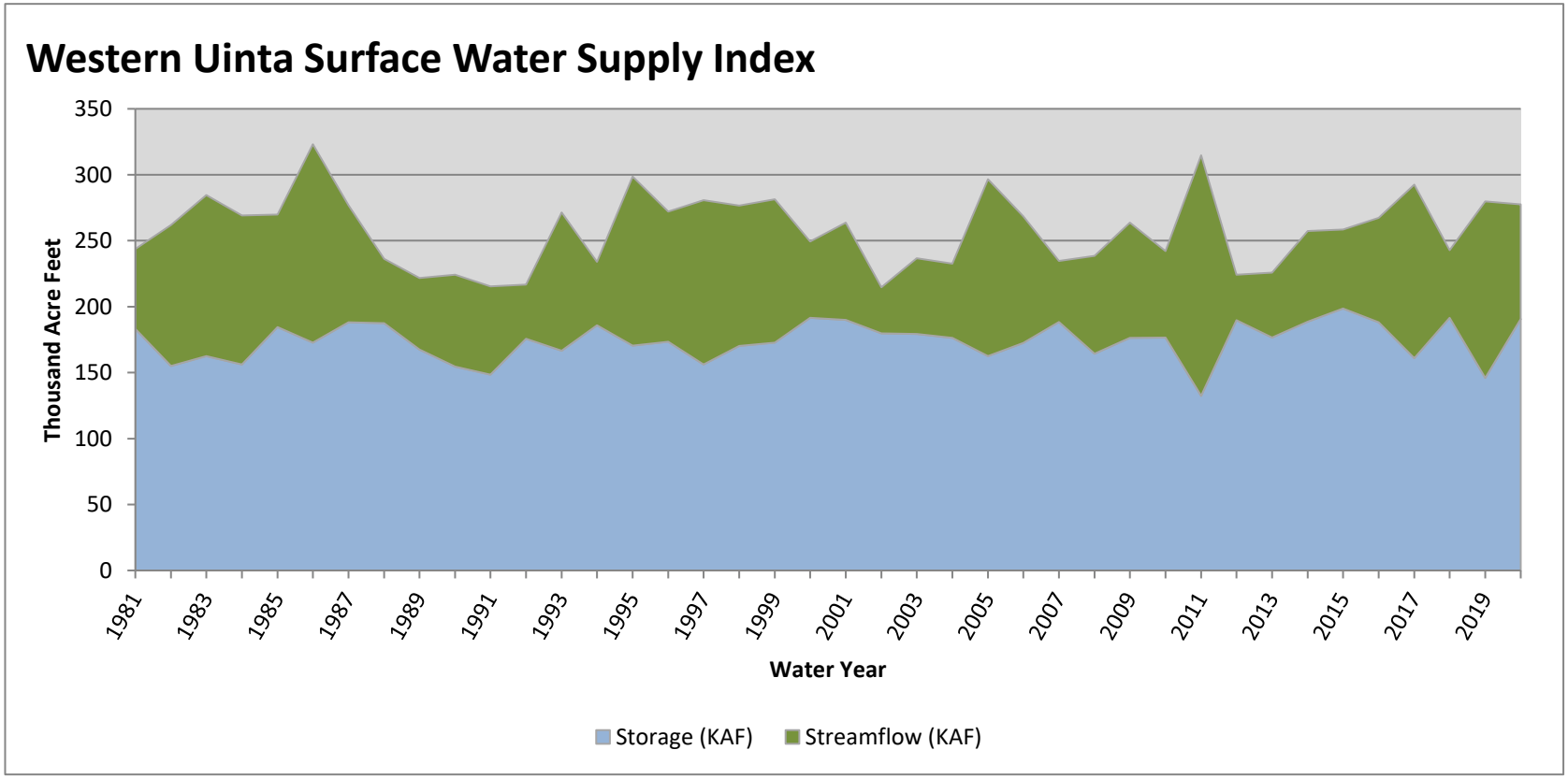


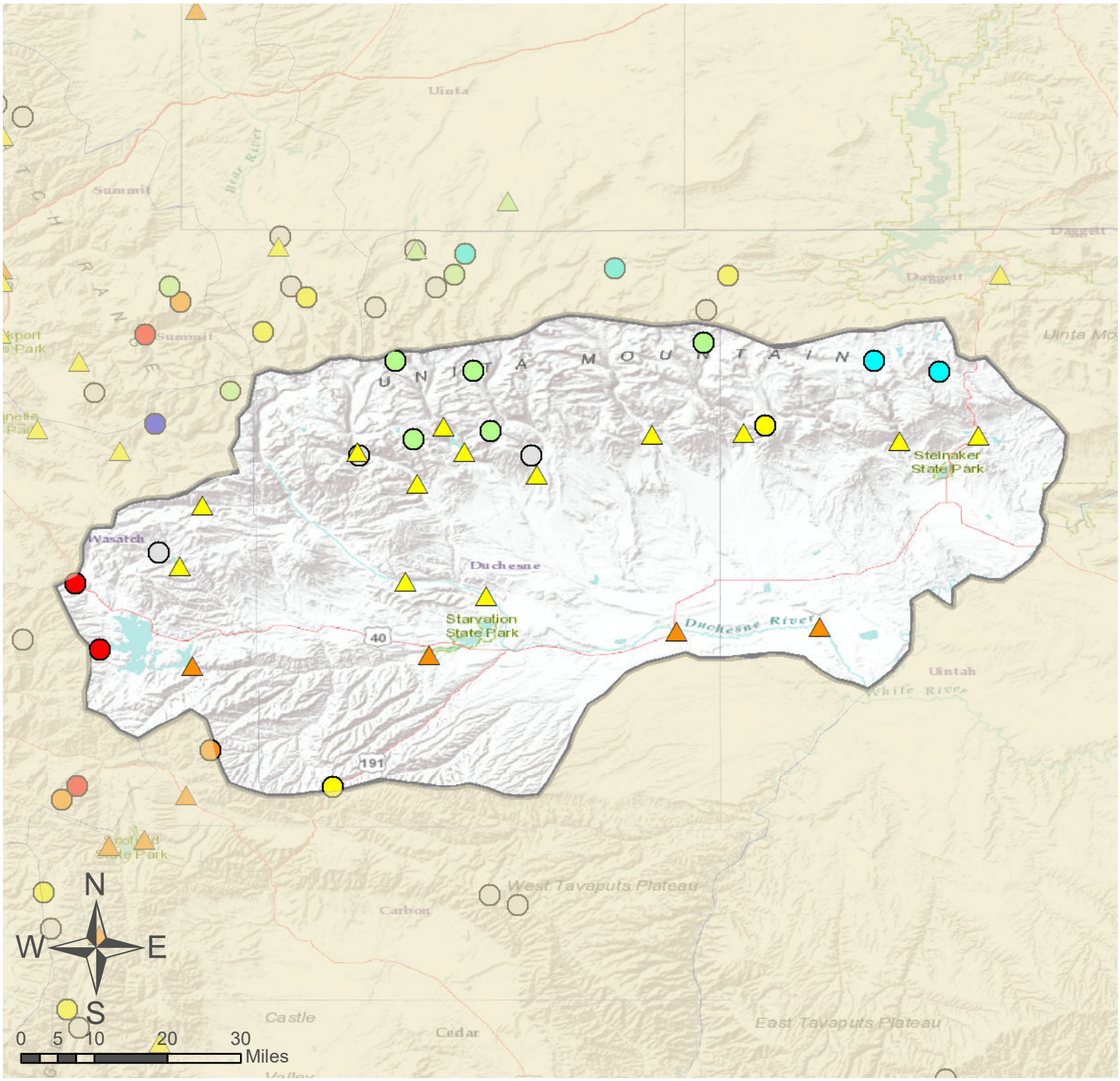
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Western Uinta	**190.65**	**87.00**	**277.65**	**76**	**2.13**	**98, 87, 19, 97**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





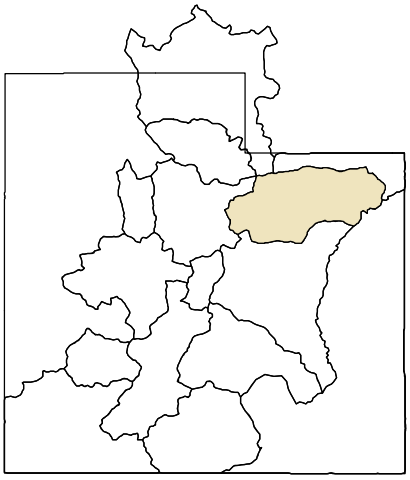
Duchesne River Basin

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



As of May 1, 2020:

90% of Normal SWE

85% of Normal Precipitation

41% of Normal Precipitation Last Month

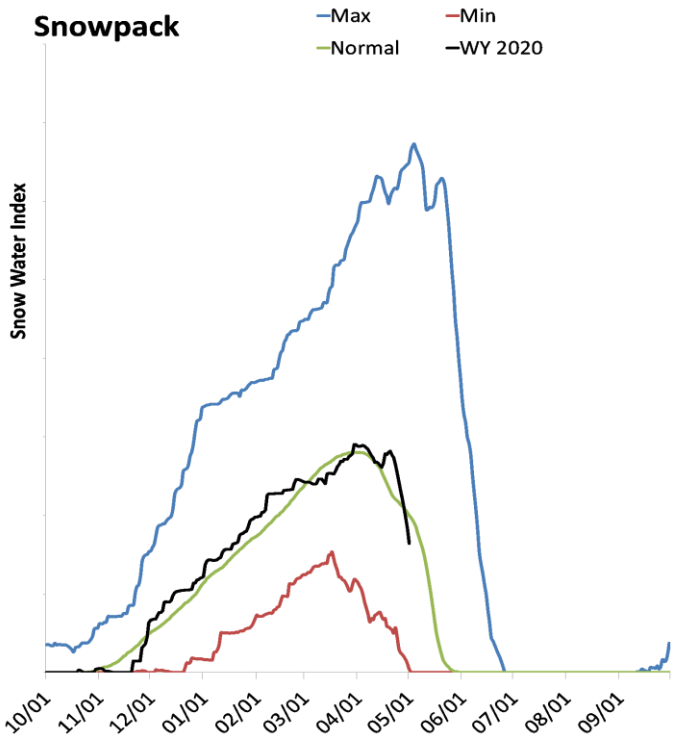
80% Saturation Soil Moisture

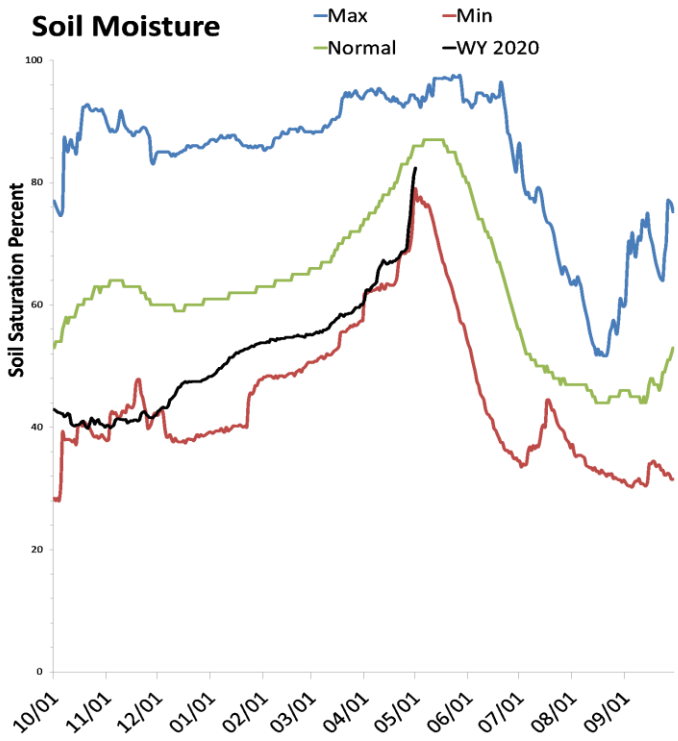
Duchesne River Basin

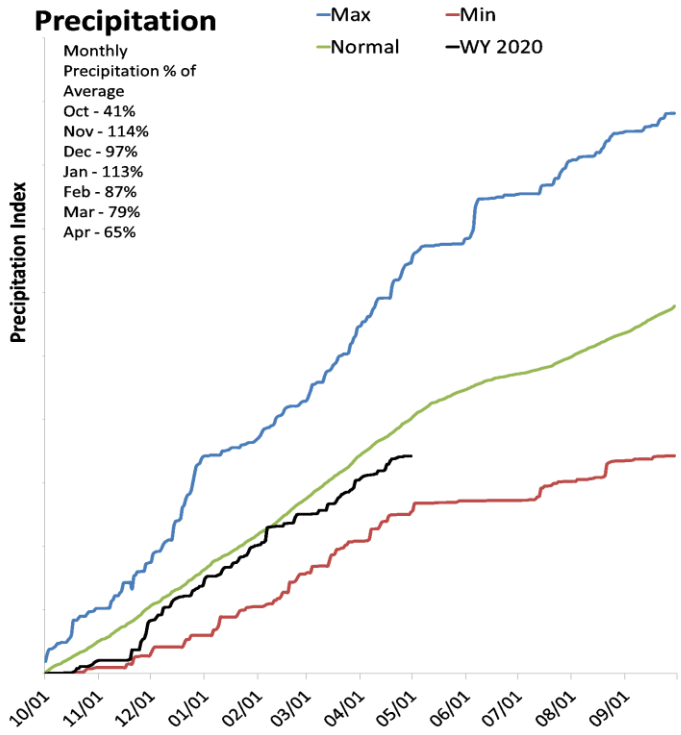
San Pitch River Basin

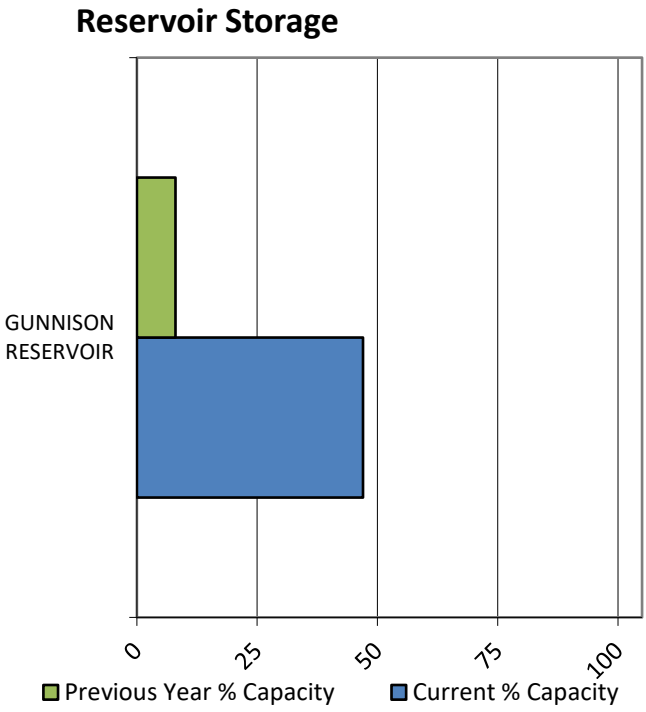
May 1, 2020

Snowpack in the San Pitch River Basin is below normal at 82% of normal, compared to 156% last year. Precipitation in April was much below average at 66%, which brings the seasonal accumulation (Oct-Apr) to 86% of average. Soil moisture is at 82% compared to 87% last year. Reservoir storage is at 47% of capacity, compared to 8% last year. The forecast streamflow volume for Manti Creek is 76% of average for May-July. The surface water supply index is 32% for the San Pitch.









SNOTEL Data

Data Current as of: 5/6/2020 11:34:10 AM

San Pitch River
Streamflow Forecasts - May 1, 2020

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

San Pitch River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Manti Ck bl Dugway Ck nr Manti								
	APR-JUL	8.8	10.9	12.5	75%	14.2	16.9	16.7
	MAY-JUL	8.2	10.3	11.8	76%	13.5	16.1	15.5
Sevier R nr Gunnison								
	APR-JUL	30	61	81	82%	101	132	99
	MAY-JUL	36	58	74	86%	90	112	86

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Gunnison Reservoir	9.6	1.7	14.2	20.3
Basin-wide Total	9.6	1.7	14.2	20.3
# of reservoirs	1	1	1	1

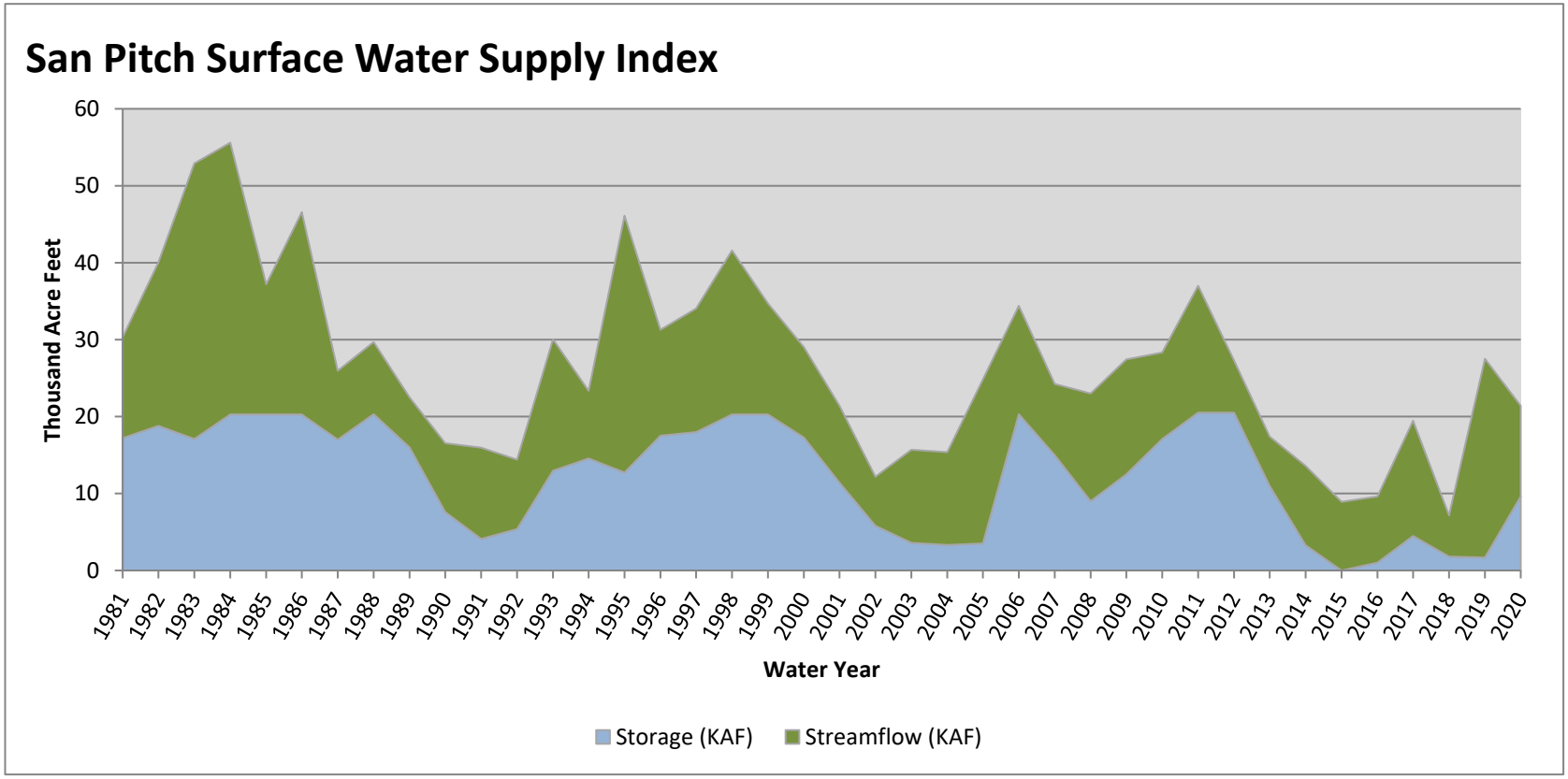
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Upper San Pitch	3	83%	145%
Lower San Pitch	6	78%	139%

