Utah Water Supply Briefing

January 9th, 2023

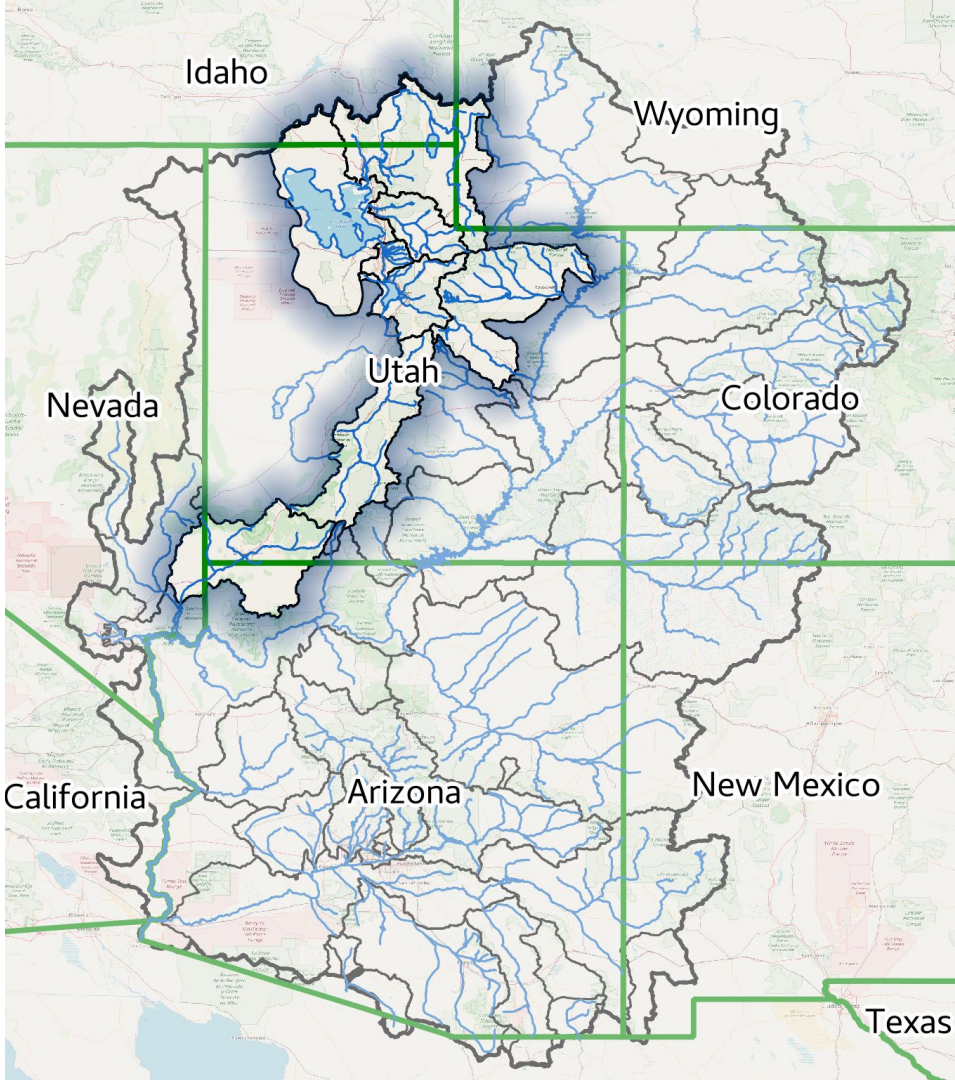
Colorado Basin River Forecast Center

Presenter: - Patrick Kormos

Utah Forecasters: Trevor Grout
Brenda Alcorn
Patrick Kormos

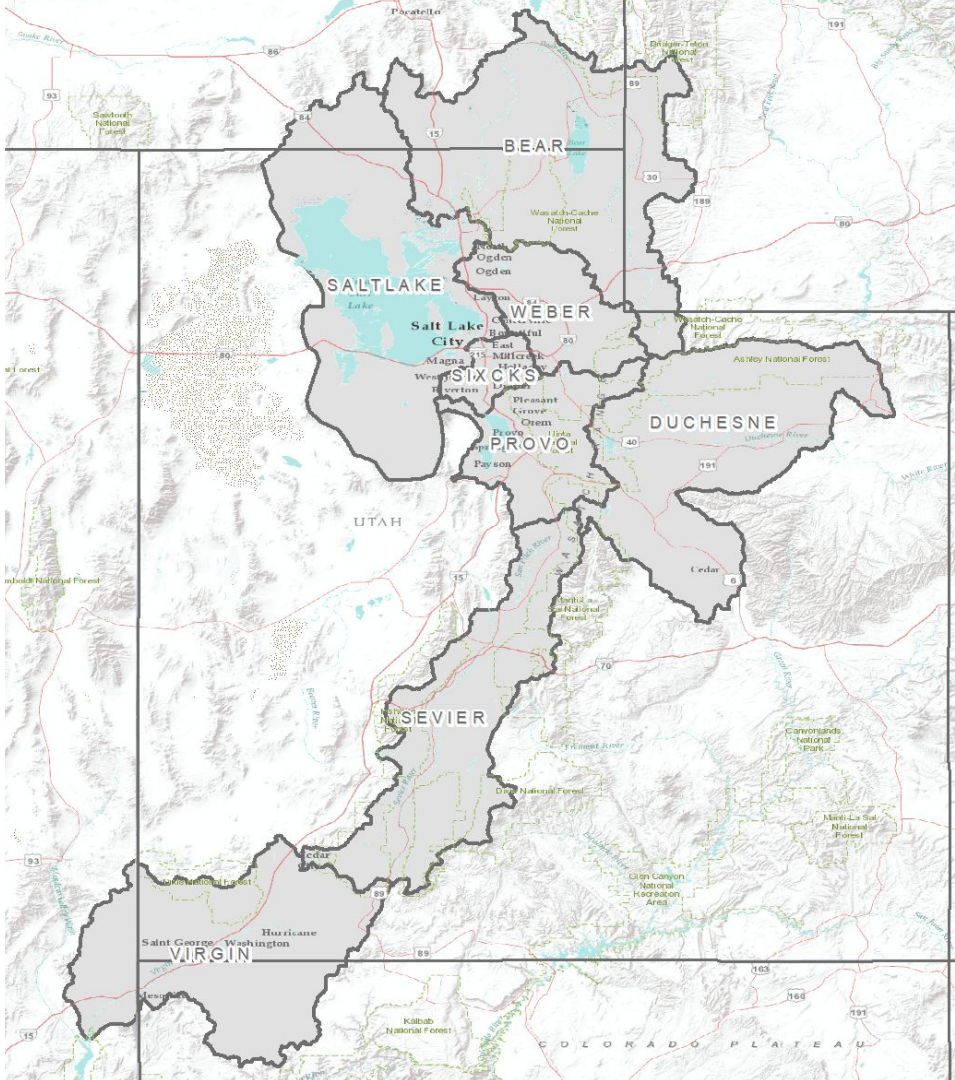
Questions: Type questions into the ‘Questions’ Box or Raise Hand

Webinar recording & slides will be made available on CBRFC webpage

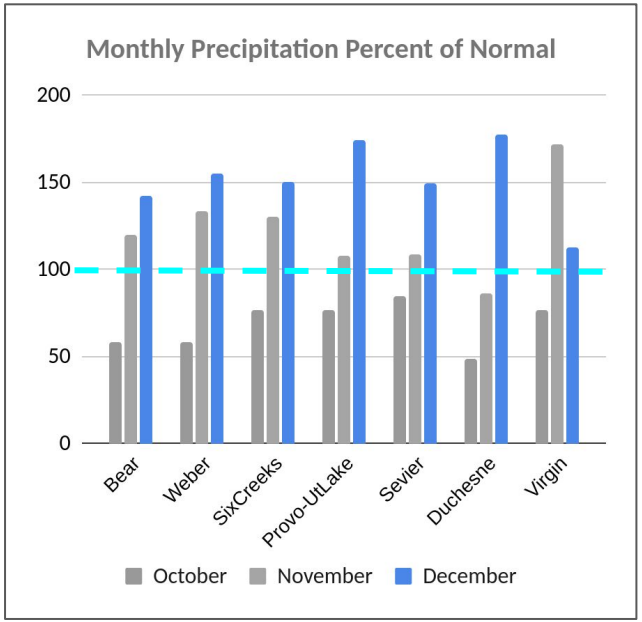


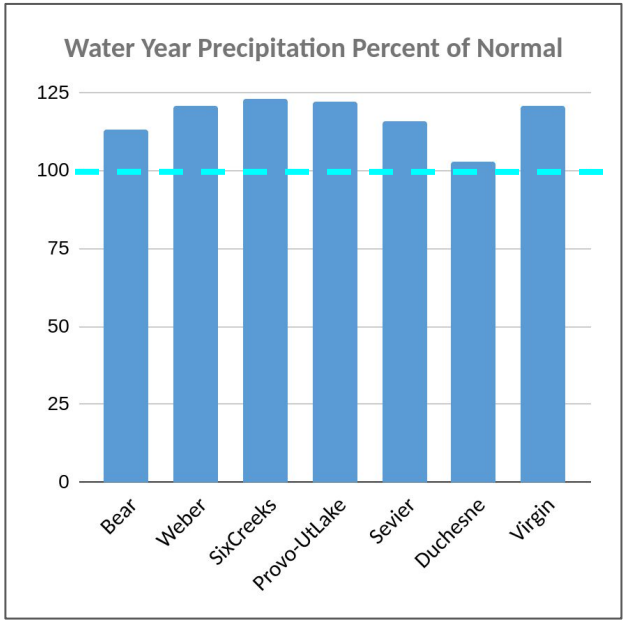
Utah Water Supply Briefing

1. Precipitation Review
2. Current Snowpack
3. Fall Soil Moisture
4. 2023 Water Supply Forecasts
5. Early Season Forecast Error
6. Upcoming Weather
7. Contacts & Questions



