



Utah Water Conditions Update (drought webinar)

The meeting will begin shortly



Thank you to our contributors

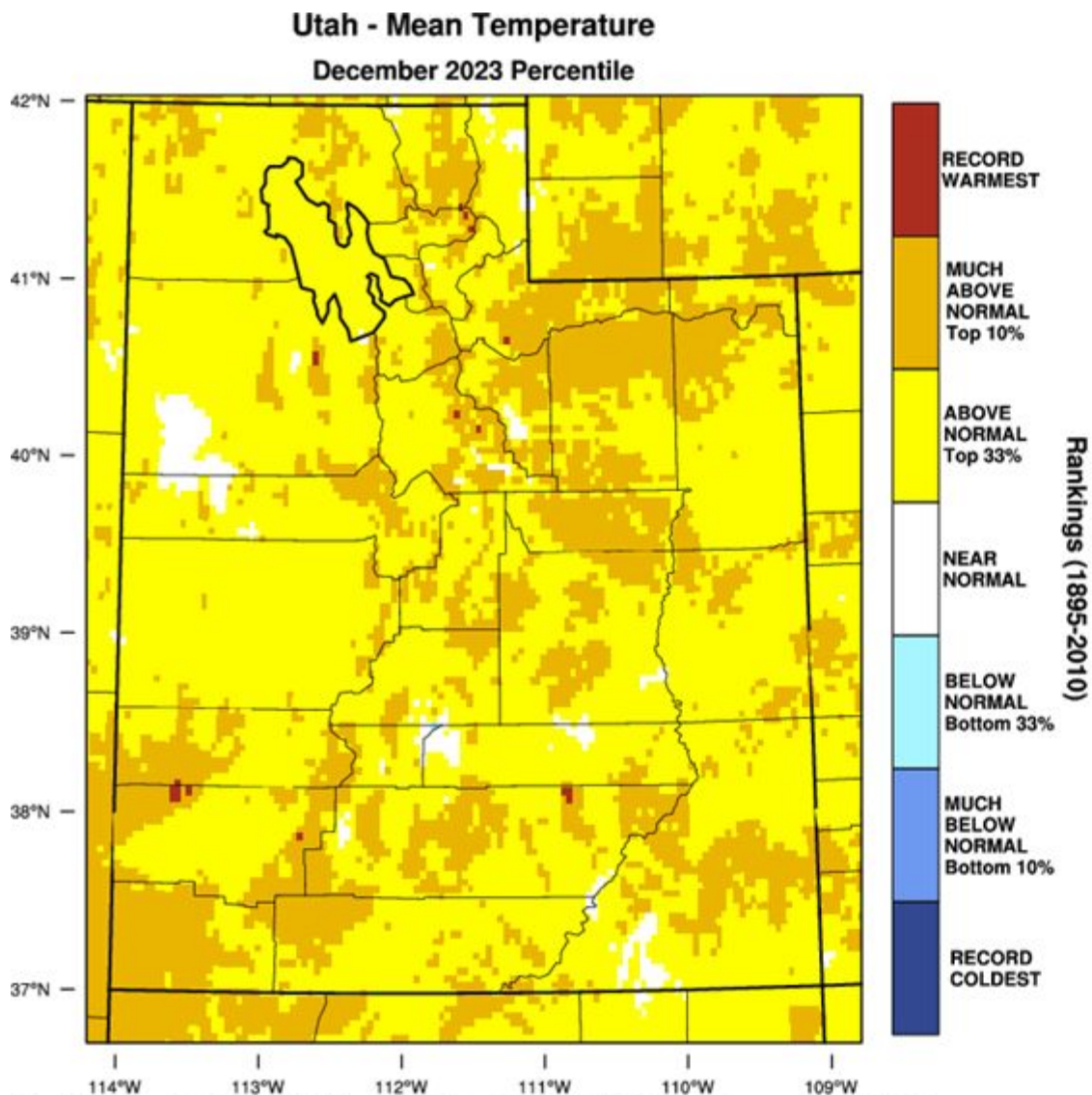




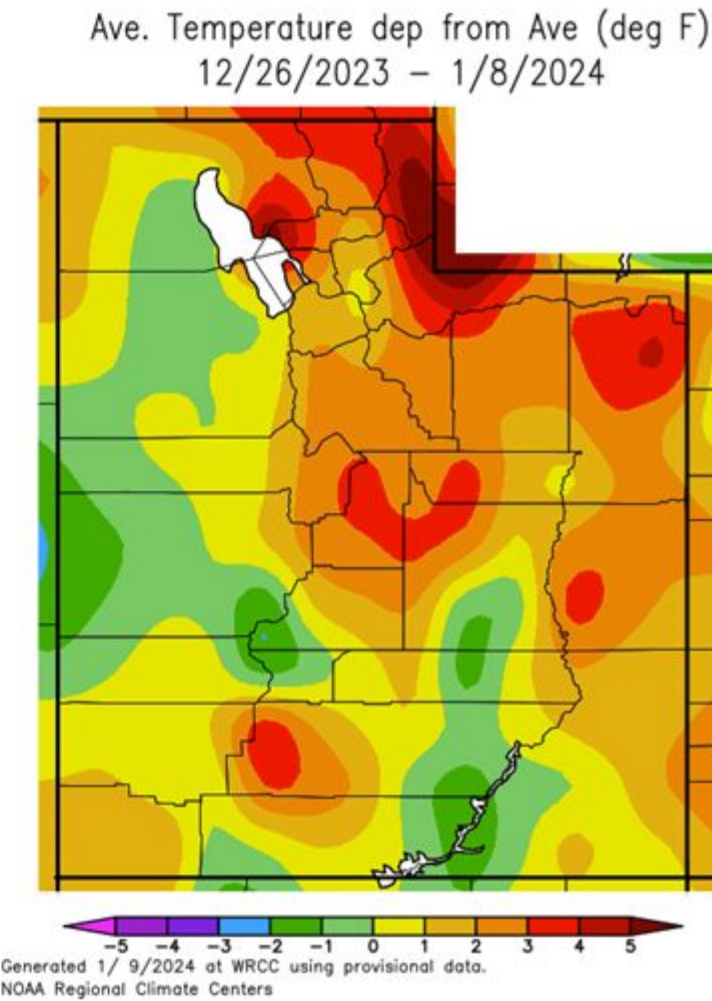
Utah Water Assessment & Conditions Monitoring Webinar

January 9, 2024

Temperatures (December overview and last two weeks)