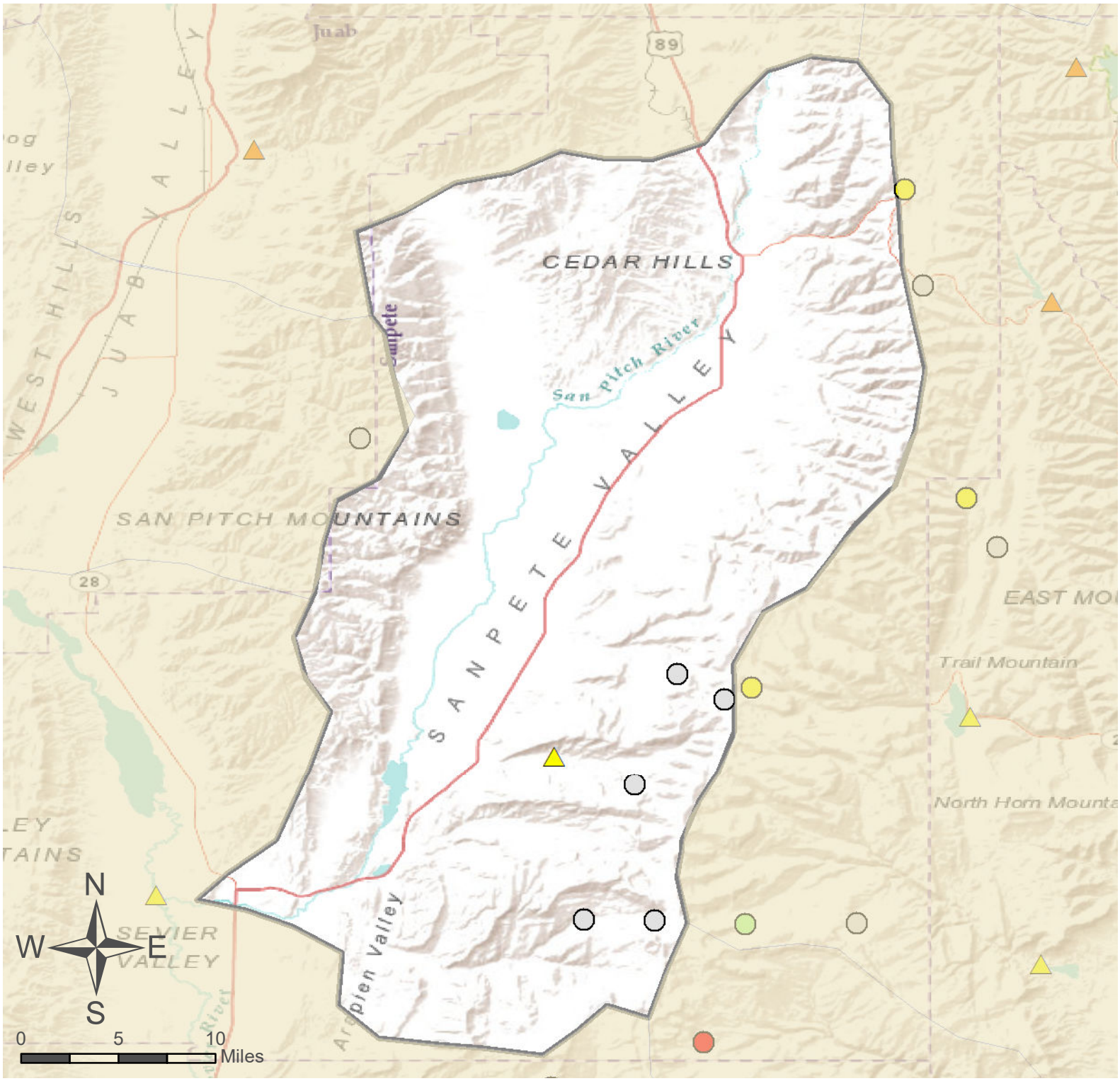
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
San Pitch	**9.61**	**11.80**	**21.41**	**32**	**-1.52**	**13, 17, 01, 89**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





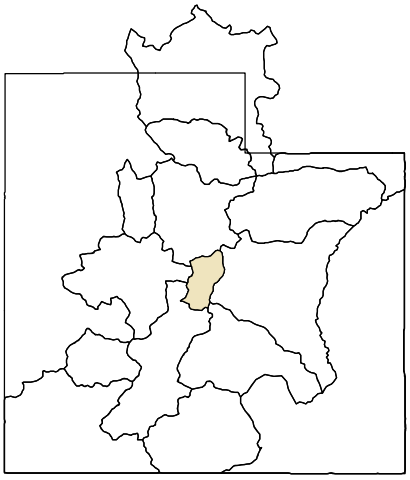
San Pitch River Basin

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



<u>As of May 1, 2020:</u>

82% of Normal SWE

86% of Normal Precipitation

66% of Normal Precipitation Last Month

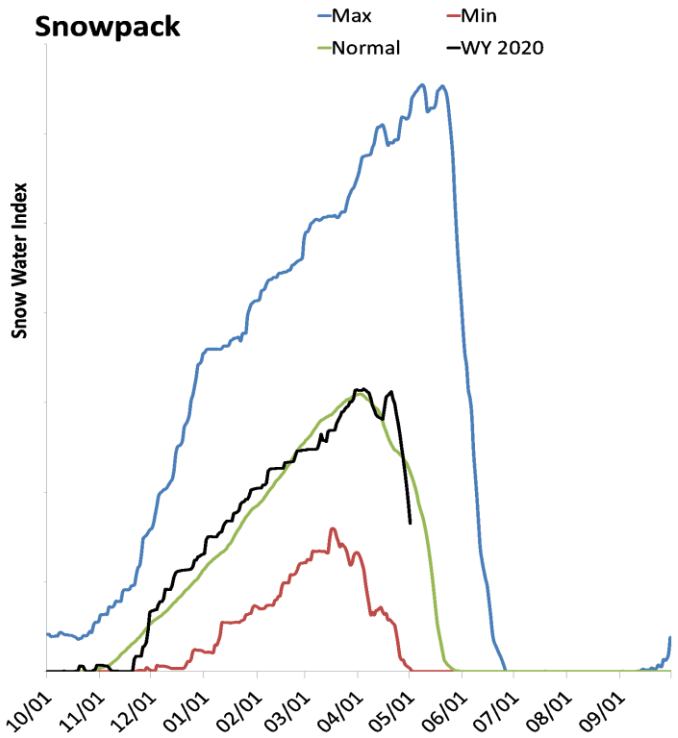
82% Saturation Soil Moisture

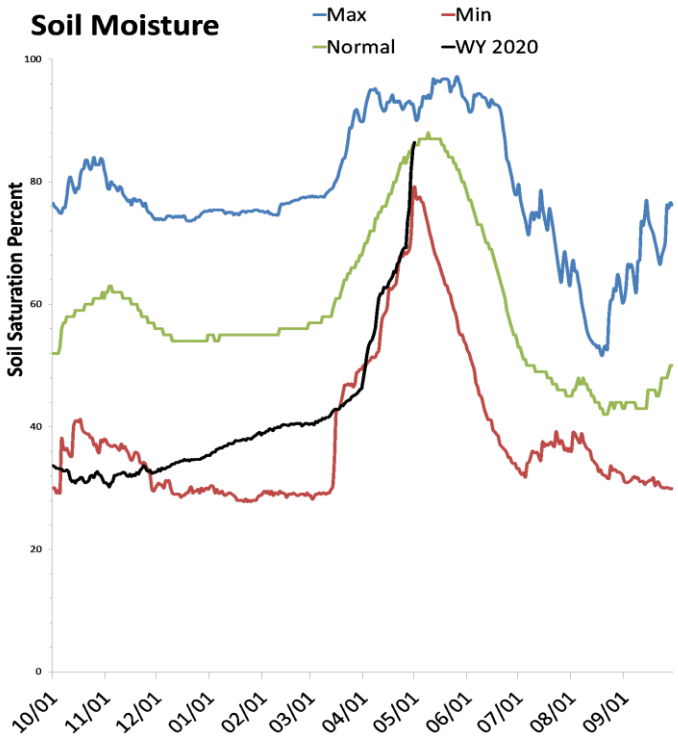
San Pitch River Basin

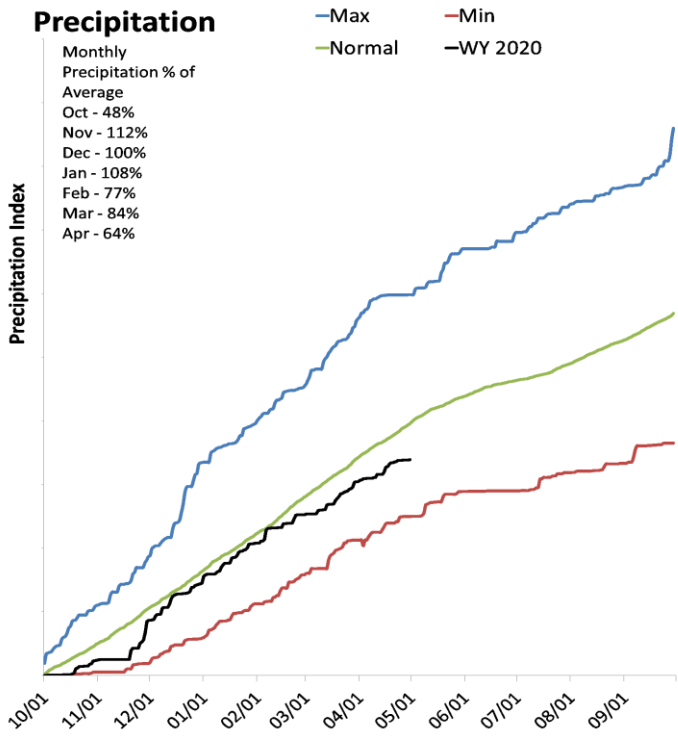
Price & San Rafael Basins

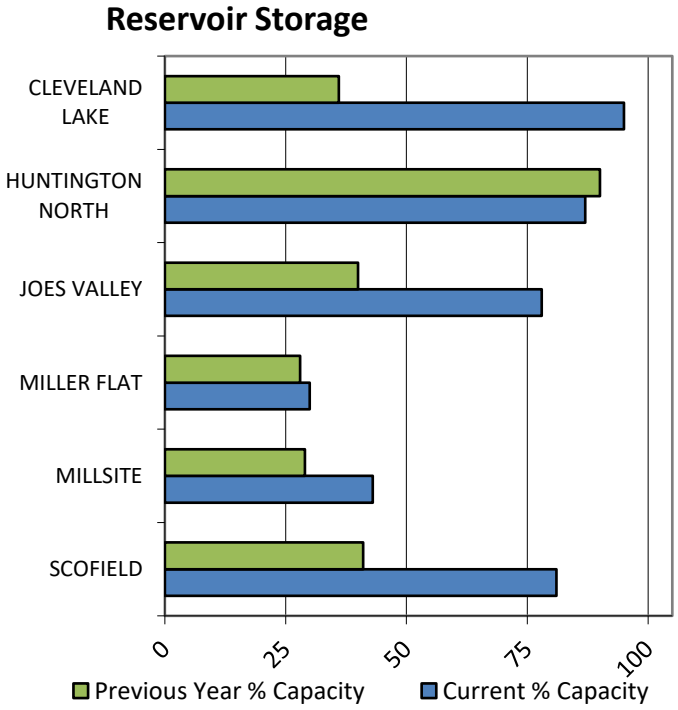
May 1, 2020

Snowpack in the Price & San Rafael Basins is below normal at 74% of normal, compared to 153% last year. Precipitation in April was much below average at 64%, which brings the seasonal accumulation (Oct-Apr) to 86% of average. Soil moisture is at 86% compared to 86% last year. Reservoir storage is at 76% of capacity, compared to 41% last year. Forecast streamflow volumes range from 52% to 82% of average. The surface water supply index is 71% for the Price River, 56% for Joe's Valley, 37% for Ferron Creek.









SNOTEL Data

Data Current as of: 5/6/2020 11:33:46 AM

Price San Rafael Rivers
Streamflow Forecasts - May 1, 2020

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

Price San Rafael Rivers	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Fish Ck ab Reservoir nr Scofield								
	APR-JUL	11.6	15.2	18	60%	21	26	30
	MAY-JUL	9.6	13.2	16	62%	19	24	26
Price R nr Scofield Reservoir[2]								
	APR-JUL	15.1	21	25	61%	30	37	41
	MAY-JUL	11.4	16.8	21	60%	26	33	35
White R bl Tabbyune Creek								
	APR-JUL	5.3	6.8	8	52%	9.3	11.3	15.5
	MAY-JUL	3.8	5.3	6.5	55%	7.8	9.8	11.9
Green R at Green River, UT [2]								
	APR-JUL	1840	2160	2390	81%	2630	3010	2960
	MAY-JUL	1530	1850	2080	82%	2320	2700	2540
Electric Lake Inflow [2]								
	APR-JUL	6.5	7.9	9	68%	10.2	12	13.3
	MAY-JUL	5.5	6.9	8	68%	9.2	11	11.8
Huntington Ck nr Huntington [2]								
	APR-JUL	22	26	29	73%	32	37	40
	MAY-JUL	19.3	23	26	70%	29	34	37
Joes Valley Reservoir Inflow[2]								
	APR-JUL	30	37	42	75%	47	55	56
	MAY-JUL	28	35	40	77%	45	53	52
Ferron Ck (Upper Station) nr Ferron								
	APR-JUL	24	27	29	76%	31	35	38
	MAY-JUL	22	25	27	77%	29	33	35

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Joes Valley Reservoir	47.8	24.8	40.1	61.6
Millsite	7.2	4.8	11.2	16.7
Huntington North Reservoir	3.7	3.8	3.9	4.2
Cleveland Lake	5.2	2.0		5.4
Miller Flat Reservoir	1.6	1.4		5.2
Scofield Reservoir	53.6	26.7	33.2	65.8
Basin-wide Total	112.2	60.1	88.4	148.3
# of reservoirs	4	4	4	4

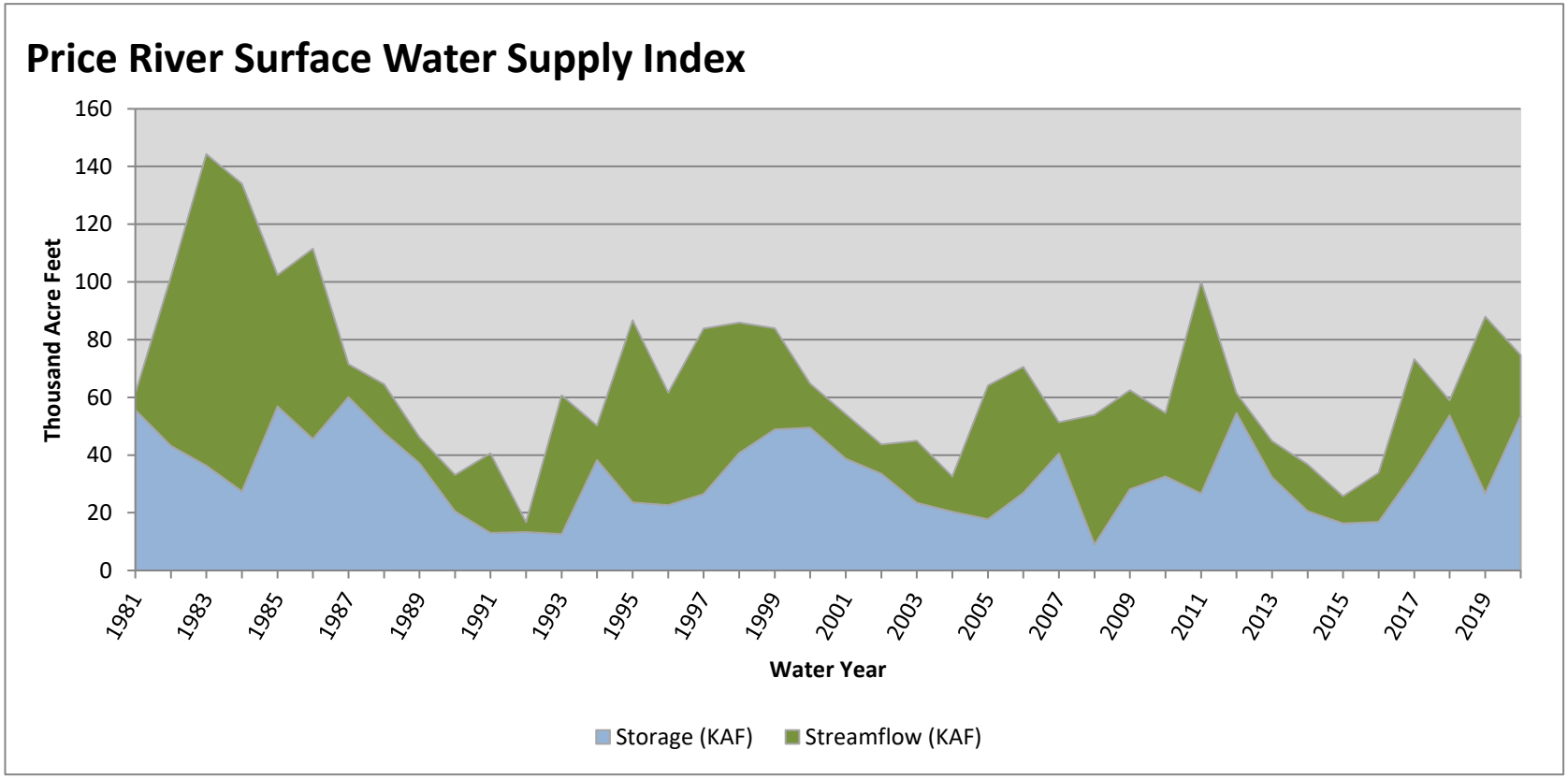
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Price River	4	64%	174%
San Rafael	6	86%	142%

May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Price River	**53.56**	**21.00**	**74.56**	**71**	**1.73**	**87, 17, 97, 99**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