2023 Water Year Precipitation

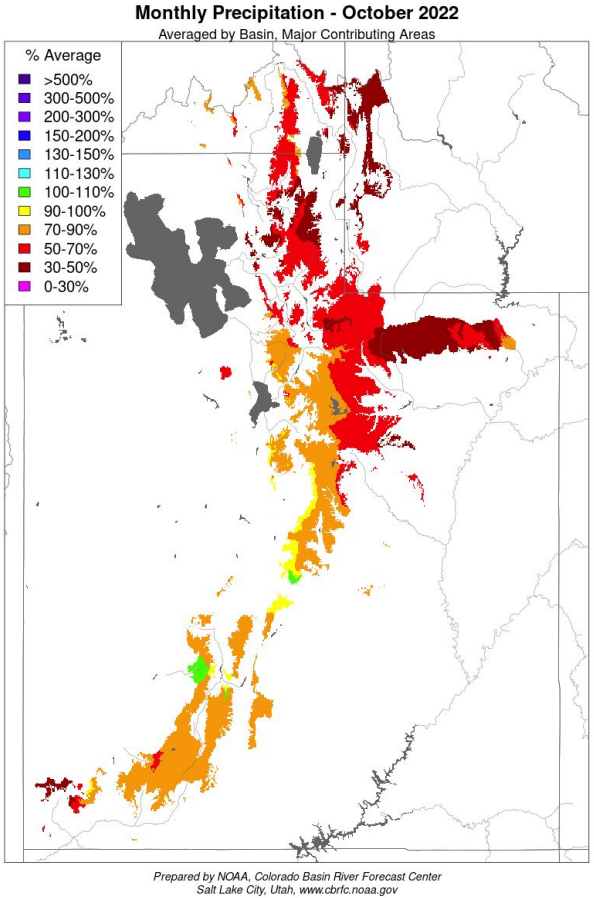


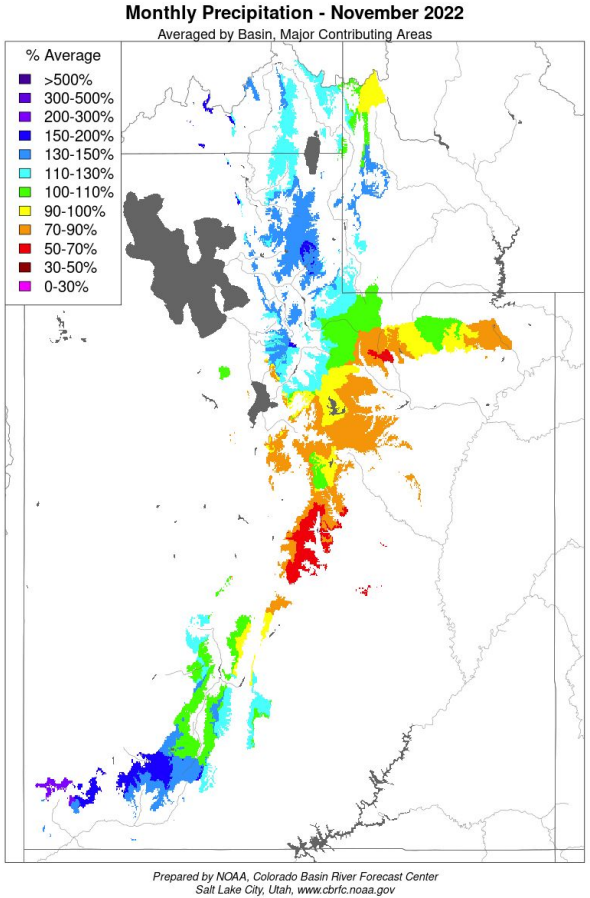


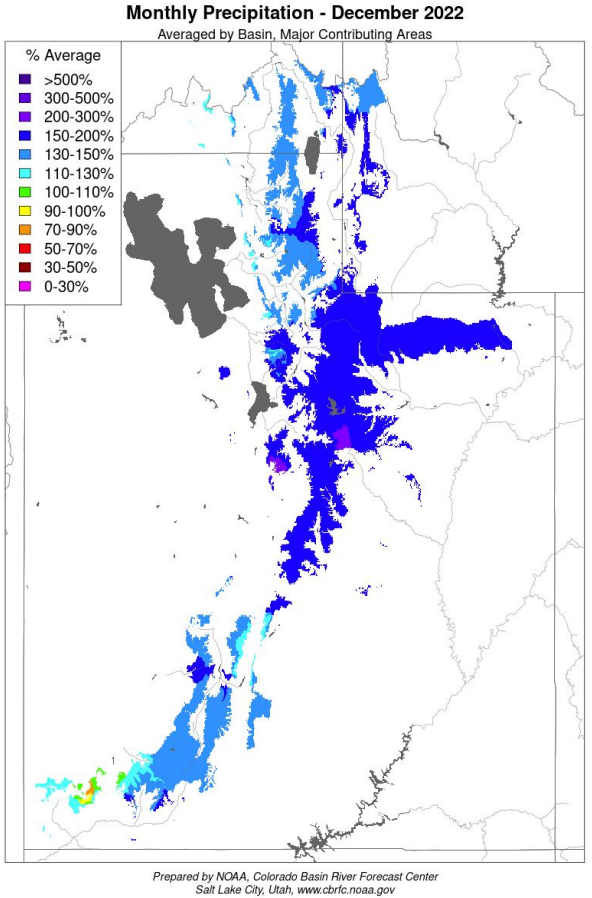
- All forecast groups have seen above normal WY precipitation

Forecast Group	Percent of WY normal
Bear	114
Weber	121
Six Creeks	125
Provo	124
Sevier	116
Duchesne	103
Virgin	121

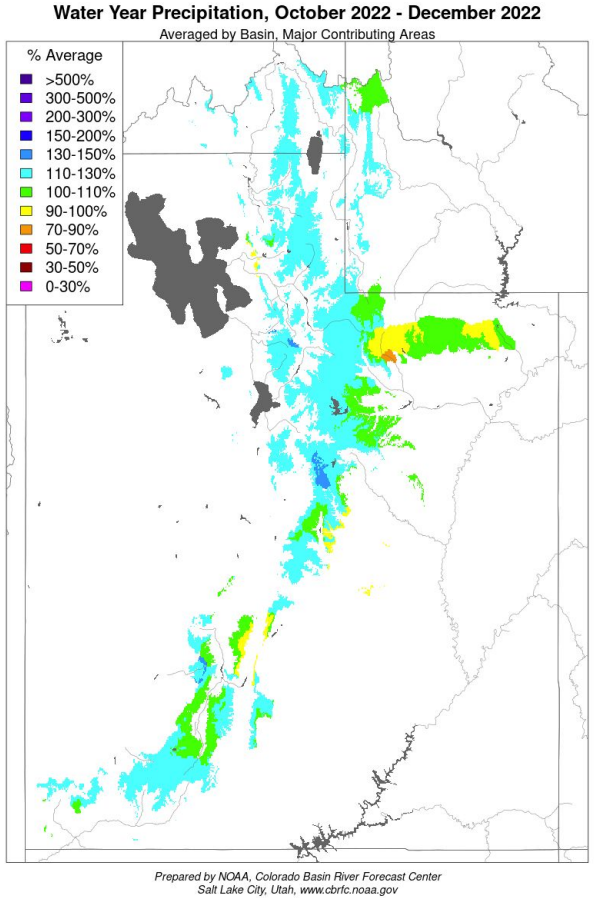
Utah Weather Review - Monthly Precipitation

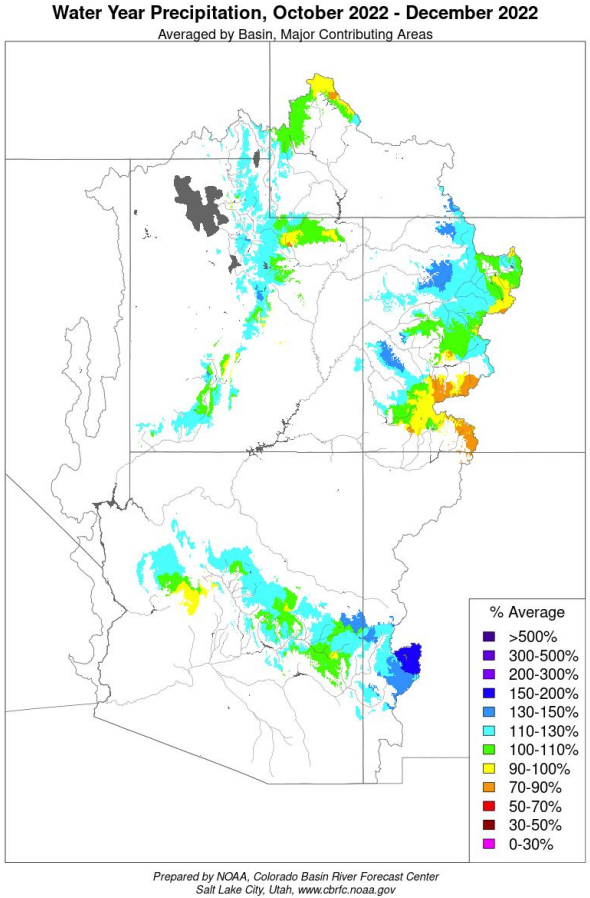






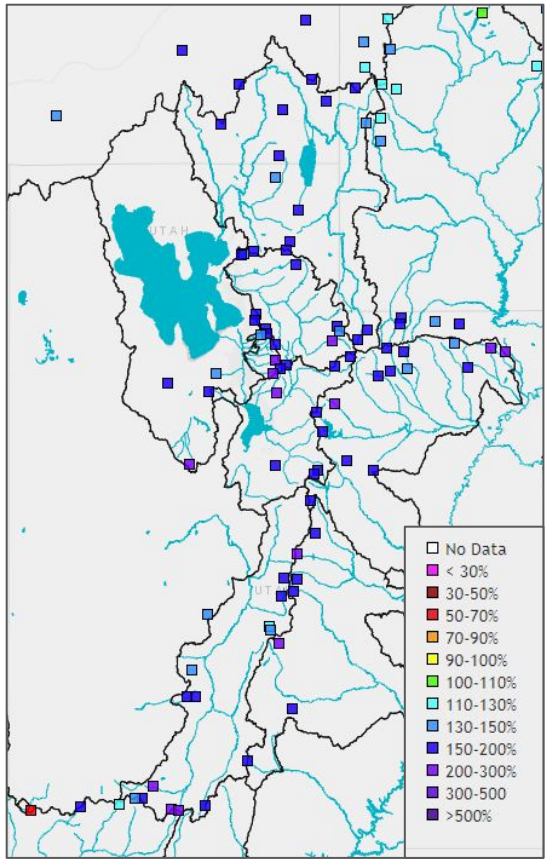
Utah Weather Review - Water Year Precipitation

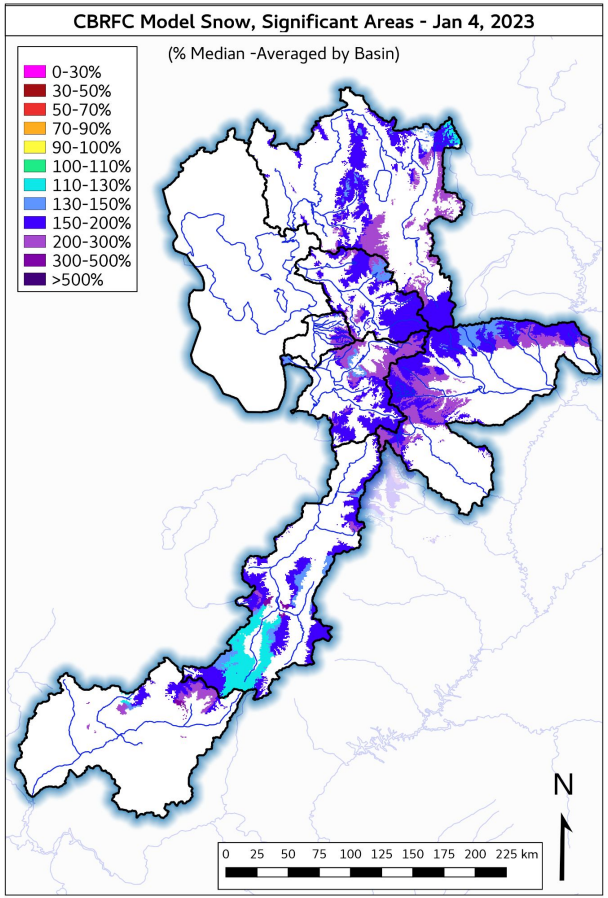




Utah Current Snowpack

SNOTEL (Observed)



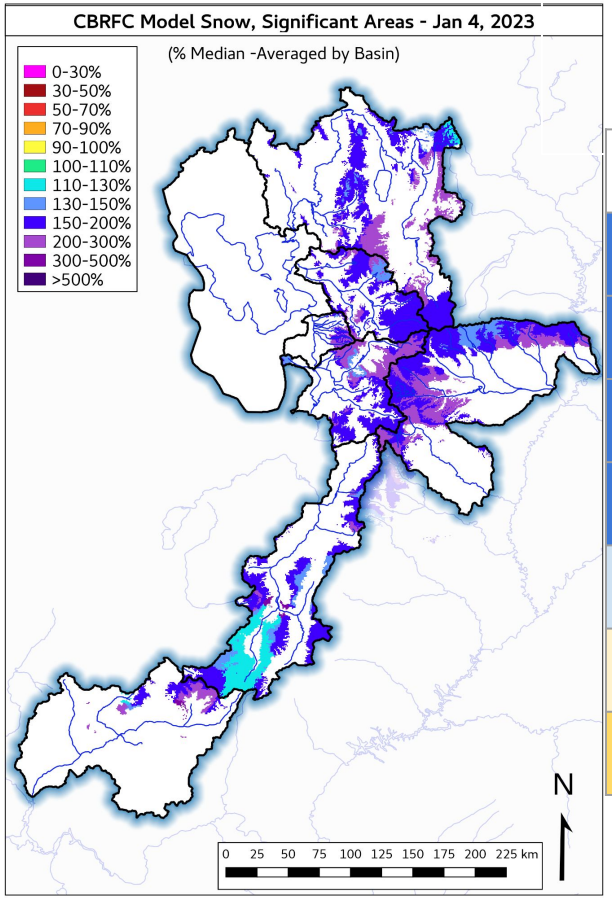


This is a change!