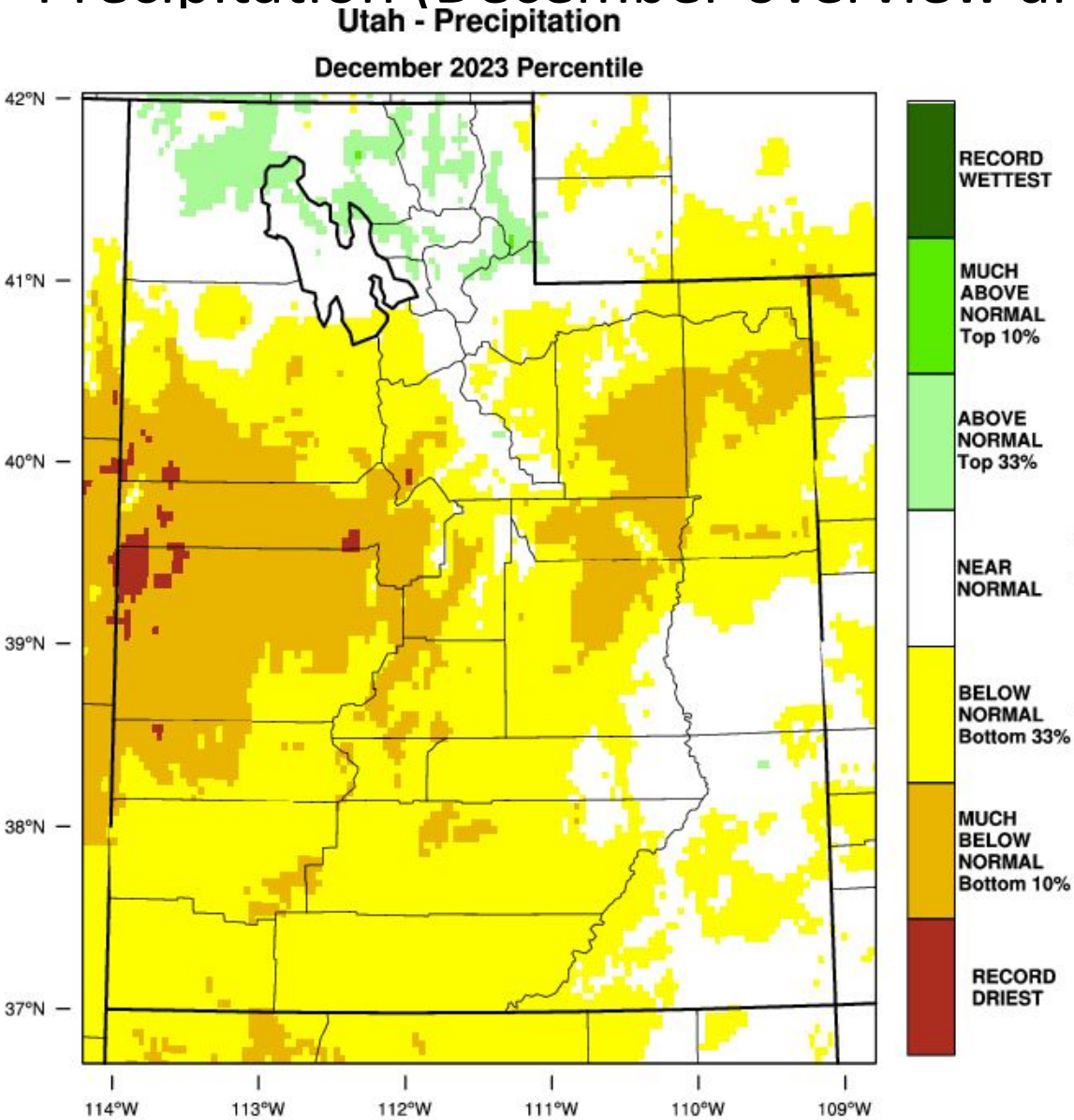
WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 5 JAN 2024



Above average temperatures have persisted across the state.

