

# Utah Water Supply Outlook Report

March 1, 2023



**Snow almost to the top of the precipitation can at the  
Atwater SNOTEL site at Alta**

**Photo by Troy Brosten**

# STATE OF UTAH GENERAL OUTLOOK

March 1, 2023

## SUMMARY

The snow keeps coming! We are now roughly one month from when Utah's snowpack typically peaks, and our conditions remain outstanding. Statewide, the snow water equivalent (SWE) measured at our SNOTEL sites was 161% of normal as of March 1<sup>st</sup>, with all major basins except the Raft above 140%. Utah surpassed its typical peak snowpack on January 18<sup>th</sup>, and the snow just keeps piling up! Statewide SWE projections suggest that Utah's snowpack may be as high as 150% of our typical peak by the end of the month. What a winter! Our statewide SWE continues to compare with some of our best snowpack seasons on record, including 1984, 2005, and 2011.

As noted in last month's report, new records for snow water equivalent are being set at Utah's SNOTEL sites. As of March 1<sup>st</sup>, 10 sites were reporting a record high amount of SWE compared with the last 30 years, and 7 more were second highest. The Vernon Creek SNOTEL at the south end of the Tooele watershed already has 231% of its typical peak snowpack! Four other SNOTEL sites also have around double the amount of snow that they would have at their typical peak. The vast majority of Utah's 137 SNOTEL sites are at (or above) the 85<sup>th</sup> percentile for SWE compared to their period of record, with 31 in the top five percent.

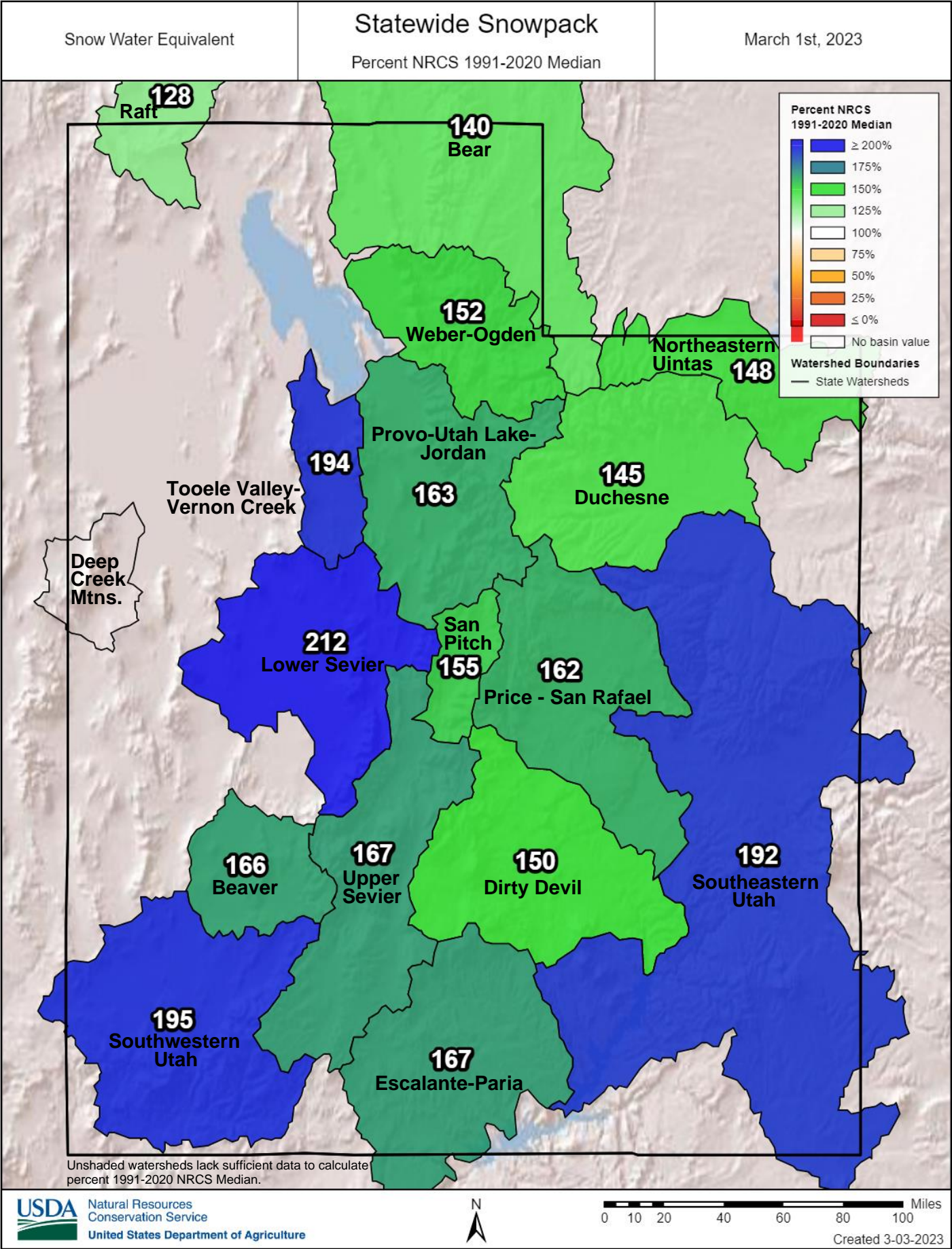
February precipitation in Utah was above normal at 123%, bringing the water-year-to-date precipitation to 139% of normal. All of Utah's major watersheds remain above 115% of normal precipitation for the 2023 water year. Statewide soil moisture is above normal at 56% of saturation, which bodes well for our snowmelt runoff efficiency. Utah's reservoir storage is currently at 51% of capacity, down 2% from this time last year. While many small to medium-size reservoirs will fill, some of Utah's largest (e.g. Sevier Bridge Reservoir and Bear Lake) most likely will not, and of course the water levels in both Lake Powell and the Great Salt Lake remain critically low. Utahns will need to continue to conserve water to help make progress replenishing our storage systems.

As noted last month, NRCS streamflow forecasts for April to July snowmelt runoff volume are based mainly on observed SWE and precipitation at Utah's SNOTEL sites. March 1 forecasts are very high, with >200% of normal flow forecast for many locations. As we round the corner on winter and head towards early spring, our confidence in these water supply forecasts increases. There continues to be excellent agreement between our forecasts and those provided by the Colorado Basin River Forecast Center (NOAA). Overlap in CBRFC and NRCS forecasts lends confidence considering the different methodological approaches used. Both can be viewed on the new [Forecast Comparison page](#) which is intended to be a one-stop landing page for water managers to find snowmelt runoff forecasts from both agencies for any location in Utah and compare the values.

Surface Water Supply Indices (SWSI) for Utah basins combine our current reservoir levels with the additional volume of water anticipated for each watershed based on these March 1 streamflow forecasts. Some areas of the state with significant ground to make up (due to large amounts of depleted reservoir storage) continue to have low SWSI values, such as the Provo basin. Other areas have much higher SWSI values, such as the Moab which is above the 90<sup>th</sup> percentile. All but four of Utah's basins have SWSI values above the 50<sup>th</sup> percentile, suggesting that those basins will have favorable amounts of surface water supplies compared with previous observations. Please refer to the SWSI table provided on page 5 of this report for further details.

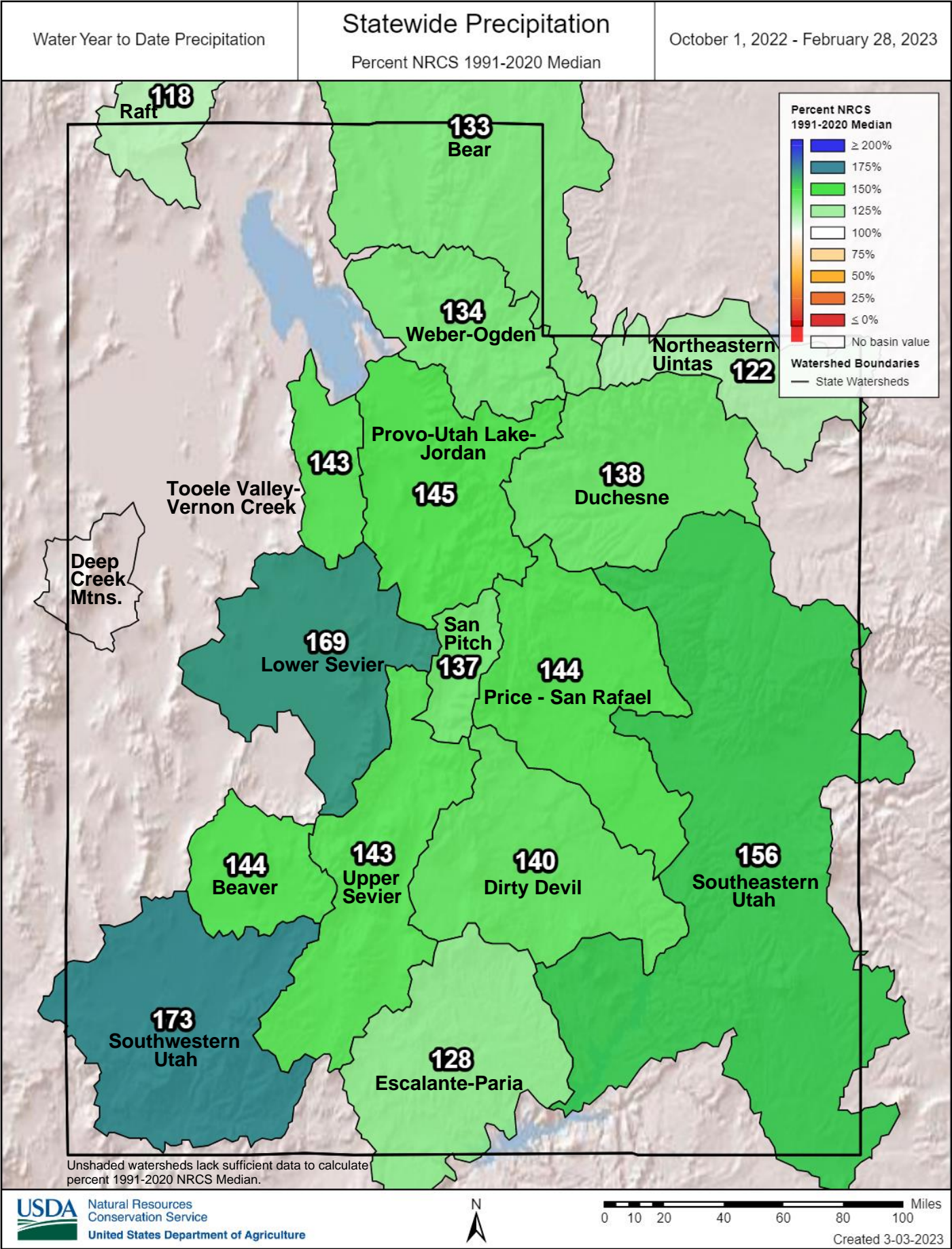


# Utah (statewide) Snowpack





# Utah (statewide) Precipitation





## March 1, 2023 | Surface Water Supply Index (SWSI)

Basin or Region	Reservoir Storage <sup>1</sup> (KAF) <sup>2</sup>	Apr-July Forecast (KAF) <sup>2</sup>	Forecast + Storage (KAF) <sup>2</sup>	SWSI <sup>3</sup>	Percentile <sup>4</sup> (%)	Similar Years
Bear	414.4	136.0	550.4	-1.33	34	[2010, 2016]
Woodruff Narrows	13.5	149.0	162.5	1.39	67	[2016, 2019]
Little Bear	9.6	64.0	73.6	2.34	78	[1995, 1999]
Ogden	47.8	176.0	223.8	1.7	70	[1995, 2019]
Weber	235.9	435.0	670.9	1.52	68	[1996, 2019]
Provo	773.2	130.0	903.2	-2.78	17	[2003, 2005]
Western Uintas	172.3	75.0	247.3	1.14	64	[1997, 2001]
Eastern Uintas	26.8	157.0	183.8	2.08	75	[1987, 2001]
Blacks Fork	10.3	95.0	105.3	1.12	63	[2010, 2015]
Smiths Fork	6.4	30.0	36.4	1.93	73	[1996, 2005]
Price	15.8	70.0	85.8	2.08	75	[1995, 2006]
Joes Valley	30.1	69.0	99.1	0.95	61	[2008, 2009]
Ferron Creek	8.4	45.0	53.4	1.33	66	[1985, 1999]
Moab	1.8	8.0	9.8	3.49	92	[2005, 2016]
Upper Sevier	39.5	103.0	142.5	0.95	61	[1986, 2020]
San Pitch	0.9	19.8	20.7	-0.57	43	[2001, 2020]
Lower Sevier	48.2	120.0	168.2	-1.14	36	[1990, 2020]
Beaver River	7.1	42.0	49.1	2.08	75	[1982, 1999]
Virgin River	32.2	123.4	155.6	2.34	78	[2010, 2019]

<sup>1</sup> End of Month Reservoir Storage; <sup>2</sup> KAF, Thousand Acre-Feet; <sup>3</sup> SWSI, Surface Water Supply Index; <sup>4</sup> Threshold for coloring: >75% Green, <25% Red

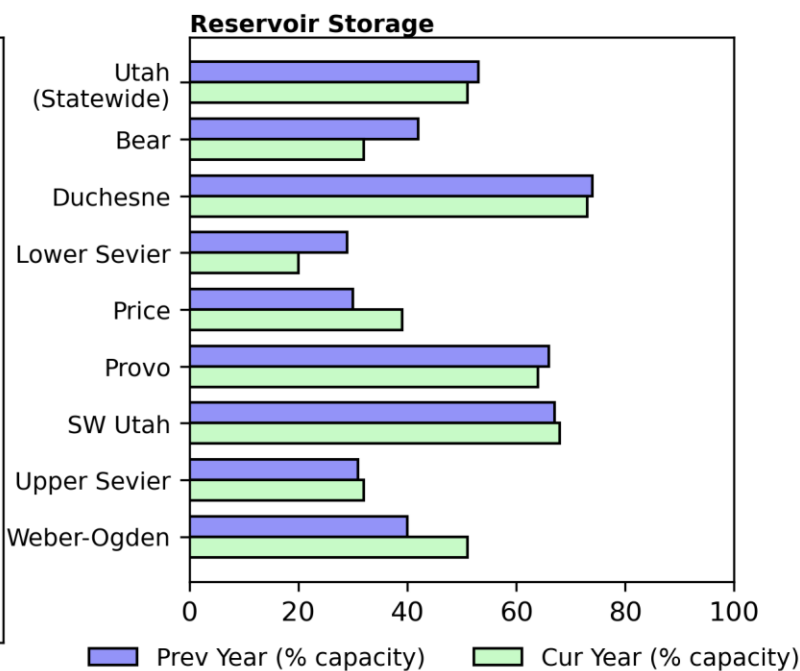
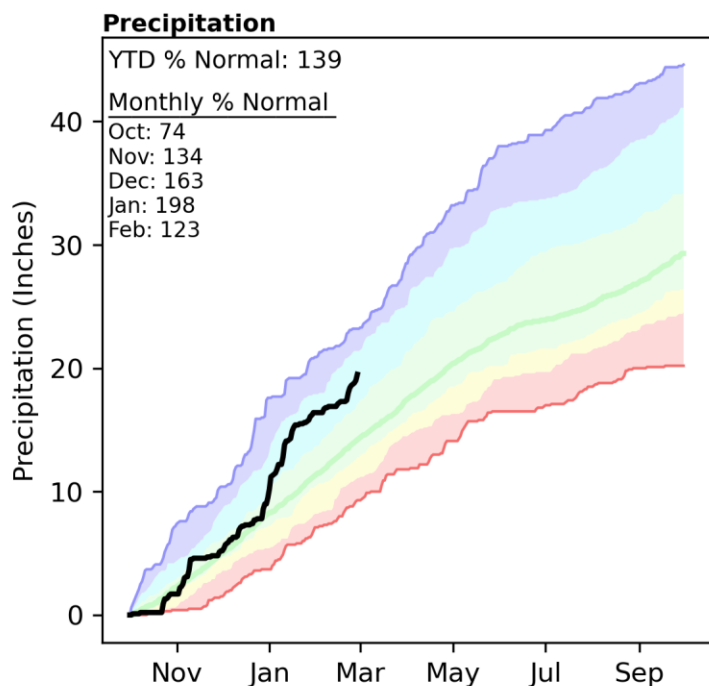
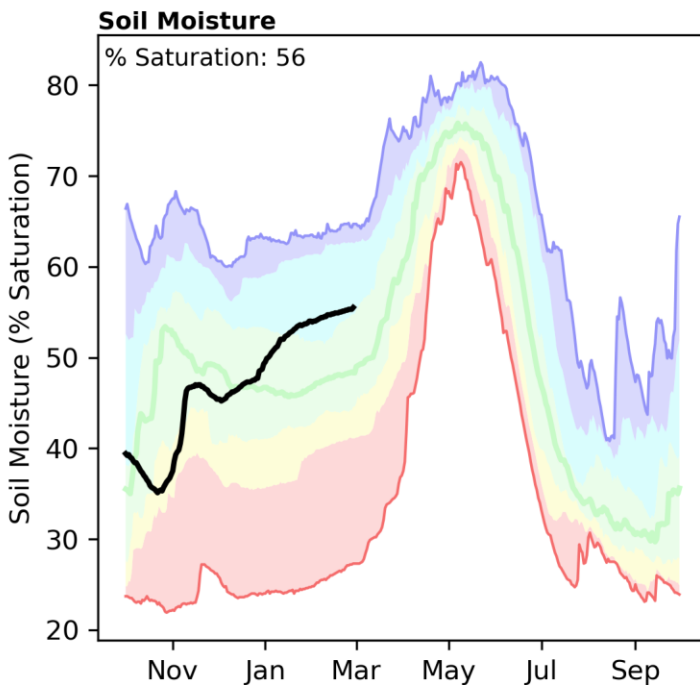
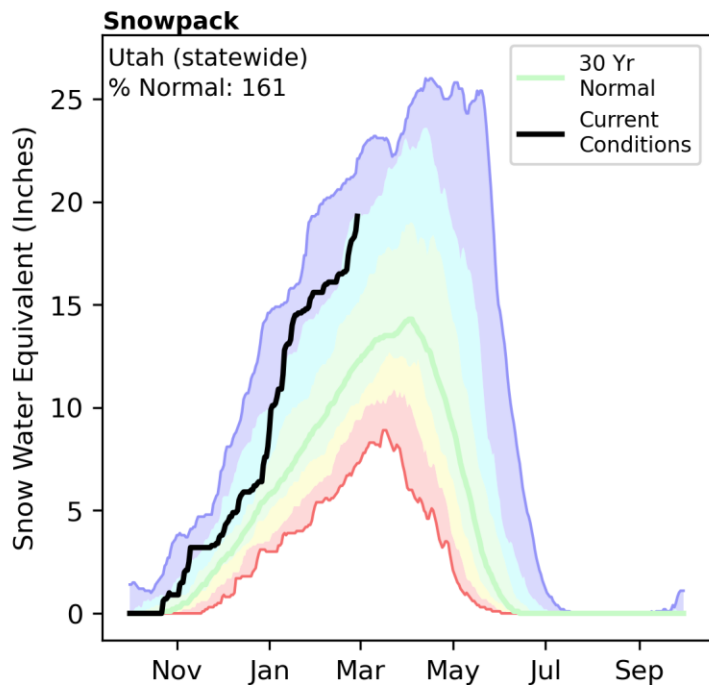
### What is a Surface Water Supply Index?

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. See Appendix A for details on forecast points and reservoirs used in SWSI calculations.

The Utah Snow Survey 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 a simple 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.

# Utah (statewide) | March 1, 2023

Snowpack in Utah (statewide) is well above normal at 161% of median, compared to 83% at this time last year. Precipitation in February was above normal at 123%, which brings the seasonal accumulation (October-February) to 139% of median. Soil moisture is at 56% saturation compared to 54% saturation last year. Statewide, reservoir storage is 51% of capacity, compared to 53% last year<sup>1</sup>. Forecast streamflow volumes (50% exceedence, April-July) range from 88% to 510% of normal.

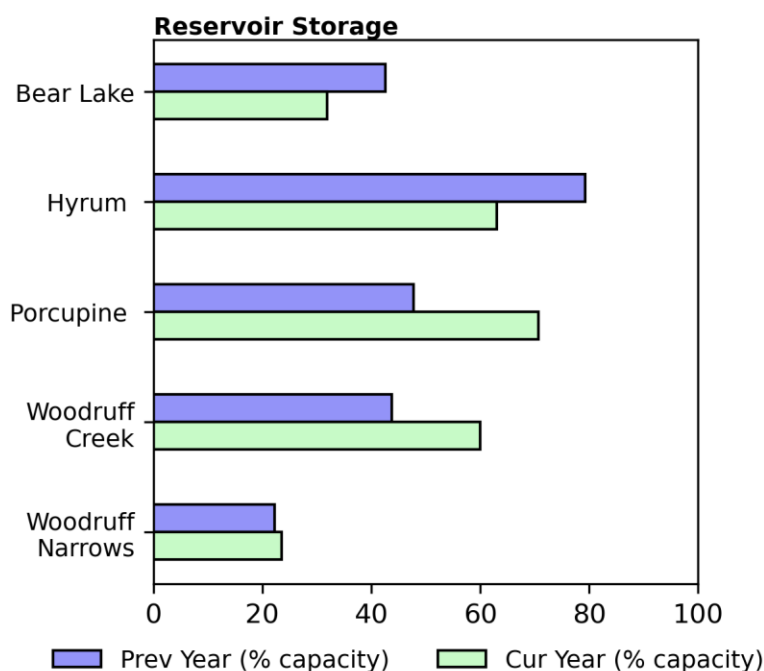
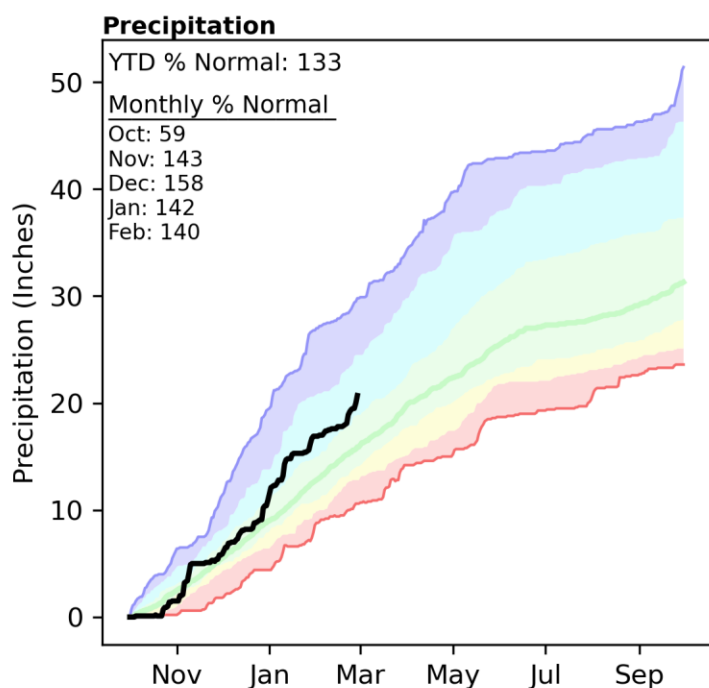
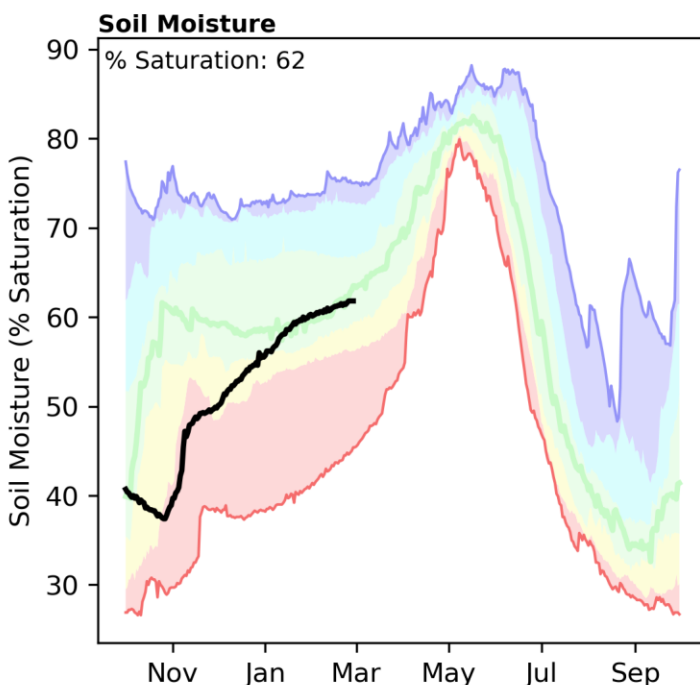
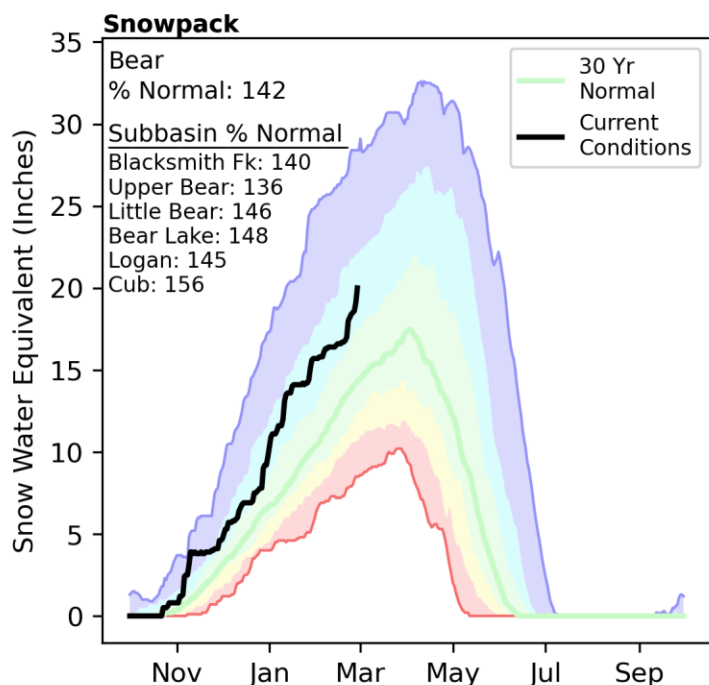


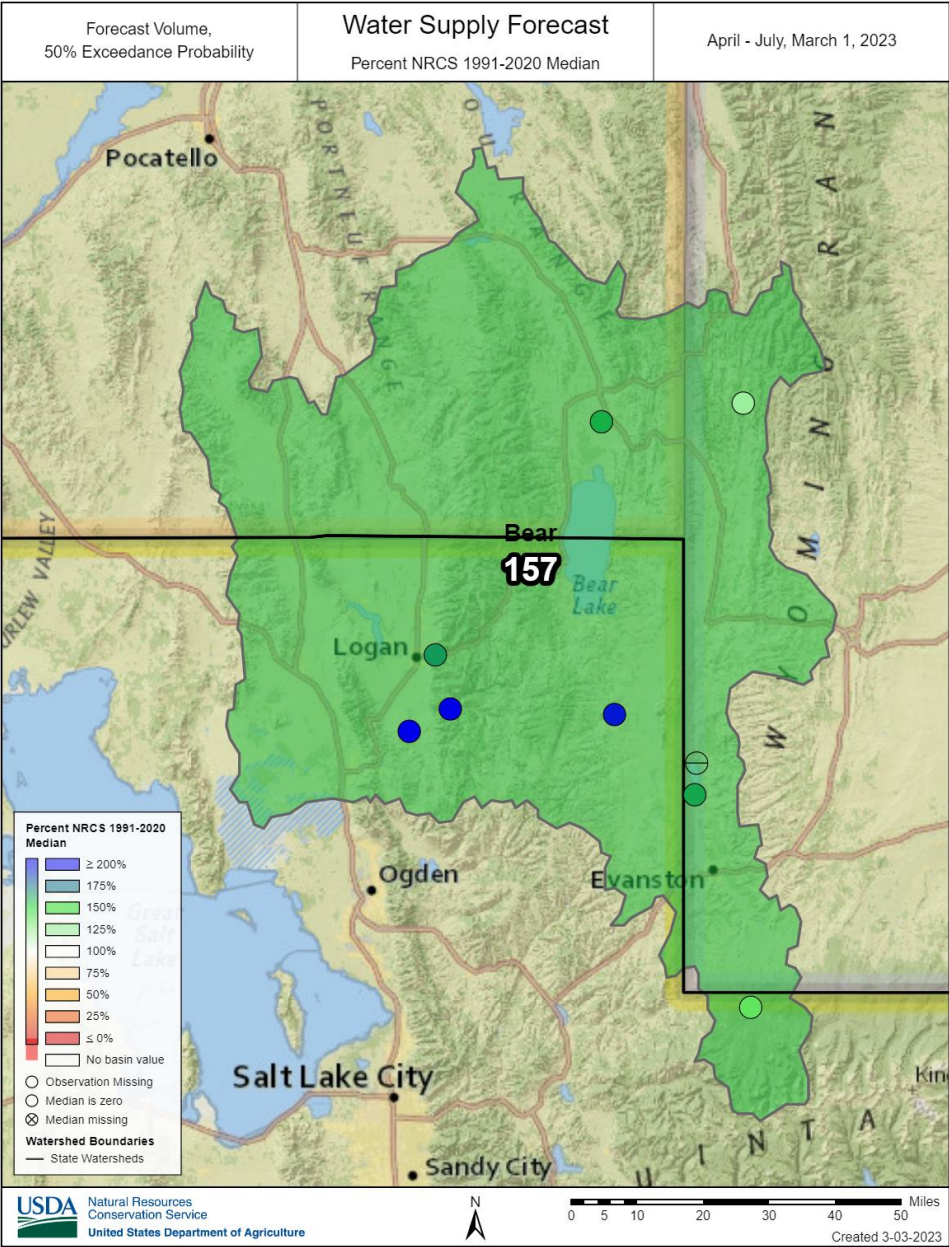
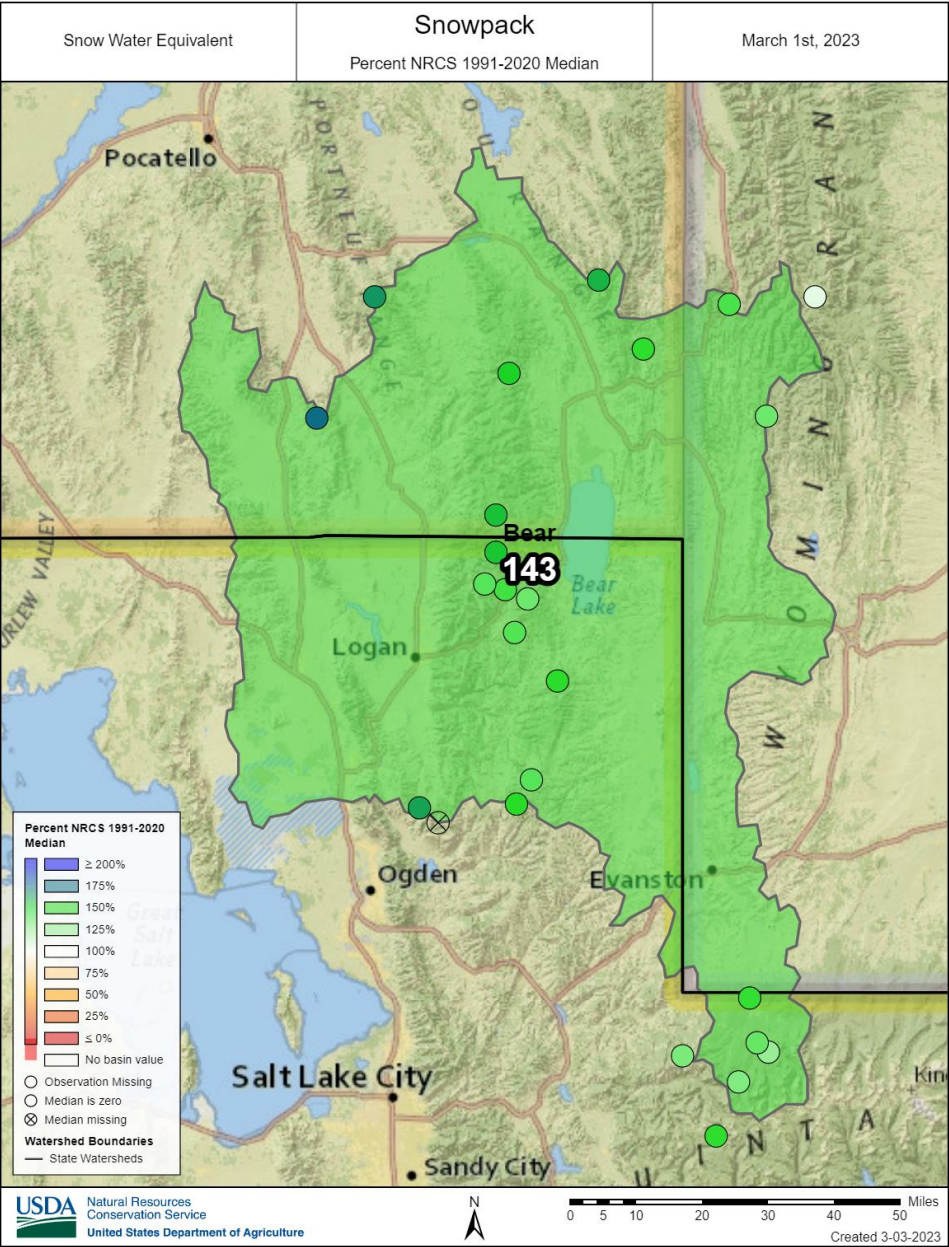
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)

<sup>1</sup>Statewide reservoir percentages exclude Lake Powell and Flaming Gorge Reservoirs.

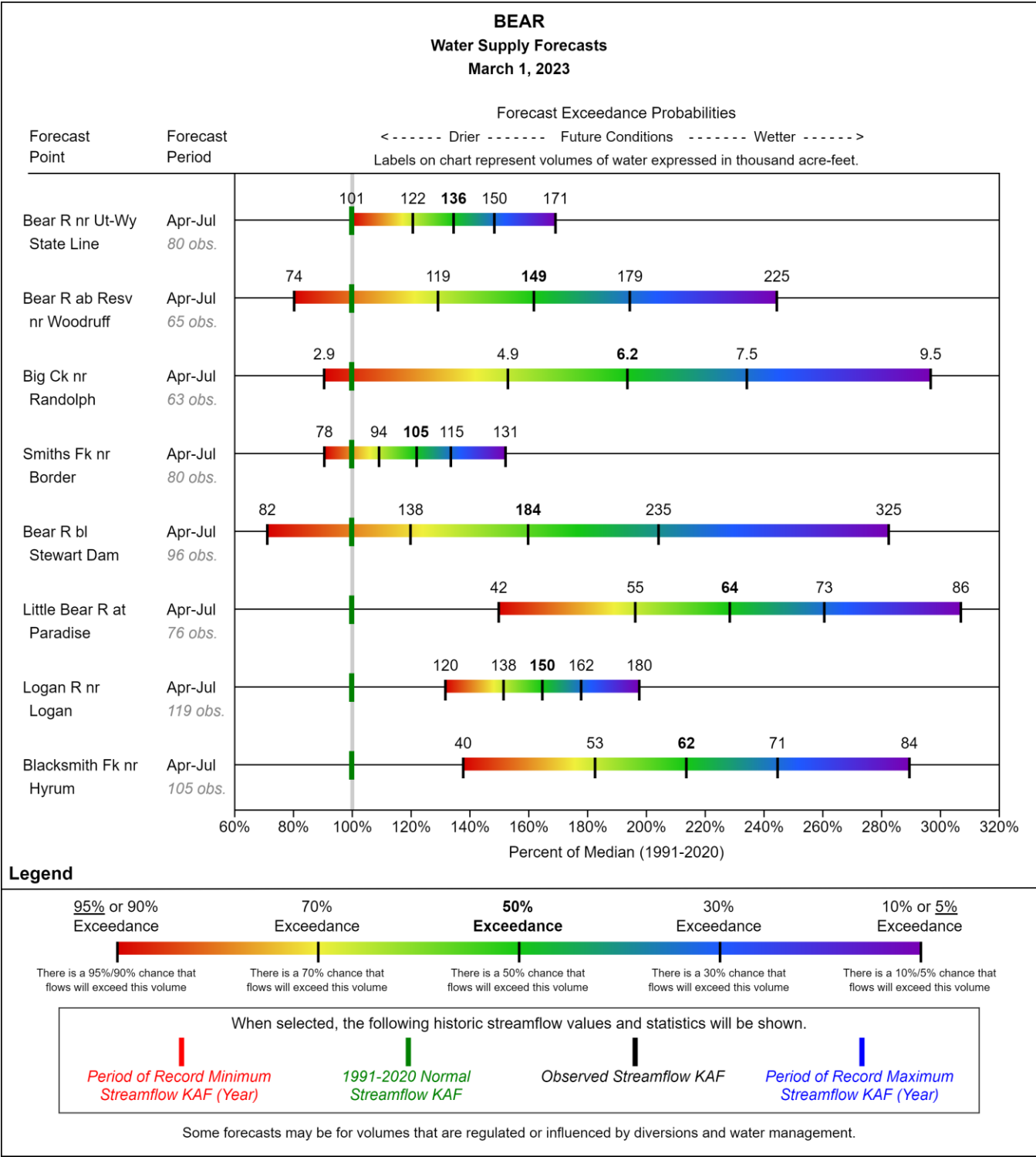


Snowpack in the Bear River Basin is well above normal at 142% of median, compared to 79% at this time last year. Precipitation in February was well above normal at 140%, which brings the seasonal accumulation (October-February) to 133% of median. Soil moisture is at 62% saturation compared to 66% saturation last year. Reservoir storage is 32% of capacity, compared to 42% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 122% to 229% of normal. The Surface Water Supply Index percentiles are 34% for the Bear, 78% for the Little Bear, and 67% for Woodruff Narrows.