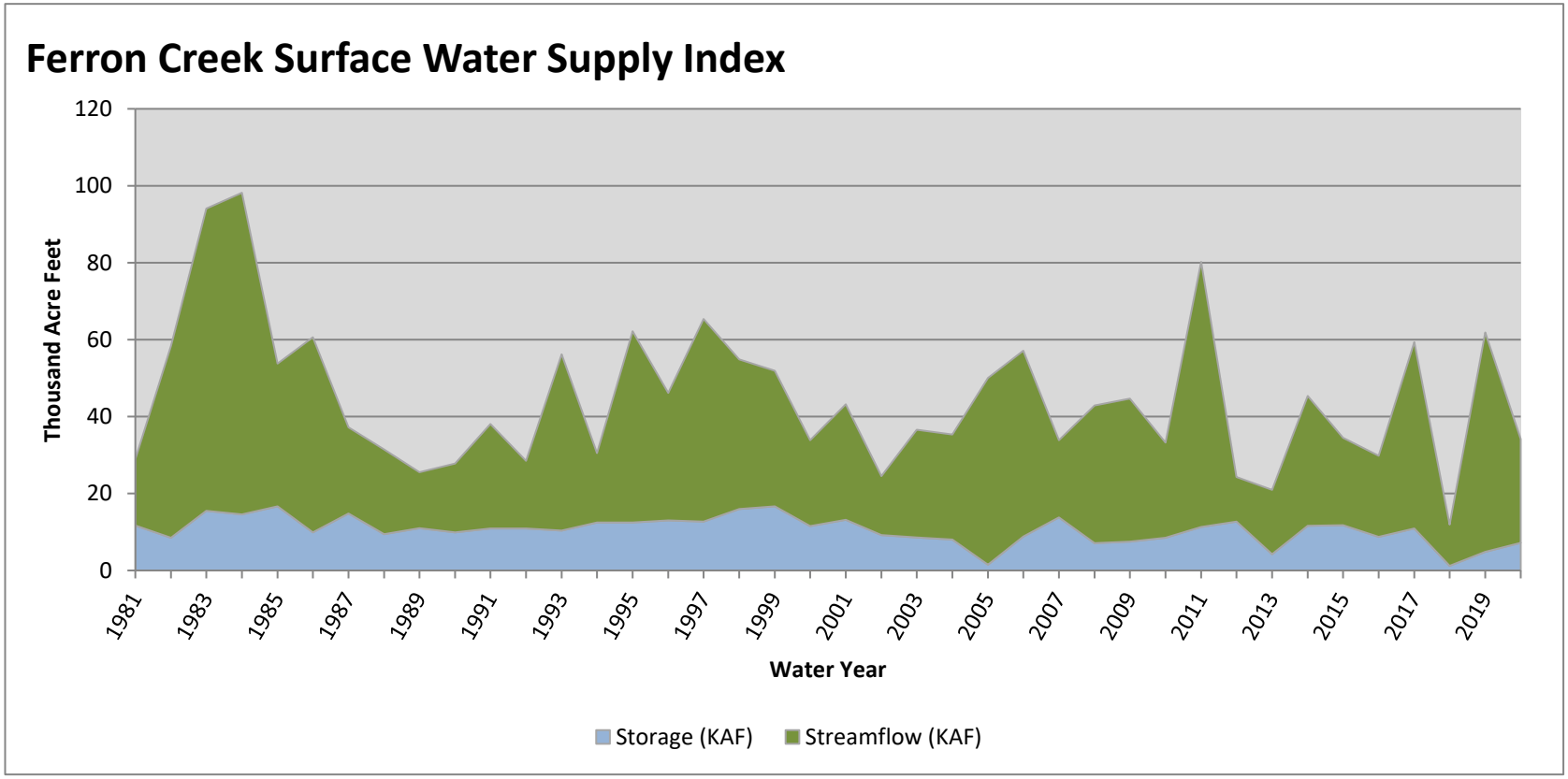


May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Ferron Creek	**7.19**	**27.00**	**34.19**	**37**	**-1.12**	**00, 07, 15, 04**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.

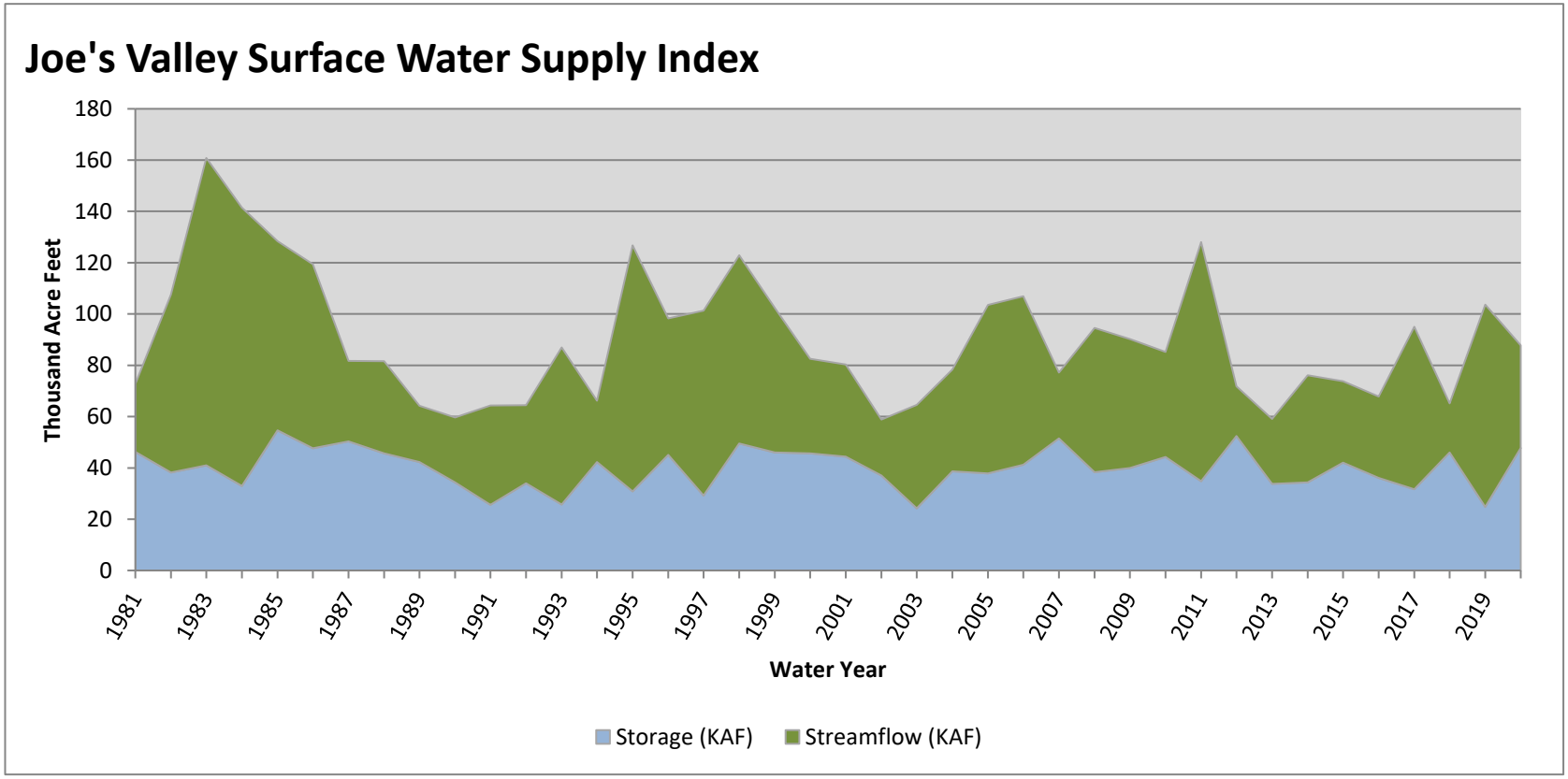


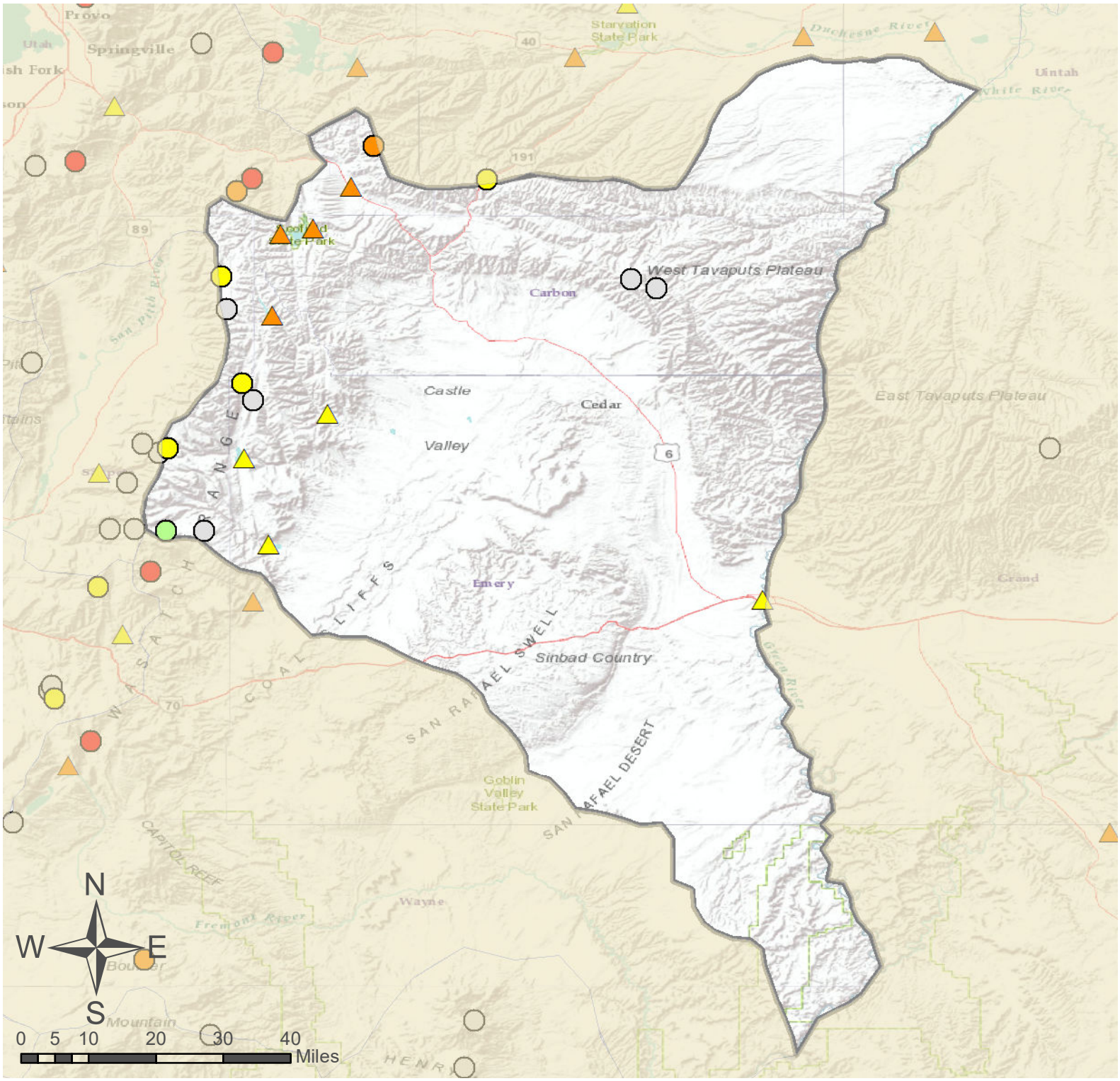
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Joe's Valley	**47.76**	**40.00**	**87.76**	**56**	**0.51**	**10, 93, 09, 08**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





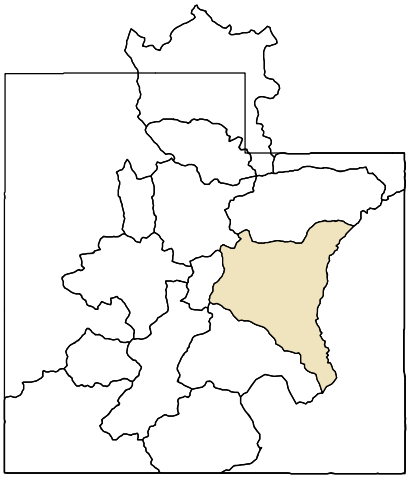
Price & San Rafael Basins

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



<u>As of May 1, 2020:</u>

74% of Normal SWE

86% of Normal Precipitation

64% of Normal Precipitation Last Month

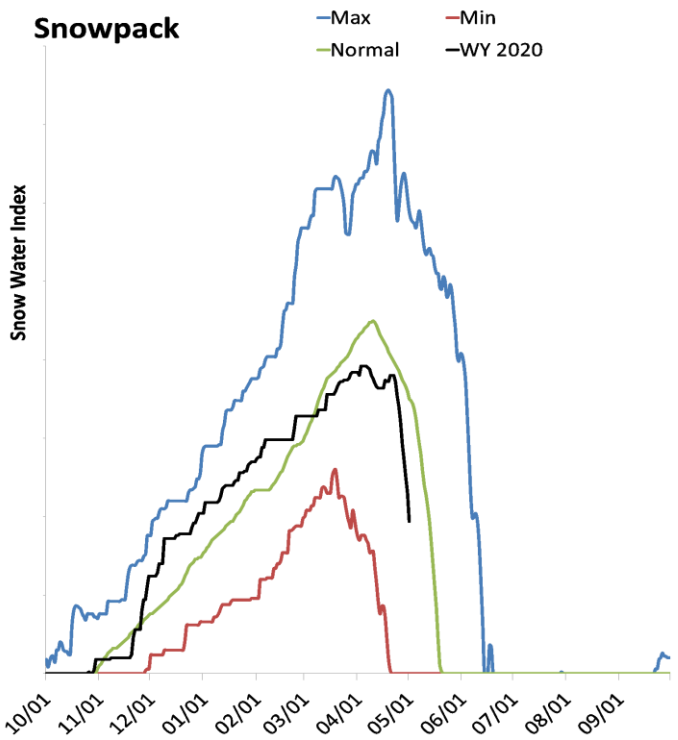
86% Saturation Soil Moisture

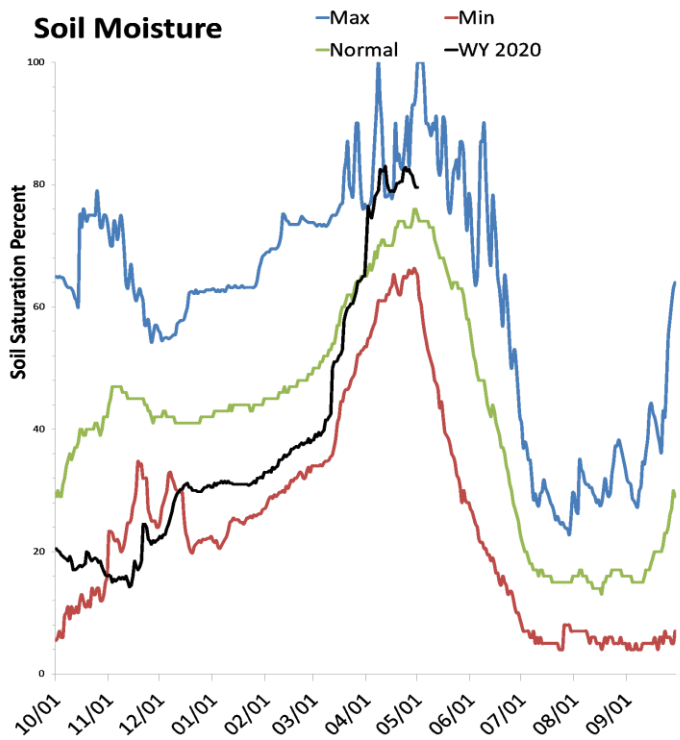
Price & San Rafael Basins

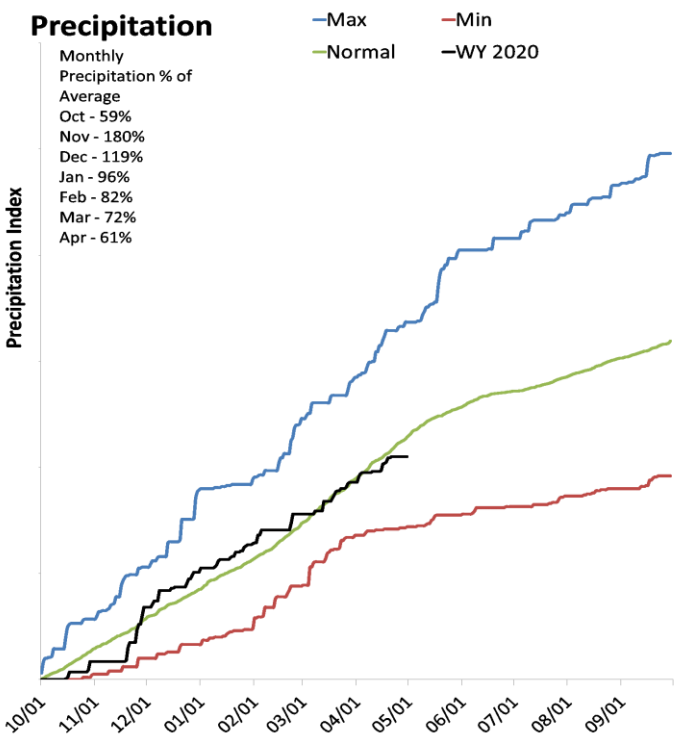
Lower Sevier Basin

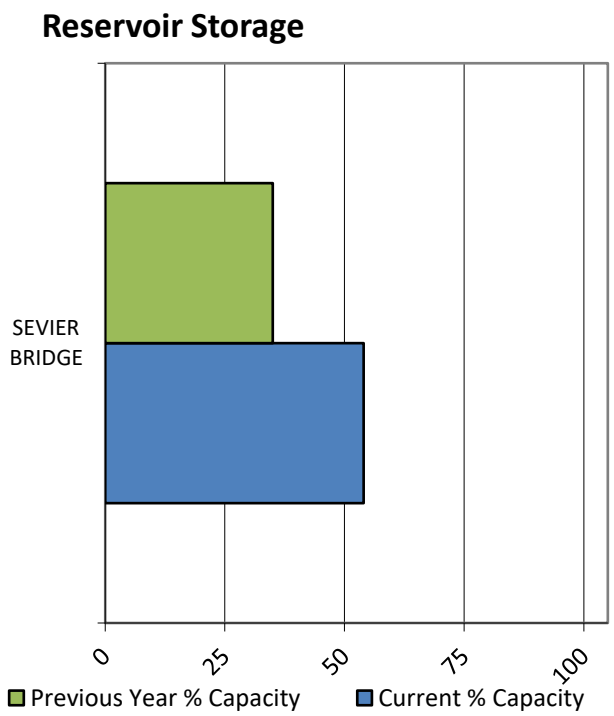
May 1, 2020

Snowpack in the Lower Sevier Basin is much below normal at 55% of normal, compared to 155% last year. Precipitation in April was much below average at 62%, which brings the seasonal accumulation (Oct-Apr) to 92% of average. Soil moisture is at 79% compared to 73% last year. Reservoir storage is at 54% of capacity, compared to 35% last year. Forecast streamflow volumes range from 82% to 86% of average. The surface water supply index is 46% for the Lower Sevier.