CBRFC Model Snow by Forecast Group
January 1st % median

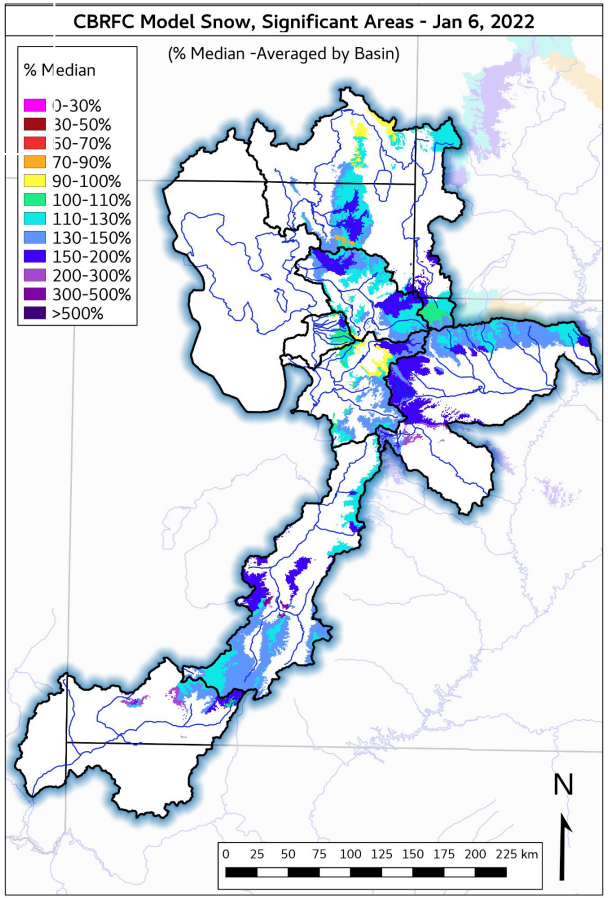
Bear	164%
Weber	179%
Six Creeks	184%
Provo	187%
Duchesne	146%
Sevier	159%
Virgin	117%

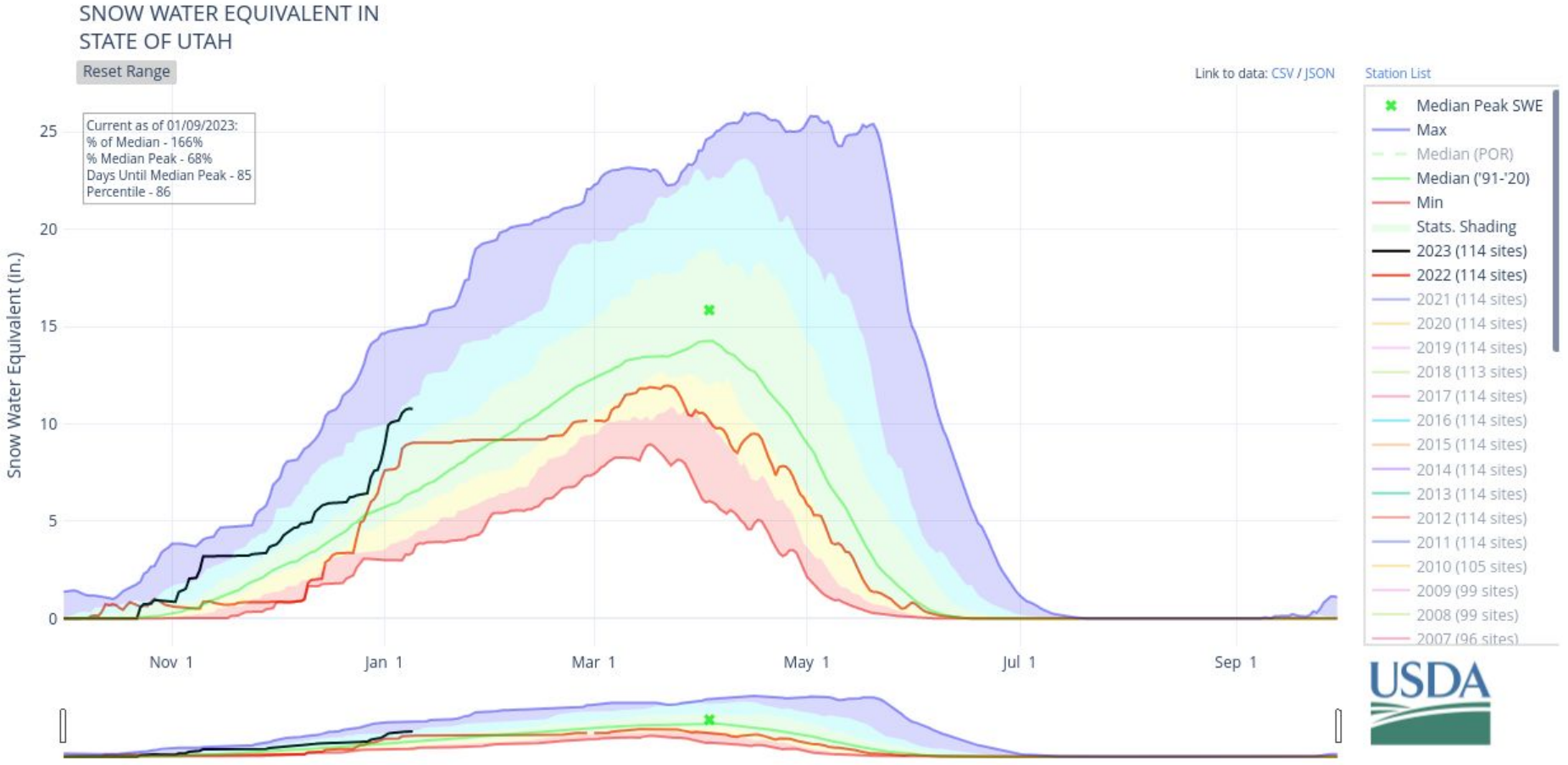
Utah Current Snowpack



CBRFC Model Snow by Forecast Group
January 1st

	2023	2022
Bear	164%	103%
Weber	179%	114%
Six Creeks	184%	108%
Provo	187%	132%
Duchesne	146%	137%
Sevier	159%	165%
Virgin	117%	196%

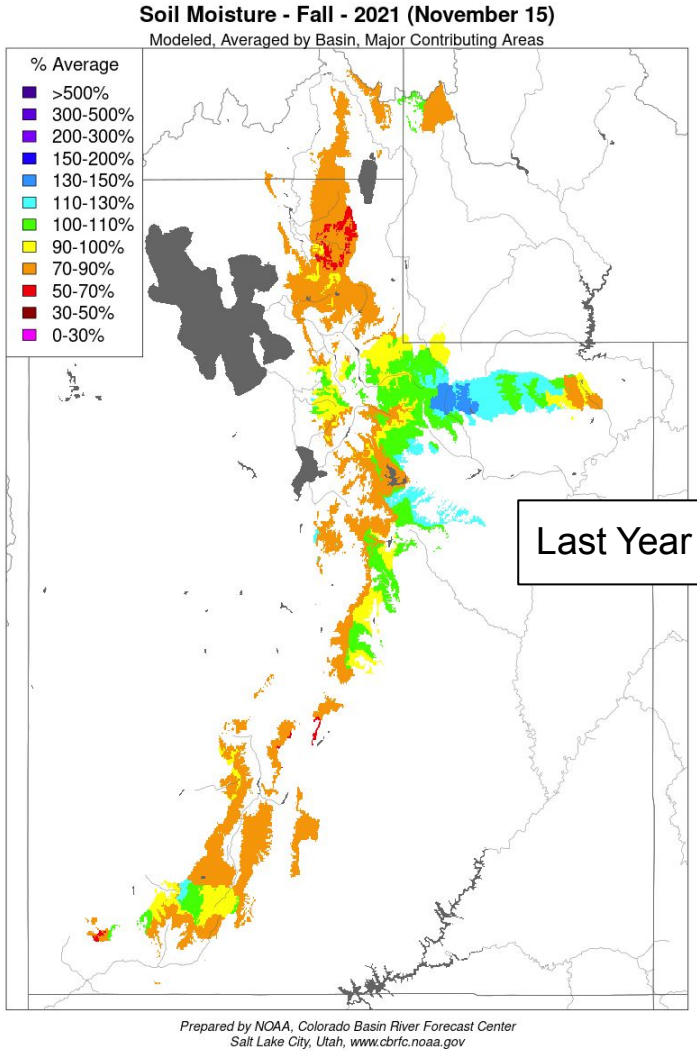




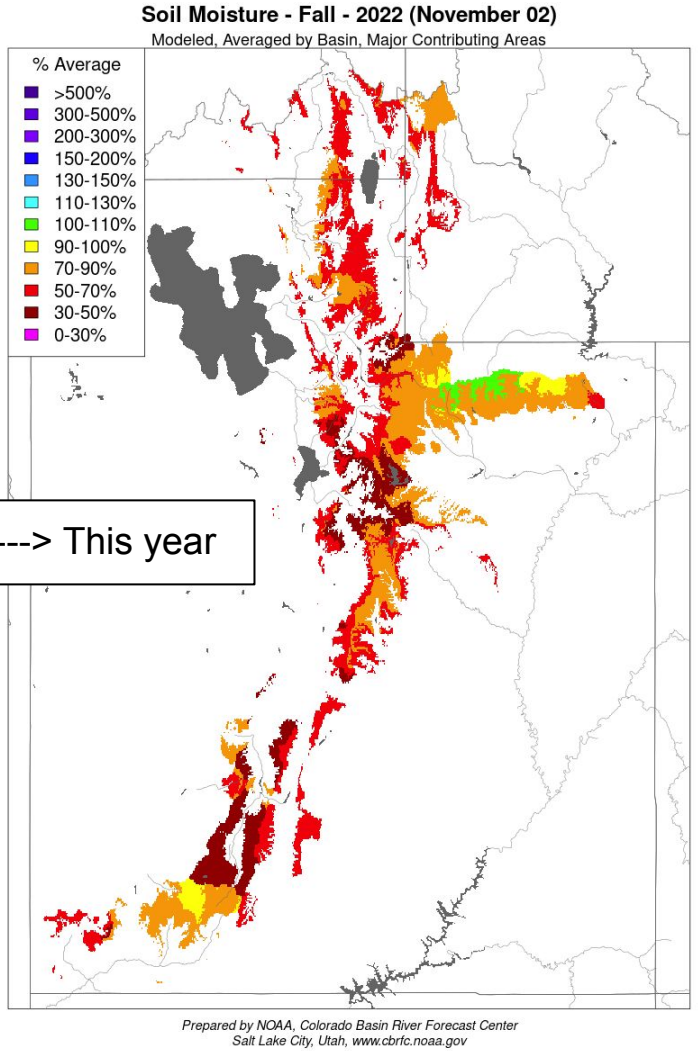
Last year also saw above average early season snow accumulation.