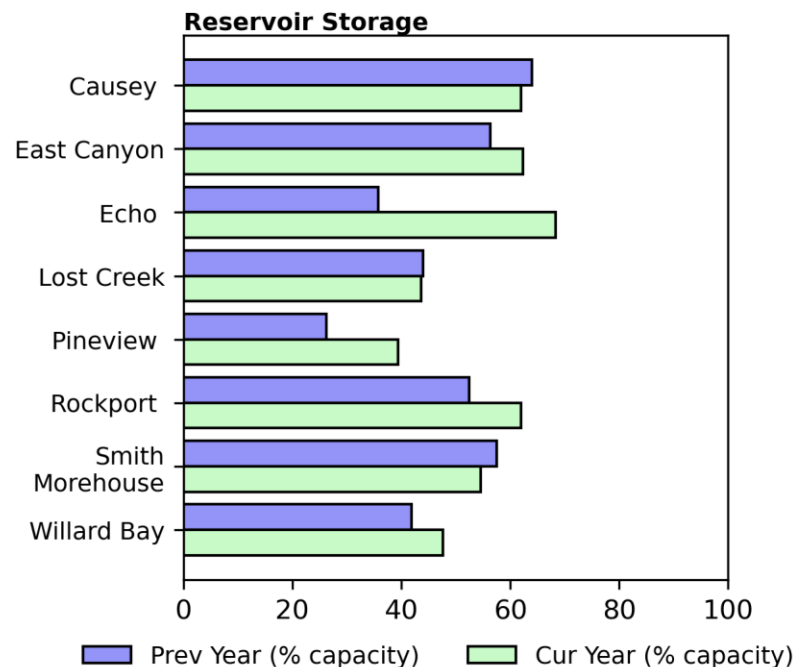
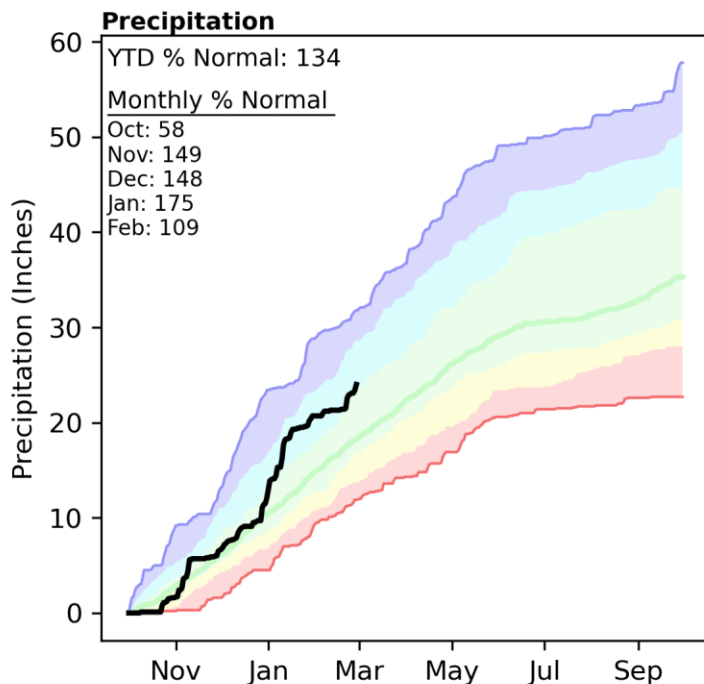
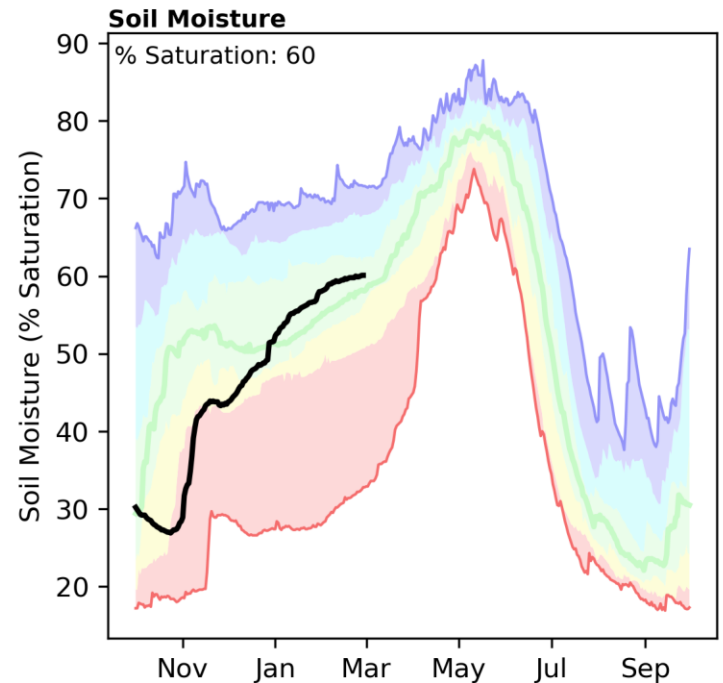
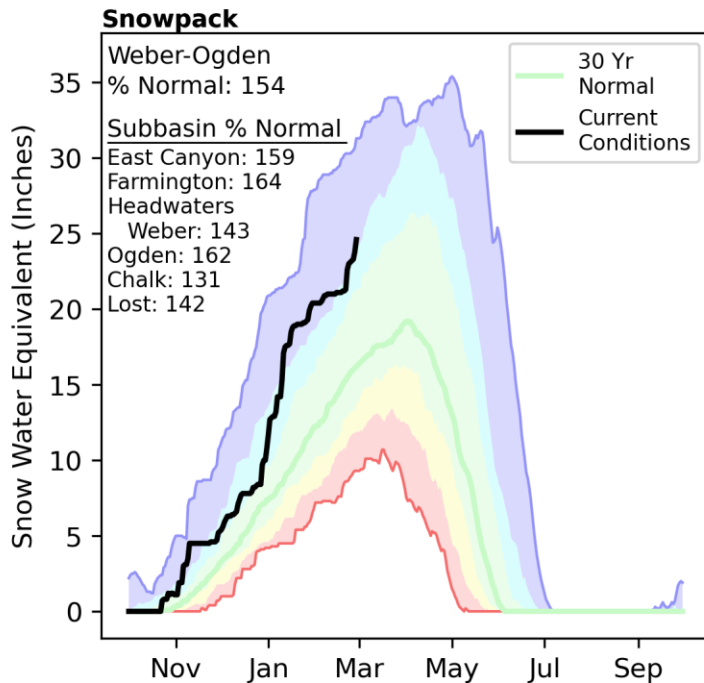








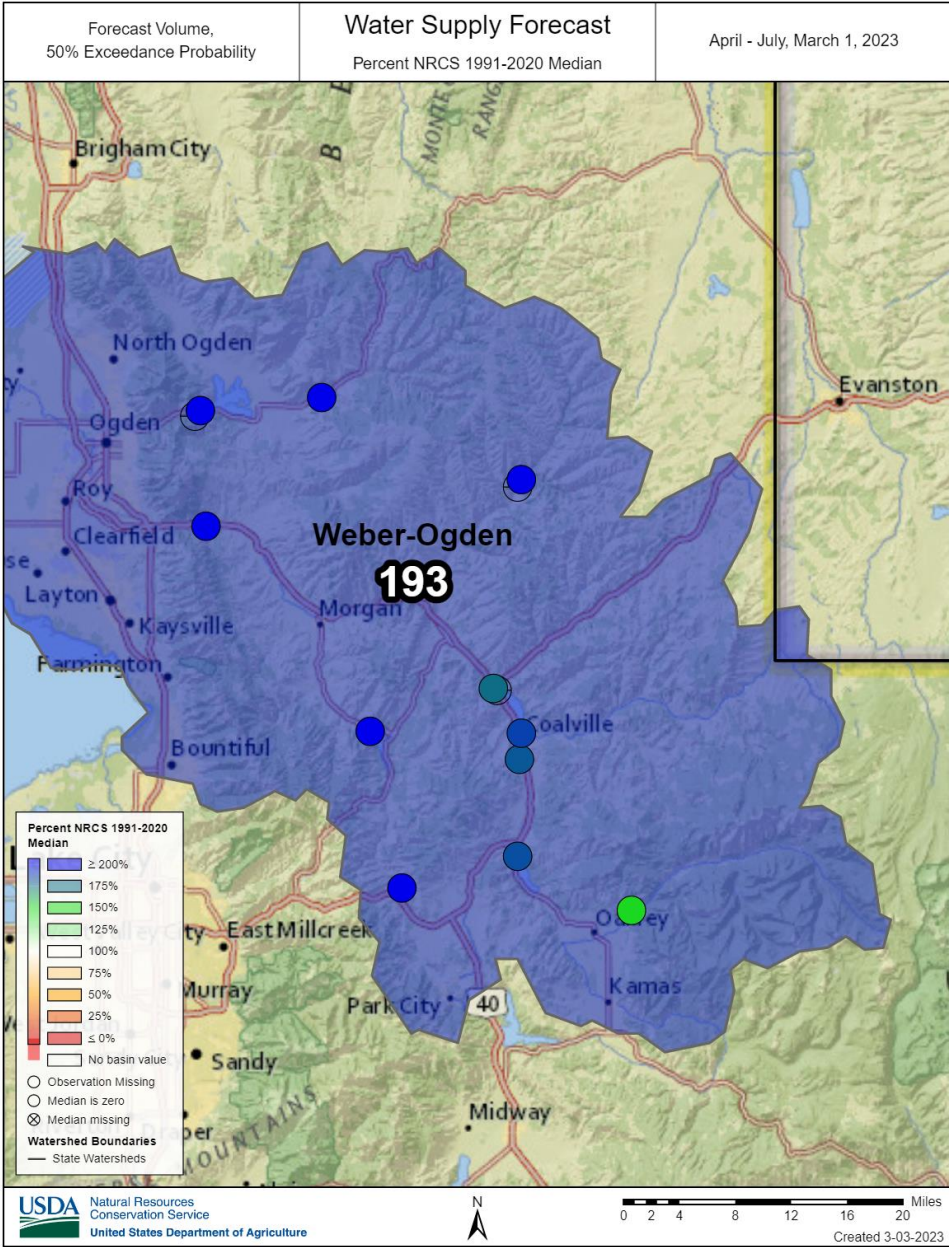
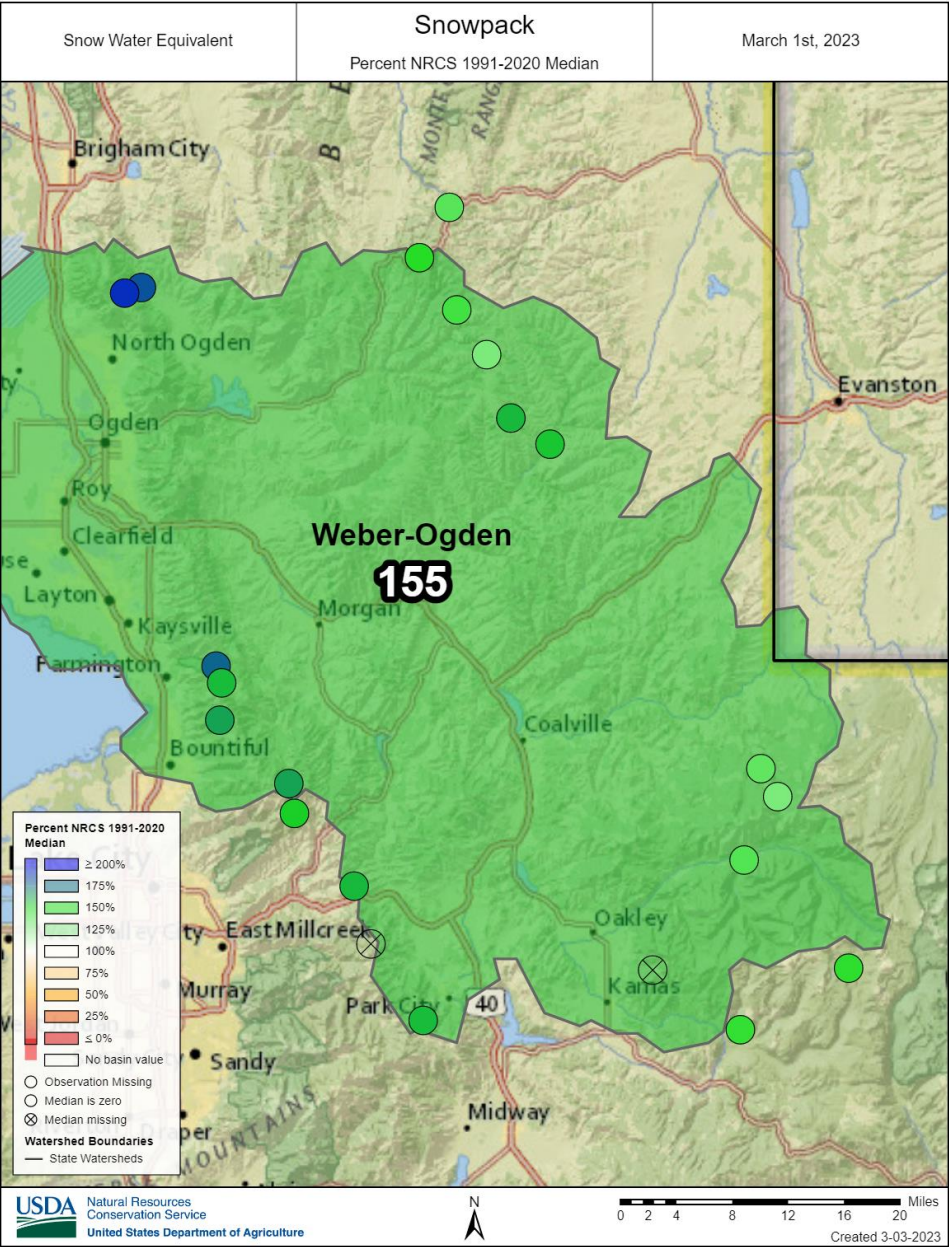
Snowpack in the Weber and Ogden River Basins is well above normal at 154% of median, compared to 73% at this time last year. Precipitation in February was about normal at 109%, which brings the seasonal accumulation (October-February) to 134% of median. Soil moisture is at 60% saturation compared to 63% saturation last year. Reservoir storage is 51% of capacity, compared to 40% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 151% to 274% of normal. The Surface Water Supply Index percentiles are 68% for the Weber, and 70% for the Ogden.

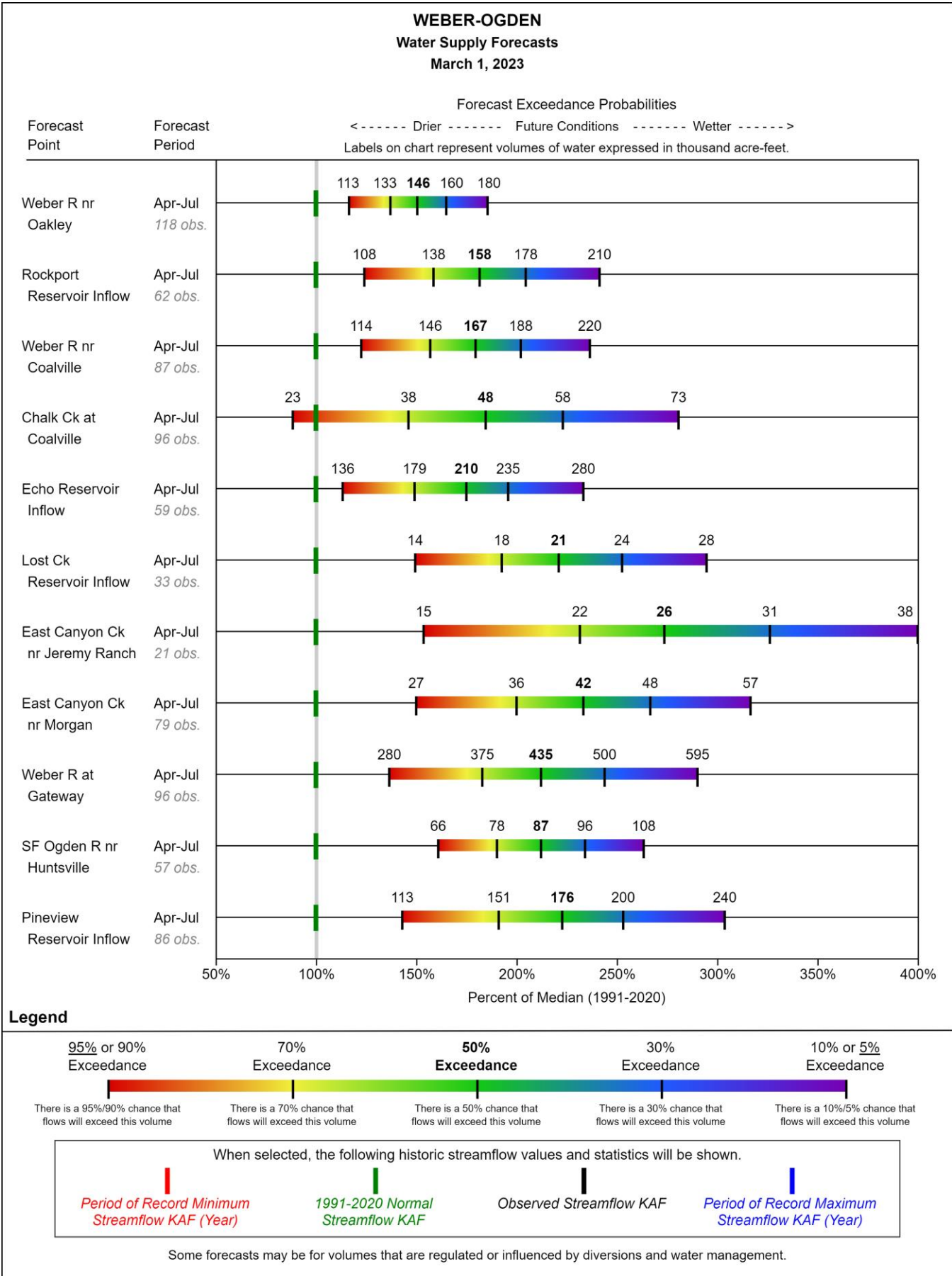


Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



# Weber-Ogden

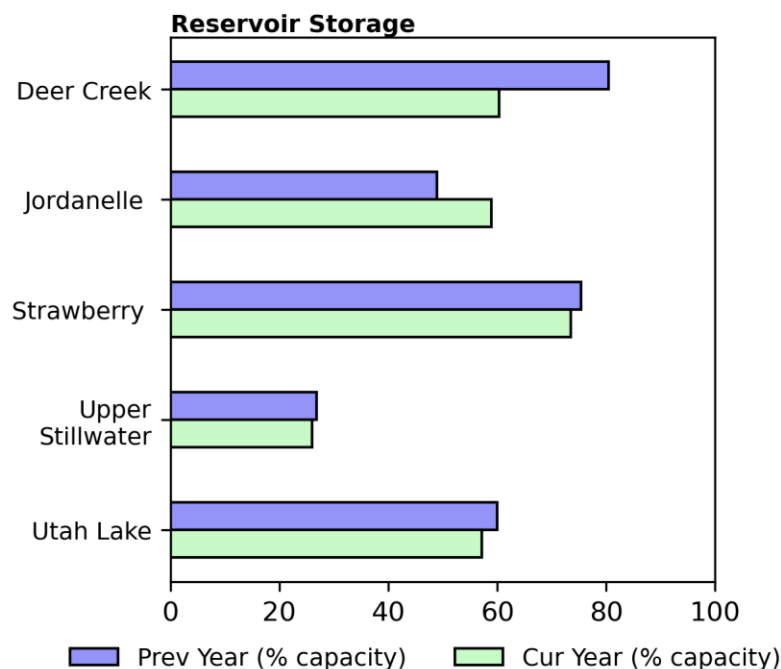
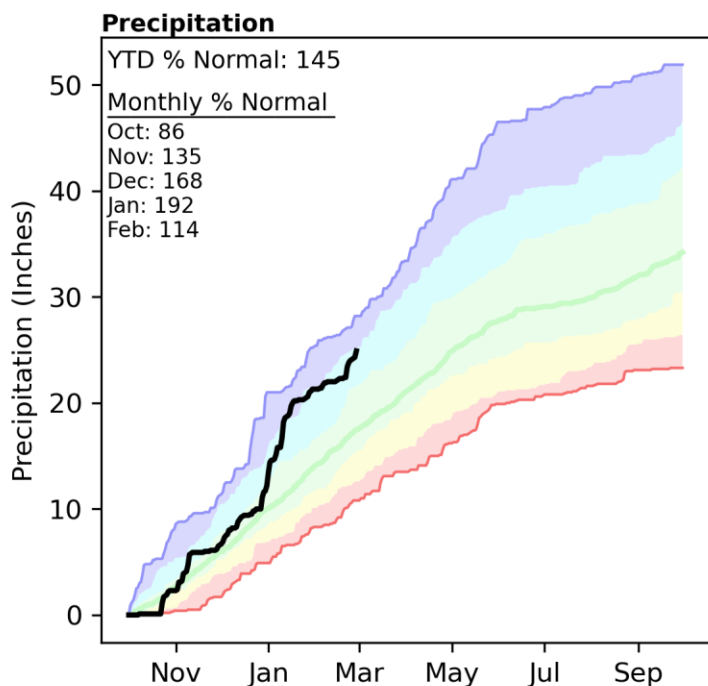
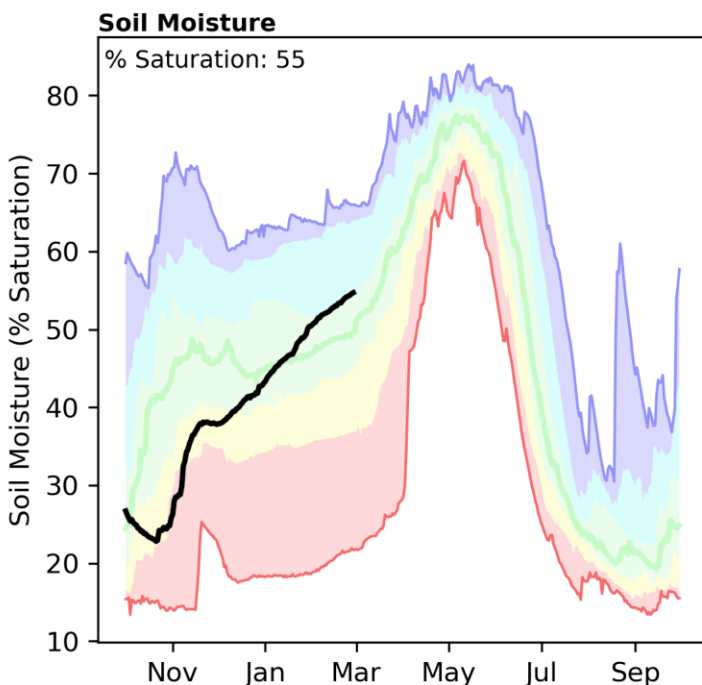
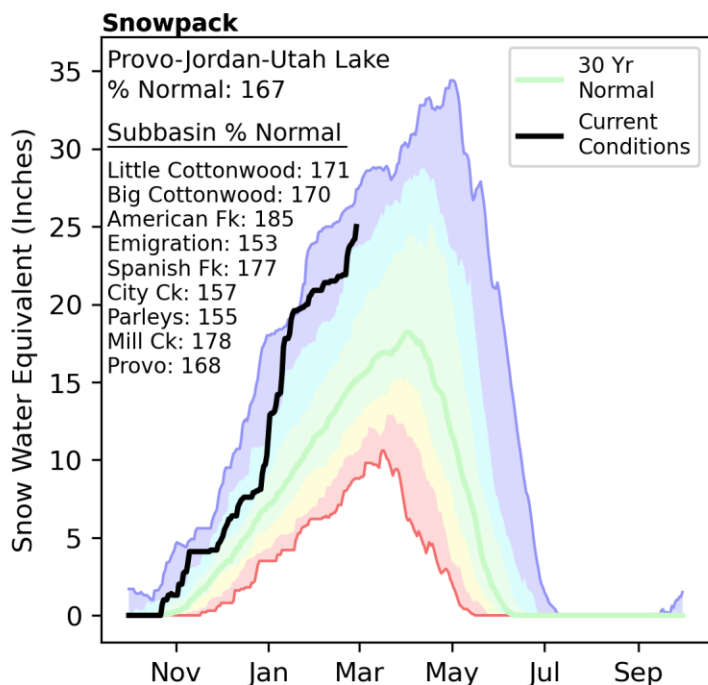






# Provo-Jordan-Utah Lake | March 1, 2023

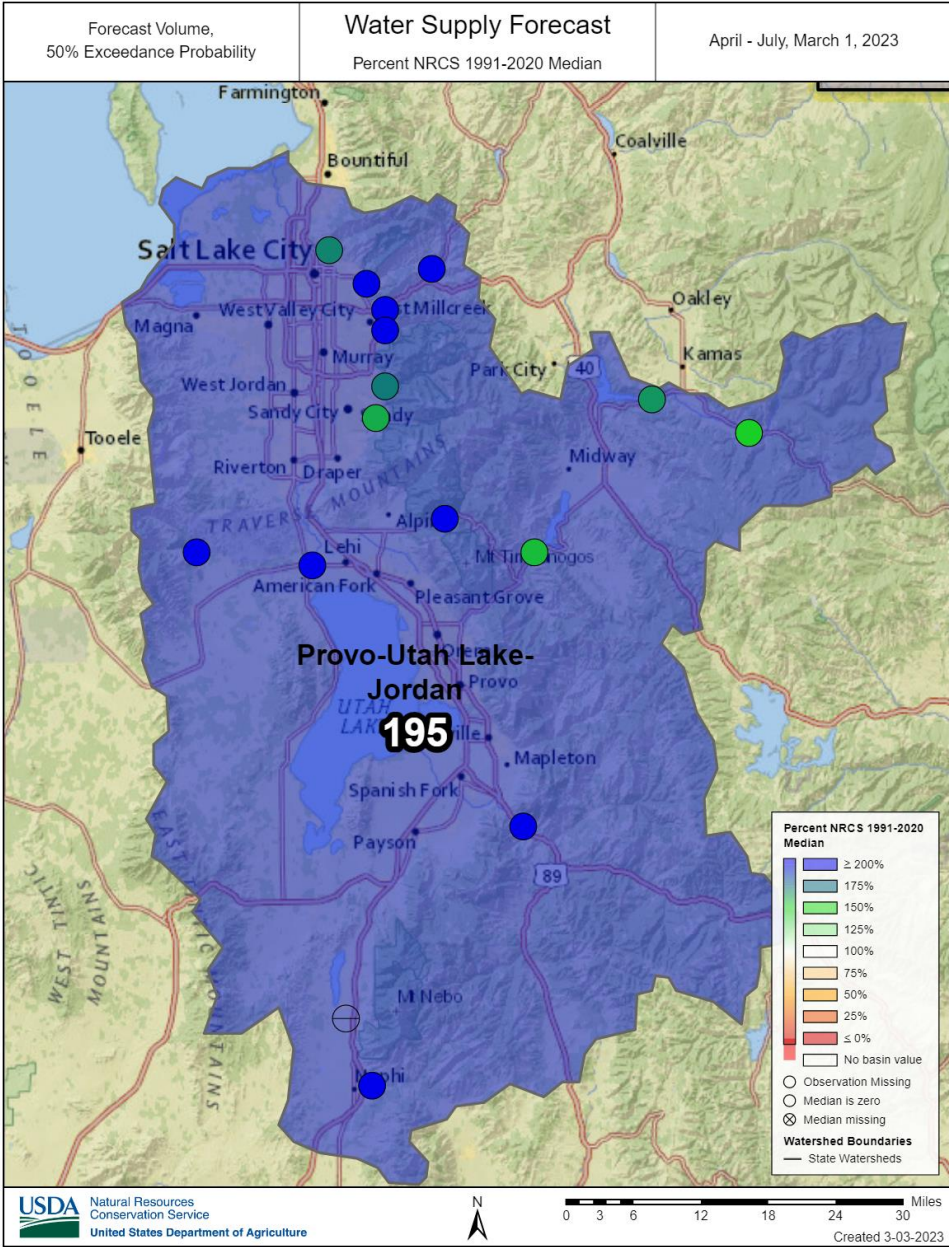
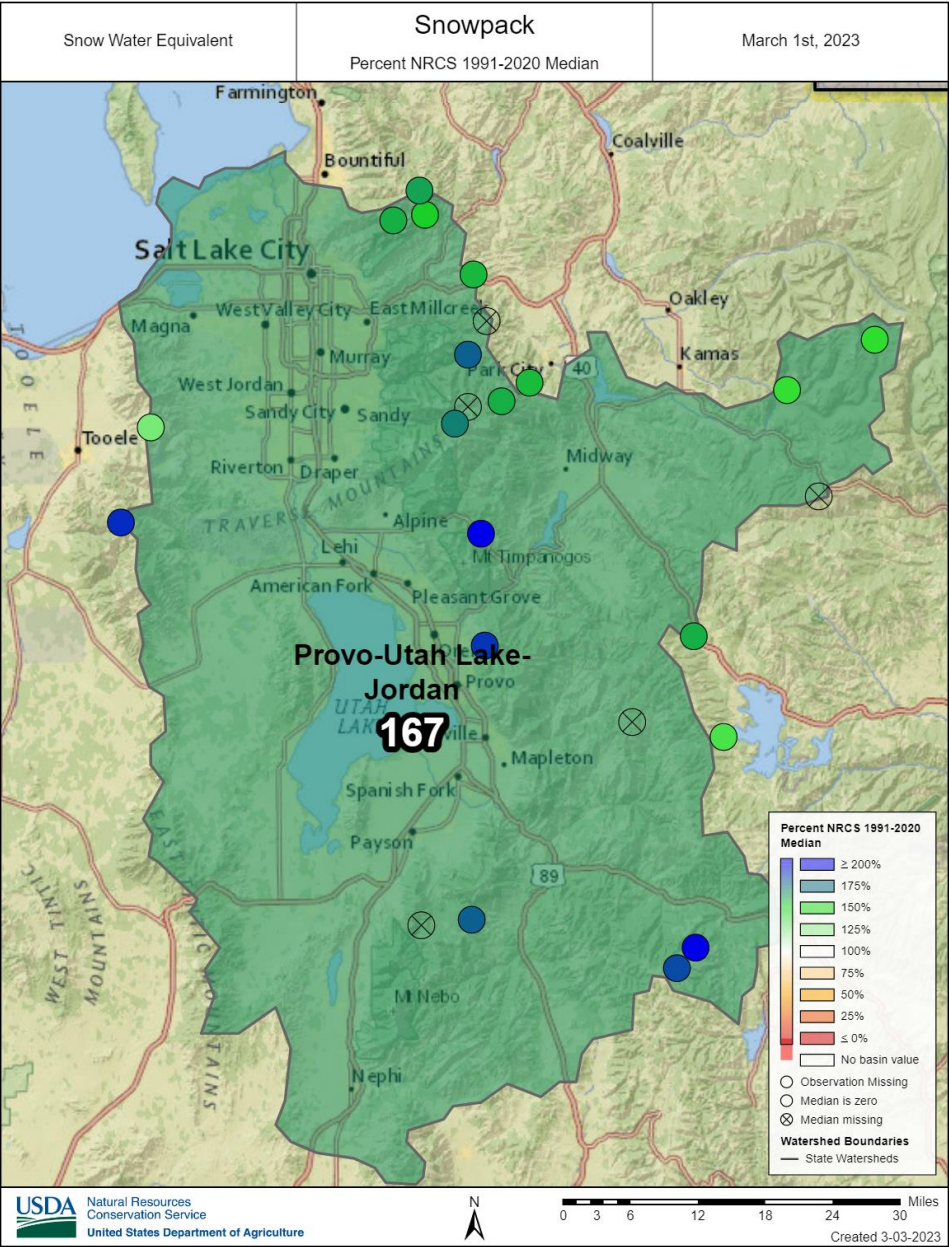
Snowpack in the Provo and Jordan River Basins is well above normal at 167% of median, compared to 76% at this time last year. Precipitation in February was above normal at 114%, which brings the seasonal accumulation (October-February) to 145% of median. Soil moisture is at 55% saturation compared to 58% saturation last year. Reservoir storage is 64% of capacity, compared to 66% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 153% to 426% of normal. The Surface Water Supply Index percentile is 17% for the Provo.



