



Utah Water Supply Outlook Report

February 1, 2023



Cascade Mountain, Utah County

Photo by Dave Eiriksson

STATE OF UTAH GENERAL OUTLOOK

February 1, 2023

SUMMARY

This is the winter we've been waiting for! As of February 1st, the statewide snow water equivalent (SWE) measured at our SNOTEL sites was 171% of normal, with all major basins except the Raft above 150%. With around 60 days to go until our typical peak snowpack in early April, we have already surpassed what a normal peak snowpack would look like in an average year. Our statewide SWE is roughly 109% of our typical peak SWE, which means that Utah is now guaranteed to have an above-normal snowpack season! From now until the onset of snowmelt, every additional amount of snow we receive will push us farther above normal. The only years that have had more snow at the beginning of February since the SNOTEL network was installed were 1984 and 1997. We're in good company! That makes this the best winter that we've seen in more than 25 years—even better than the banner 1983, 2005, and 2011 snow seasons that we often hold up as measuring stick-type winters.

New records for snow water equivalent are being set at Utah's SNOTEL sites! As of February 1st, three sites (Big Flat SNOTEL near Beaver, Lasal Mountain SNOTEL near Moab, and Vernon Creek SNOTEL near Vernon) were reporting a record high amount of SWE compared with the last 30 years, and 11 more were second highest.

While we are all quite excited about the snowy conditions, please bear in mind that a range of outcomes is still possible for Utah's snowpack season. From our projections using the range of previous observations, the most probable outcome is that our maximum SWE for this winter will be roughly 150% of normal (averaged across all of Utah's SNOTEL sites). It's also possible that this could be our new record winter for SWE in Utah! Conversely, it's still possible that our storms could start to dry up. If we follow the trace for the worst possible winter observed in Utah from this day forward, we would peak at ~120% of normal SWE in mid-March. Let's hope that doesn't happen!

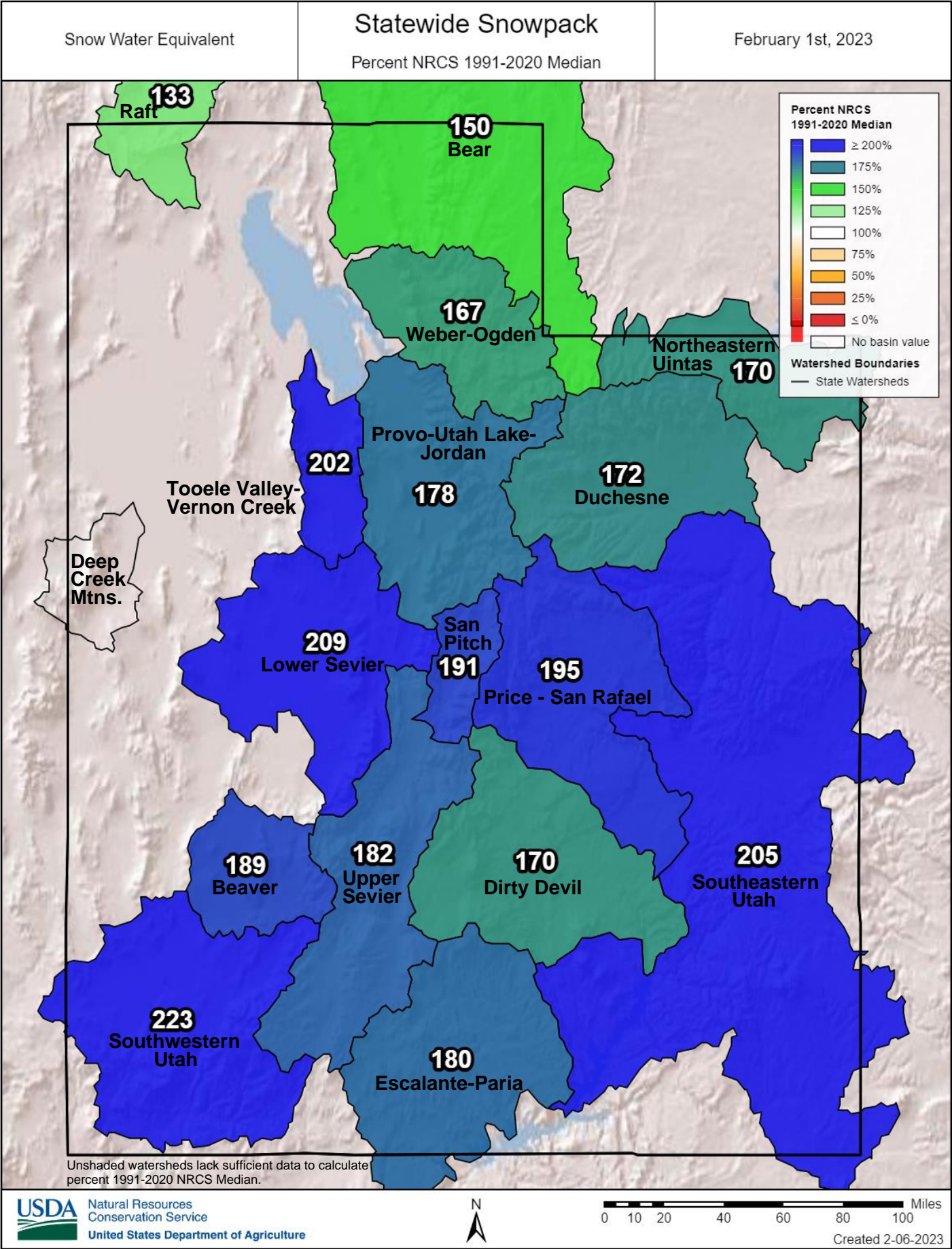
January precipitation in Utah was well above normal at 196%! This brings the water-year-to-date precipitation to 142% of normal. As of February 1st, all of Utah's major watersheds were above 115% of normal precipitation for the 2023 water year. Statewide soil moisture is at 54% of saturation, compared with 56% last year. Utah's reservoir storage is currently at 49% of capacity, down 2% from this time last year.

Streamflow forecasts for April to July snowmelt runoff volume are based mainly on observed SWE and precipitation at Utah's SNOTEL sites, with some consideration given to soil moisture conditions. These forecasts are quite bullish—above normal flow predicted at every forecast point except the Green River—with >200% of normal flow forecast for many locations. However, please recall that as of last year our forecast percent normal values are based on median instead of average. Because of Utah's arid streamflow hydrology (where the majority of years have low flows but infrequent high flow years also influence the distribution), the switch from average to median resulted in a large number of decreased normals for Utah streams. The lower normal values produce a higher relative "percent of normal" for any given observation. Water and resource managers need to be aware of the impact that these new normals may have on the public's understanding of our water supply conditions. Additional details about the transition to the new normals can be found [here](#).

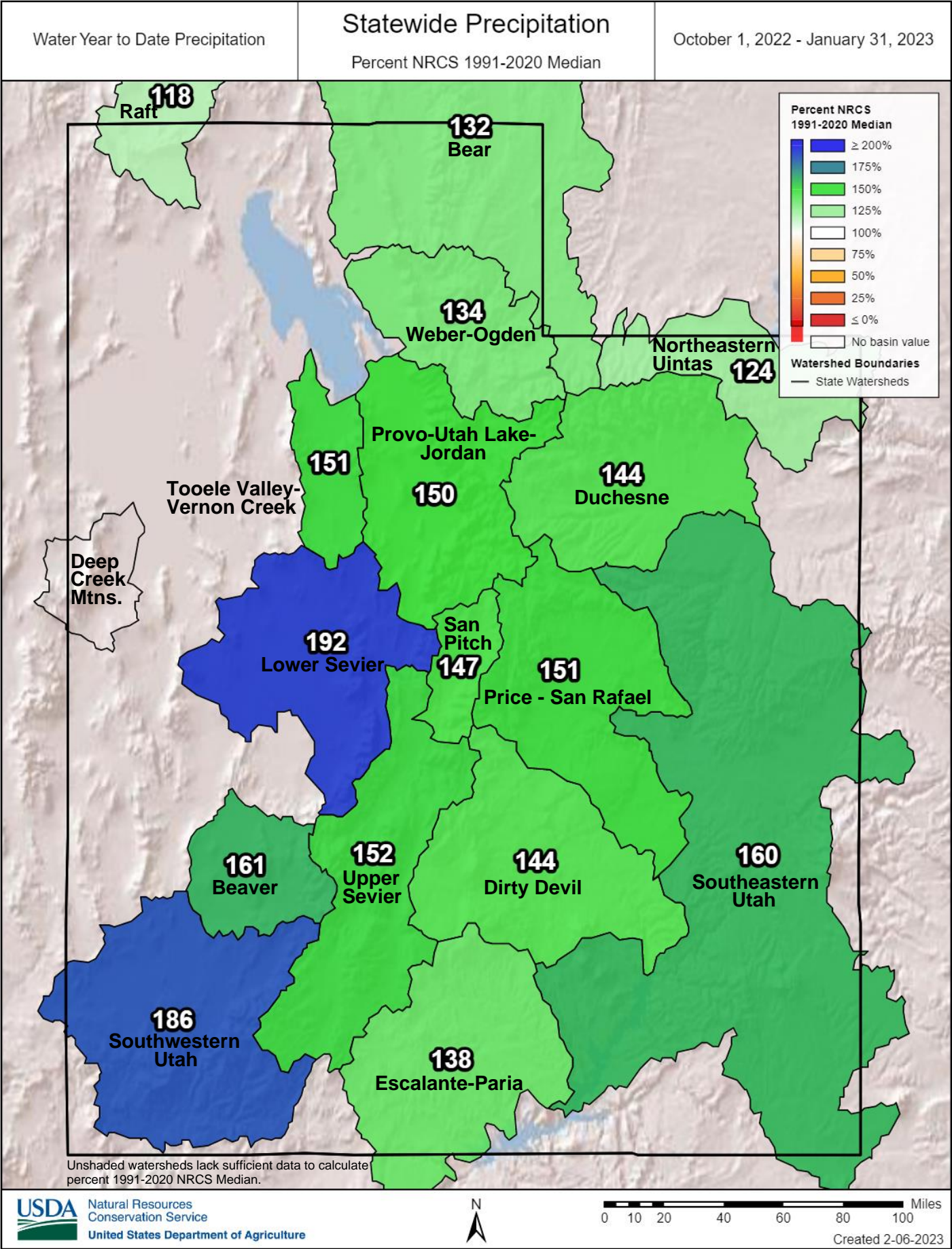
The Utah Snow Survey (NRCS) has recently been working with the Colorado Basin River Forecast Center (NOAA) on a new [Forecast Comparison page](#). This is intended to be a one-stop landing page for water managers to find snowmelt runoff forecasts from both agencies for any location in Utah and compare the values. Water users can also assess differences in forecasts relative to 'percent of average' versus 'percent of median' to help alleviate the potential issues described in the previous paragraph. In general, there is excellent agreement between the forecasts from both agencies. Differences in forecast methodology are bound to produce differences in published forecast values between the two agencies, though these discrepancies are typically minor in the context of the overall forecast uncertainty. The page is now live and available to all interested parties. Many thanks to the CBRFC for spearheading this effort and for being great collaborators!

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 February 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 River basin. Other areas have much higher SWSI values, such as the Smith Fork, Moab, Price, Beaver, and Virgin River watersheds, which are all above the 75th percentile. These high SWSI values suggest that those basins will have favorable amounts of surface water supplies compared with previous observations going back to the early 1980s.

Utah (statewide) Snowpack



Utah (statewide) Precipitation



Feb 1, 2023 | Surface Water Supply Index (SWSI)

Basin or Region	Reservoir Storage ¹ (KAF) ²	Apr-July Forecast (KAF) ²	Forecast + Storage (KAF) ²	SWSI ³	Percentile ⁴ (%)	Similar Years
Bear	396.4	141.0	537.4	-1.33	34	[2010, 2016]
Woodruff Narrows	13.5	147.0	160.5	1.39	67	[2016, 2019]
Little Bear	9.6	57.0	66.6	1.56	69	[1996, 2006]
Ogden	50.3	150.0	200.3	1.33	66	[1995, 2009]
Weber	204.8	435.0	639.8	1.33	66	[2005, 2019]
Provo	721.8	136.0	857.8	-2.78	17	[2003, 2017]
Western Uintas	163.9	77.0	240.9	0.95	61	[2001, 2015]
Eastern Uintas	25.0	154.0	179.0	1.7	70	[1985, 1997]
Blacks Fork	9.5	102.0	111.5	1.73	71	[1985, 1993]
Smiths Fork	6.1	33.0	39.1	2.13	76	[1996, 2016]
Price	14.4	70.0	84.4	2.08	75	[1997, 1999]
Joes Valley	30.1	74.0	104.1	1.52	68	[1996, 1999]
Ferron Creek	8.0	48.0	56.0	1.7	70	[1982, 2005]
Moab	1.7	7.5	9.2	3.27	89	[1995, 2016]
Upper Sevier	37.4	102.0	139.4	1.14	64	[1981, 1999]
San Pitch	0.6	21.0	21.6	-0.19	48	[2007, 2010]
Lower Sevier	32.6	110.0	142.6	-1.33	34	[2014, 2020]
Beaver River	5.9	45.0	50.9	2.27	77	[1982, 1986]
Virgin River	30.8	109.3	140.1	2.34	78	[2010, 2019]

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

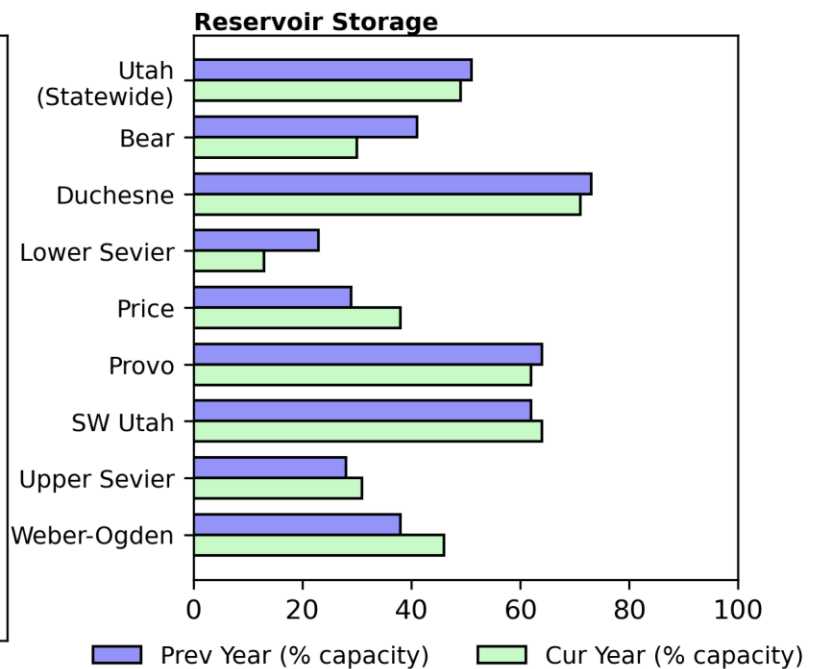
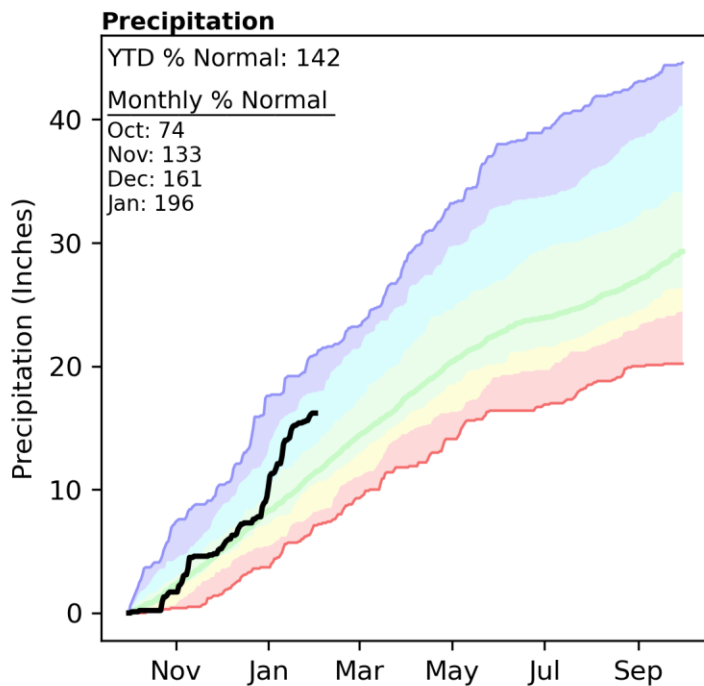
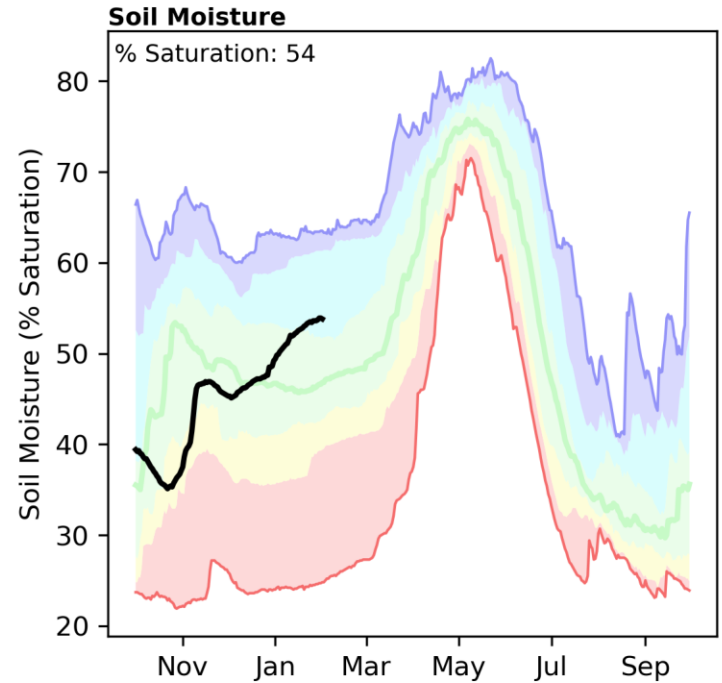
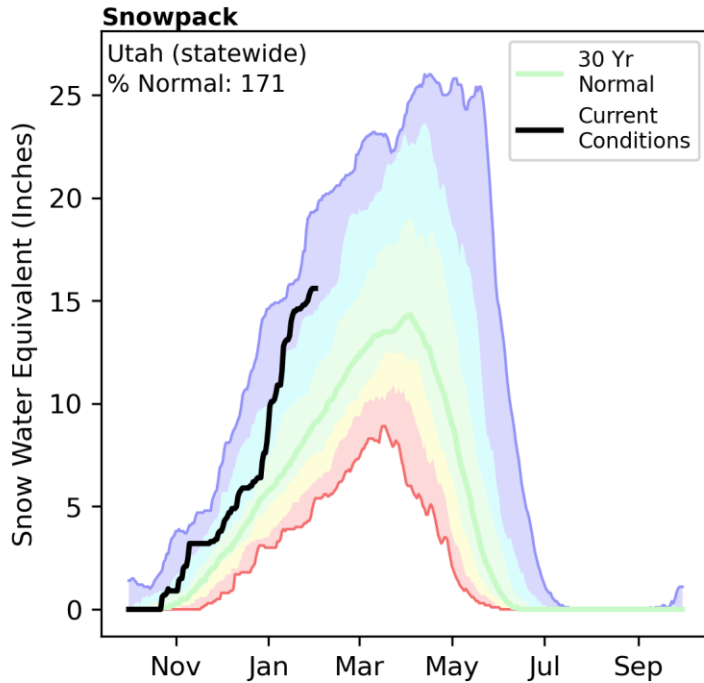
What is a Surface Water Supply Index?

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) | February 1, 2023

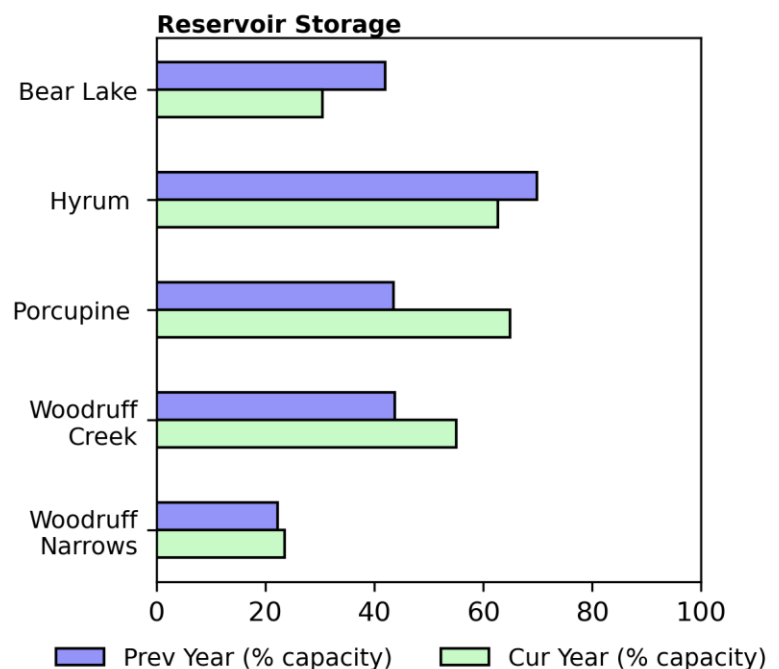
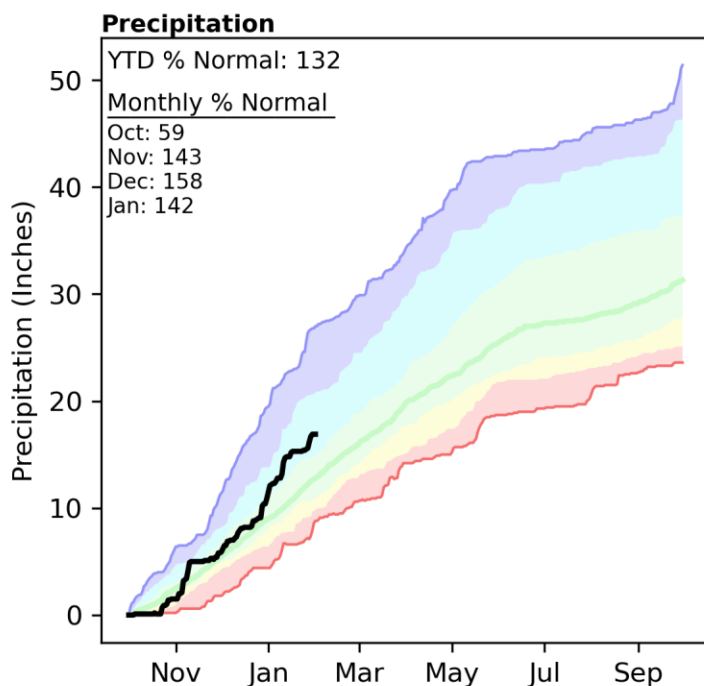
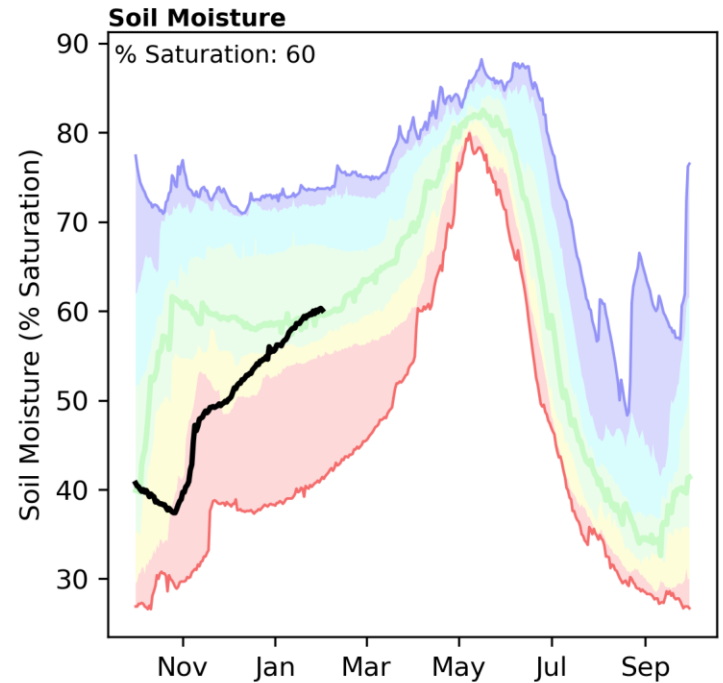
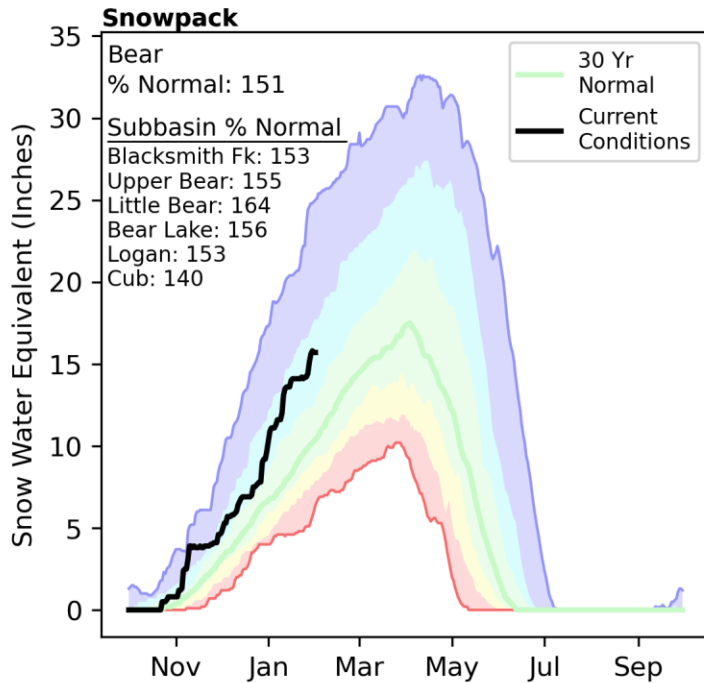
Snowpack in Utah (statewide) is well above normal at 171% of median, compared to 101% at this time last year. Precipitation in January was well above normal at 196%, which brings the seasonal accumulation (October-January) to 142% of median. Soil moisture is at 54% saturation compared to 56% saturation last year. Statewide, reservoir storage is 49% of capacity, compared to 51% last year¹. Forecast streamflow volumes (50% exceedence, April-July) range from 95% to 483% of normal.

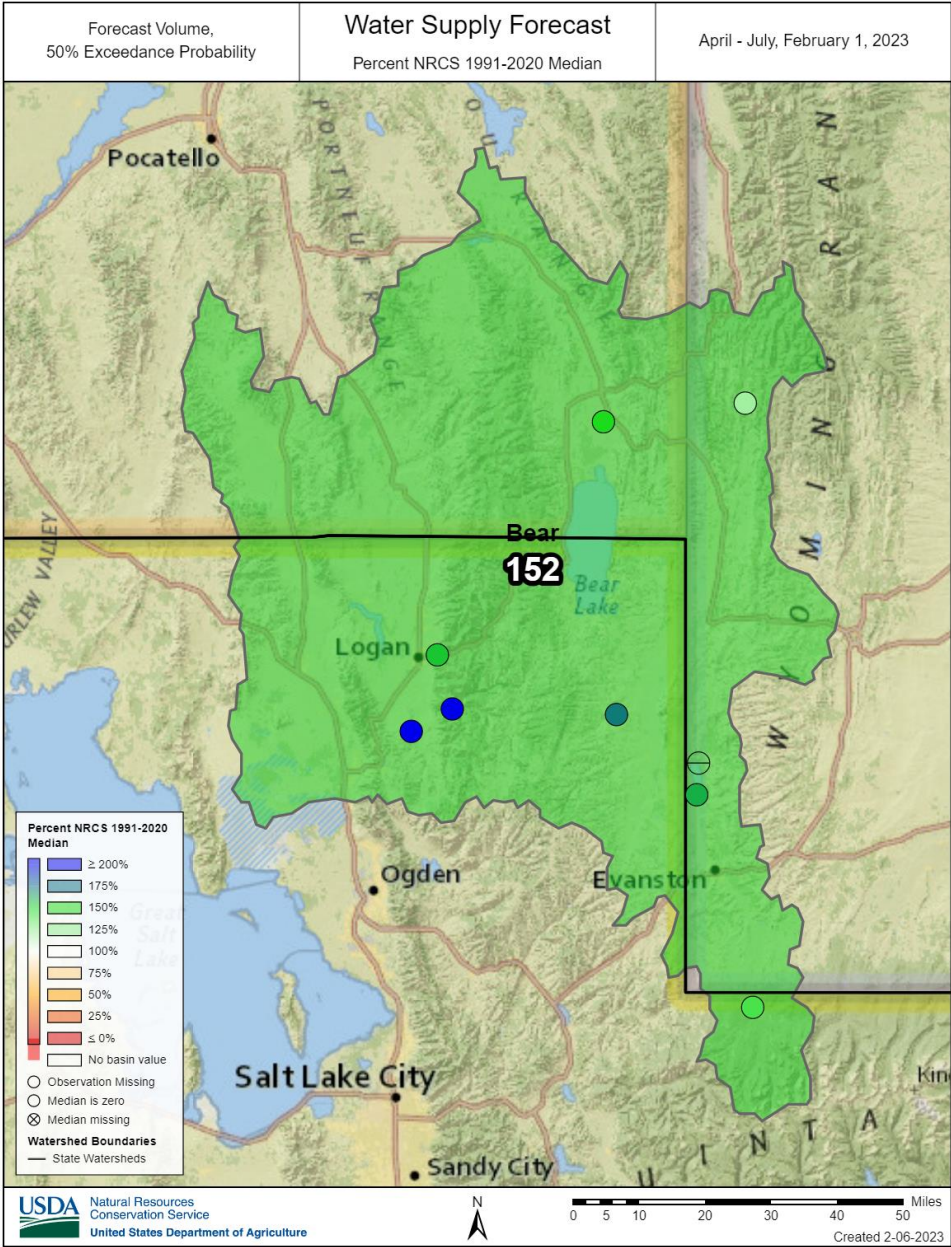
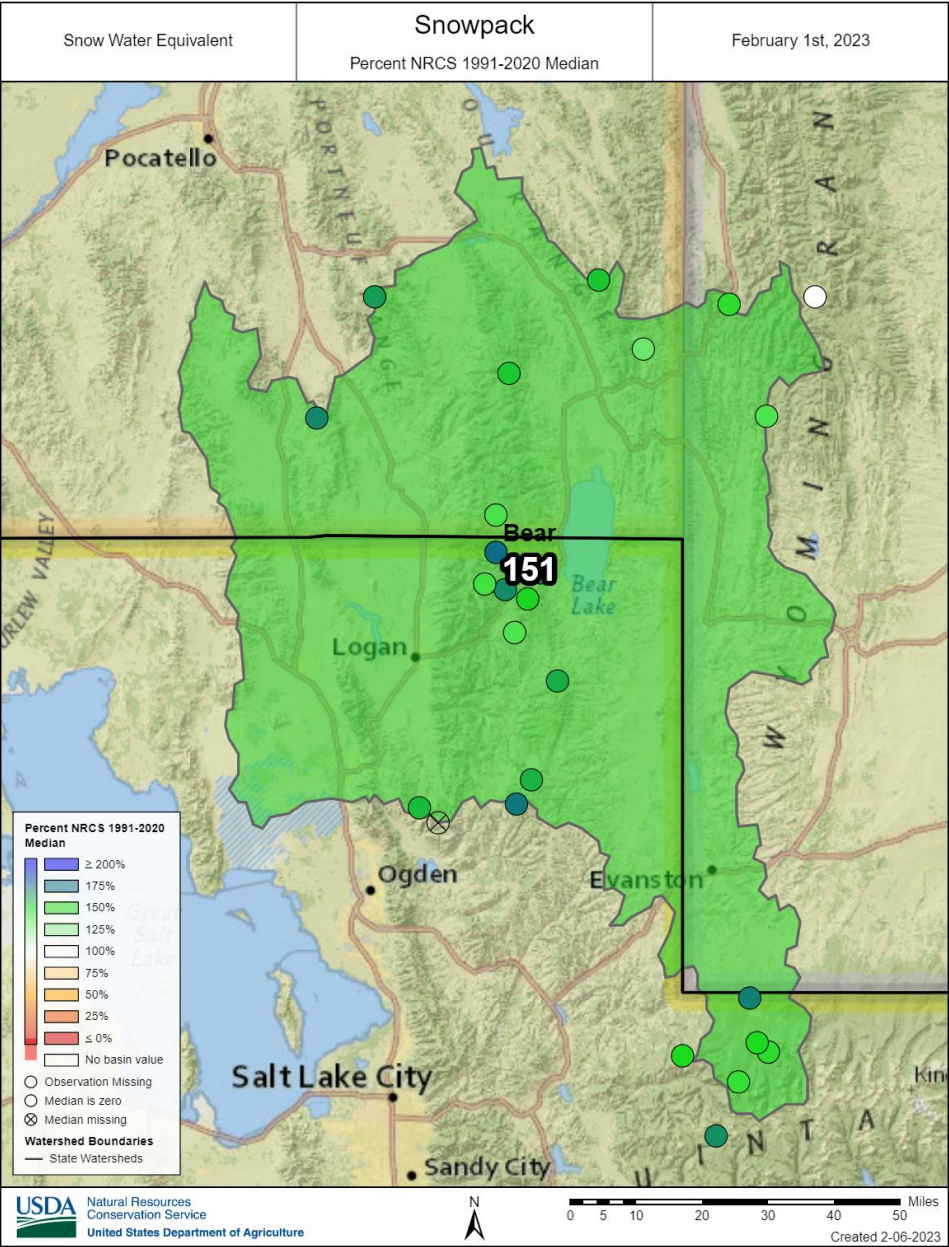


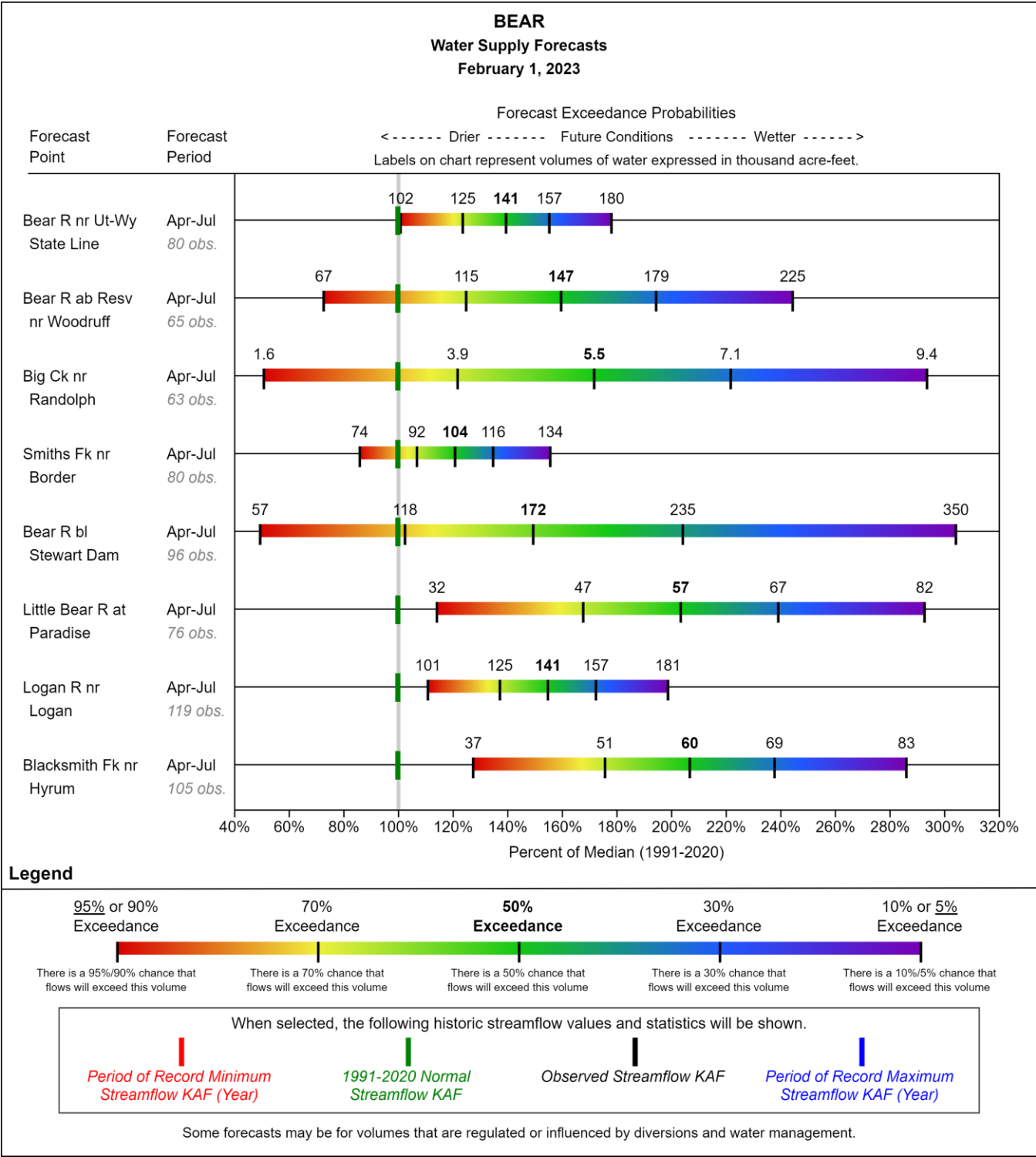
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

¹Statewide reservoir percentages exclude Lake Powell and Flaming Gorge Reservoirs.