Fall Model Soil Moisture Conditions:

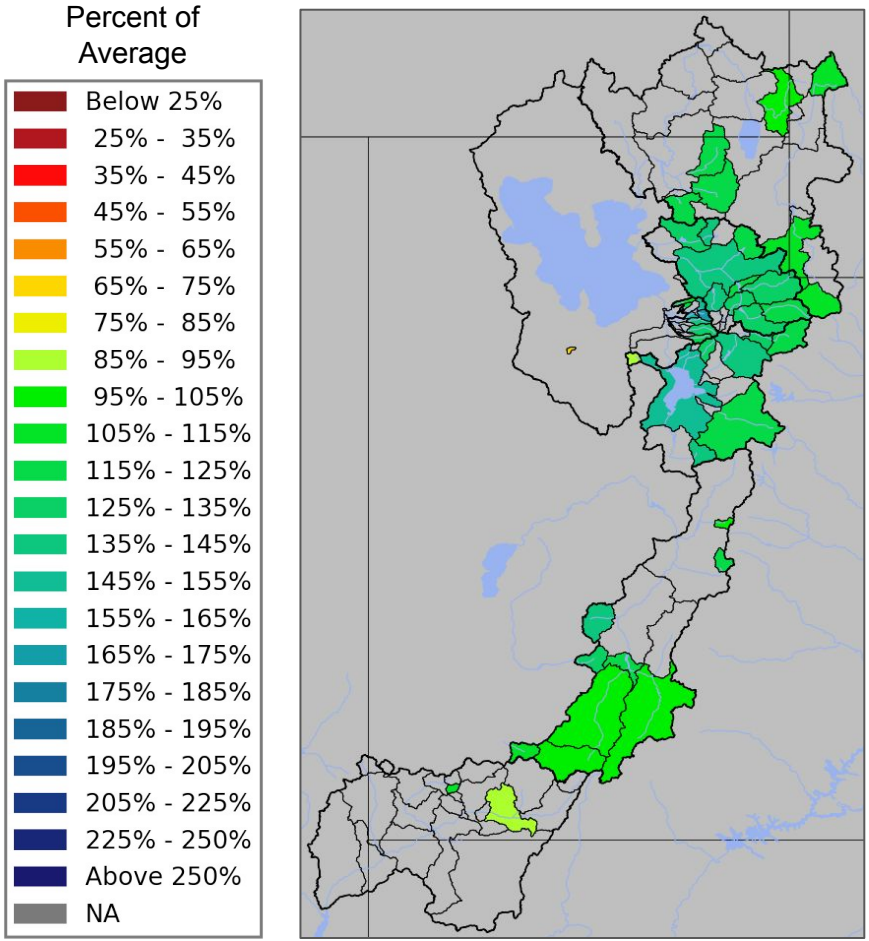
Larger Soil Moisture Deficit than last year



Last Year ——-----> This year



Utah Water Supply Forecasts - Overview

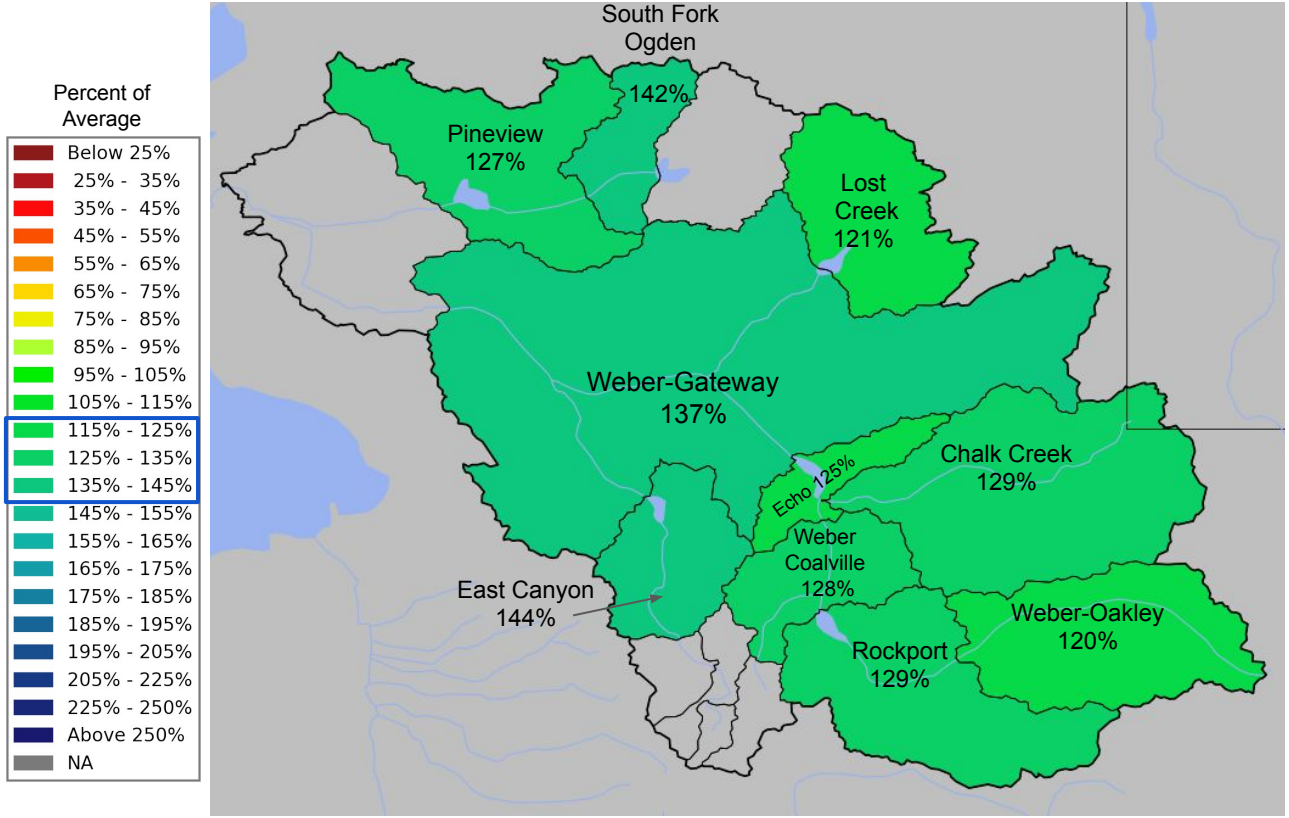


- January 1 forecast for April-July volume
- April-July forecast streamflow volumes are in percent of 1991-2020 average.

Median forecasts by forecast group.

Weber	130%
Bear	110%
Six Creeks	135%
Provo / Utah Lake	125%
Sevier	110%
Duchesne	110%
Virgin	100%

Utah Water Supply Forecasts - Weber



Weber River Basin Forecasts

January: 130% of Normal
(last Jan: 110%)

- Forecasts range from 120-144% of normal

Utah Water Supply Forecasts - Weber

2023/01/01:

Max 1907: 254.23

Min 1934: 35.47

Average: 111

Median: 97

ESP: 114

Official 10: 182

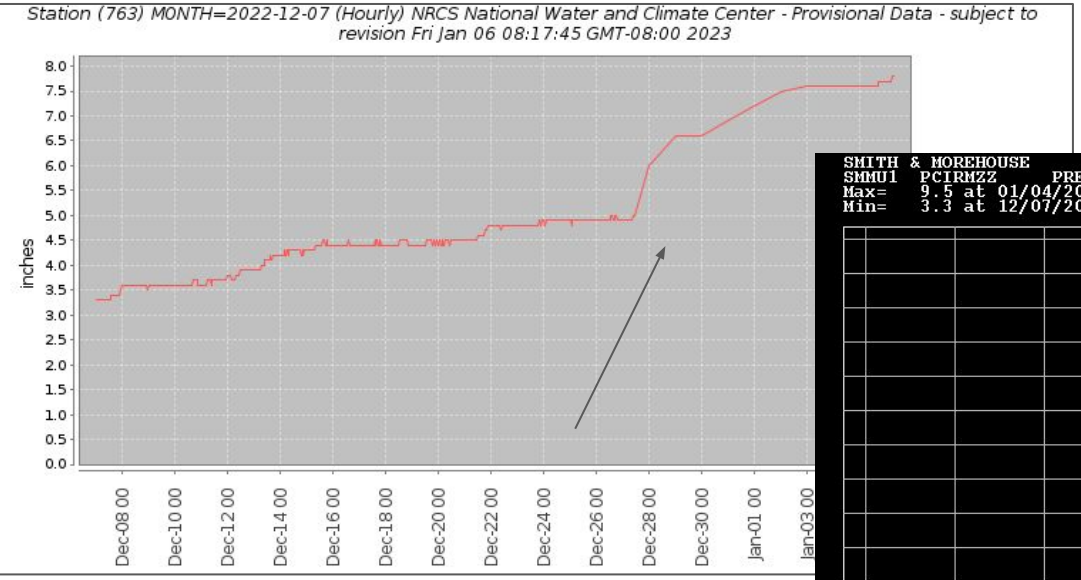
Official 30: 145

Official 50: 133

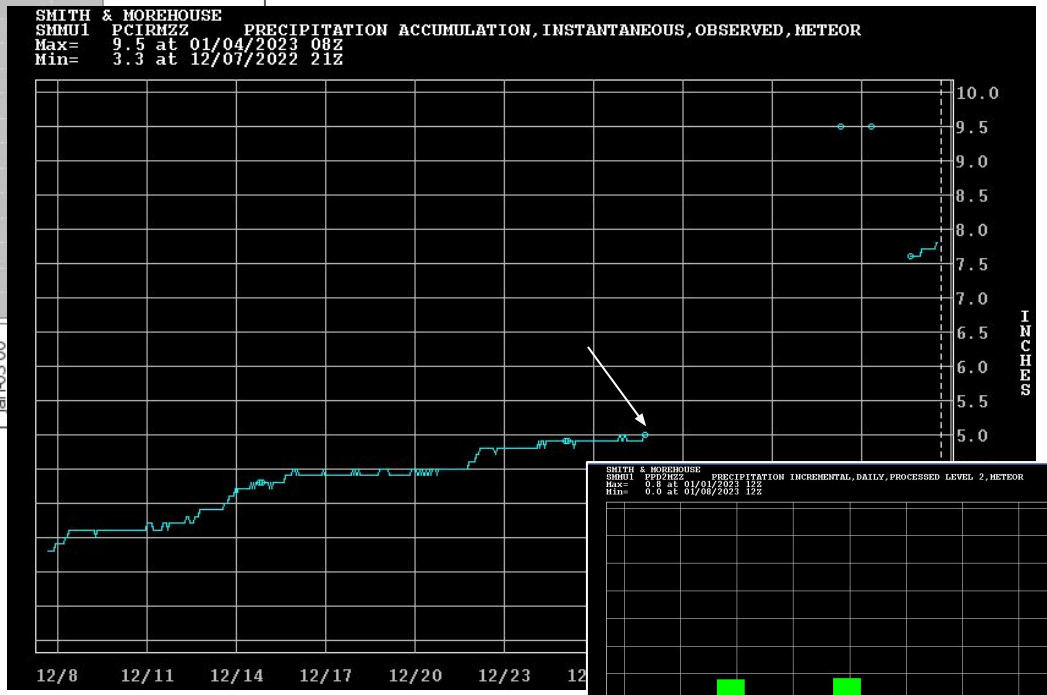
Official 70: 93

Official 90: 81

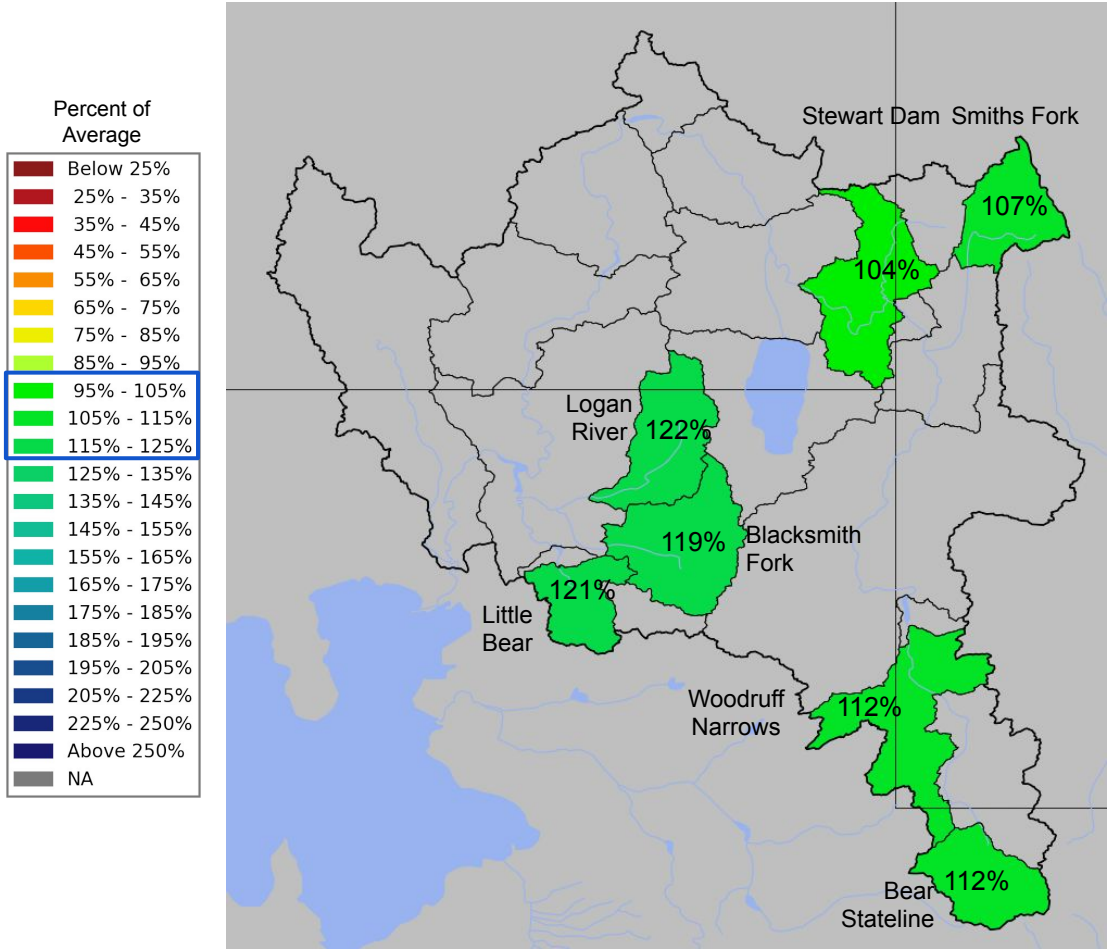
Utah Water Supply Forecasts - Weber



Smith and Morehouse Snotel Data Issues.



Utah Water Supply Forecasts - Bear



Bear River Basin Forecasts

January: 110% of Normal
(last January 95%)

- Forecasts range from 104-122% of normal

Utah Water Supply Forecasts - Bear

2023/01/01:

Max 1986: 222.92

Min 1977: 34.12

Average: 106

Median: 91

ESP: 100

Official 10: 165

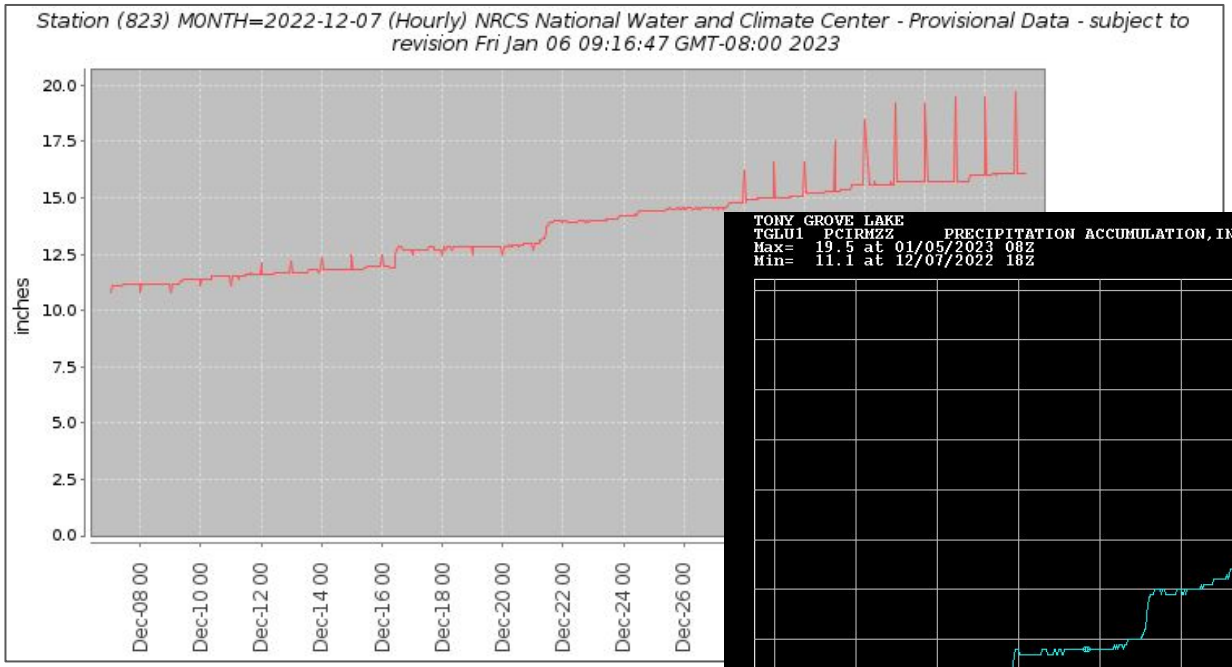
Official 30: 140

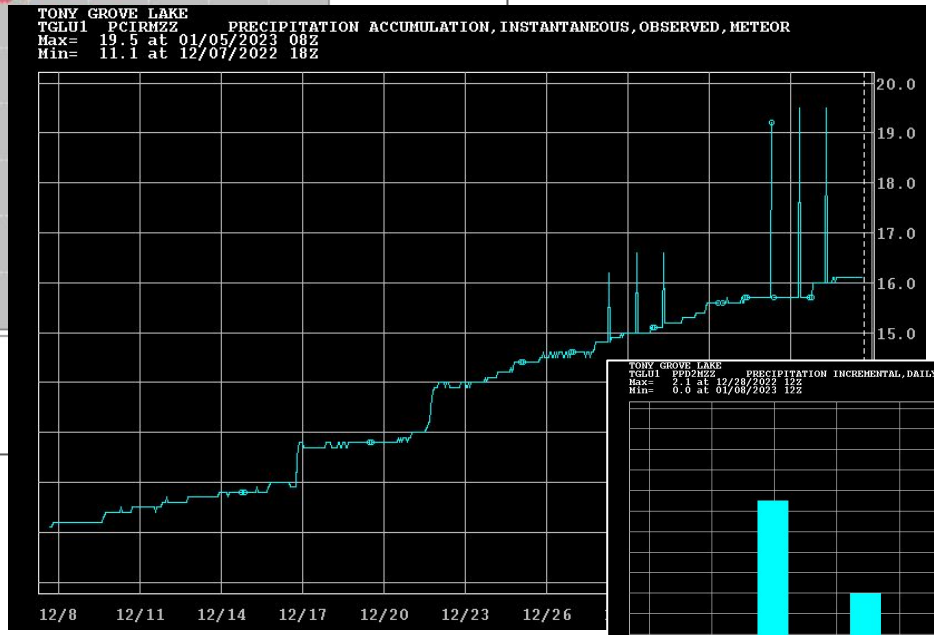
Official 50: 129

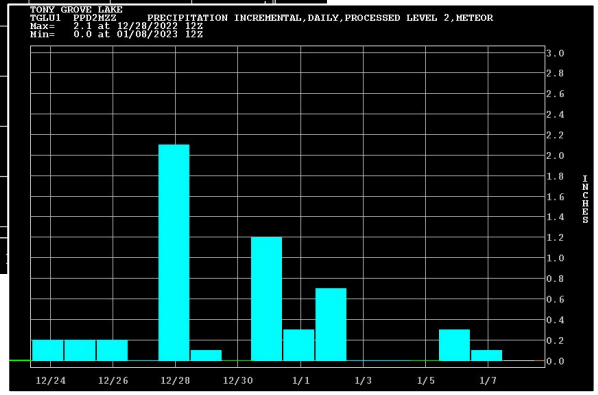
Official 70: 88

Official 90: 68

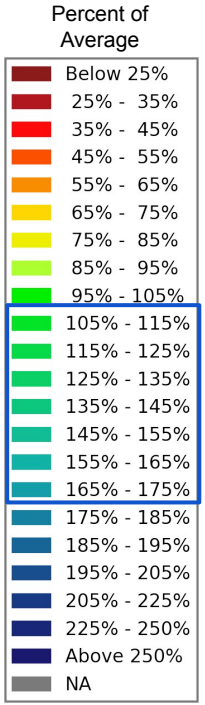
Utah Water Supply Forecasts - Bear

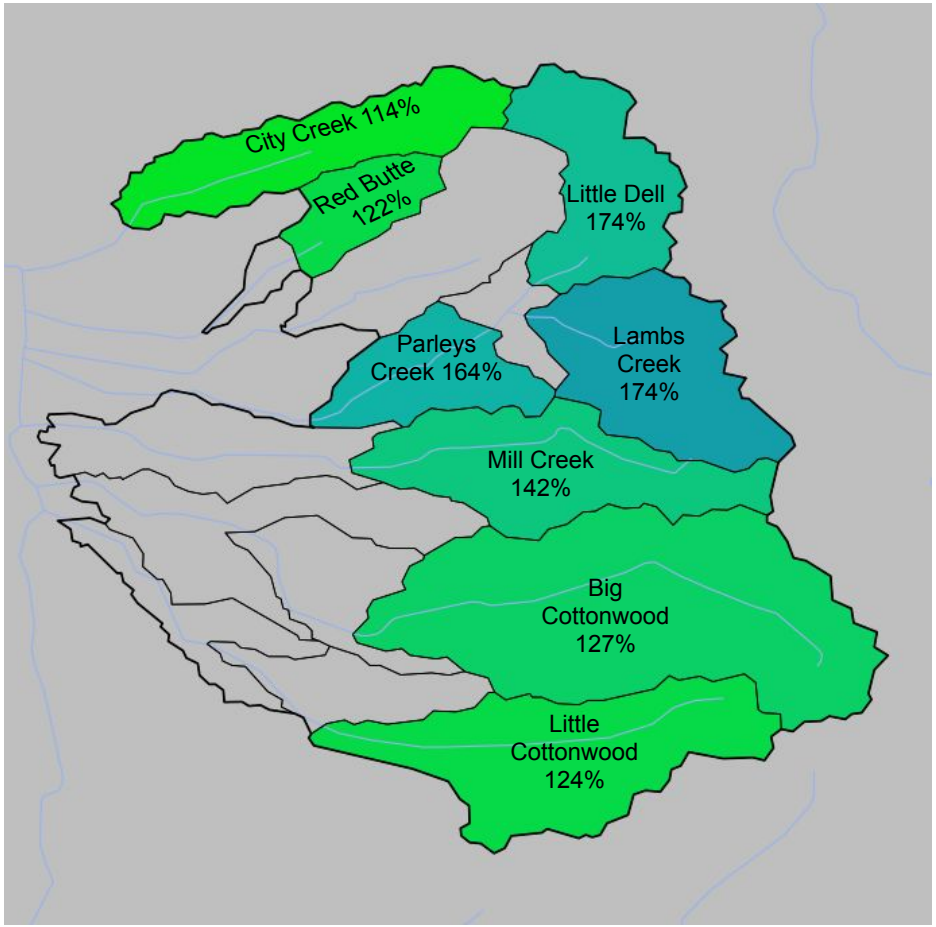






Utah Water Supply Forecasts - Six Creeks



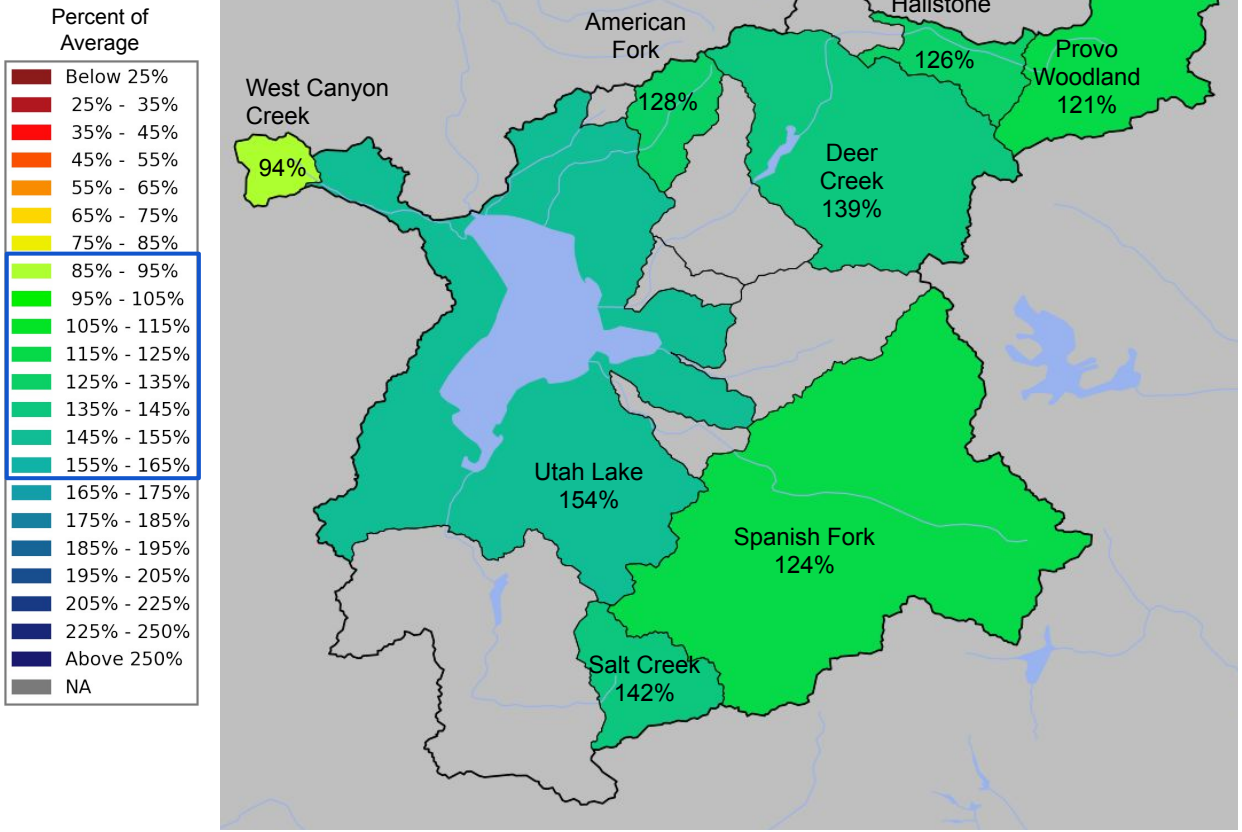


Six Creeks Basin Forecasts

January: 135% of Normal
(last January 115%)

- Forecasts range from 114-174% of normal

Utah Water Supply Forecasts - Utah Lake Basin

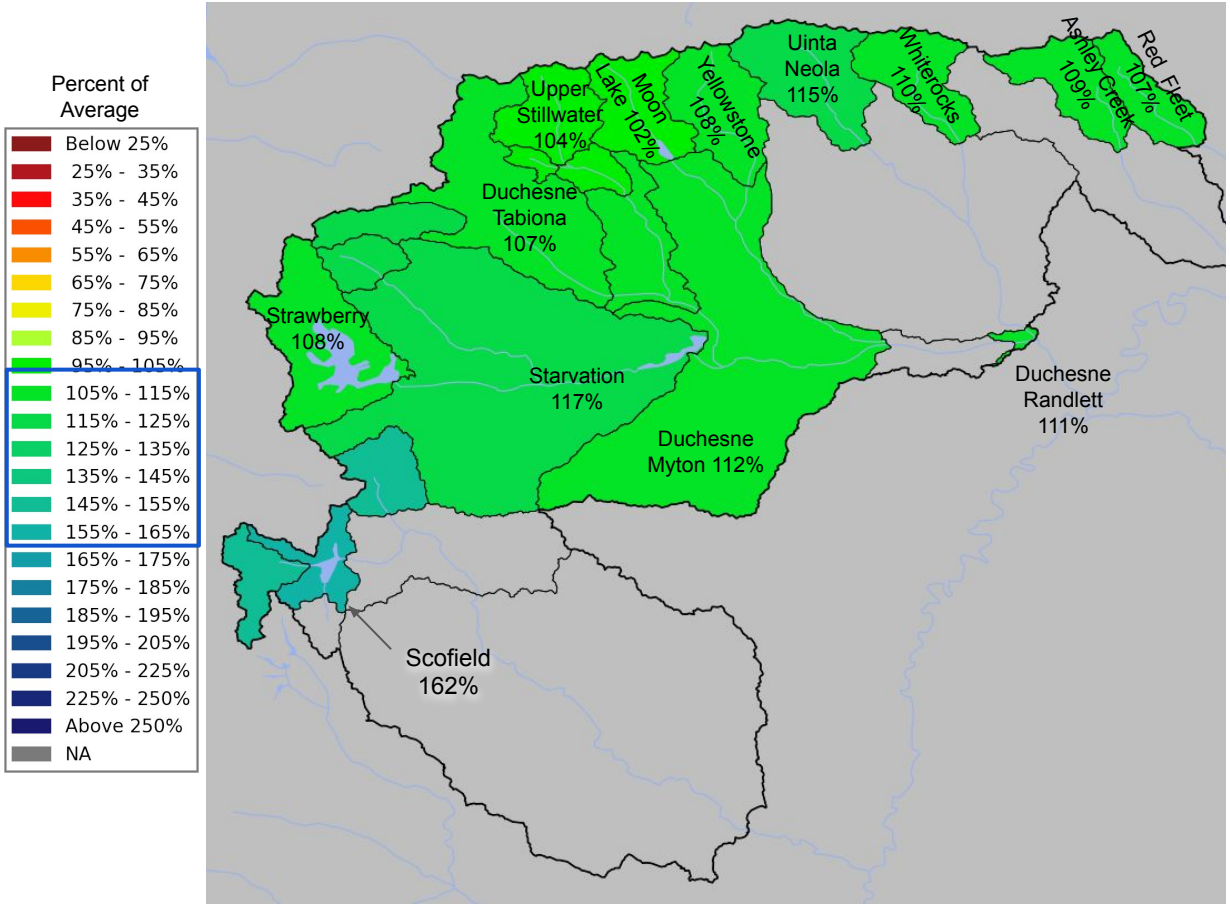


Utah Lake Basin Forecasts

January: 135% of Normal
(last January 110%)

- Forecasts range from 94-154% of normal

Utah Water Supply Forecasts - Duchesne



Duchesne River Basin

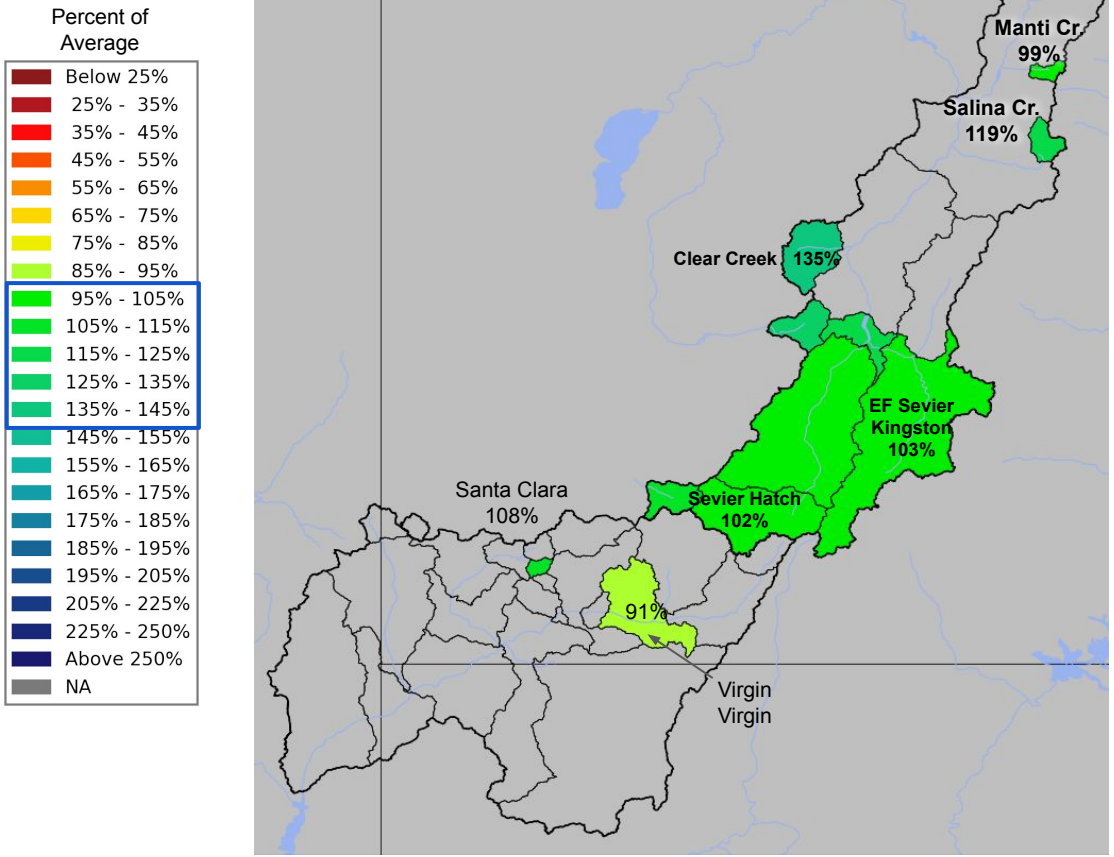
January: 110% of Normal
(last January 110%)