SNOTEL Data

Data Current as of: 5/6/2020 11:34:16 AM

Lower Sevier
Streamflow Forecasts - May 1, 2020

Lower Sevier	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Chicken Ck nr Levan								
Sevier R nr Gunnison								
	APR-JUL	30	61	81	82%	101	132	99
	MAY-JUL	36	58	74	86%	90	112	86
Oak Ck nr Oak City								

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Sevier Bridge Reservoir	128.3	82.9	172.9	236.0
Basin-wide Total	128.3	82.9	172.9	236.0
# of reservoirs	1	1	1	1

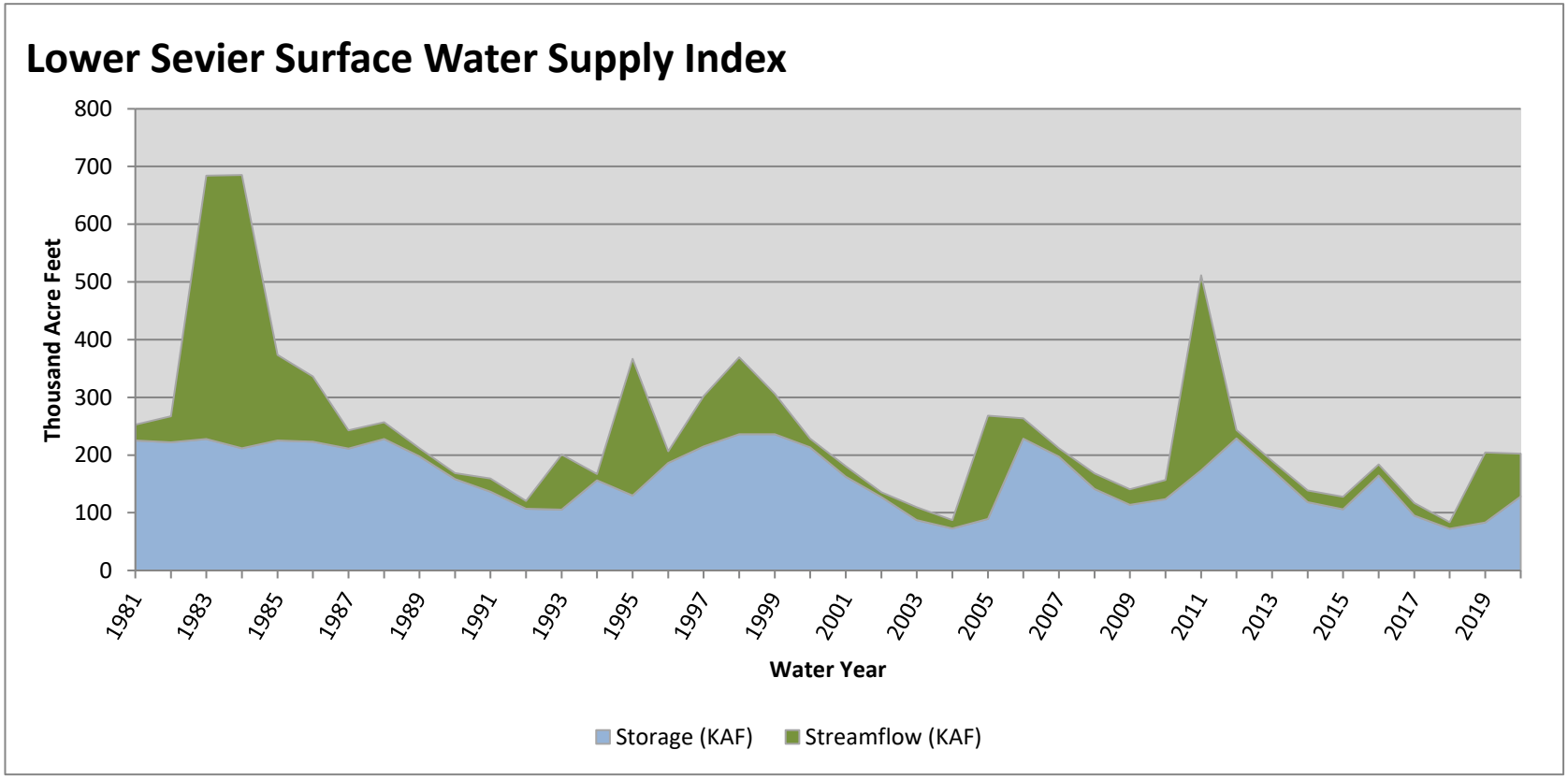
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Lower Sevier	1	55%	155%

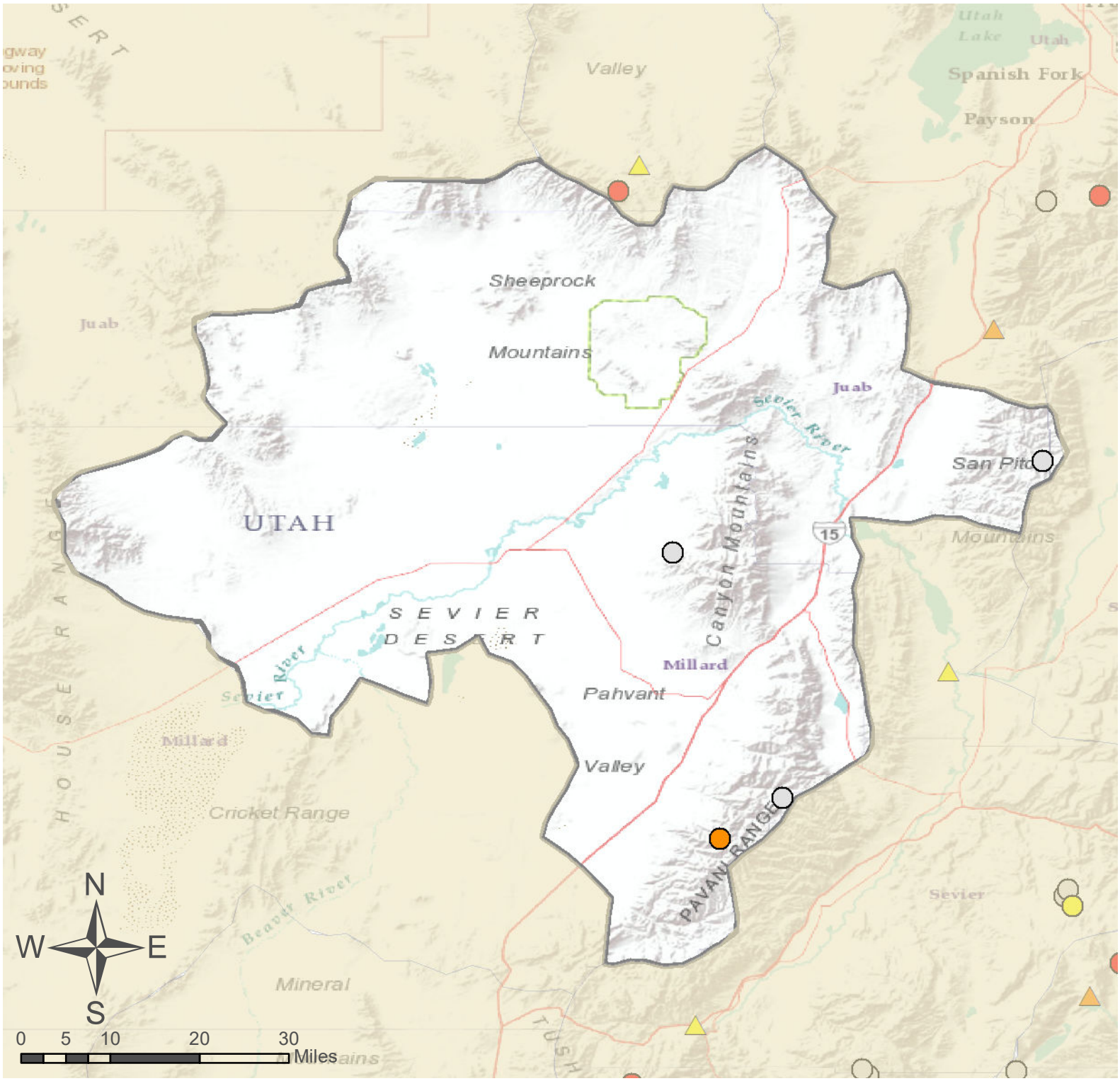
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Lower Sevier	**128.26**	**74.00**	**202.26**	**46**	**-0.3**	**13, 93, 19, 96**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





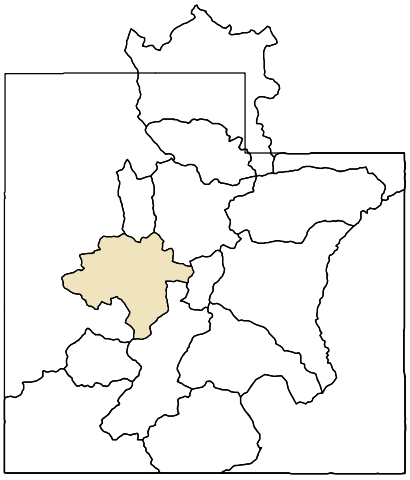
Lower Sevier Basin

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



As of May 1, 2020:

55% of Normal SWE

92% of Normal Precipitation

62% of Normal Precipitation Last Month

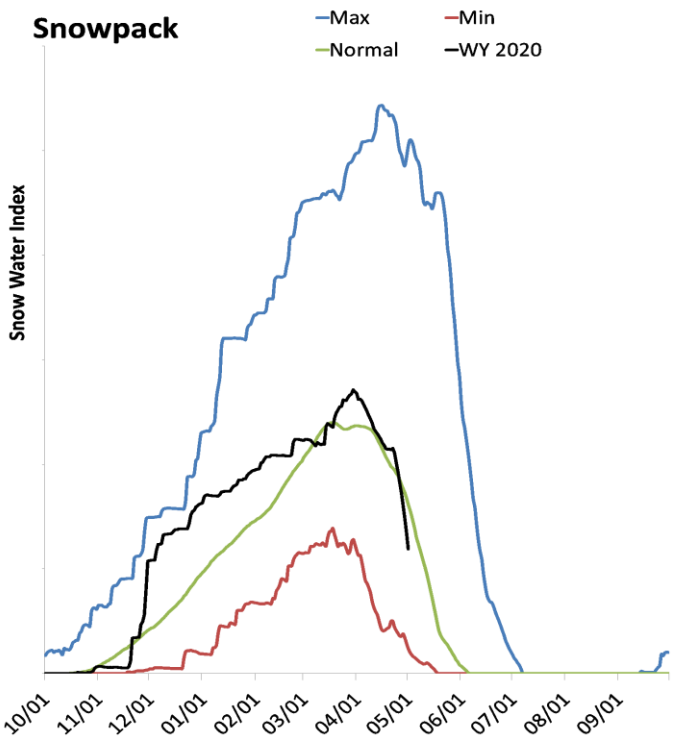
79% Saturation Soil Moisture

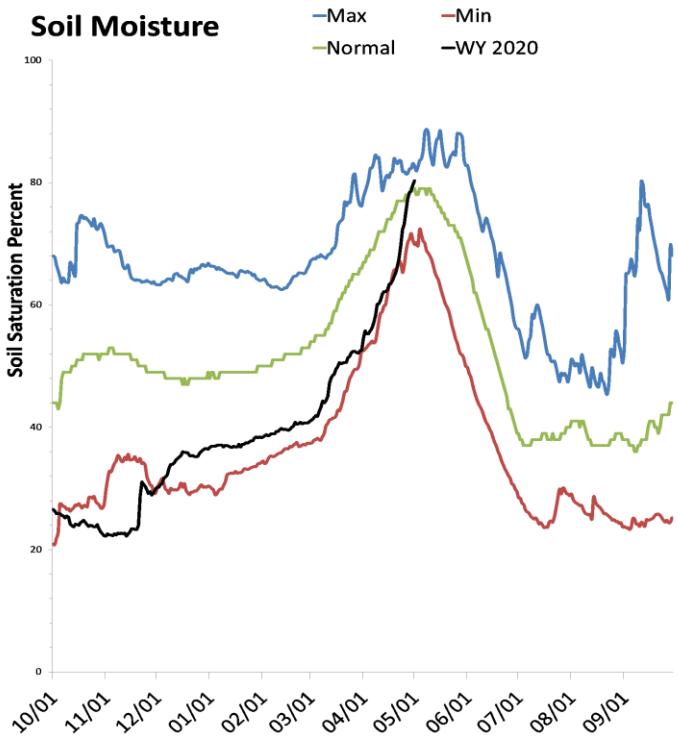
Lower Sevier Basin

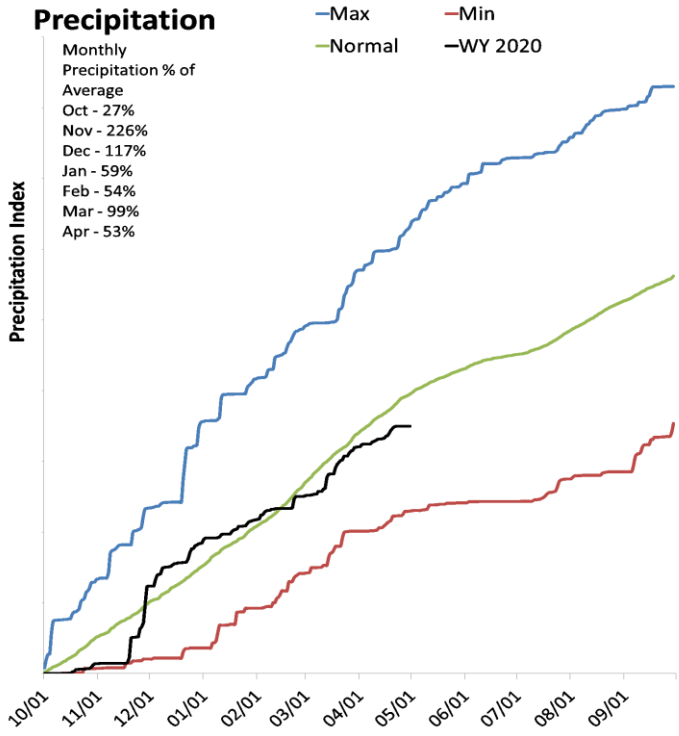
Upper Sevier Basin

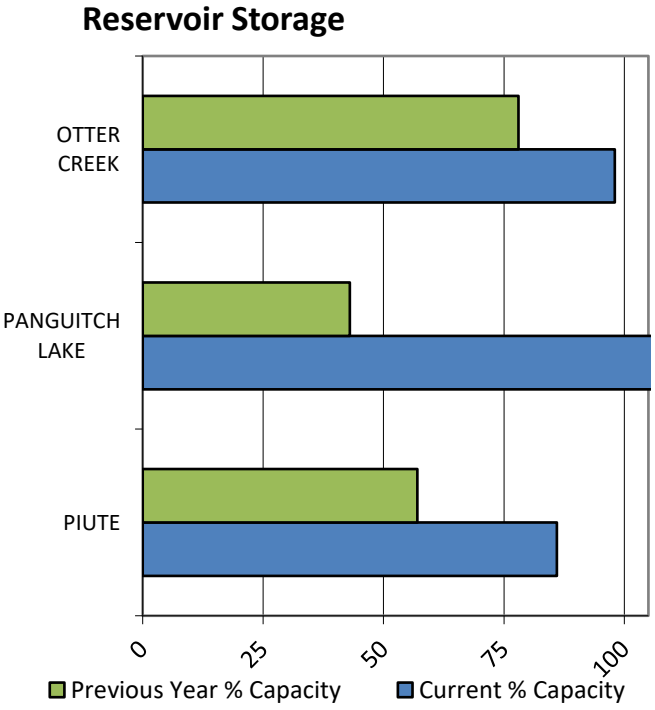
May 1, 2020

Snowpack in the Upper Sevier Basin is below normal at 74% of normal, compared to 147% last year. Precipitation in April was much below average at 53%, which brings the seasonal accumulation (Oct-Apr) to 89% of average. Soil moisture is at 80% compared to 78% last year. Reservoir storage is at 93% of capacity, compared to 62% last year. Forecast streamflow volumes range from 71% to 91% of average. The surface water supply index is 68% for the Upper Sevier.









SNOTEL Data

Data Current as of: 5/6/2020 11:34:04 AM

Upper Sevier
Streamflow Forecasts - May 1, 2020

Upper Sevier	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Mammoth Ck nr Hatch								
	APR-JUL	1.35	7.4	23	85%	41	65	27
	MAY-JUL	2	7.6	21	84%	34	54	25
Sevier R at Hatch								
	APR-JUL	27	36	42	88%	48	56	48
	MAY-JUL	24	31	36	86%	40	47	42
EF Sevier R nr Kingston								
	APR-JUL	12.1	23	30	86%	37	48	35
	MAY-JUL	5.4	17.1	25	83%	33	45	30
Sevier R nr Kingston								
	APR-JUL	7.7	20	29	88%	38	50	33
	MAY-JUL	2.8	14.8	23	88%	31	43	26
Sevier R bl Piute Dam								
	APR-JUL	13.7	41	60	91%	79	106	66
	MAY-JUL	18.3	37	50	91%	63	82	55
Clear Ck ab Diversions nr Sevier								
	APR-JUL	7.6	12	15	71%	18	22	21
	MAY-JUL	6.3	10.3	13.1	77%	15.9	19.9	17
Salina Ck nr Emery								
	APR-JUL	2.1	4.5	6.1	77%	7.7	10.1	7.9
	MAY-JUL	1.97	4.1	5.6	80%	7.1	9.2	7

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Piute Reservoir	61.5	40.7	54.4	71.8
Otter Creek Reservoir	51.6	40.9	44.8	52.5
Panguitch Lake	23.6	9.7	15.9	22.3
Basin-wide Total	136.7	91.2	115.1	146.6
# of reservoirs	3	3	3	3

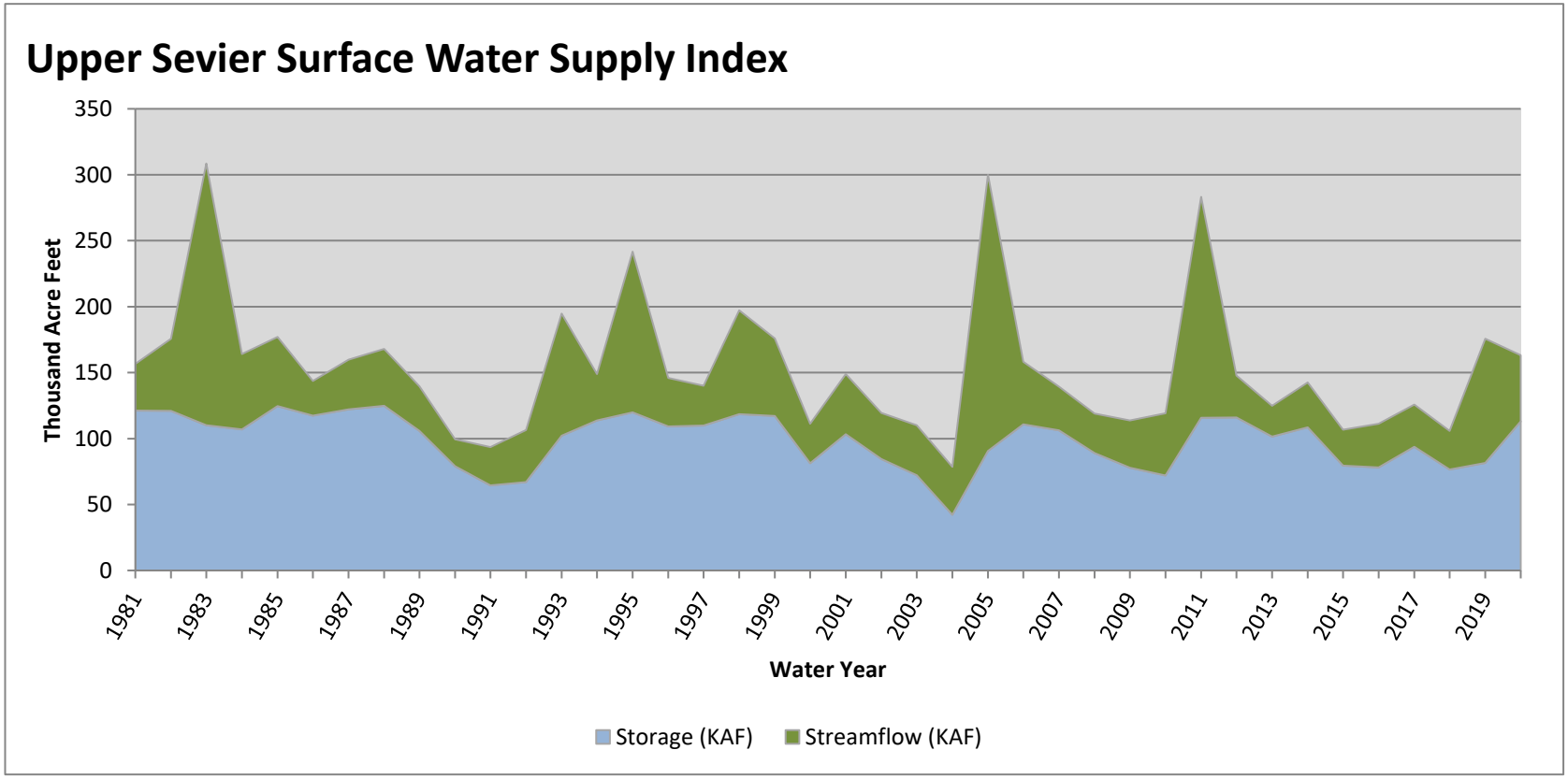
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Upper Sevier	12	74%	147%
Middle Sevier	8	62%	137%
East Fork Sevier River	5	76%	179%