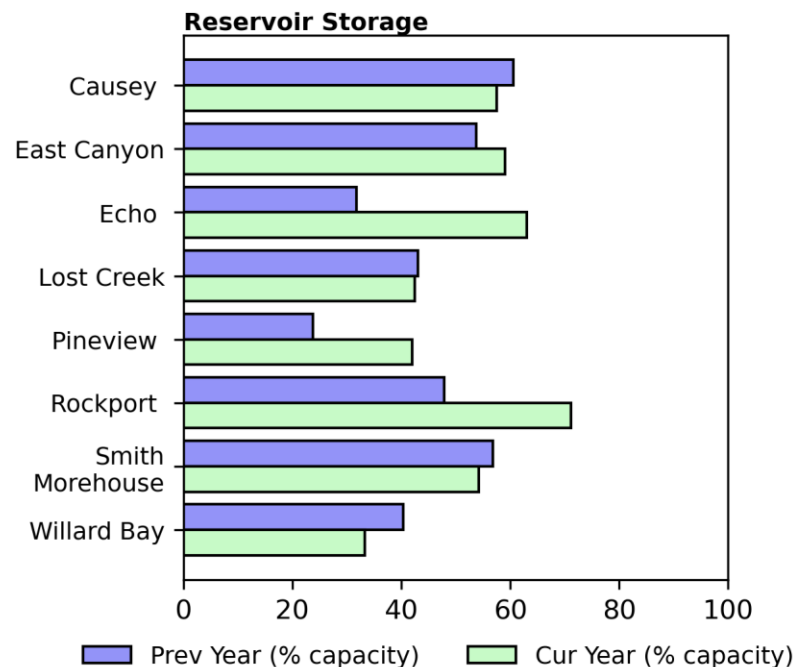
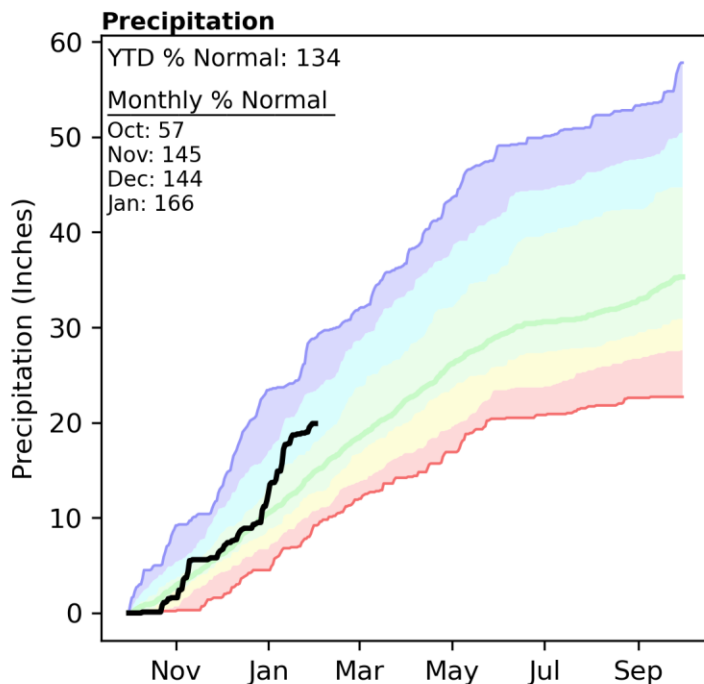
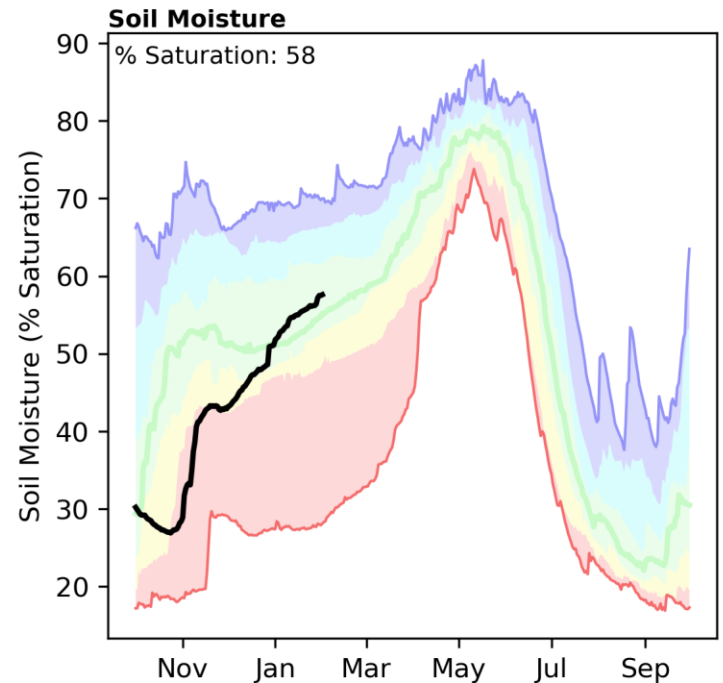
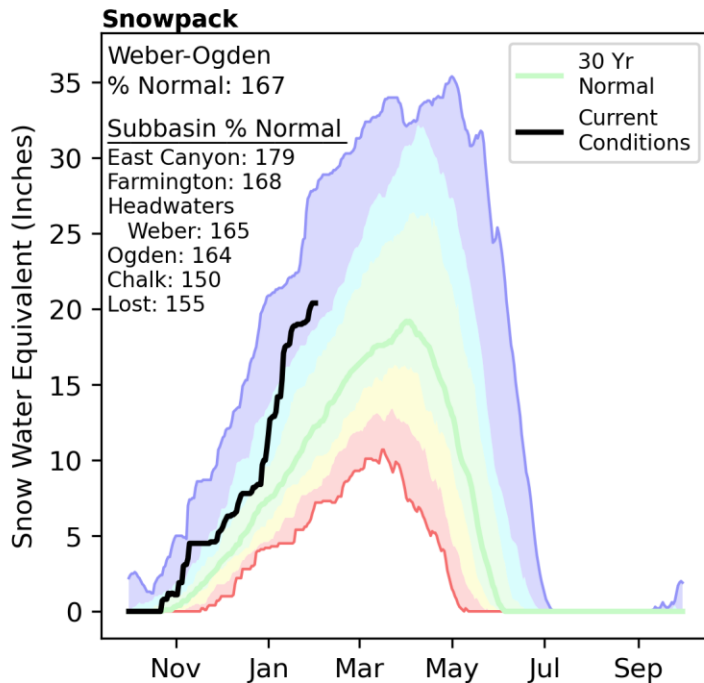
Snowpack in the Bear River Basin is well above normal at 151% of median, compared to 104% at this time last year. Precipitation in January was well above normal at 142%, which brings the seasonal accumulation (October-January) to 132% of median. Soil moisture is at 60% saturation compared to 67% saturation last year. Reservoir storage is 30% of capacity, compared to 41% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 121% to 207% of normal. The Surface Water Supply Index percentiles are 34% for the Bear, 69% for the Little Bear, and 67% for Woodruff Narrows.





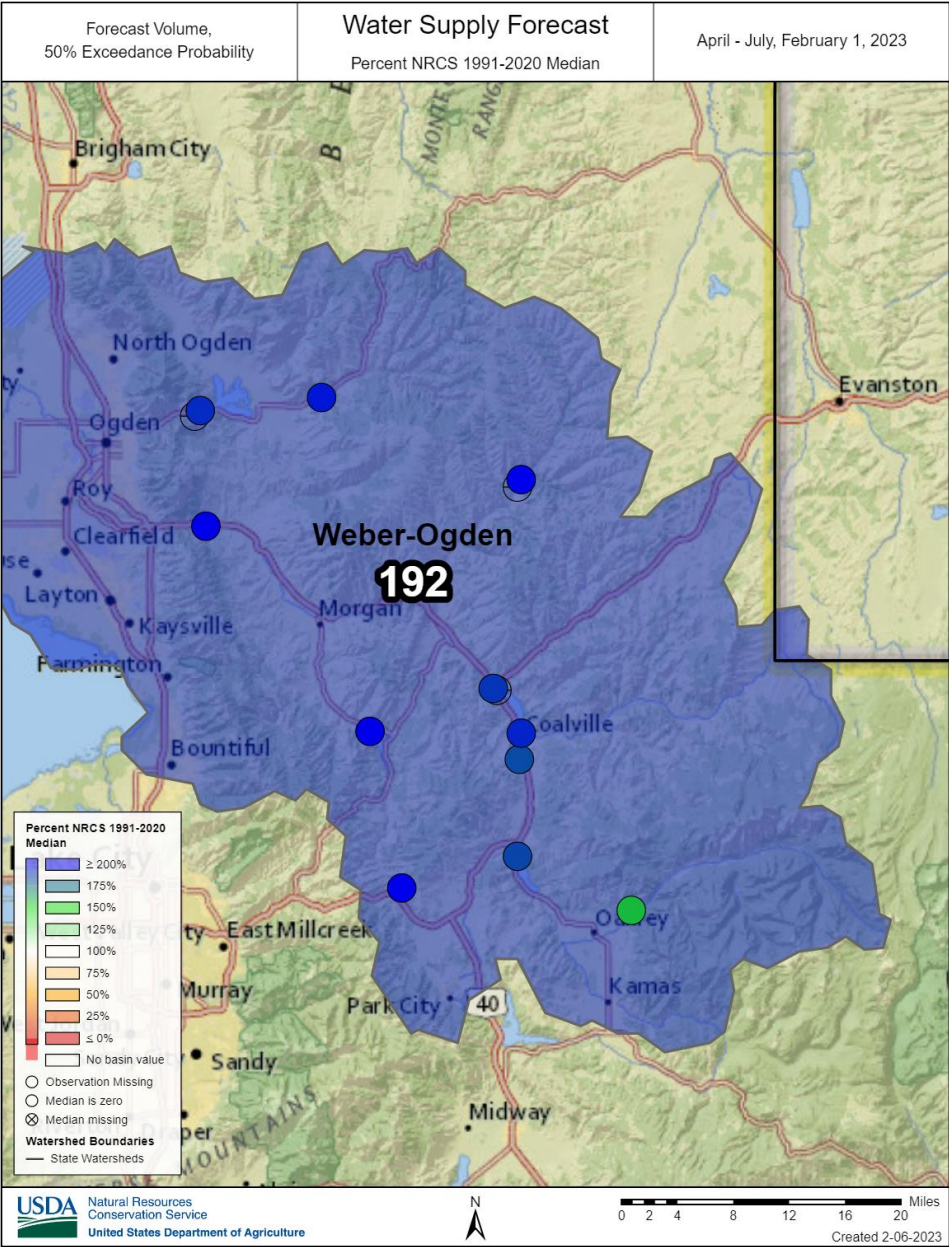
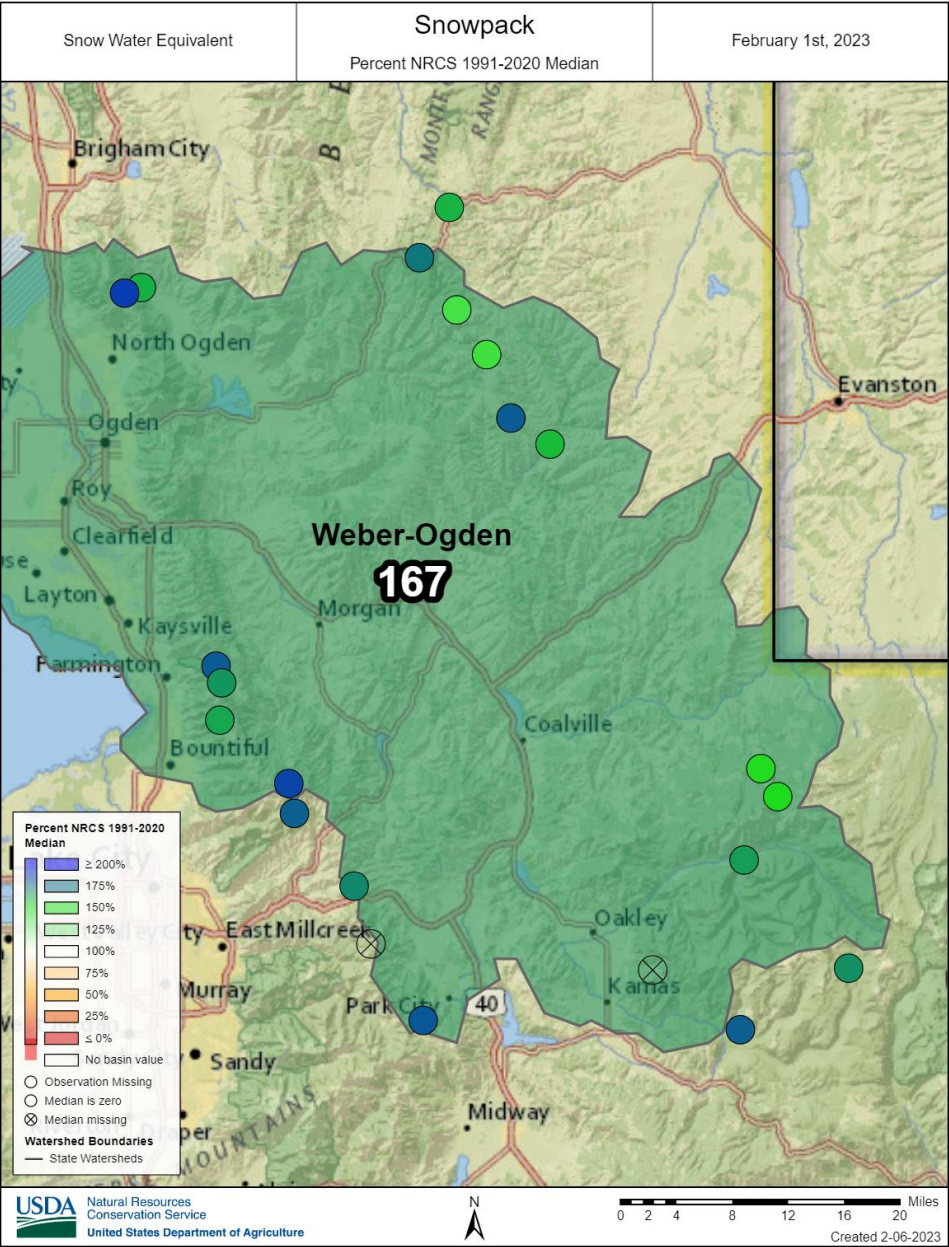


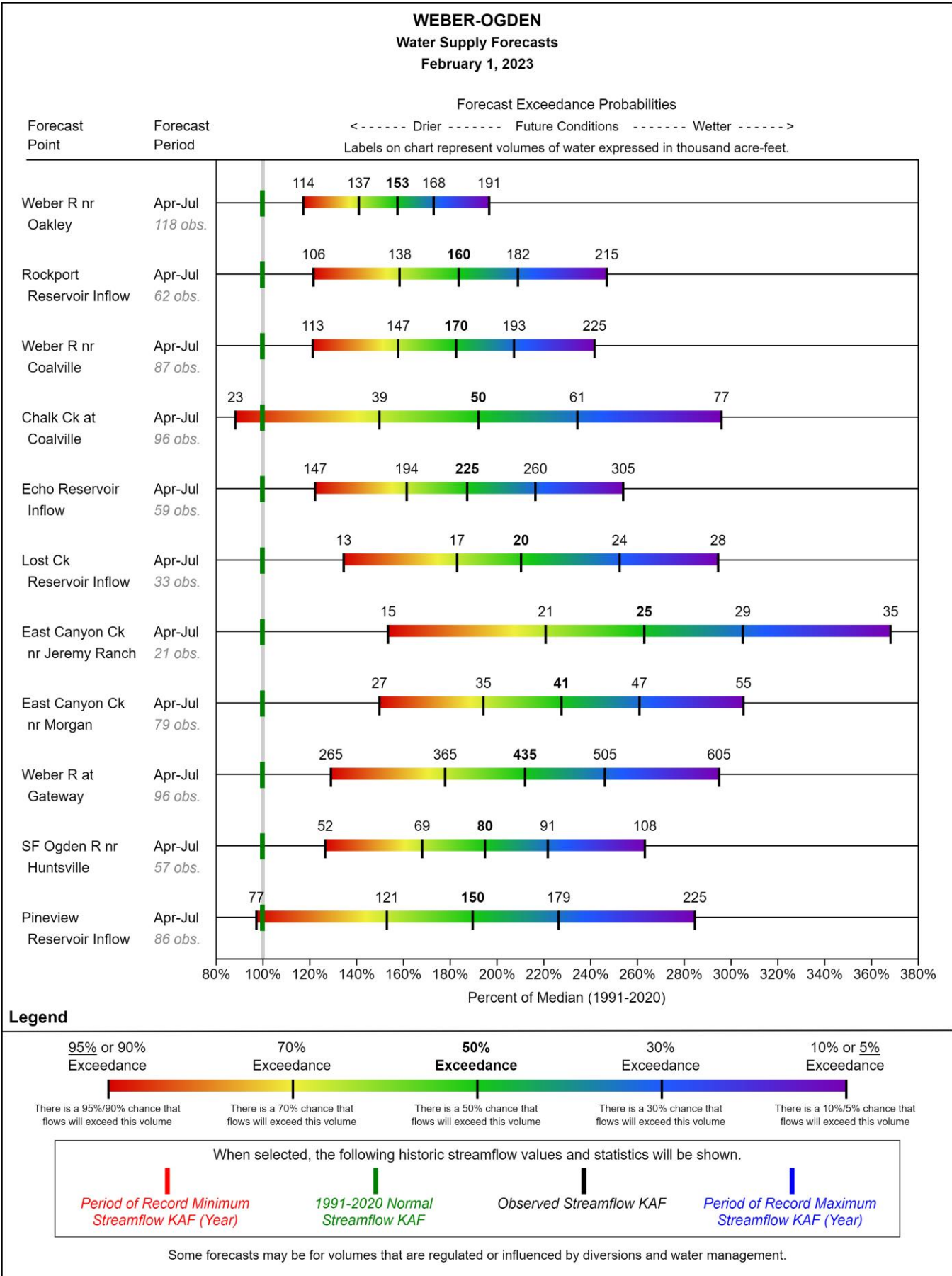
Snowpack in the Weber and Ogden River Basins is well above normal at 167% of median, compared to 92% at this time last year. Precipitation in January was well above normal at 166%, which brings the seasonal accumulation (October-January) to 134% of median. Soil moisture is at 58% saturation compared to 64% saturation last year. Reservoir storage is 46% of capacity, compared to 38% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 158% to 263% of normal. The Surface Water Supply Index percentiles are 66% for the Weber, and 66% for the Ogden.



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

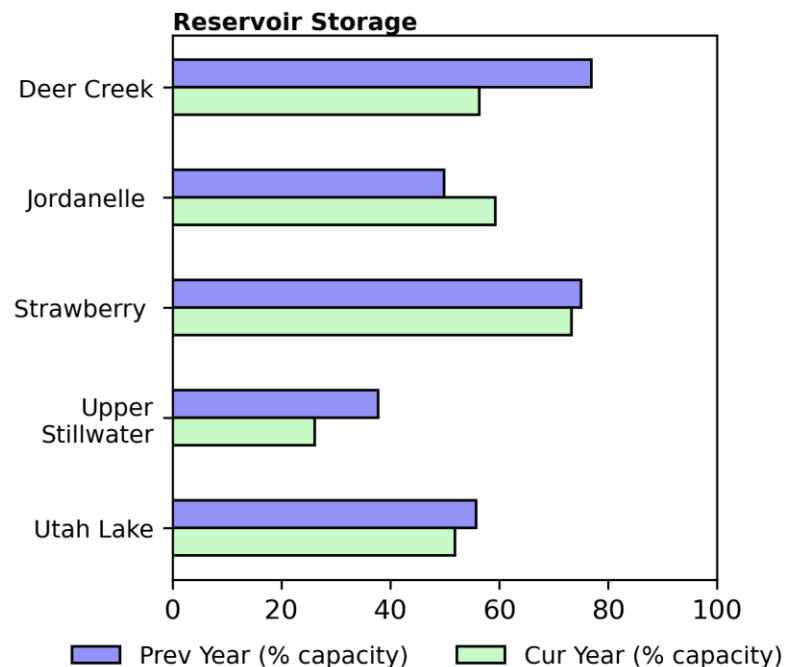
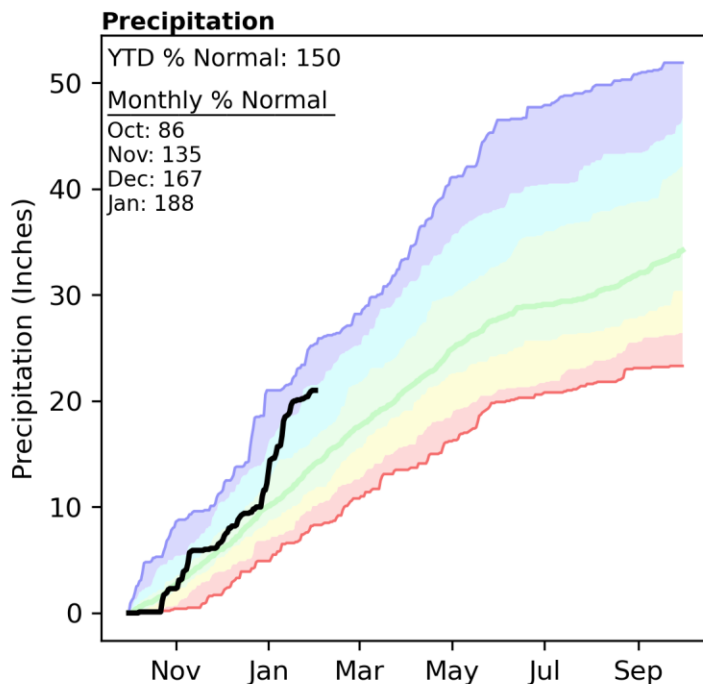
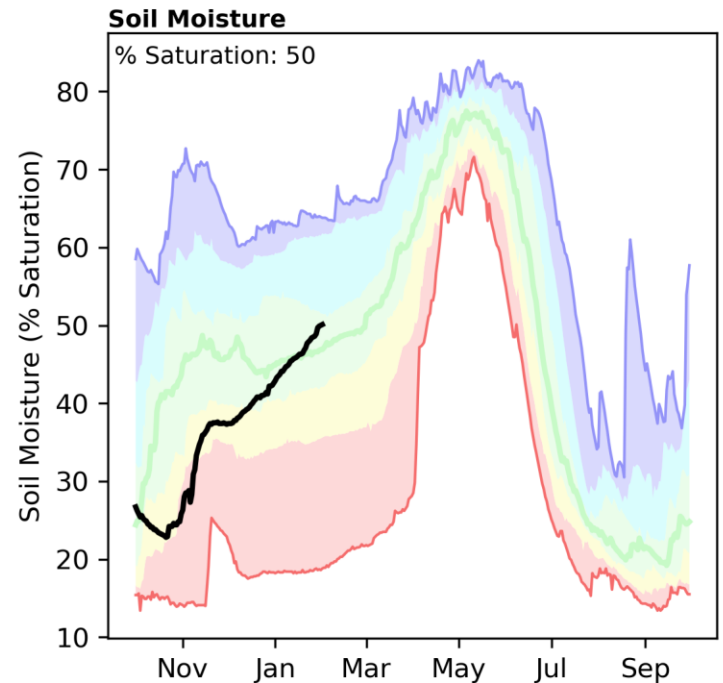
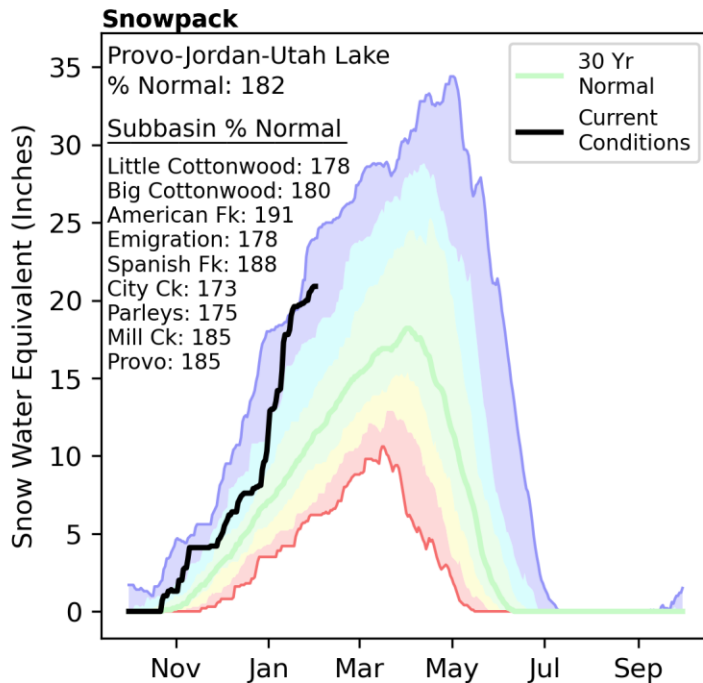
Weber-Ogden





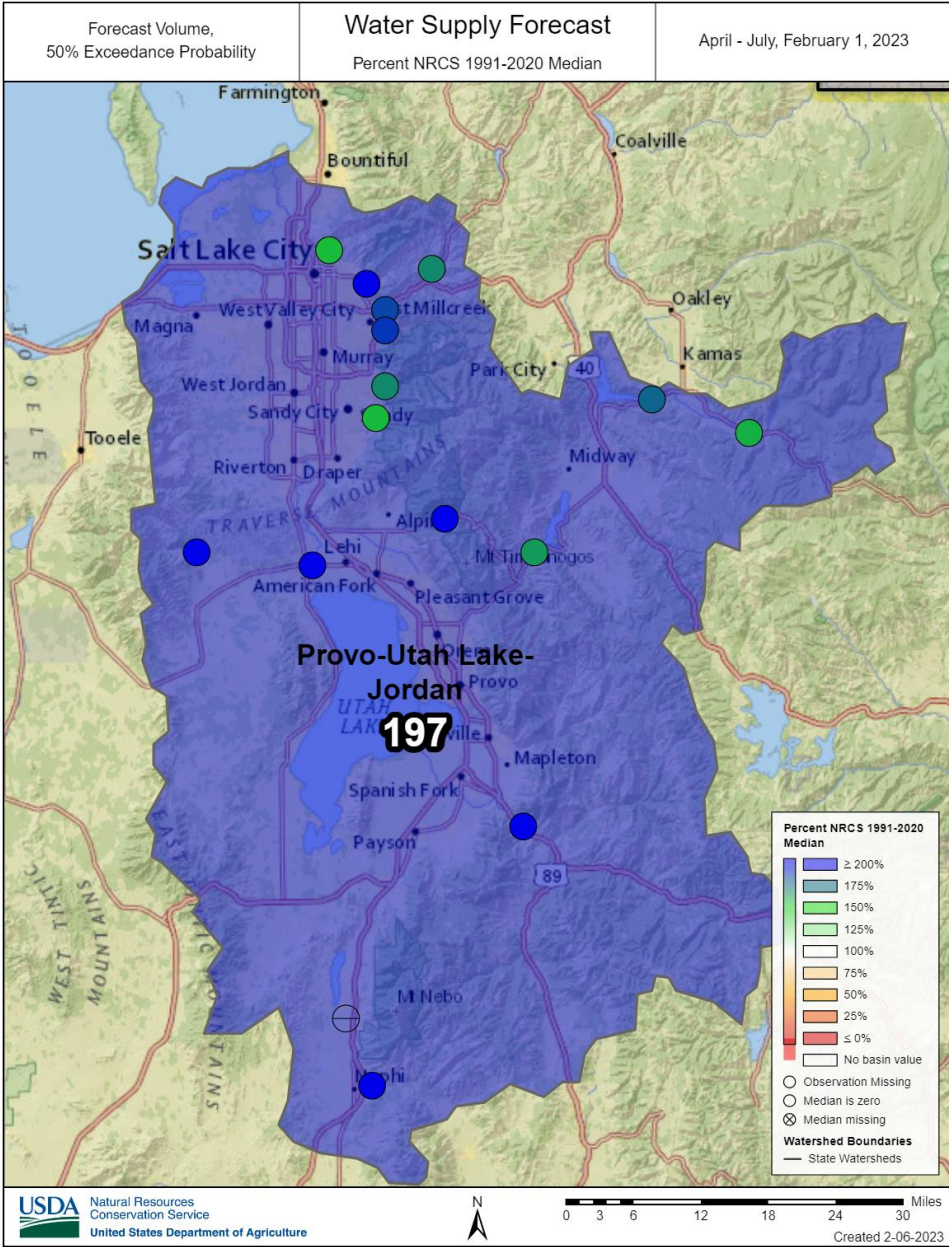
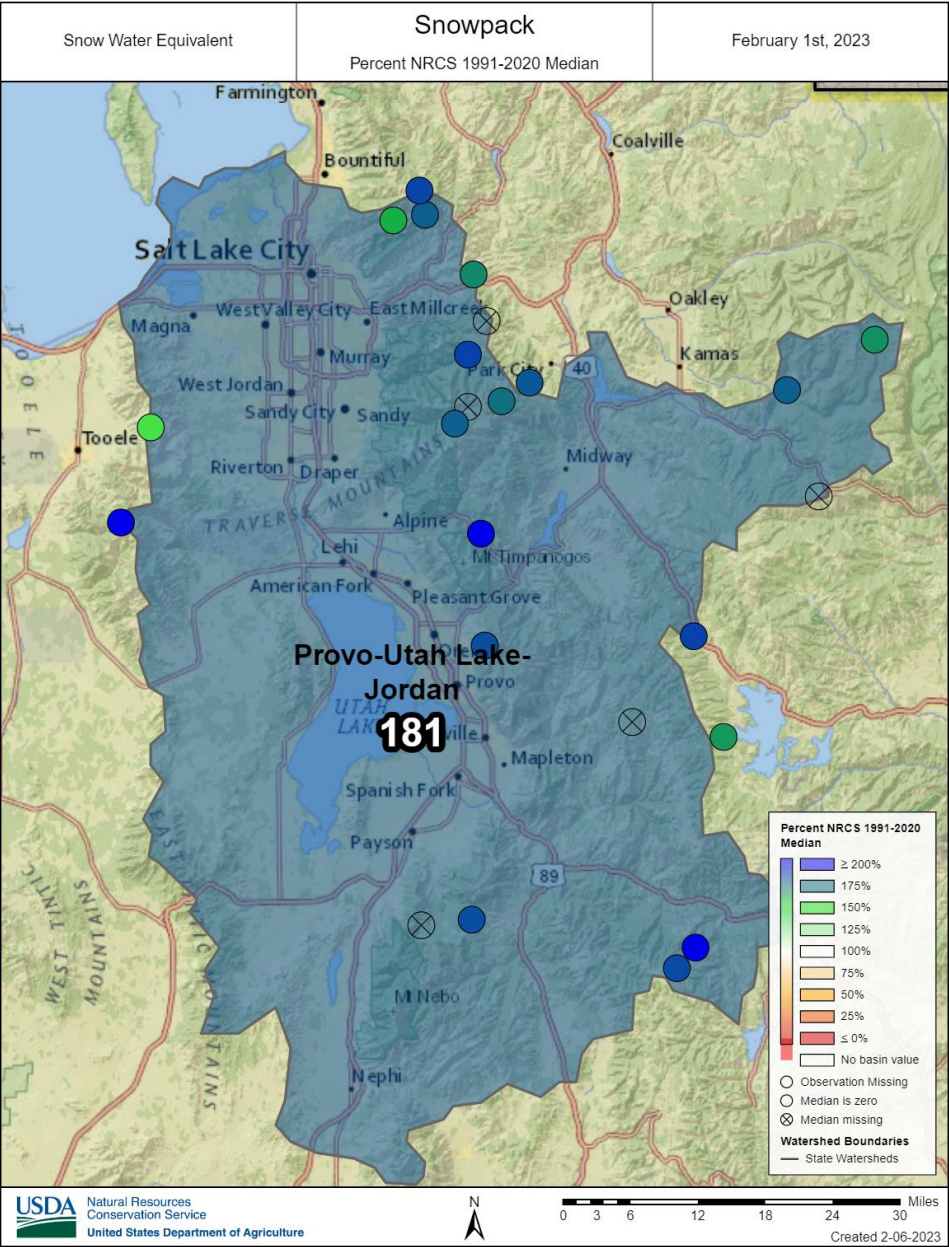
Provo-Jordan-Utah Lake | February 1, 2023

Snowpack in the Provo and Jordan River Basins is well above normal at 182% of median, compared to 92% at this time last year. Precipitation in January was well above normal at 188%, which brings the seasonal accumulation (October-January) to 150% of median. Soil moisture is at 50% saturation compared to 60% saturation last year. Reservoir storage is 62% of capacity, compared to 64% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 157% to 383% of normal. The Surface Water Supply Index percentile is 17% for the Provo.