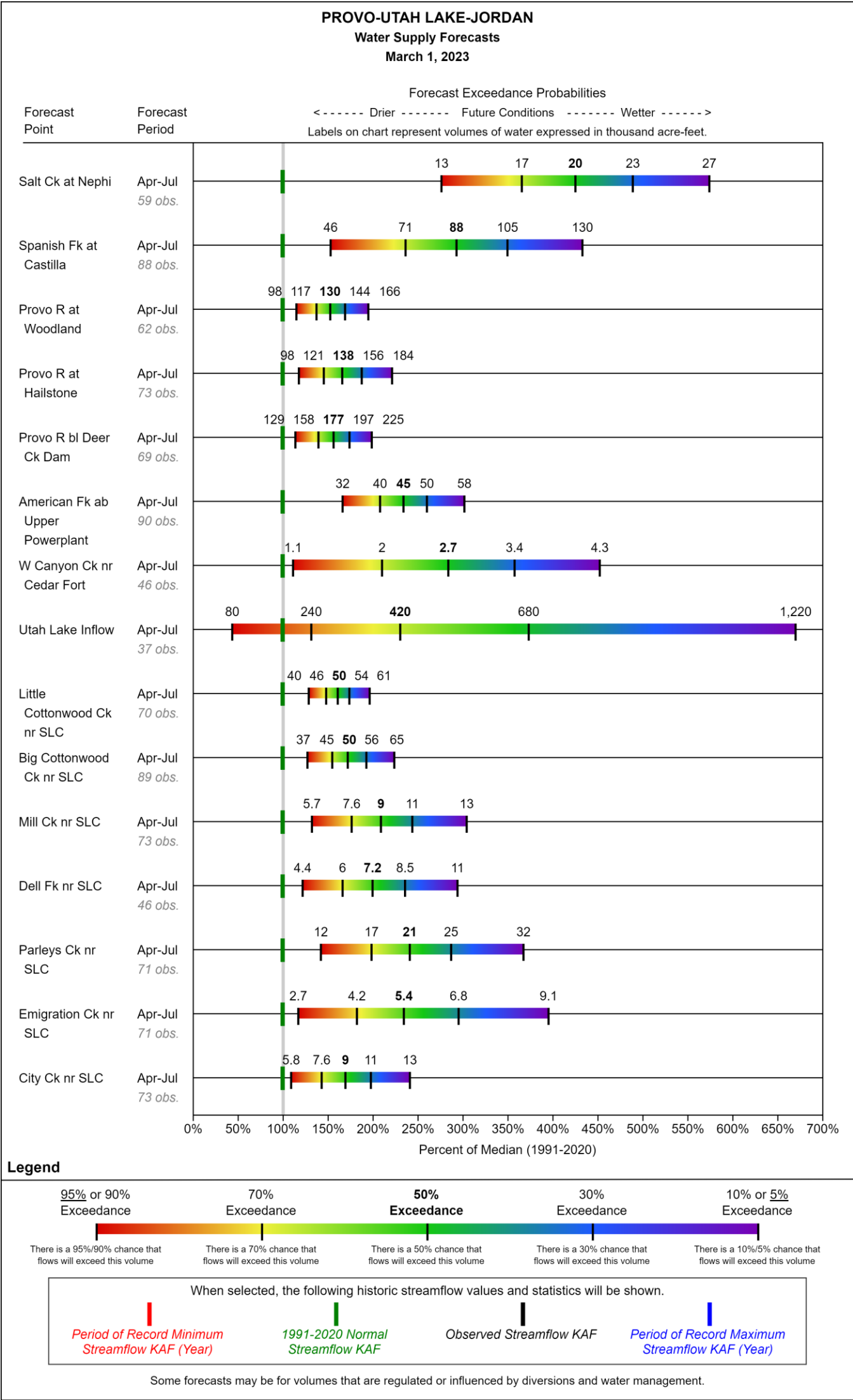
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



# Provo-Utah Lake-Jordan

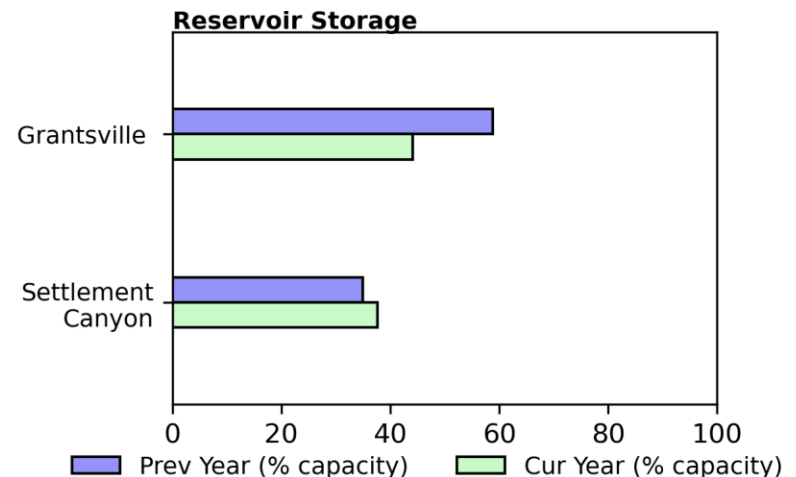
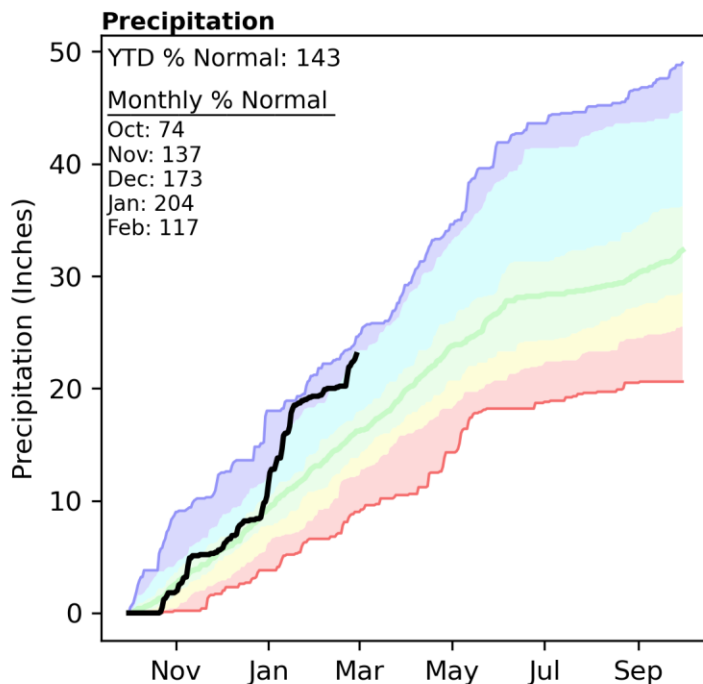
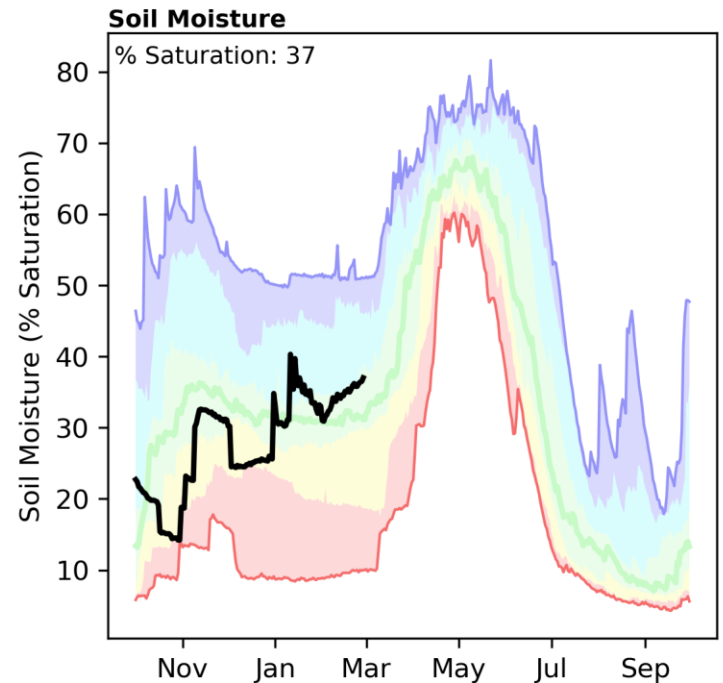
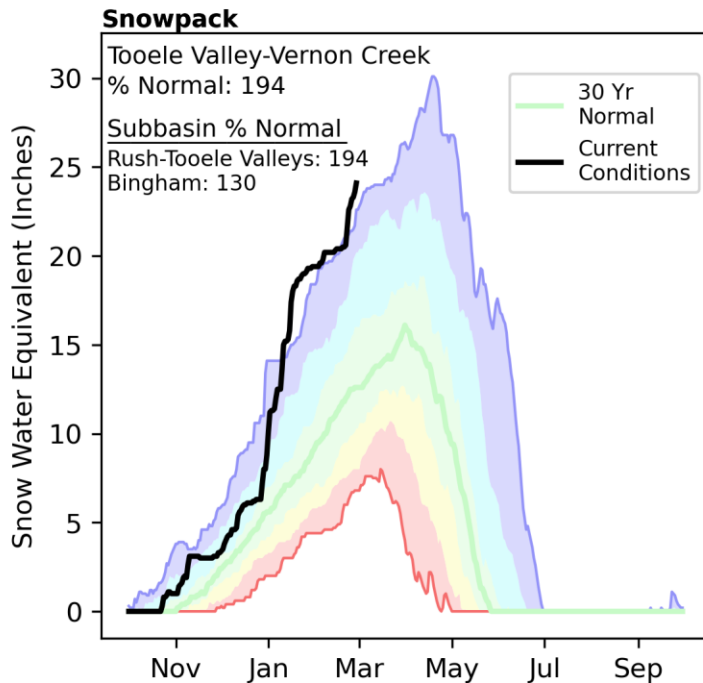


Provo-Utah Lake-Jordan



# Tooele Valley-Vernon Creek | March 1, 2023

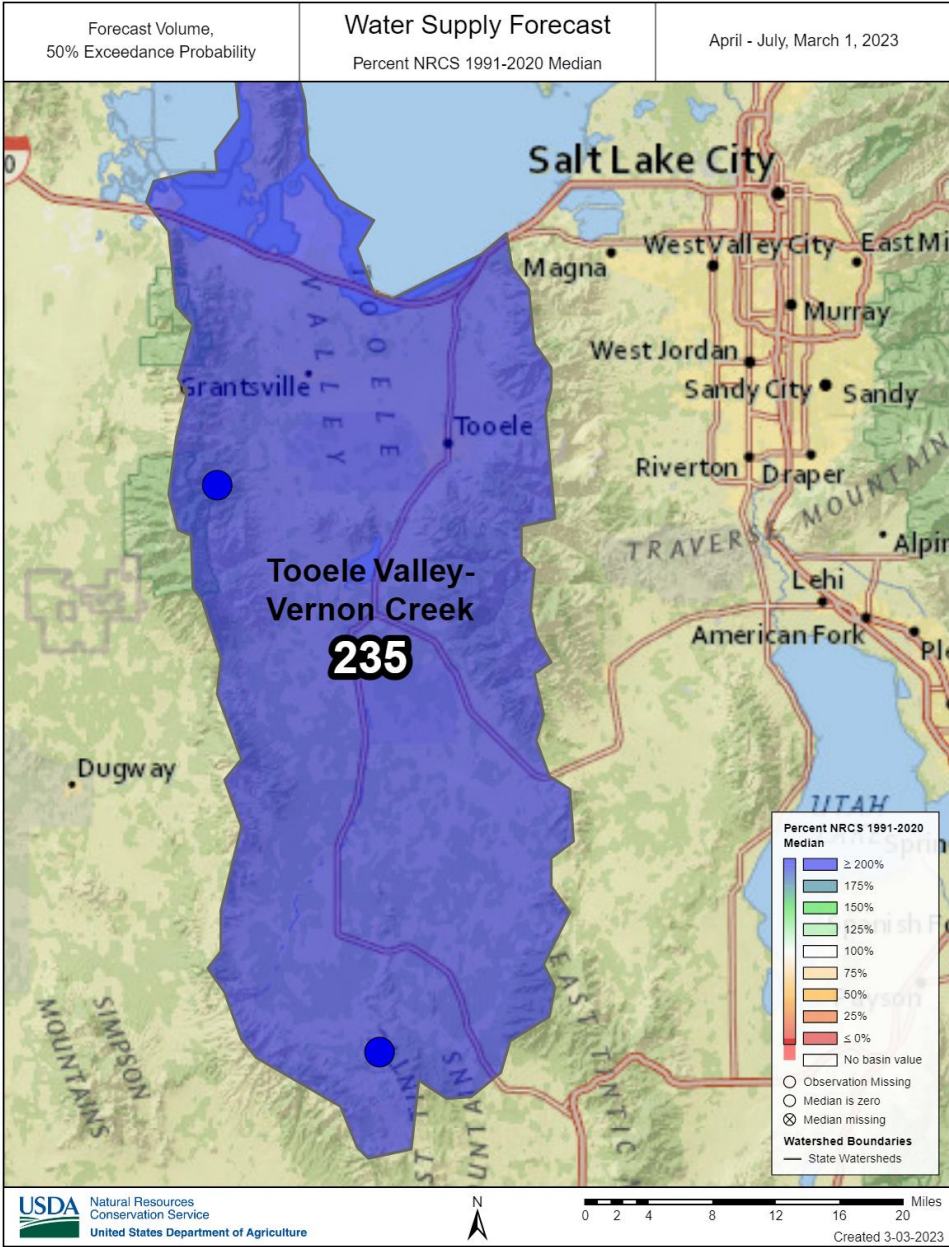
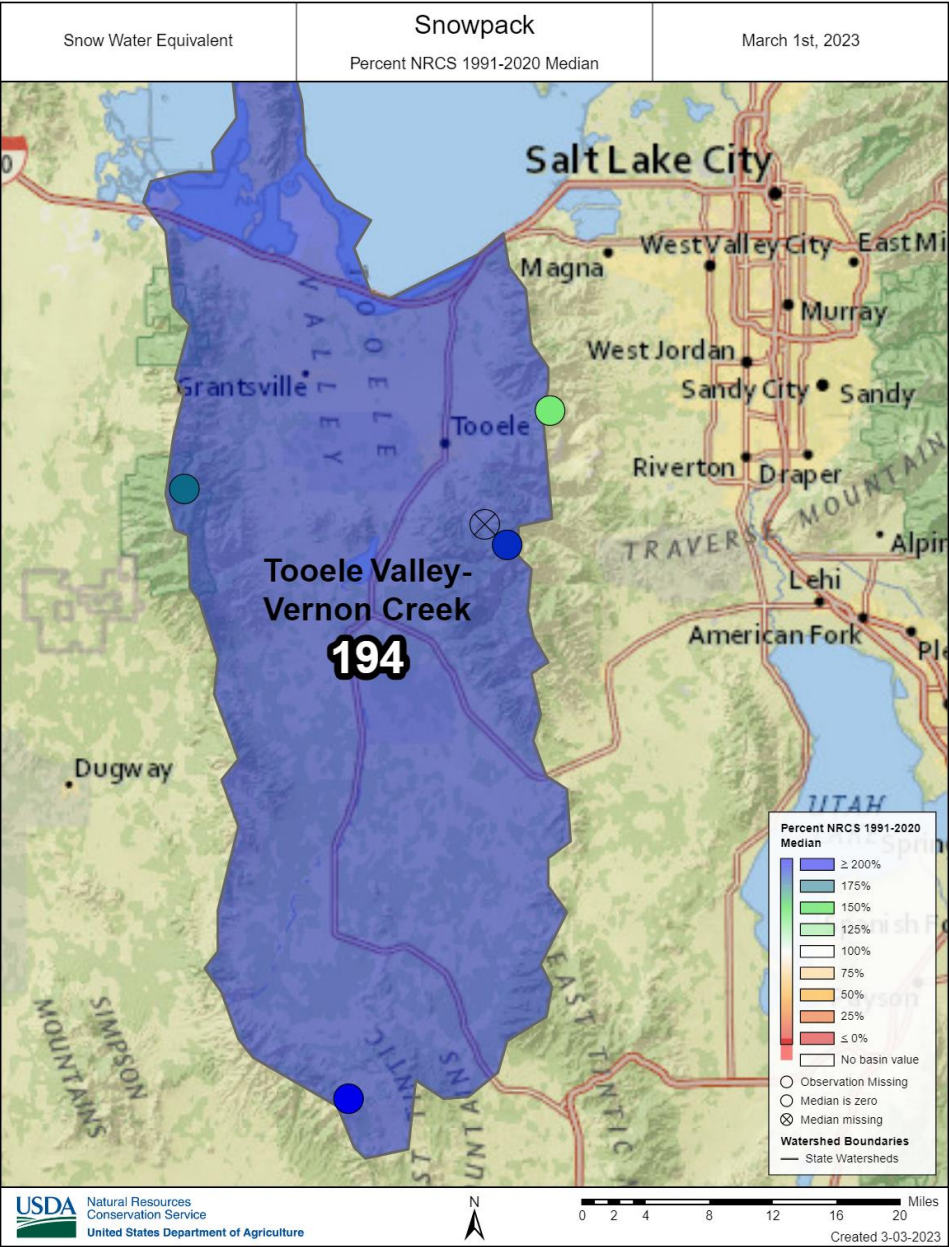
Snowpack in the Tooele Valley and West Desert Region is well above normal at 194% of median, compared to 63% at this time last year. Precipitation in February was above normal at 117%, which brings the seasonal accumulation (October-February) to 143% of median. Soil moisture is at 37% saturation compared to 30% saturation last year. Reservoir storage is 42% of capacity, compared to 53% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 167% to 297% of normal.



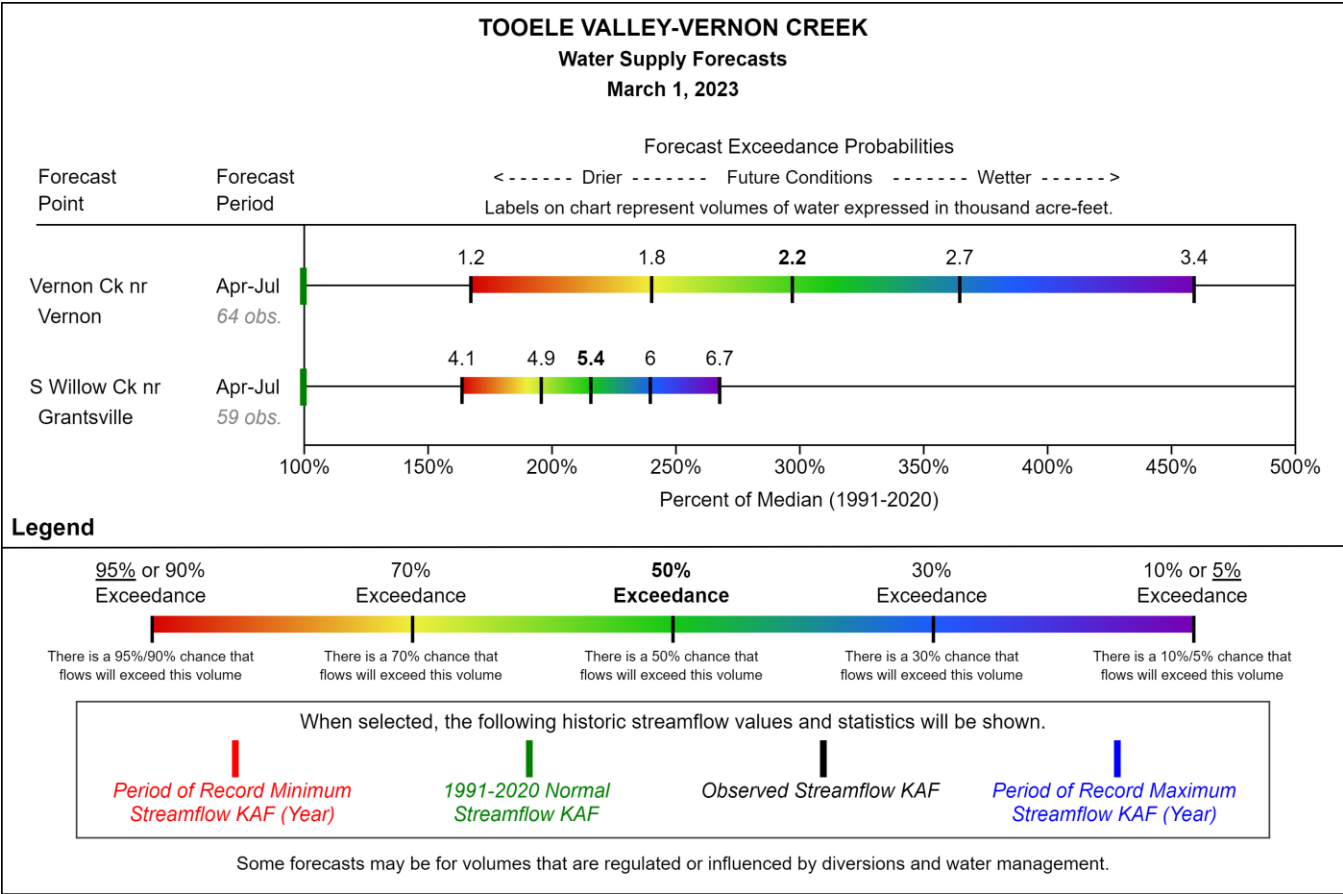
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



# Tooele Valley-Vernon Creek

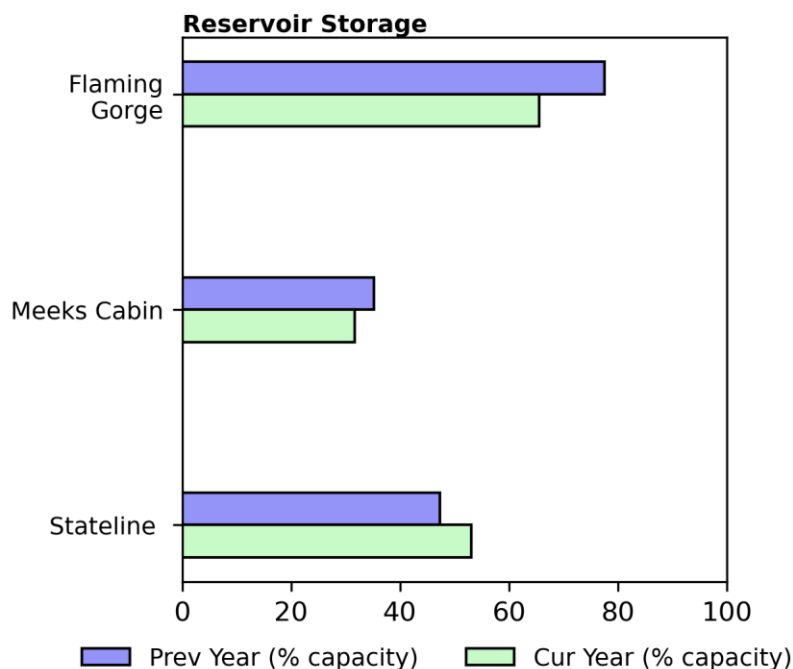
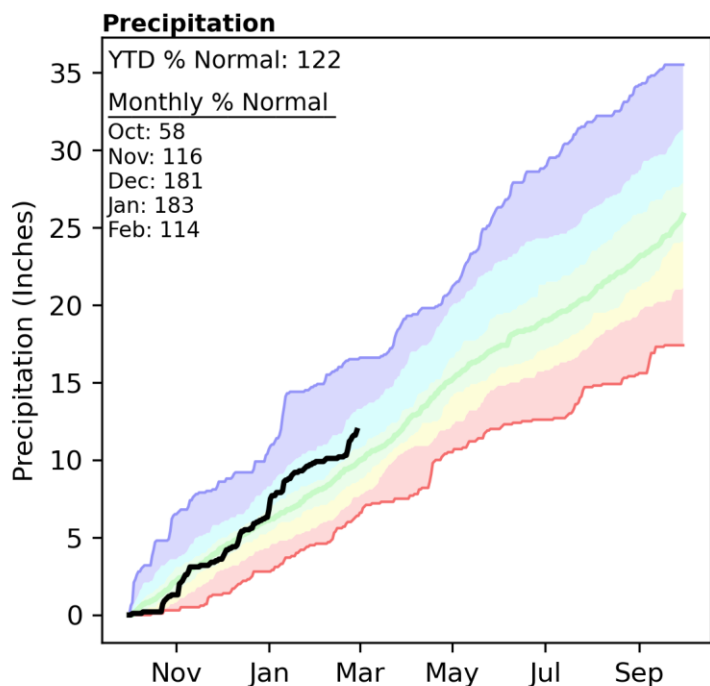
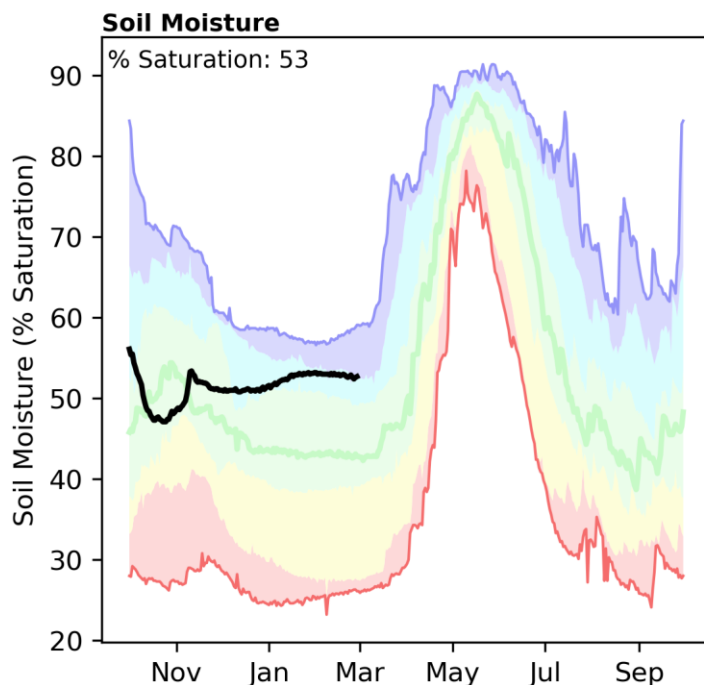
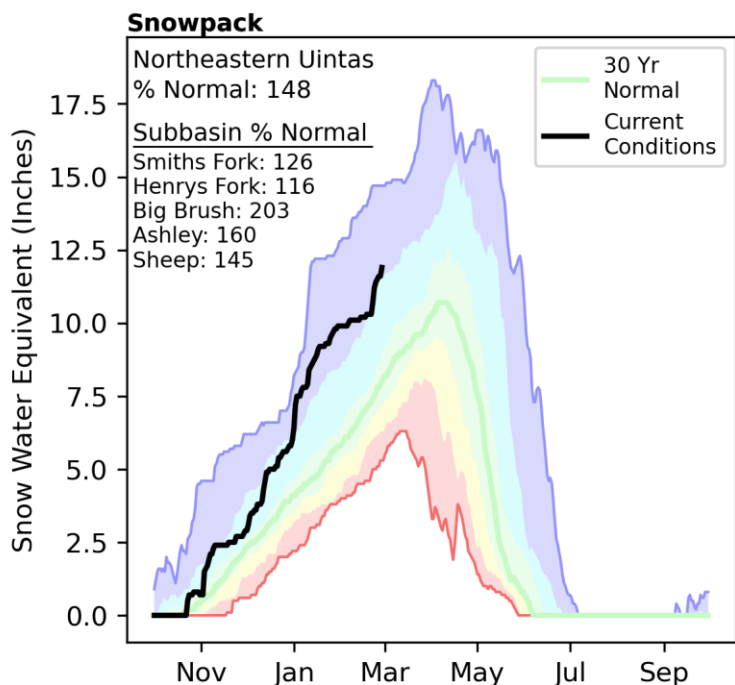


# Tooele Valley-Vernon Creek



# Northeastern Uintas | March 1, 2023

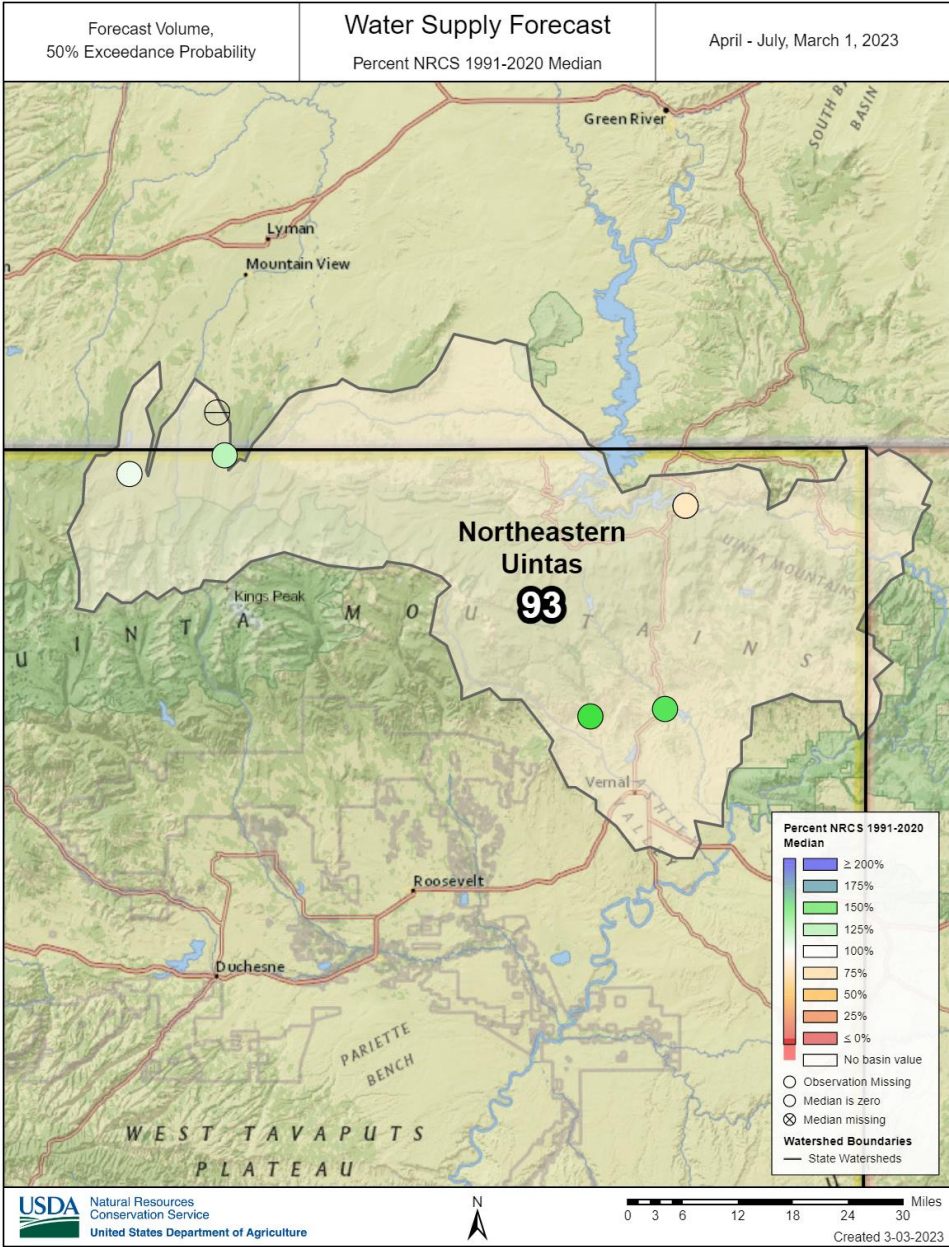
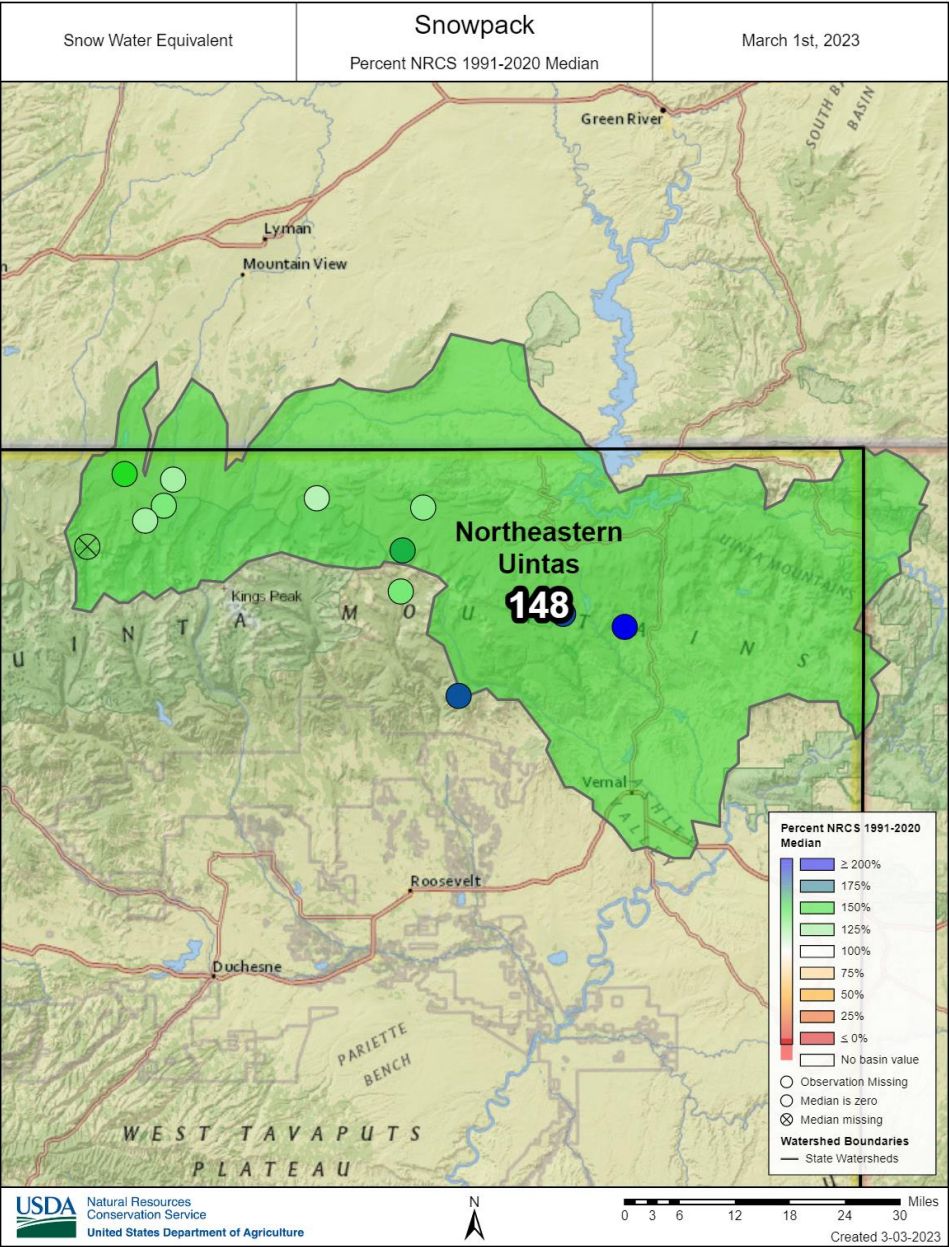
Snowpack in the Northeastern Uintas is well above normal at 148% of median, compared to 90% at this time last year. Precipitation in February was above normal at 114%, which brings the seasonal accumulation (October-February) to 122% of median. Soil moisture is at 53% saturation compared to 47% saturation last year. Reservoir storage is 65% of capacity, compared to 77% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 88% to 142% of normal. The Surface Water Supply Index percentiles are 63% for the Blacks Fork, and 73% for the Smiths Fork.



Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)

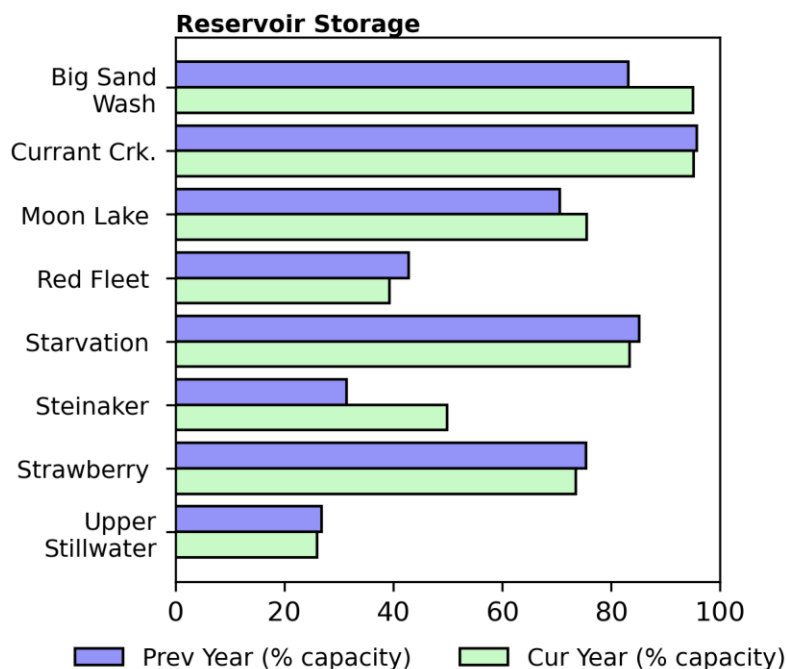
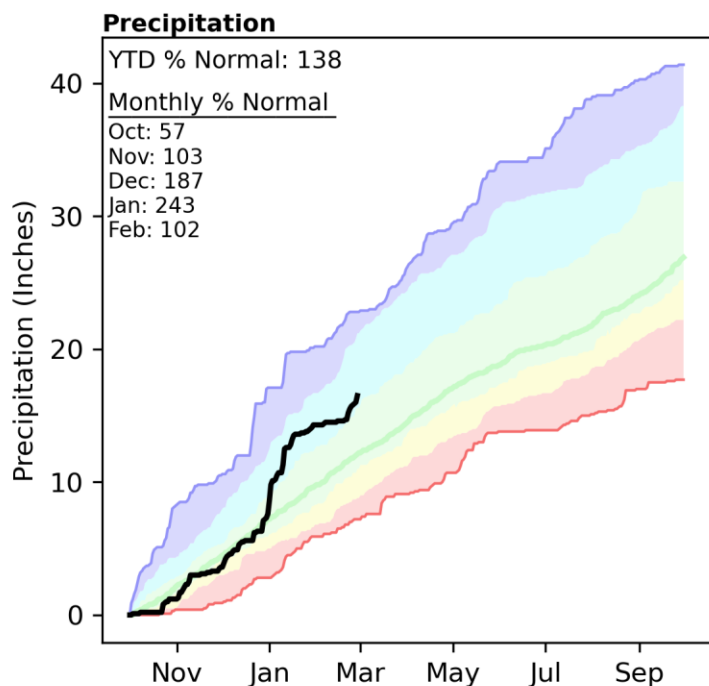
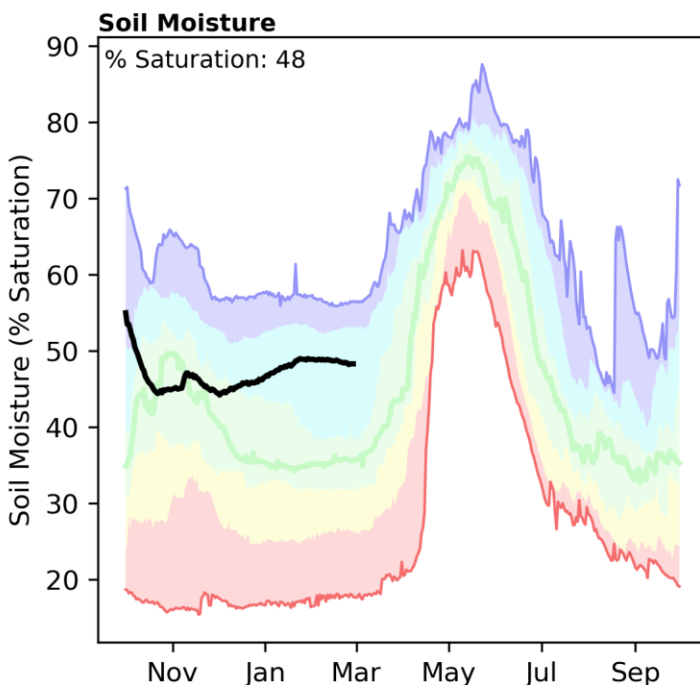
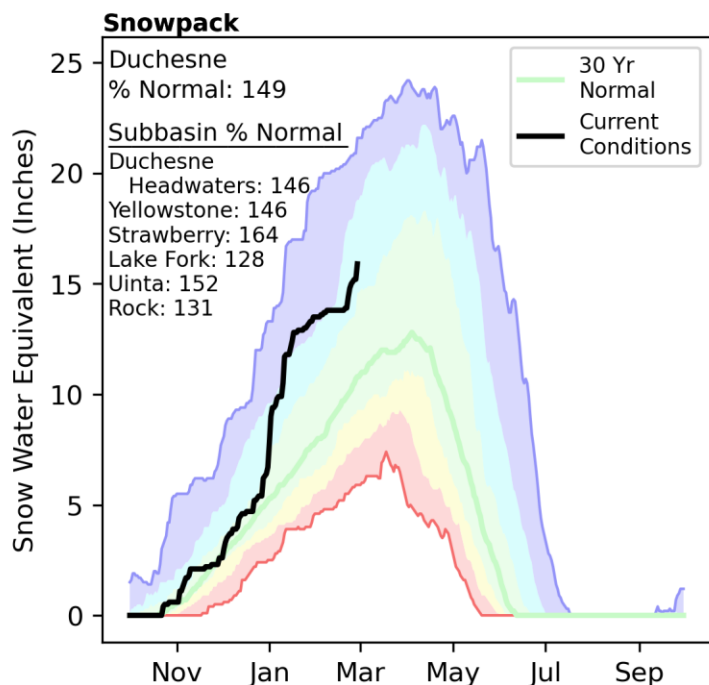