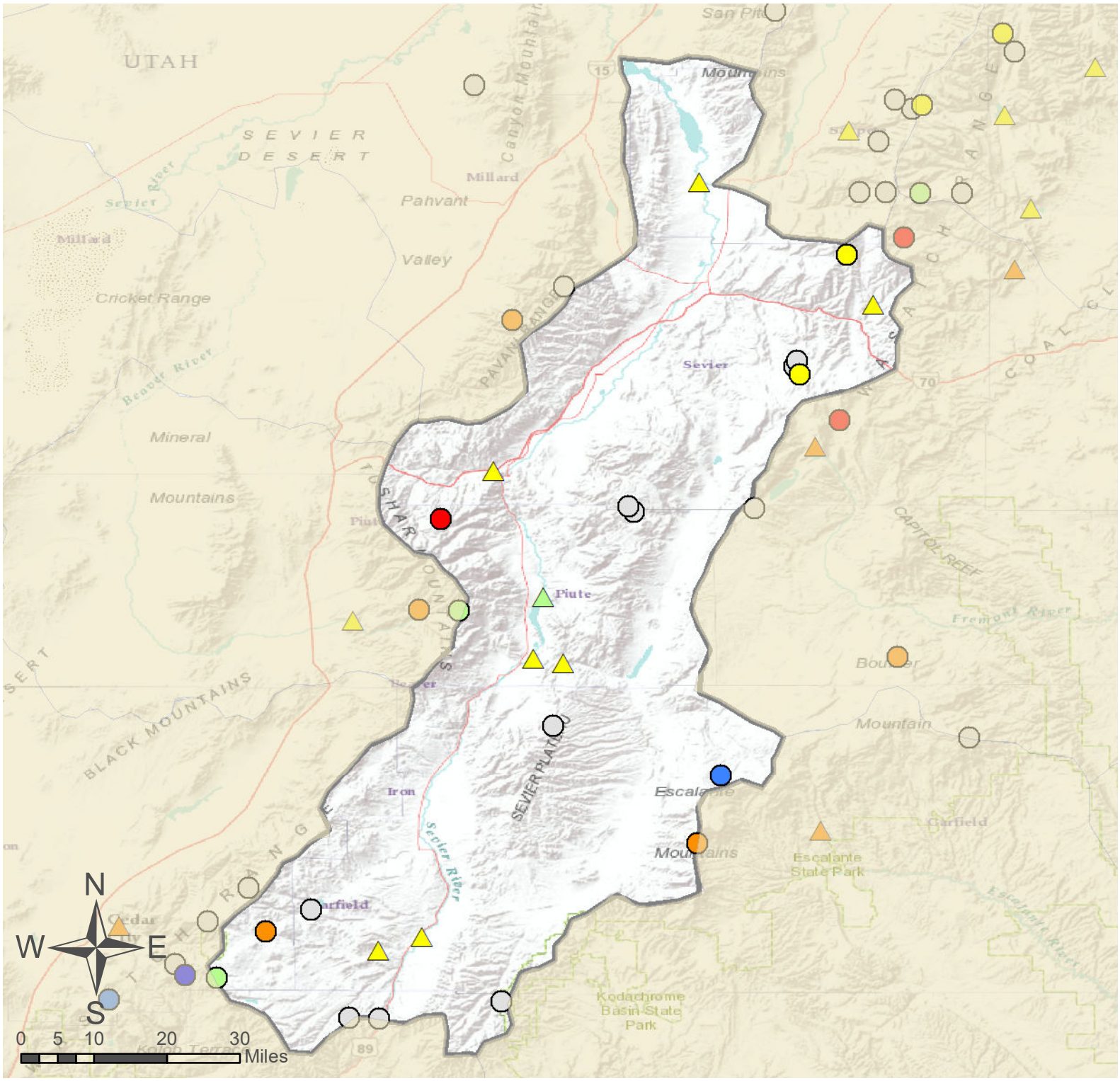
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Upper Sevier	**113.11**	**50.00**	**163.11**	**68**	**1.52**	**06, 87, 84, 88**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





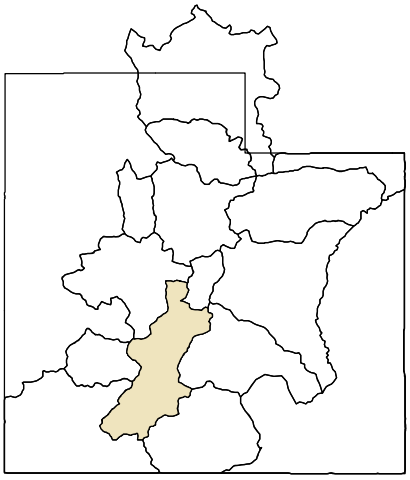
Upper Sevier Basin

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



As of May 1, 2020:

74% of Normal SWE

89% of Normal Precipitation

53% of Normal Precipitation Last Month

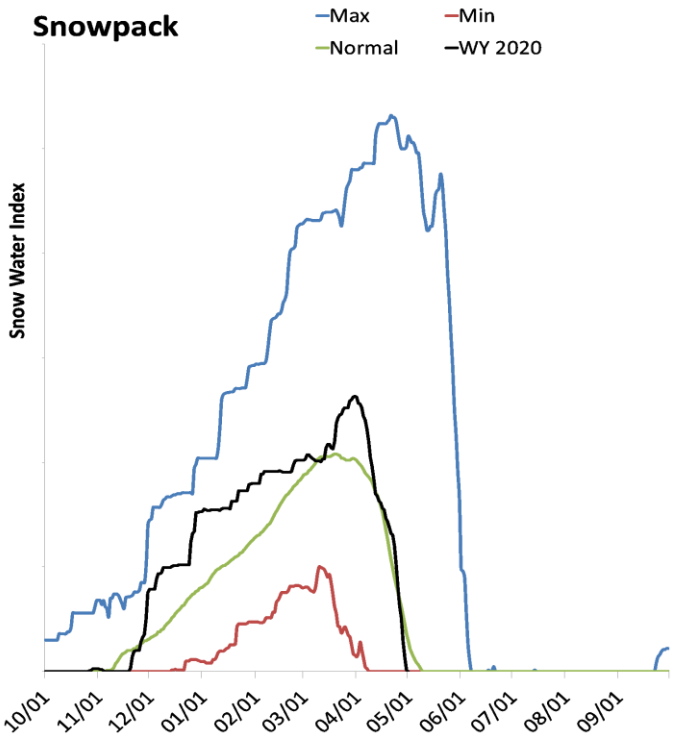
80% Saturation Soil Moisture

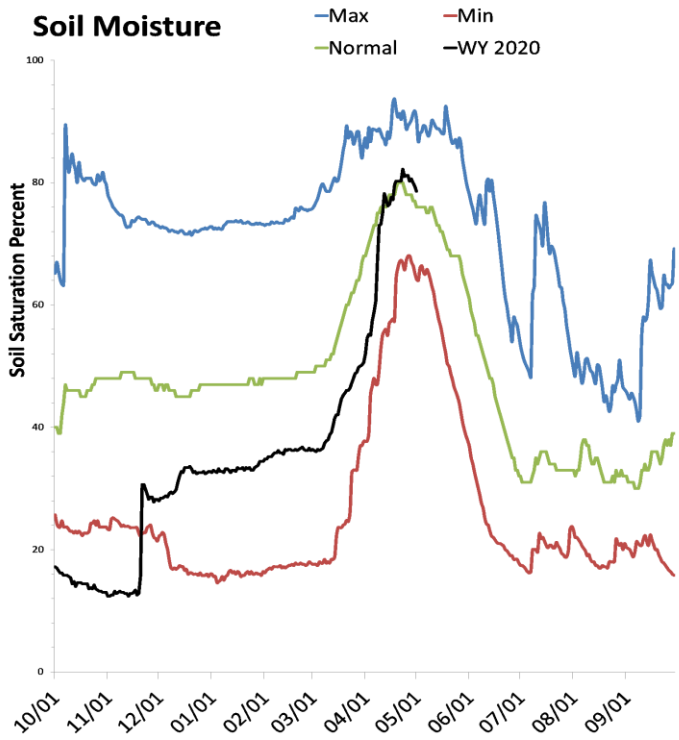
Upper Sevier Basin

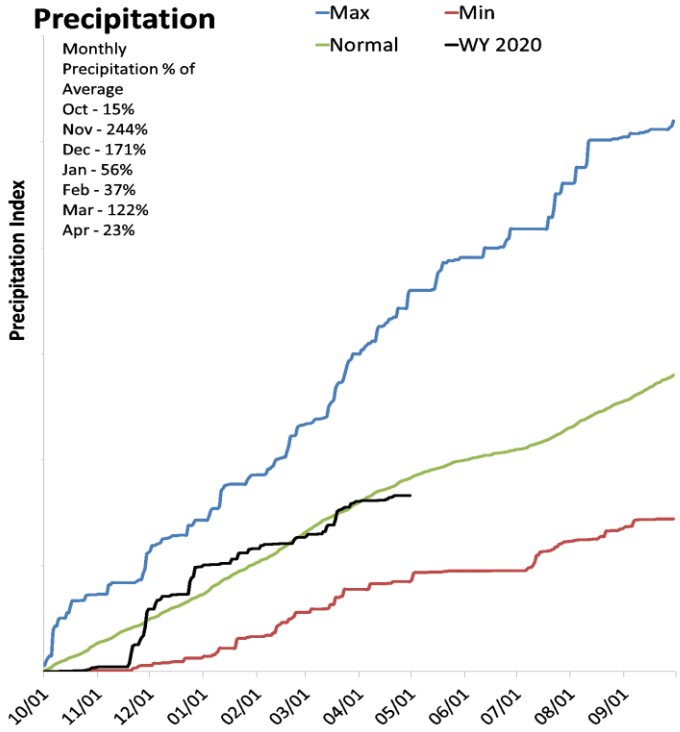
Southeastern Utah

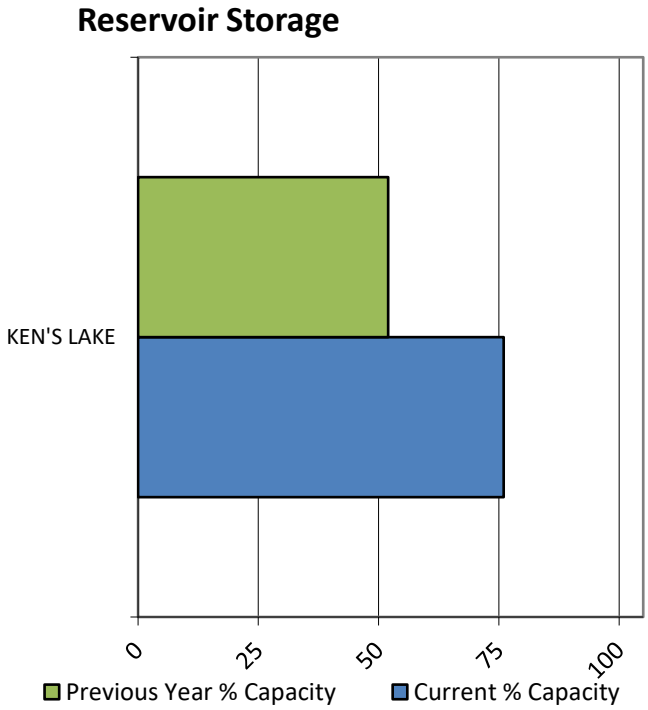
May 1, 2020

Snowpack in the Southeastern Utah is much below normal at 0% of normal, compared to 648% last year. Precipitation in April was much below average at 22%, which brings the seasonal accumulation (Oct-Apr) to 91% of average. Soil moisture is at 79% compared to 81% last year. Reservoir storage is at 76% of capacity, compared to 52% last year. Forecast streamflow volumes range from 39% to 67% of average. The surface water supply index is 32% for Moab.









SNOTEL Data

Data Current as of: 5/6/2020 11:33:58 AM

Southeastern Utah
Streamflow Forecasts - May 1, 2020

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

Southeastern Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Mill Ck at Sheley Tunnel nr Moab								
	APR-JUL	1.39	1.89	2.3	53%	2.8	3.5	4.3
	MAY-JUL	1.03	1.53	1.92	52%	2.4	3.1	3.7
South Ck ab Resv nr Monticello								
	MAR-JUL	0.25	0.34	0.43	39%	0.55	0.77	1.09
	MAY-JUL	0.1	0.19	0.28	41%	0.4	0.62	0.69
Colorado R nr Cisco [2]								
	APR-JUL	2130	2470	2720	64%	2980	3390	4280
	MAY-JUL	1890	2230	2480	67%	2740	3150	3720
San Juan R near Bluff [2]								
	APR-JUL	340	415	470	43%	530	630	1100
	MAY-JUL	245	320	375	44%	435	535	855

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Ken's Lake	1.7	1.2	1.5	2.3
Basin-wide Total	1.7	1.2	1.5	2.3
# of reservoirs	1	1	1	1

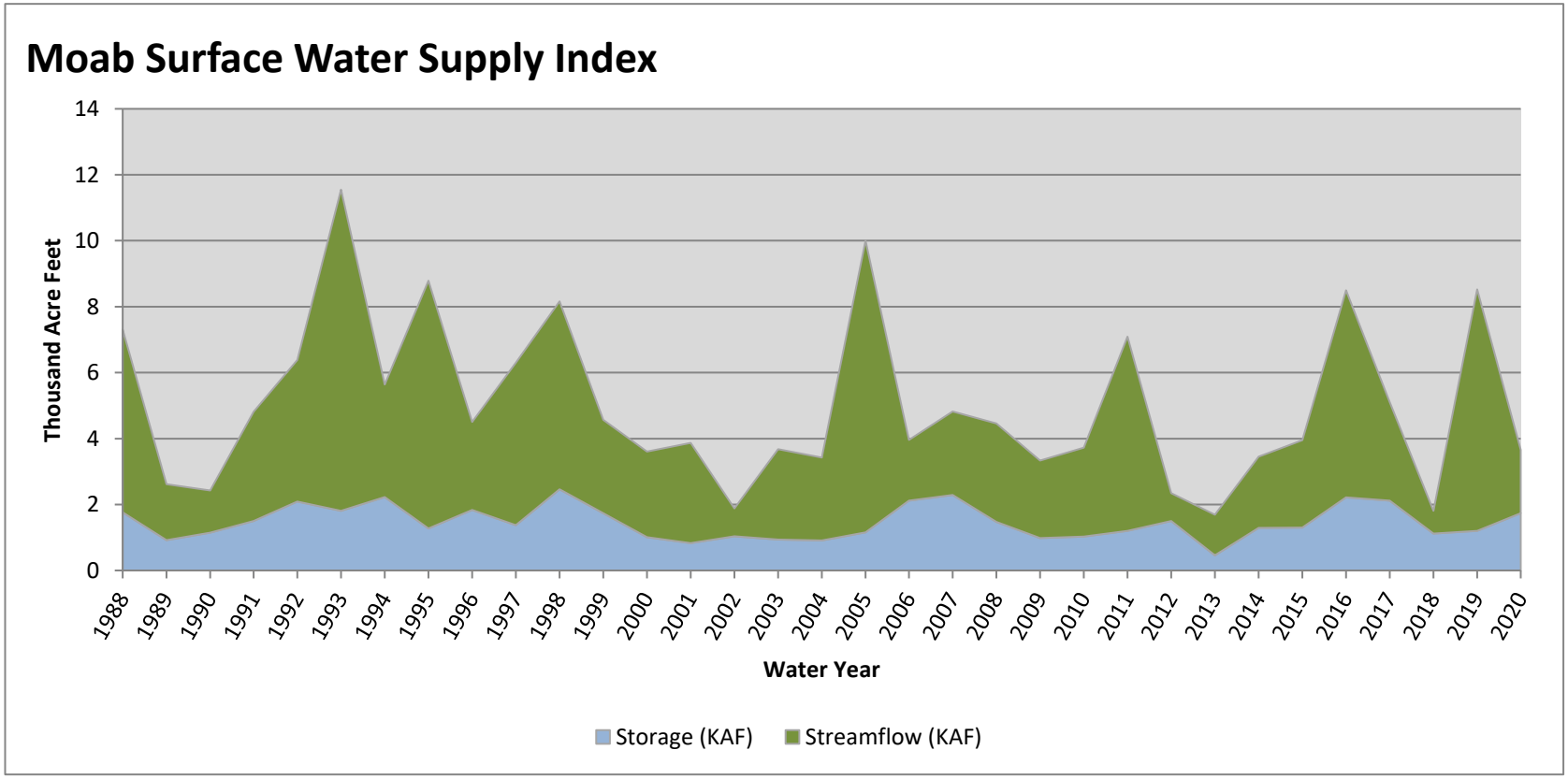
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Lasal Mountains	2	0%	551%
Lower San Juan	2	83%	376%
Lower Green	2	80%	298%
Henry Mountains	0		