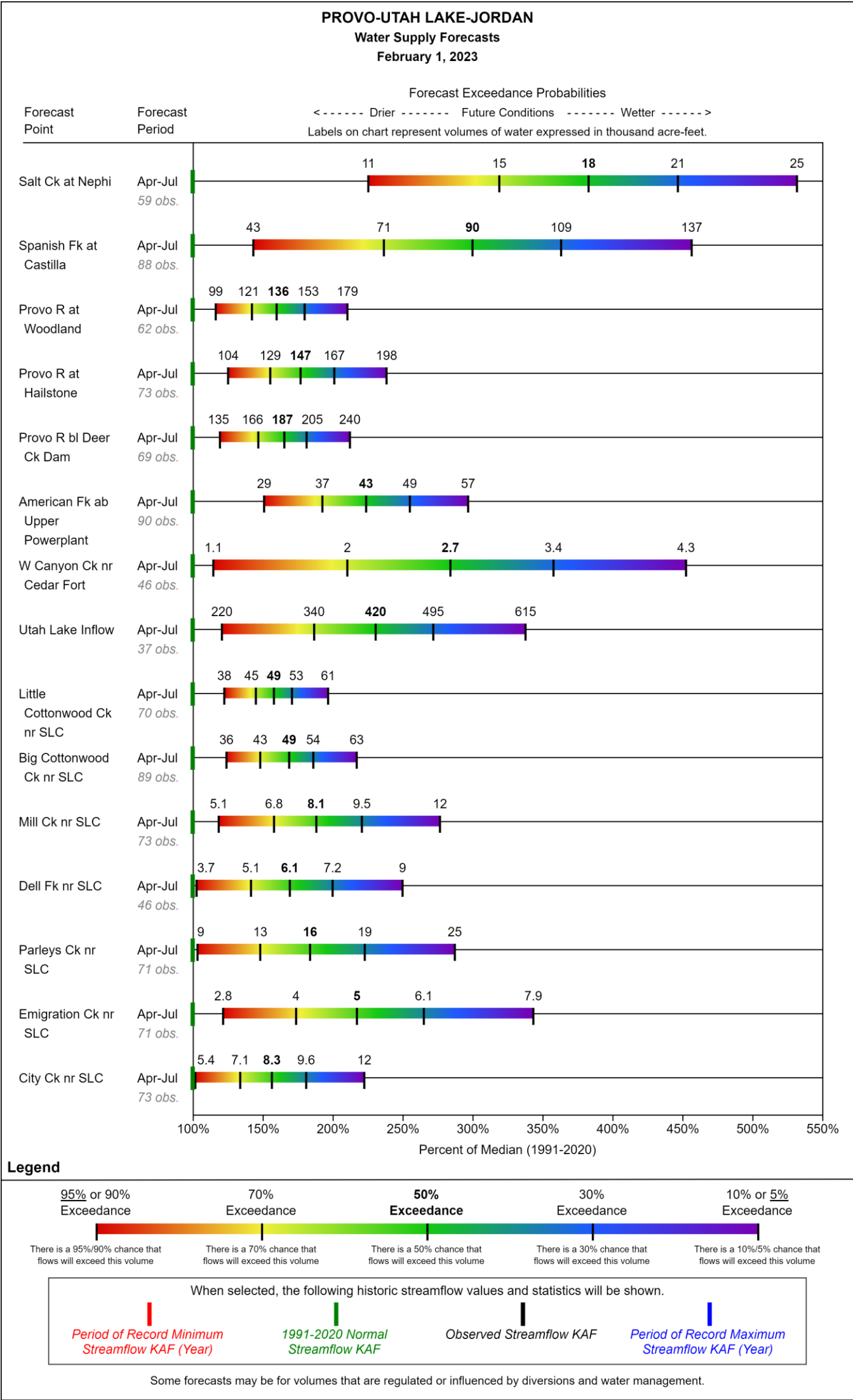


Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
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Provo-Utah Lake-Jordan

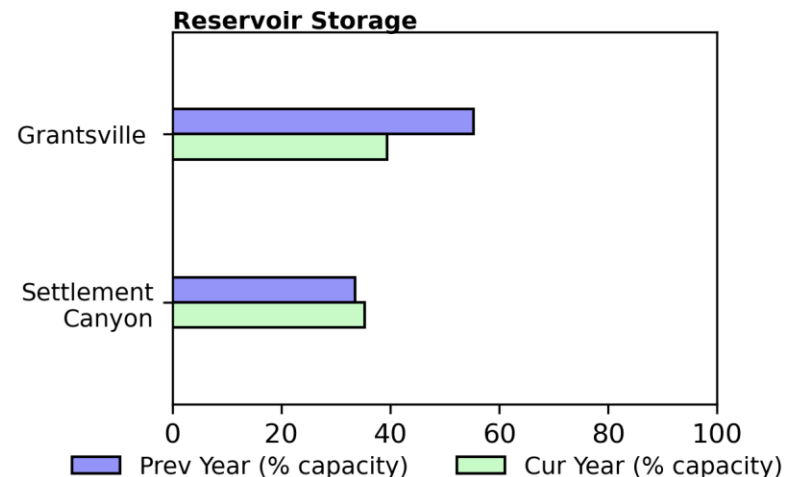
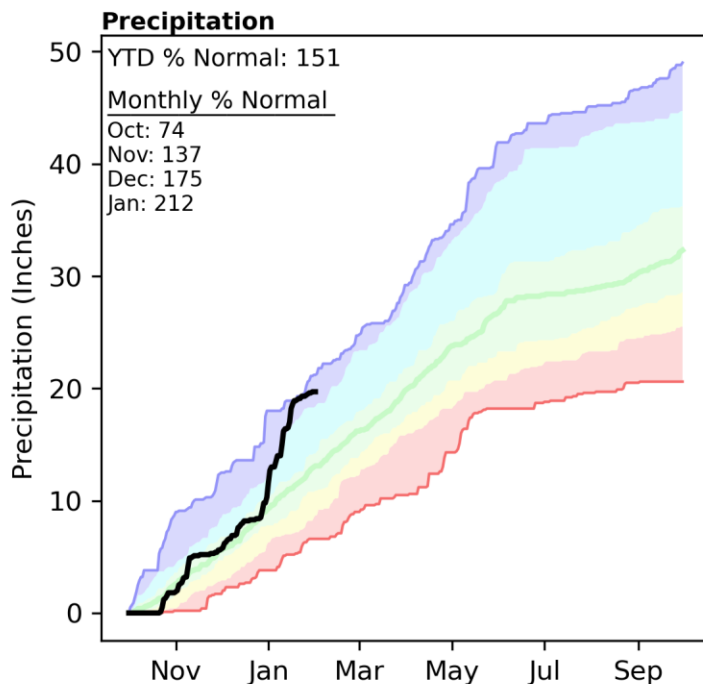
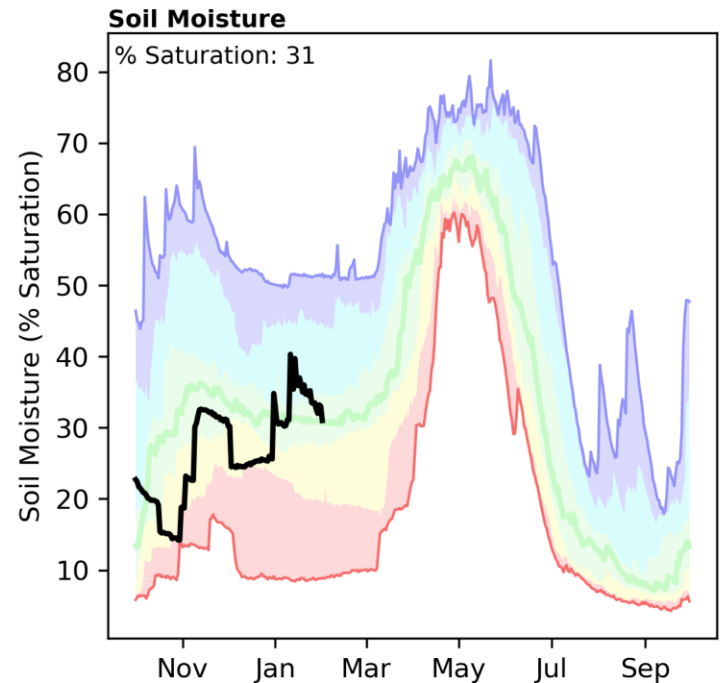
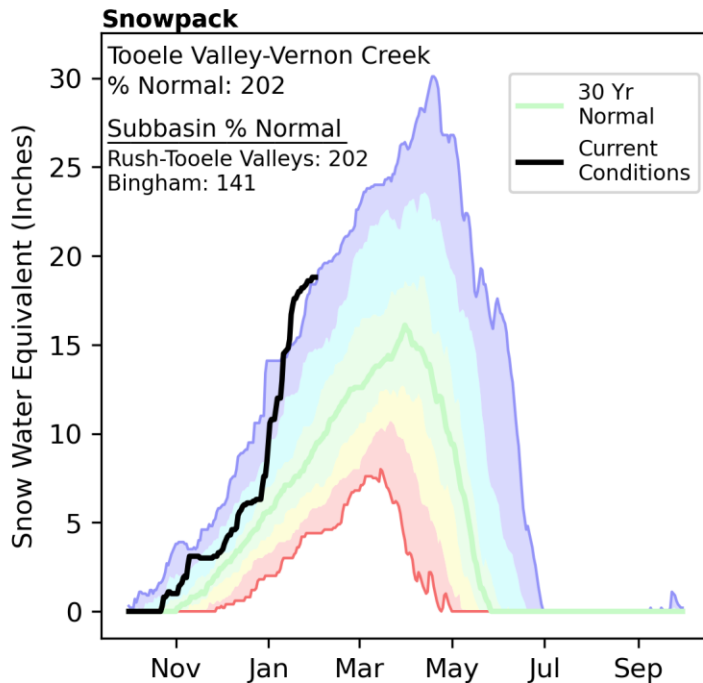


Provo-Utah Lake-Jordan



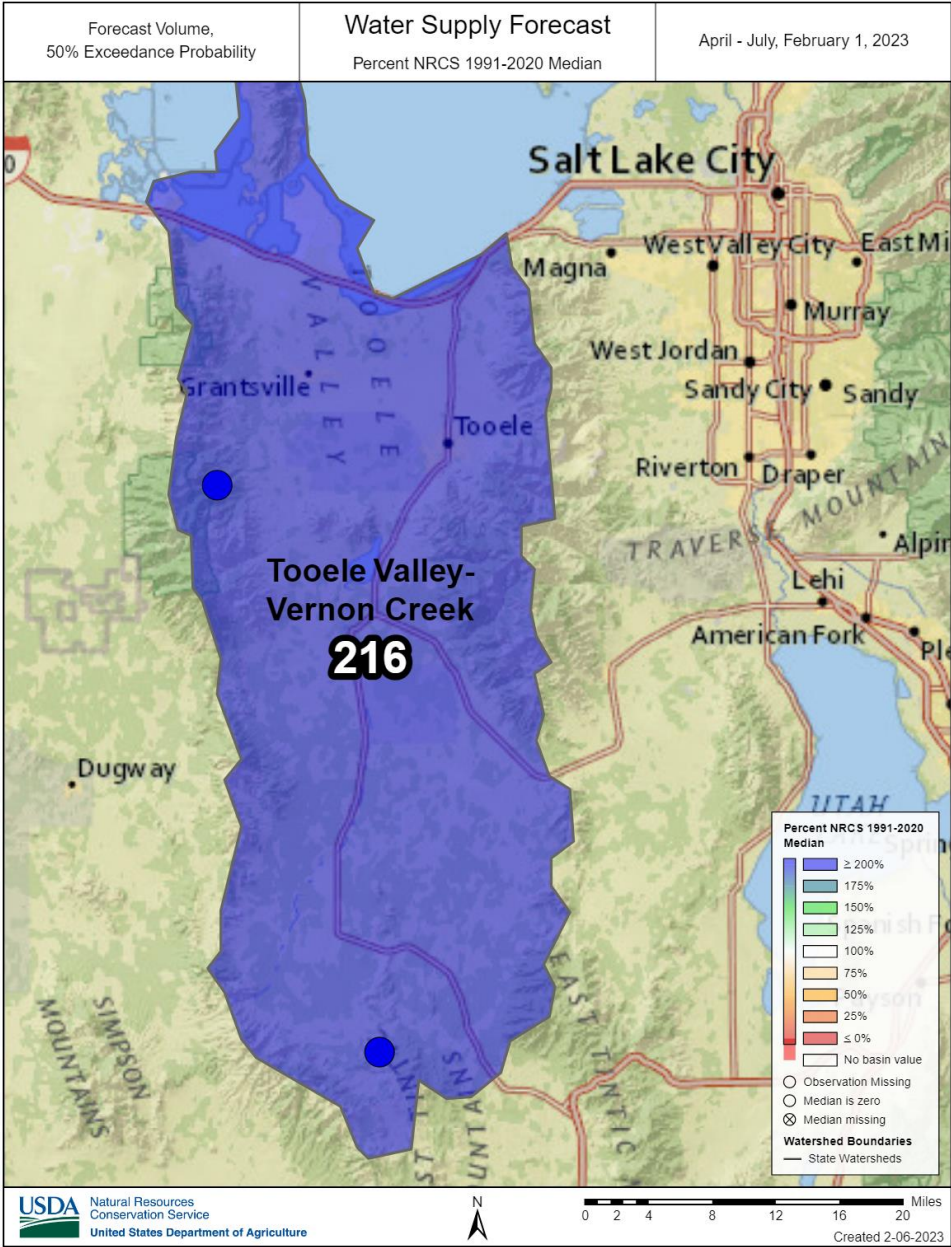
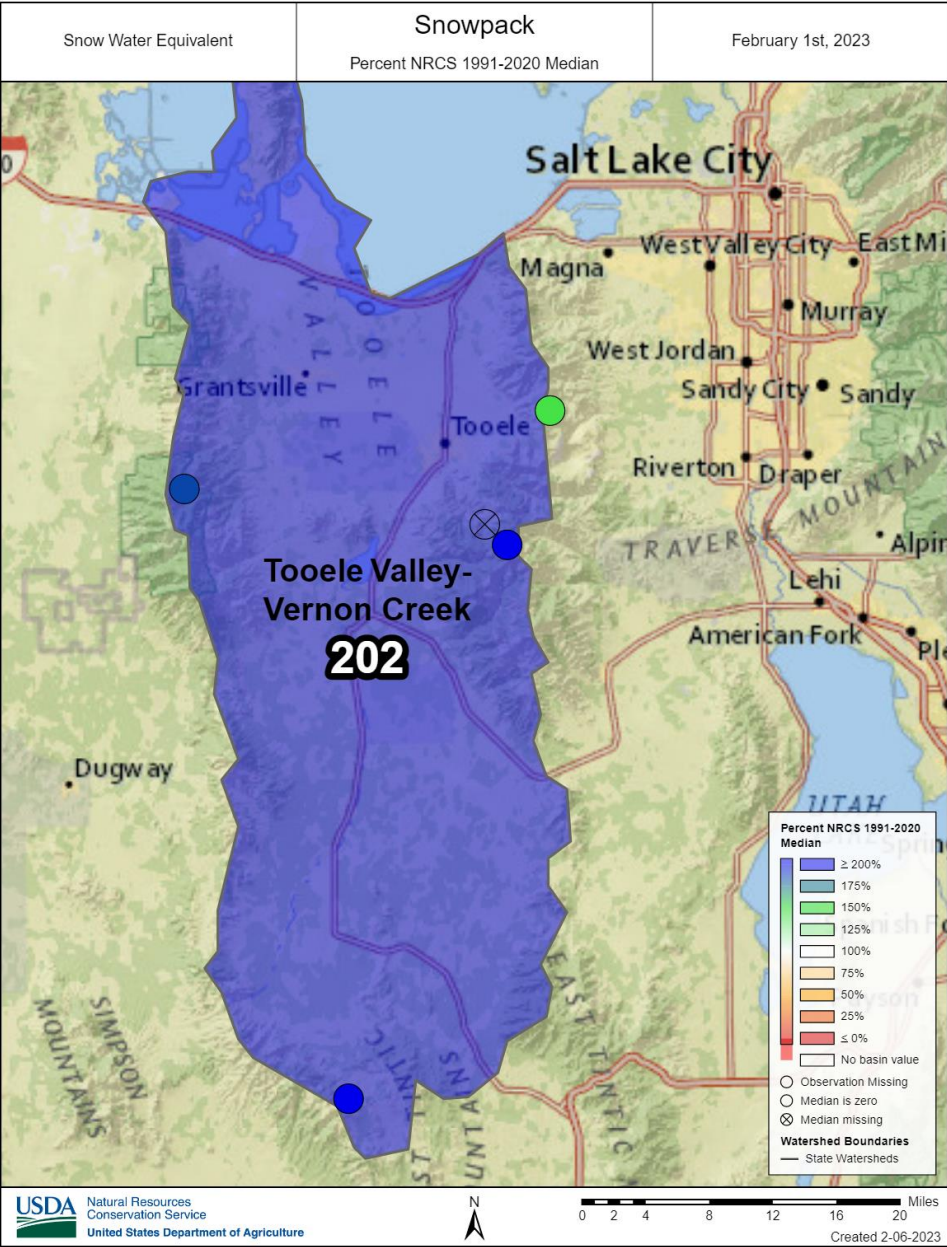
Tooele Valley-Vernon Creek | February 1, 2023

Snowpack in the Tooele Valley and West Desert Region is well above normal at 202% of median, compared to 73% at this time last year. Precipitation in January was well above normal at 212%, which brings the seasonal accumulation (October-January) to 151% of median. Soil moisture is at 31% saturation compared to 35% saturation last year. Reservoir storage is 38% of capacity, compared to 50% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 154% to 270% of normal.



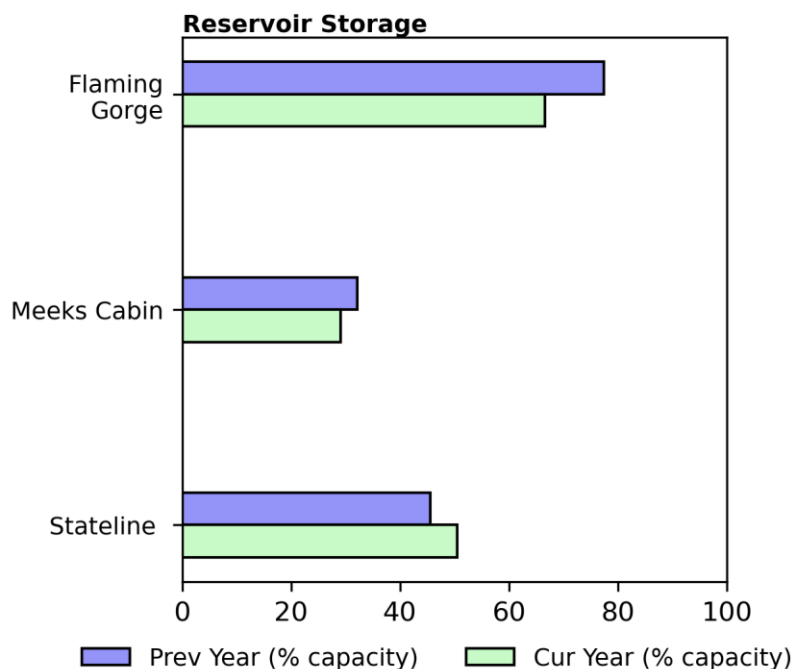
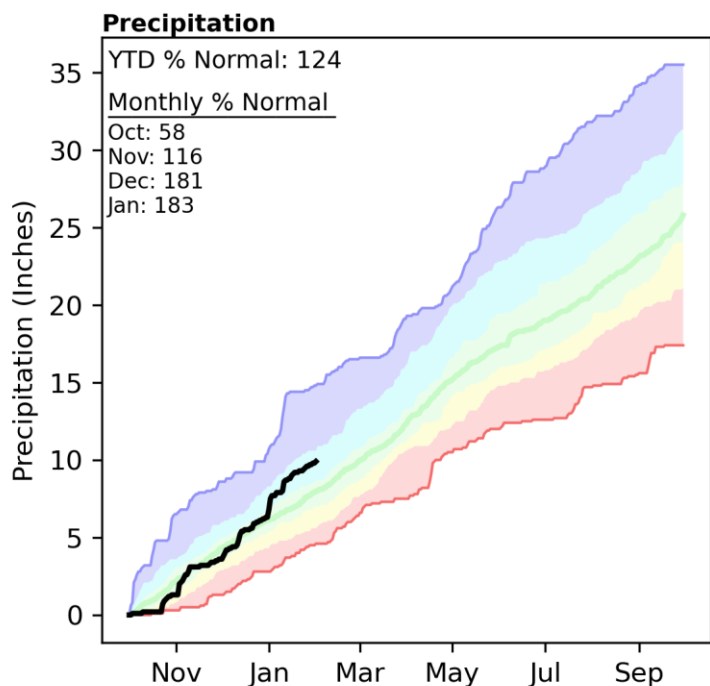
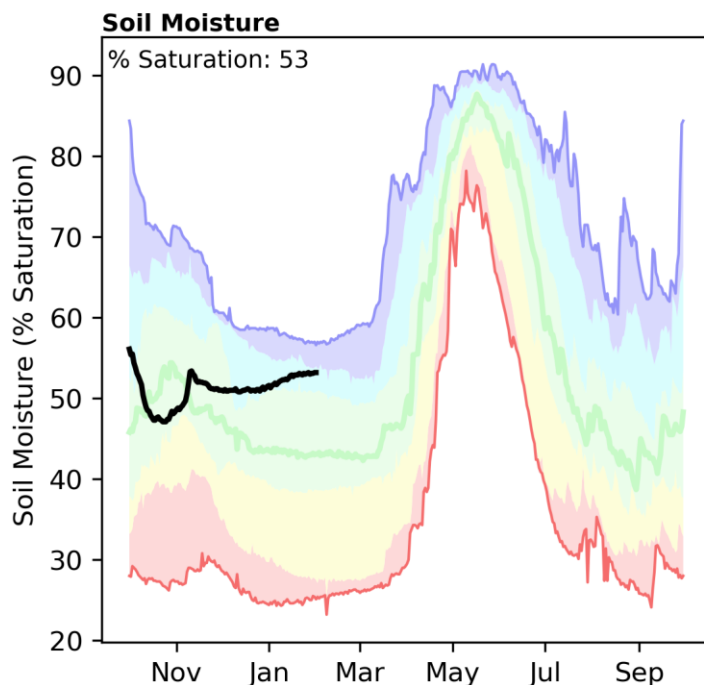
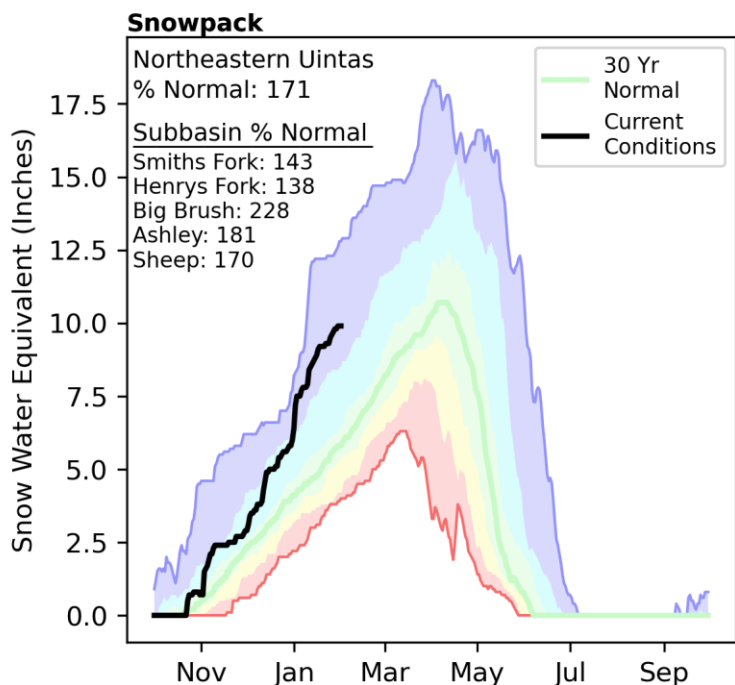
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

Tooele Valley-Vernon Creek



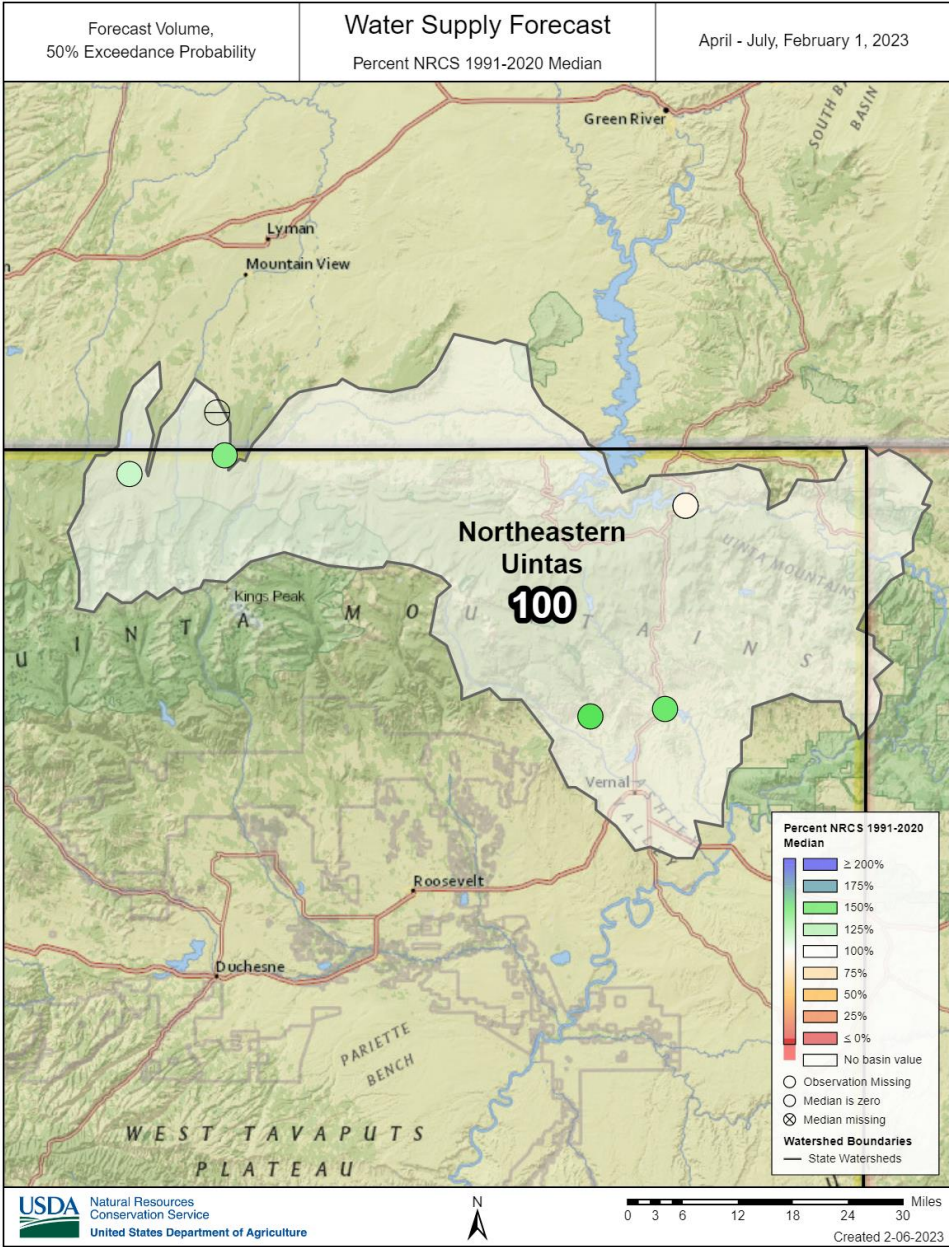
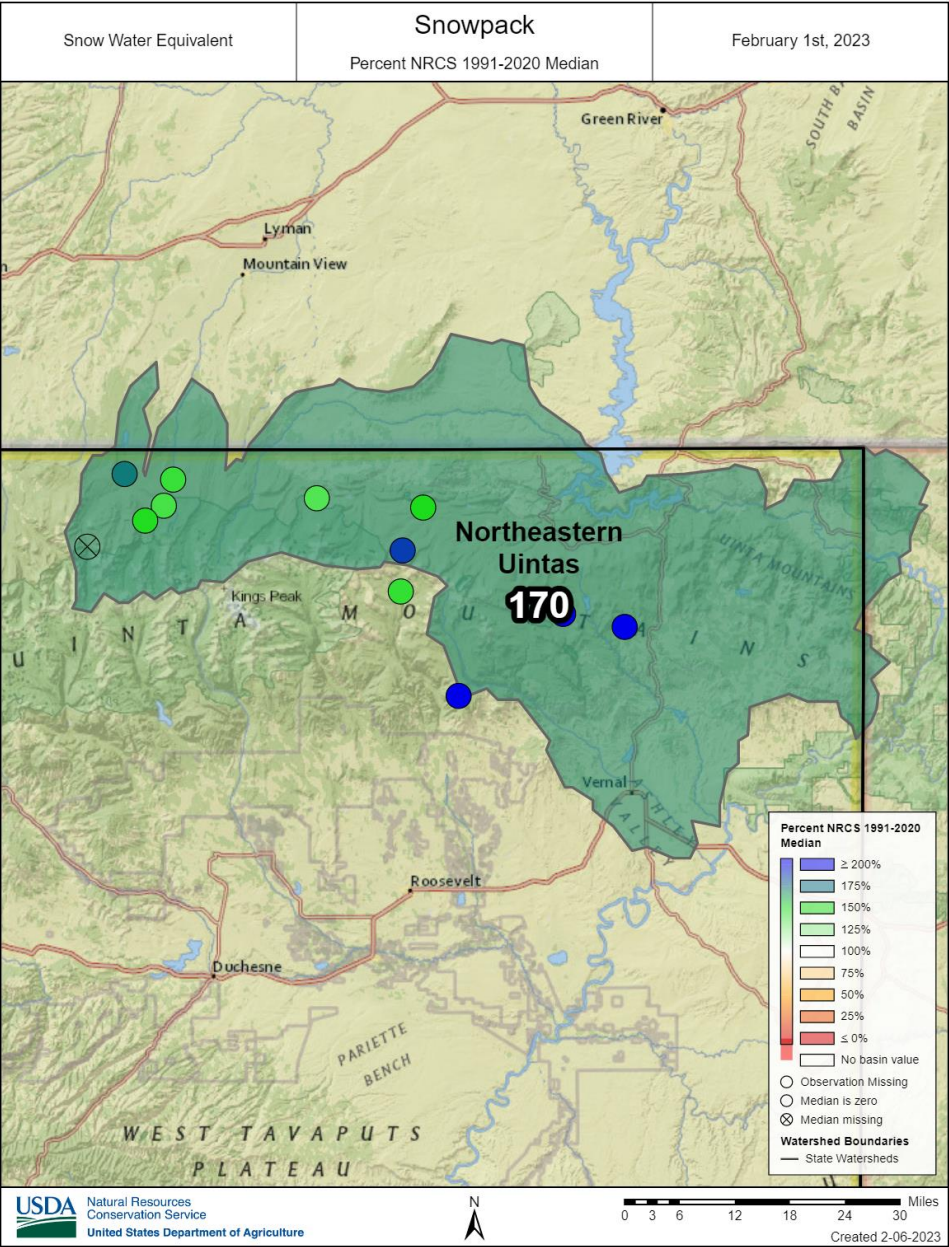
Northeastern Uintas | February 1, 2023

Snowpack in the Northeastern Uintas is well above normal at 171% of median, compared to 110% at this time last year. Precipitation in January was well above normal at 183%, which brings the seasonal accumulation (October-January) to 124% of median. Soil moisture is at 53% saturation compared to 52% saturation last year. Reservoir storage is 66% of capacity, compared to 76% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 95% to 137% of normal. The Surface Water Supply Index percentiles are 71% for the Blacks Fork, and 76% for the Smiths Fork.

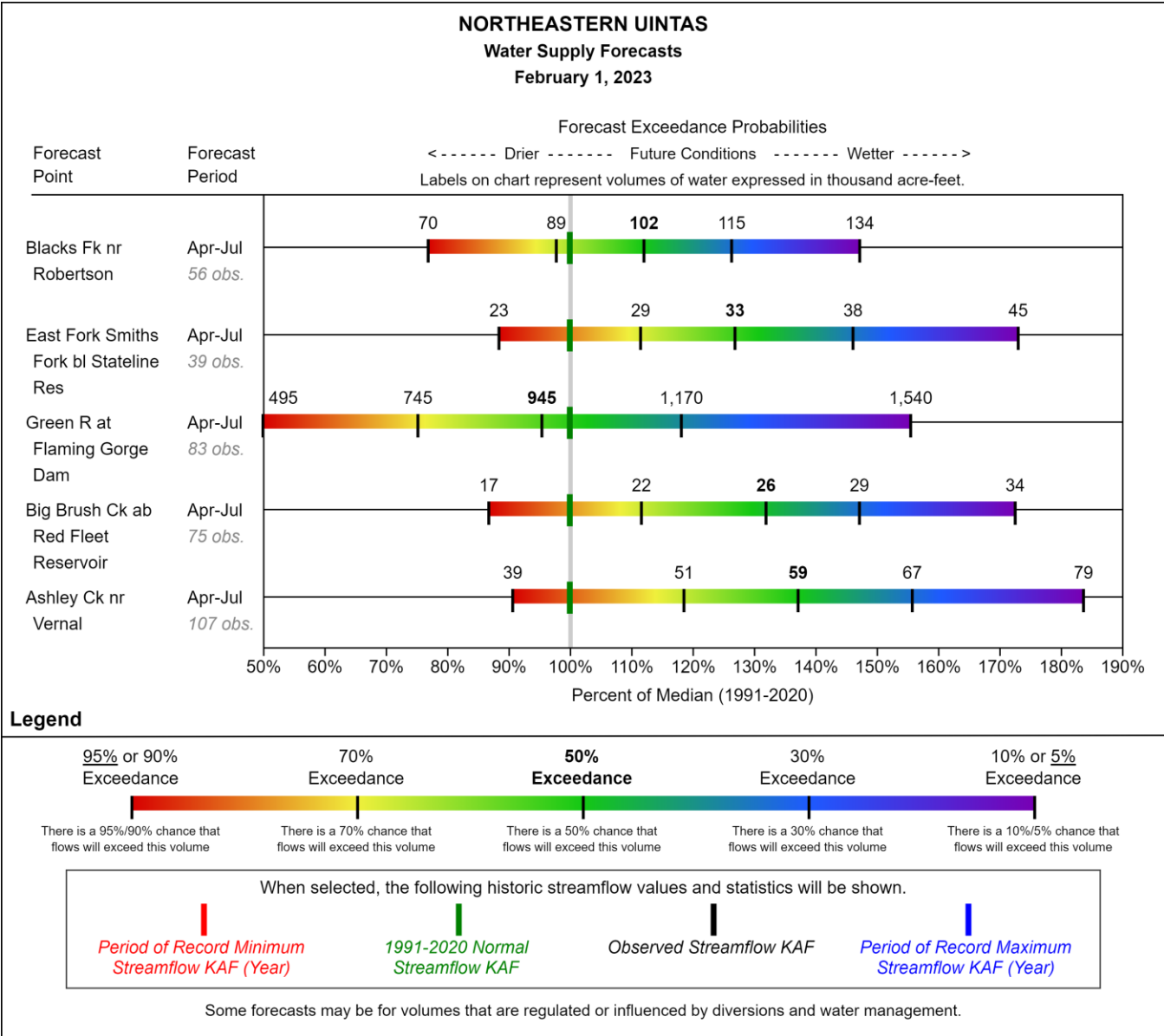


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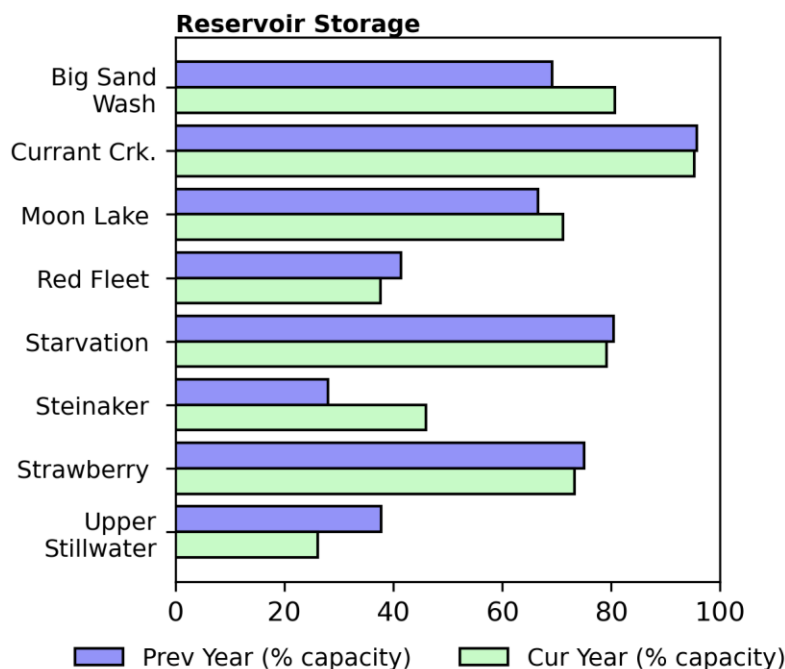
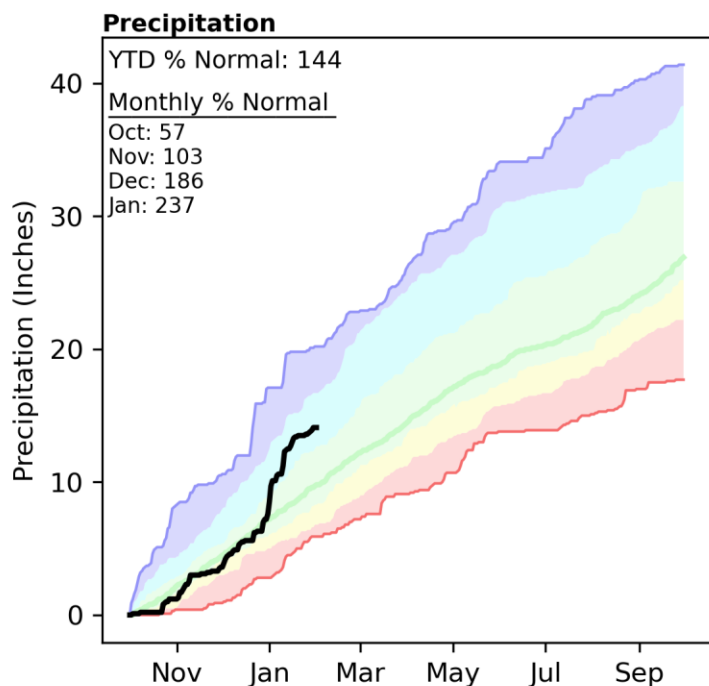
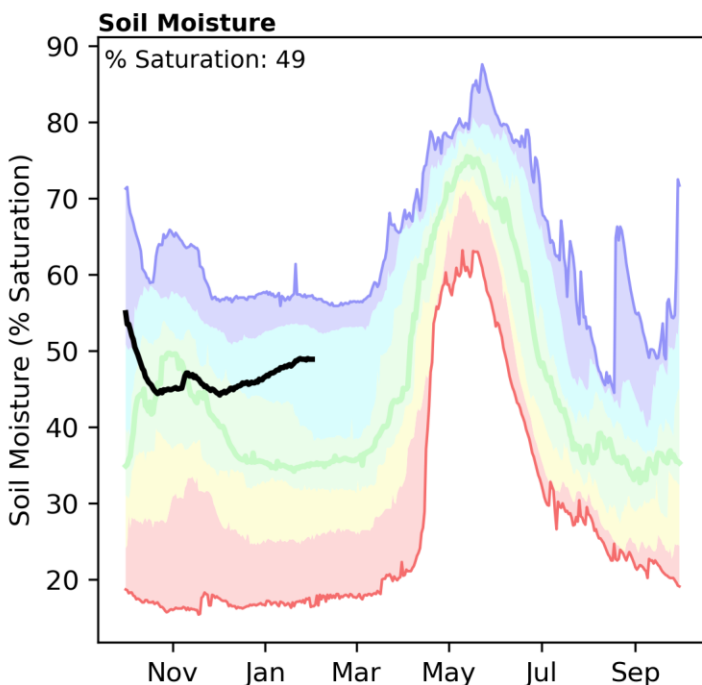
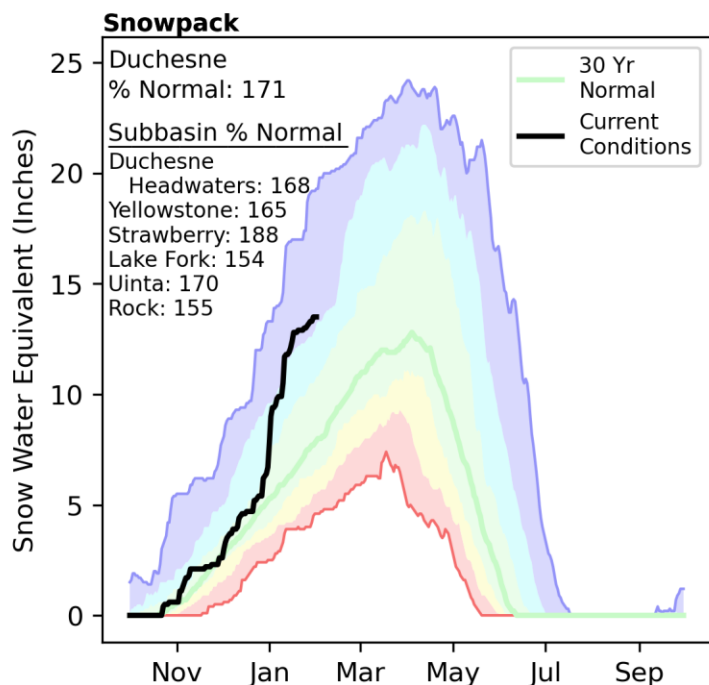
Northeastern Uintas