# Northeastern Uintas



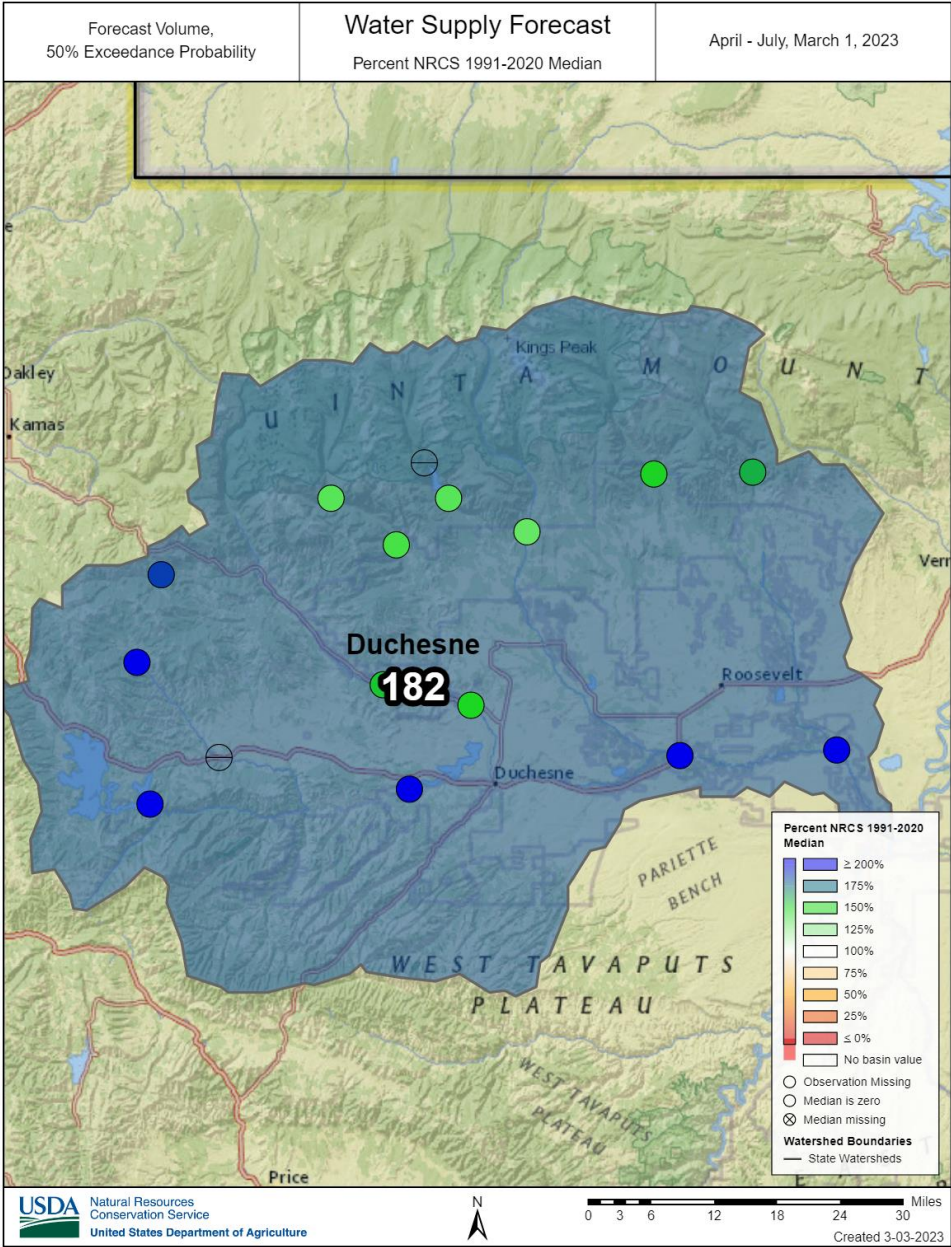
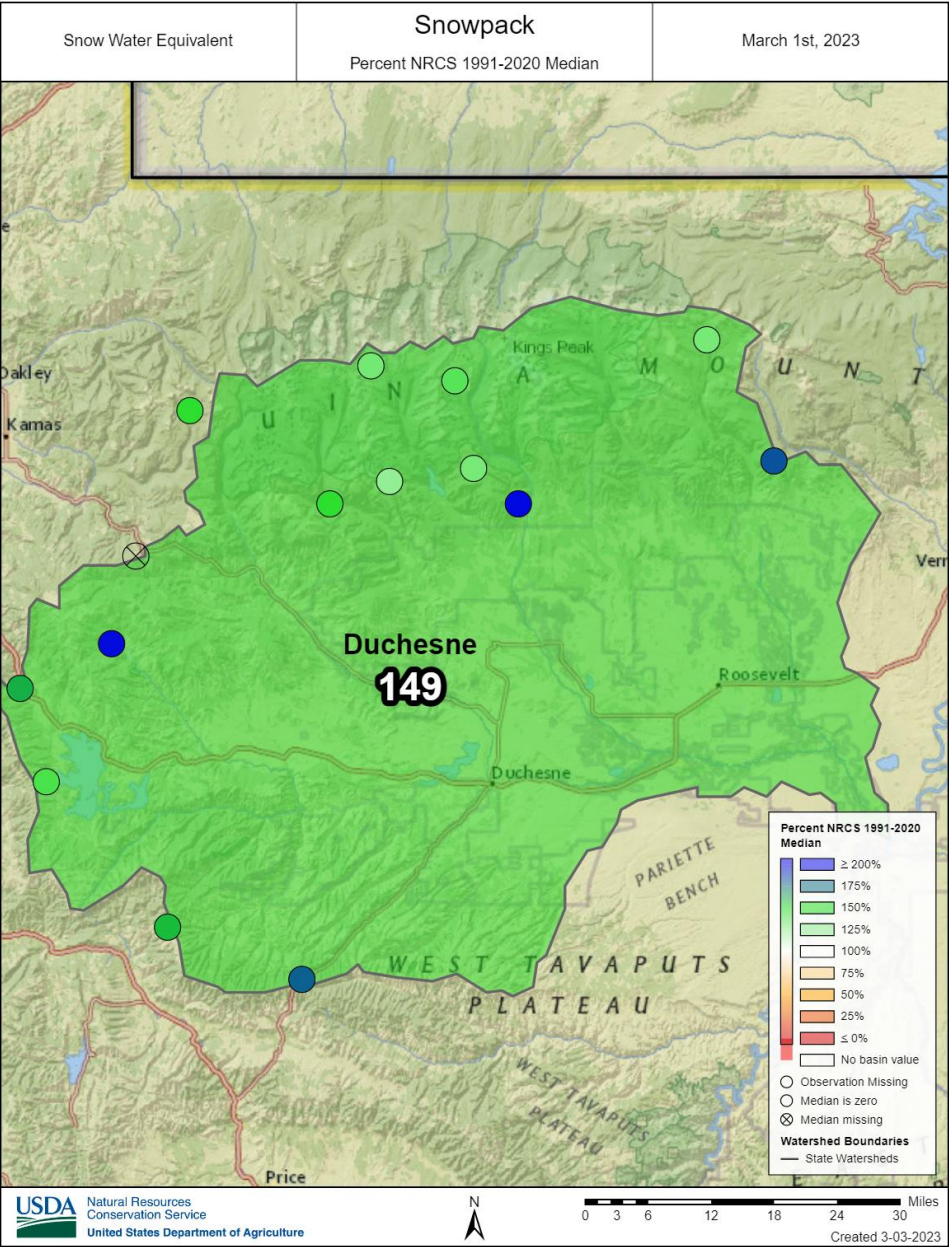


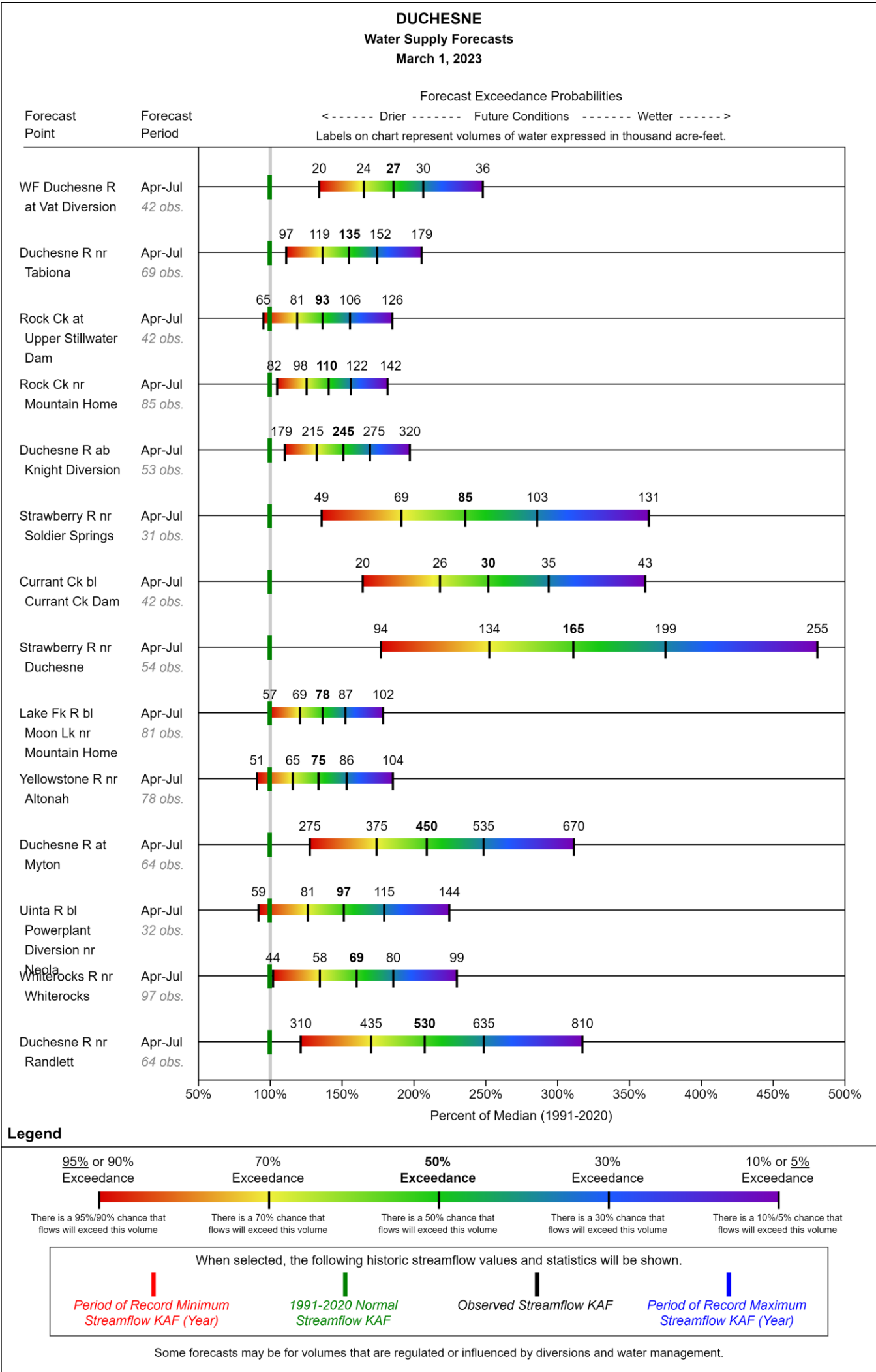
Snowpack in the Duchesne River Basin is well above normal at 149% of median, compared to 91% at this time last year. Precipitation in February was about normal at 102%, which brings the seasonal accumulation (October-February) to 138% of median. Soil moisture is at 48% saturation compared to 48% saturation last year. Reservoir storage is 73% of capacity, compared to 74% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 134% to 311% of normal. The Surface Water Supply Index percentiles are 64% for the Western Uintas, and 75% for the Eastern Uintas.



Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)

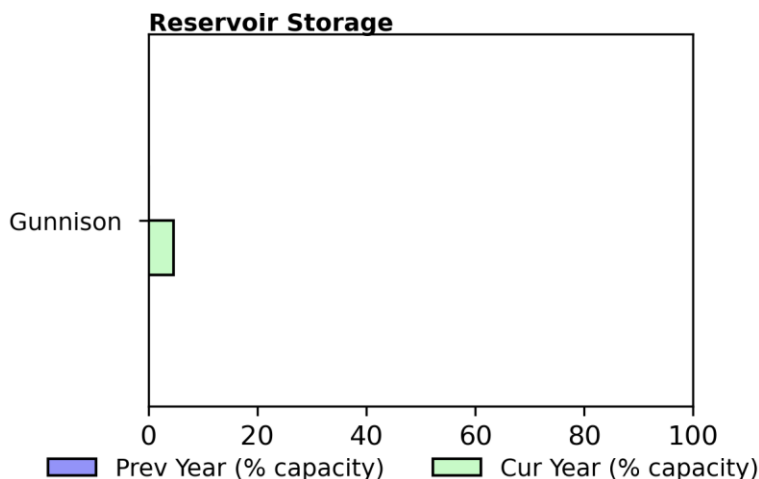
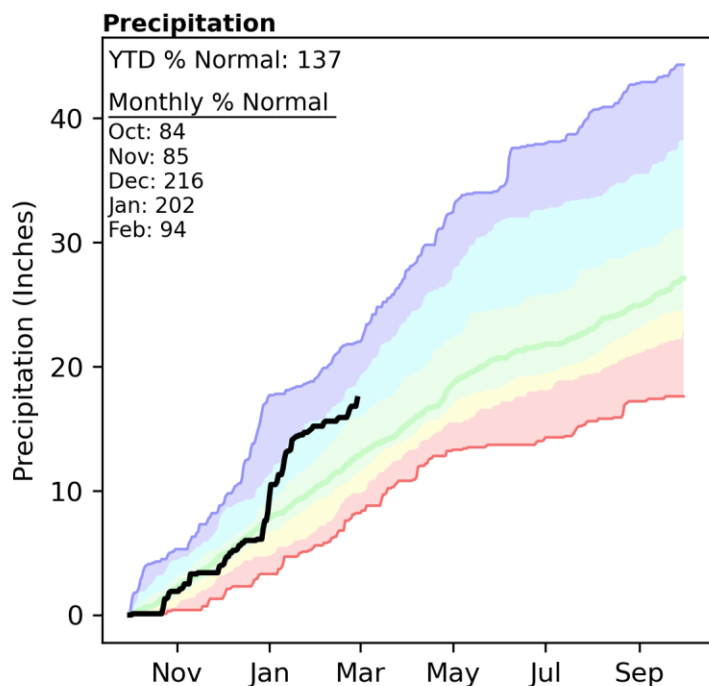
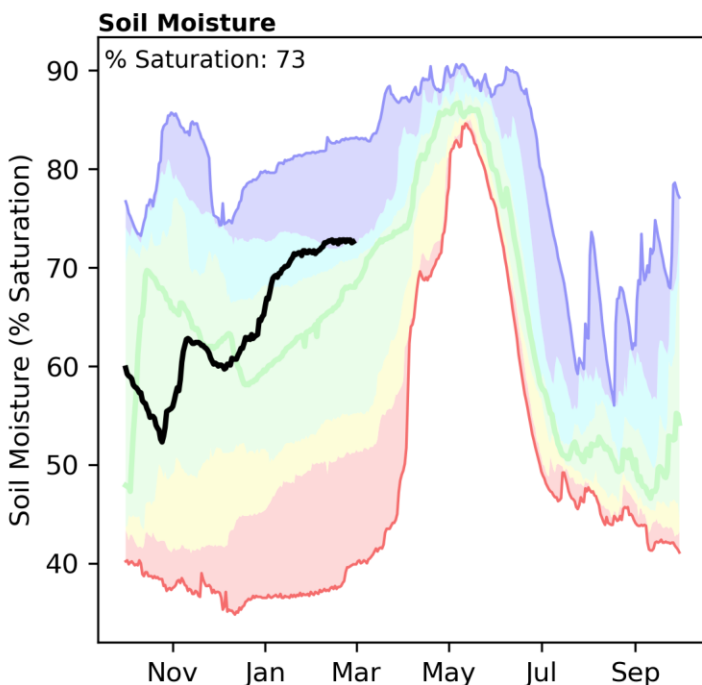
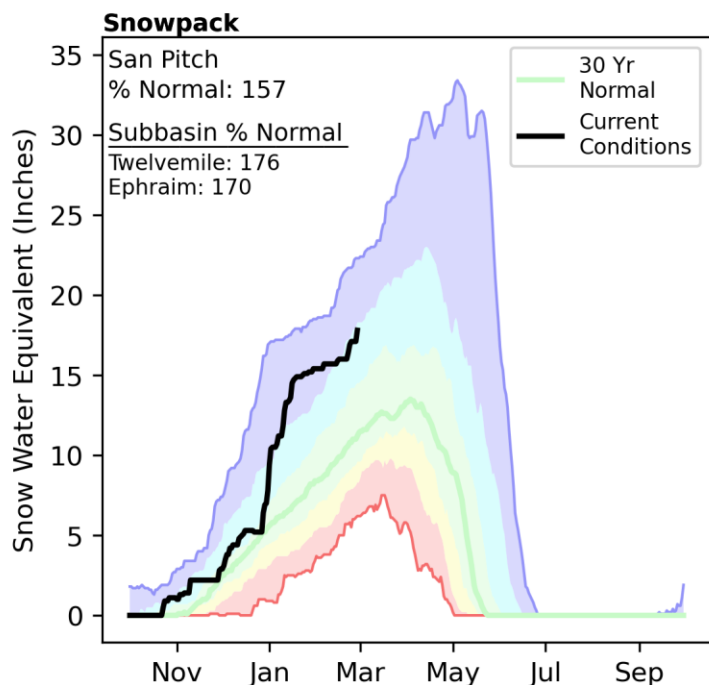






# San Pitch | March 1, 2023

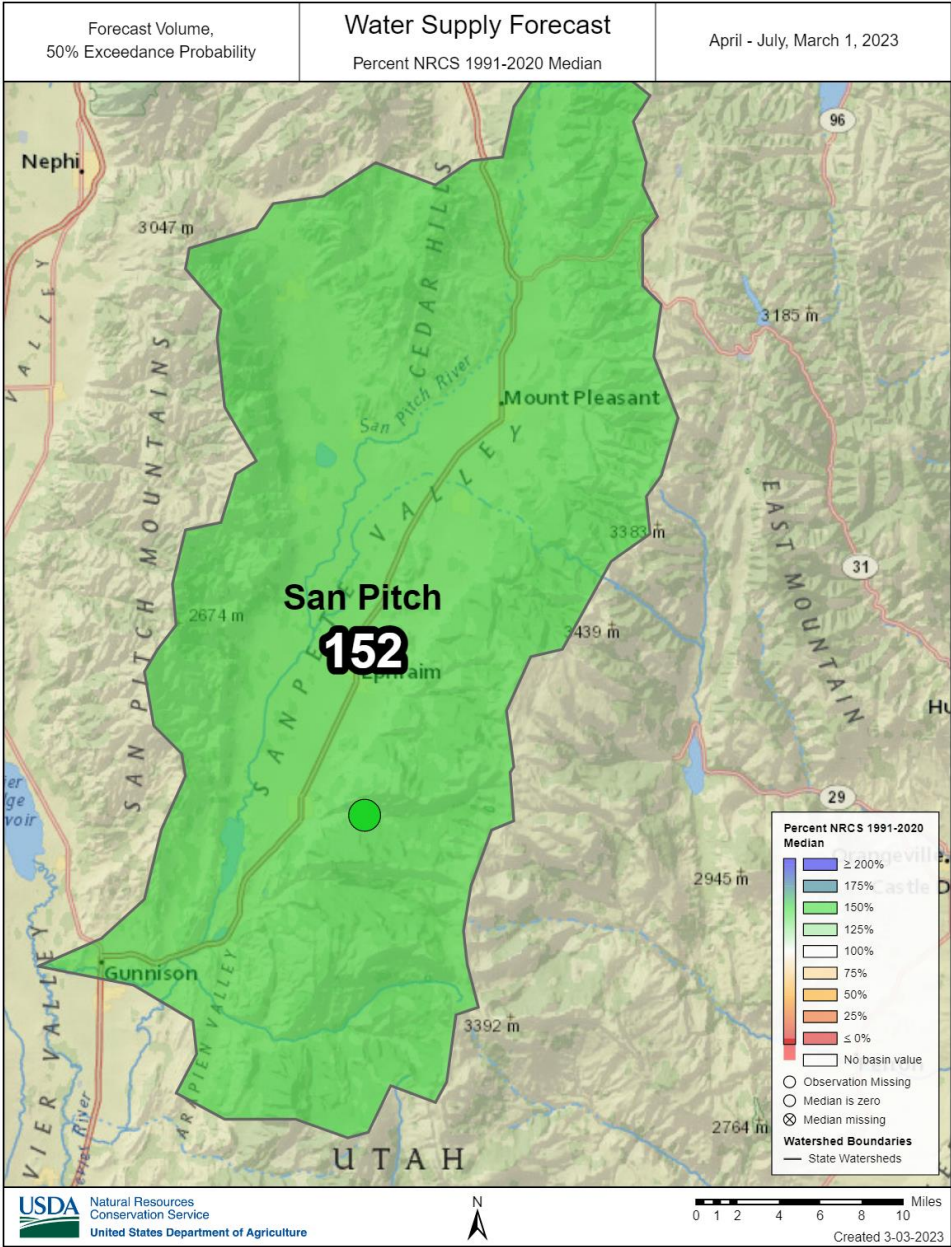
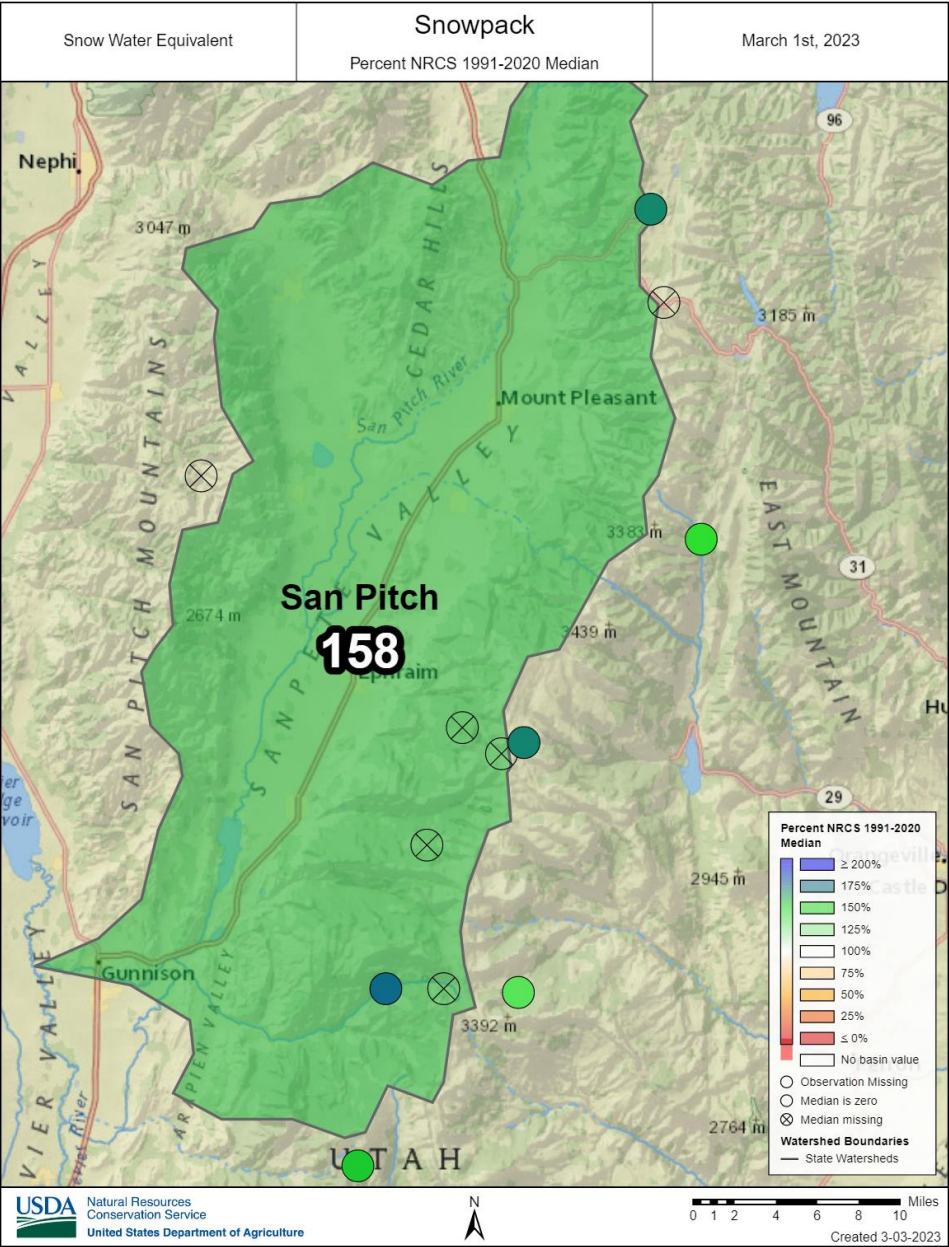
Snowpack in the San Pitch River Basin is well above normal at 157% of median, compared to 81% at this time last year. Precipitation in February was about normal at 94%, which brings the seasonal accumulation (October-February) to 137% of median. Soil moisture is at 73% saturation compared to 71% saturation last year. Reservoir storage is 4% of capacity, compared to 0% last year. The forecast streamflow volume (50% exceedence, April-July) for Manti Creek is 152% of normal. The Surface Water Supply Index percentile is 43% for the San Pitch.



Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



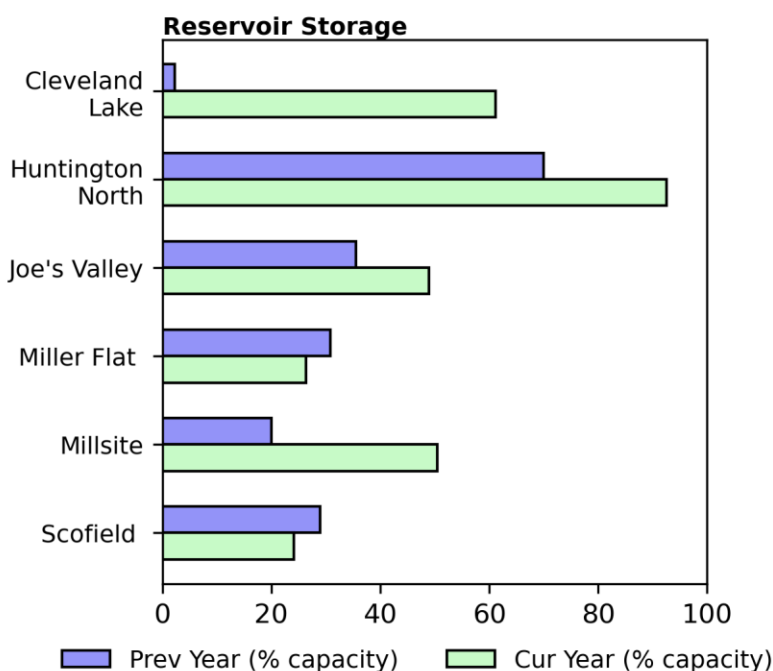
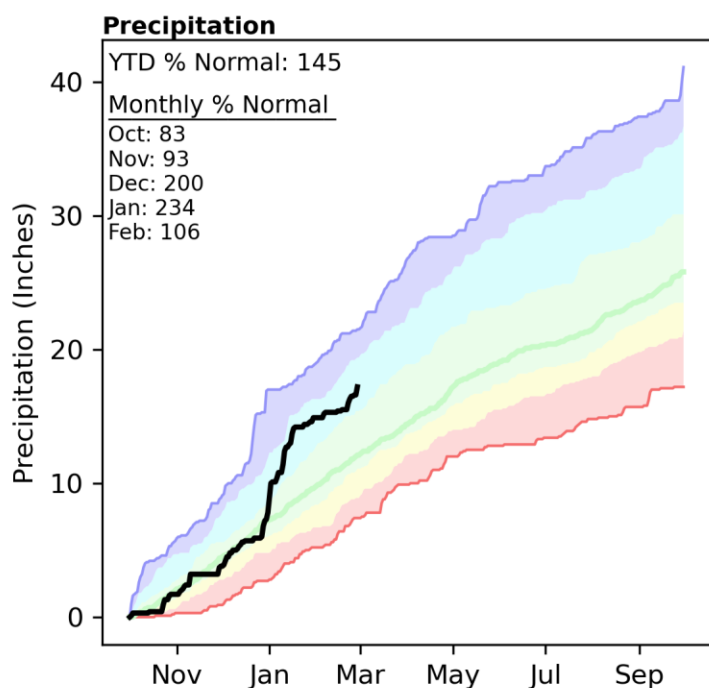
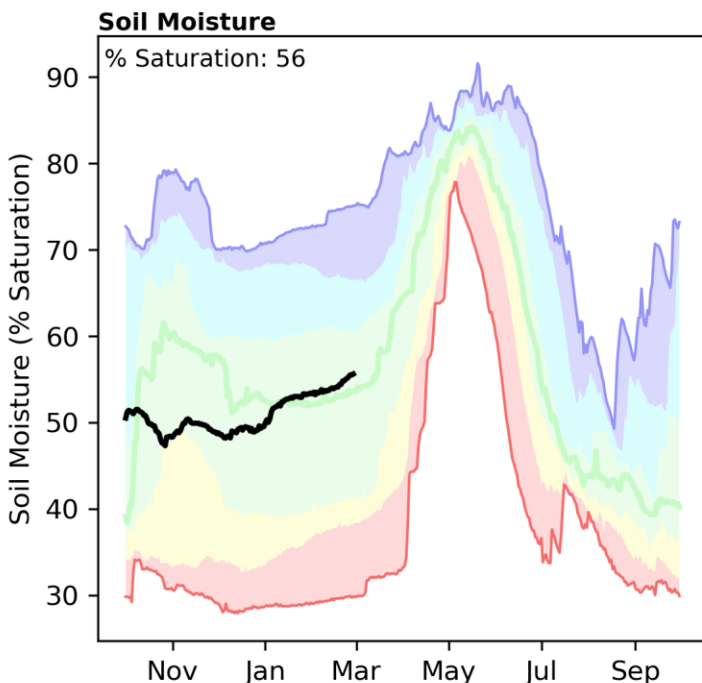
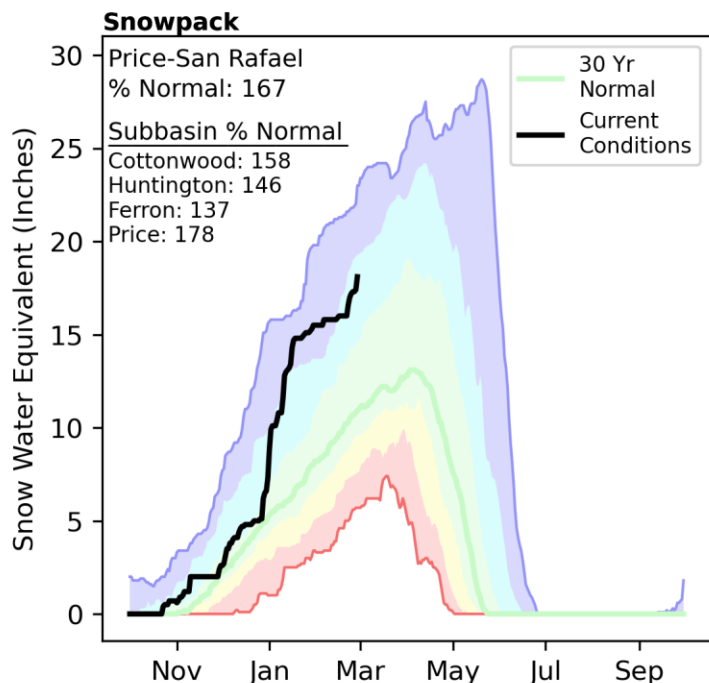
# San Pitch





## Price-San Rafael | March 1, 2023

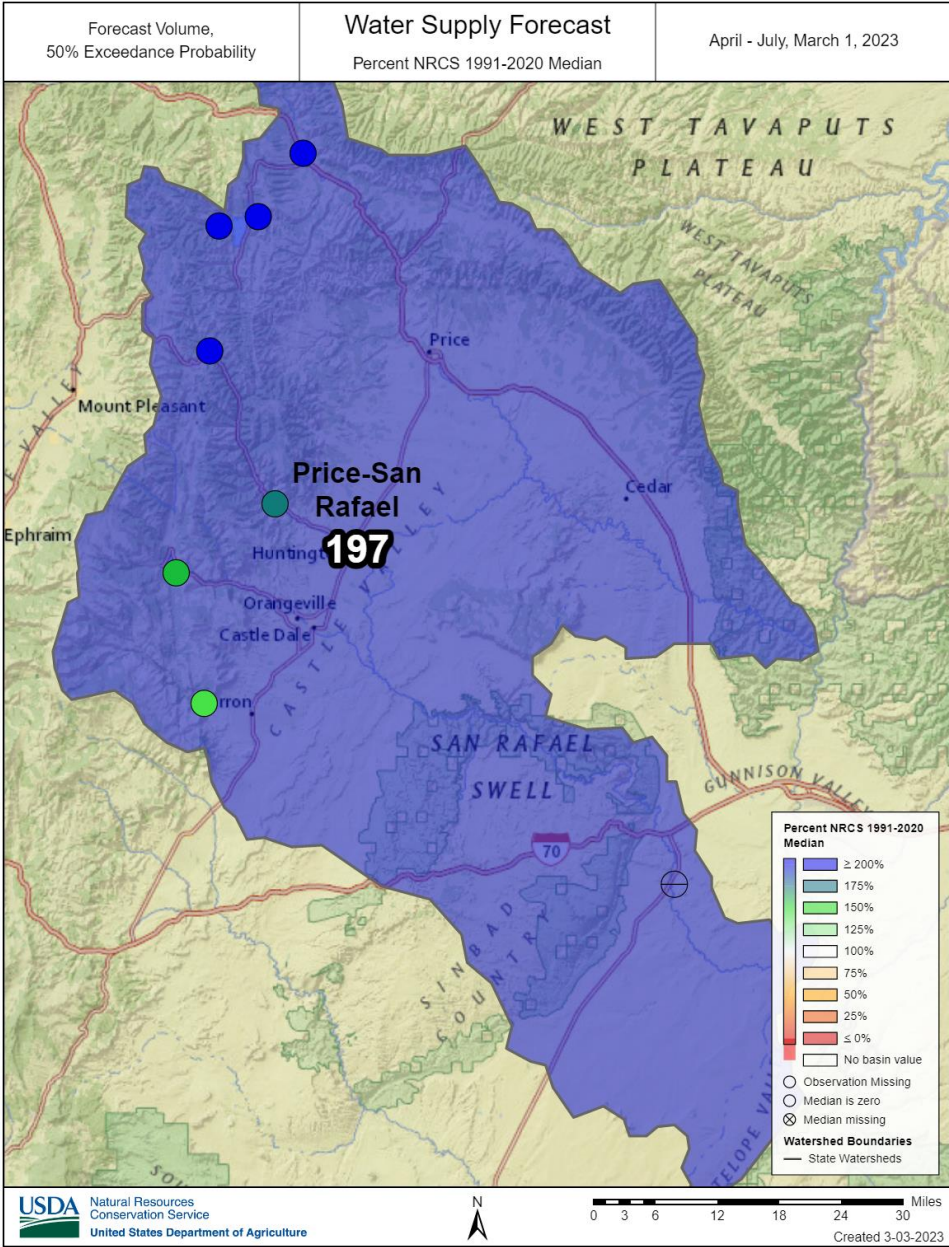
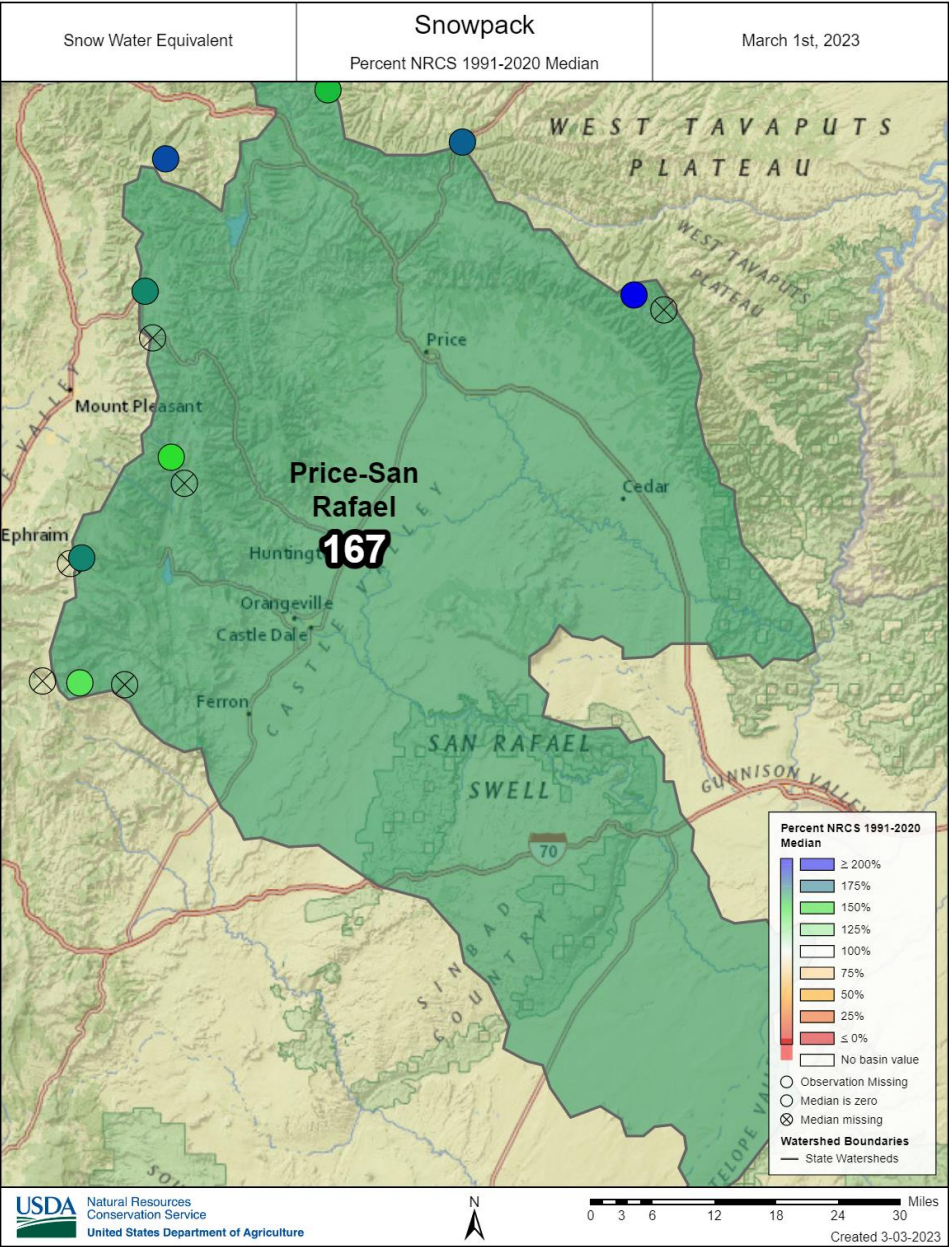
Snowpack in the Price and San Rafael River Basins is well above normal at 167% of median, compared to 86% at this time last year. Precipitation in February was about normal at 106%, which brings the seasonal accumulation (October-February) to 145% of median. Soil moisture is at 56% saturation compared to 61% saturation last year. Reservoir storage is 39% of capacity, compared to 30% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 141% to 333% of normal. The Surface Water Supply Index percentiles are 75% for the Price, 61% for Joes Valley, and 66% for Ferron Creek.