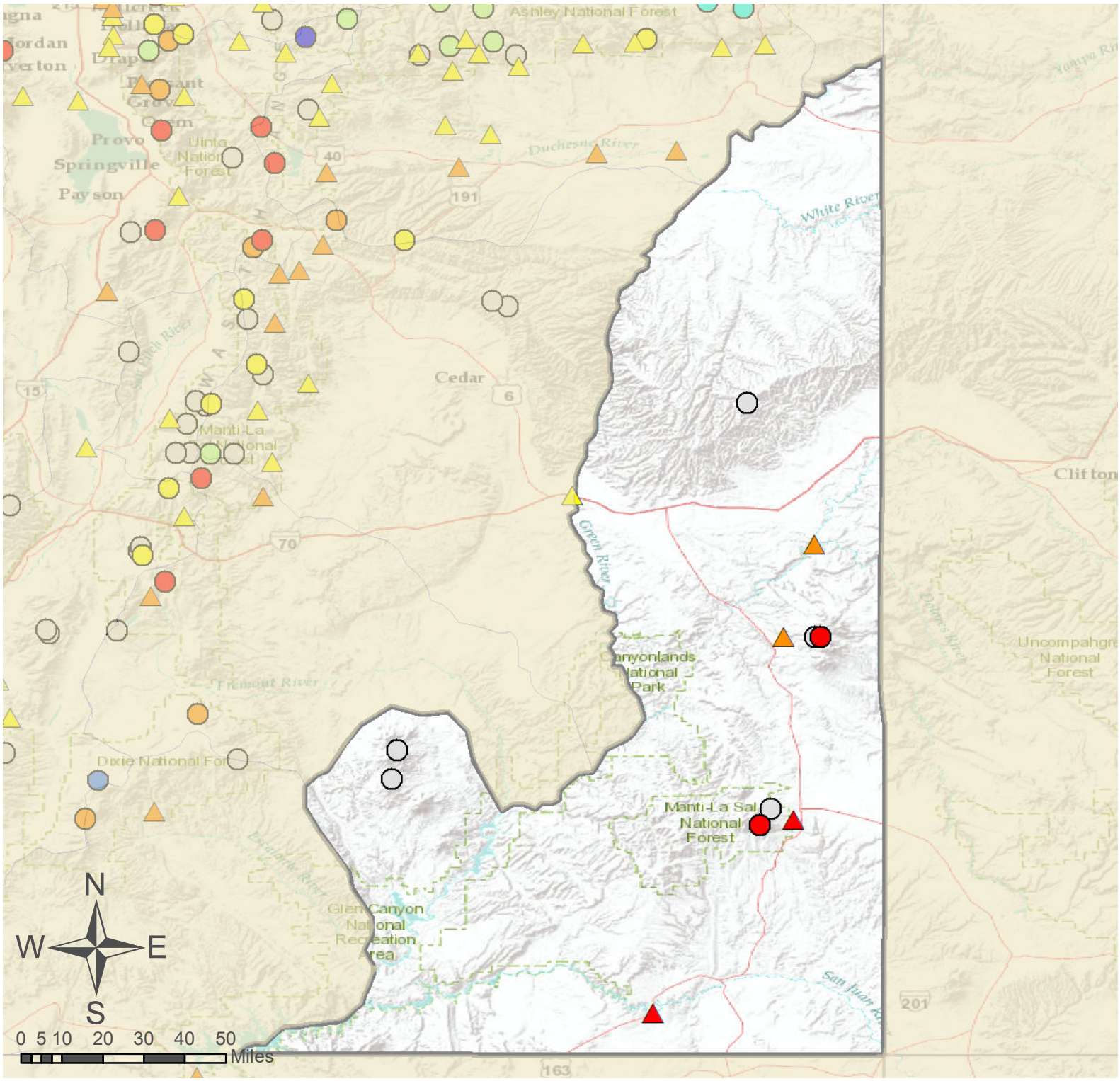
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Moab	**1.74**	**1.92**	**3.66**	**32**	**-1.47**	**14, 00, 03, 10**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





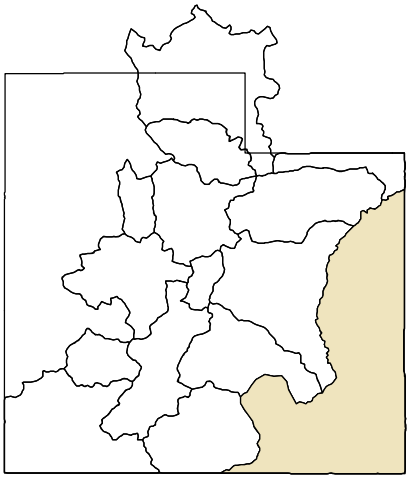
Southeastern Utah

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



As of May 1, 2020:

0% of Normal SWE

91% of Normal Precipitation

22% of Normal Precipitation Last Month

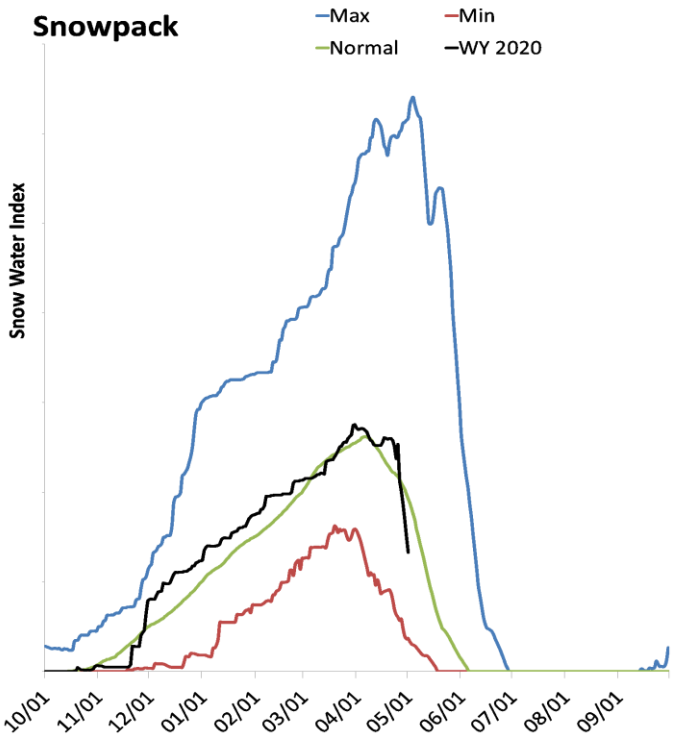
79% Saturation Soil Moisture

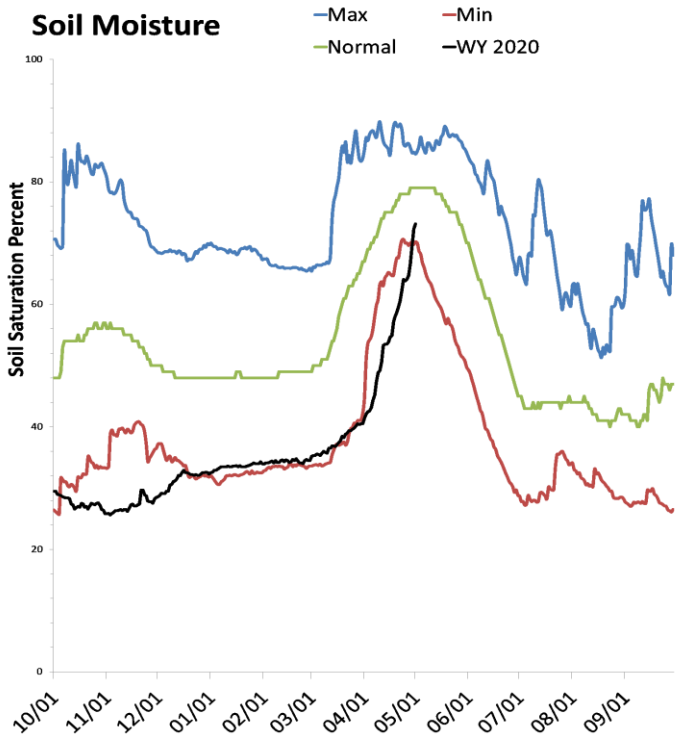
Southeastern Utah

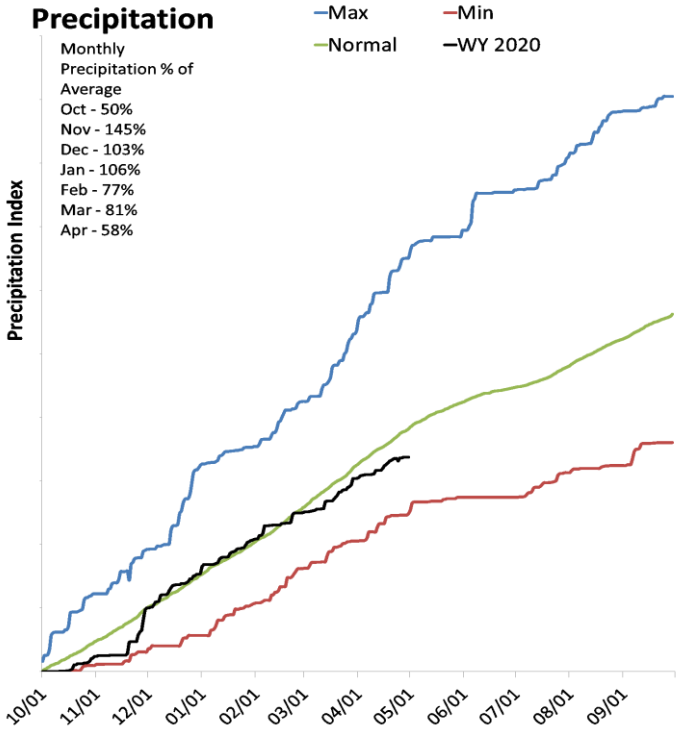
Dirty Devil Basin

May 1, 2020

Snowpack in the Dirty Devil Basin is much below normal at 69% of normal, compared to 121% last year. Precipitation in April was much below average at 58%, which brings the seasonal accumulation (Oct-Apr) to 88% of average. Soil moisture is at 73% compared to 75% last year. Forecast streamflow volumes range from 63% to 66% of average.







SNOTEL Data

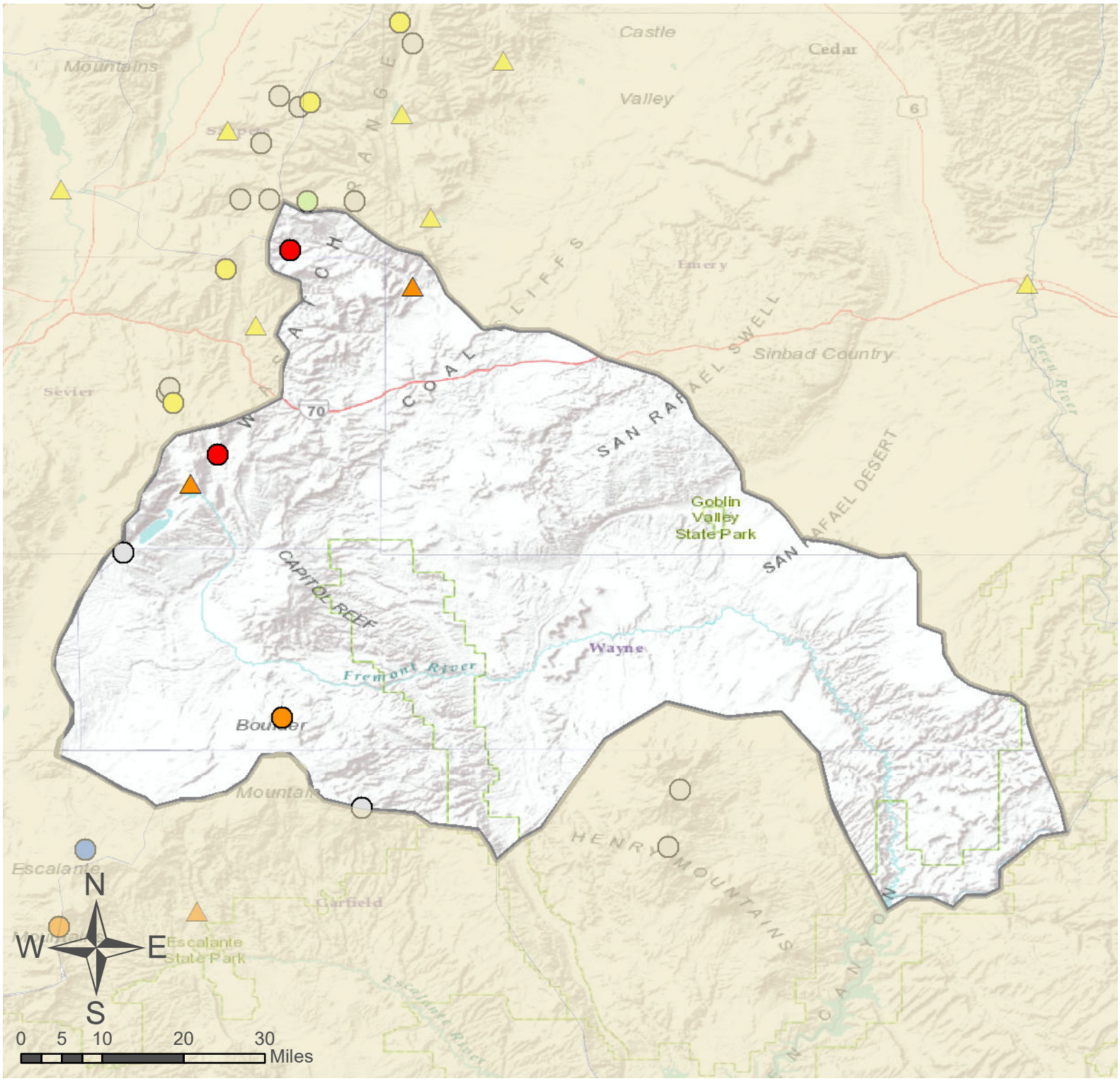
Data Current as of: 5/6/2020 11:33:52 AM

Dirty Devil
Streamflow Forecasts - May 1, 2020

Dirty Devil	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Muddy Ck nr Emery								
	APR-JUL	8.2	11	13.2	66%	15.6	19.5	19.9
	MAY-JUL	7	9.8	12	66%	14.4	18.3	18.1
Seven Mile Ck nr Fish Lake								
	APR-JUL	3.4	4.2	4.8	66%	5.5	6.5	7.3
	MAY-JUL	2.6	3.4	4	63%	4.7	5.7	6.3

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Muddy Creek	3	69%	133%
Fremont River	4	65%	120%
Henry Mountains	0		



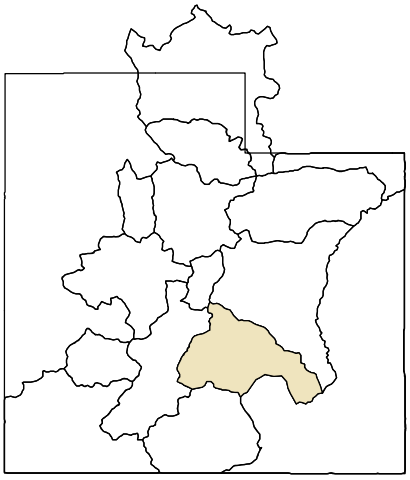
Dirty Devil Basin

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



As of May 1, 2020:

69% of Normal SWE

88% of Normal Precipitation

58% of Normal Precipitation Last Month

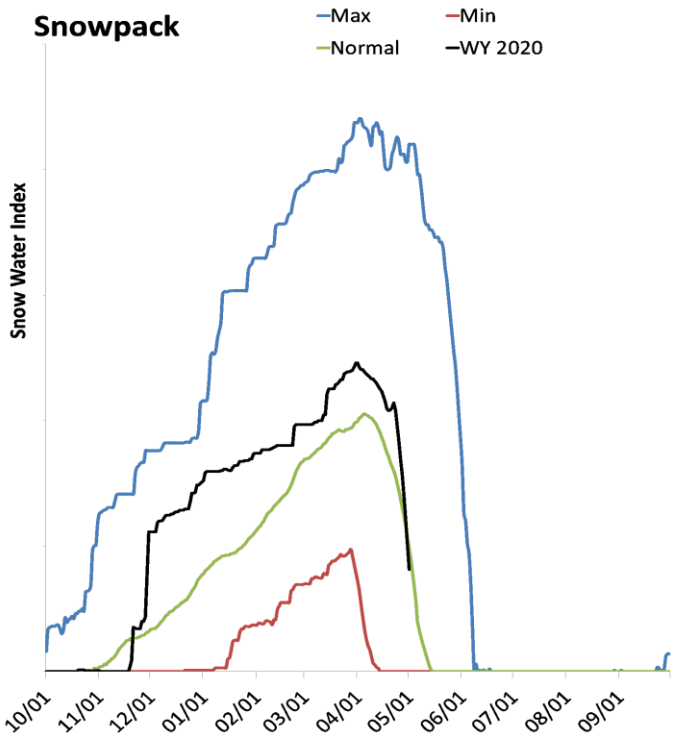
73% Saturation Soil Moisture

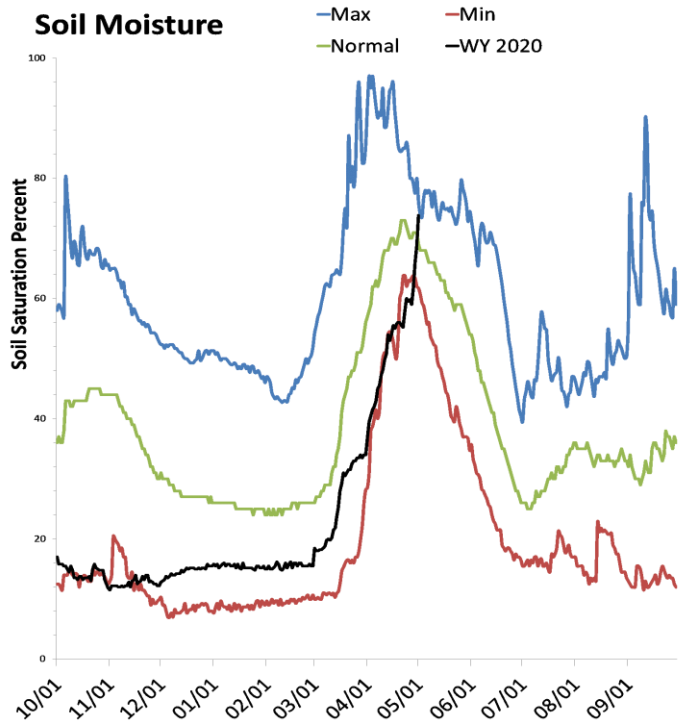
Dirty Devil Basin

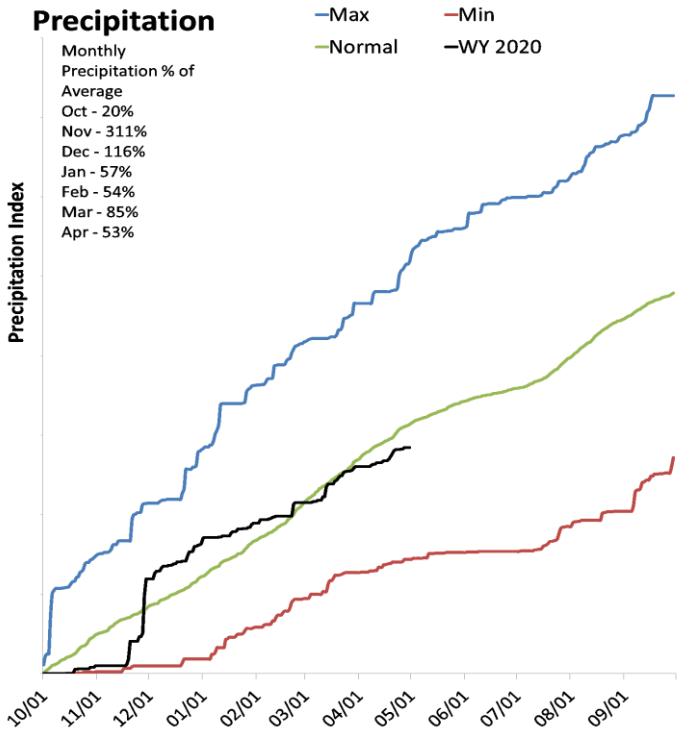
Escalante River Basin

May 1, 2020

Snowpack in the Escalante River Basin is below normal at 83% of normal, compared to 135% last year. Precipitation in April was much below average at 54%, which brings the seasonal accumulation (Oct-Apr) to 91% of average. Soil moisture is at 71% compared to 66% last year. The forecast streamflow volume for Pine Creek is 67% of average.