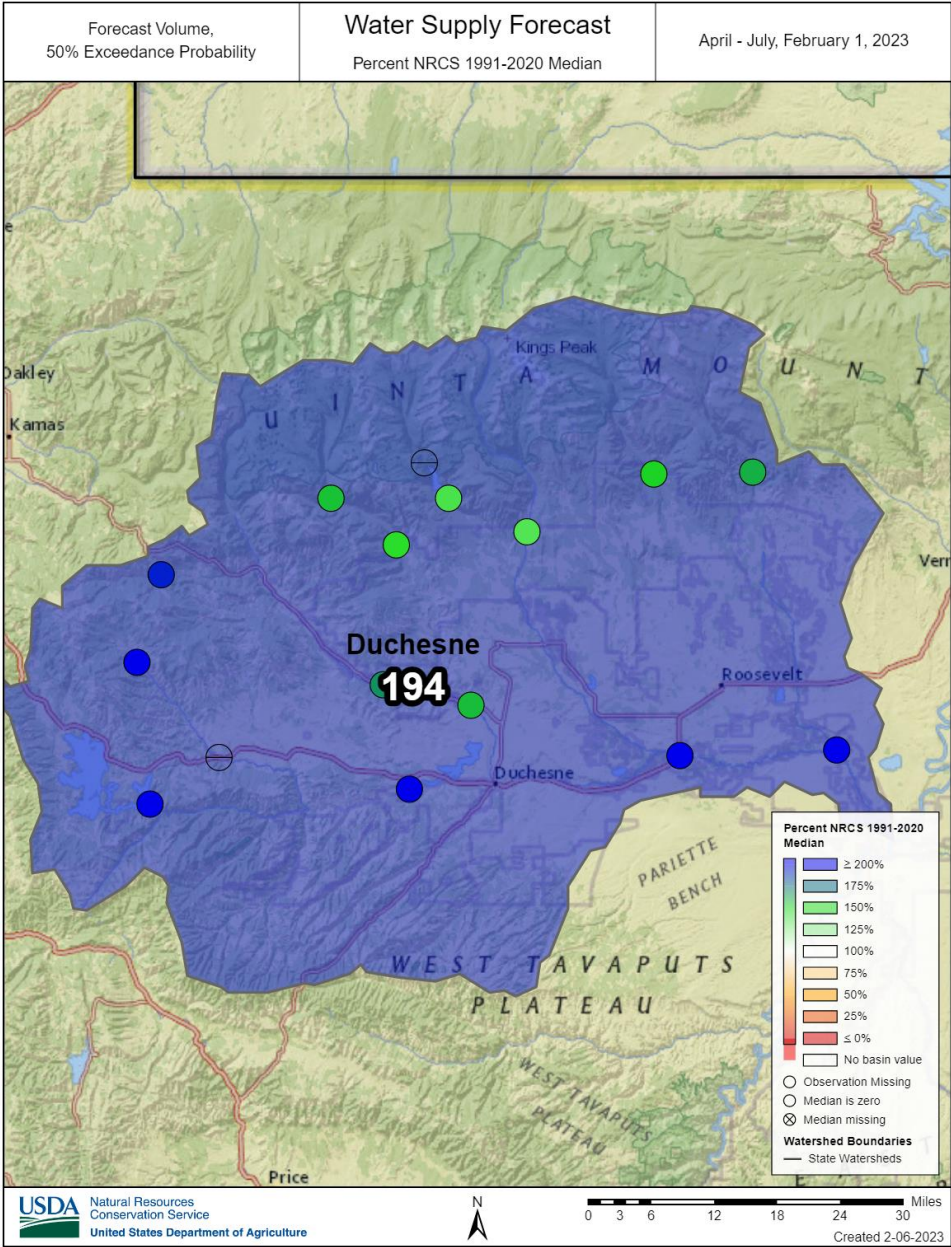
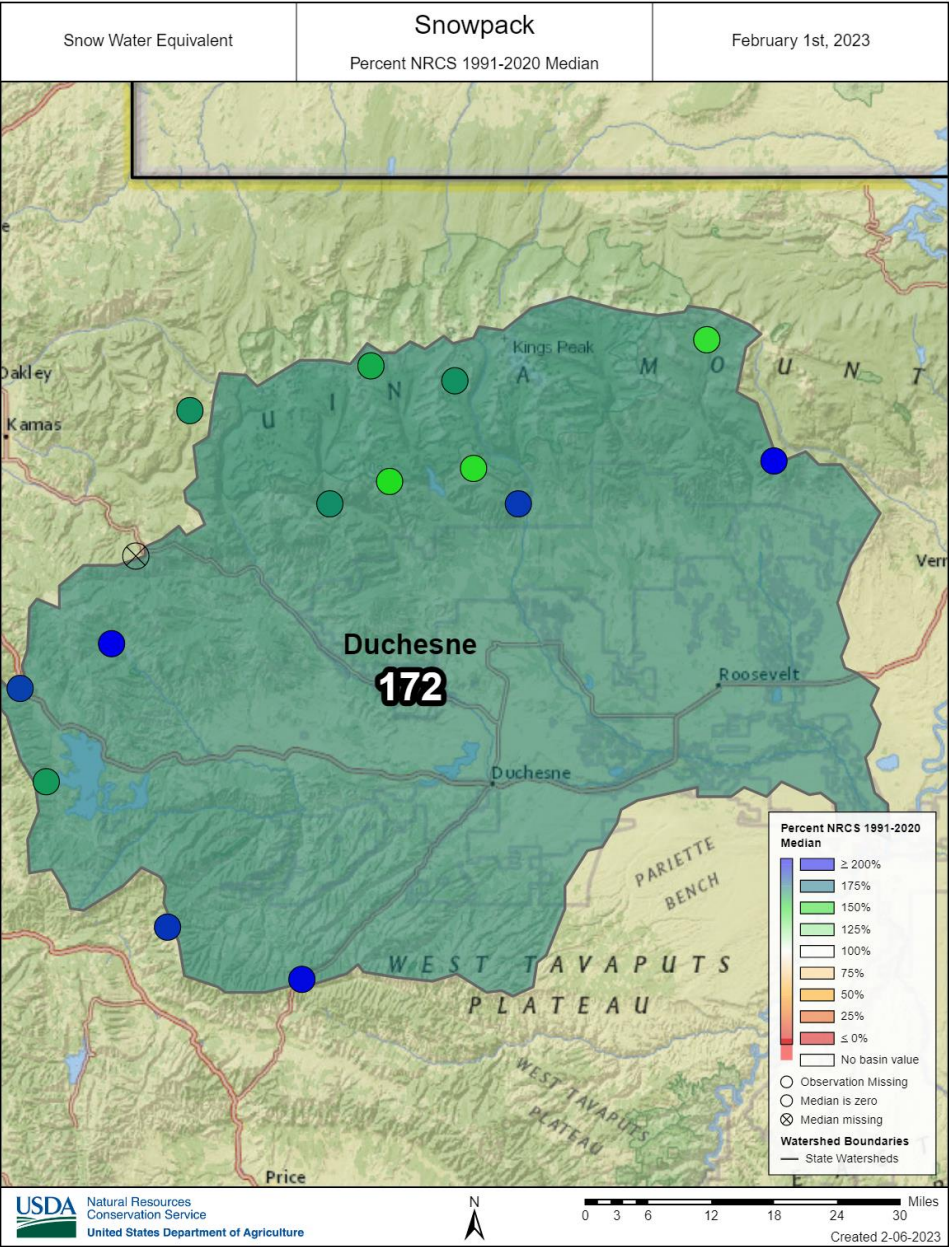
Northeastern Uintas

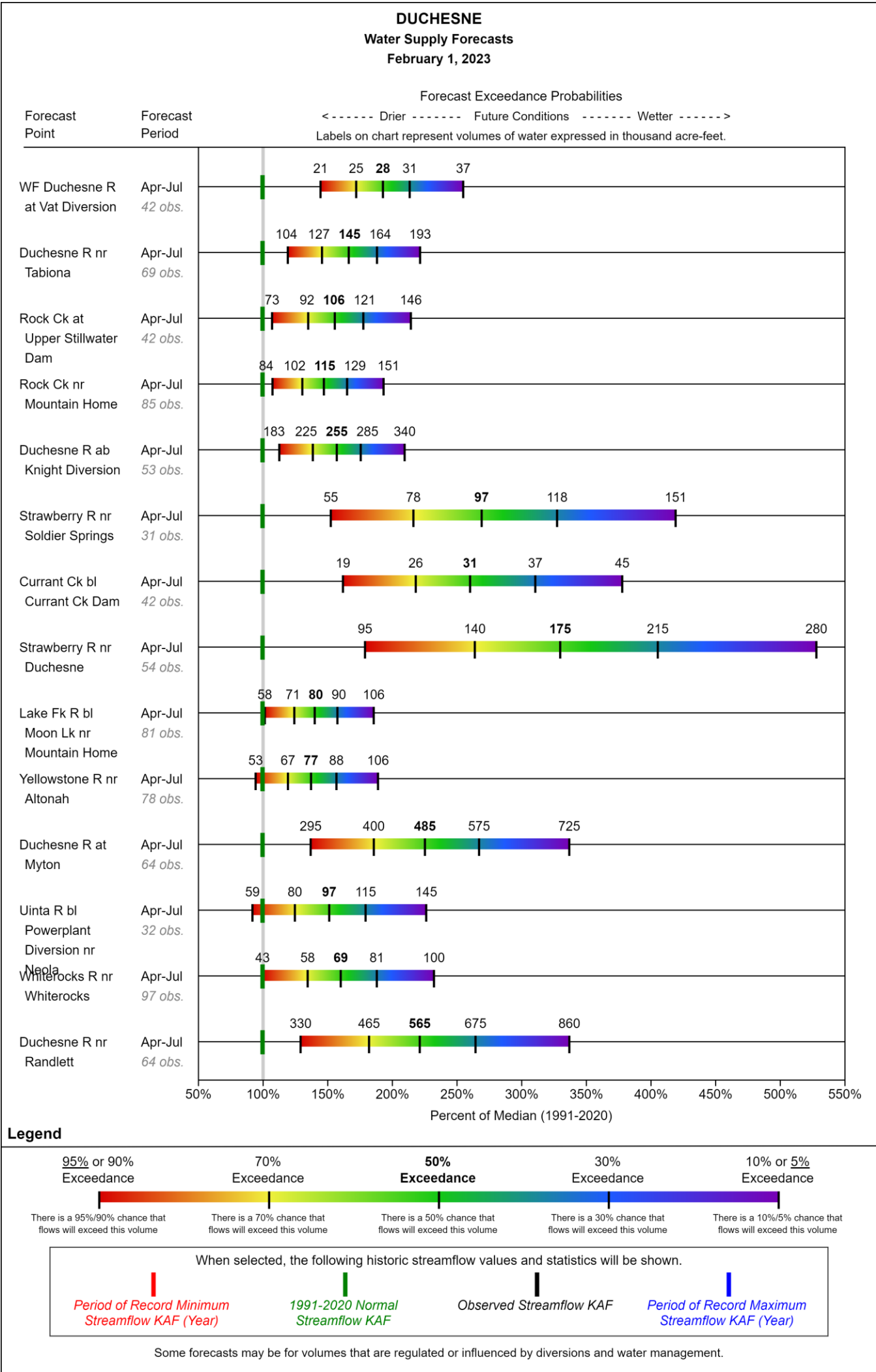


Snowpack in the Duchesne River Basin is well above normal at 171% of median, compared to 118% at this time last year. Precipitation in January was well above normal at 237%, which brings the seasonal accumulation (October-January) to 144% of median. Soil moisture is at 49% saturation compared to 52% saturation last year. Reservoir storage is 71% of capacity, compared to 73% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 138% to 330% of normal. The Surface Water Supply Index percentiles are 61% for the Western Uintas, and 70% for the Eastern Uintas.



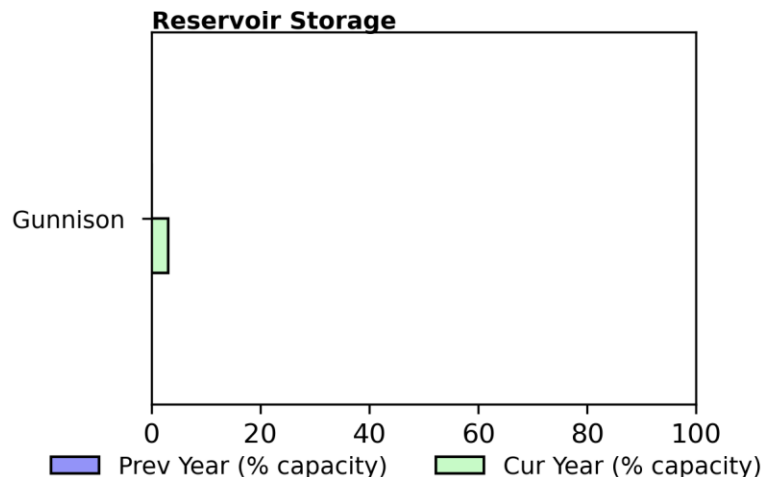
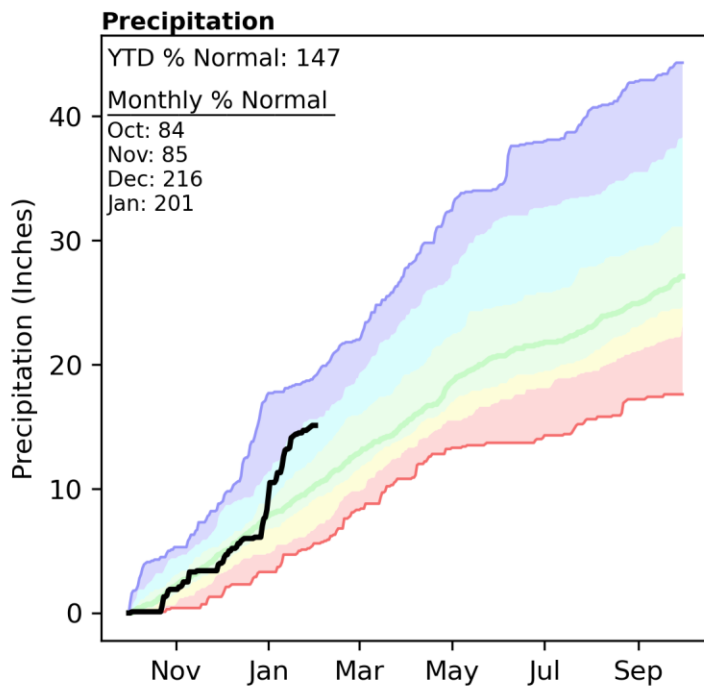
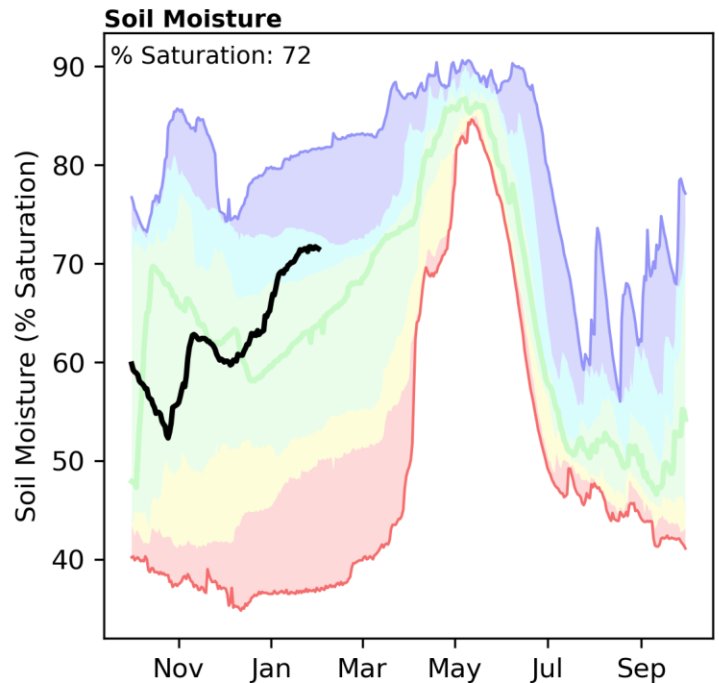
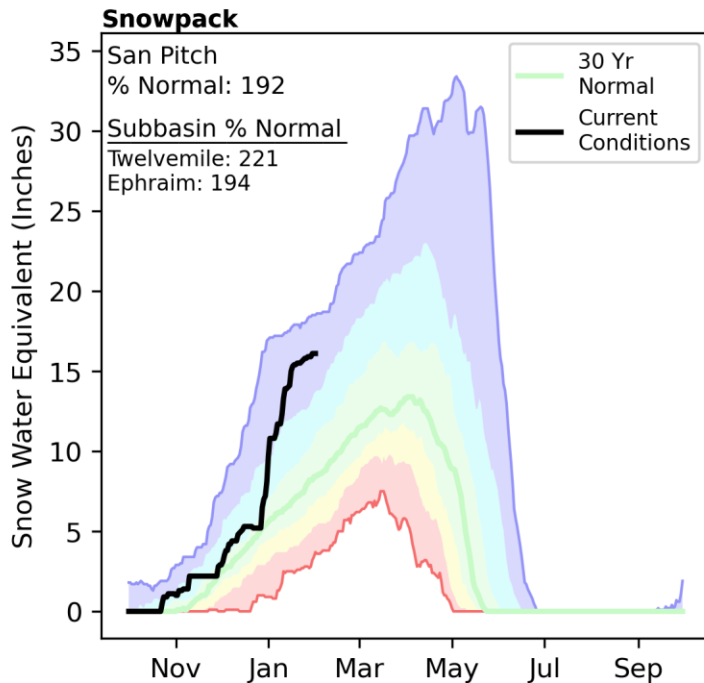
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)





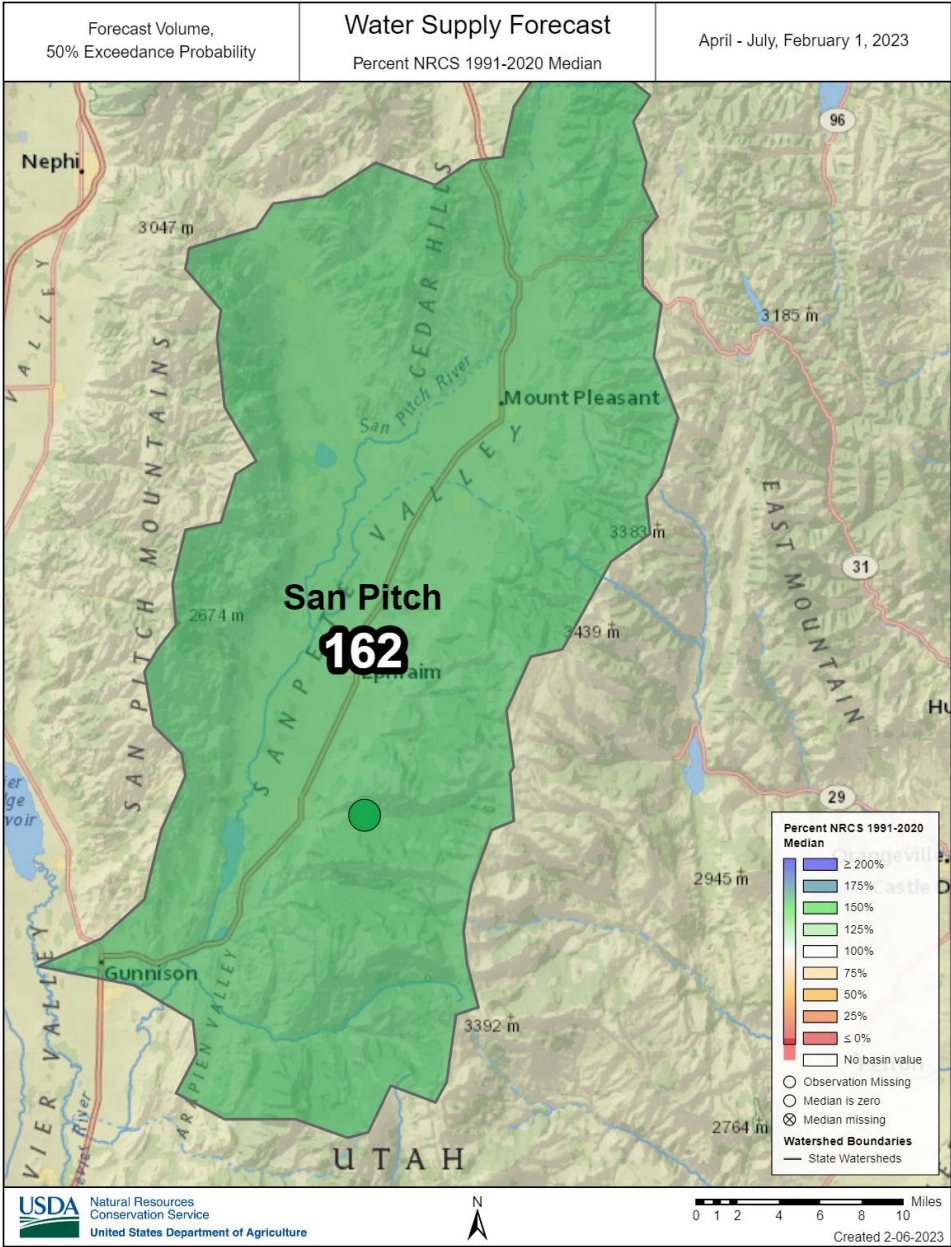
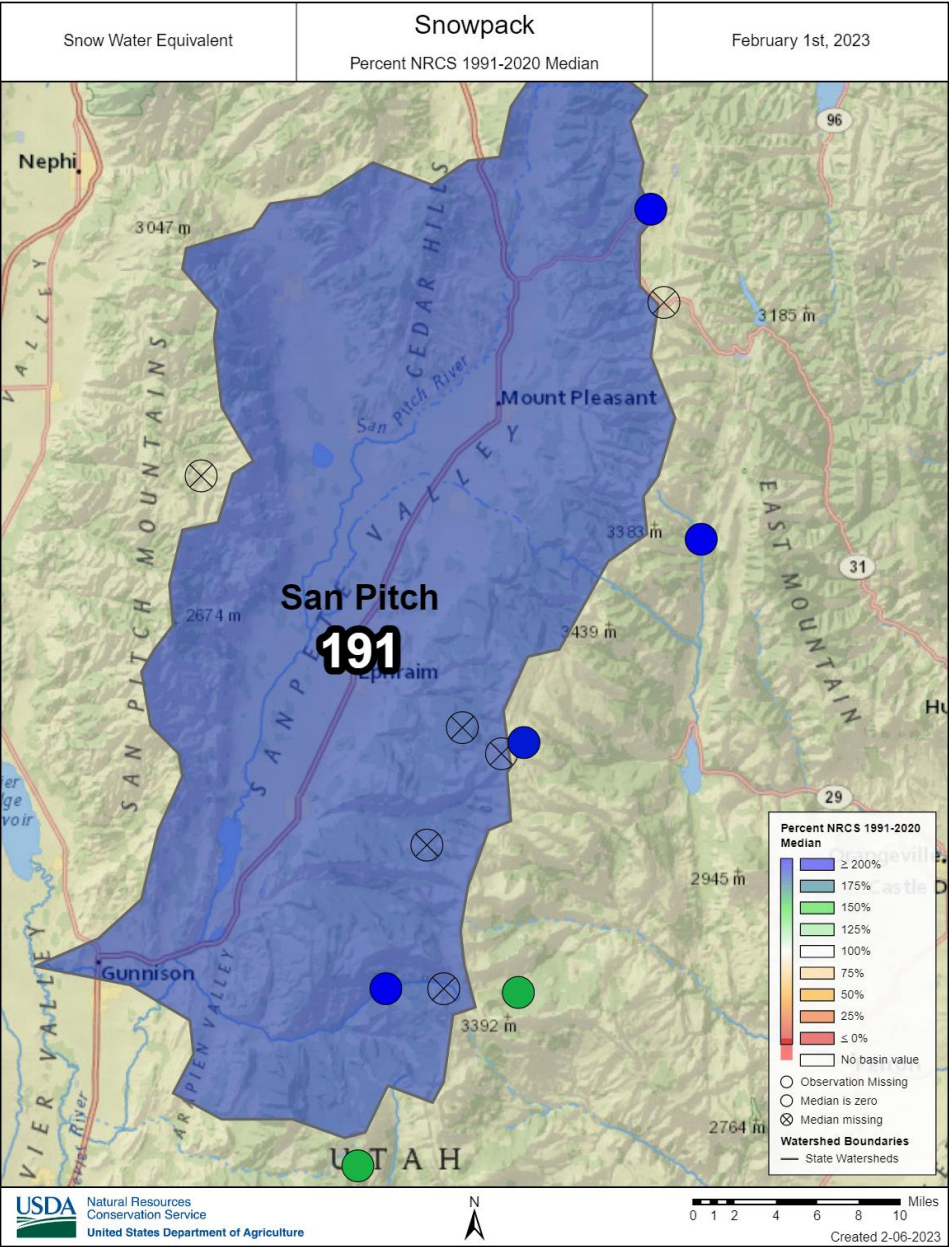
San Pitch | February 1, 2023

Snowpack in the San Pitch River Basin is well above normal at 192% of median, compared to 94% at this time last year. Precipitation in January was well above normal at 201%, which brings the seasonal accumulation (October-January) to 147% of median. Soil moisture is at 72% saturation compared to 72% saturation last year. Reservoir storage is 3% of capacity, compared to 0% last year. The forecast streamflow volume (50% exceedence, April-July) for Manti Creek is 162% of normal. The Surface Water Supply Index percentile is 48% for the San Pitch.



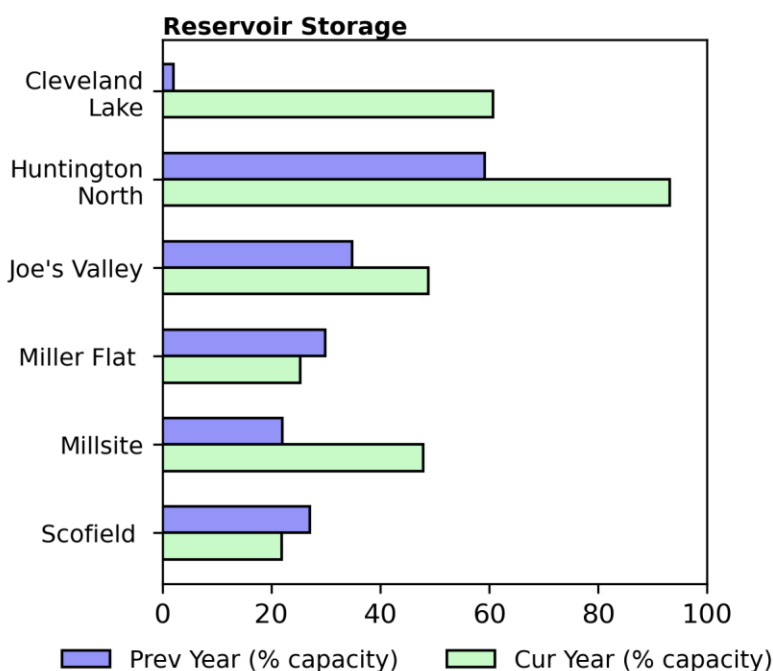
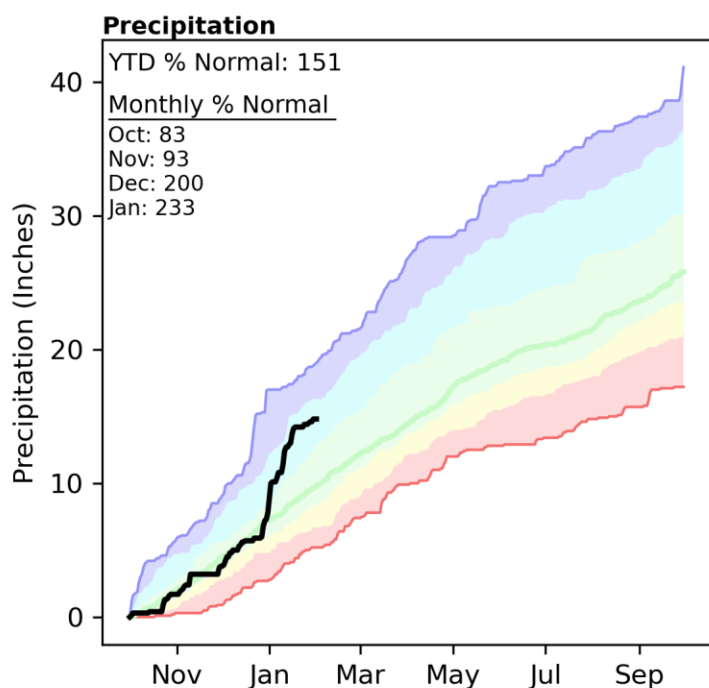
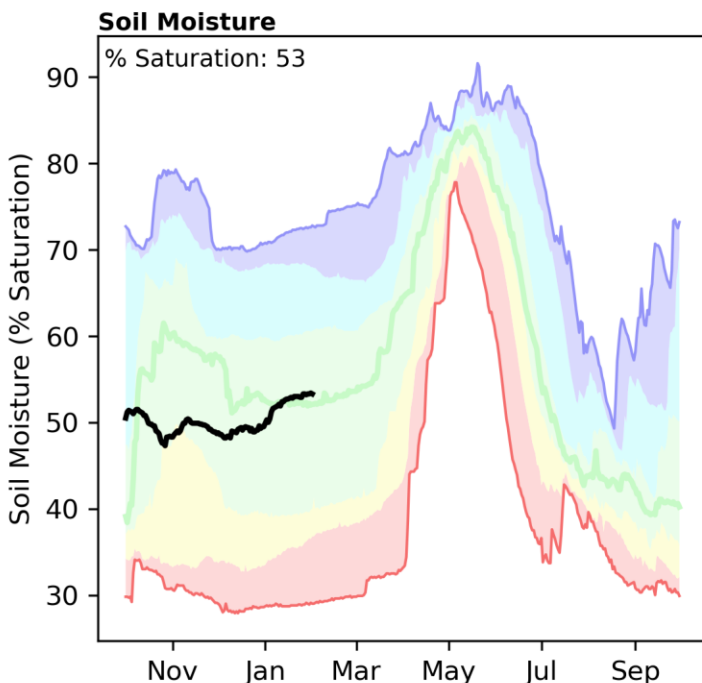
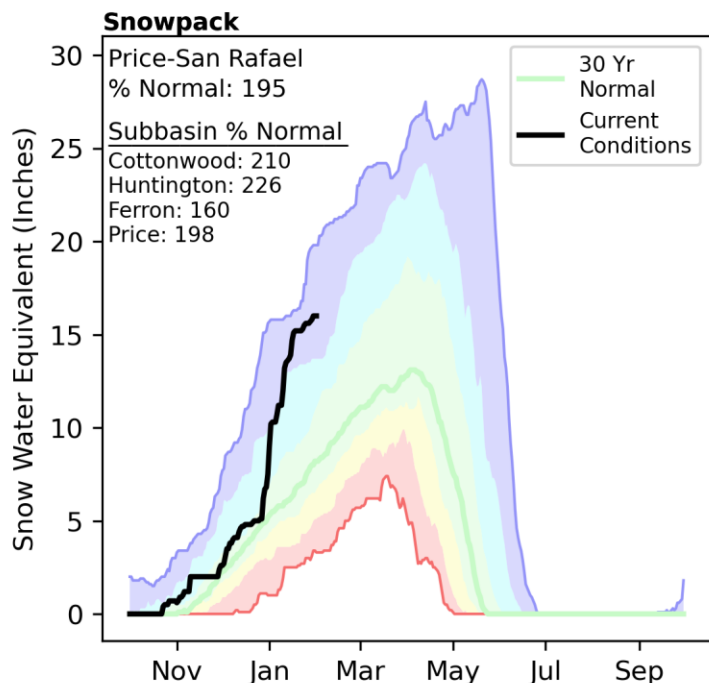
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

San Pitch



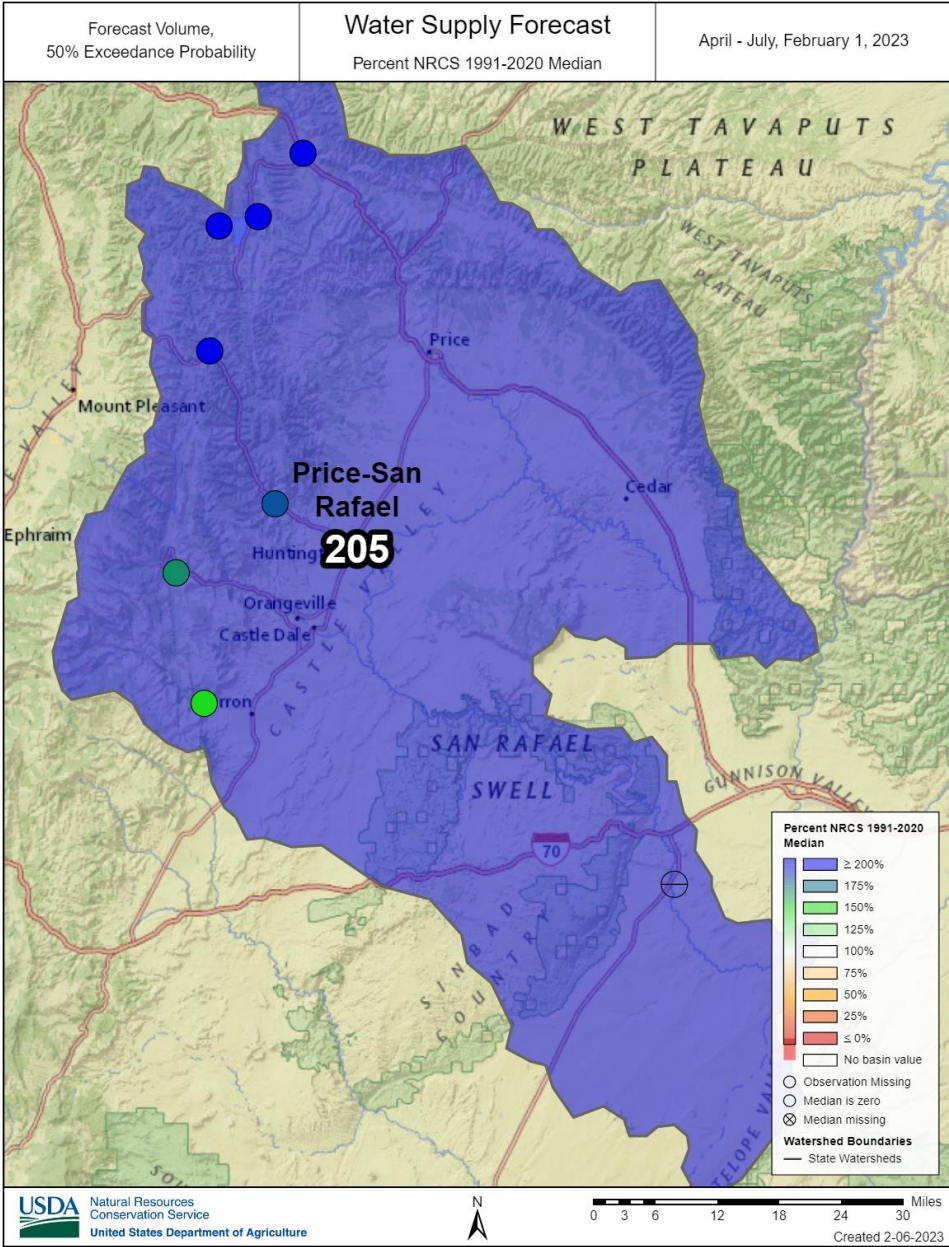
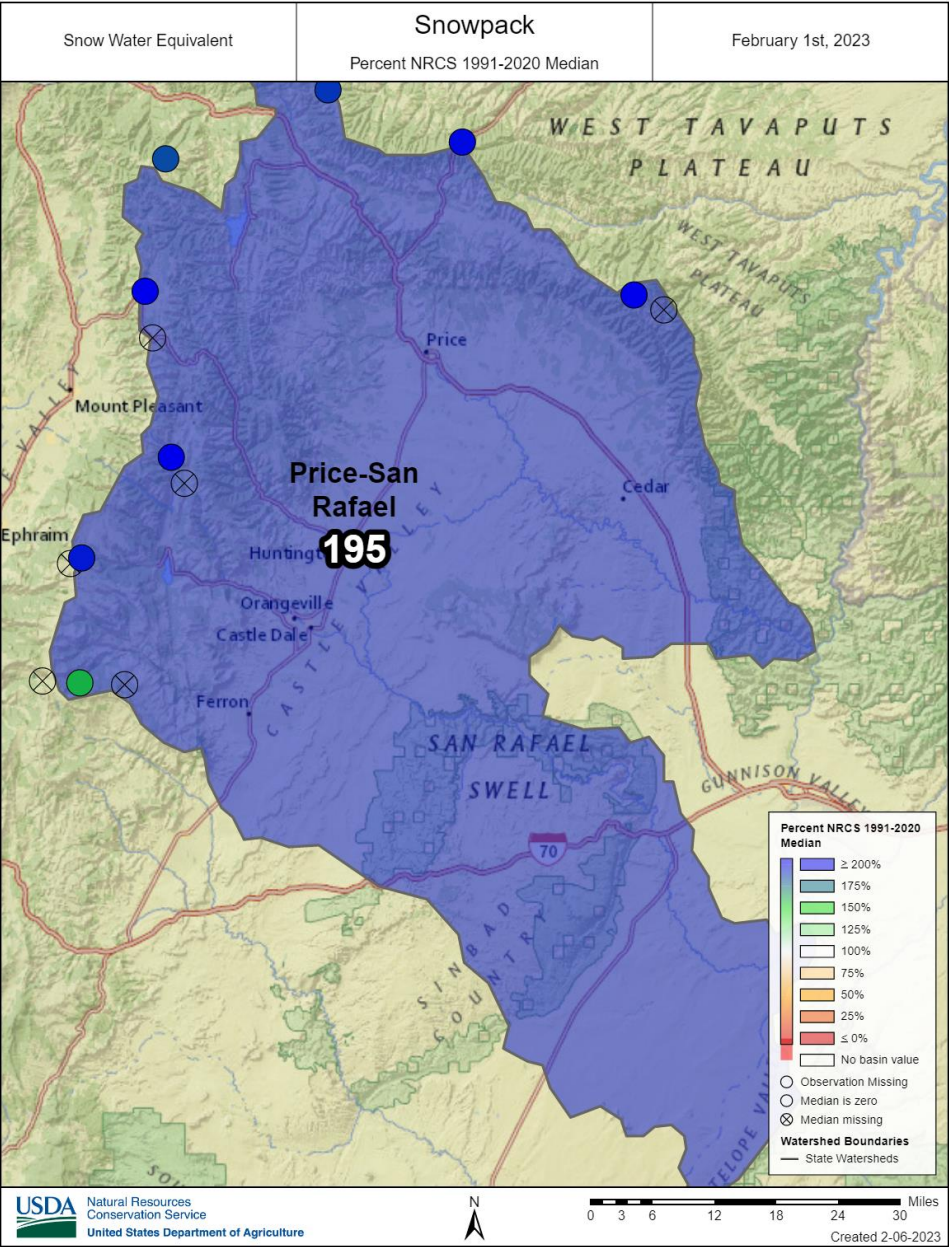
Price-San Rafael | February 1, 2023

Snowpack in the Price and San Rafael River Basins is well above normal at 195% of median, compared to 102% at this time last year. Precipitation in January was well above normal at 233%, which brings the seasonal accumulation (October-January) to 151% of median. Soil moisture is at 53% saturation compared to 64% saturation last year. Reservoir storage is 38% of capacity, compared to 29% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 150% to 361% of normal. The Surface Water Supply Index percentiles are 75% for the Price, 68% for Joes Valley, and 70% for Ferron Creek.