- Forecasts range from 102-117% of normal

Price River Basin

January: 162% of Normal
(last January 125%)

Utah Water Supply Forecasts - Sevier and Virgin



Sevier River Basin Forecasts (regulated)

January: 110% of Normal
(last January 105%)

- Forecasts range from 99-135% of normal

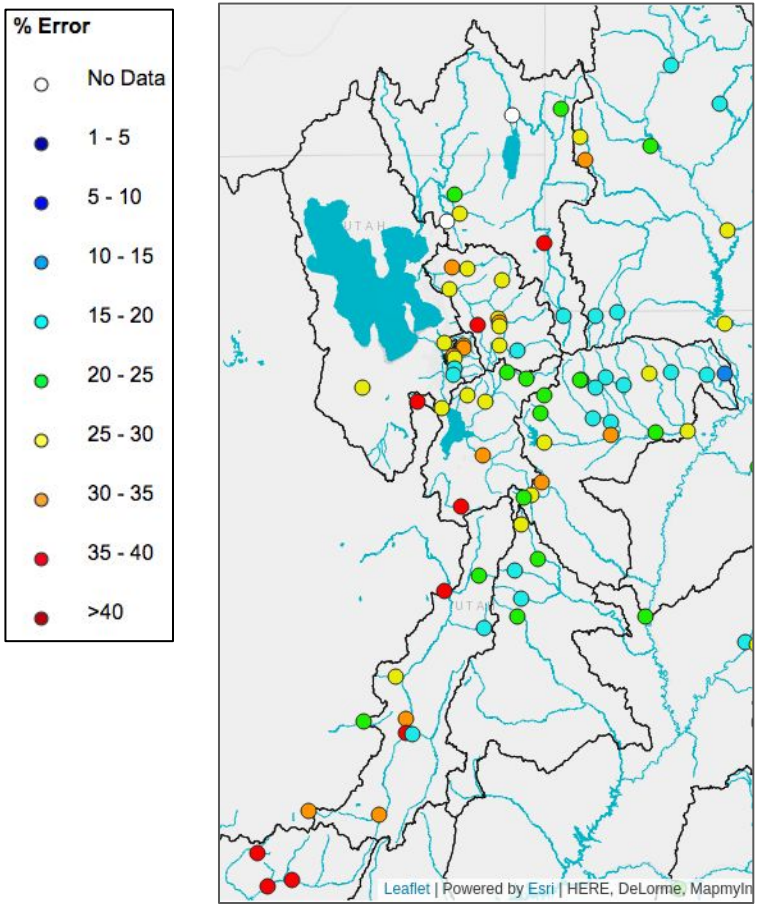
Virgin River Basin Forecasts

January: 100% of Normal
(last January 90%)

- Forecasts range from 91-108% of normal

Historical Forecast Verification

January Forecast Error: April-July Volume



Location	Jan 1 Forecast Error
BEAR - UTAH-WYOMING STATE	21%
BEAR - WOODRUFF NARROWS	40%
LOGAN - LOGAN- NR	27%
WEBER - OAKLEY- NR	23%
WEBER - ROCKPORT RES	30%
BIG COTTONWOOD CK	21%
PROVO - WOODLAND- NR	25%
PROVO - DEER CK RES	33%
VIRGIN - VIRGIN	44%

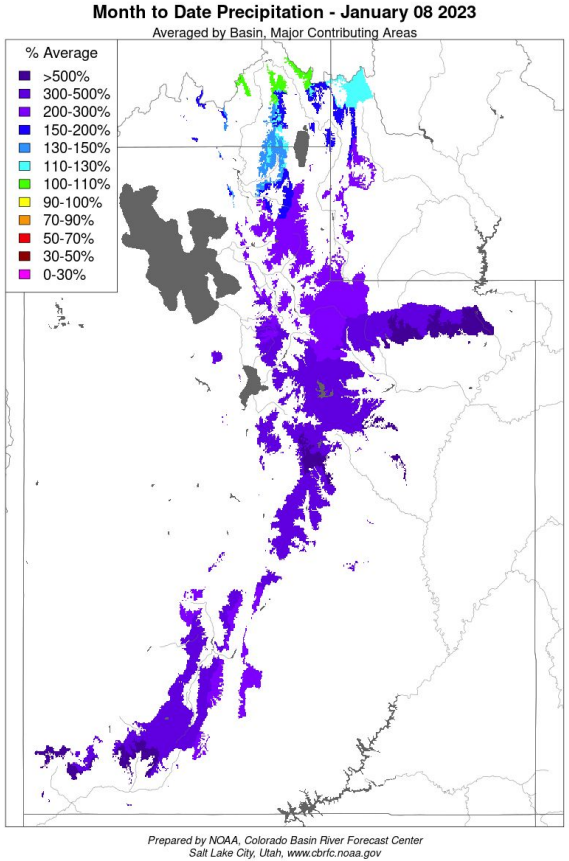
Error tends to decrease each month into the spring

Where Forecasts are Better:
- -Headwaters
- -Primarily snow melt basins
- -Known diversions / demands

Where Forecasts are Worse:
- -Lower elevations (rain or early melt)
- -Downstream of diversions / irrigation
- -Little is known about diversions / demands

Future weather is the primary source of early season water supply forecast error/uncertainty.

January 2023 Month-To-Date Precipitation



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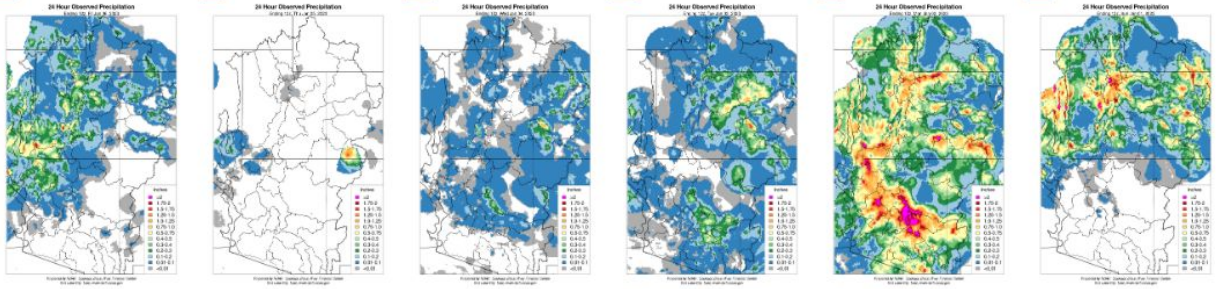
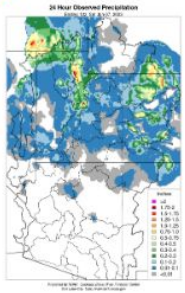
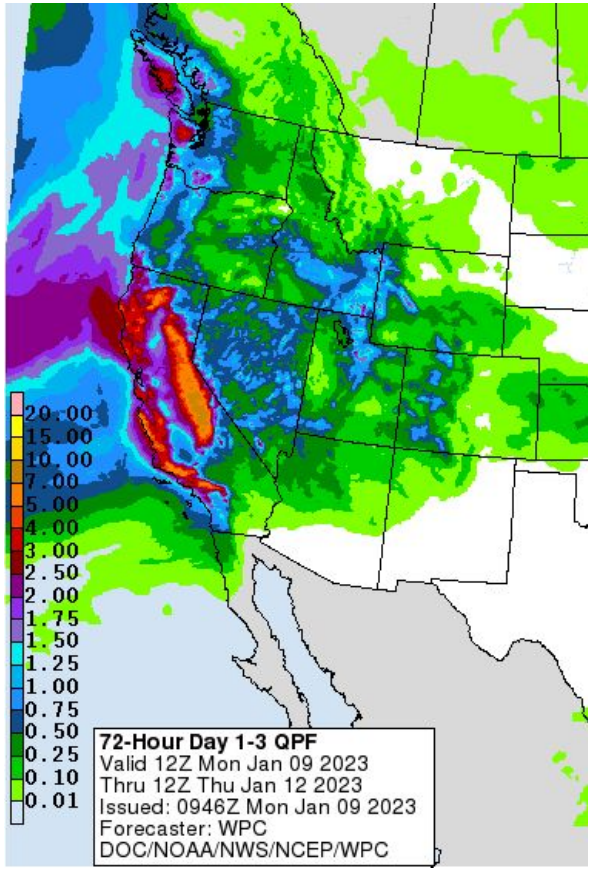


Precipitation has continued across north and central Utah.