SNOTEL Data

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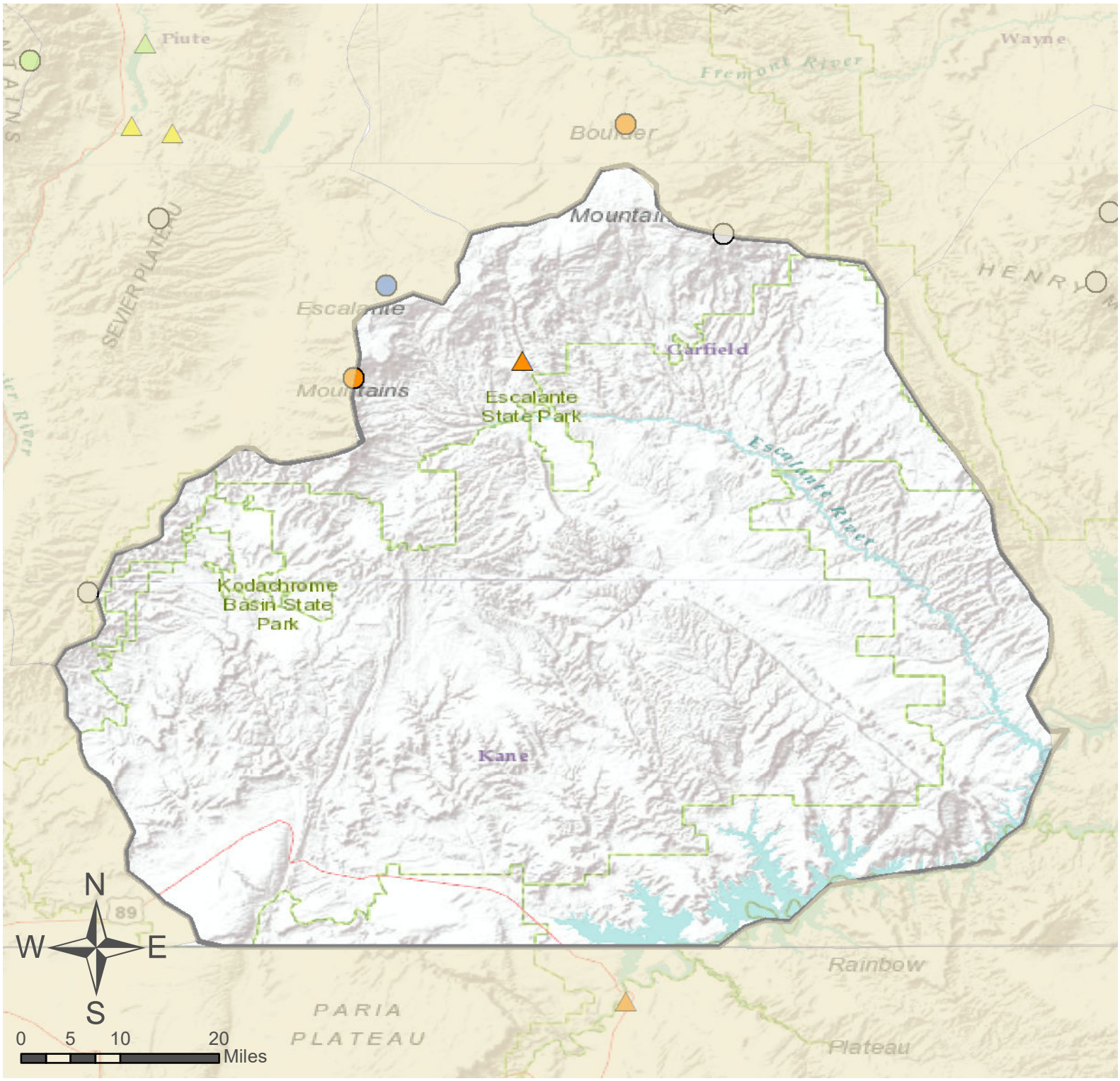
Escalante River
Streamflow Forecasts - May 1, 2020

		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Escalante River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Pine Ck nr Escalante								
	APR-JUL	0.88	1.27	1.6	67%	1.97	2.7	2.4
	MAY-JUL	0.52	0.91	1.24	67%	1.61	2.3	1.86

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Escalante River	3	83%	135%
Paria River	3	57%	104%



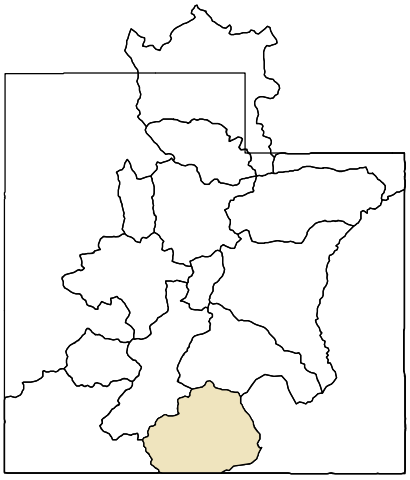
Escalante River Basin

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



As of May 1, 2020:

83% of Normal SWE

91% of Normal Precipitation

54% of Normal Precipitation Last Month

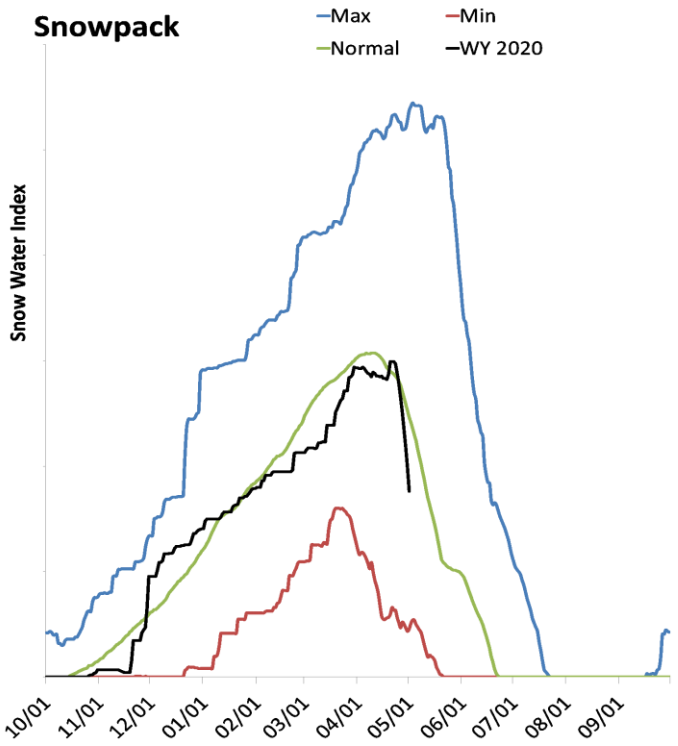
71% Saturation Soil Moisture

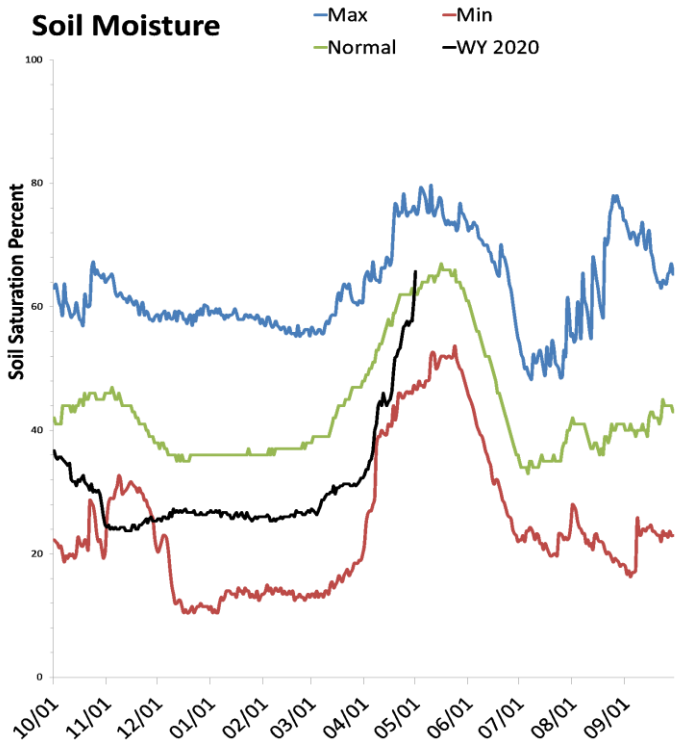
Escalante River Basin

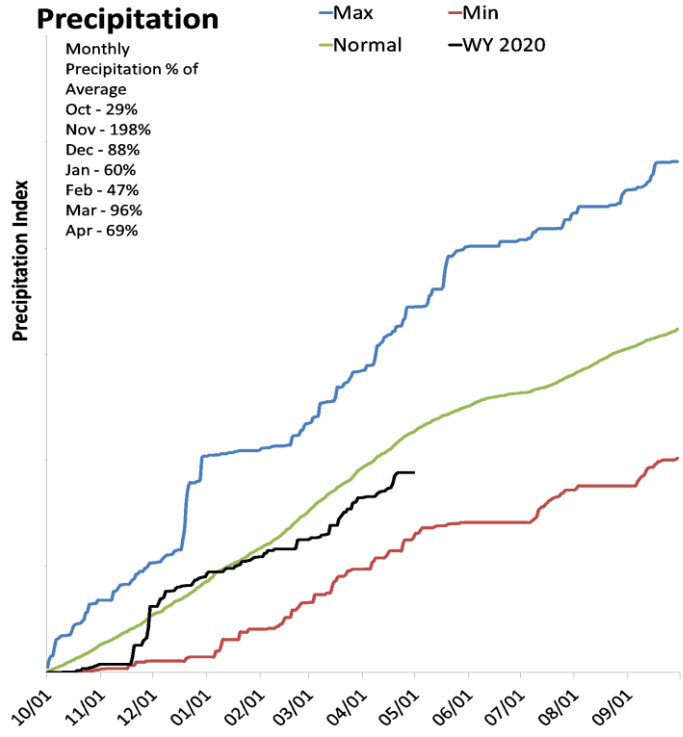
Beaver River Basin

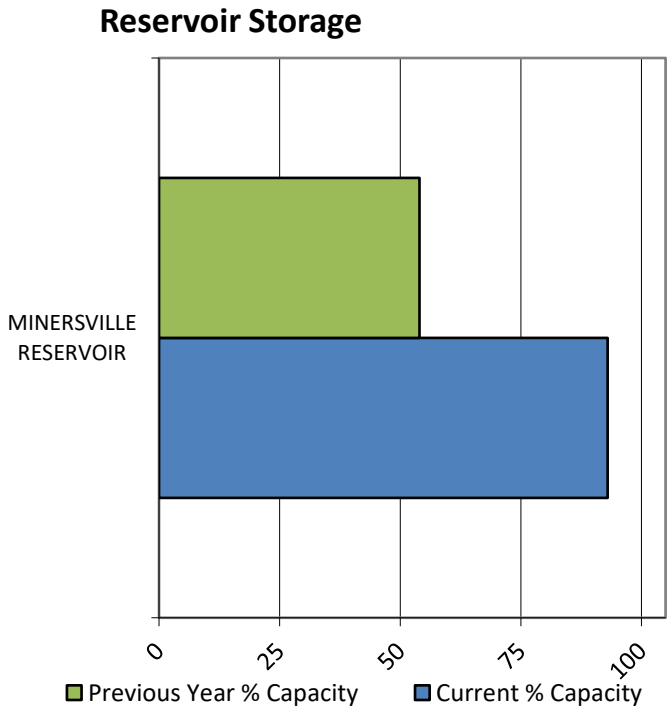
May 1, 2020

Snowpack in the Beaver River Basin is below normal at 72% of normal, compared to 163% last year. Precipitation in April was much below average at 69%, which brings the seasonal accumulation (Oct-Apr) to 83% of average. Soil moisture is at 63% compared to 64% last year. Reservoir storage is at 93% of capacity, compared to 54% last year. The forecast streamflow volume for the Beaver River is 78% of average for the May-July period. The surface water supply index is 59% for the Beaver River.









SNOTEL Data

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Beaver River
Streamflow Forecasts - May 1, 2020

Beaver River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
		Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						
Beaver R nr Beaver								
	APR-JUL	9.2	16.2	21	81%	26	33	26
	MAY-JUL	4.7	12.6	18	78%	23	31	23

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Minersville Reservoir	21.8	12.6	16.5	23.3
Basin-wide Total	21.8	12.6	16.5	23.3
# of reservoirs	1	1	1	1

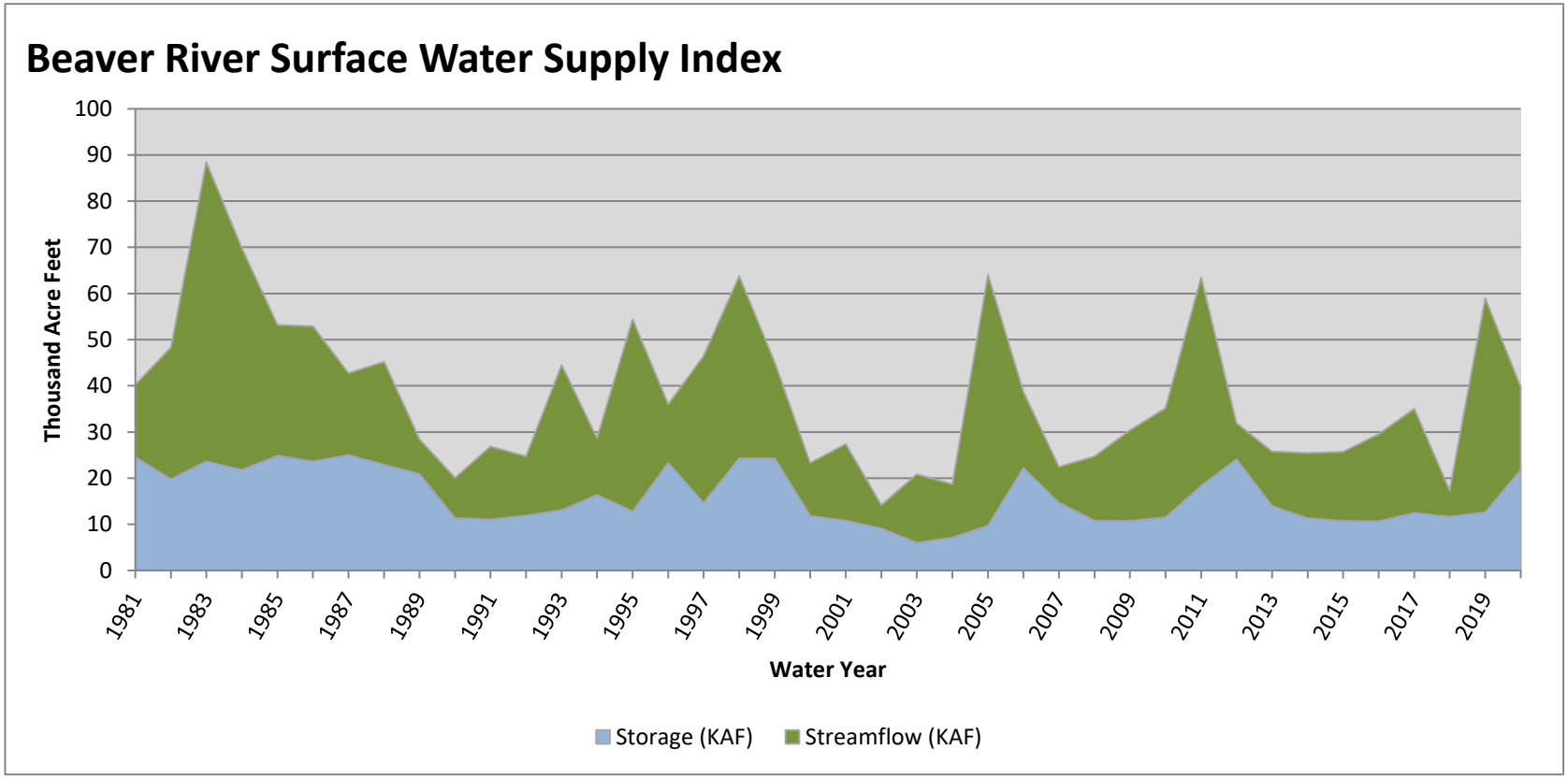
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Beaver River	3	72%	163%

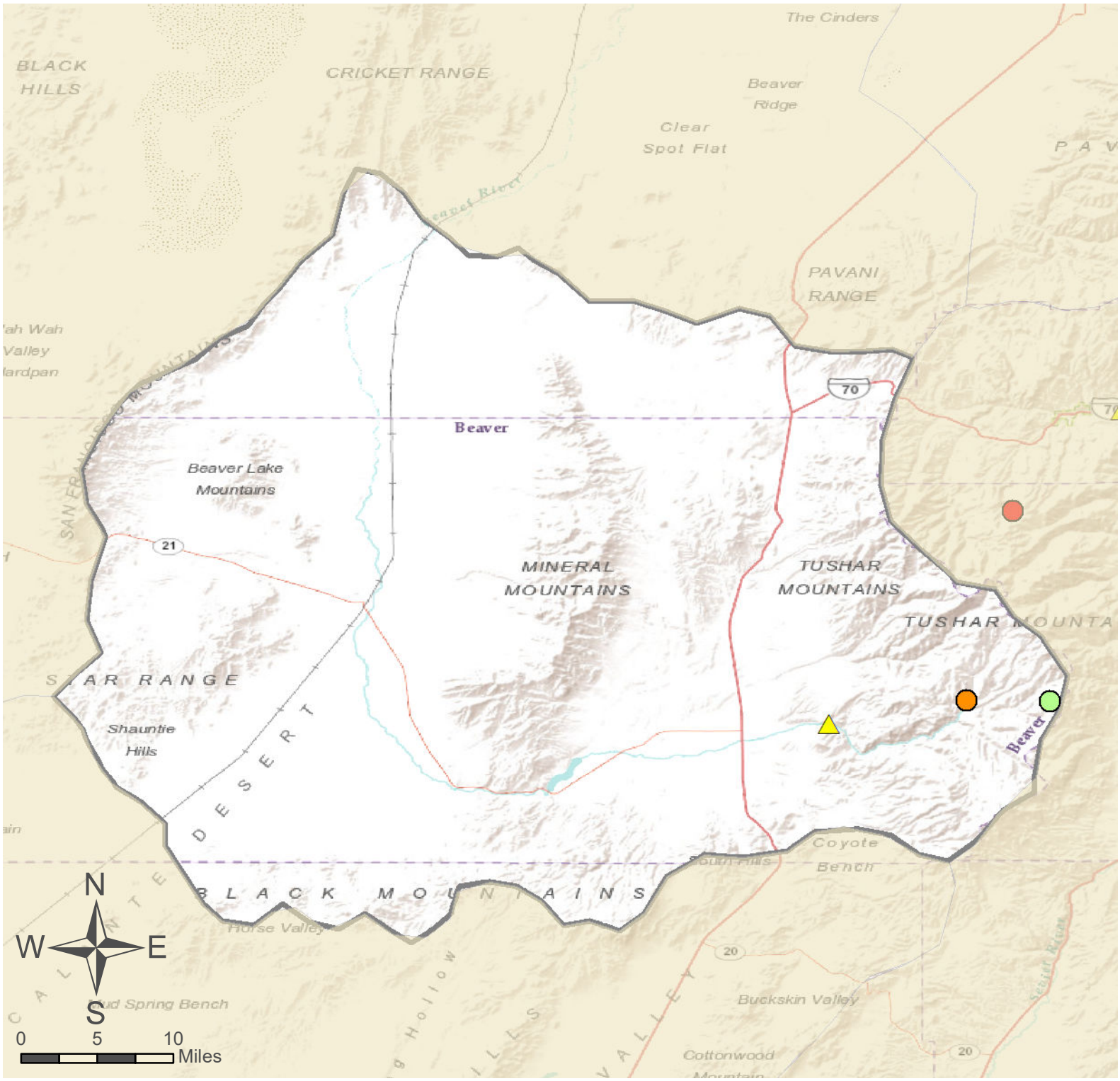
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Beaver River	**21.75**	**18.00**	**39.75**	**59**	**0.71**	**96, 06, 81, 87**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