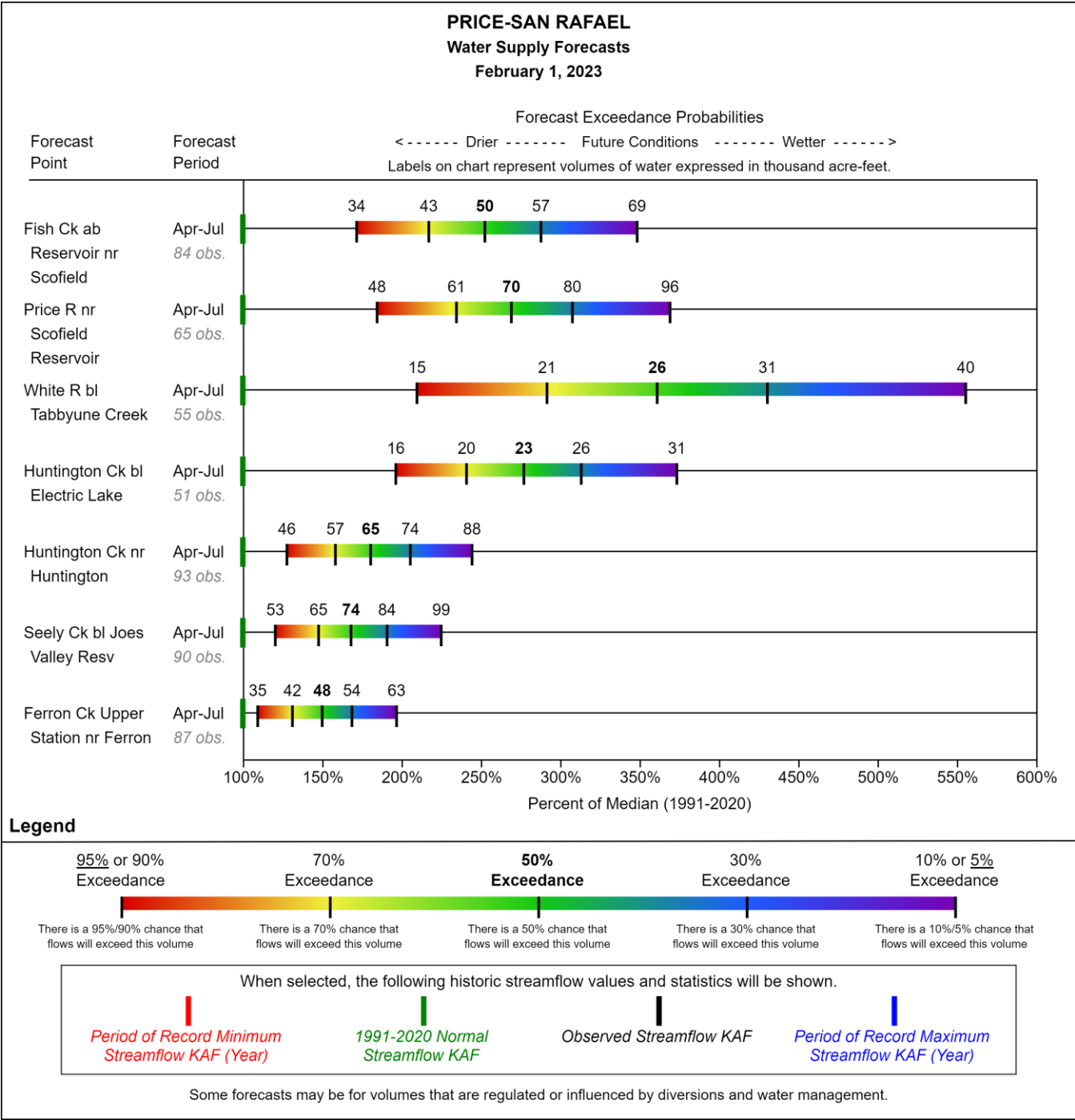


Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

Price San-Rafael

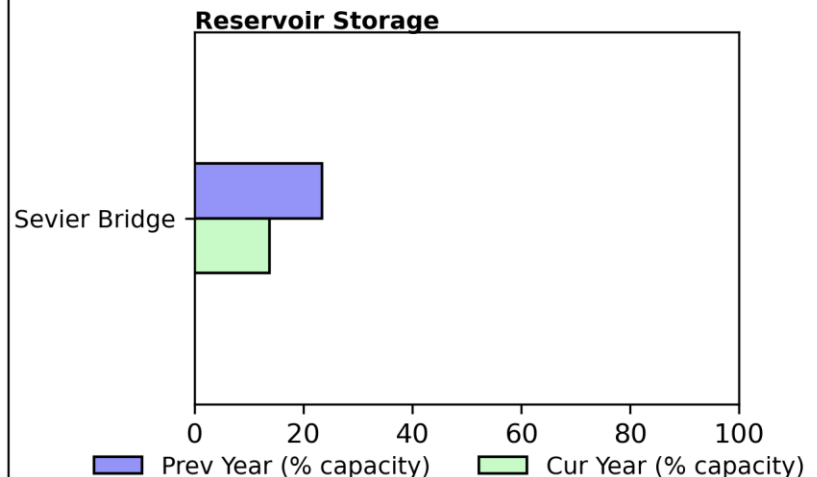
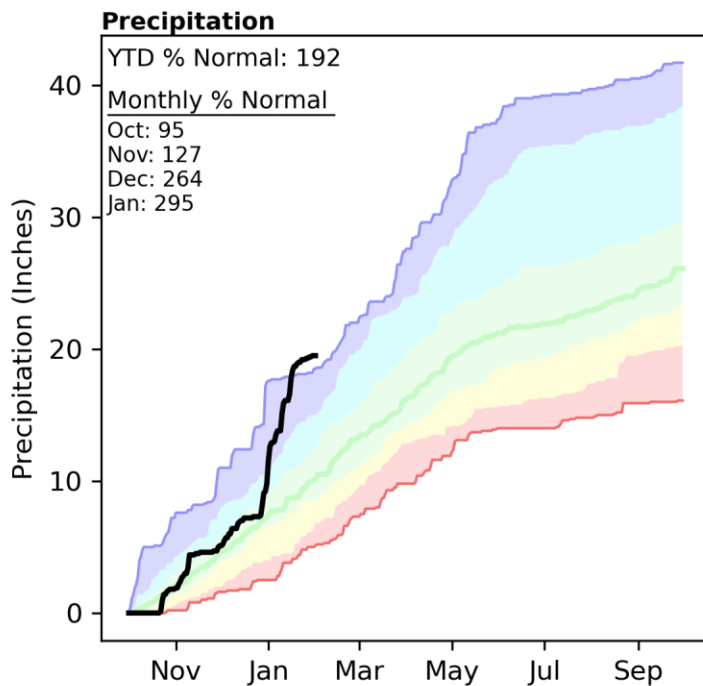
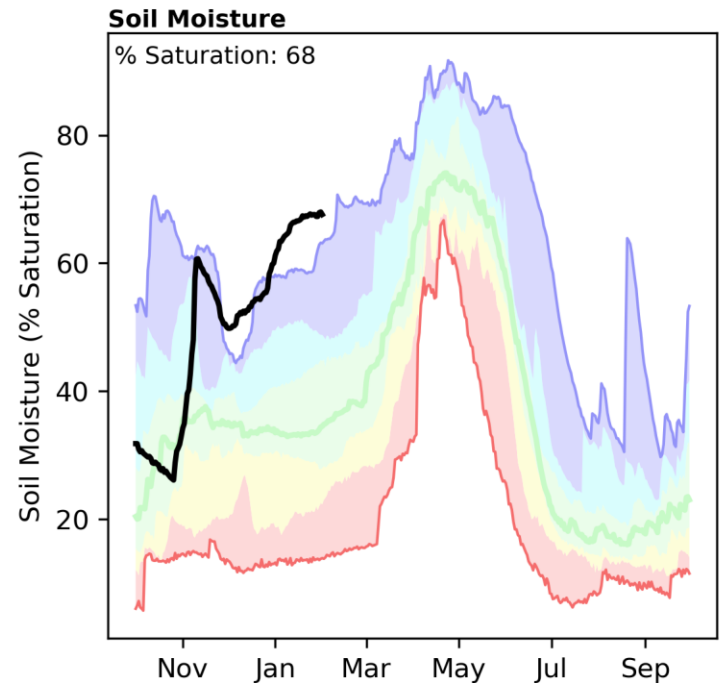
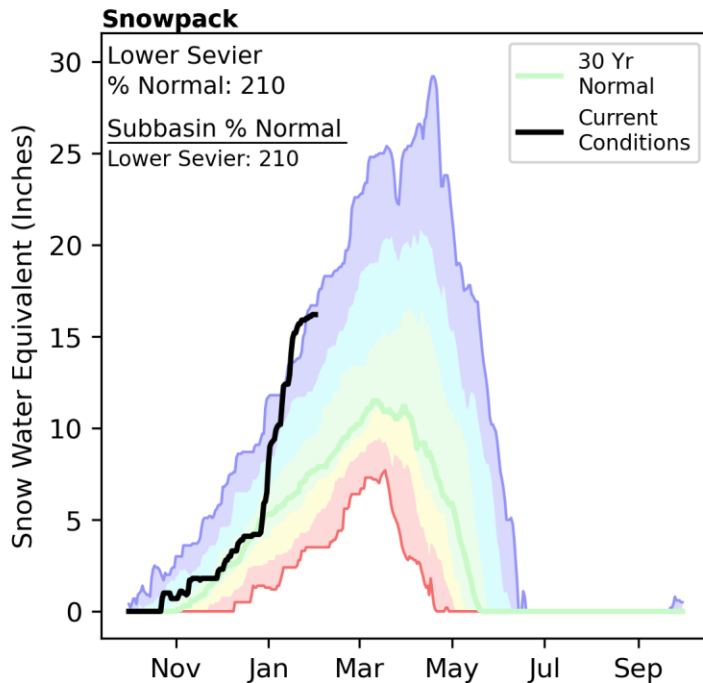


Price-San Rafael



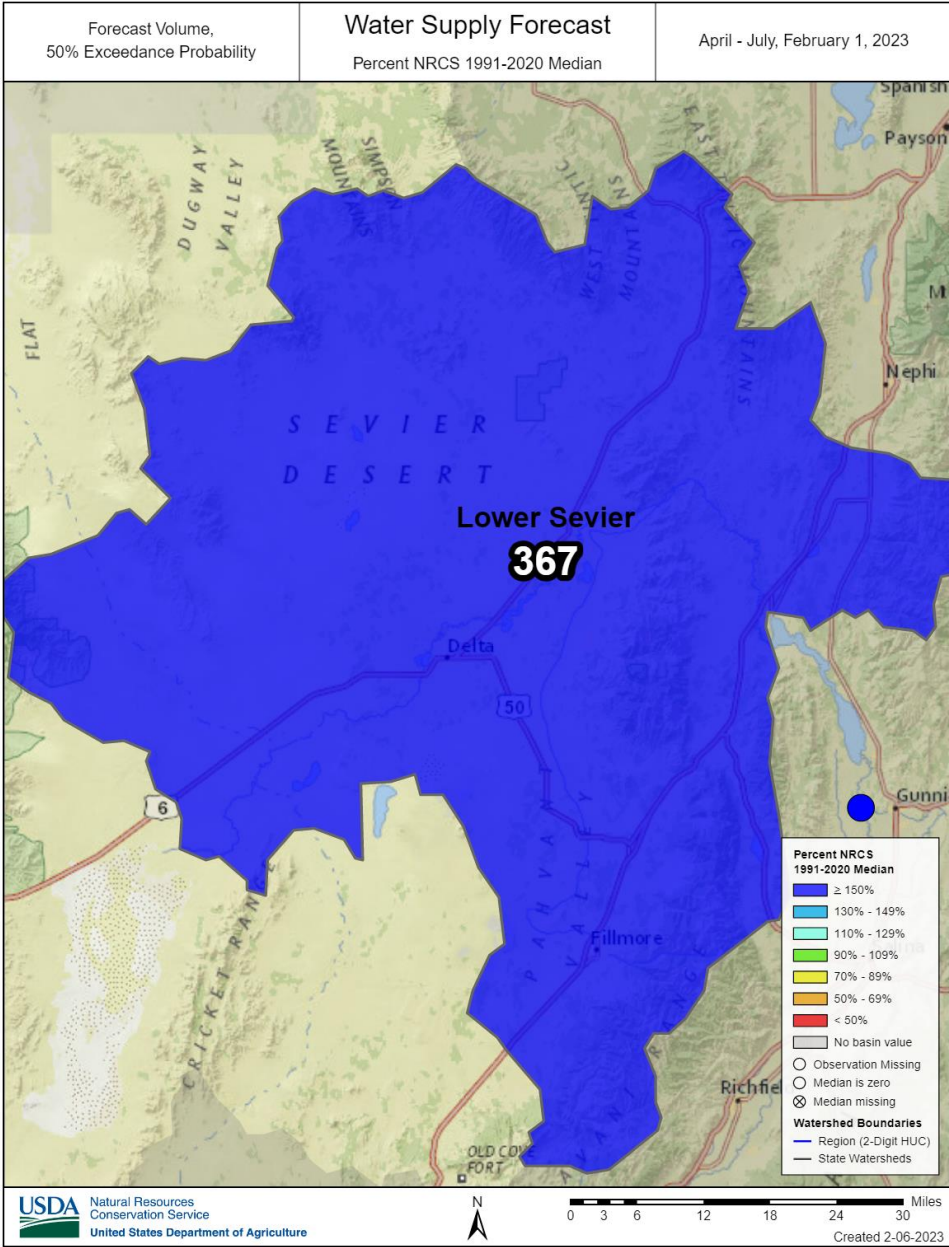
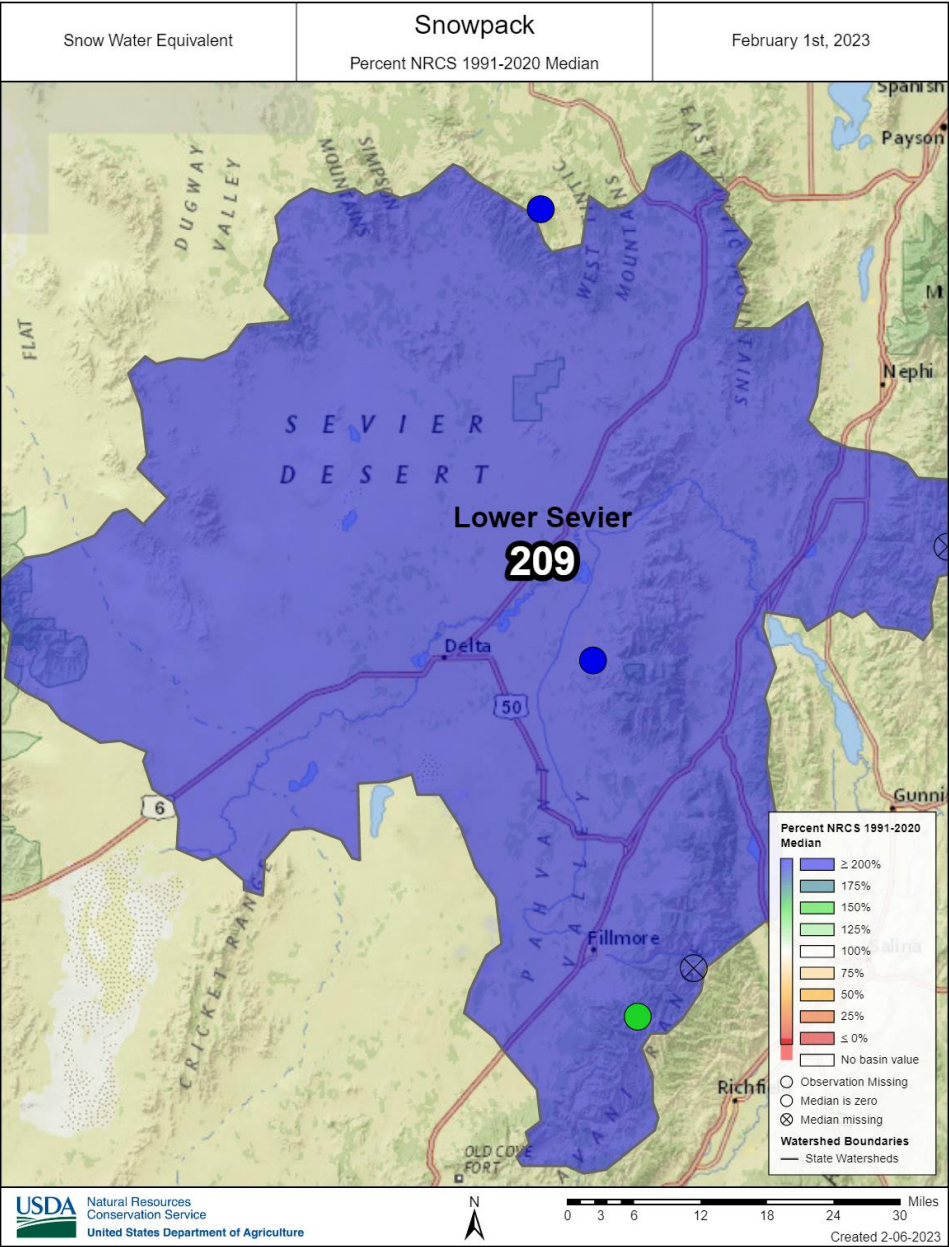
Lower Sevier | February 1, 2023

Snowpack in the Lower Sevier River Basin is well above normal at 210% of median, compared to 99% at this time last year. Precipitation in January was well above normal at 295%, which brings the seasonal accumulation (October-January) to 192% of median. Soil moisture is at 68% saturation compared to 49% saturation last year. Reservoir storage is 13% of capacity, compared to 23% last year. Forecast streamflow volume (50% exceedence, April-July) for the Sevier River near Gunnison is 367% of normal. The Surface Water Supply Index percentile is 34% for the Lower Sevier.

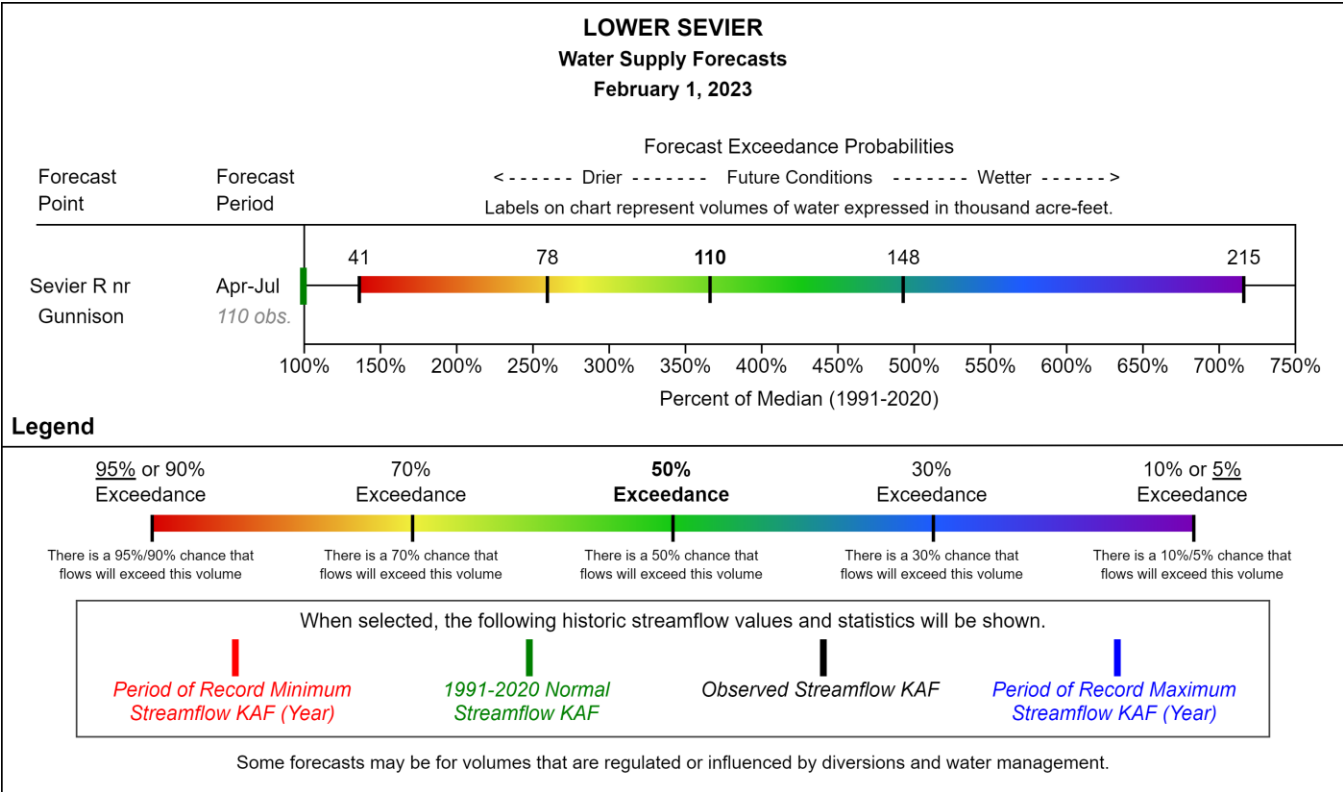


Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

Lower Sevier

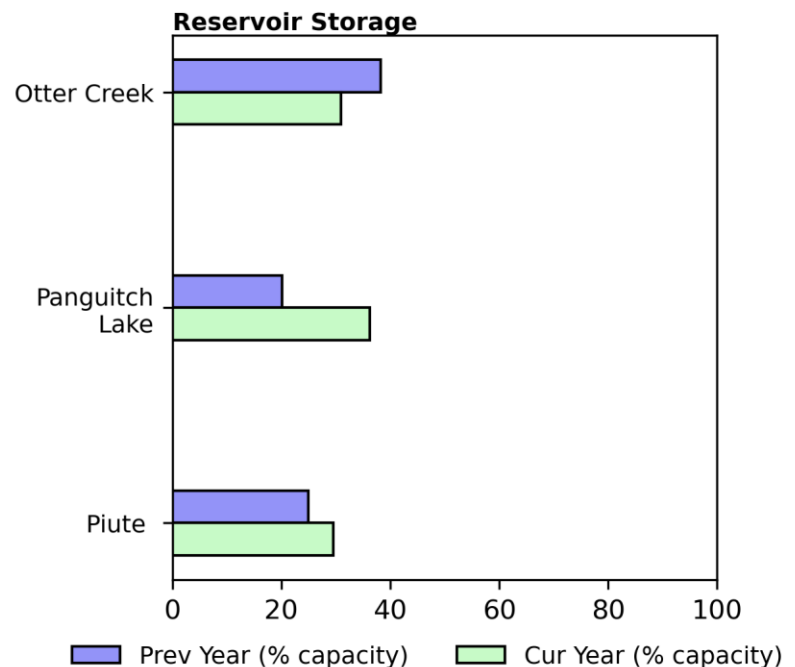
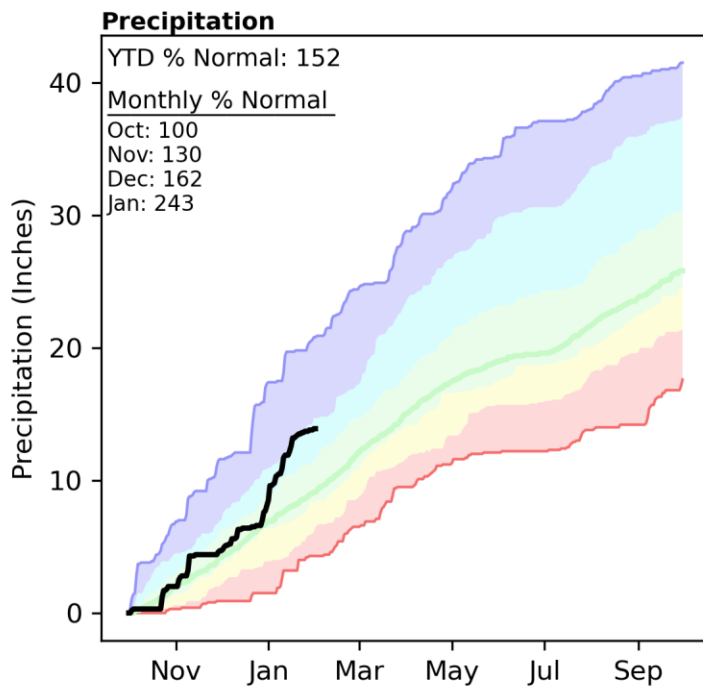
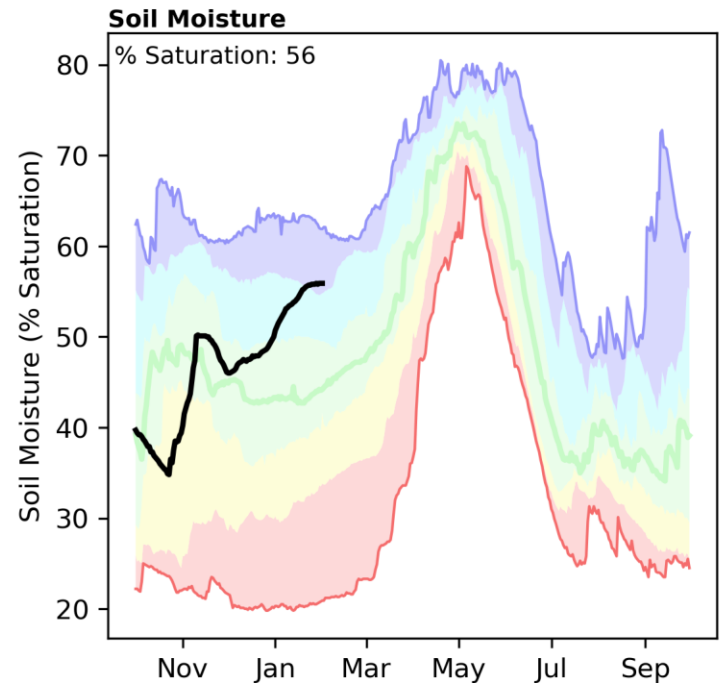
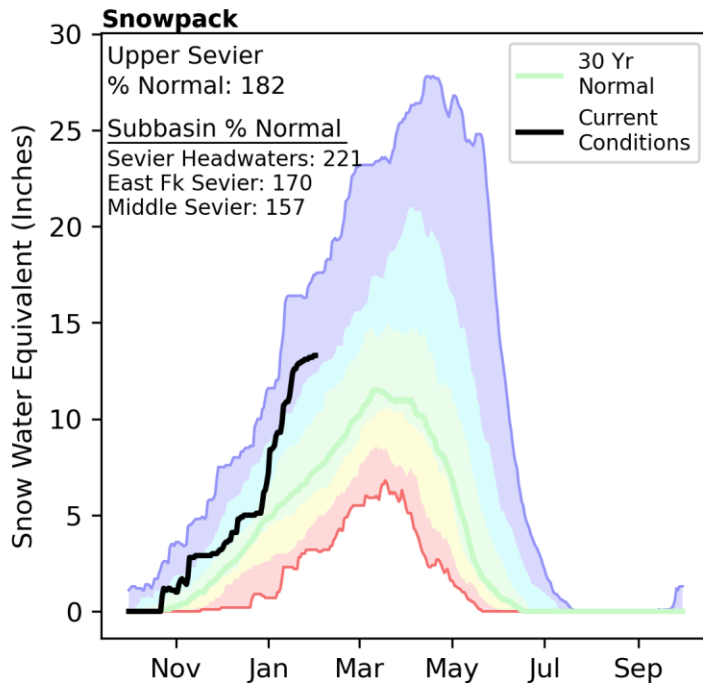


Lower Sevier



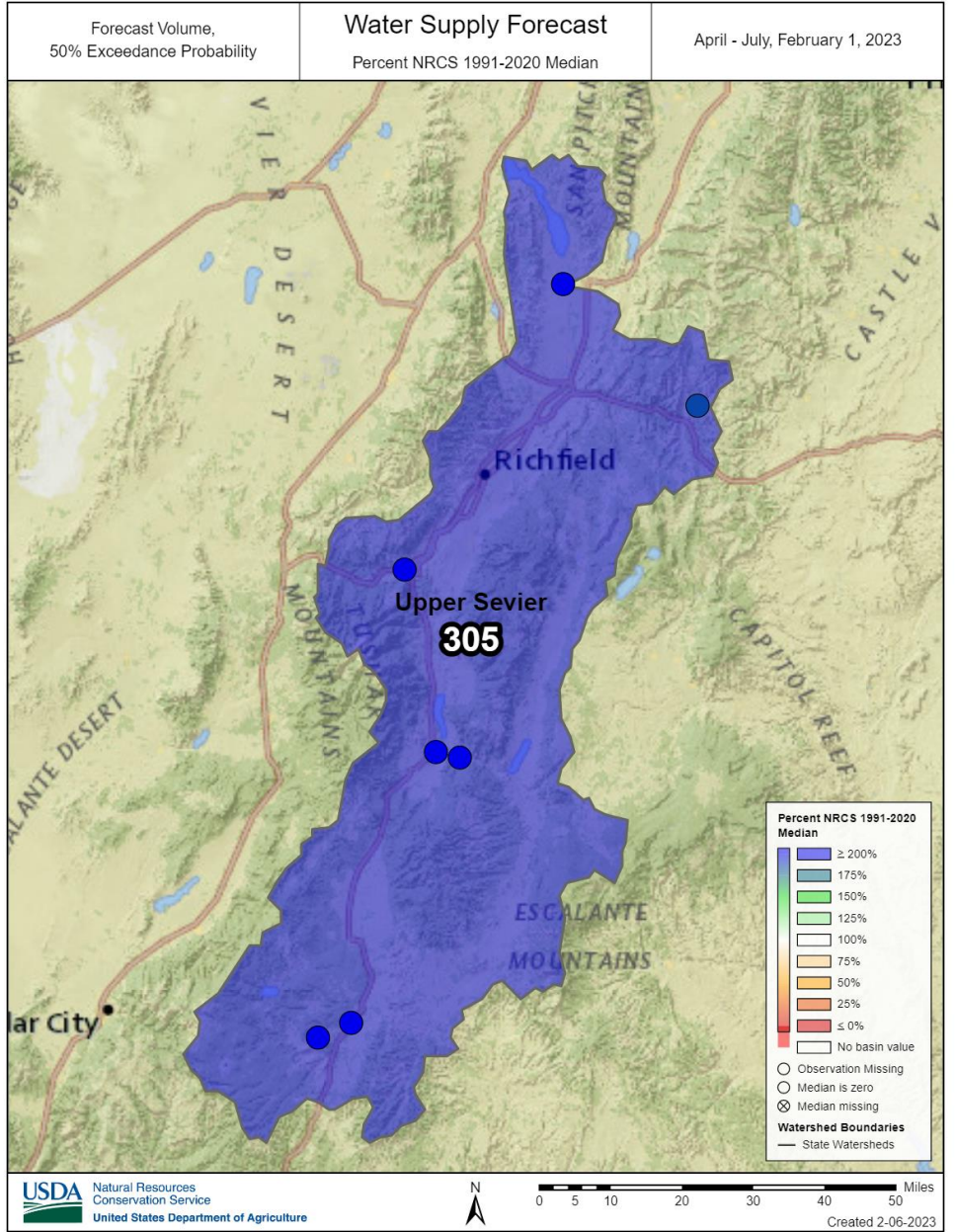
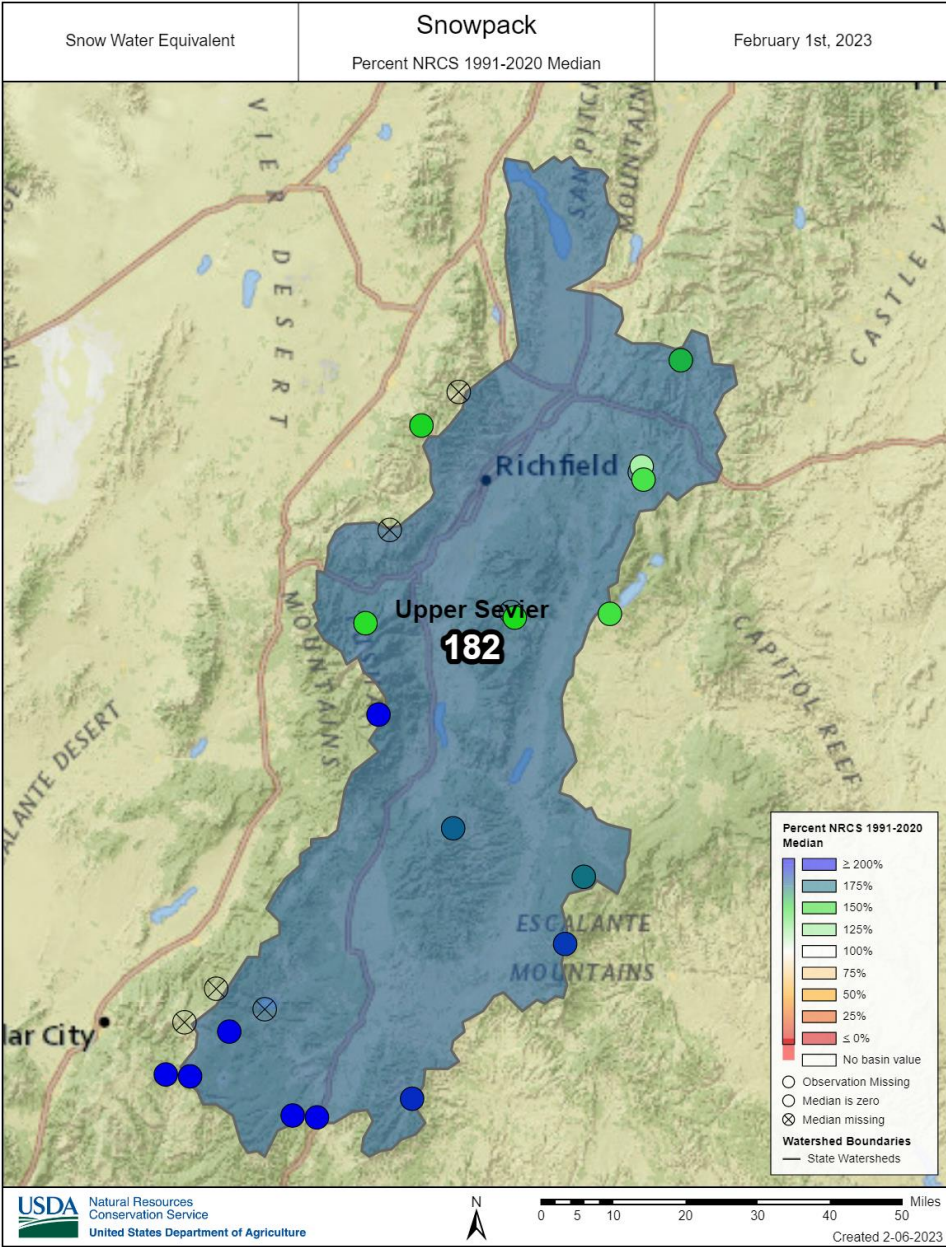
Upper Sevier | February 1, 2023

Snowpack in the Upper Sevier River Basin is well above normal at 182% of median, compared to 110% at this time last year. Precipitation in January was well above normal at 243%, which brings the seasonal accumulation (October-January) to 152% of median. Soil moisture is at 56% saturation compared to 49% saturation last year. Reservoir storage is 31% of capacity, compared to 28% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 184% to 483% of normal. The Surface Water Supply Index percentile is 64% for the Upper Sevier.