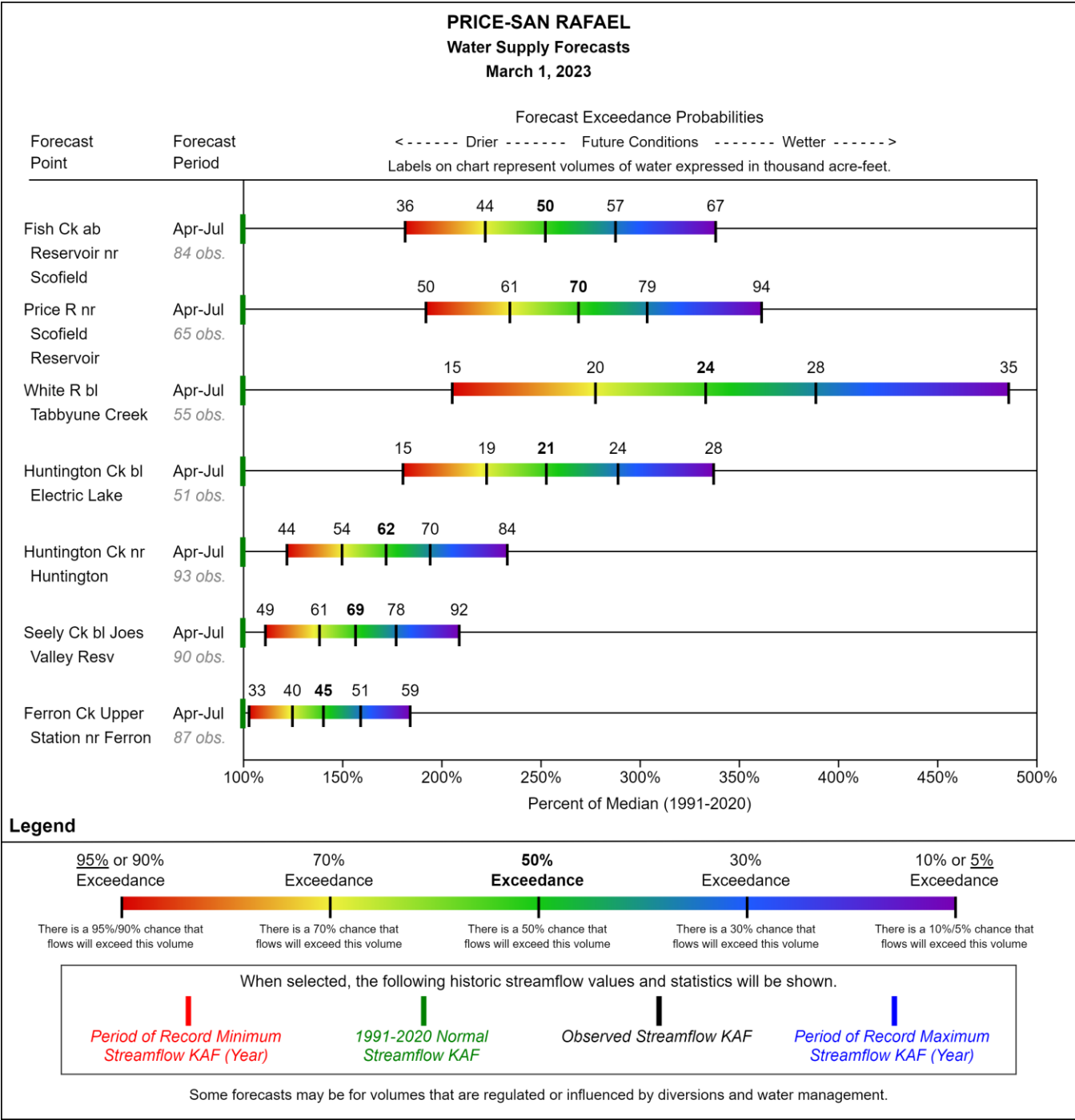
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



# Price San-Rafael

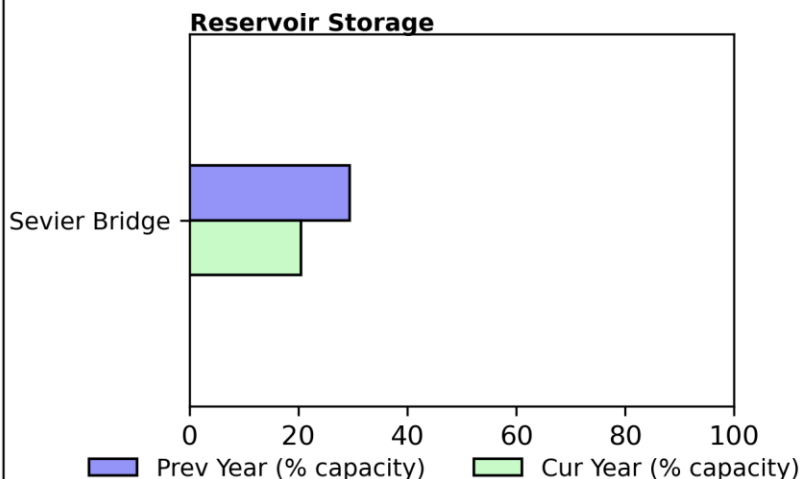
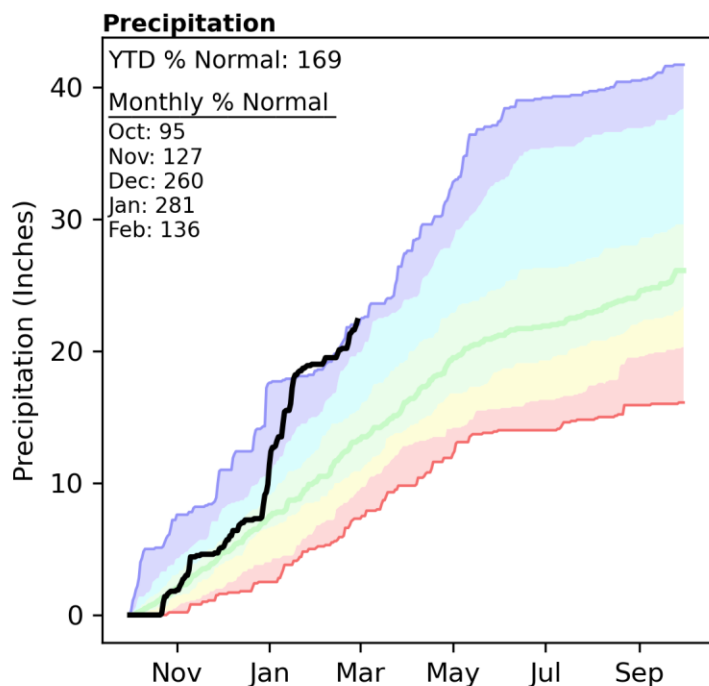
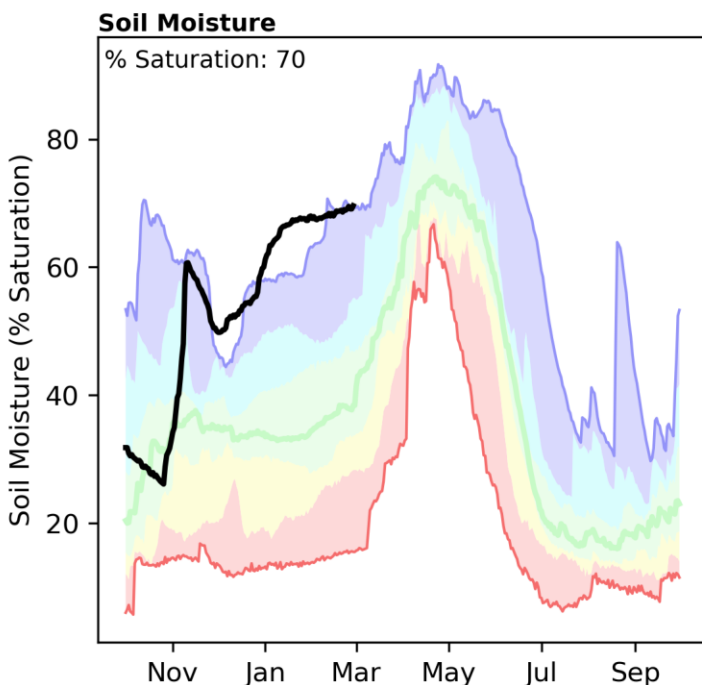
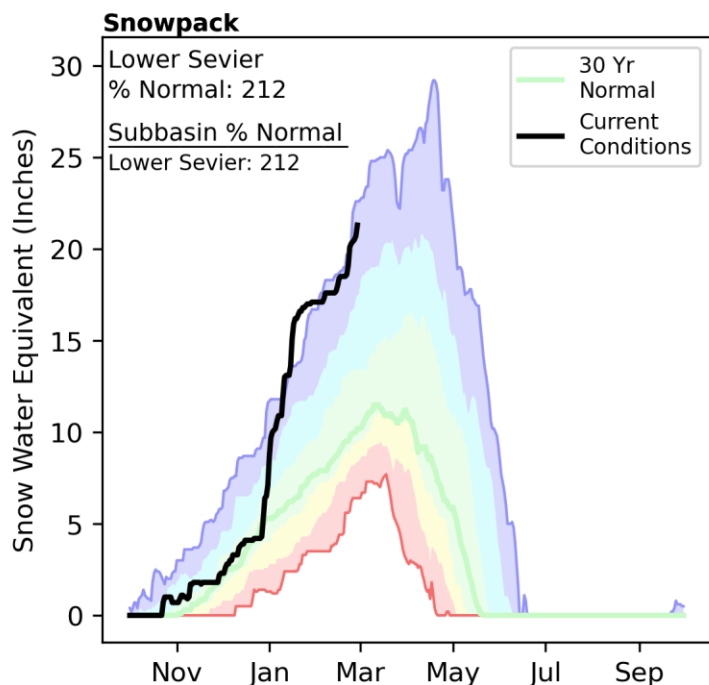


# Price-San Rafael



## Lower Sevier | March 1, 2023

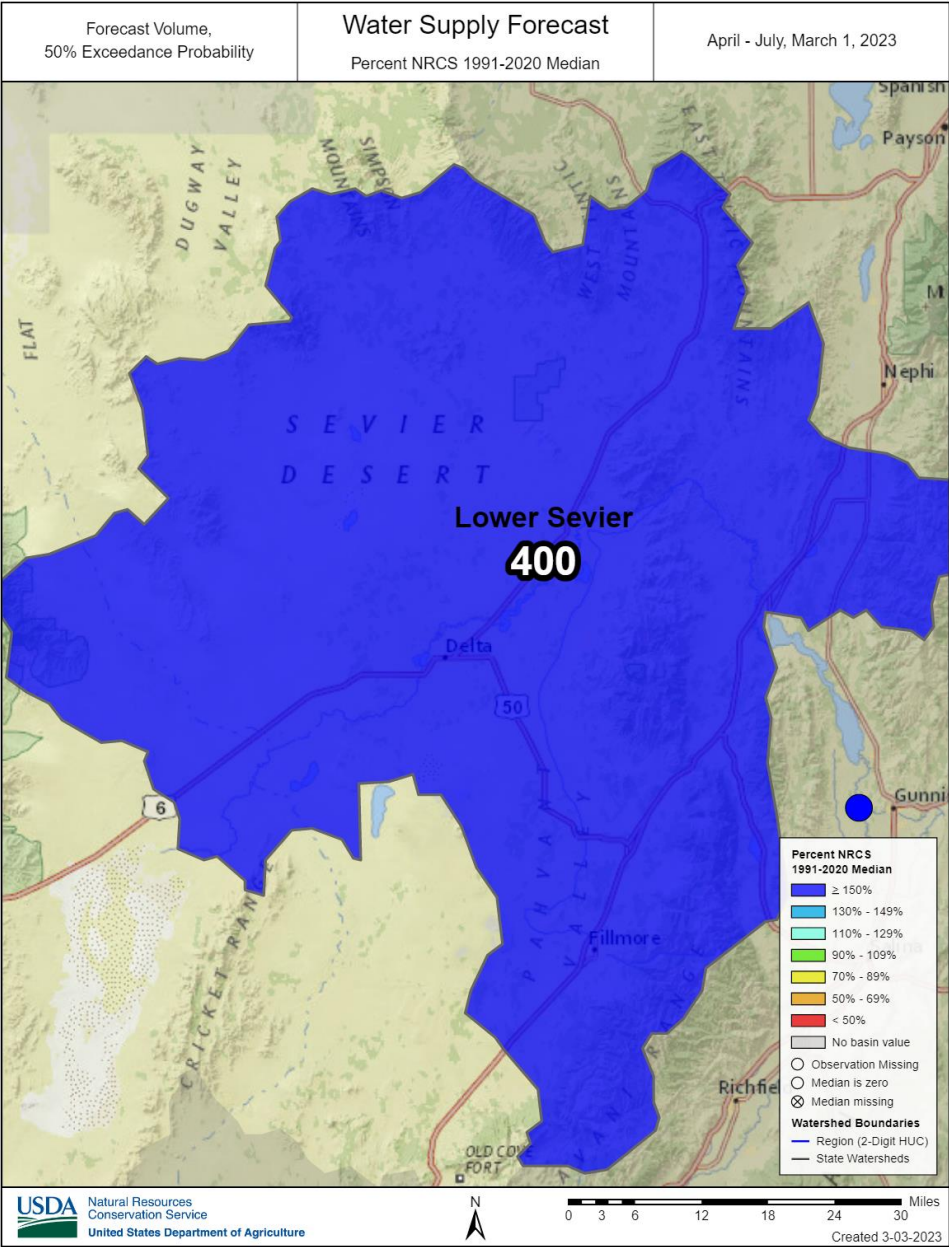
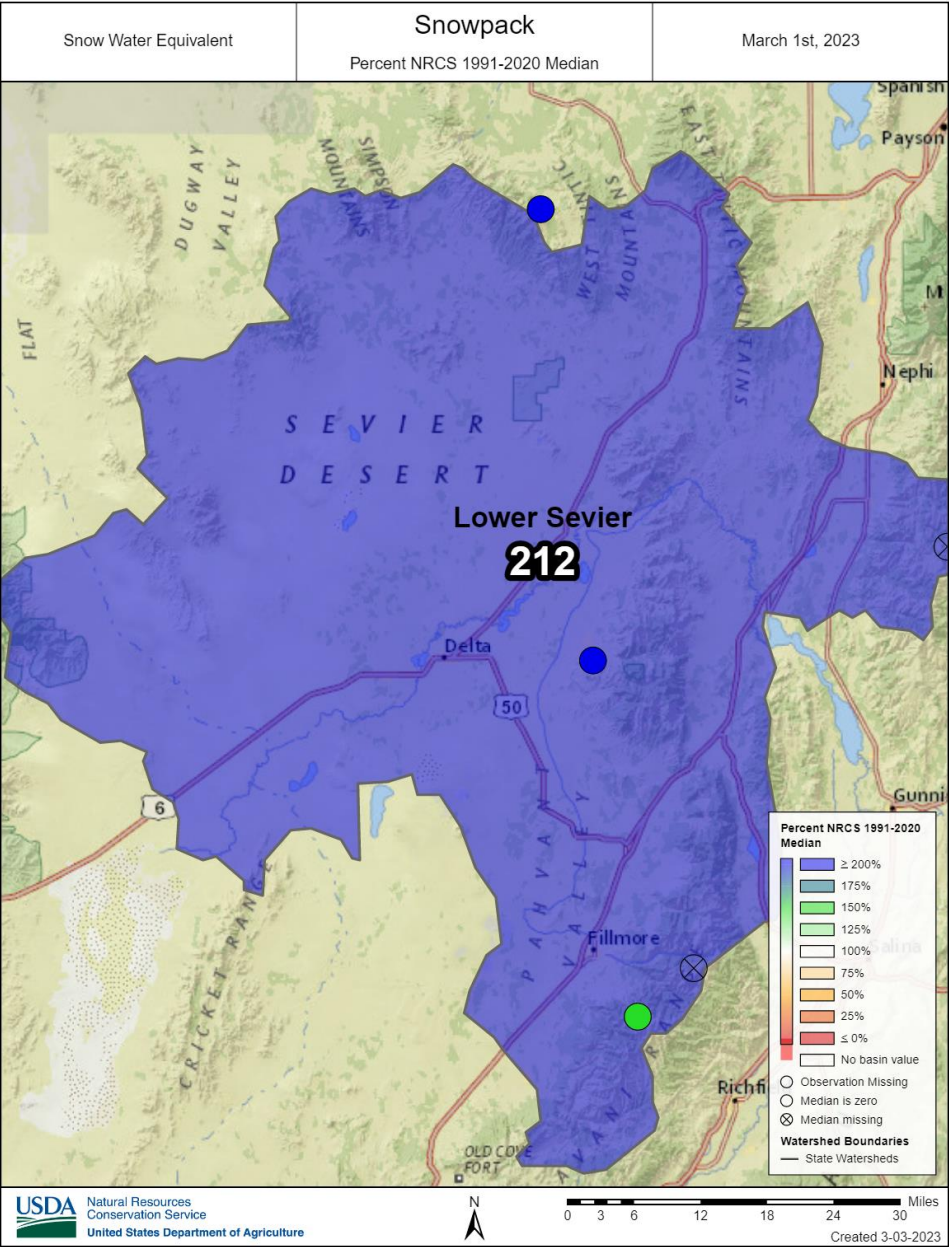
Snowpack in the Lower Sevier River Basin is well above normal at 212% of median, compared to 85% at this time last year. Precipitation in February was well above normal at 136%, which brings the seasonal accumulation (October-February) to 169% of median. Soil moisture is at 70% saturation compared to 46% saturation last year. Reservoir storage is 20% of capacity, compared to 29% last year. Forecast streamflow volume (50% exceedence, April-July) for the Sevier River near Gunnison is 400% of normal. The Surface Water Supply Index percentile is 36% for the Lower Sevier.



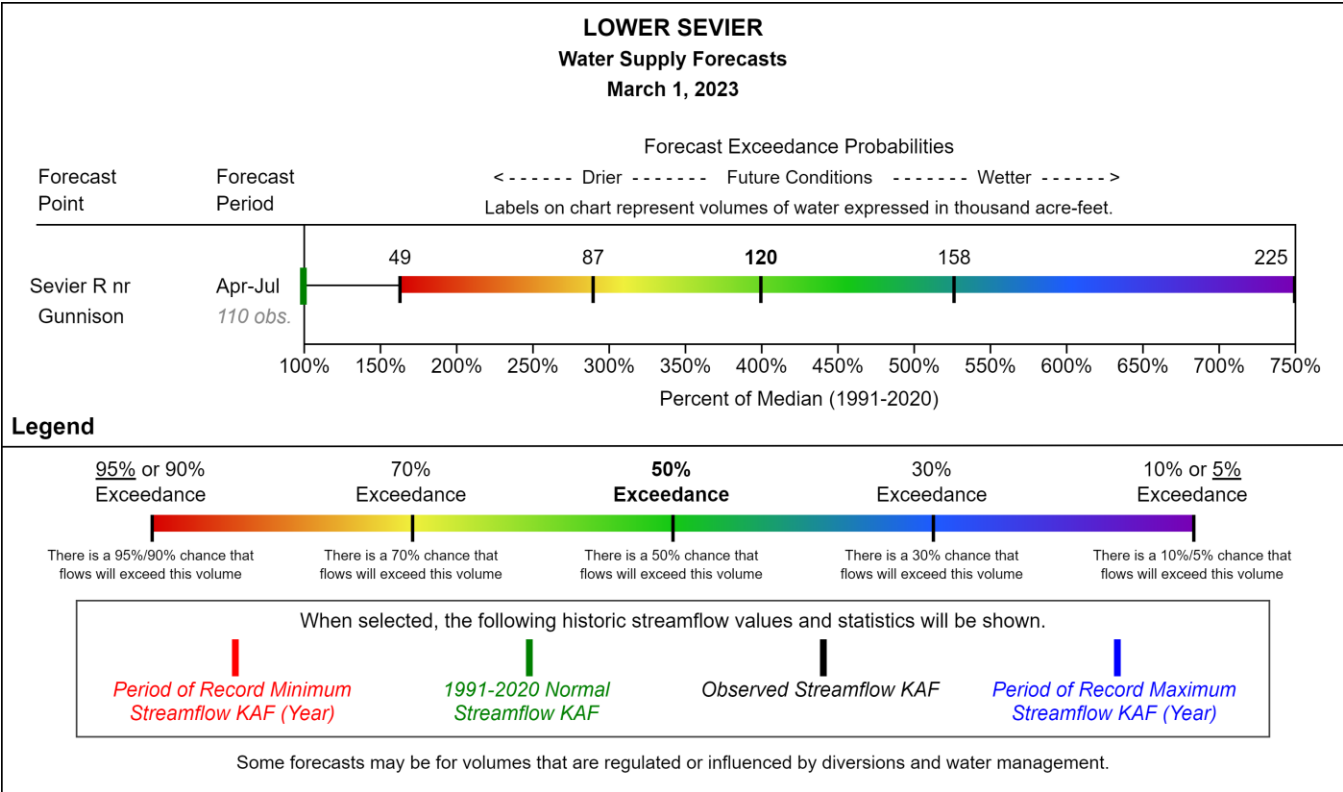
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



Lower Sevier

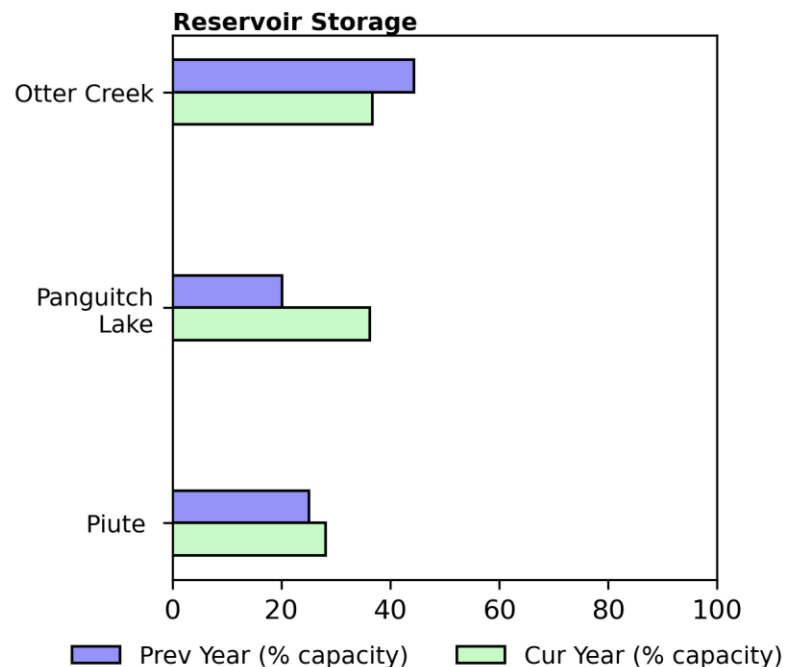
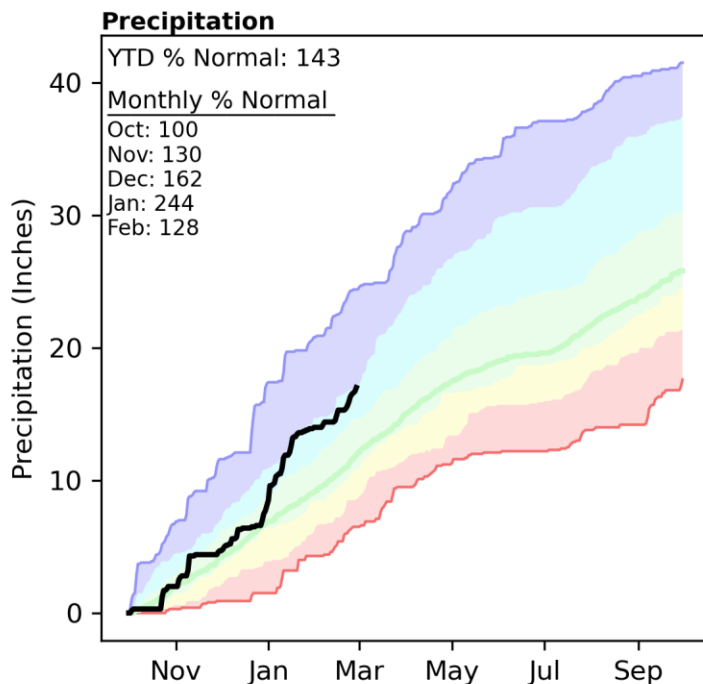
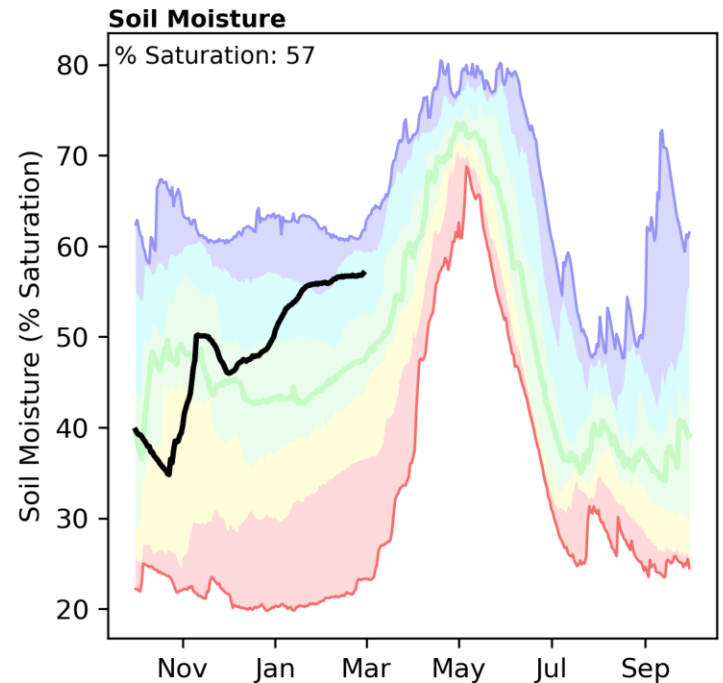
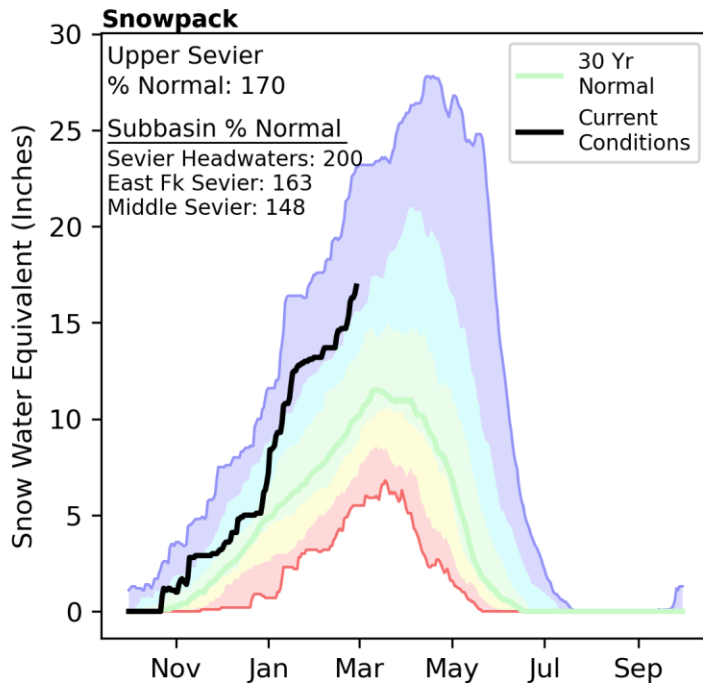


# Lower Sevier



## Upper Sevier | March 1, 2023

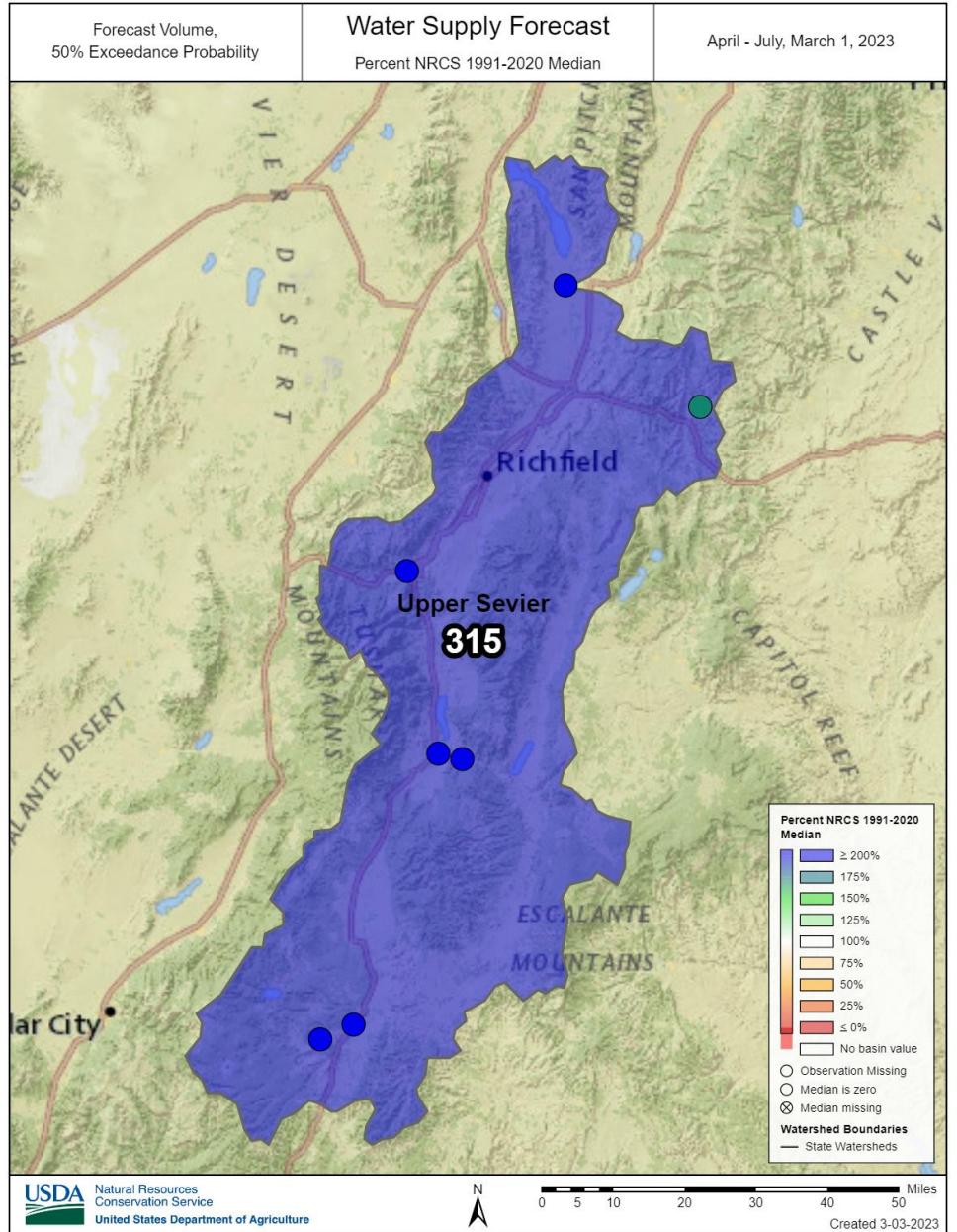
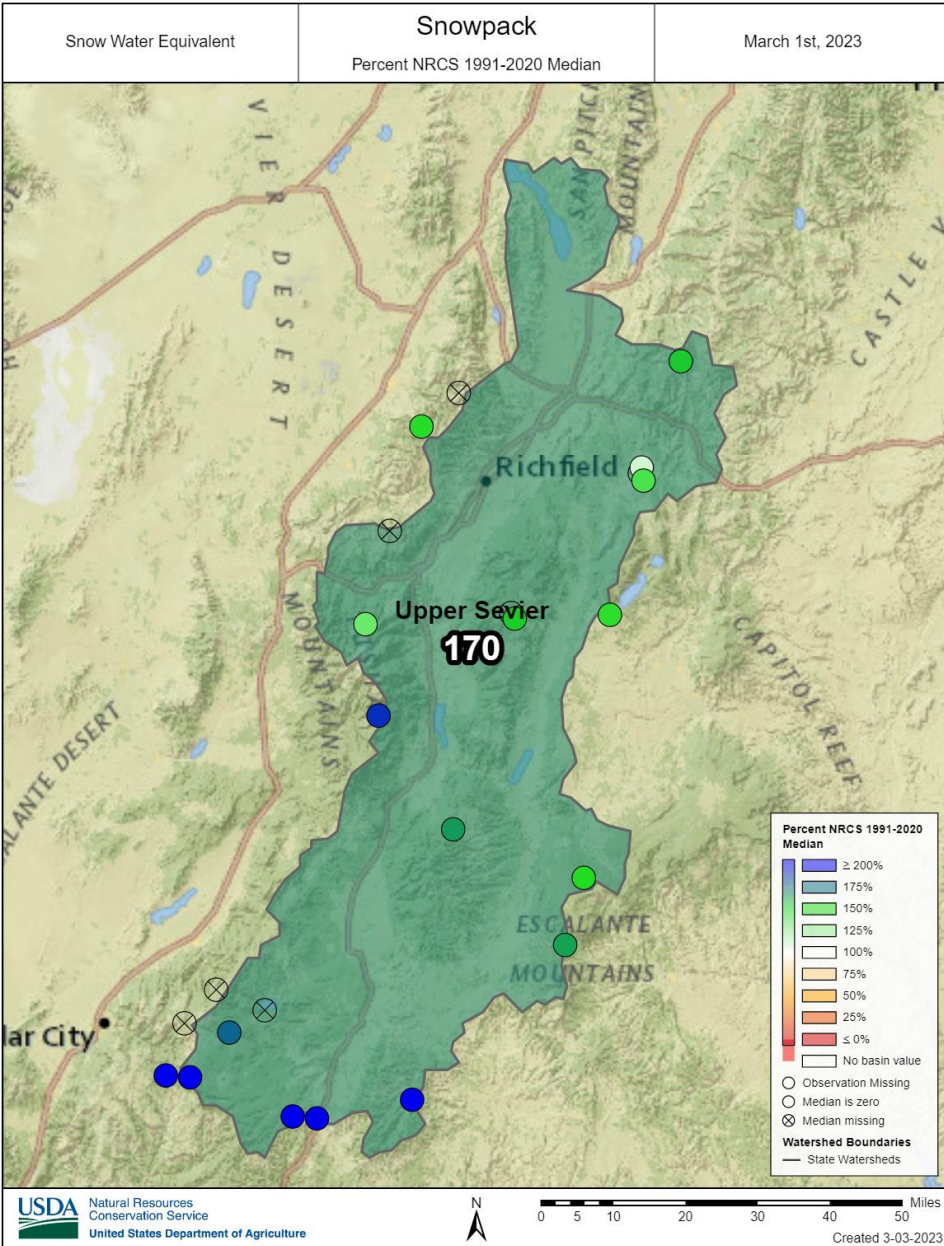
Snowpack in the Upper Sevier River Basin is well above normal at 170% of median, compared to 96% at this time last year. Precipitation in February was above normal at 128%, which brings the seasonal accumulation (October-February) to 143% of median. Soil moisture is at 57% saturation compared to 47% saturation last year. Reservoir storage is 32% of capacity, compared to 31% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 170% to 510% of normal. The Surface Water Supply Index percentile is 61% for the Upper Sevier.