Low elevation snow has struggled to establish itself in between the infrequent storm events

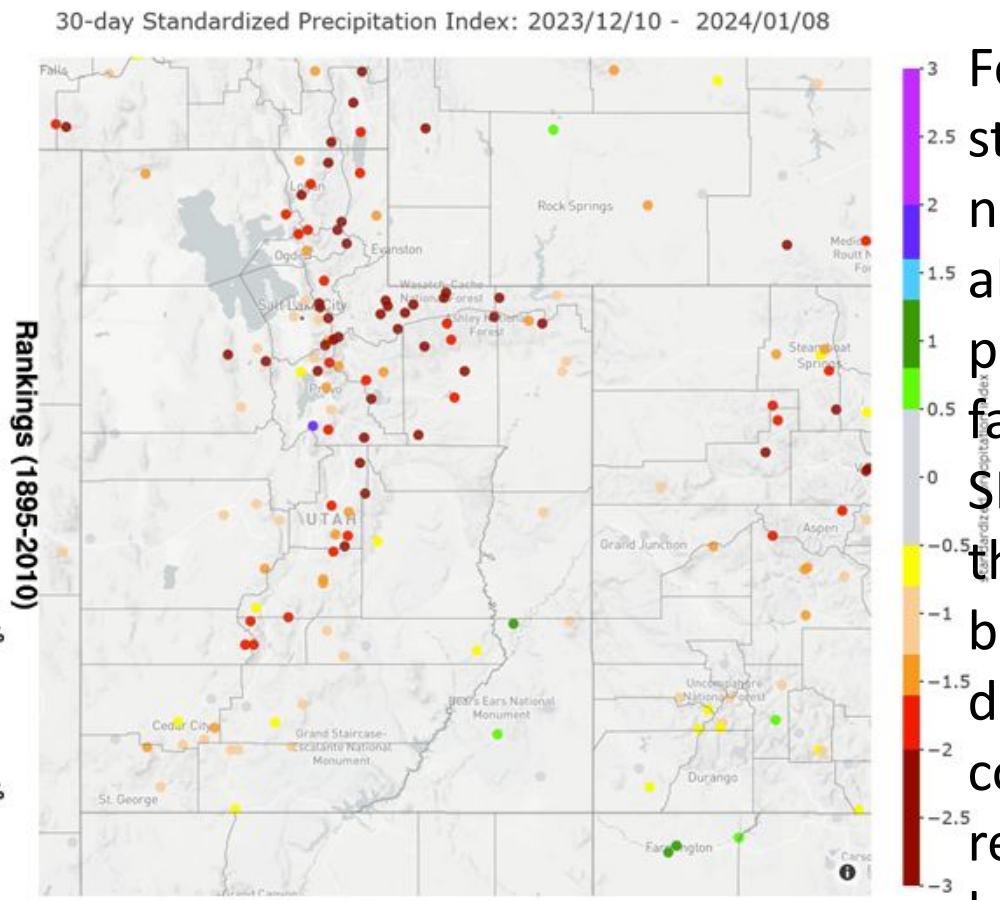
Precipitation (December overview and 30-day SPI)