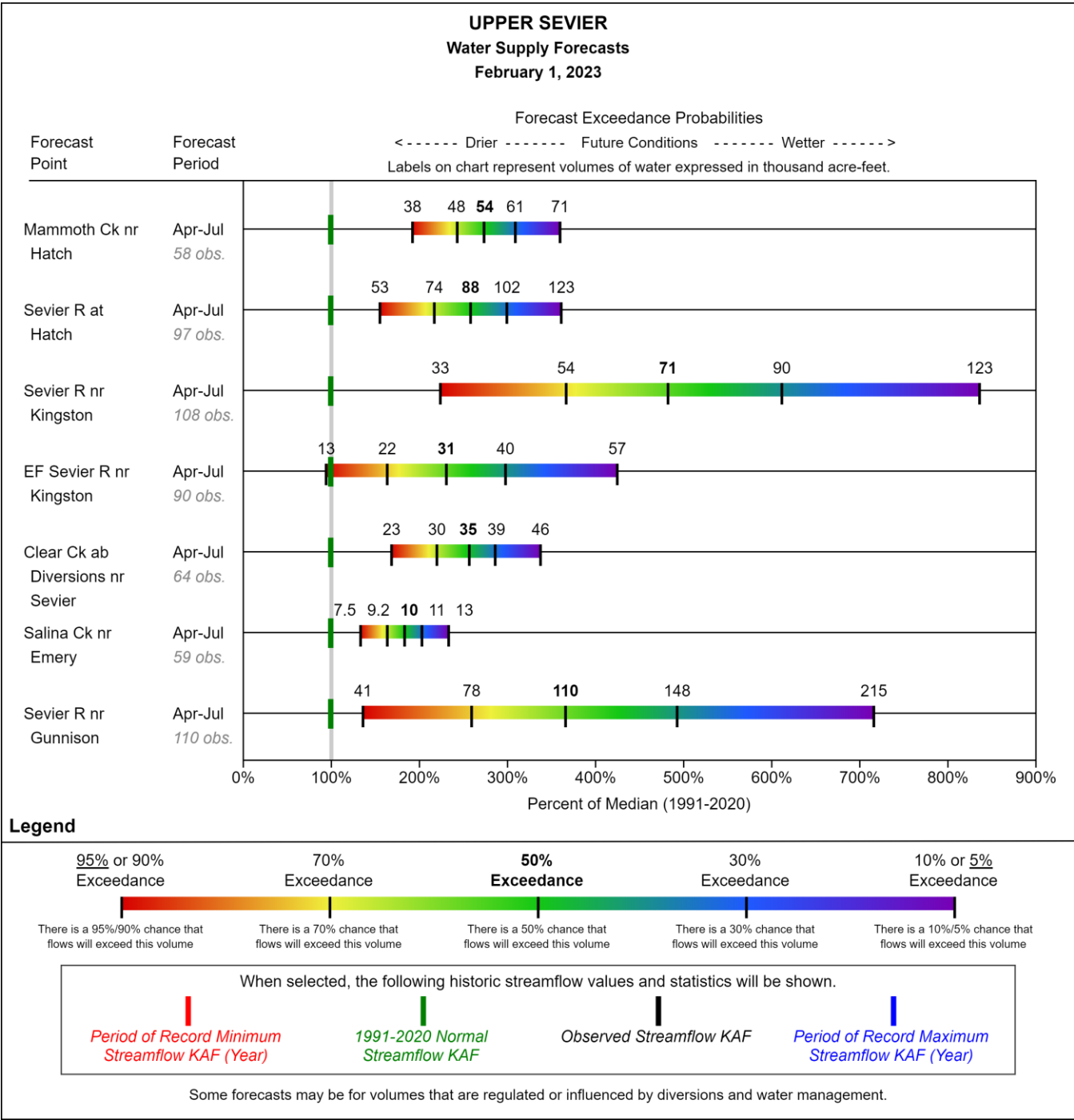


Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

Upper Sevier

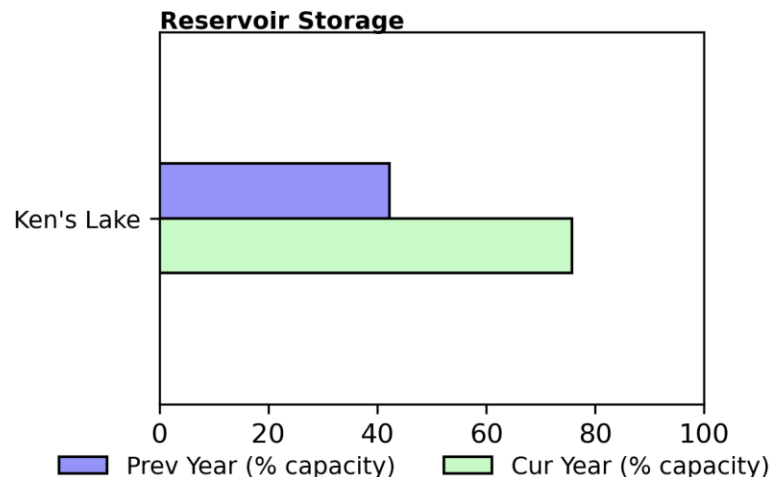
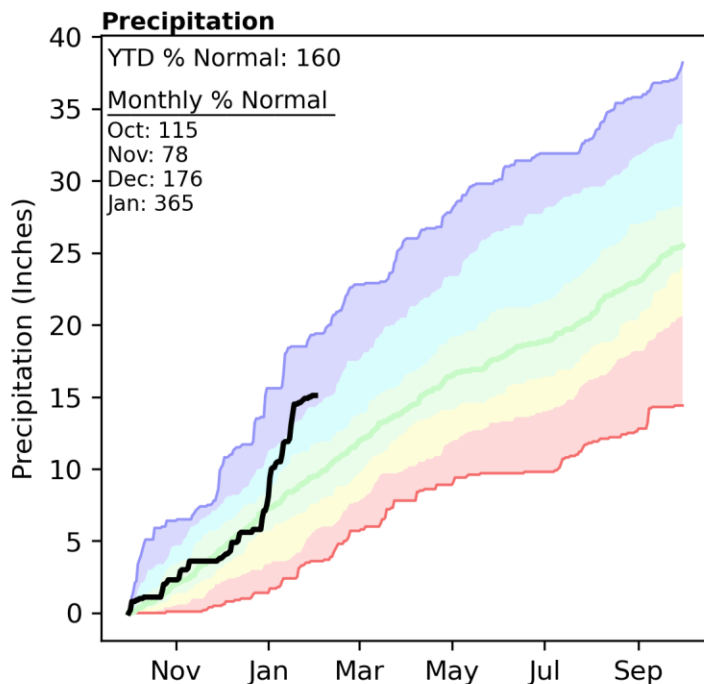
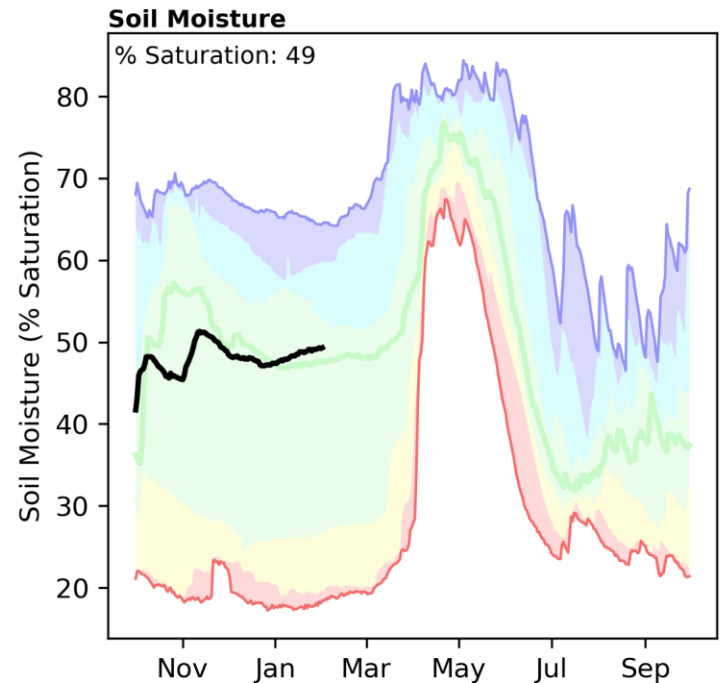
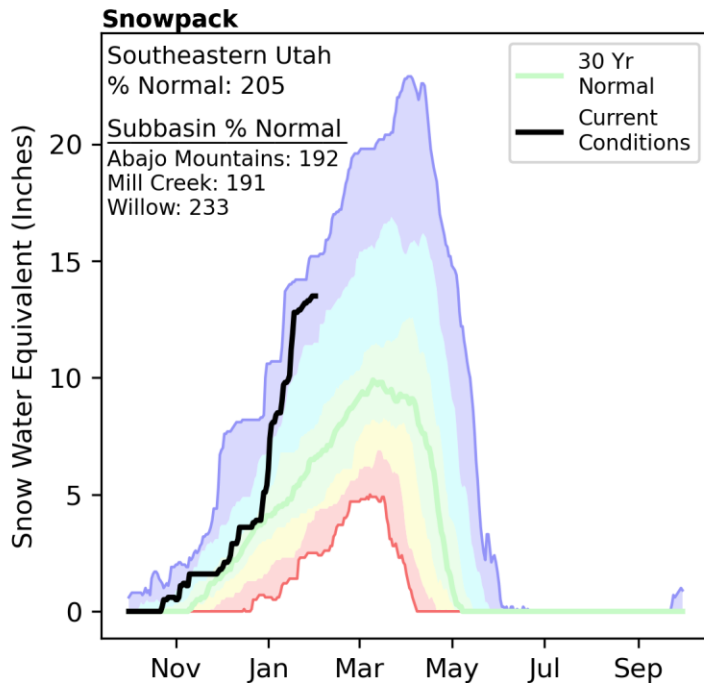


Upper Sevier



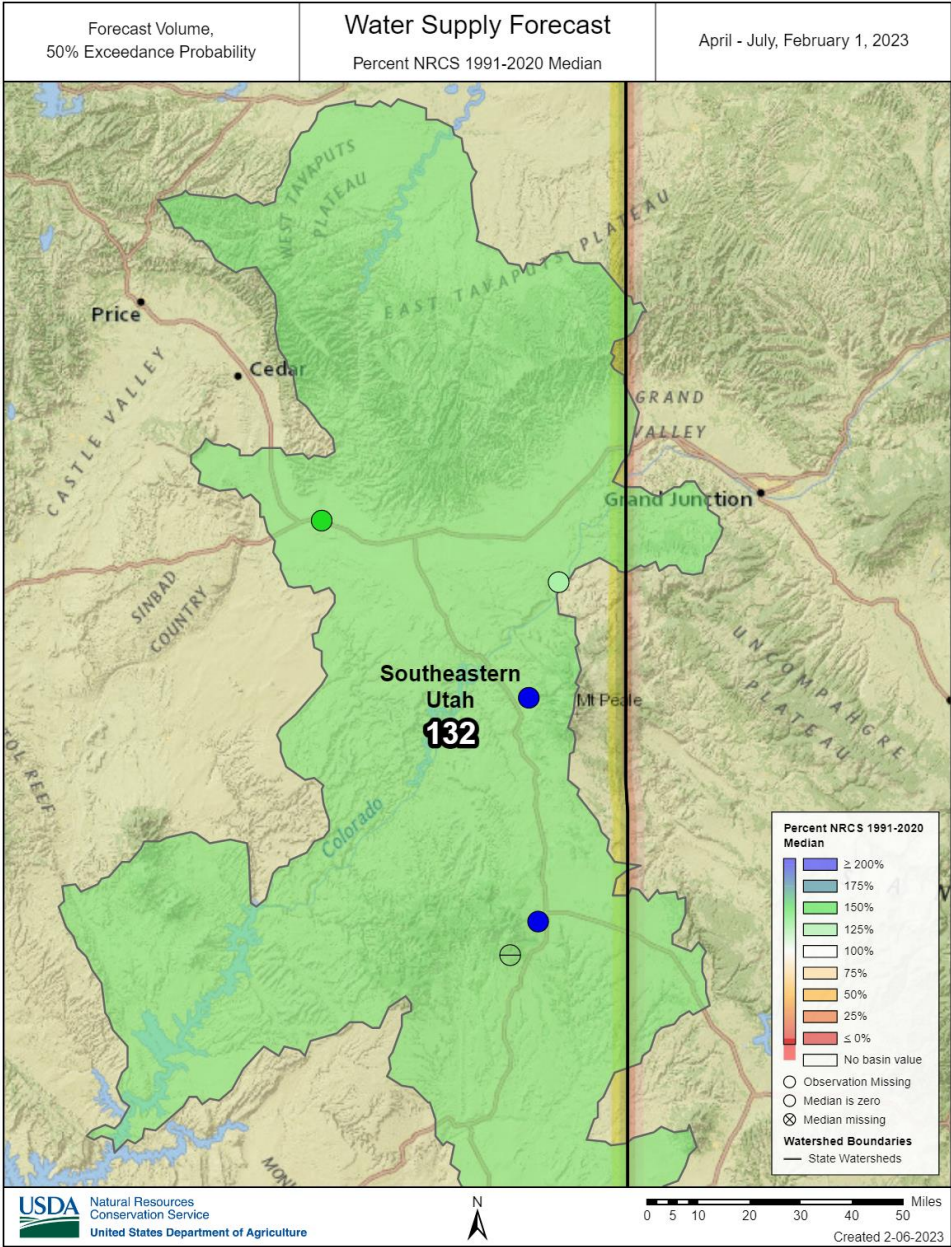
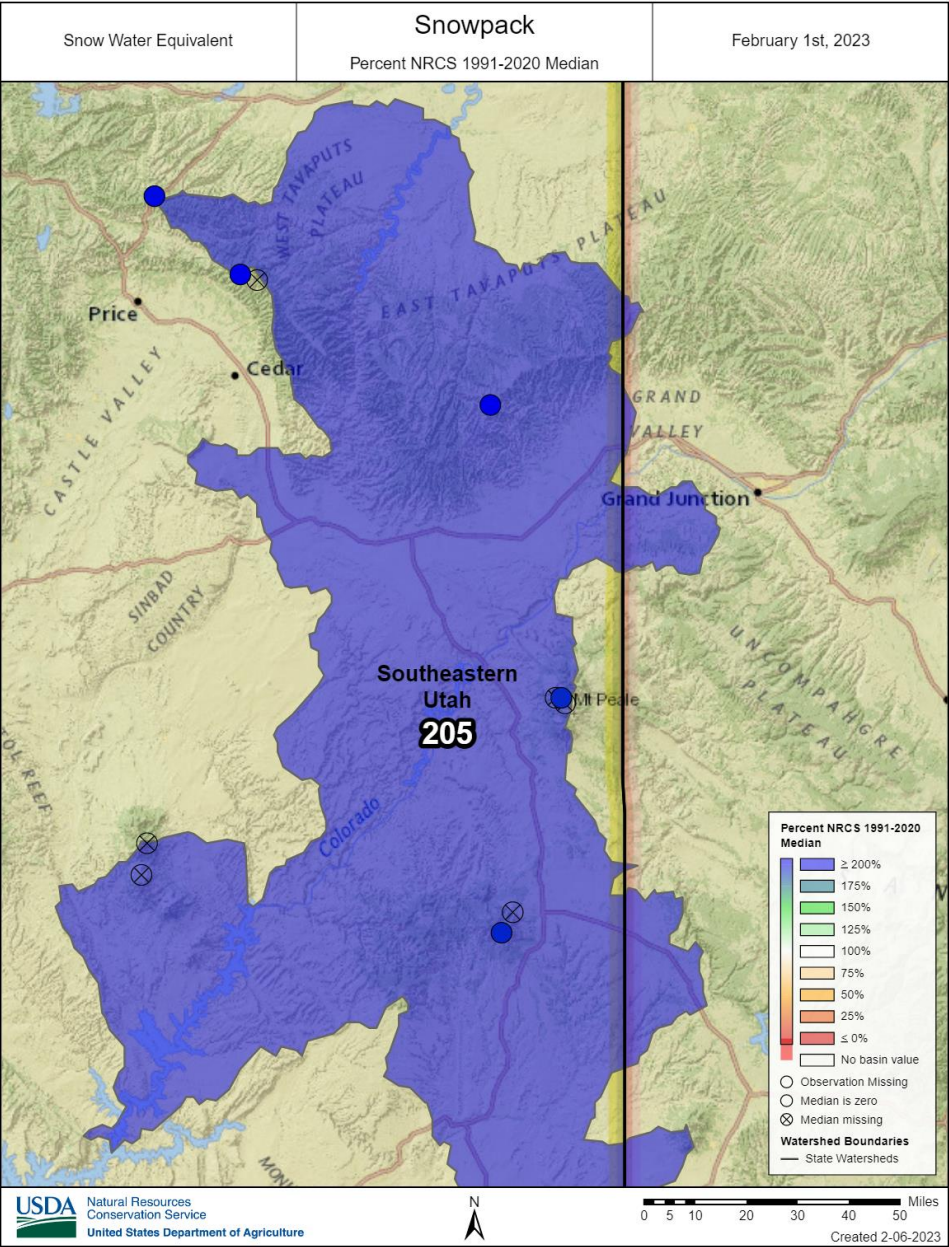
Southeastern Utah | February 1, 2023

Snowpack in Southeastern Utah is well above normal at 205% of median, compared to 105% at this time last year. Precipitation in January was well above normal at 365%, which brings the seasonal accumulation (October-January) to 160% of median. Soil moisture is at 49% saturation compared to 55% saturation last year. Reservoir storage is 75% of capacity, compared to 42% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 119% to 417% of normal. The Surface Water Supply Index percentile is 89% for Moab.

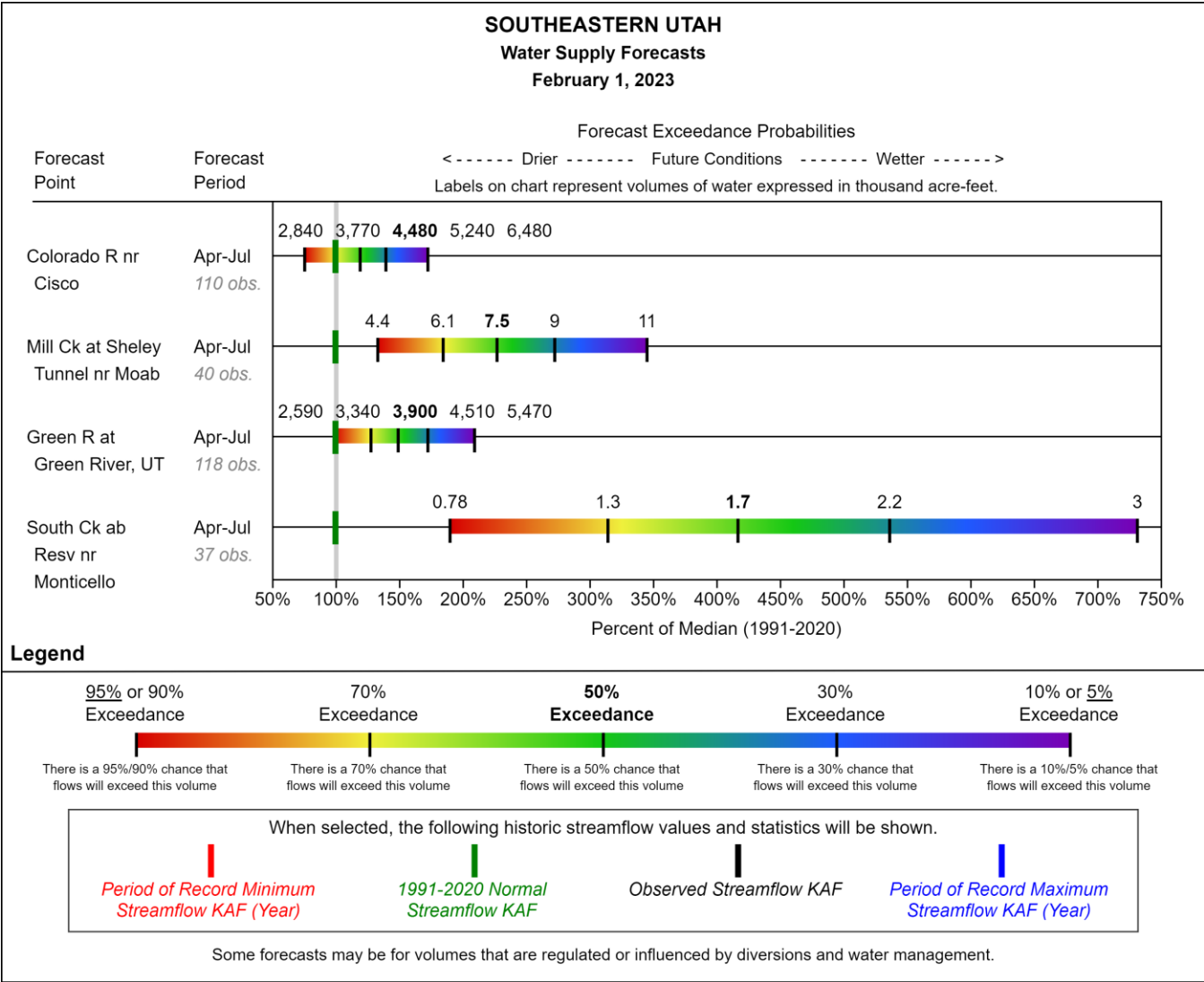


Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

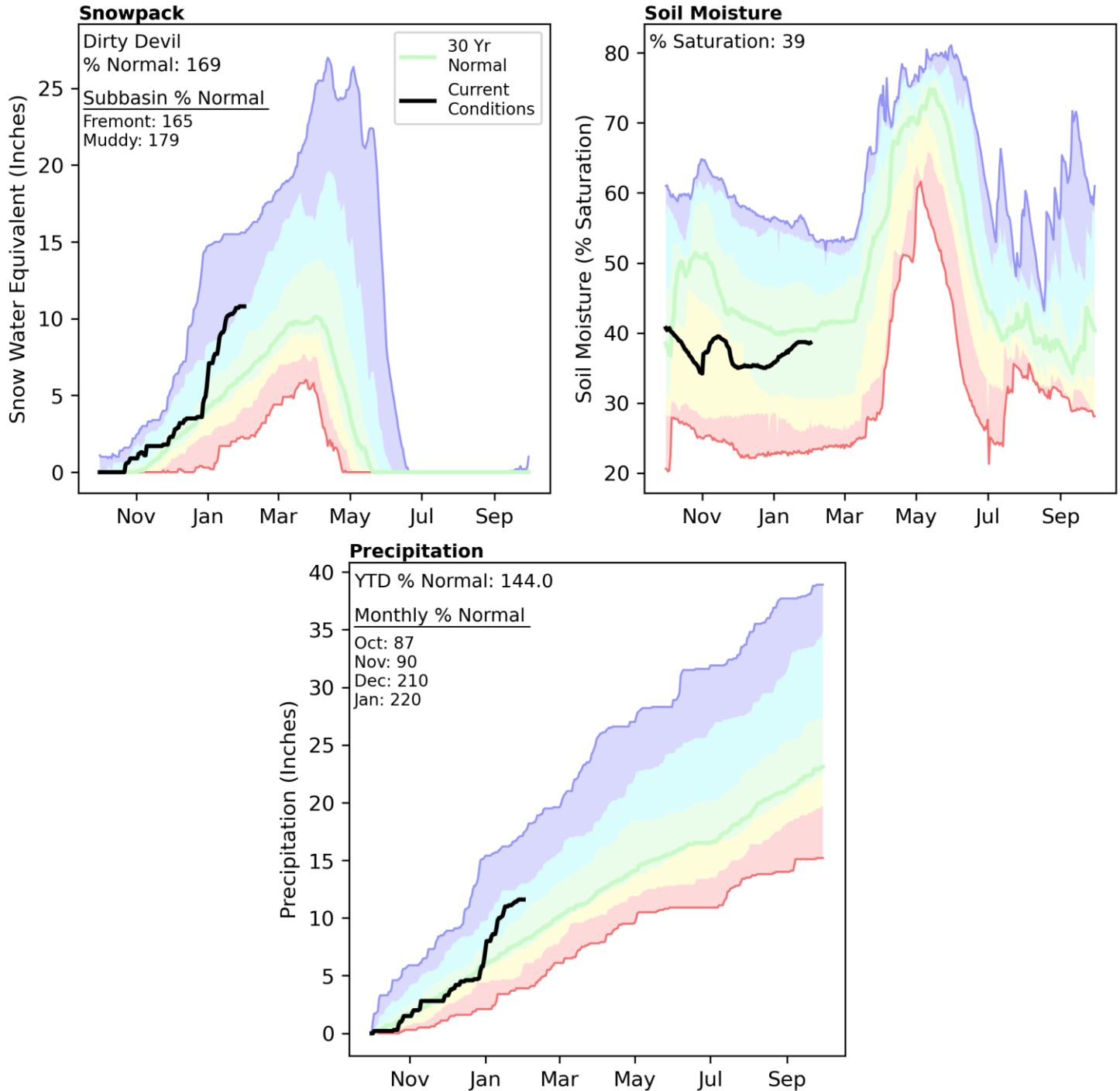
Southeastern Utah



Southeastern Utah

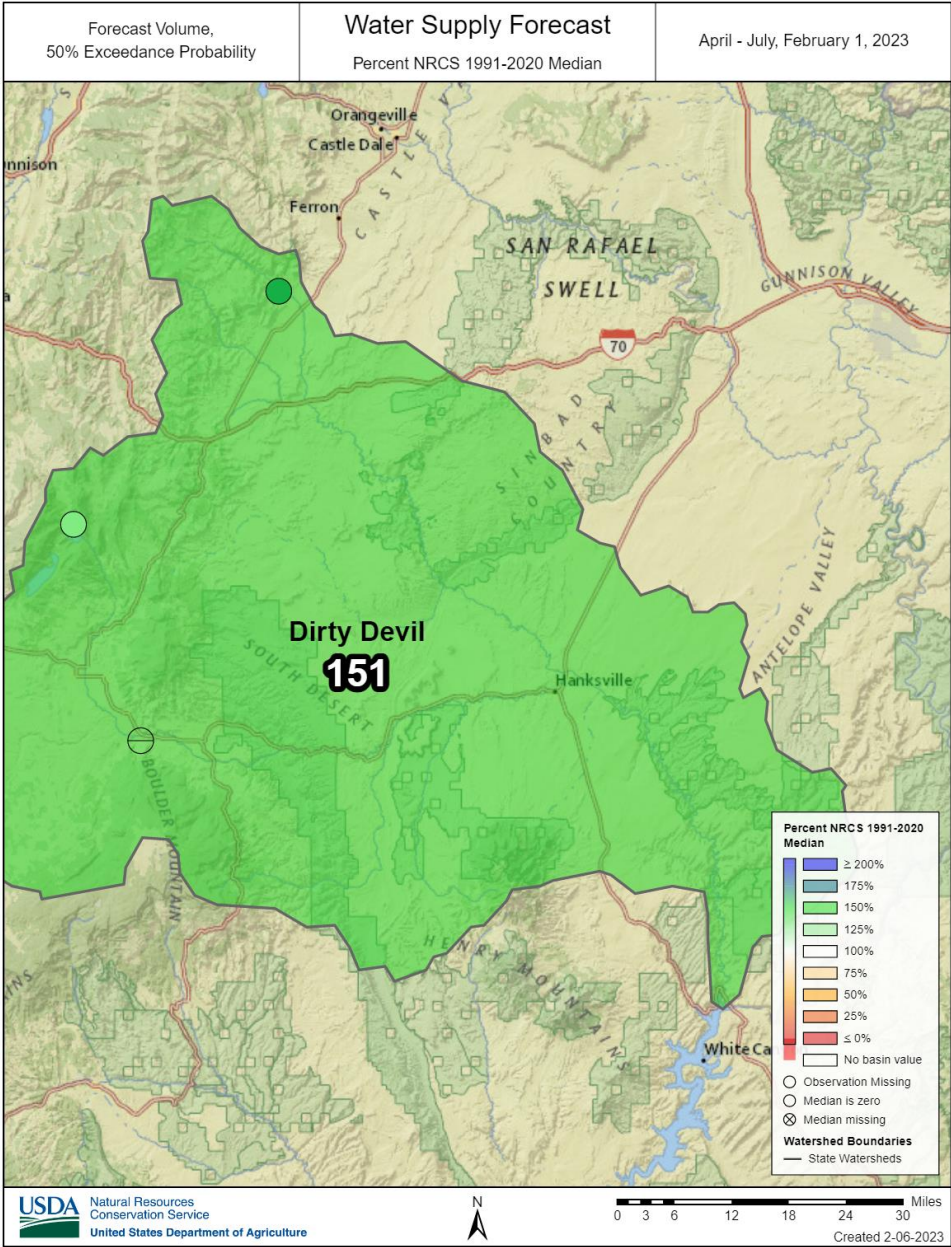
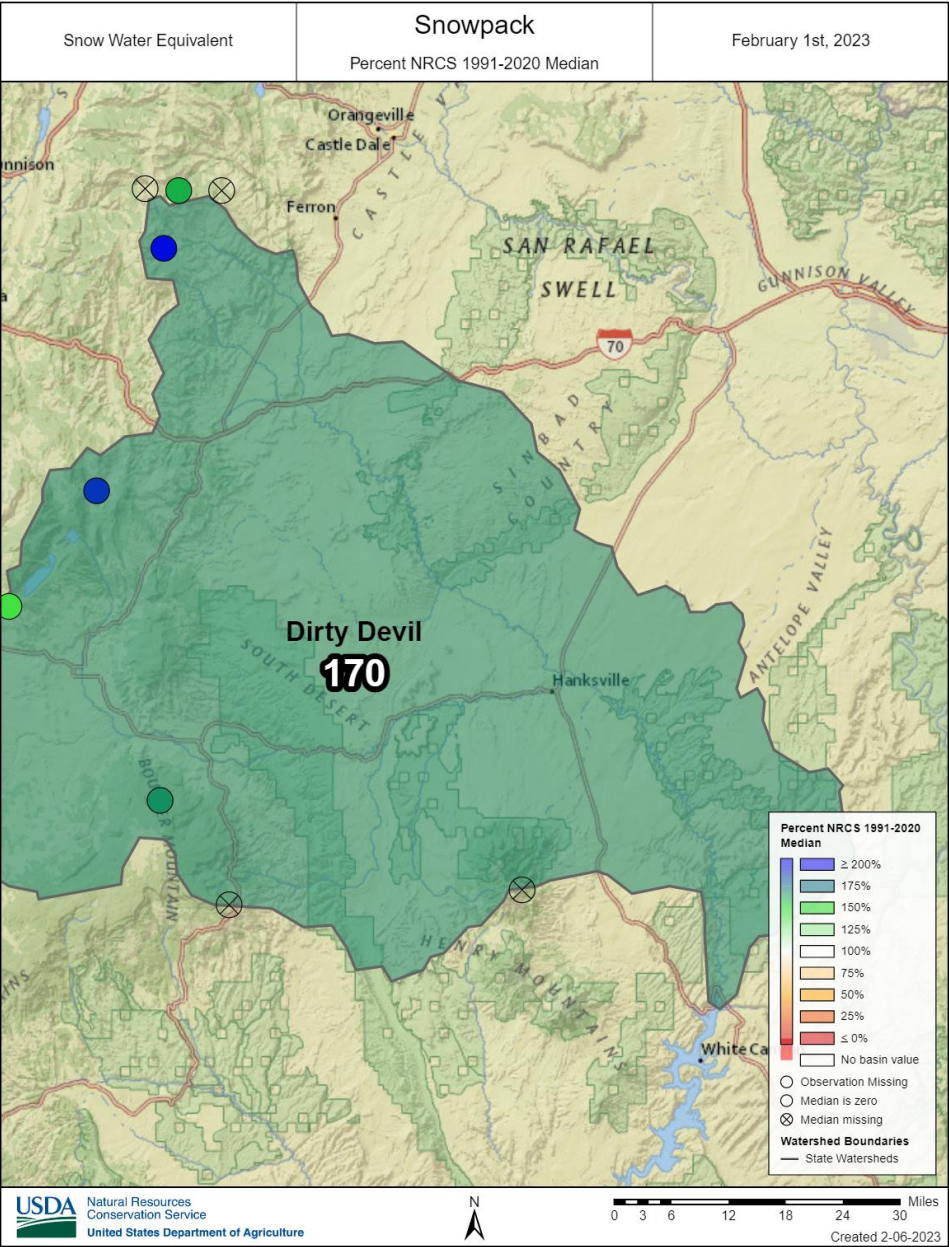


Snowpack in the Dirty Devil River Basin is well above normal at 169% of median, compared to 97% at this time last year. Precipitation in January was well above normal at 220%, which brings the seasonal accumulation (October-January) to 144% of median. Soil moisture is at 39% saturation compared to 47% saturation last year. Forecast streamflow volumes (50% exceedence, April-July) range from 128% to 160% of normal.