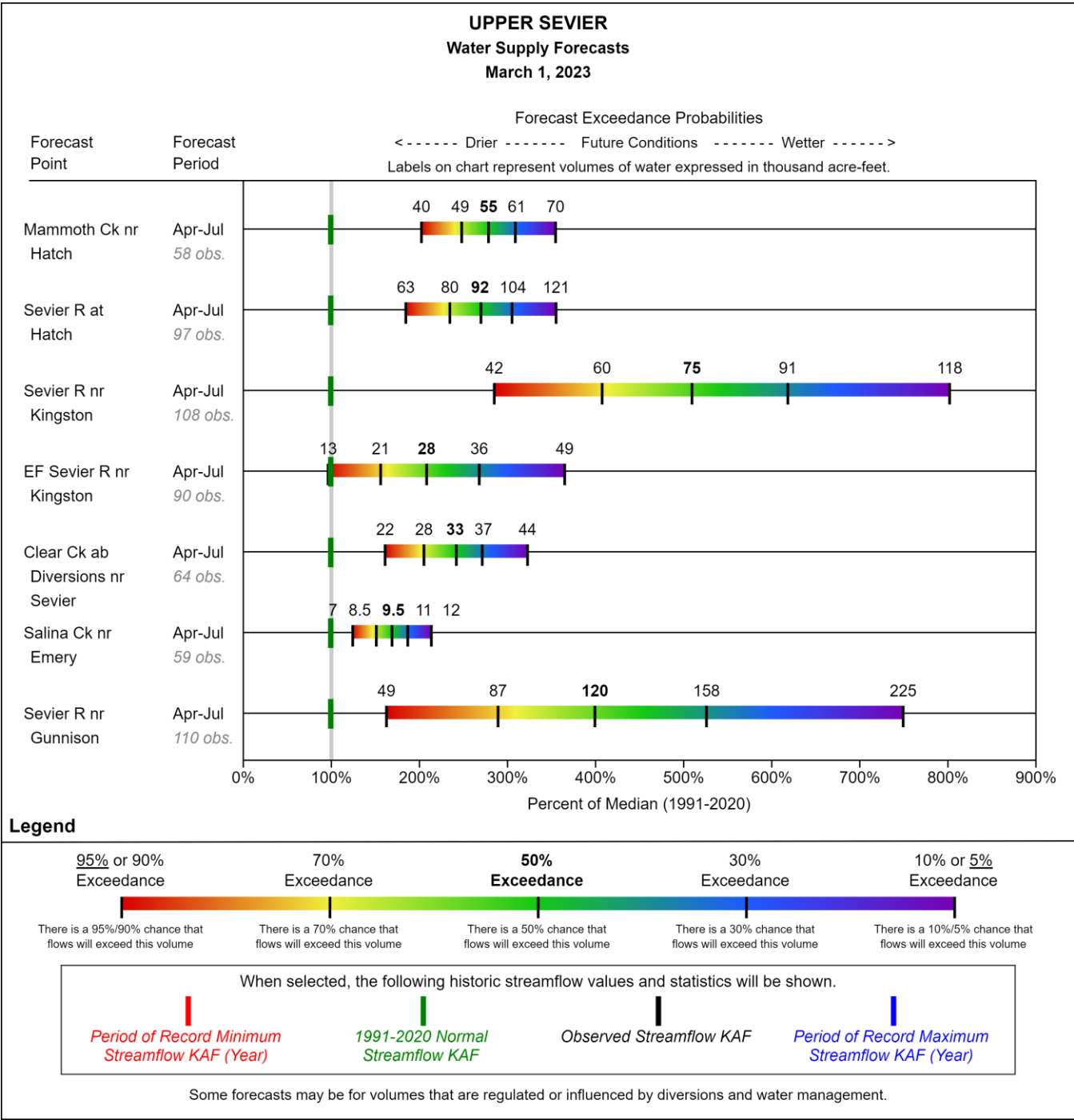
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



# Upper Sevier

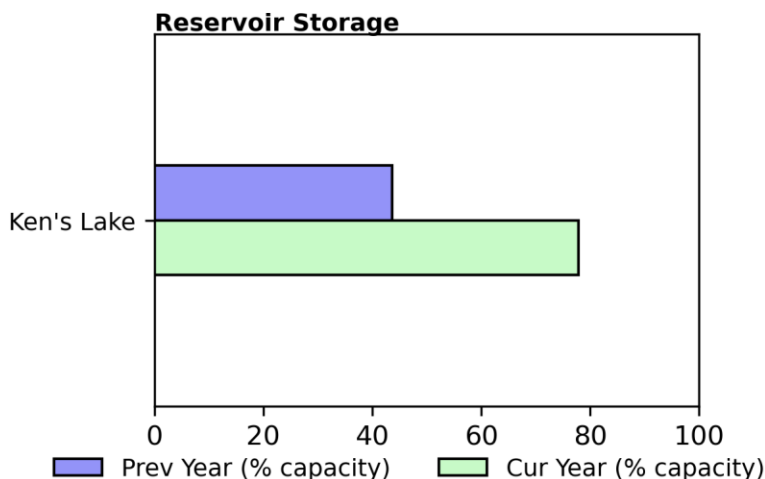
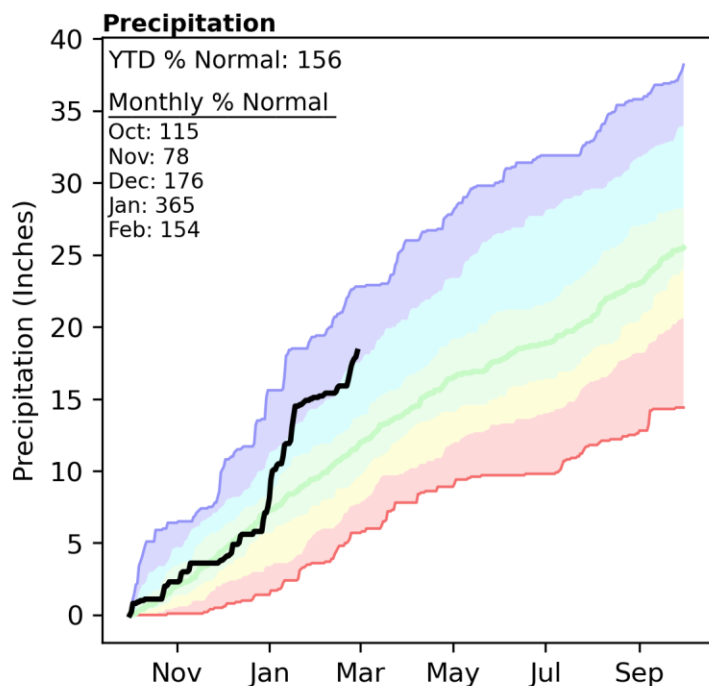
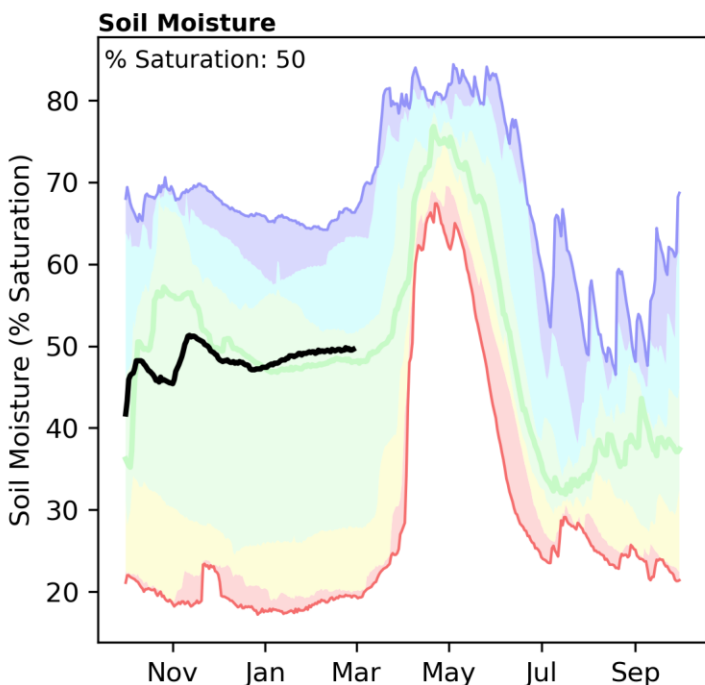
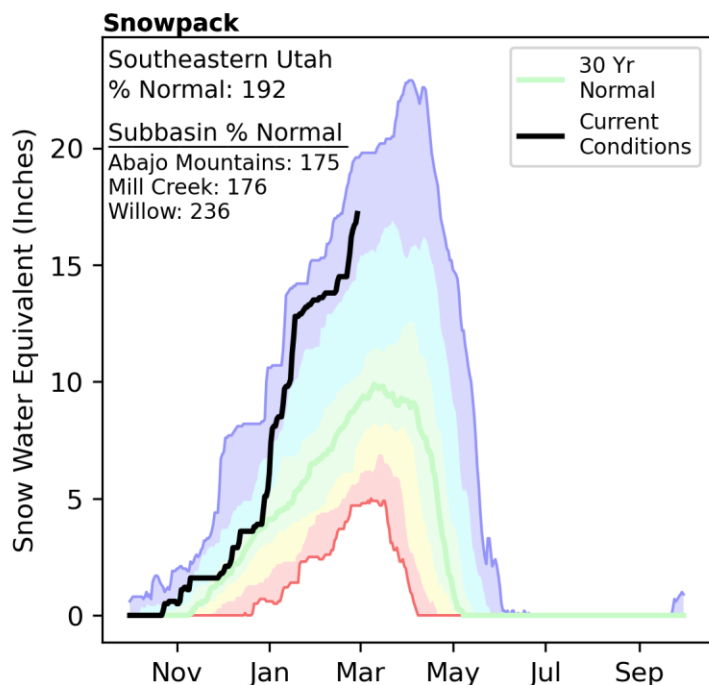


# Upper Sevier



# Southeastern Utah | March 1, 2023

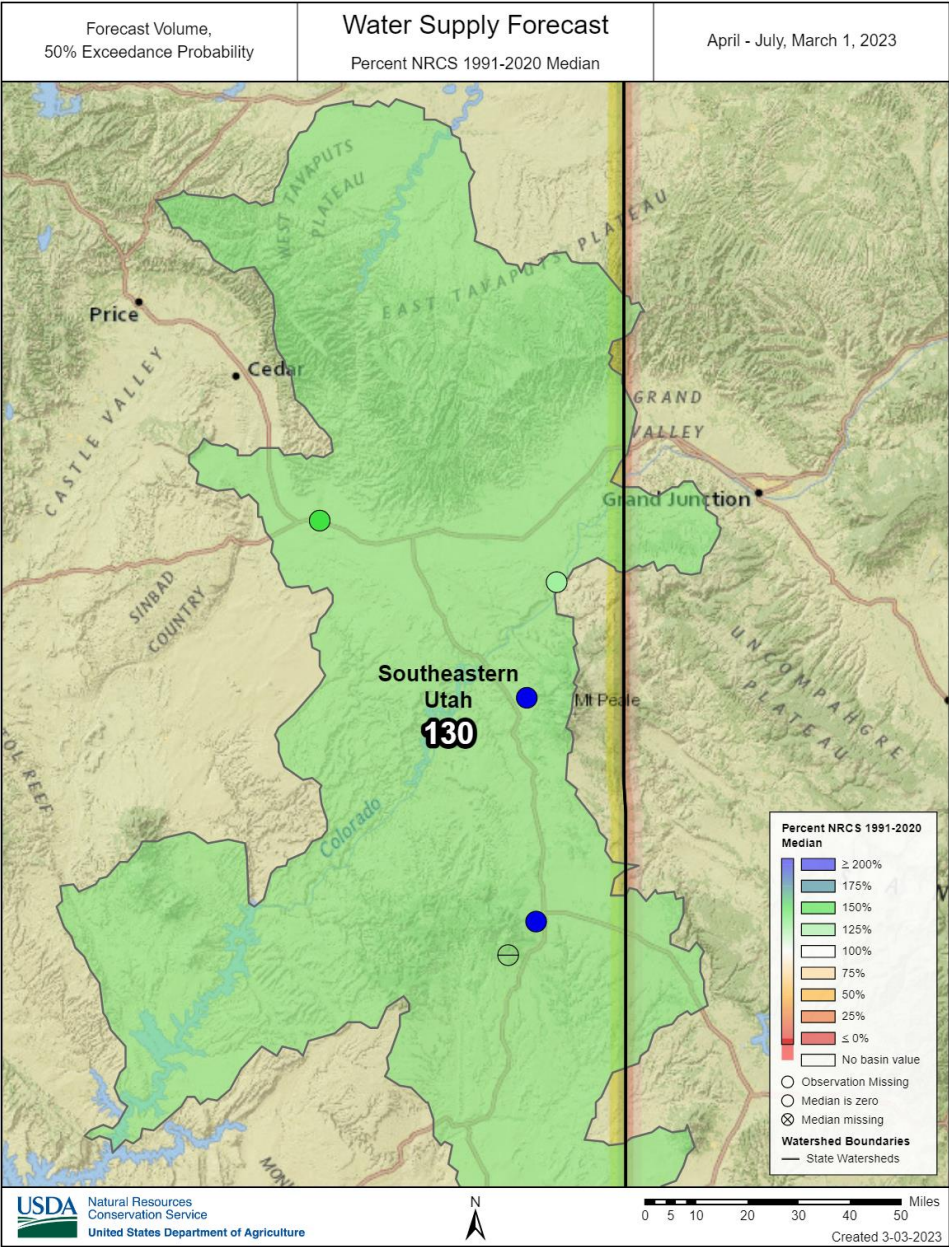
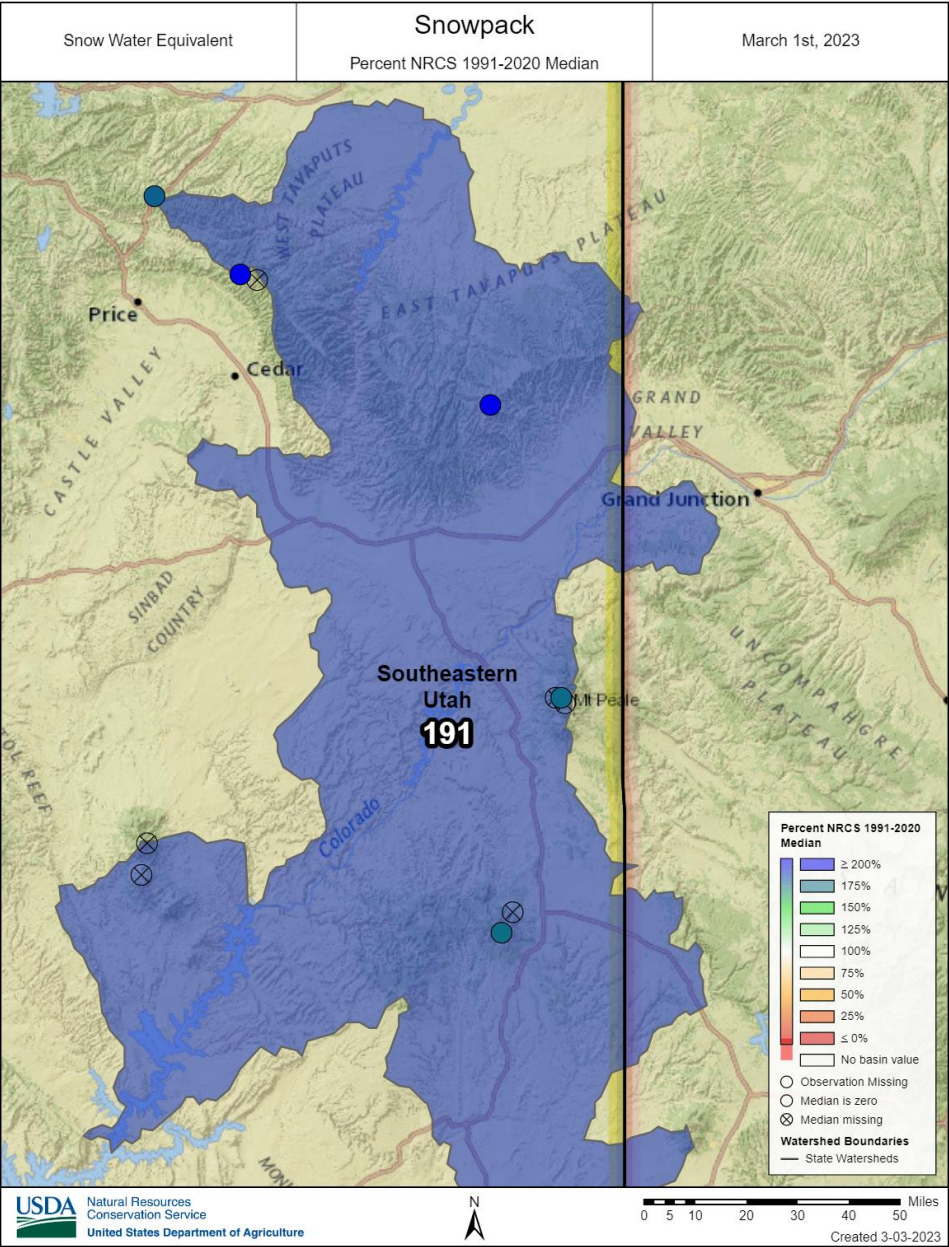
Snowpack in Southeastern Utah is well above normal at 192% of median, compared to 91% at this time last year. Precipitation in February was well above normal at 154%, which brings the seasonal accumulation (October-February) to 156% of median. Soil moisture is at 50% saturation compared to 51% saturation last year. Reservoir storage is 77% of capacity, compared to 43% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 121% to 398% of normal. The Surface Water Supply Index percentile is 92% for Moab.



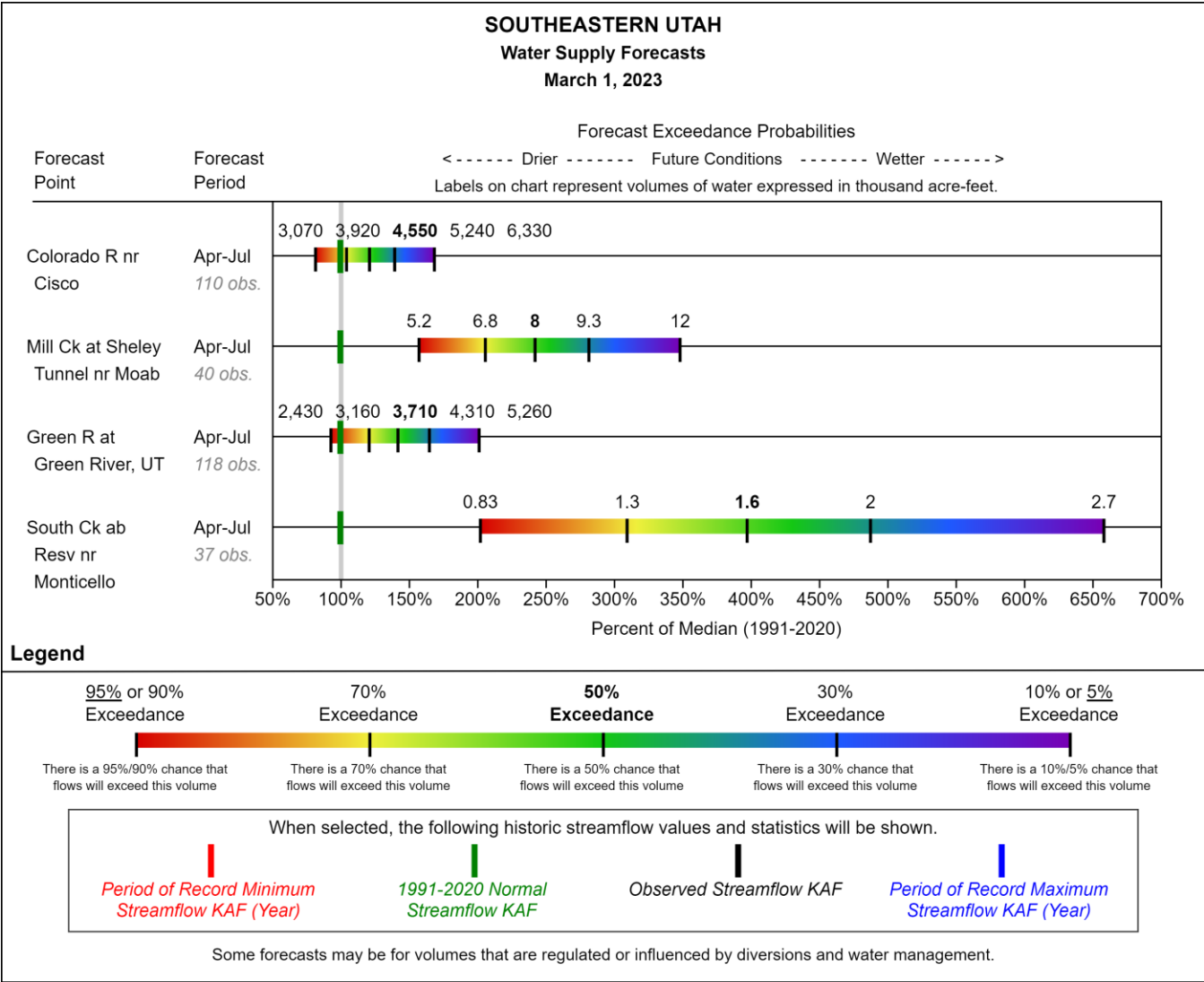
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



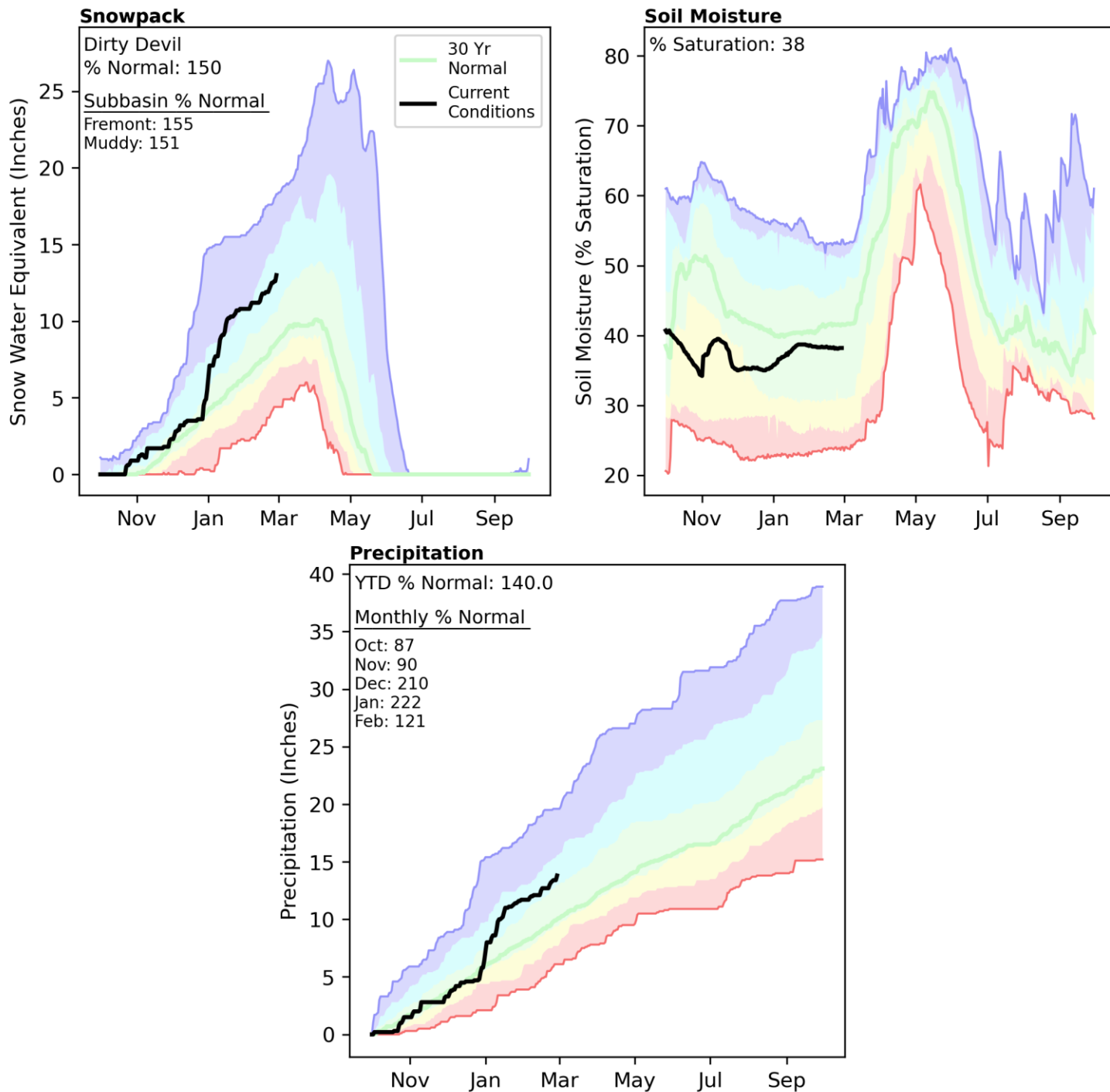
# Southeastern Utah



# Southeastern Utah



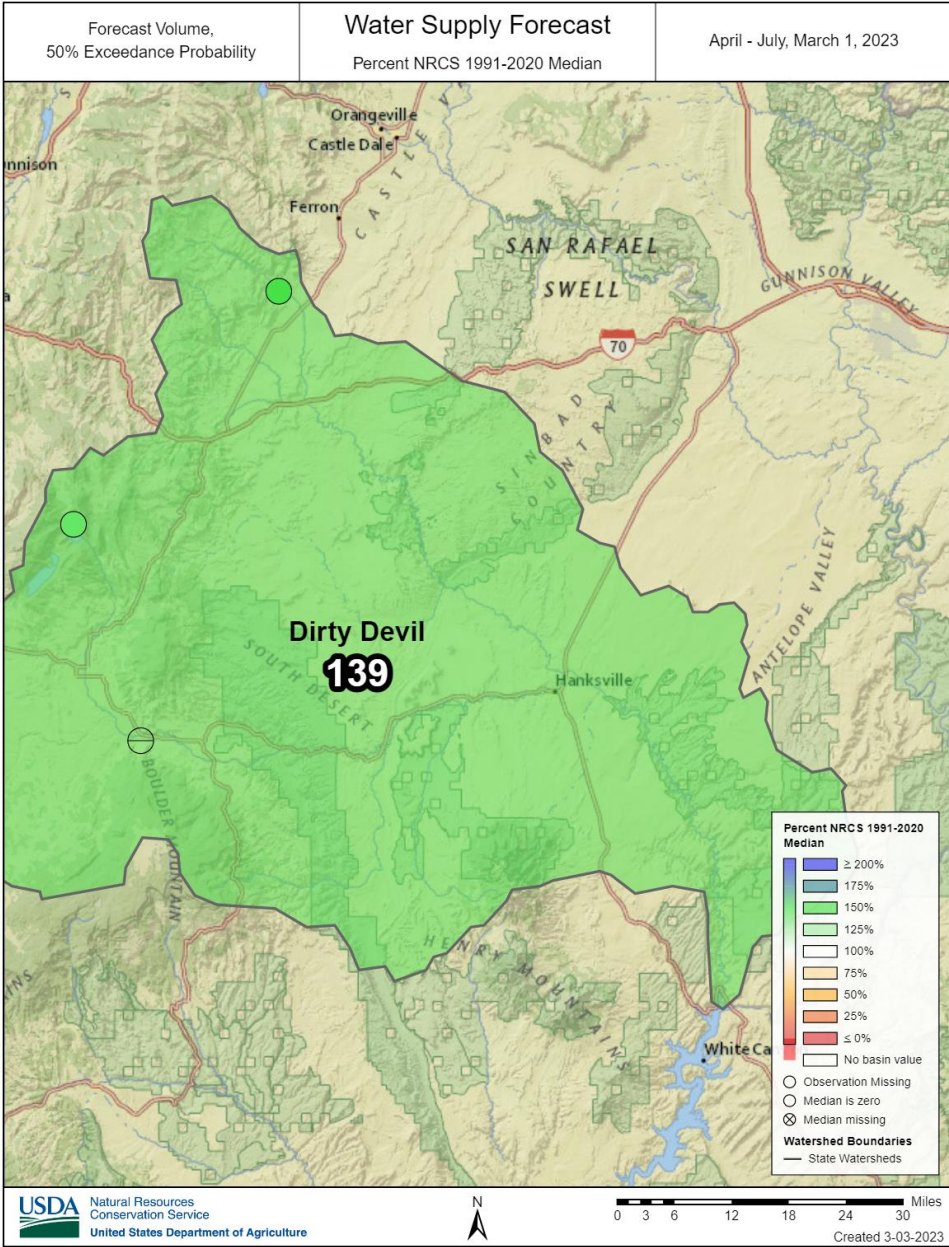
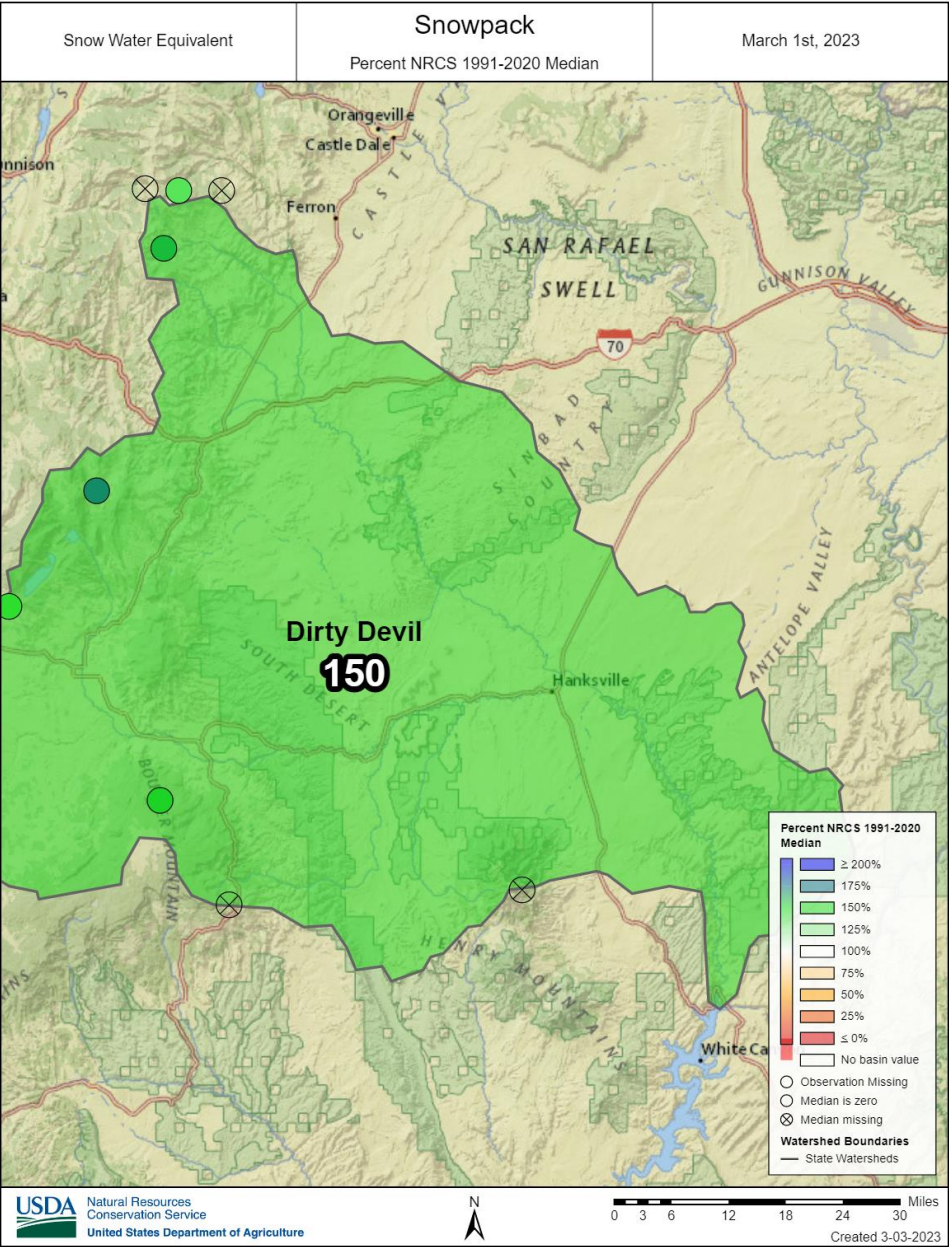
Snowpack in the Dirty Devil River Basin is well above normal at 150% of median, compared to 90% at this time last year. Precipitation in February was above normal at 121%, which brings the seasonal accumulation (October-February) to 140% of median. Soil moisture is at 38% saturation compared to 43% saturation last year. Forecast streamflow volumes (50% exceedence, April-July) range from 134% to 141% of normal.