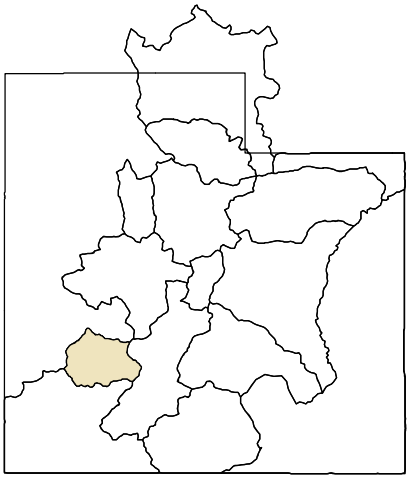
Beaver River Basin

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



As of May 1, 2020:

72% of Normal SWE

83% of Normal Precipitation

69% of Normal Precipitation Last Month

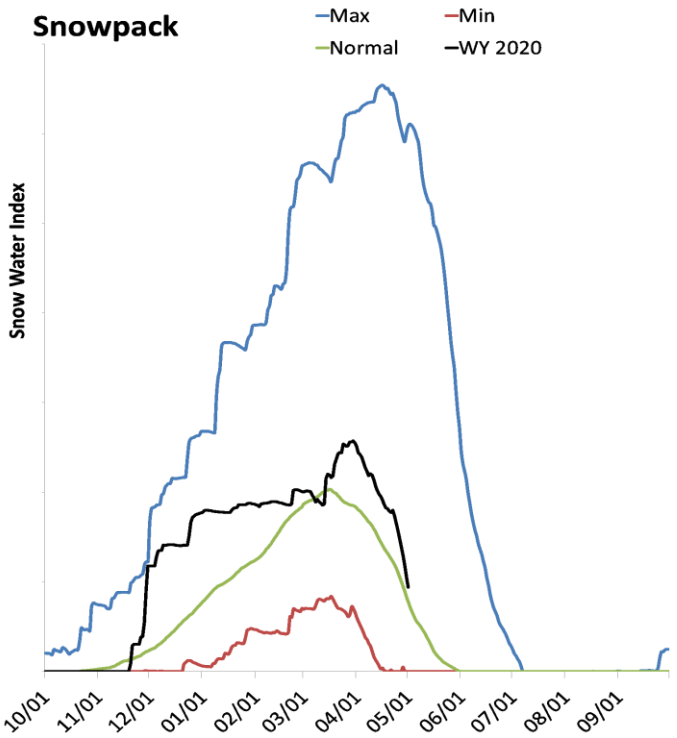
63% Saturation Soil Moisture

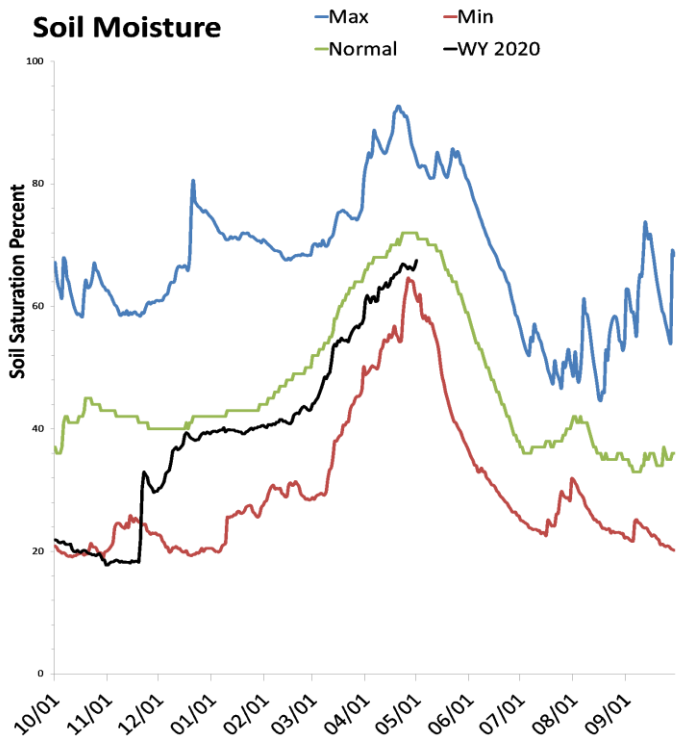
Beaver River Basin

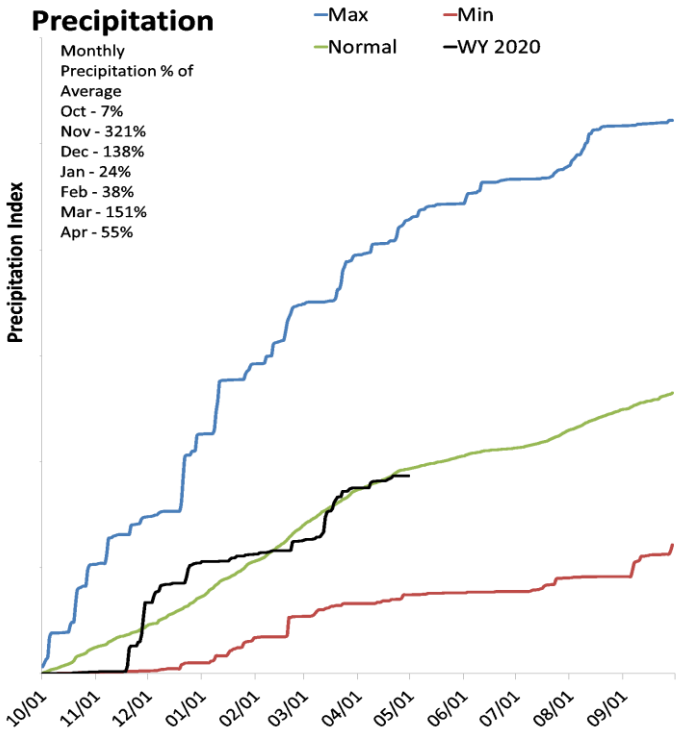
Southwestern Utah

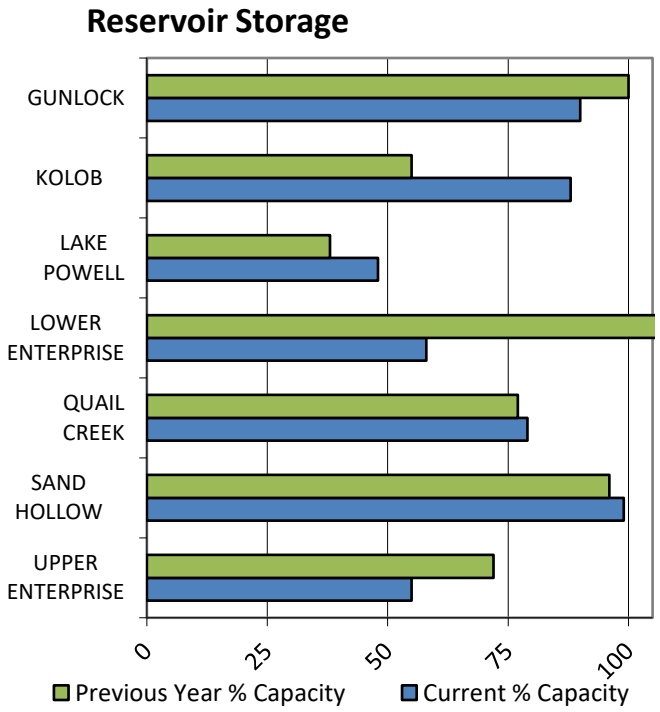
May 1, 2020

Snowpack in the Southwestern Utah is above normal at 120% of normal, compared to 230% last year. Precipitation in April was much below average at 55%, which brings the seasonal accumulation (Oct-Apr) to 96% of average. Soil moisture is at 67% compared to 74% last year. Reservoir storage is at 48% of capacity, compared to 38% last year. Forecast streamflow volumes range from 61% to 84% of average. The surface water supply index is 52% for the Virgin River.









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Southwestern Utah
Streamflow Forecasts - May 1, 2020

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

Southwestern Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Lake Powell Inflow [2]								
	APR-JUL	3240	3890	4370	61%	4880	5700	7160
	MAY-JUL	2770	3420	3900	64%	4410	5230	6100
Virgin R nr Hurricane								
	APR-JUL	19.5	35	46	73%	57	72	63
	MAY-JUL	9.4	21	29	71%	37	48	41
Virgin R at Virgin								
	APR-JUL	32	38	42	72%	47	54	58
	MAY-JUL	17.1	22	25	66%	29	34	38
Santa Clara R nr Pine Valley								
	APR-JUL	3	3.7	4.2	84%	4.8	5.6	5
	MAY-JUL	1.96	2.5	3	75%	3.4	4.2	4
Coal Ck nr Cedar City								
	APR-JUL	11.2	13	14.3	74%	15.6	17.4	19.4
	MAY-JUL	6.6	9.1	10.8	68%	12.6	15.1	15.8

1) 90% and 10% exceedance probabilities are actually 95% and 5%
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
3) Median value used in place of average

Reservoir Storage End of April, 2020	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Powell	11685.3	9197.9	17123.0	24322.0
Lower Enterprise	1.5	2.8	1.4	2.6
Upper Enterprise	5.5	7.2	5.0	10.0
Kolob Reservoir	4.9	3.1		5.6
Gunlock	9.3	10.4	6.8	10.4
Sand Hollow Reservoir	49.5	48.0		50.0
Quail Creek	31.6	30.8	31.6	40.0
Basin-wide Total	11733.2	9249.1	17167.8	24385.0
# of reservoirs	5	5	5	5

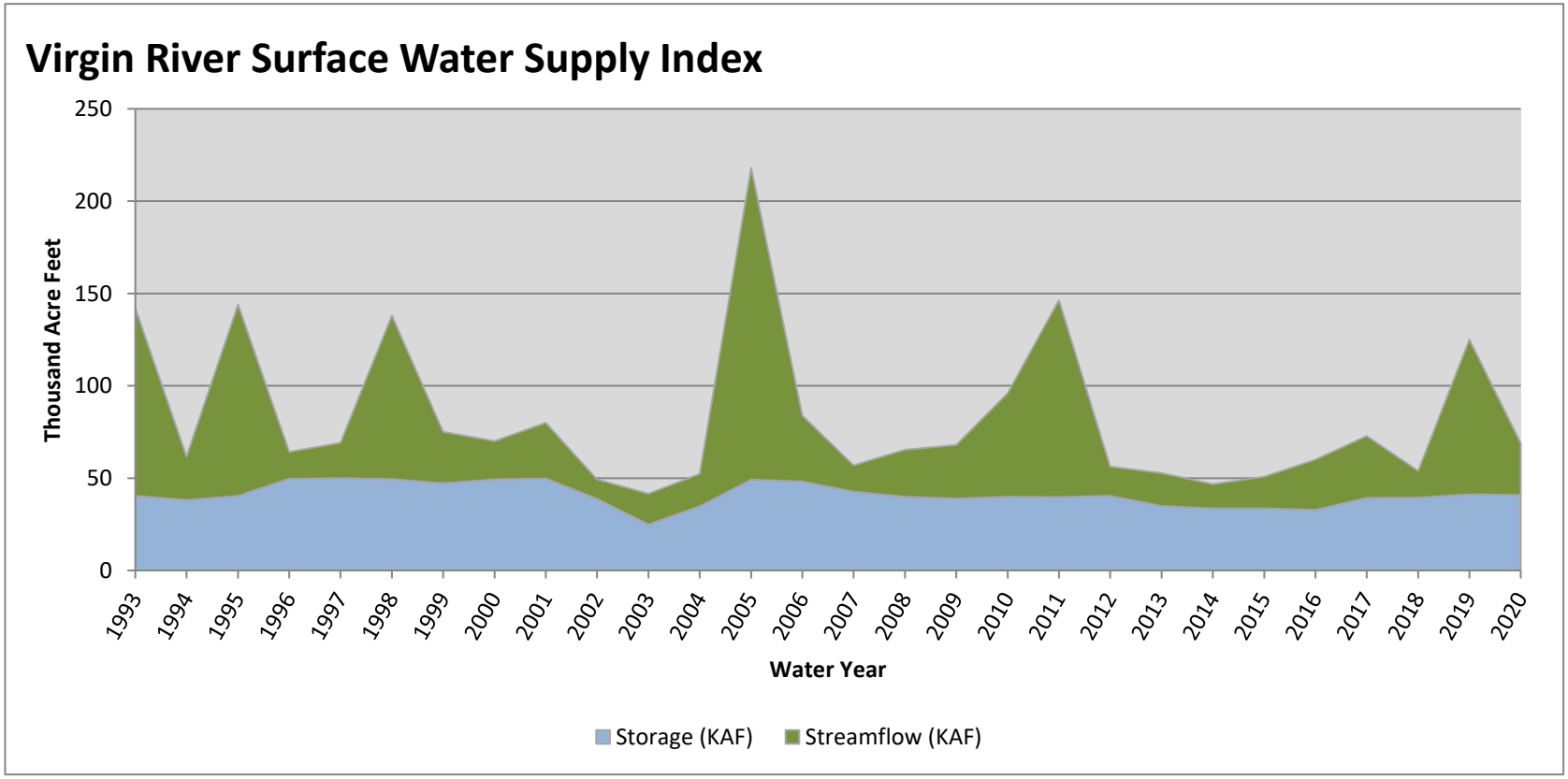
Watershed Snowpack Analysis May 1, 2020	# of Sites	% Median	Last Year % Median
Upper Virgin	8	115%	198%
Lower Virgin	2		
Coal Parowan Creeks	4	114%	207%

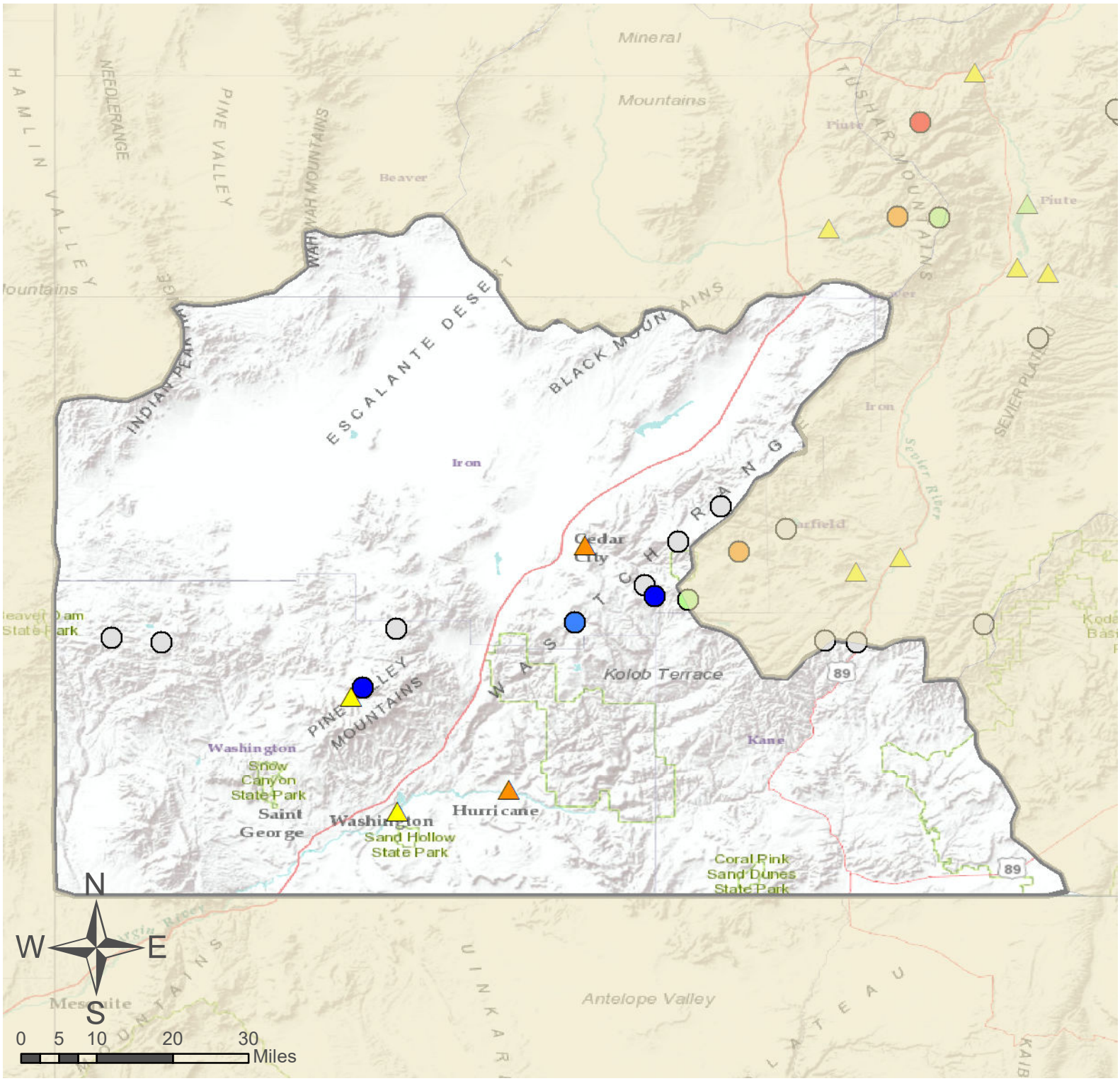
May 1, 2020

Surface Water Supply Index

Basin or Region	Apr EOM* Storage	MAY-JUL Forecast	Storage + Forecast	Percentile	SWSI#	Years with similiar SWSI
	KAF^	KAF^	KAF^	%		
Virgin River	**40.90**	**28.00**	**68.90**	**52**	**0.14**	**08, 09, 97, 00**

*EOM, end of month; #SWSI, Surface Water Supply Index; ^KAF, thousand acre-feet.





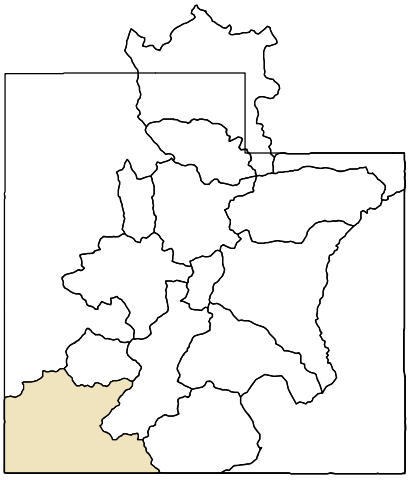
Southwestern Utah

SNOTEL Site

Forecast Point

% of Normal

- < 50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- > 150%
- No Normal



As of May 1, 2020:

120% of Normal SWE

96% of Normal Precipitation

55% of Normal Precipitation Last Month

67% Saturation Soil Moisture

Southwestern Utah

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Utah Water Supply Outlook Report

Natural Resources Conservation Service
Salt Lake City, UT