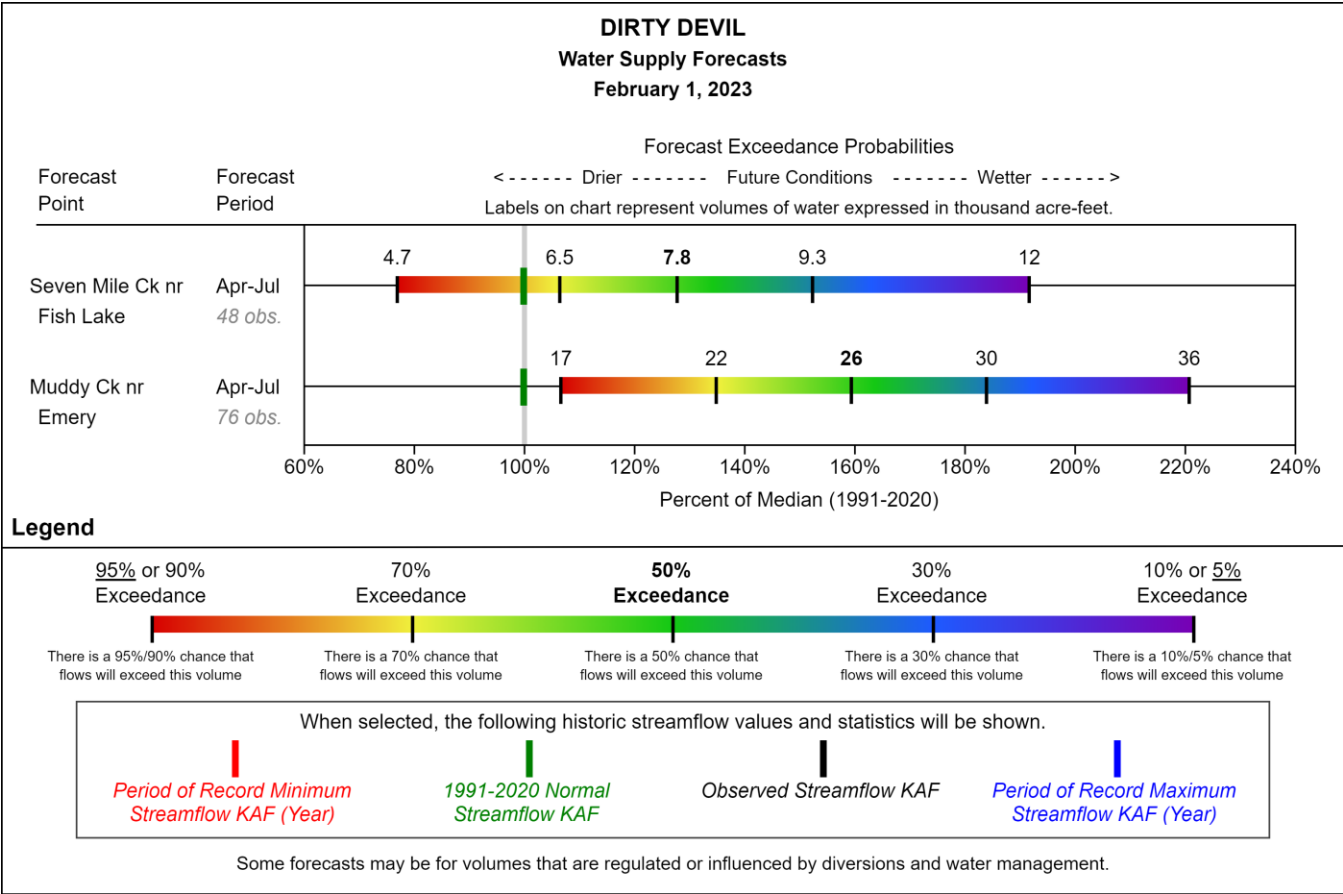


Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

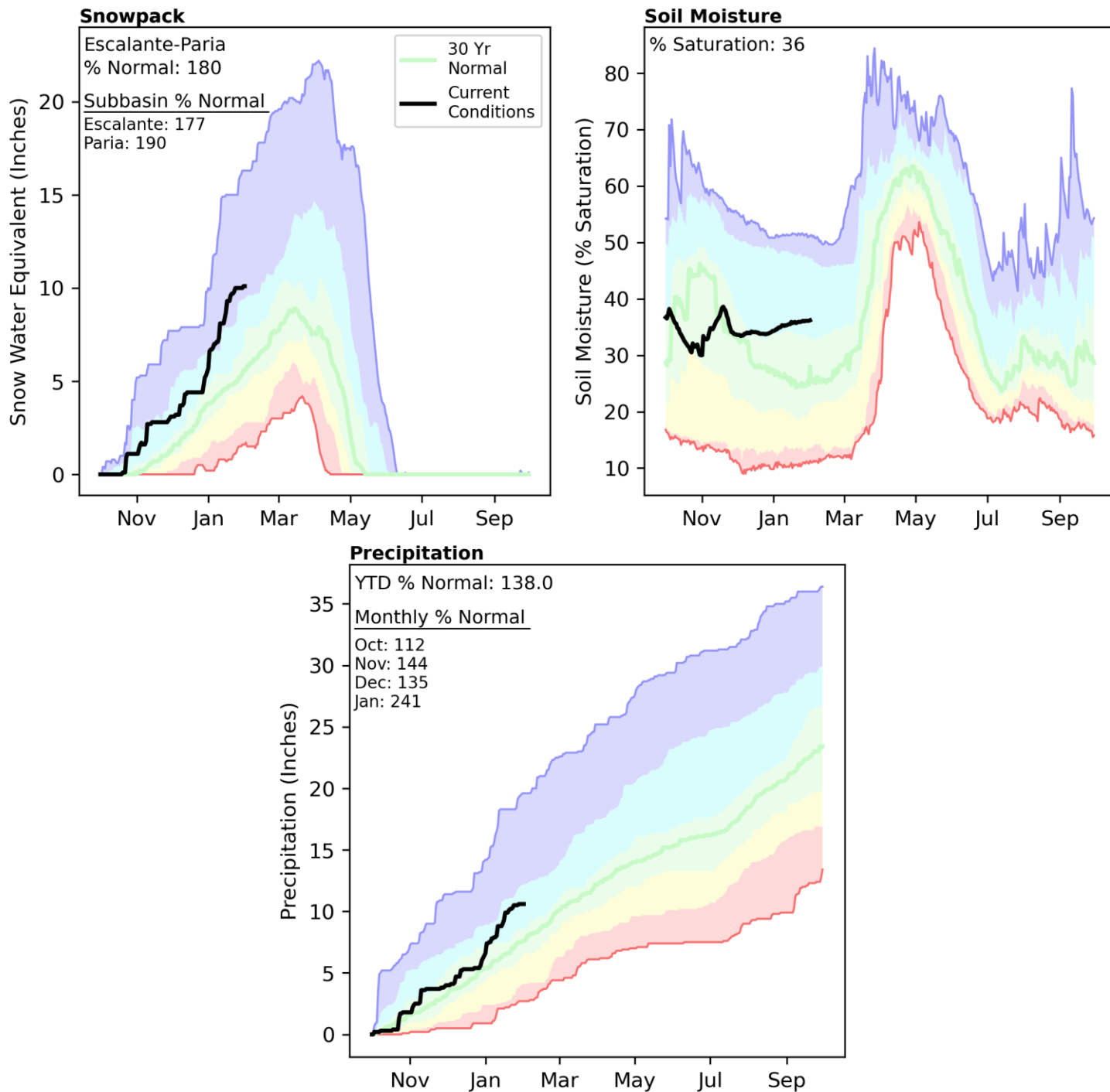
Dirty Devil



Dirty Devil

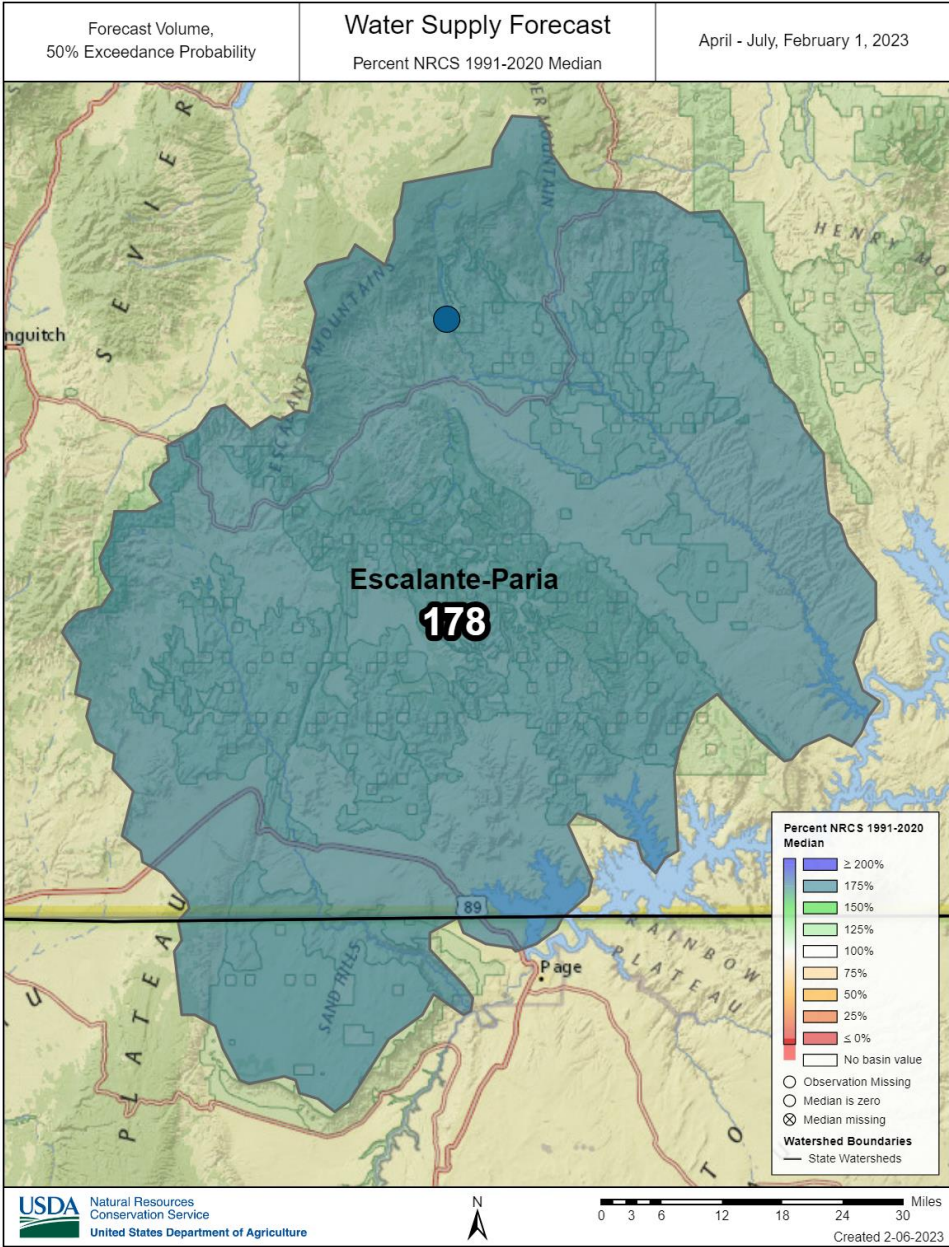
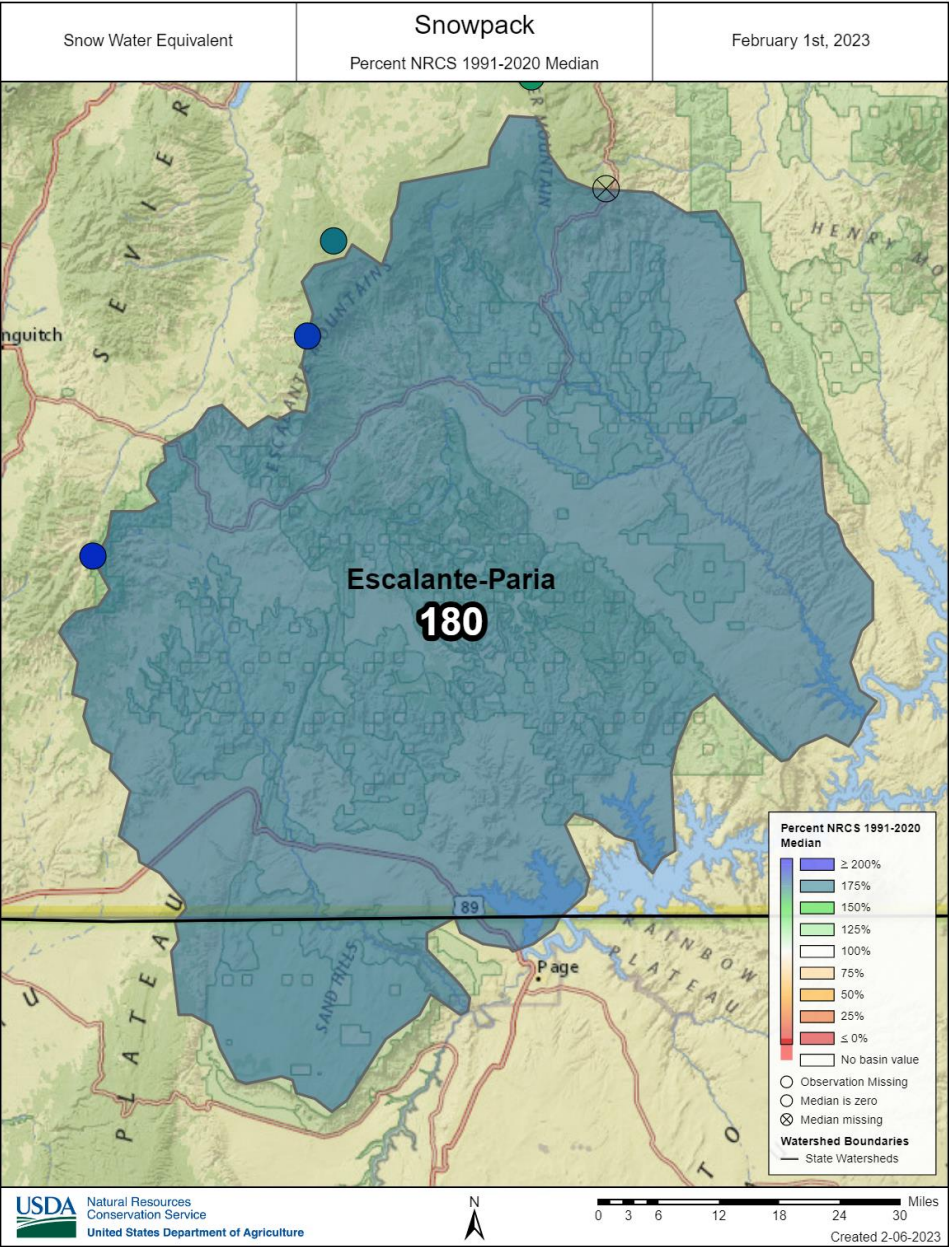


Snowpack in the Escalante and Paria River Basins is well above normal at 180% of median, compared to 96% at this time last year. Precipitation in January was well above normal at 241%, which brings the seasonal accumulation (October-January) to 138% of median. Soil moisture is at 36% saturation compared to 32% saturation last year. The forecast streamflow volume (50% exceedence, April-July) for Pine Creek is 178% of normal.

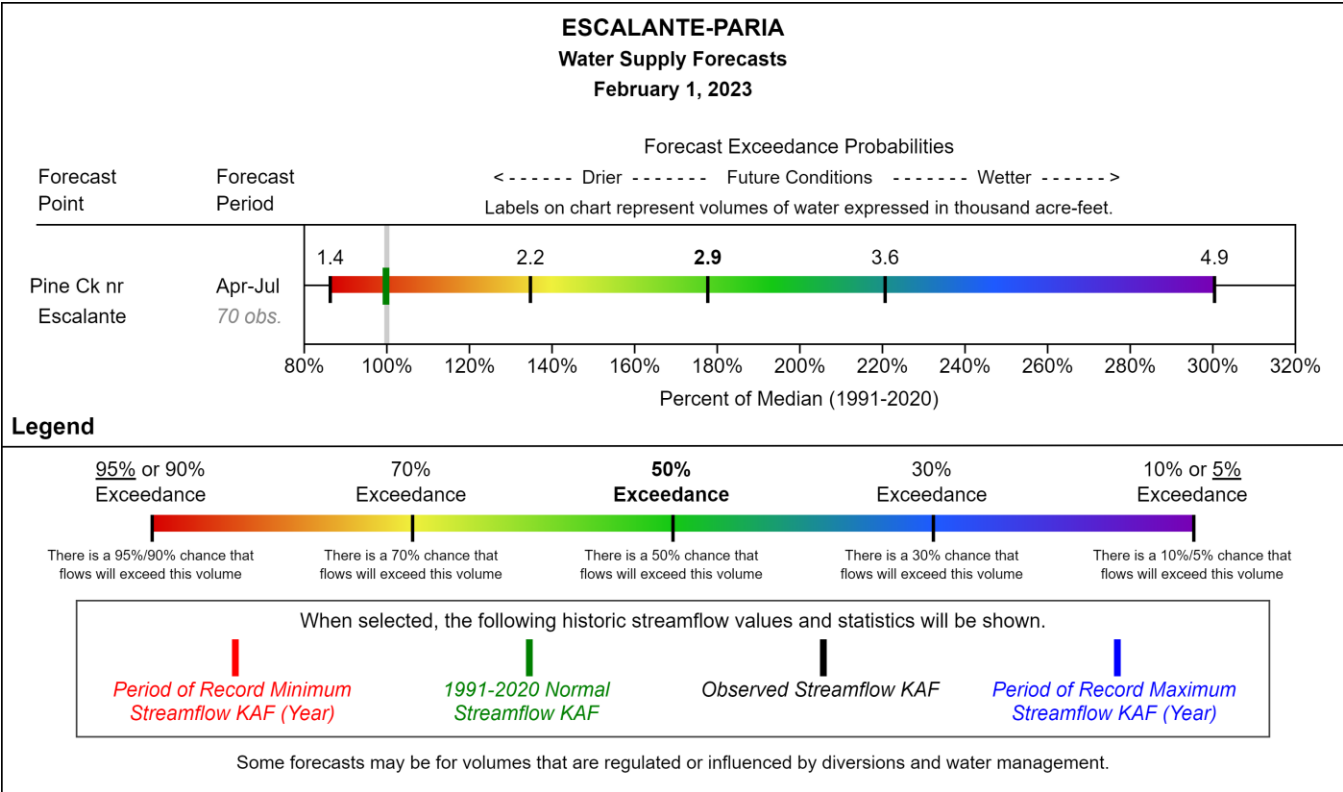


Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

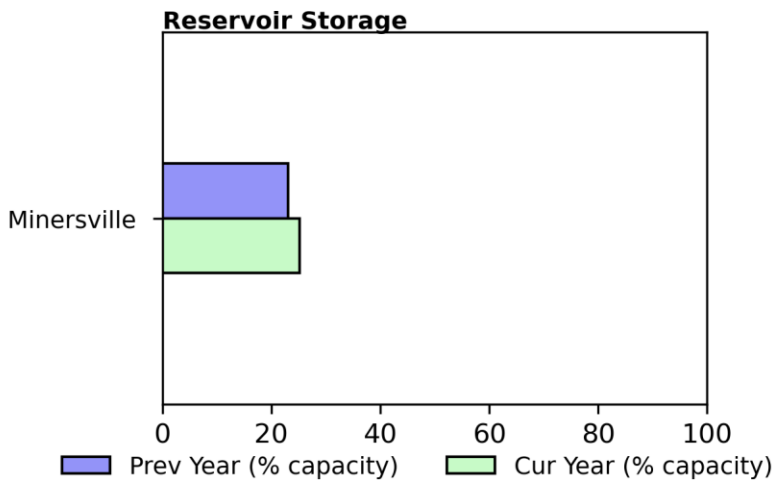
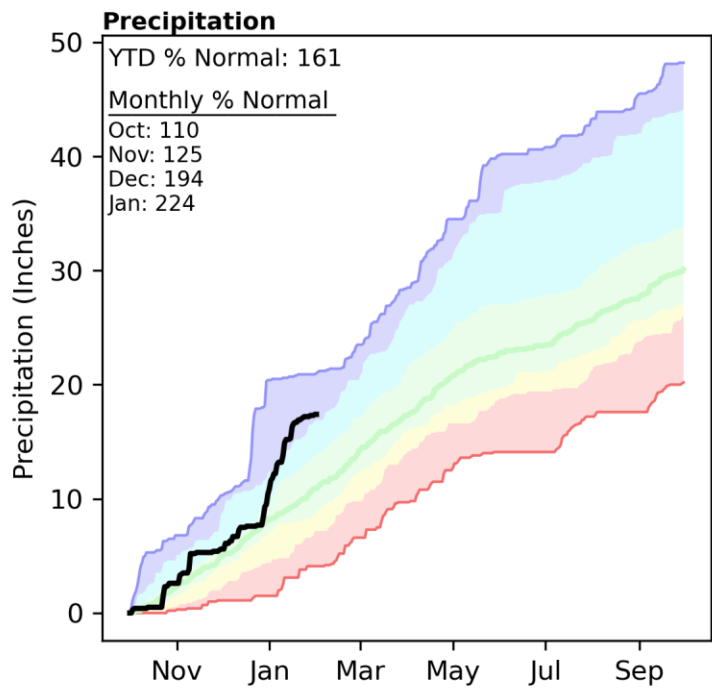
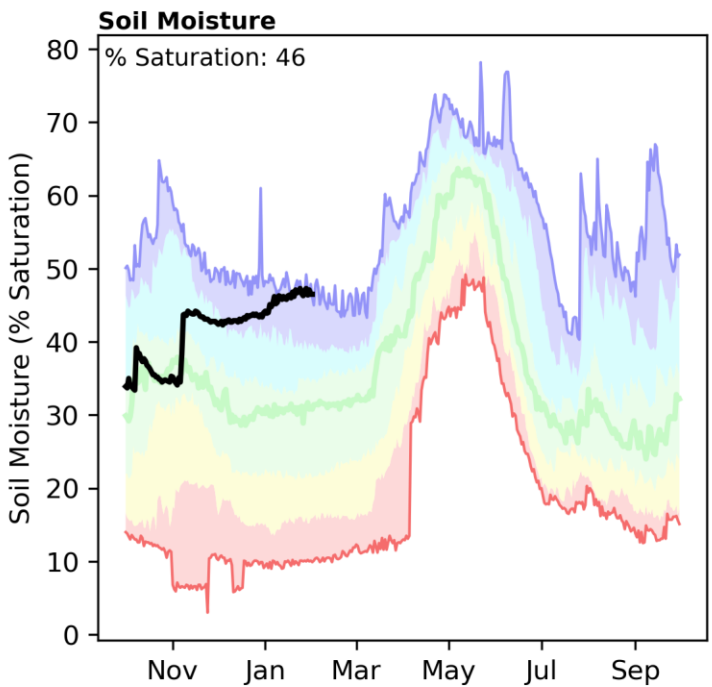
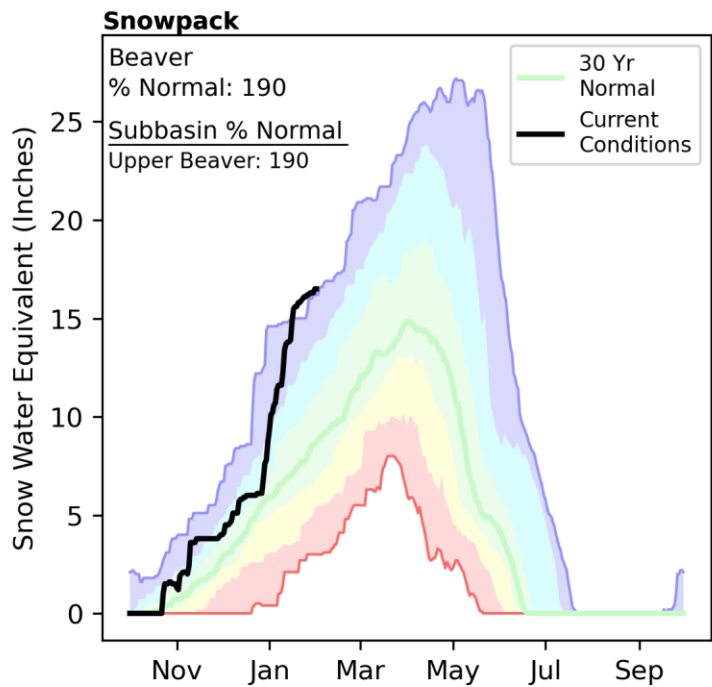
Escalante-Paria



Escalante-Paria

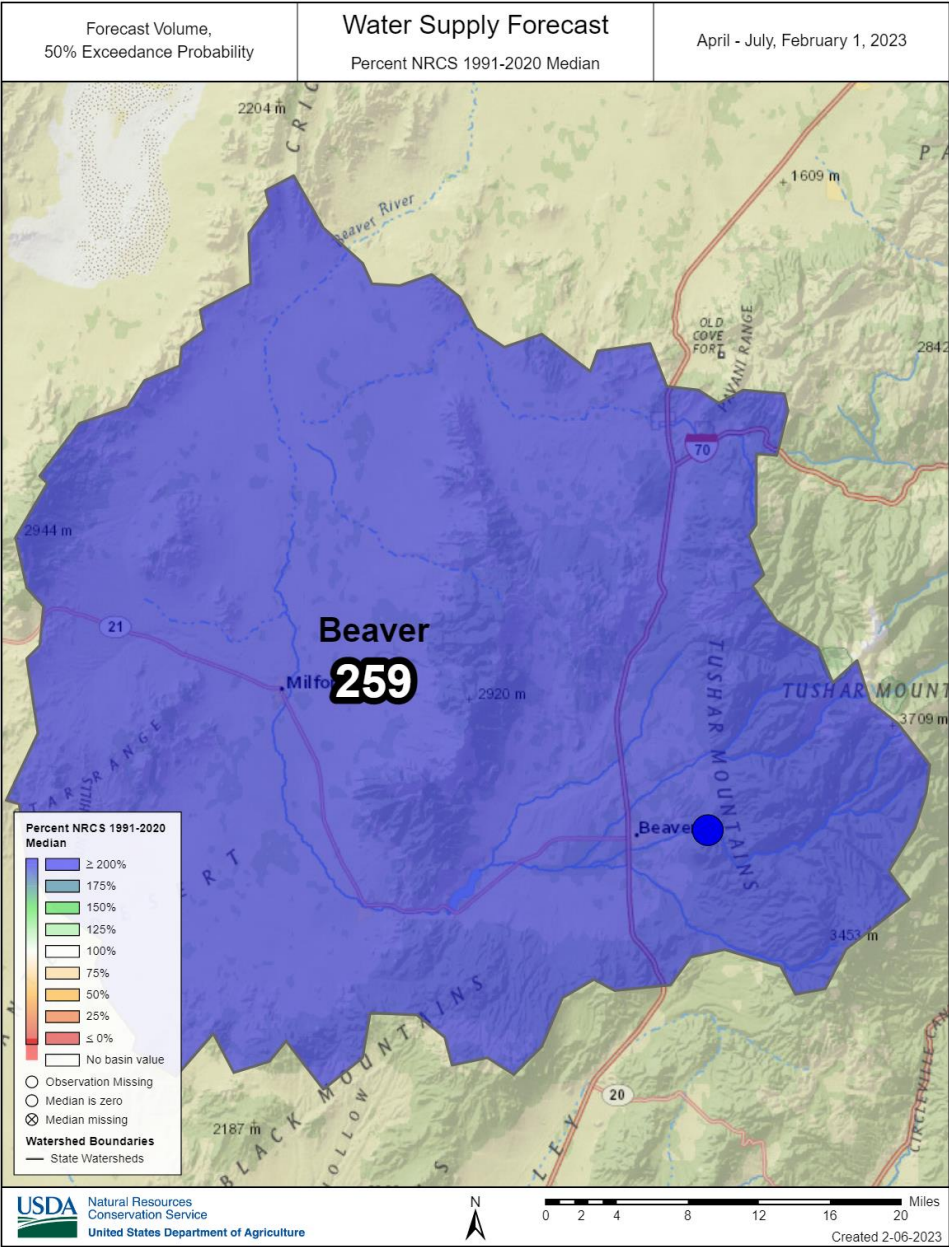
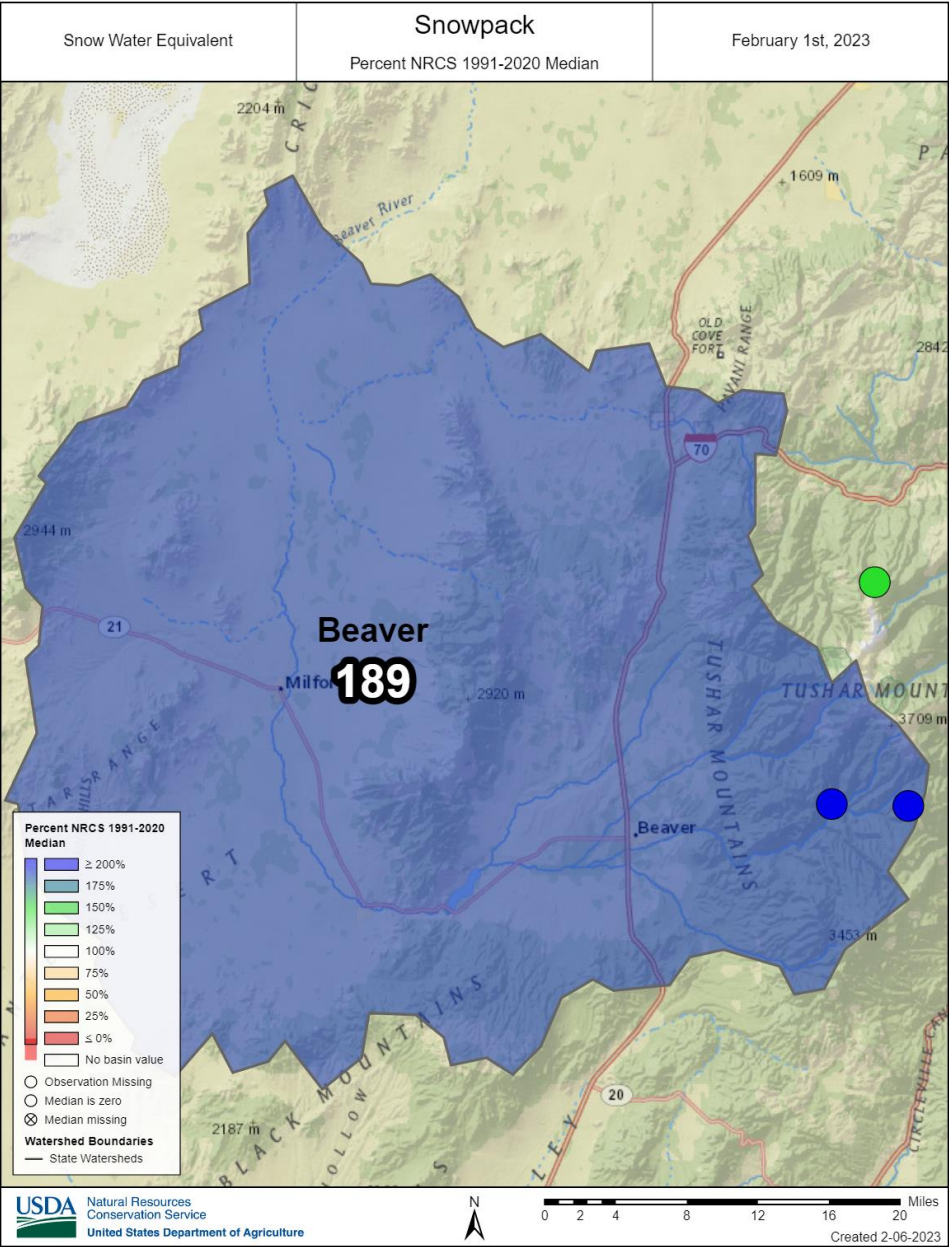


Snowpack in the Beaver River Basin is well above normal at 190% of median, compared to 134% at this time last year. Precipitation in January was well above normal at 224%, which brings the seasonal accumulation (October-January) to 161% of median. Soil moisture is at 46% saturation compared to 42% saturation last year. Reservoir storage is 25% of capacity, compared to 23% last year. The forecast streamflow volume (50% exceedence, April-July) for the Beaver River is 259% of normal. The Surface Water Supply Index percentile is 77% for the Beaver River.