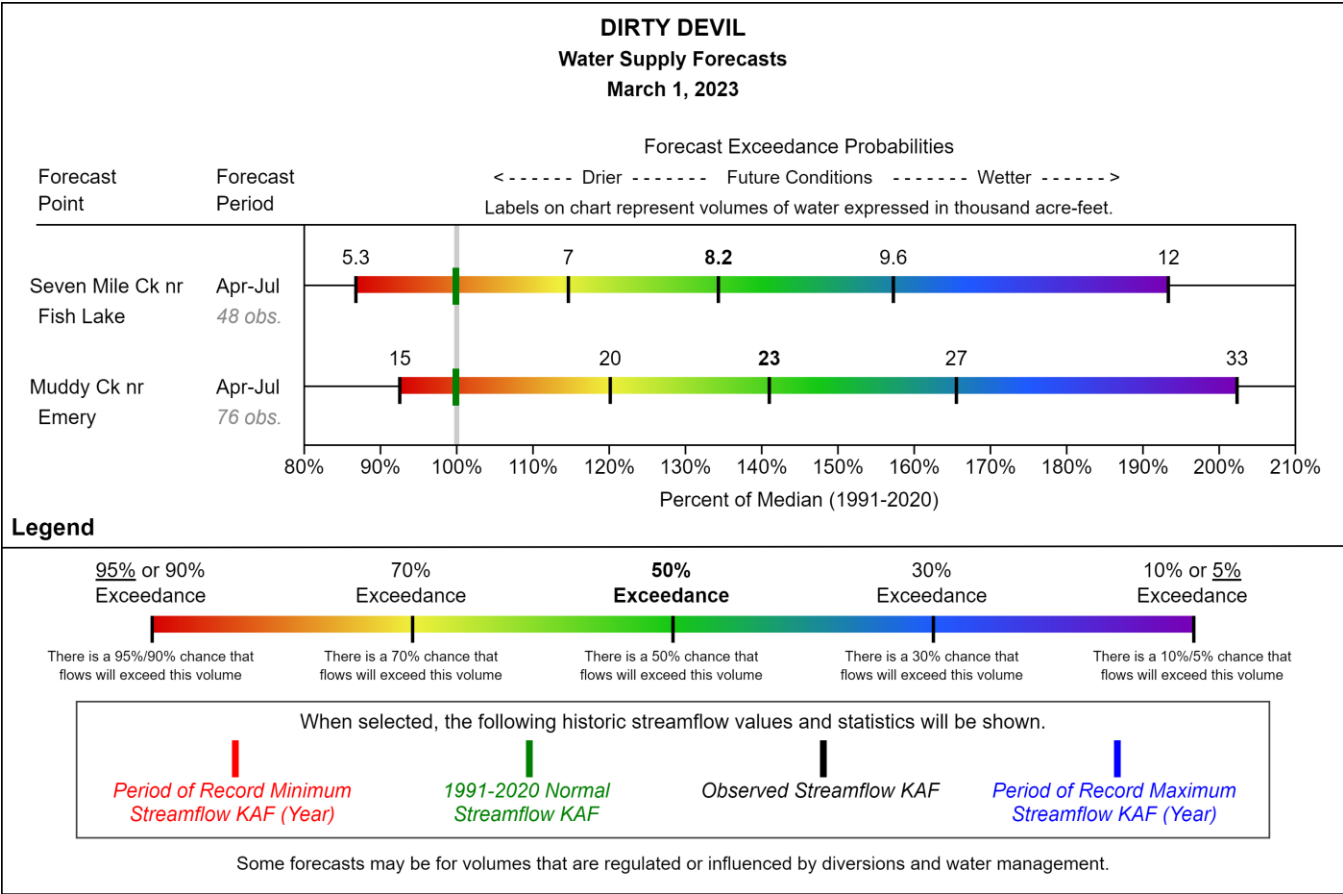
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



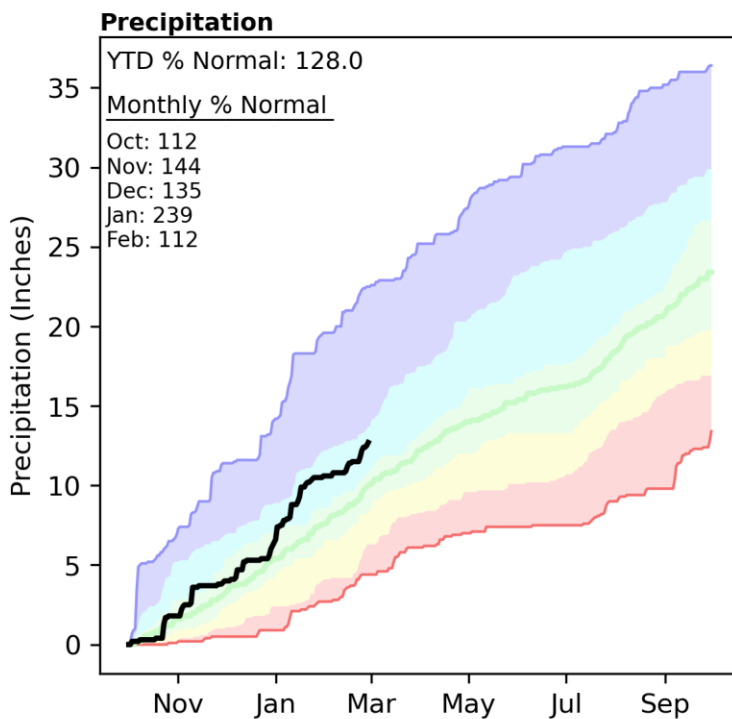
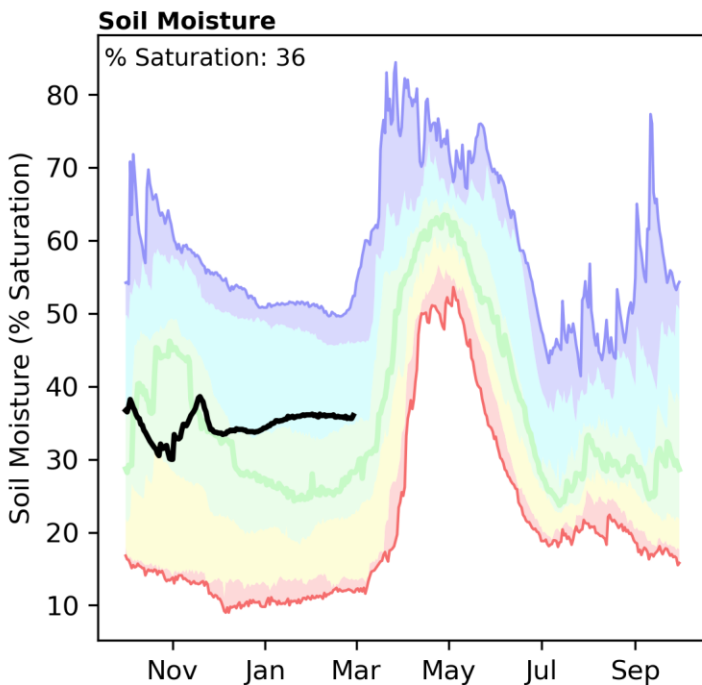
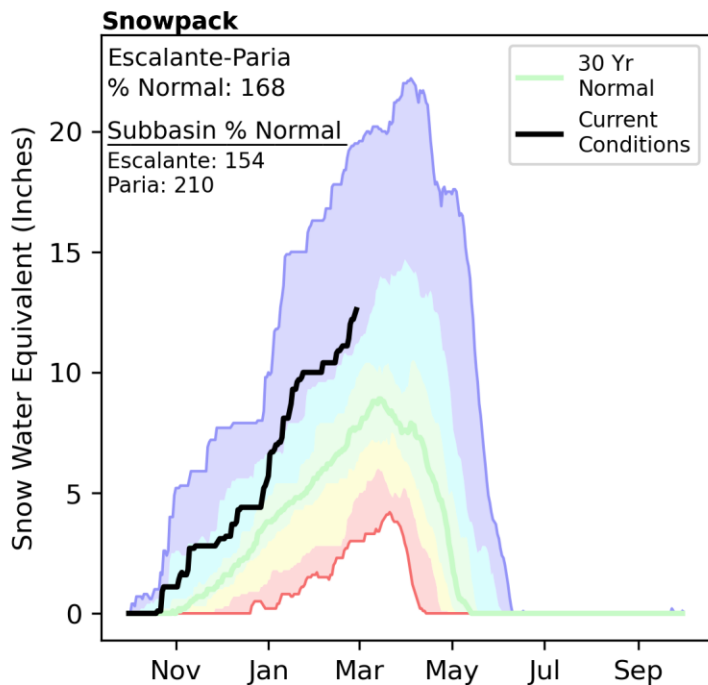
# Dirty Devil



# Dirty Devil



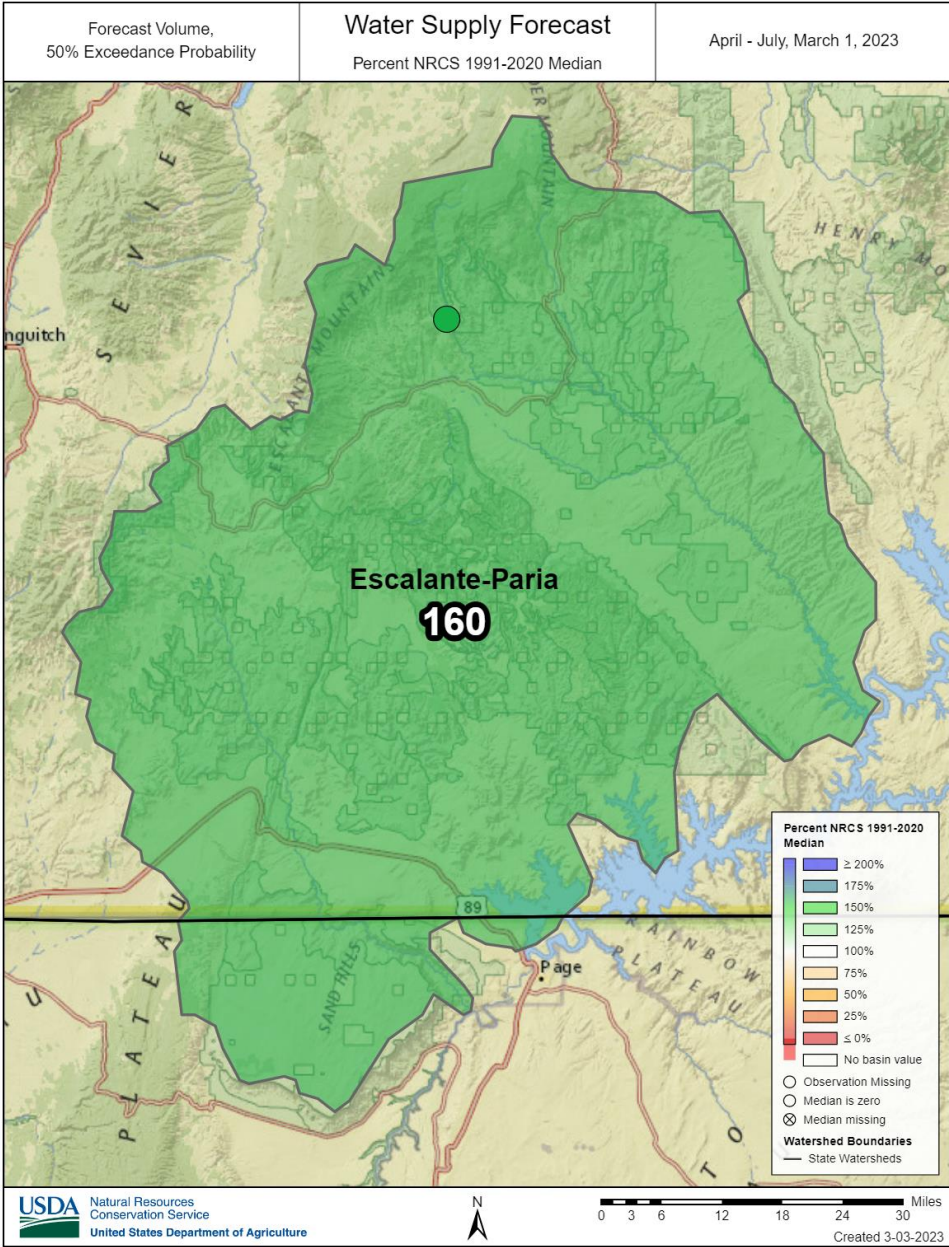
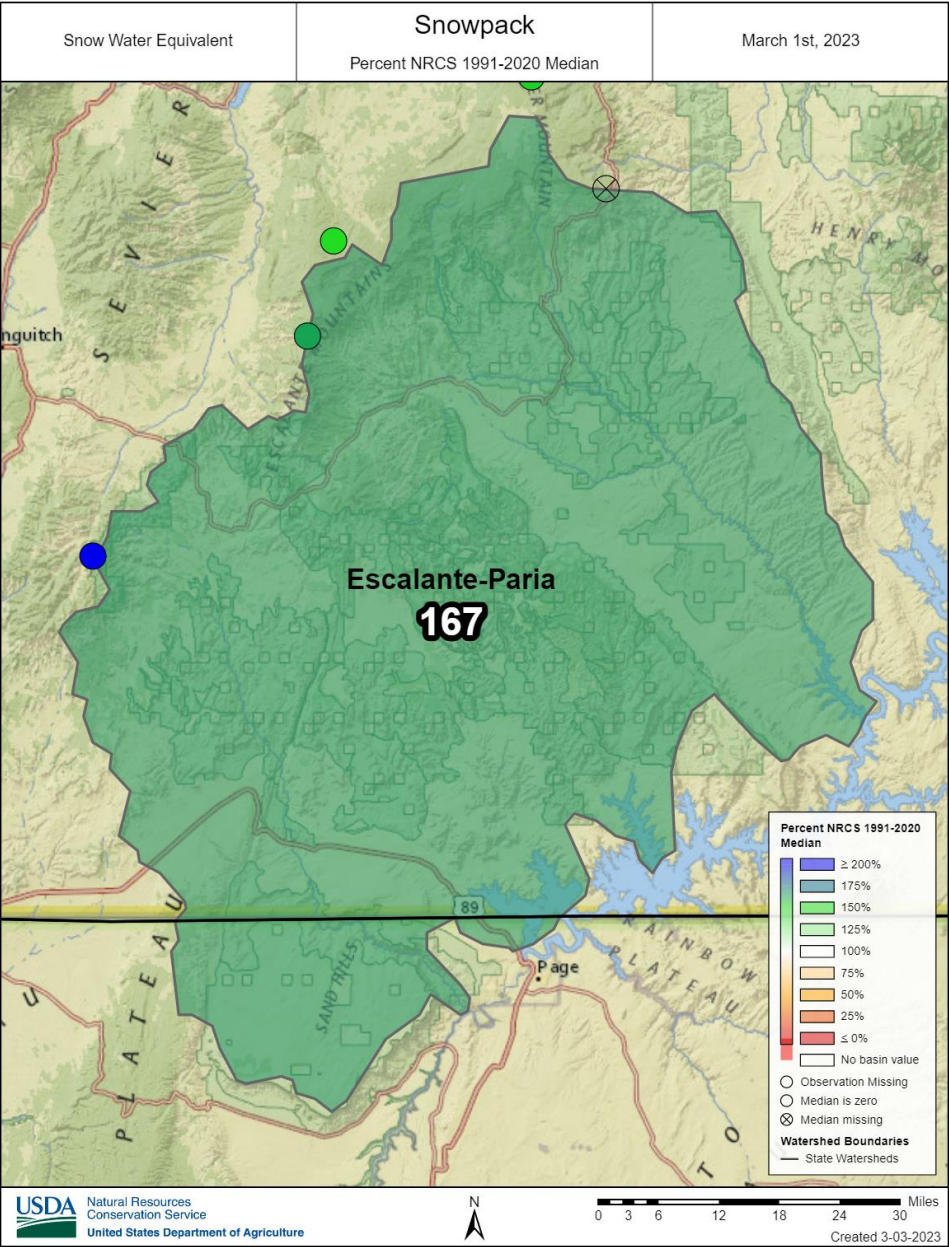
Snowpack in the Escalante and Paria River Basins is well above normal at 168% of median, compared to 91% at this time last year. Precipitation in February was above normal at 112%, which brings the seasonal accumulation (October-February) to 128% of median. Soil moisture is at 36% saturation compared to 28% saturation last year. The forecast streamflow volume (50% exceedence, April-July) for Pine Creek is 160% of normal.



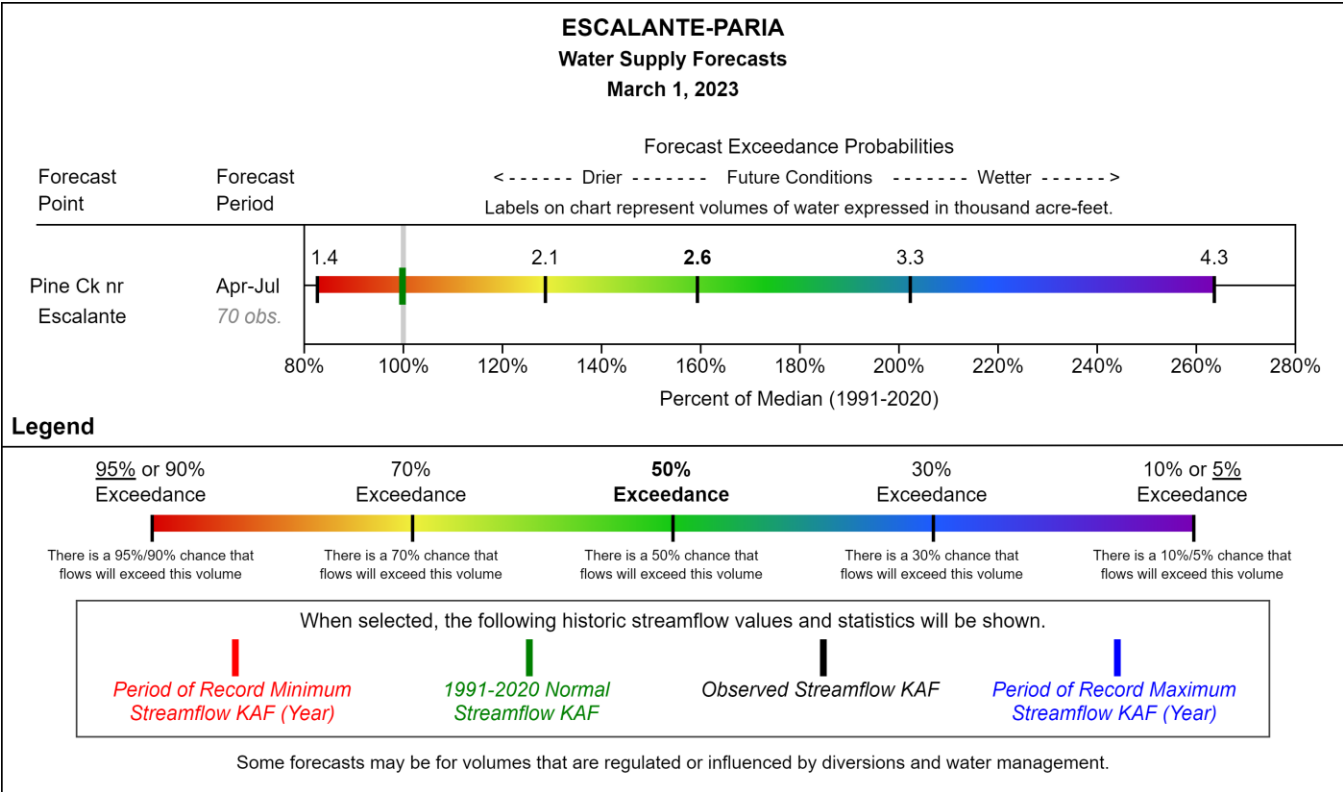
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



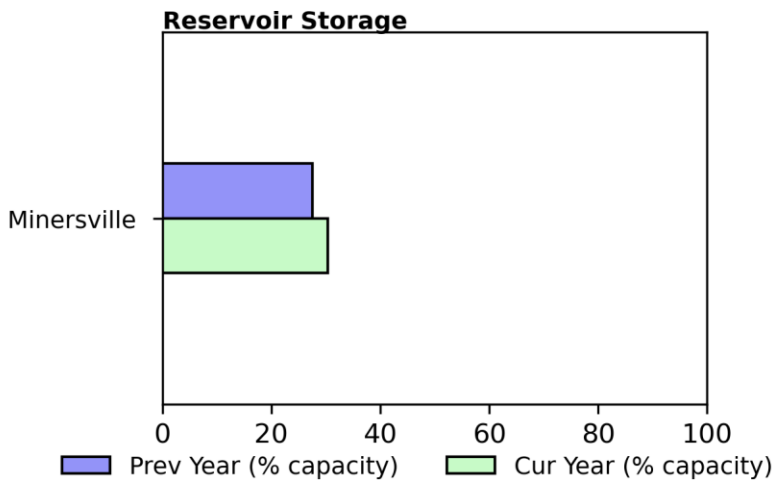
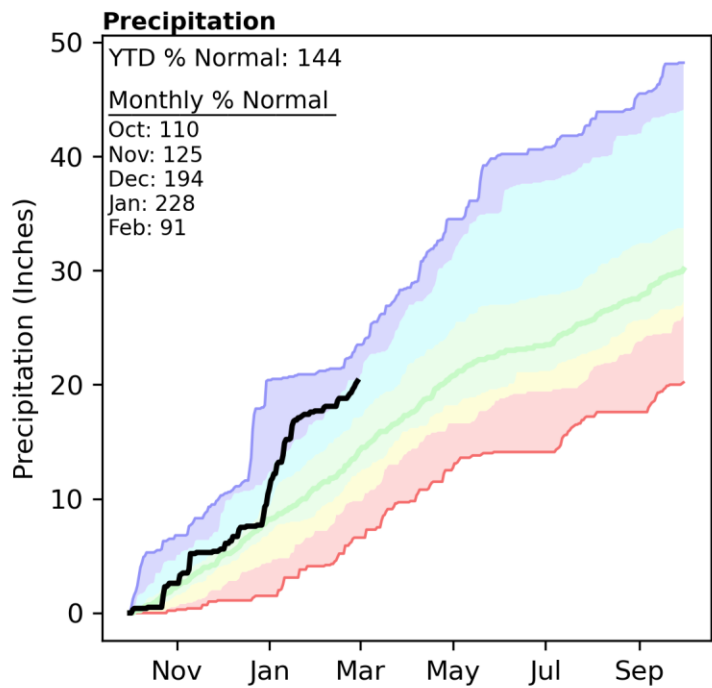
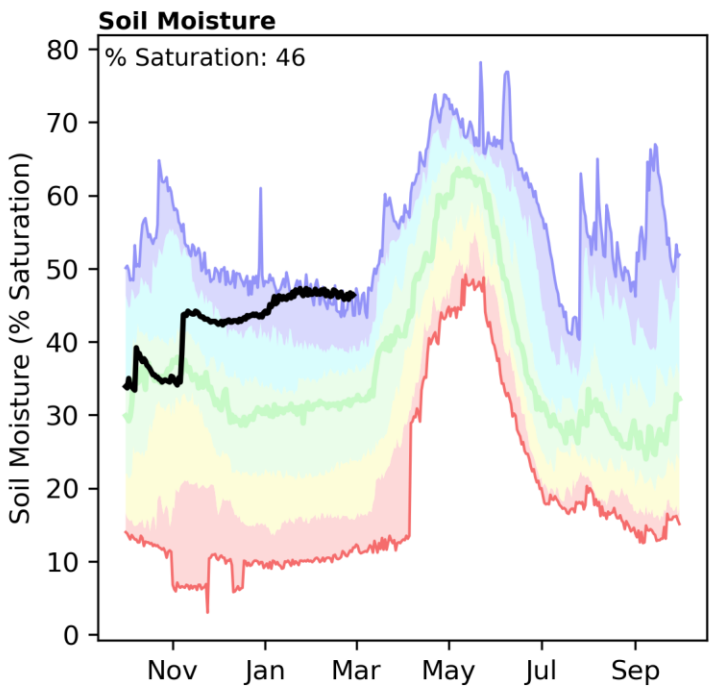
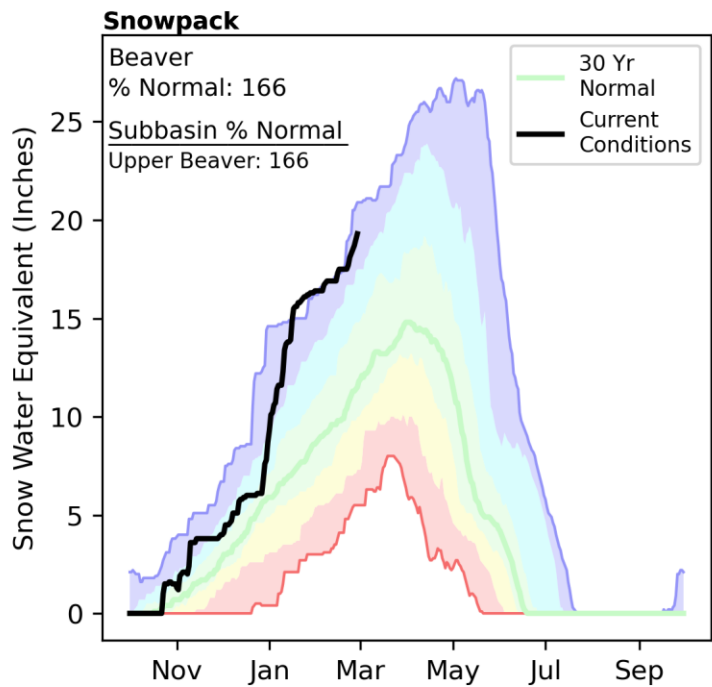
# Escalante-Paria



# Escalante-Paria



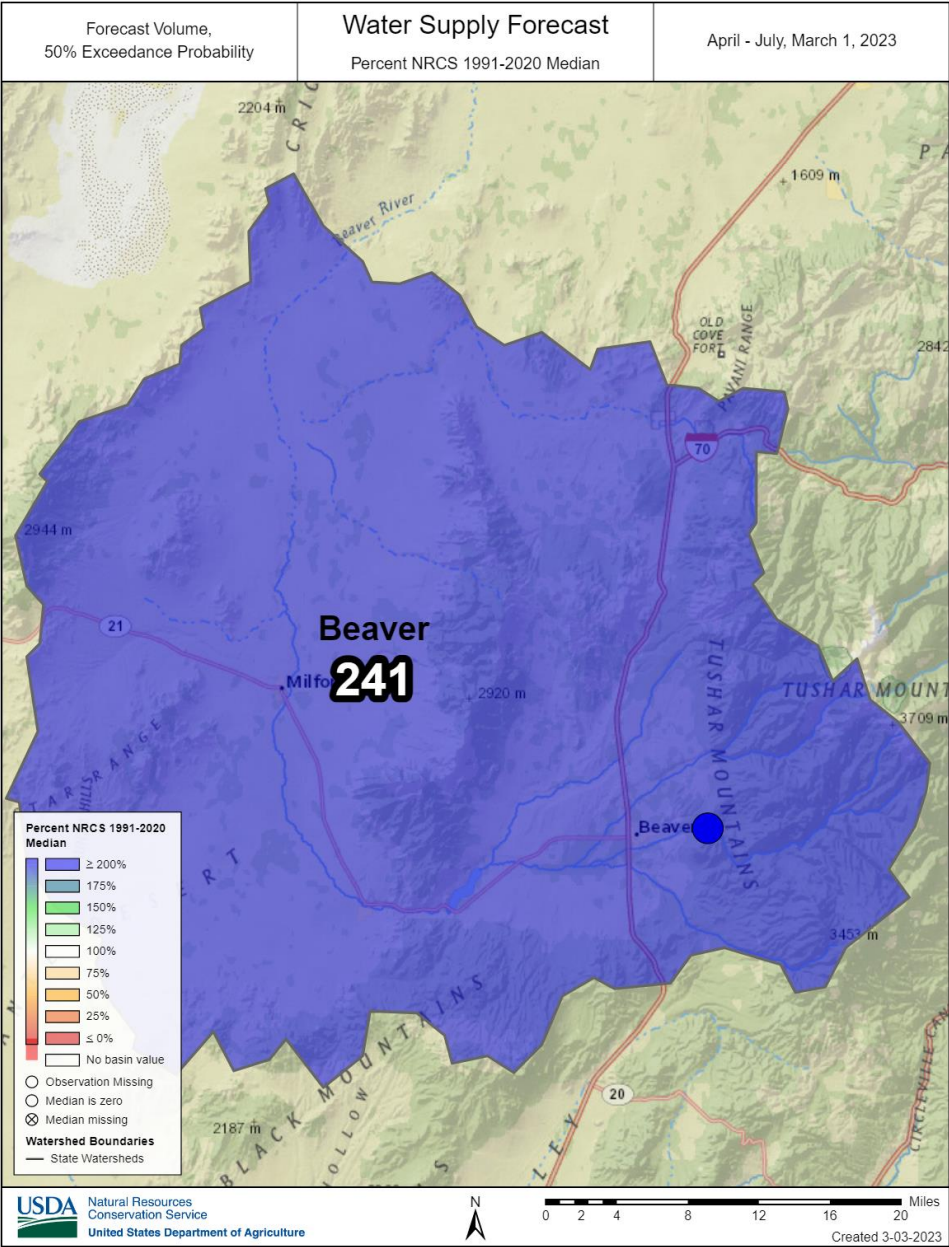
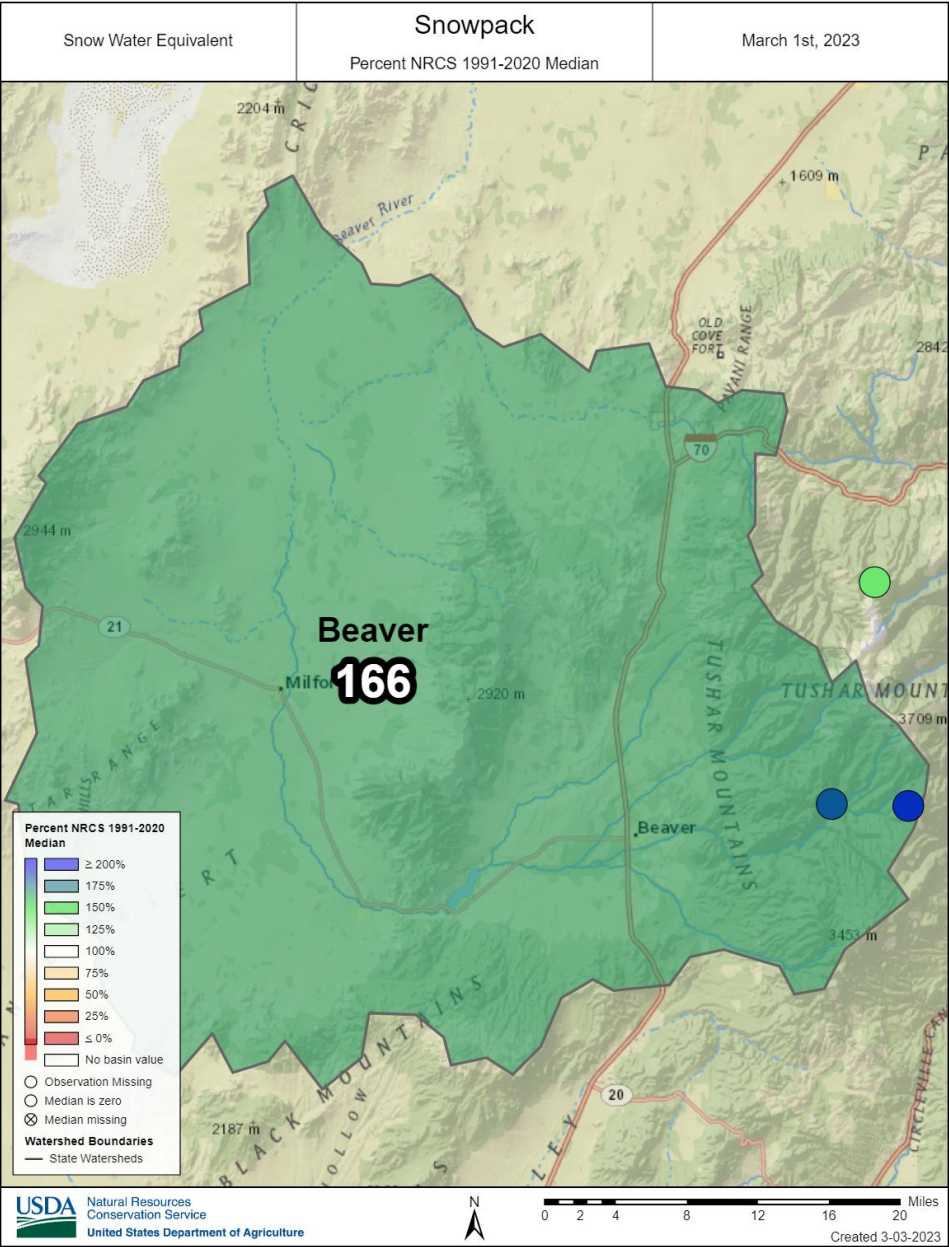
Snowpack in the Beaver River Basin is well above normal at 166% of median, compared to 113% at this time last year. Precipitation in February was about normal at 91%, which brings the seasonal accumulation (October-February) to 144% of median. Soil moisture is at 46% saturation compared to 38% saturation last year. Reservoir storage is 30% of capacity, compared to 27% last year. The forecast streamflow volume (50% exceedence, April-July) for the Beaver River is 241% of normal. The Surface Water Supply Index percentile is 75% for the Beaver River.



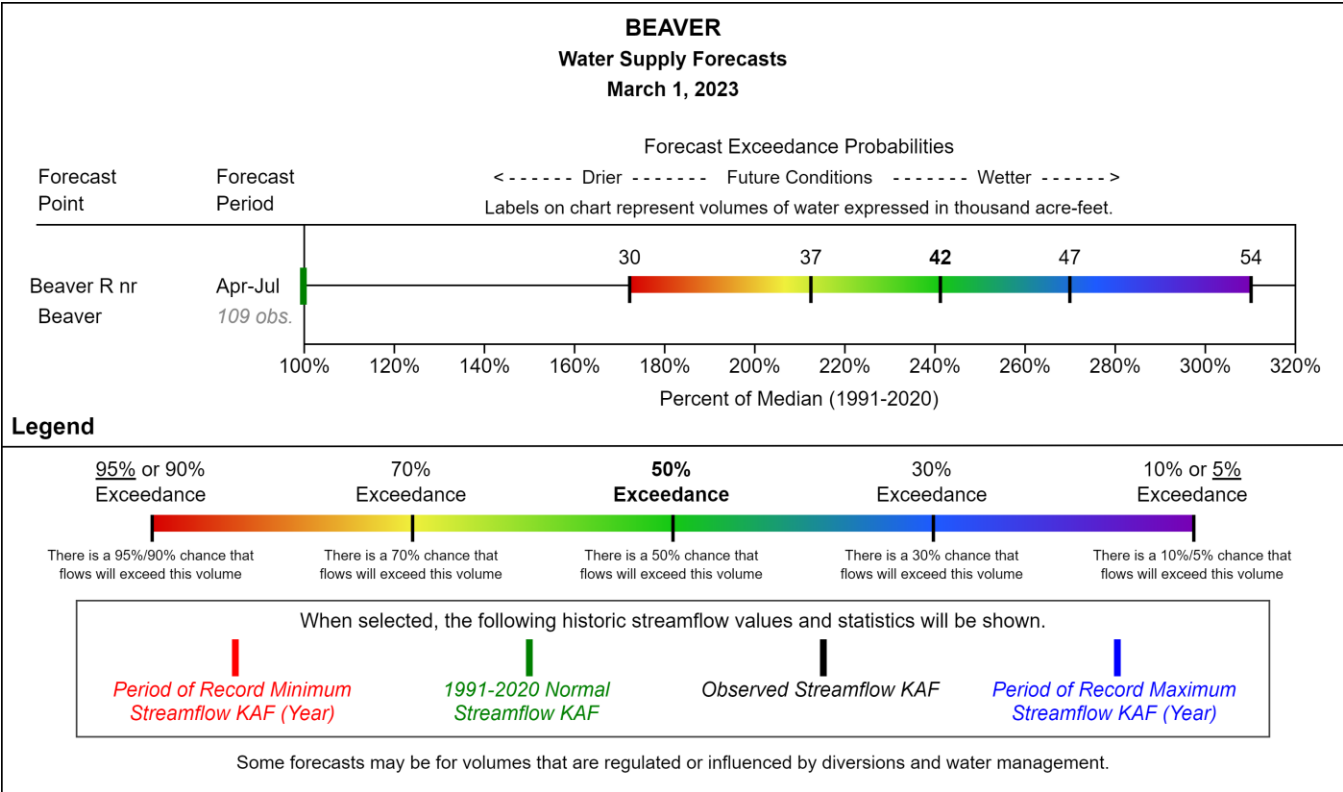
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



# Beaver

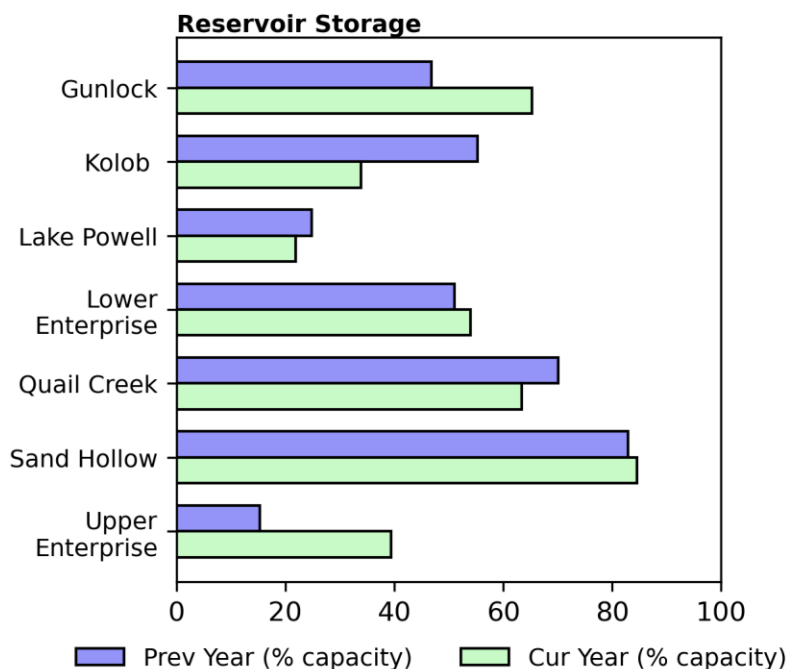
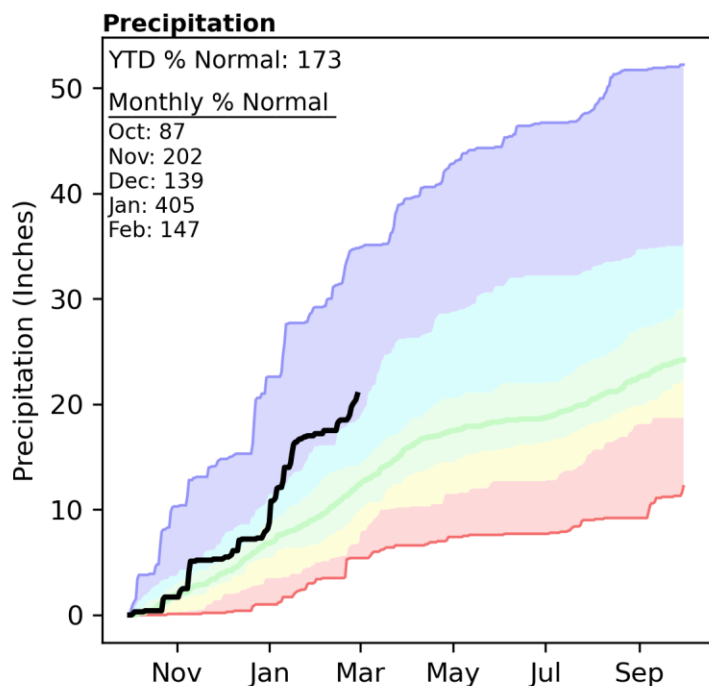
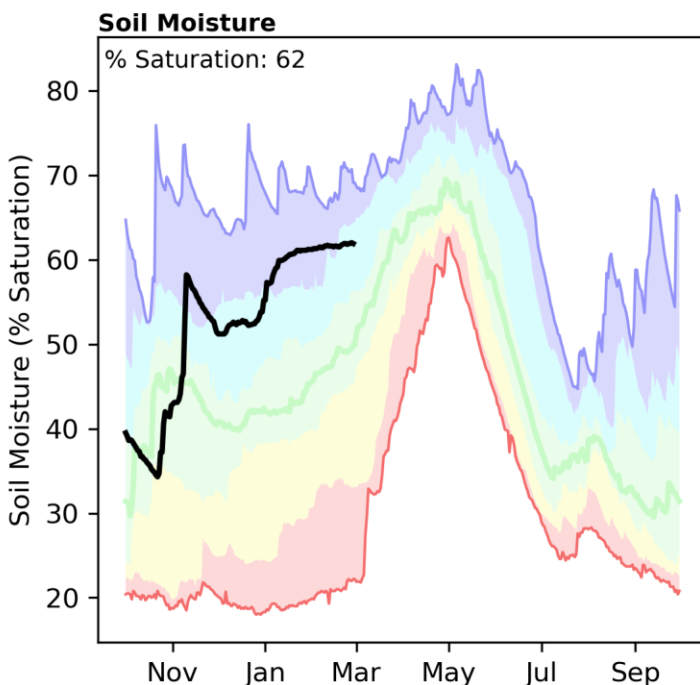
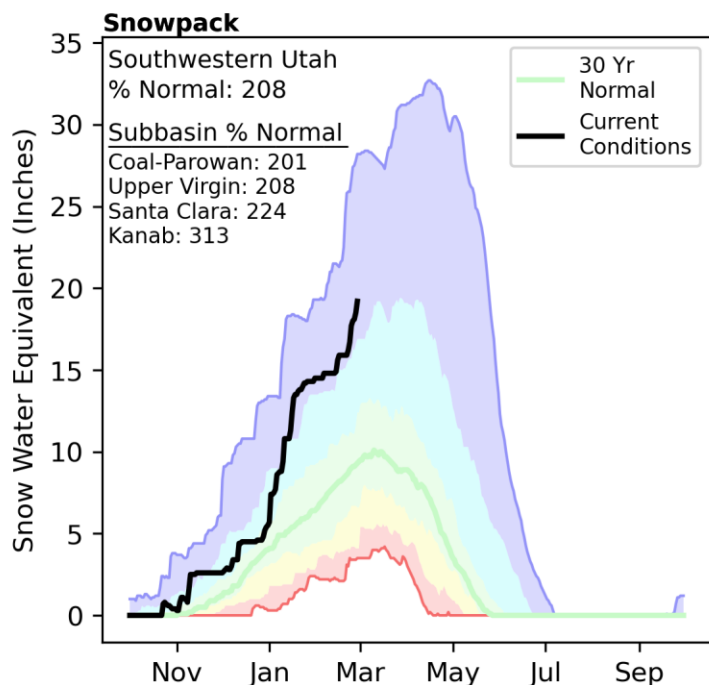