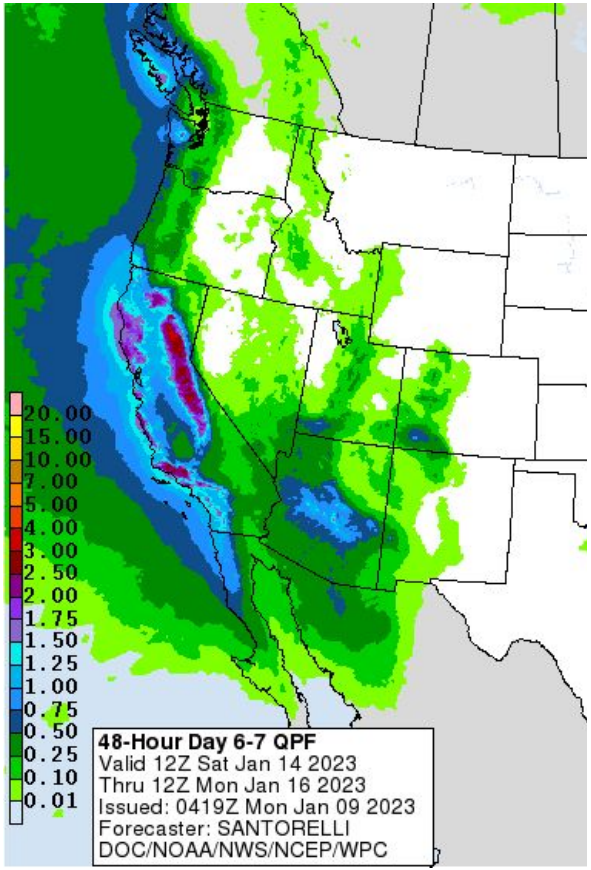
07



Upcoming Weather: WPC January 9-16 Precipitation Outlook



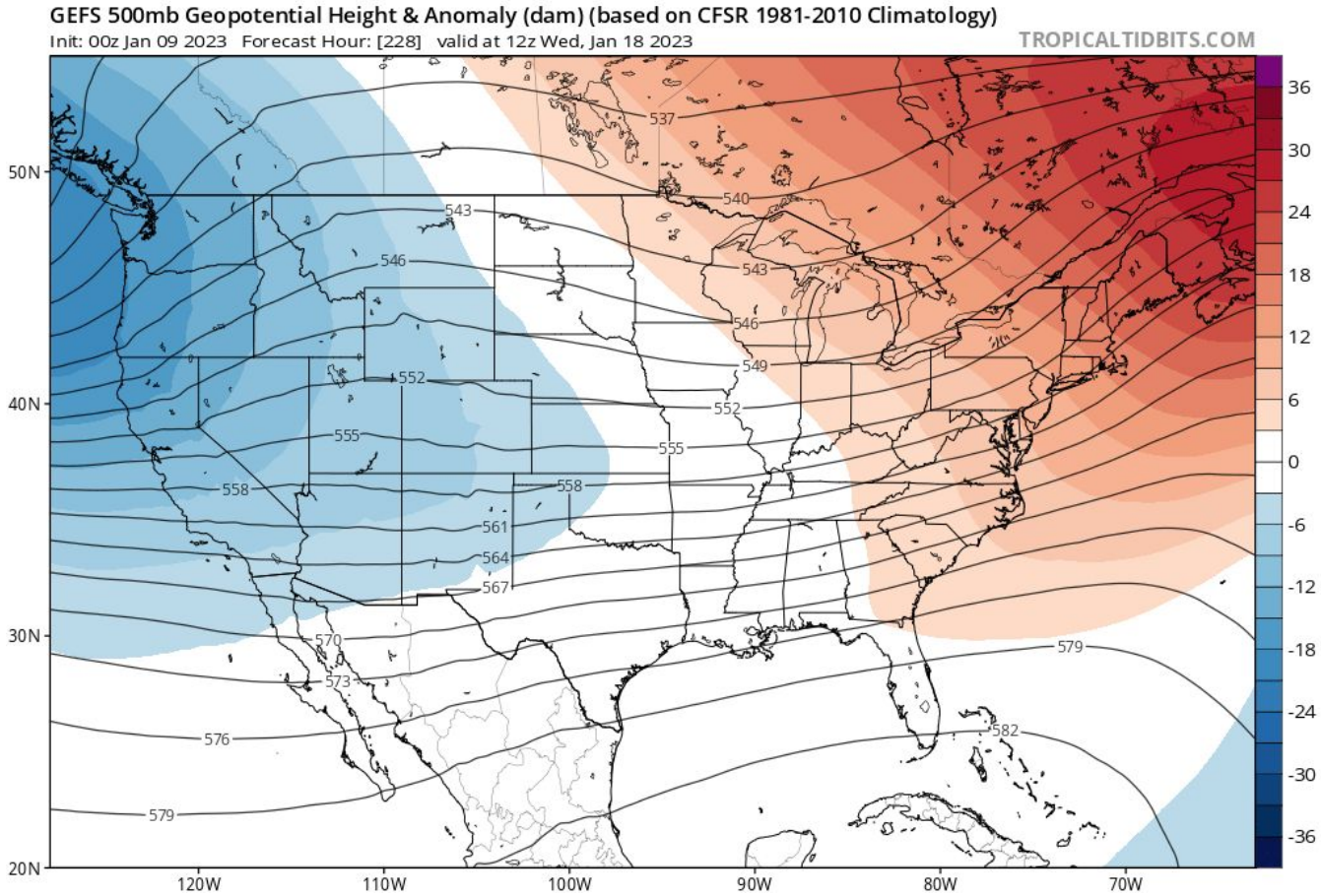
WPC QPF for days 1-3



WPC QPF for days 6-7

- A trough and associated atmospheric river will bring widespread QPF to the Great Basin through Wednesday
    - Up to 0.5” for lower elevations, up to 2” for higher terrain
- Another system to bring QPF to the region towards the end of the weekend
- Model ensembles are split on a track that would favor the heaviest QPF in AZ vs UT/CO

Upcoming Weather: January 16-20: Western Ridge and a Closed Low

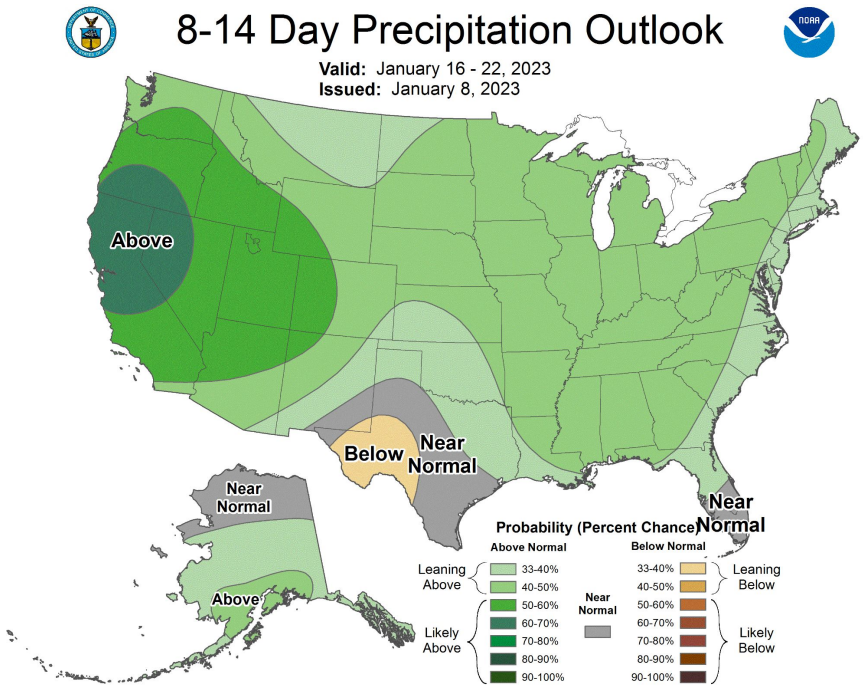


- The combination of eastern Pacific troughing and westerly flow over the US will keep the overall pattern active for the Colorado River Basin
- Can expect wetter than average precipitation, and near average temperatures to continue

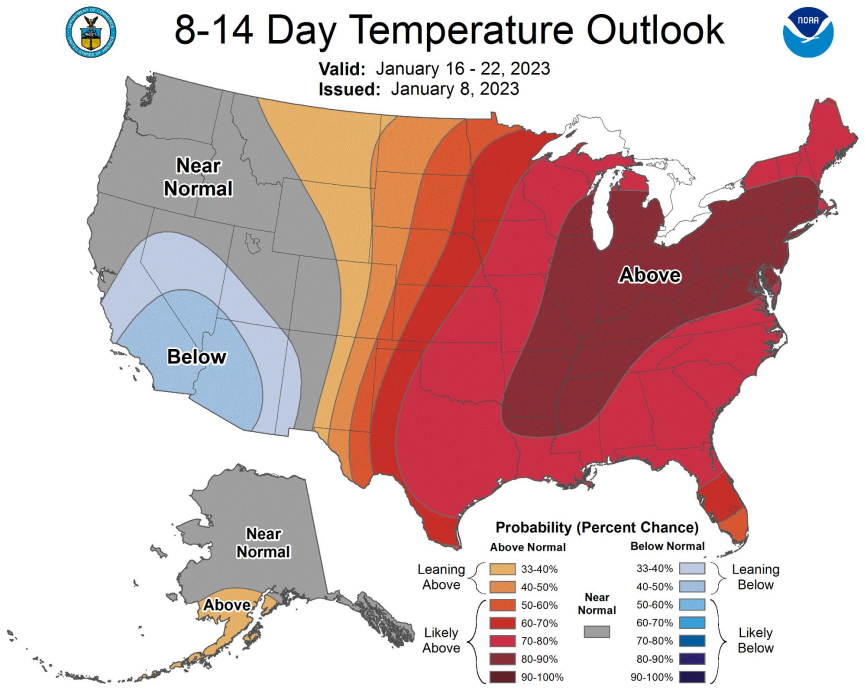
Upcoming Weather: 8-14 Day Outlook (January 16-22)

Elevated odds of above average precipitation across the basin & near to below average temperatures.

Precipitation Outlook

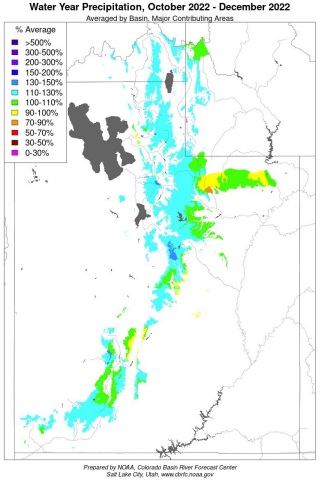


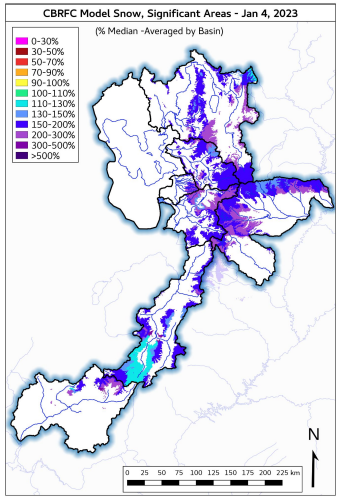
Temperature Outlook

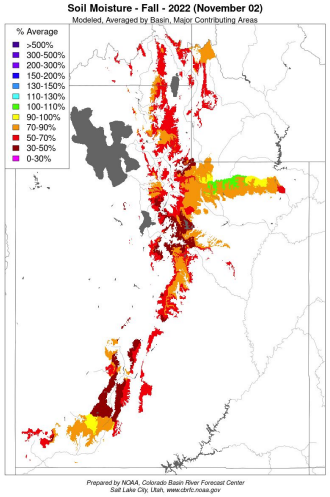


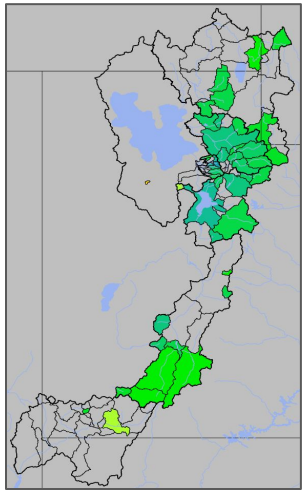
Summary

- It is very early in the snow accumulation / water supply forecasting season.
- Water year precipitation is above average across Utah.
- Current snowpack is above average across Utah.
- Soils are drier than they were going into last year.
- Water supply forecasts are near to above average across Utah (with minor exceptions).
- The active weather pattern should continue through mid January.









2023 Water Supply Webinar Schedule

**All Times Mountain Time (MT)*

Colorado River Basin

~~Monday~~	~~Jan 9th~~	~~10 am~~
Tuesday	Feb 7th	10 am
Tuesday	Mar 7th	10 am
Friday	Apr 7th	10 am
Friday	May 5th	10 am

Utah/Great Basin

Monday	Jan 9th	11:30 am
Tuesday	Feb 7th	11:30 am
Tuesday	Mar 7th	11:30 am
Friday	Apr 7th	11:30 am
Friday	May 5th	11:30 am

Peak flow forecast webinar Monday, March 20th, 10 am MT

Additional briefings scheduled as needed

Webinar schedule & registration information has been posted to the CBRFC web page

CBRFC Contacts & WY23 Basin Focal Points

Basin Focal Points (Forecasters)

Brenda Alcorn - Green, Duchesne, White/Yampa
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CBRFC Water Supply Presentations
https://www.cbrfc.noaa.gov/present/present.php