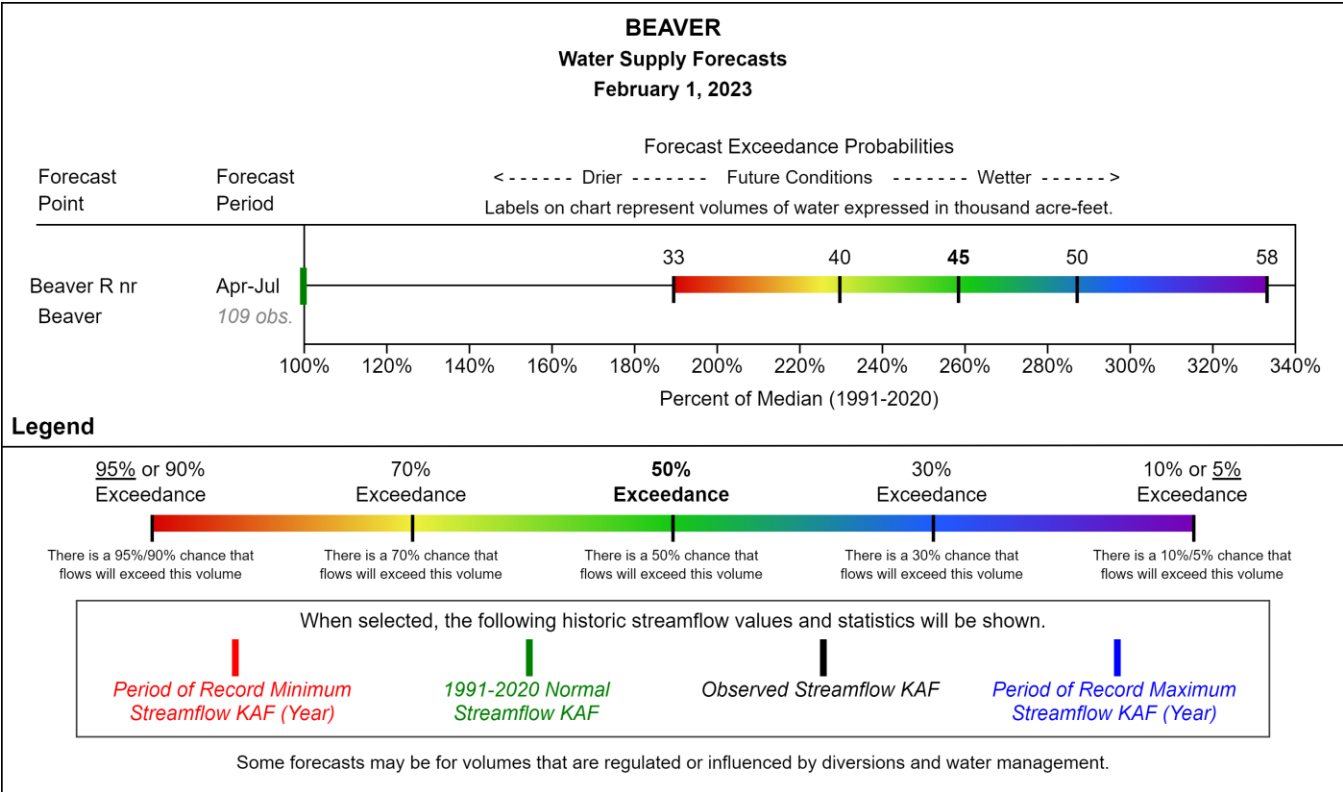


Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

Beaver

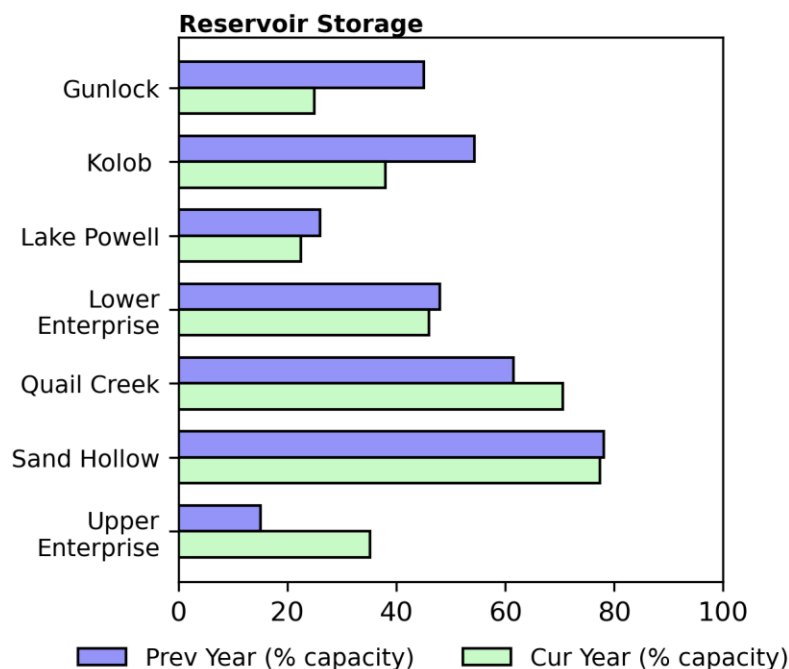
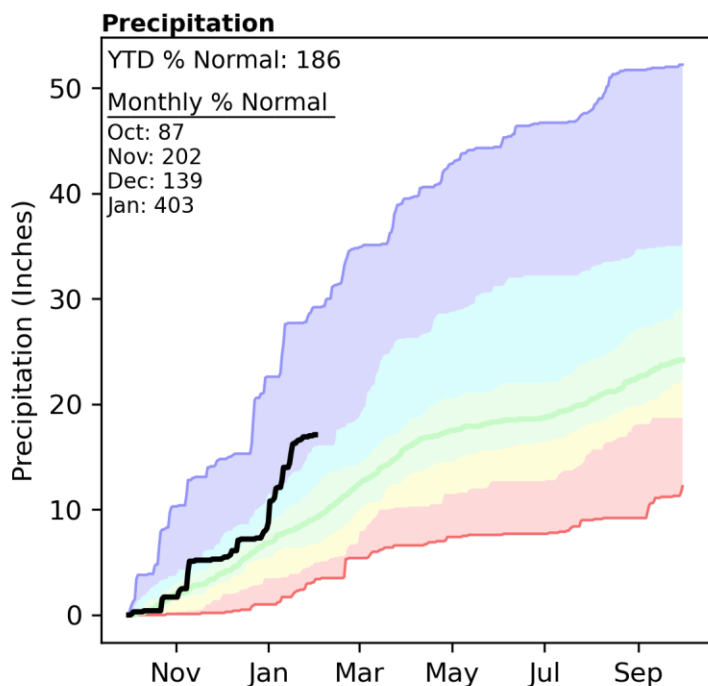
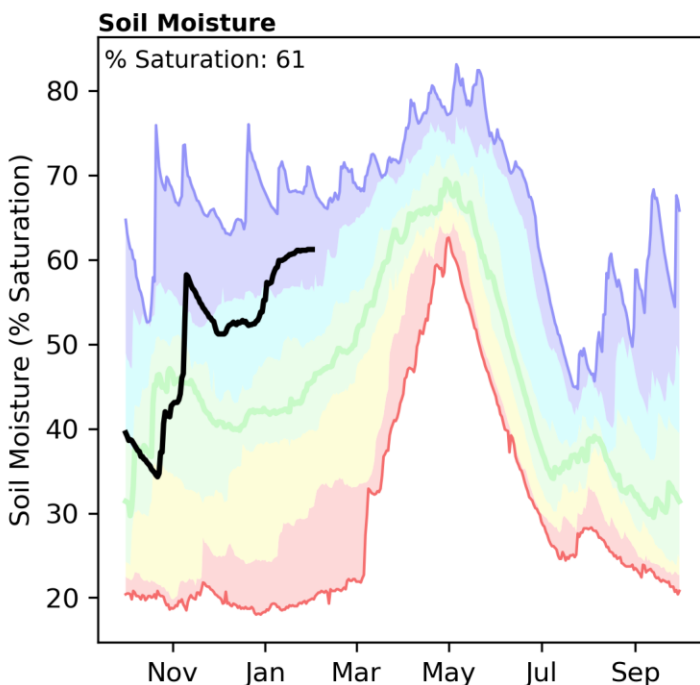
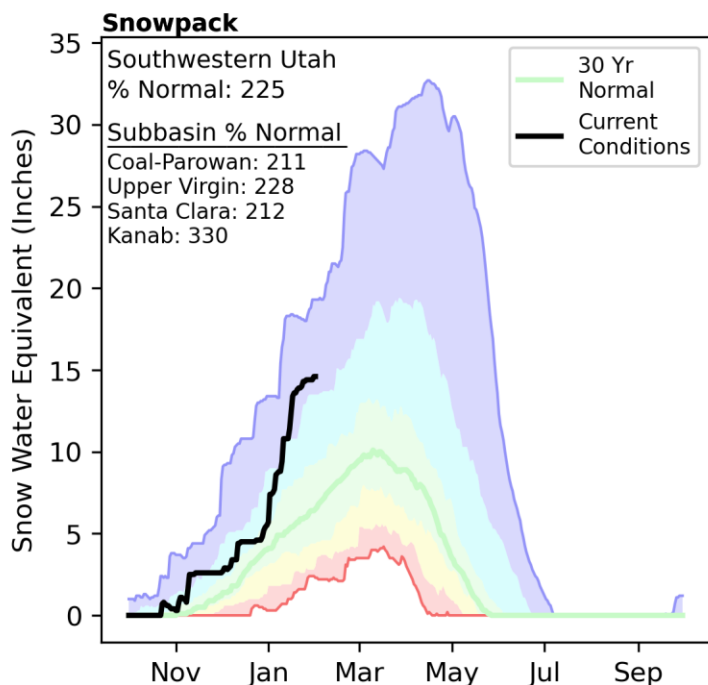


Beaver



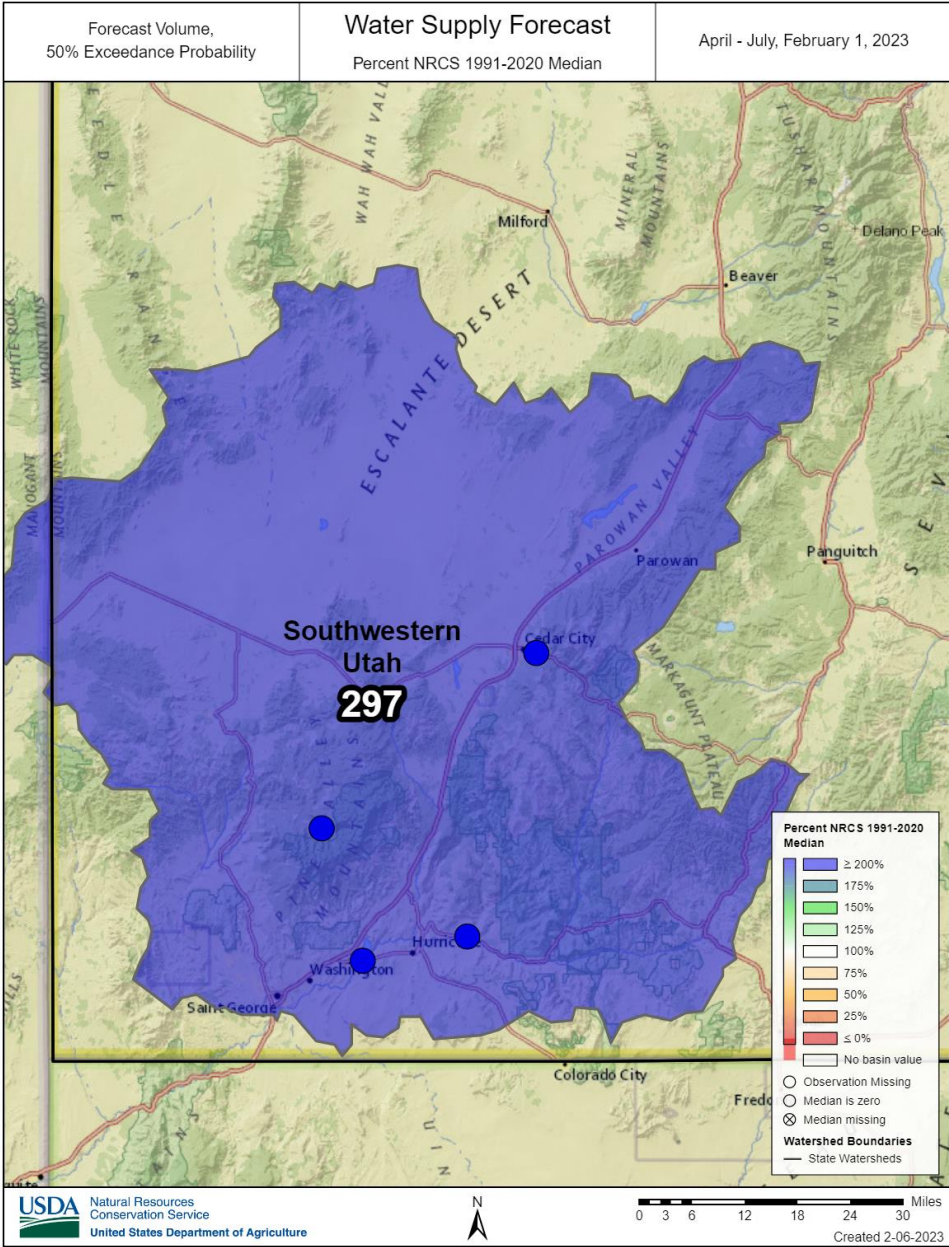
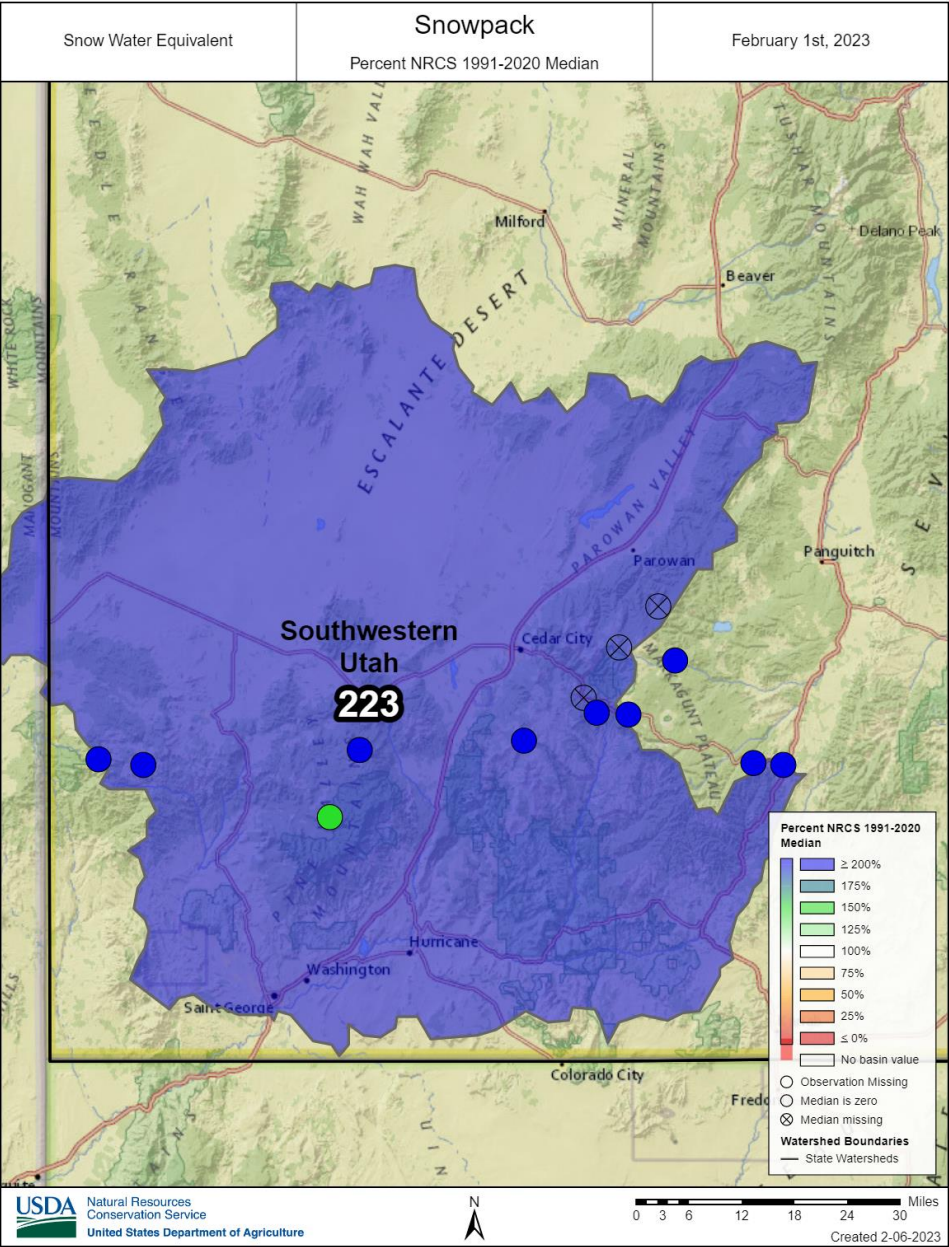
Southwestern Utah | February 1, 2023

Snowpack in Southwestern Utah is well above normal at 225% of median, compared to 129% at this time last year. Precipitation in January was well above normal at 403%, which brings the seasonal accumulation (October-January) to 186% of median. Soil moisture is at 61% saturation compared to 52% saturation last year. Reservoir storage is 22% of capacity, compared to 26% last year. Forecast streamflow volumes (50% exceedence, April-July) range from 278% to 326% of normal. The Surface Water Supply Index percentile is 78% for the Virgin River.

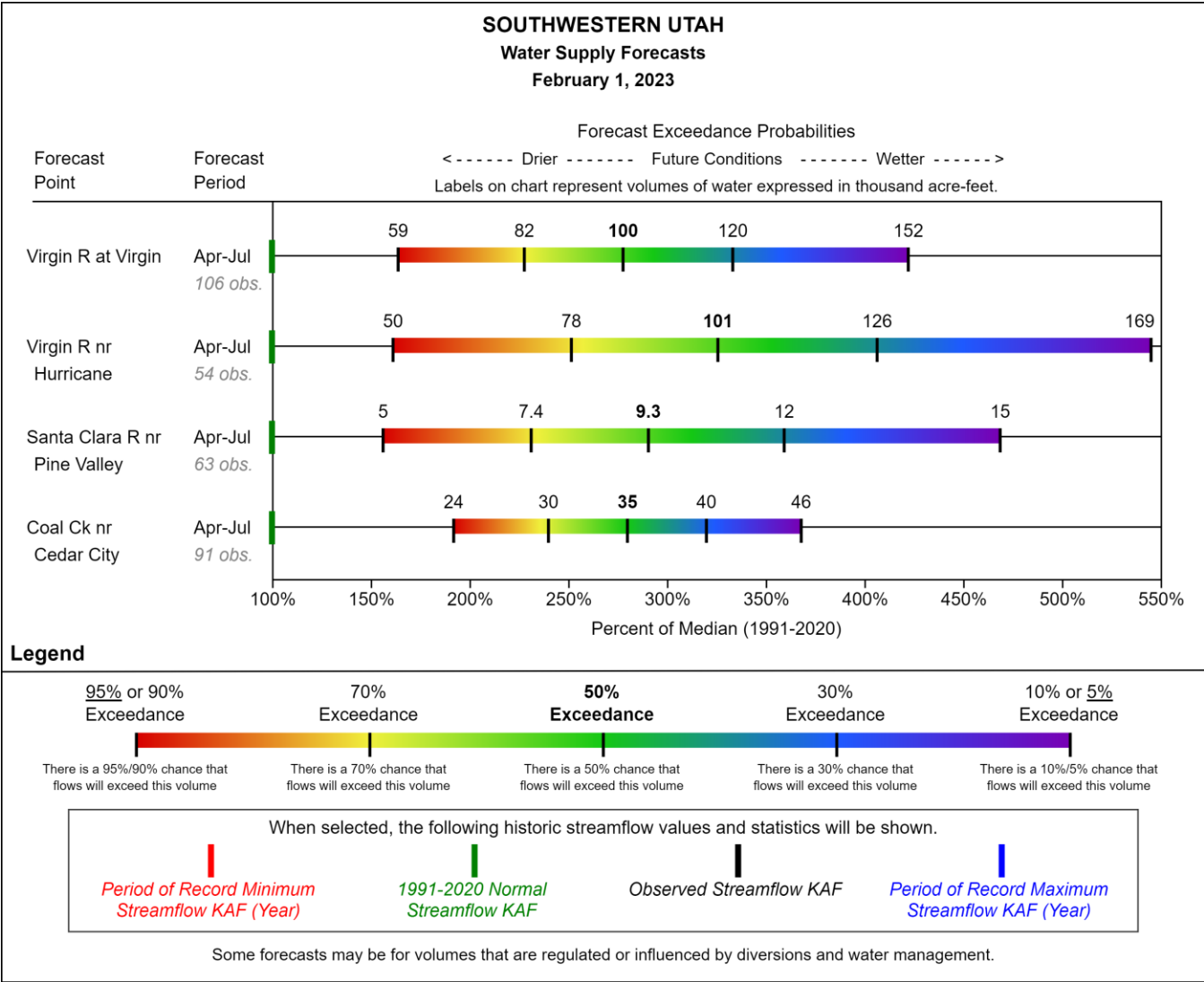


Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th percentiles.
For more information visit: [30 year normal calculation description](#)

Southwestern Utah



Southwestern Utah



Feb 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)	2681	5465	51	49
Utah (Statewide) Incl. Flaming G. & Lk. Powell	10634	33536	36	31
Bear	428	1389	41	30
Weber-Ogden	255	547	38	46
Northeastern Uintas	2537	3852	76	65
Tooele Valley	1	4	50	38
Duchesne	1009	1379	74	73
Provo	721	1334	56	54
San Pitch	0	20	0	3
Price	60	158	29	38
Upper Sevier	78	382	25	20
Southeast UT	1	2	42	75
Beaver	5	23	23	25
Southwest Utah	76	118	62	64

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	396	1302	41	30
Big Sand Wash Reservoir	20	25	69	80
Causey Reservoir	4	7	60	57
Cleveland Lake	3	5	2	60
Currant Creek Reservoir	14	15	95	95
Deer Creek Reservoir	84	149	76	56
East Canyon Reservoir	29	49	53	59
Echo Reservoir	46	73	31	63
Flaming Gorge Reservoir	2496	3749	77	66
Grantsville Reservoir	1	3	55	39
Gunlock	2	10	45	24
Gunnison Reservoir	0	20	0	3
Huntington North Reservoir	3	4	59	93
Hyrum Reservoir	9	15	69	62
Joes Valley Reservoir	30	61	34	48
Jordanelle Reservoir	186	314	49	59
Ken's Lake	1	2	42	75
Kolob Reservoir	2	5	54	38
Lake Powell	5456	24322	26	22
Lost Creek Reservoir	9	22	43	42
Lower Enterprise	1	2	48	46
Meeks Cabin Reservoir	9	32	32	29
Miller Flat Reservoir	1	5	29	25
Millsite	7	16	22	47
Minersville Reservoir	5	23	23	25
Moon Lake Reservoir	25	35	66	71
Otter Creek Reservoir	16	52	38	30
Panguitch Lake	8	22	20	36
Pineview Reservoir	46	110	23	41
Piute Reservoir	21	71	24	29
Porcupine Reservoir	7	11	43	64
Quail Creek	28	40	61	70
Red Fleet Reservoir	9	25	41	37
Rockport Reservoir	43	60	47	71
Sand Hollow Reservoir	38	50	78	77
Scofield Reservoir	14	65	27	21
Settlement Canyon Reservoir	0	1	33	35
Sevier Bridge Reservoir	32	236	23	13
Smith and Morehouse	4	8	56	54
Starvation Reservoir	129	164	80	79
Stateline Reservoir	6	12	45	50
Steinaker Reservoir	15	33	27	45
Strawberry Reservoir	810	1105	75	73
Upper Enterprise	3	10	15	35
Upper Stillwater Reservoir	8	32	37	26
Utah Lake	451	870	55	51
Willard Bay	71	215	40	33
Woodruff Creek	2	4	43	55
Woodruff Narrows Reservoir	13	57	22	23

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

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

Raft	Forecast Period	Forecast Exceedance Probabilities For Risk Assessment Chance that actual volume will exceed forecast						30yr Median (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	
Dunn Ck nr Park Valley	APR-JUL	2	3	3.7	154%	4.4	5.4	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

Bear	Forecast Period	Forecast Exceedance Probabilities For Risk Assessment Chance that actual volume will exceed forecast						30yr Median (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	
Bear R nr UT-WY State Line	APR-JUL	102	125	141	140%	157	180	101
	APR-SEP	113	138	155	136%	172	197	114
Little Bear at Paradise	APR-JUL	32	47	57	204%	67	82	28
Big Ck nr Randolph	APR-JUL	1.63	3.9	5.5	172%	7.1	9.4	3.2
Smiths Fk nr Border	APR-JUL	74	92	104	121%	116	134	86
	APR-SEP	86	106	120	120%	134	154	100
Logan R nr Logan	APR-JUL	101	125	141	155%	157	181	91
Bear R ab Resv nr Woodruff	APR-JUL	67	115	147	160%	179	225	92
	APR-SEP	69	120	155	157%	190	240	99
Bear R bl Stewart Dam	FEB-JUL	71	135	189	142%	255	365	133
	FEB-SEP	72	139	198	137%	265	385	145
	MAR-JUL	66	128	182	144%	245	355	126
	MAR-SEP	66	133	191	137%	260	380	139
Blacksmith Fk nr Hyrum	APR-JUL	37	51	60	207%	69	83	29

- 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

Weber-Ogden	Forecast Period	Forecast Exceedance Probabilities For Risk Assessment Chance that actual volume will exceed forecast						30yr Median (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	
East Canyon Ck nr Jeremy Ranch	APR-JUL	14.6	21	25	263%	29	35	9.5
East Canyon Ck nr Morgan	APR-JUL	27	35	41	228%	47	55	18
Weber R nr Coalville	APR-JUL	113	147	170	183%	193	225	93
Weber R at Gateway	APR-JUL	265	365	435	212%	505	605	205
Weber R nr Oakley	APR-JUL	114	137	153	158%	168	191	97
SF Ogden R nr Huntsville								

Chalk Ck at Coalville	APR-JUL	52	69	80	195%	91	108	41
Echo Reservoir Inflow	APR-JUL	23	39	50	192%	61	77	26
Lost Ck Reservoir Inflow	APR-JUL	147	194	225	188%	260	305	120
Pineview Reservoir Inflow	APR-JUL	12.8	17.4	20	211%	24	28	9.5
Rockport Reservoir Inflow	APR-JUL	77	121	150	190%	179	225	79
	APR-JUL	106	138	160	184%	182	215	87

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

Northeastern Uintas	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Flaming Gorge Resvr Local BI Fontenelle ²								
Blacks Fk nr Robertson								
	APR-JUL	70	89	102	112%	115	134	91
Flaming Gorge Reservoir Inflow ²								
	APR-JUL	495	745	945	95%	1170	1540	990
Big Brush Ck ab Red Fleet Reservoir								
	APR-JUL	17.1	22	26	132%	29	34	19.7
Ashley Ck nr Vernal								
	APR-JUL	39	51	59	137%	67	79	43
Stateline Reservoir Inflow ²								
	APR-JUL	23	29	33	127%	38	45	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

Tooele Valley-Vernon Creek	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Vernon Ck nr Vernon								
	APR-JUL	1.03	1.57	2	270%	2.5	3.3	0.74
S Willow Ck nr Grantsville								
	APR-JUL	3.8	4.5	5	200%	5.5	6.2	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

Duchesne	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Lake Fk R bl Moon Lk nr Mountain Home ²								
	APR-JUL	58	71	80	140%	90	106	57
Duchesne R nr Randlett ²								
	APR-JUL	330	465	565	222%	675	860	255

Yellowstone R nr Altonah	APR-JUL	53	67	77	138%	88	106	56
Uinta R bl Powerplant Diversion nr Neola	APR-JUL	59	80	97	152%	115	145	64
Strawberry R nr Duchesne ²	APR-JUL	95	140	175	330%	215	280	53
Upper Stillwater Reservoir Inflow ²	APR-JUL	73	92	106	156%	121	146	68
Whiterocks R nr Whiterocks	APR-JUL	43	58	69	160%	81	100	43
Currant Ck Reservoir Inflow ²	APR-JUL	19.3	26	31	261%	37	45	11.9
Strawberry R nr Soldier Springs ²	APR-JUL	55	78	97	269%	118	151	36
Duchesne R nr Tabiona ²	APR-JUL	104	127	145	167%	164	193	87
Duchesne R ab Knight Diversion ²	APR-JUL	183	225	255	157%	285	340	162
Rock Ck nr Mountain Home ²	APR-JUL	84	102	115	147%	129	151	78
WF Duchesne R at VAT Diversion ²	APR-JUL	21	25	28	193%	31	37	14.5
Duchesne R at Myton ²	APR-JUL	295	400	485	226%	575	725	215

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

Provo-Utah Lake-Jordan	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
American Fk ab Upper Powerplant	APR-JUL	29	37	43	224%	49	57	19.2
Mill Ck nr SLC	APR-JUL	5.1	6.8	8.1	188%	9.5	11.9	4.3
Big Cottonwood Ck nr SLC	APR-JUL	36	43	49	169%	54	63	29
City Ck nr SLC	APR-JUL	5.4	7.1	8.3	157%	9.6	11.8	5.3
Provo R at Hailstone	APR-JUL	104	129	147	177%	167	198	83
Dell Fk nr SLC	APR-JUL	3.7	5.1	6.1	169%	7.2	9	3.6
W Canyon Ck nr Cedar Fort	APR-JUL	1.09	2	2.7	284%	3.4	4.3	0.95
Spanish Fk at Castilla	APR-JUL	43	71	90	300%	109	137	30
Provo R at Woodland	APR-JUL	99	121	136	160%	153	179	85
Salt Ck at Nephi	APR-JUL	10.6	15	18	383%	21	25	4.7
Little Cottonwood Ck nr SLC	APR-JUL	38	45	49	158%	53	61	31
Provo R bl Deer Ck Dam	APR-JUL	135	166	187	165%	205	240	113
Emigration Ck nr SLC	APR-JUL	2.8	4	5	217%	6.1	7.9	2.3
Utah Lake Inflow								

Parleys Ck nr SLC	APR-JUL	220	340	420	231%	495	615	182
	APR-JUL	9	12.9	16	184%	19.4	25	8.7

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

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	41	78	110	367%	148	215	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	13.9	18	21	162%	24	28	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)
Ferron Ck (Upper Station) nr Ferron								
	APR-JUL	35	42	48	150%	54	63	32
Joes Valley Reservoir Inflow ²								
	APR-JUL	53	65	74	168%	84	99	44
Price R nr Scofield Reservoir ²								
	APR-JUL	48	61	70	269%	80	96	26
Electric Lake Inflow ²								
	APR-JUL	16.3	20	23	277%	26	31	8.3
Huntington Ck nr Huntington ²								
	APR-JUL	46	57	65	181%	74	88	36
Fish Ck ab Reservoir nr Scofield								
	APR-JUL	34	43	50	253%	57	69	19.8
White R bl Tabbyune Creek								
	APR-JUL	15.1	21	26	361%	31	40	7.2

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)
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Salina Ck nr Emery	APR-JUL	7.5	9.2	10.3	184%	11.4	13.1	5.6
Clear Ck ab Diversions nr Sevier	APR-JUL	23	30	35	257%	39	46	13.6
Sevier R at Hatch	APR-JUL	53	74	88	259%	102	123	34
Mammoth Ck nr Hatch	APR-JUL	38	48	54	274%	61	71	19.7
EF Sevier R nr Kingston	APR-JUL	12.7	22	31	231%	40	57	13.4
Sevier R nr Gunnison	APR-JUL	41	78	110	367%	148	215	30
Sevier R nr Kingston	APR-JUL	33	54	71	483%	90	123	14.7

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

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

Southeastern Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Green R at Green River, UT ²	APR-JUL	2590	3340	3900	149%	4510	5470	2610
Colorado R nr Cisco ²	APR-JUL	2840	3770	4480	119%	5240	6480	3750
South Ck ab Resv nr Monticello	APR-JUL	0.78	1.29	1.71	417%	2.2	3	0.41
Mill Ck at Sheley Tunnel nr Moab	APR-JUL	4.4	6.1	7.5	227%	9	11.4	3.3

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

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

Dirty Devil	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Seven Mile Ck nr Fish Lake	APR-JUL	4.7	6.5	7.8	128%	9.3	11.7	6.1
Muddy Ck nr Emery	APR-JUL	17.4	22	26	160%	30	36	16.3

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

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

Beaver	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Beaver R nr Beaver	APR-JUL	33	40	45	259%	50	58	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

Southwestern Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Virgin R nr Hurricane	APR-JUL	50	78	101	326%	126	169	31
Santa Clara R nr Pine Valley	APR-JUL	5	7.4	9.3	291%	11.5	15	3.2
Virgin R at Virgin	APR-JUL	59	82	100	278%	120	152	36
Coal Ck nr Cedar City	APR-JUL	24	30	35	280%	40	46	12.5

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

Escalante-Paria	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
Pine Ck nr Escalante	APR-JUL	1.41	2.2	2.9	178%	3.6	4.9	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

State of Utah	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Median	30% (KAF)	10% (KAF)	30yr Median (KAF)
East Canyon Ck nr Morgan	APR-JUL	27	35	41	228%	47	55	18
Blacks Fk nr Robertson	APR-JUL	70	89	102	112%	115	134	91
Big Brush Ck ab Red Fleet Reservoir	APR-JUL	17.1	22	26	132%	29	34	19.7
Flaming Gorge Reservoir Inflow ²	APR-JUL	495	745	945	95%	1170	1540	990
Sevier R nr Gunnison	APR-JUL	41	78	110	367%	148	215	30
Blacksmith Fk nr Hyrum	APR-JUL	37	51	60	207%	69	83	29
Uinta R bl Powerplant Diversion nr Neola	APR-JUL	59	80	97	152%	115	145	64
Beaver R nr Beaver	APR-JUL	33	40	45	259%	50	58	17.4
Bear R bl Stewart Dam	FEB-JUL	71	135	189	142%	255	365	133
	FEB-SEP	72	139	198	137%	265	385	145
	MAR-JUL	66	128	182	144%	245	355	126
	MAR-SEP	66	133	191	137%	260	380	139
Mammoth Ck nr Hatch	APR-JUL	38	48	54	274%	61	71	19.7
Provo R bl Deer Ck Dam	APR-JUL	135	166	187	165%	205	240	113
Manti Ck bl Dugway Ck nr Manti								

Weber R nr Oakley	APR-JUL	13.9	18	21	162%	24	28	13
Ashley Ck nr Vernal	APR-JUL	114	137	153	158%	168	191	97
SF Ogden R nr Huntsville	APR-JUL	39	51	59	137%	67	79	43
Muddy Ck nr Emery	APR-JUL	52	69	80	195%	91	108	41
Dunn Ck nr Park Valley	APR-JUL	17.4	22	26	160%	30	36	16.3
White R bl Tabbyune Creek	APR-JUL	2	3	3.7	154%	4.4	5.4	2.4
Flaming Gorge Resvr Local Bl Fontenelle ²	APR-JUL	15.1	21	26	361%	31	40	7.2
Whiterocks R nr Whiterocks	APR-JUL	43	58	69	160%	81	100	43
Weber R nr Coalville	APR-JUL	113	147	170	183%	193	225	93
Bear R ab Resv nr Woodruff	APR-JUL	67	115	147	160%	179	225	92
WF Duchesne R at VAT Diversion ²	APR-SEP	69	120	155	157%	190	240	99
City Ck nr SLC	APR-JUL	21	25	28	193%	31	37	14.5
Ferron Ck (Upper Station) nr Ferron	APR-JUL	5.4	7.1	8.3	157%	9.6	11.8	5.3
Mill Ck at Sheley Tunnel nr Moab	APR-JUL	35	42	48	150%	54	63	32
Bear R nr UT-WY State Line	APR-JUL	4.4	6.1	7.5	227%	9	11.4	3.3
	APR-JUL	102	125	141	140%	157	180	101
	APR-SEP	113	138	155	136%	172	197	114
Currant Ck Reservoir Inflow ²	APR-JUL	19.3	26	31	261%	37	45	11.9
Dell Fk nr SLC	APR-JUL	3.7	5.1	6.1	169%	7.2	9	3.6
Coal Ck nr Cedar City	APR-JUL	24	30	35	280%	40	46	12.5
Huntington Ck nr Huntington ²	APR-JUL	46	57	65	181%	74	88	36
Duchesne R at Myton ²	APR-JUL	295	400	485	226%	575	725	215
Fish Ck ab Reservoir nr Scofield	APR-JUL	34	43	50	253%	57	69	19.8
Emigration Ck nr SLC	APR-JUL	2.8	4	5	217%	6.1	7.9	2.3
Upper Stillwater Reservoir Inflow ²	APR-JUL	73	92	106	156%	121	146	68
Pine Ck nr Escalante	APR-JUL	1.41	2.2	2.9	178%	3.6	4.9	1.63
Spanish Fk at Castilla	APR-JUL	43	71	90	300%	109	137	30
Provo R at Woodland	APR-JUL	99	121	136	160%	153	179	85
Sevier R at Hatch	APR-JUL	53	74	88	259%	102	123	34
Smiths Fk nr Border	APR-JUL	74	92	104	121%	116	134	86
	APR-SEP	86	106	120	120%	134	154	100
Electric Lake Inflow ²	APR-JUL	16.3	20	23	277%	26	31	8.3

W Canyon Ck nr Cedar Fort								
APR-JUL	1.09	2	2.7	284%	3.4	4.3	0.95	
Santa Clara R nr Pine Valley								
APR-JUL	5	7.4	9.3	291%	11.5	15	3.2	
EF Sevier R nr Kingston								
APR-JUL	12.7	22	31	231%	40	57	13.4	
Parleys Ck nr SLC								
APR-JUL	9	12.9	16	184%	19.4	25	8.7	
S Willow Ck nr Grantsville								
APR-JUL	3.8	4.5	5	200%	5.5	6.2	2.5	
American Fk ab Upper Powerplant								
APR-JUL	29	37	43	224%	49	57	19.2	
Yellowstone R nr Altonah								
APR-JUL	53	67	77	138%	88	106	56	
Duchesne R nr Tabiona ²								
APR-JUL	104	127	145	167%	164	193	87	
Lost Ck Reservoir Inflow								
APR-JUL	12.8	17.4	20	211%	24	28	9.5	
South Ck ab Resv nr Monticello								
APR-JUL	0.78	1.29	1.71	417%	2.2	3	0.41	
Rockport Reservoir Inflow								
APR-JUL	106	138	160	184%	182	215	87	
Duchesne R nr Randlett ²								
APR-JUL	330	465	565	222%	675	860	255	
Virgin R at Virgin								
APR-JUL	59	82	100	278%	120	152	36	
Clear Ck ab Diversions nr Sevier								
APR-JUL	23	30	35	257%	39	46	13.6	
Green R at Green River, UT ²								
APR-JUL	2590	3340	3900	149%	4510	5470	2610	
Rock Ck nr Mountain Home ²								
APR-JUL	84	102	115	147%	129	151	78	
Stateline Reservoir Inflow ²								
APR-JUL	23	29	33	127%	38	45	26	
Strawberry R nr Duchesne ²								
APR-JUL	95	140	175	330%	215	280	53	
Weber R at Gateway								
APR-JUL	265	365	435	212%	505	605	205	
Echo Reservoir Inflow								
APR-JUL	147	194	225	188%	260	305	120	
Strawberry R nr Soldier Springs ²								
APR-JUL	55	78	97	269%	118	151	36	
Logan R nr Logan								
APR-JUL	101	125	141	155%	157	181	91	
Colorado R nr Cisco ²								
APR-JUL	2840	3770	4480	119%	5240	6480	3750	
Duchesne R ab Knight Diversion ²								
APR-JUL	183	225	255	157%	285	340	162	
Seven Mile Ck nr Fish Lake								
APR-JUL	4.7	6.5	7.8	128%	9.3	11.7	6.1	
Salina Ck nr Emery								
APR-JUL	7.5	9.2	10.3	184%	11.4	13.1	5.6	
Provo R at Hailstone								
APR-JUL	104	129	147	177%	167	198	83	
Chalk Ck at Coalville								
APR-JUL	23	39	50	192%	61	77	26	
Pineview Reservoir Inflow								
APR-JUL	77	121	150	190%	179	225	79	
Utah Lake Inflow								
APR-JUL	220	340	420	231%	495	615	182	
Lake Fk R bl Moon Lk nr Mountain Home ²								
APR-JUL	58	71	80	140%	90	106	57	

Price R nr Scofield Reservoir ²								
	APR-JUL	48	61	70	269%	80	96	26
Little Bear at Paradise								
	APR-JUL	32	47	57	204%	67	82	28
Sevier R nr Kingston								
	APR-JUL	33	54	71	483%	90	123	14.7
East Canyon Ck nr Jeremy Ranch								
	APR-JUL	14.6	21	25	263%	29	35	9.5
Vernon Ck nr Vernon								
	APR-JUL	1.03	1.57	2	270%	2.5	3.3	0.74
Little Cottonwood Ck nr SLC								
	APR-JUL	38	45	49	158%	53	61	31
Salt Ck at Nephi								
	APR-JUL	10.6	15	18	383%	21	25	4.7
Virgin R nr Hurricane								
	APR-JUL	50	78	101	326%	126	169	31
Mill Ck nr SLC								
	APR-JUL	5.1	6.8	8.1	188%	9.5	11.9	4.3
Joes Valley Reservoir Inflow ²								
	APR-JUL	53	65	74	168%	84	99	44
Big Ck nr Randolph								
	APR-JUL	1.63	3.9	5.5	172%	7.1	9.4	3.2
Big Cottonwood Ck nr SLC								
	APR-JUL	36	43	49	169%	54	63	29

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

Water Supply Outlook Reports

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

Released by
Trisha Cracroft
Acting 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



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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
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