WestWide Drought Tracker | Idaho/WPSC Data Source: PRISM (Prelim), created 5 JAN 2024

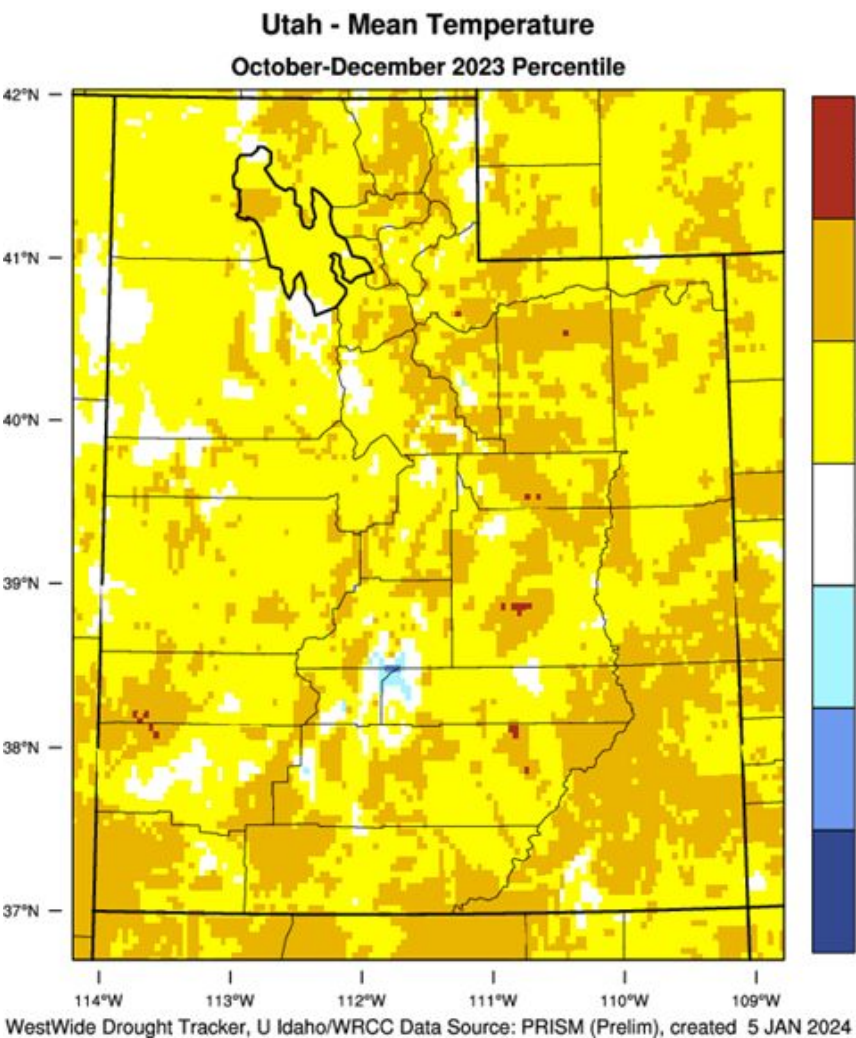
Agency - Utah Climate Center

Presenter - Jon Meyer

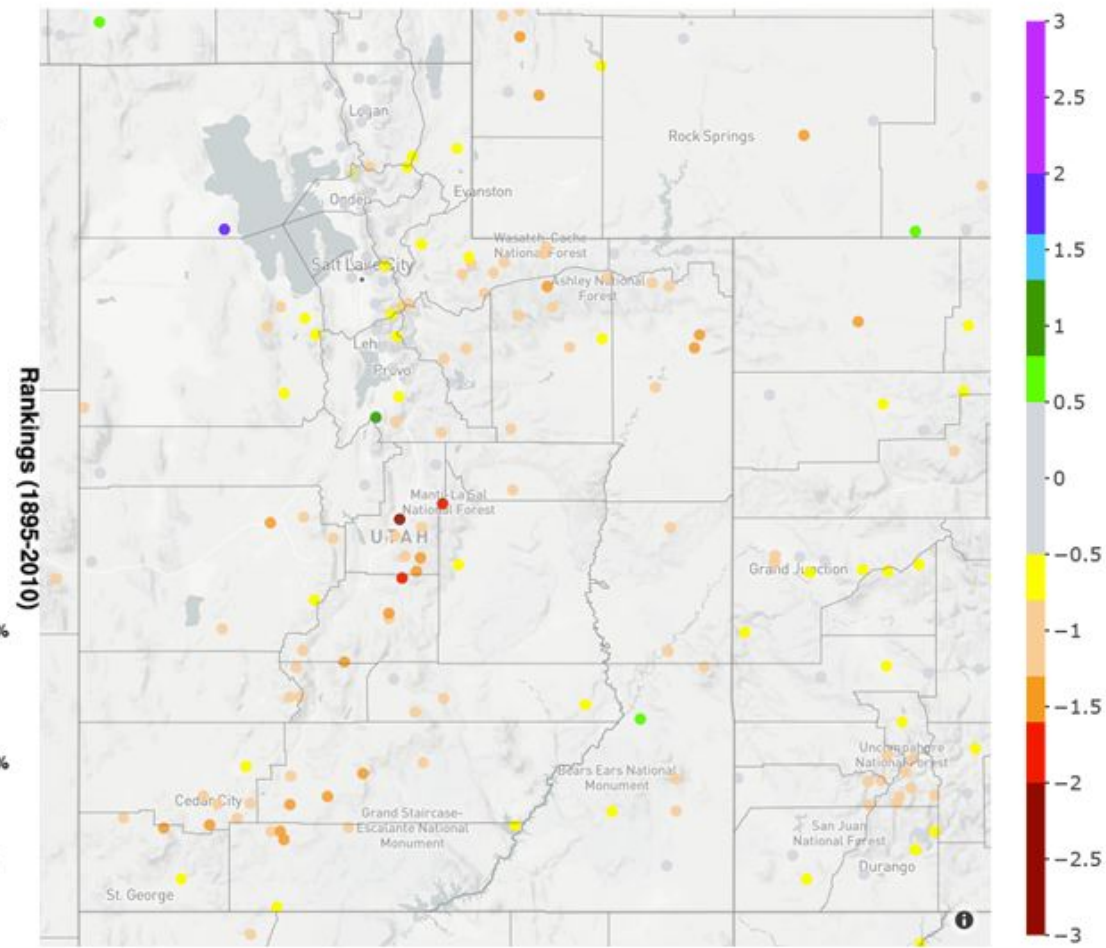


Few areas of the state have seen normal to above-normal precipitation so far. Silver lining is the eastern border, where drought conditions remain, has not been the worst affected by the slow start.