# Beaver



## Southwestern Utah | March 1, 2023

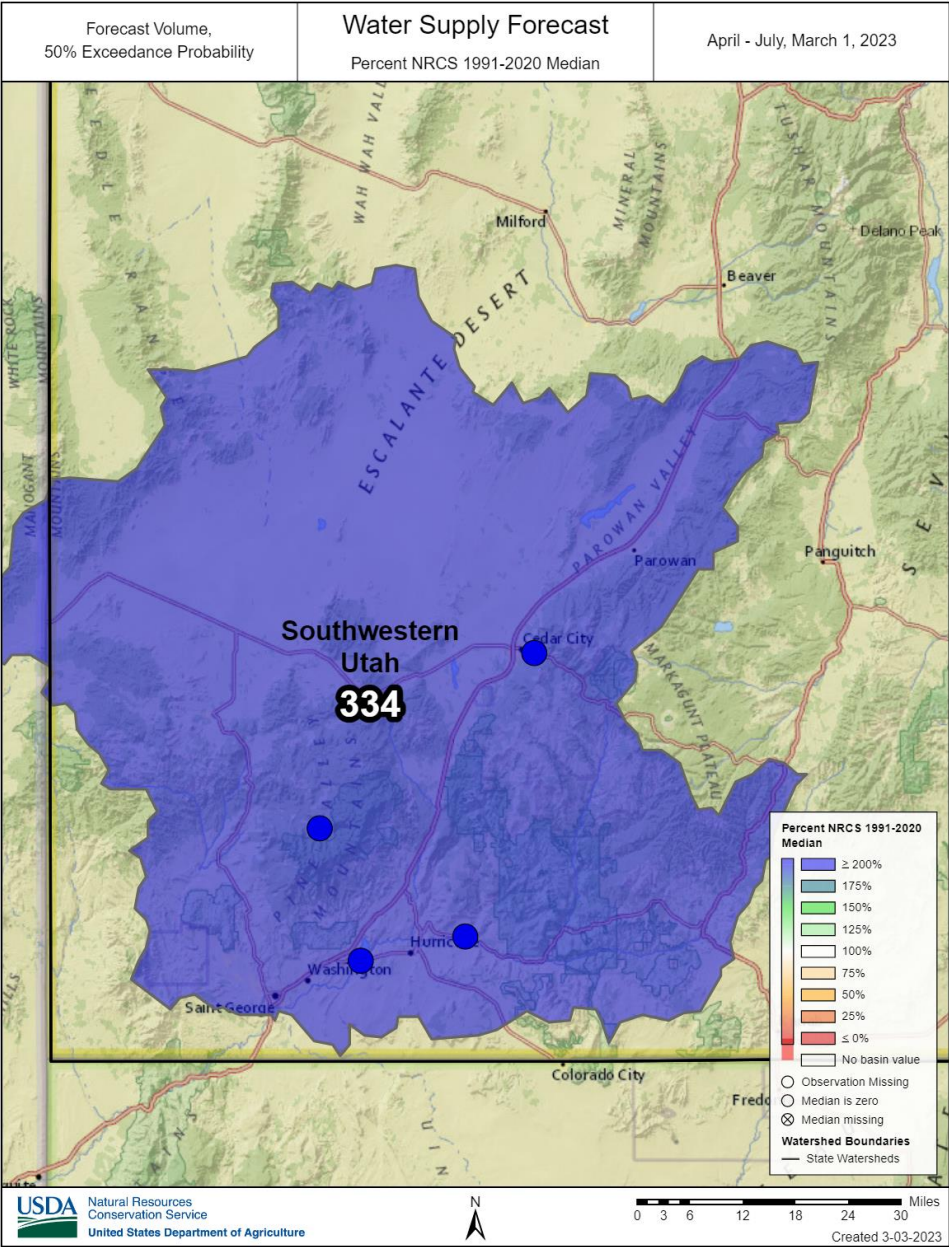
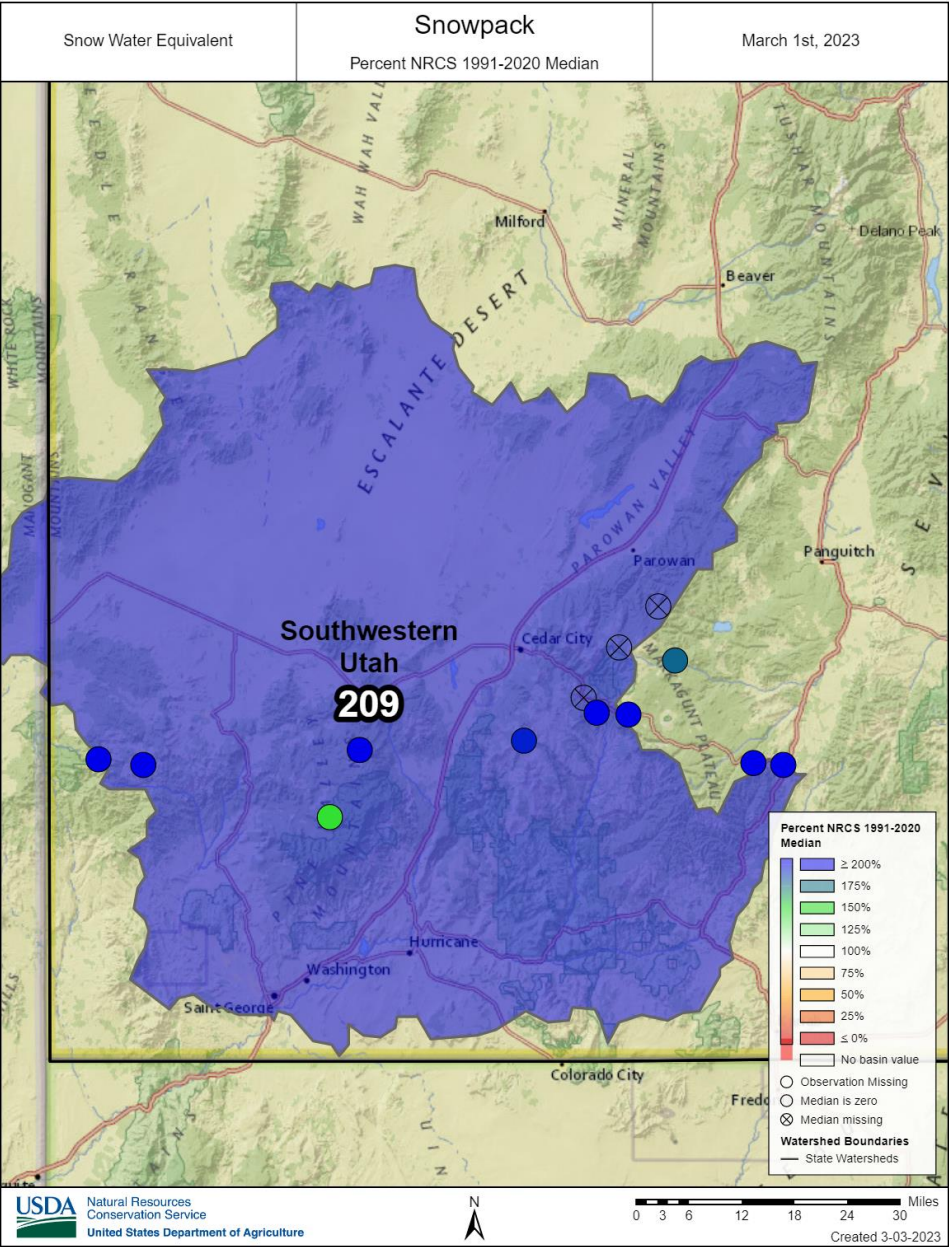
Snowpack in Southwestern Utah is well above normal at 208% of median, compared to 100% at this time last year. Precipitation in February was well above normal at 147%, which brings the seasonal accumulation (October-February) to 173% of median. Soil moisture is at 62% saturation compared to 52% saturation last year. Reservoir storage is 22% of capacity, compared to 25% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 304% to 371% of normal. The Surface Water Supply Index percentile is 78% for the Virgin River.



Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.  
For more information visit: [30 year normal calculation description](#)



# Southwestern Utah





## March 1, 2023 | Utah Reservoir Summary

Watershed/Region	Current Storage (Basinwide KAF)	Reservoir Capacity (Basinwide KAF)	Last Yr % Capacity (Basinwide)	This Yr % Capacity (Basinwide)
Utah (Statewide)	2825	5465	53	51
Utah (Statewide) Incl. Flaming G. & Lk. Powell	10602	33536	35	31
Bear	447	1389	42	32
Weber-Ogden	283	547	40	51
Northeastern Uintas	2500	3852	76	64
Tooele Valley	1	4	53	42
Duchesne	1024	1379	75	74
Provo	773	1334	59	57
San Pitch	0	20	0	4
Price	62	158	30	39
Upper Sevier	95	382	30	25
Southeast UT	1	2	43	77
Beaver	7	23	27	30
Southwest Utah	81	118	67	68

Red (green) shading indicates >5% decrease (increase) in % capacity from this time last year.

Reservoir	Current Storage (KAF)	Reservoir Capacity (KAF)	Last Yr % Capacity	This Yr % Capacity
Bear Lake	414	1302	42	31
Big Sand Wash Reservoir	24	25	83	95
Causey Reservoir	4	7	63	62
Cleveland Lake	3	5	2	61
Currant Creek Reservoir	14	15	95	95
Deer Creek Reservoir	90	149	80	60
East Canyon Reservoir	30	49	56	62
Echo Reservoir	50	73	35	68
Flaming Gorge Reservoir	2457	3749	77	65
Grantsville Reservoir	1	3	58	44
Gunlock	6	10	46	65
Gunnison Reservoir	0	20	0	4
Huntington North Reservoir	3	4	69	92
Hyrum Reservoir	9	15	79	63
Joes Valley Reservoir	30	61	35	48
Jordanelle Reservoir	185	314	48	58
Ken's Lake	1	2	43	77
Kolob Reservoir	1	5	55	33
Lake Powell	5319	24322	24	21
Lost Creek Reservoir	9	22	44	43
Lower Enterprise	1	2	51	54
Meeks Cabin Reservoir	10	32	35	31
Miller Flat Reservoir	1	5	30	26
Millsite	8	16	20	50
Minersville Reservoir	7	23	27	30
Moon Lake Reservoir	27	35	70	75
Otter Creek Reservoir	19	52	44	36
Panguitch Lake	8	22	20	36
Pineview Reservoir	43	110	26	39
Piute Reservoir	20	71	25	28
Porcupine Reservoir	7	11	47	70
Quail Creek	25	40	70	63
Red Fleet Reservoir	10	25	42	39
Rockport Reservoir	37	60	52	61
Sand Hollow Reservoir	42	50	82	84
Scofield Reservoir	15	65	28	24
Settlement Canyon Reservoir	0	1	34	37
Sevier Bridge Reservoir	48	236	29	20
Smith and Morehouse	4	8	57	54
Starvation Reservoir	136	164	85	83
Stateline Reservoir	6	12	47	53
Steinaker Reservoir	16	33	31	49
Strawberry Reservoir	813	1105	75	73
Upper Enterprise	3	10	15	39
Upper Stillwater Reservoir	8	32	26	25
Utah Lake	497	870	60	57
Willard Bay	102	215	41	47
Woodruff Creek	2	4	43	60
Woodruff Narrows Reservoir	13	57	22	23

Red (green) shading indicates >5% decrease (increase) in % capacity from this time last year.



Report Created:  
3/3/2023 10:58:57 AM

**Streamflow Forecast Summary: March 1, 2023**  
**(Medians based On 1991-2020 reference period)**

Forecast Exceedance Probabilities For Risk Assessment Chance that actual volume will exceed forecast								
<b>Raft</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Dunn Ck nr Park Valley	APR-JUL	2.7	3.5	4	167%	4.5	5.3	2.4

- 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

Forecast Exceedance Probabilities For Risk Assessment Chance that actual volume will exceed forecast								
<b>Bear</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Smiths Fk nr Border	APR-JUL	78	94	105	122%	115	131	86
	APR-SEP	91	109	121	121%	133	151	100
Logan R nr Logan	APR-JUL	120	138	150	165%	162	180	91
Big Ck nr Randolph	APR-JUL	2.9	4.9	6.2	194%	7.5	9.5	3.2
Blacksmith Fk nr Hyrum	APR-JUL	40	53	62	214%	71	84	29
Bear R bl Stewart Dam	MAR-JUL	111	168	215	171%	265	350	126
	MAR-SEP	112	174	225	162%	280	375	139
	APR-JUL	82	138	184	160%	235	325	115
	APR-SEP	84	144	194	159%	250	350	122
Little Bear at Paradise	APR-JUL	42	55	64	229%	73	86	28
Bear R ab Resv nr Woodruff	APR-JUL	74	119	149	162%	179	225	92
	APR-SEP	80	128	160	162%	192	240	99
Bear R nr UT-WY State Line	APR-JUL	101	122	136	135%	150	171	101
	APR-SEP	110	133	149	131%	165	188	114

- 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

Forecast Exceedance Probabilities For Risk Assessment Chance that actual volume will exceed forecast								
<b>Weber-Ogden</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Weber R nr Coalville	APR-JUL	114	146	167	180%	188	220	93
Weber R at Gateway	APR-JUL	280	375	435	212%	500	595	205
Rockport Reservoir Inflow	APR-JUL	108	138	158	182%	178	210	87
Pineview Reservoir Inflow	APR-JUL	113	151	176	223%	200	240	79
Chalk Ck at Coalville	APR-JUL	23	38	48	185%	58	73	26
Lost Ck Reservoir Inflow	APR-JUL	14.2	18.3	21	221%	24	28	9.5

SF Ogden R nr Huntsville	APR-JUL	66	78	87	212%	96	108	41
Weber R nr Oakley	APR-JUL	113	133	146	151%	160	180	97
Echo Reservoir Inflow	APR-JUL	136	179	210	175%	235	280	120
East Canyon Ck nr Jeremy Ranch	APR-JUL	14.6	22	26	274%	31	38	9.5
East Canyon Ck nr Morgan	APR-JUL	27	36	42	233%	48	57	18

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

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

<b>Northeastern Uintas</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Ashley Ck nr Vernal	APR-JUL	42	54	61	142%	69	80	43
Flaming Gorge Resvr Local BI Fontenelle <sup>2</sup>								
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	18.7	24	27	137%	30	35	19.7
Flaming Gorge Reservoir Inflow <sup>2</sup>	APR-JUL	475	695	870	88%	1060	1380	990
Blacks Fk nr Robertson	APR-JUL	64	82	95	104%	108	126	91
Stateline Reservoir Inflow <sup>2</sup>	APR-JUL	20	26	30	115%	35	42	26

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

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

<b>Tooele Valley-Vernon Creek</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Vernon Ck nr Vernon	APR-JUL	1.24	1.78	2.2	297%	2.7	3.4	0.74
S Willow Ck nr Grantsville	APR-JUL	4.1	4.9	5.4	216%	6	6.7	2.5

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

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

<b>Duchesne</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Currant Ck Reservoir Inflow <sup>2</sup>	APR-JUL	19.6	26	30	252%	35	43	11.9
Lake Fk R bl Moon Lk nr Mountain Home <sup>2</sup>	APR-JUL	57	69	78	137%	87	102	57
Duchesne R nr Randlett <sup>2</sup>	APR-JUL	310	435	530	208%	635	810	255

Duchesne R nr Tabiona <sup>2</sup>	APR-JUL	97	119	135	155%	152	179	87
Duchesne R at Myton <sup>2</sup>	APR-JUL	275	375	450	209%	535	670	215
Duchesne R ab Knight Diversion <sup>2</sup>	APR-JUL	179	215	245	151%	275	320	162
Uinta R bl Powerplant Diversion nr Neola	APR-JUL	59	81	97	152%	115	144	64
WF Duchesne R at VAT Diversion <sup>2</sup>	APR-JUL	19.5	24	27	186%	30	36	14.5
Yellowstone R nr Altonah	APR-JUL	51	65	75	134%	86	104	56
Strawberry R nr Soldier Springs <sup>2</sup>	APR-JUL	49	69	85	236%	103	131	36
Rock Ck nr Mountain Home <sup>2</sup>	APR-JUL	82	98	110	141%	122	142	78
Whiterocks R nr Whiterocks	APR-JUL	44	58	69	160%	80	99	43
Upper Stillwater Reservoir Inflow <sup>2</sup>	APR-JUL	65	81	93	137%	106	126	68
Strawberry R nr Duchesne <sup>2</sup>	APR-JUL	94	134	165	311%	199	255	53

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

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

<b>Provo-Utah Lake-Jordan</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Big Cottonwood Ck nr SLC	APR-JUL	37	45	50	172%	56	65	29
Mill Ck nr SLC	APR-JUL	5.7	7.6	9	209%	10.5	13.1	4.3
American Fk ab Upper Powerplant	APR-JUL	32	40	45	234%	50	58	19.2
City Ck nr SLC	APR-JUL	5.8	7.6	9	170%	10.5	12.8	5.3
Salt Ck at Nephi	APR-JUL	13	17.2	20	426%	23	27	4.7
Utah Lake Inflow	APR-JUL	80	240	420	231%	680	1220	182
Emigration Ck nr SLC	APR-JUL	2.7	4.2	5.4	235%	6.8	9.1	2.3
Parleys Ck nr SLC	APR-JUL	12.4	17.3	21	241%	25	32	8.7
Little Cottonwood Ck nr SLC	APR-JUL	40	46	50	161%	54	61	31
Provo R bl Deer Ck Dam	APR-JUL	129	158	177	157%	197	225	113
Provo R at Hailstone	APR-JUL	98	121	138	166%	156	184	83
Provo R at Woodland	APR-JUL	98	117	130	153%	144	166	85
Dell Fk nr SLC	APR-JUL	4.4	6	7.2	200%	8.5	10.6	3.6
W Canyon Ck nr Cedar Fort	APR-JUL	1.06	2	2.7	284%	3.4	4.3	0.95
Spanish Fk at Castilla	APR-JUL	46	71	88	293%	105	130	30



- 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

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

Lower Sevier	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Sevier R nr Gunnison	APR-JUL	49	87	120	400%	158	225	30

- 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

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

San Pitch	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Manti Ck bl Dugway Ck nr Manti	APR-JUL	13.3	17.2	19.8	152%	22	26	13

- 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

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

Price-San Rafael	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Joes Valley Reservoir Inflow <sup>2</sup>	APR-JUL	49	61	69	157%	78	92	44
Price R nr Scofield Reservoir <sup>2</sup>	APR-JUL	50	61	70	269%	79	94	26
Ferron Ck (Upper Station) nr Ferron	APR-JUL	33	40	45	141%	51	59	32
Electric Lake Inflow <sup>2</sup>	APR-JUL	15	18.5	21	253%	24	28	8.3
Huntington Ck nr Huntington <sup>2</sup>	APR-JUL	44	54	62	172%	70	84	36
White R bl Tabbyune Creek	APR-JUL	14.8	20	24	333%	28	35	7.2
Fish Ck ab Reservoir nr Scofield	APR-JUL	36	44	50	253%	57	67	19.8

- 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

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

Upper Sevier	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Mammoth Ck nr Hatch	APR-JUL	40	49	55	279%	61	70	19.7
Sevier R nr Kingston	APR-JUL	42	60	75	510%	91	118	14.7

EF Sevier R nr Kingston	APR-JUL	13	21	28	209%	36	49	13.4
Sevier R at Hatch	APR-JUL	63	80	92	271%	104	121	34
Clear Ck ab Diversions nr Sevier	APR-JUL	22	28	33	243%	37	44	13.6
Salina Ck nr Emery	APR-JUL	7	8.5	9.5	170%	10.5	12	5.6
Sevier R nr Gunnison	APR-JUL	49	87	120	400%	158	225	30

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

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

<b>Southeastern Utah</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Colorado R nr Cisco <sup>2</sup>	APR-JUL	3070	3920	4550	121%	5240	6330	3750
Green R at Green River, UT <sup>2</sup>	APR-JUL	2430	3160	3710	142%	4310	5260	2610
Mill Ck at Sheley Tunnel nr Moab	APR-JUL	5.2	6.8	8	242%	9.3	11.5	3.3
South Ck ab Resv nr Monticello	APR-JUL	0.83	1.27	1.63	398%	2	2.7	0.41

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

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

<b>Dirty Devil</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Muddy Ck nr Emery	APR-JUL	15.1	19.6	23	141%	27	33	16.3
Seven Mile Ck nr Fish Lake	APR-JUL	5.3	7	8.2	134%	9.6	11.8	6.1

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

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

<b>Beaver</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Beaver R nr Beaver	APR-JUL	30	37	42	241%	47	54	17.4

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

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

<b>Southwestern Utah</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Santa Clara R nr Pine Valley	APR-JUL	6.5	8.7	10.4	325%	12.2	15.2	3.2
Virgin R at Virgin	APR-JUL	78	98	113	314%	129	154	36
Coal Ck nr Cedar City	APR-JUL	29	34	38	304%	42	47	12.5
Virgin R nr Hurricane	APR-JUL	70	96	115	371%	136	171	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

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

<b>Escalante-Paria</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Pine Ck nr Escalante	APR-JUL	1.35	2.1	2.6	160%	3.3	4.3	1.63

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

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

<b>State of Utah</b>	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Green R at Green River, UT <sup>2</sup>	APR-JUL	2430	3160	3710	142%	4310	5260	2610
Smiths Fk nr Border	APR-JUL	78	94	105	122%	115	131	86
	APR-SEP	91	109	121	121%	133	151	100
Lake Fk R bl Moon Lk nr Mountain Home <sup>2</sup>	APR-JUL	57	69	78	137%	87	102	57
Sevier R nr Kingston	APR-JUL	42	60	75	510%	91	118	14.7
White R bl Tabbyune Creek	APR-JUL	14.8	20	24	333%	28	35	7.2
Seven Mile Ck nr Fish Lake	APR-JUL	5.3	7	8.2	134%	9.6	11.8	6.1
Spanish Fk at Castilla	APR-JUL	46	71	88	293%	105	130	30
Bear R bl Stewart Dam	MAR-JUL	111	168	215	171%	265	350	126
	MAR-SEP	112	174	225	162%	280	375	139
	APR-JUL	82	138	184	160%	235	325	115
	APR-SEP	84	144	194	159%	250	350	122
Weber R nr Oakley	APR-JUL	113	133	146	151%	160	180	97
Provo R bl Deer Ck Dam	APR-JUL	129	158	177	157%	197	225	113
Weber R nr Coalville	APR-JUL	114	146	167	180%	188	220	93
Uinta R bl Powerplant Diversion nr Neola	APR-JUL	59	81	97	152%	115	144	64
Emigration Ck nr SLC	APR-JUL	2.7	4.2	5.4	235%	6.8	9.1	2.3



W Canyon Ck nr Cedar Fort								
	APR-JUL	1.06	2	2.7	284%	3.4	4.3	0.95
Beaver R nr Beaver								
	APR-JUL	30	37	42	241%	47	54	17.4
Currant Ck Reservoir Inflow <sup>2</sup>								
	APR-JUL	19.6	26	30	252%	35	43	11.9
Mill Ck nr SLC								
	APR-JUL	5.7	7.6	9	209%	10.5	13.1	4.3
Price R nr Scofield Reservoir <sup>2</sup>								
	APR-JUL	50	61	70	269%	79	94	26
S Willow Ck nr Grantsville								
	APR-JUL	4.1	4.9	5.4	216%	6	6.7	2.5
Provo R at Woodland								
	APR-JUL	98	117	130	153%	144	166	85
City Ck nr SLC								
	APR-JUL	5.8	7.6	9	170%	10.5	12.8	5.3
WF Duchesne R at VAT Diversion <sup>2</sup>								
	APR-JUL	19.5	24	27	186%	30	36	14.5
Echo Reservoir Inflow								
	APR-JUL	136	179	210	175%	235	280	120
Pineview Reservoir Inflow								
	APR-JUL	113	151	176	223%	200	240	79
Rock Ck nr Mountain Home <sup>2</sup>								
	APR-JUL	82	98	110	141%	122	142	78
Electric Lake Inflow <sup>2</sup>								
	APR-JUL	15	18.5	21	253%	24	28	8.3
Utah Lake Inflow								
	APR-JUL	80	240	420	231%	680	1220	182
Parleys Ck nr SLC								
	APR-JUL	12.4	17.3	21	241%	25	32	8.7
Coal Ck nr Cedar City								
	APR-JUL	29	34	38	304%	42	47	12.5
Whiterocks R nr Whiterocks								
	APR-JUL	44	58	69	160%	80	99	43
Bear R nr UT-WY State Line								
	APR-JUL	101	122	136	135%	150	171	101
	APR-SEP	110	133	149	131%	165	188	114
South Ck ab Resv nr Monticello								
	APR-JUL	0.83	1.27	1.63	398%	2	2.7	0.41
Flaming Gorge Resvr Local BI Fontenelle <sup>2</sup>								
Virgin R nr Hurricane								
	APR-JUL	70	96	115	371%	136	171	31
Clear Ck ab Diversions nr Sevier								
	APR-JUL	22	28	33	243%	37	44	13.6
Dell Fk nr SLC								
	APR-JUL	4.4	6	7.2	200%	8.5	10.6	3.6
Blacks Fk nr Robertson								
	APR-JUL	64	82	95	104%	108	126	91
American Fk ab Upper Powerplant								
	APR-JUL	32	40	45	234%	50	58	19.2
Duchesne R nr Randlett <sup>2</sup>								
	APR-JUL	310	435	530	208%	635	810	255
Duchesne R at Myton <sup>2</sup>								
	APR-JUL	275	375	450	209%	535	670	215
EF Sevier R nr Kingston								
	APR-JUL	13	21	28	209%	36	49	13.4
Ashley Ck nr Vernal								
	APR-JUL	42	54	61	142%	69	80	43
Virgin R at Virgin								
	APR-JUL	78	98	113	314%	129	154	36
Sevier R at Hatch								
	APR-JUL	63	80	92	271%	104	121	34

Salt Ck at Nephi	APR-JUL	13	17.2	20	426%	23	27	4.7
Little Bear at Paradise	APR-JUL	42	55	64	229%	73	86	28
Big Ck nr Randolph	APR-JUL	2.9	4.9	6.2	194%	7.5	9.5	3.2
Fish Ck ab Reservoir nr Scofield	APR-JUL	36	44	50	253%	57	67	19.8
Santa Clara R nr Pine Valley	APR-JUL	6.5	8.7	10.4	325%	12.2	15.2	3.2
Weber R at Gateway	APR-JUL	280	375	435	212%	500	595	205
Mammoth Ck nr Hatch	APR-JUL	40	49	55	279%	61	70	19.7
Pine Ck nr Escalante	APR-JUL	1.35	2.1	2.6	160%	3.3	4.3	1.63
Salina Ck nr Emery	APR-JUL	7	8.5	9.5	170%	10.5	12	5.6
Dunn Ck nr Park Valley	APR-JUL	2.7	3.5	4	167%	4.5	5.3	2.4
Stateline Reservoir Inflow <sup>2</sup>	APR-JUL	20	26	30	115%	35	42	26
Blacksmith Fk nr Hyrum	APR-JUL	40	53	62	214%	71	84	29
East Canyon Ck nr Jeremy Ranch	APR-JUL	14.6	22	26	274%	31	38	9.5
Little Cottonwood Ck nr SLC	APR-JUL	40	46	50	161%	54	61	31
Muddy Ck nr Emery	APR-JUL	15.1	19.6	23	141%	27	33	16.3
Logan R nr Logan	APR-JUL	120	138	150	165%	162	180	91
Ferron Ck (Upper Station) nr Ferron	APR-JUL	33	40	45	141%	51	59	32
Duchesne R nr Tabiona <sup>2</sup>	APR-JUL	97	119	135	155%	152	179	87
Duchesne R ab Knight Diversion <sup>2</sup>	APR-JUL	179	215	245	151%	275	320	162
Lost Ck Reservoir Inflow	APR-JUL	14.2	18.3	21	221%	24	28	9.5
Colorado R nr Cisco <sup>2</sup>	APR-JUL	3070	3920	4550	121%	5240	6330	3750
Bear R ab Resv nr Woodruff	APR-JUL	74	119	149	162%	179	225	92
	APR-SEP	80	128	160	162%	192	240	99
Provo R at Hailstone	APR-JUL	98	121	138	166%	156	184	83
Strawberry R nr Duchesne <sup>2</sup>	APR-JUL	94	134	165	311%	199	255	53
Manti Ck bl Dugway Ck nr Manti	APR-JUL	13.3	17.2	19.8	152%	22	26	13
Joes Valley Reservoir Inflow <sup>2</sup>	APR-JUL	49	61	69	157%	78	92	44
Big Cottonwood Ck nr SLC	APR-JUL	37	45	50	172%	56	65	29
Rockport Reservoir Inflow	APR-JUL	108	138	158	182%	178	210	87
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	18.7	24	27	137%	30	35	19.7
Chalk Ck at Coalville	APR-JUL	23	38	48	185%	58	73	26
SF Ogden R nr Huntsville	APR-JUL	66	78	87	212%	96	108	41

Strawberry R nr Soldier Springs <sup>2</sup>							
APR-JUL	49	69	85	236%	103	131	36
Upper Stillwater Reservoir Inflow <sup>2</sup>							
APR-JUL	65	81	93	137%	106	126	68
Huntington Ck nr Huntington <sup>2</sup>							
APR-JUL	44	54	62	172%	70	84	36
Vernon Ck nr Vernon							
APR-JUL	1.24	1.78	2.2	297%	2.7	3.4	0.74
East Canyon Ck nr Morgan							
APR-JUL	27	36	42	233%	48	57	18
Mill Ck at Sheley Tunnel nr Moab							
APR-JUL	5.2	6.8	8	242%	9.3	11.5	3.3
Yellowstone R nr Altonah							
APR-JUL	51	65	75	134%	86	104	56
Sevier R nr Gunnison							
APR-JUL	49	87	120	400%	158	225	30
Flaming Gorge Reservoir Inflow <sup>2</sup>							
APR-JUL	475	695	870	88%	1060	1380	990

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

## Appendix A: Data used in SWSI Calculations

Watershed/ Region	USGS Gauging Station(s)	Reservoir(s)	Start Date
<b>Bear</b>	Bear R nr Ut-Wy State Line	Bear Lake	1981
<b>Woodruff Narrows</b>	Bear R ab Resv nr Woodruff	Woodruff Narrows Reservoir	1986
<b>Little Bear</b>	Little Bear R at Paradise	Hyrum Reservoir	1993
<b>Ogden</b>	Pineview Reservoir Inflow	Pineview Reservoir, Causey Reservoir	1981
<b>Weber</b>	Weber R at Gateway	East Canyon Reservoir, Echo Reservoir, Lost Creek Reservoir, Rockport Reservoir, Smith And Morehouse Reservoir, Willard Bay	1981
<b>Provo</b>	Provo R at Woodland	Utah Lake, Deer Creek Reservoir, Jordanelle Reservoir	1995
<b>Western Uintas</b>	Yellowstone R nr Altonah	Starvation Reservoir, Moon Lake Reservoir, Upper Stillwater Reservoir	1981
<b>Eastern Uintas</b>	Big Brush Ck ab Red Fleet Reservoir, Ashley Ck nr Vernal, Whiterocks R nr Whiterocks	Red Fleet Reservoir, Steinaker Reservoir	1981
<b>Blacks Fork</b>	Blacks Fk nr Robertson	Meeks Cabin Reservoir	1984
<b>Smiths Fork</b>	East Fork Smiths Fork bl Stateline Res	Stateline Reservoir	1984
<b>Price</b>	Fish Ck ab Reservoir nr Scofield	Scofield Reservoir	1981
<b>Joes Valley</b>	Seely Ck bl Joes Valley Resv	Joes Valley Reservoir	1981
<b>Ferron Creek</b>	Ferron Ck Upper Station nr Ferron	Millsite	1981
<b>Moab</b>	Mill Ck at Sheley Tunnel nr Moab	Ken's Lake	1988
<b>Upper Sevier</b>	Sevier R nr Kingston, EF Sevier R nr Kingston	Piute Reservoir, Otter Creek Reservoir	1981
<b>San Pitch</b>	Manti Ck bl Dugway Ck nr Manti	Gunnison Reservoir	1981
<b>Lower Sevier</b>	Sevier R nr Gunnison	Sevier Bridge Reservoir	1981
<b>Beaver River</b>	Beaver R nr Beaver	Minersville Reservoir	1981
<b>Virgin River</b>	Virgin R at Virgin, Santa Clara R nr Pine Valley	Quail Creek, Gunlock	1993



# 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](mailto: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.

The U.S. Department of Agriculture (USDA) prohibits discrimination against its customers. If you believe you experienced discrimination when obtaining services from USDA, participating in a USDA program, or participating in a program that receives financial assistance from USDA, you may file a complaint with USDA. Information about how to file a discrimination complaint is available from the Office of the Assistant Secretary for Civil Rights. USDA prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex (including gender identity and expression), marital status, familial status, parental status, religion, sexual orientation, political beliefs, genetic information, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) To file a complaint of discrimination, complete, sign, and mail a program discrimination complaint form, available at any USDA office location or online, or write to: USDA Office of the Assistant Secretary for Civil Rights 1400 Independence Avenue, SW, Washington, DC 20250-9410 Or call toll free at (866) 632-9992 (voice) to obtain additional information, the appropriate office or to request documents. Individuals who are deaf, hard of hearing, or have speech disabilities may contact USDA through the Federal Relay service at (800) 877-8339 or (800) 845-6136 (in Spanish). USDA is an equal opportunity provider, employer, and lender. Persons with disabilities who require alternative means for communication of program information (e.g., Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

*Issued by*  
**Terry Cosby**  
**Chief, Natural Resources Conservation Service**  
**U.S. Department of Agriculture**

*Released by*  
**Emily Fife**  
**State Conservationist**  
**Natural Resources Conservation**  
**Service Salt Lake City, Utah**

*Prepared by*  
**Snow Survey Staff:**  
**Jordan Clayton, Data Collection Officer**  
**Troy Brosten, Assistant Supervisor**  
**Dave Eiriksson, Hydrologist**  
**Logan Jamison, Hydrologist**  
**Joel Burley, Hydrologist**  
**Justin Byington, Hydrologist**  
**Doug Neff, Electronic Technician**



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

Snow Survey, NRCS, USDA  
245 North Jimmy Doolittle Road  
Salt Lake City, UT 84116  
(385) 285-3118



## **Utah Water Supply Outlook Report**

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