Water Year Check Up



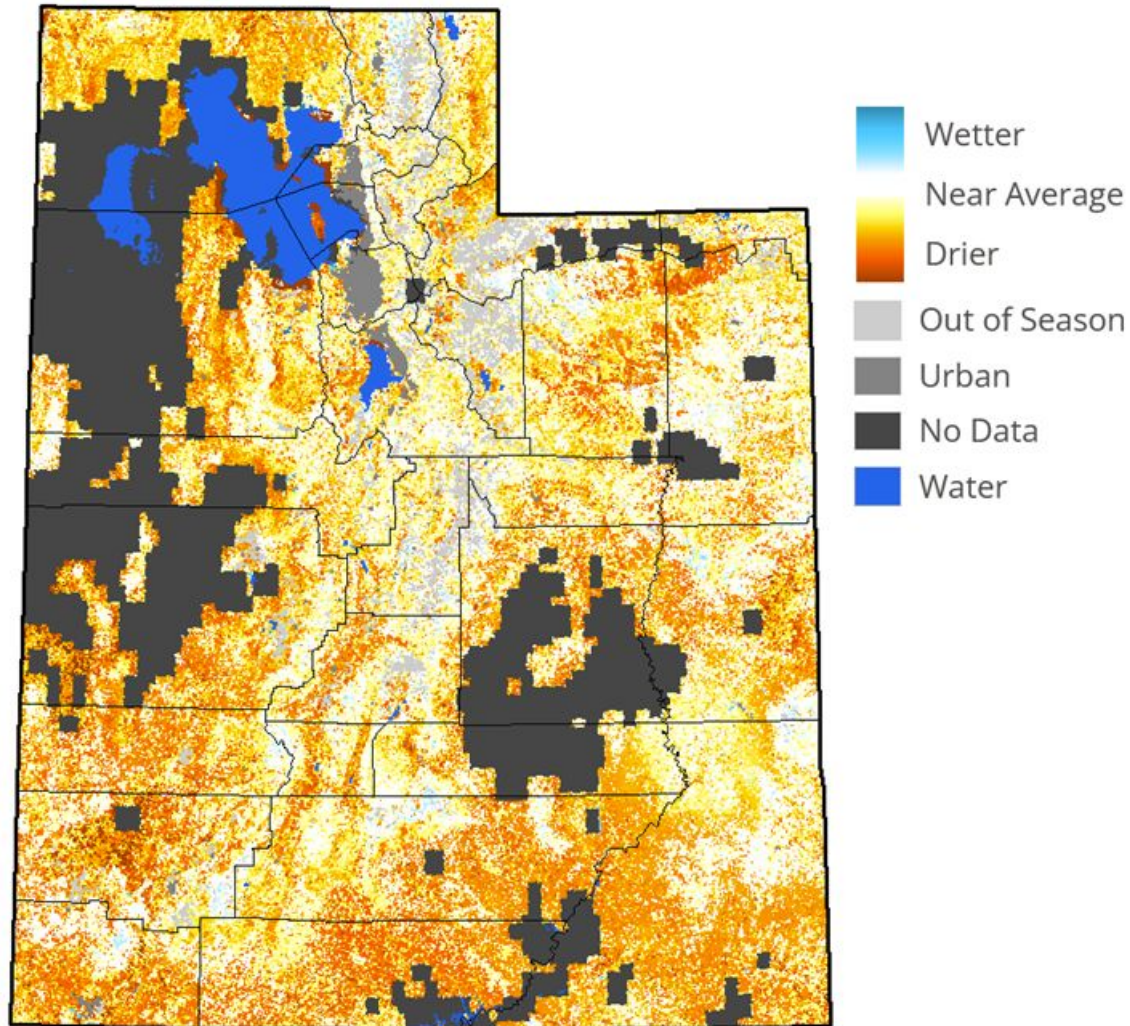
Water-year-to-date Standardized Precipitation Index: 2023/10/01 - 2024/01/08



The water year has started slow, with above normal temps and below normal precipitation being the trend so far.

Northern Utah has seen the most 'normal' precipitation.

Short term drought pressure (Quick-DRI)

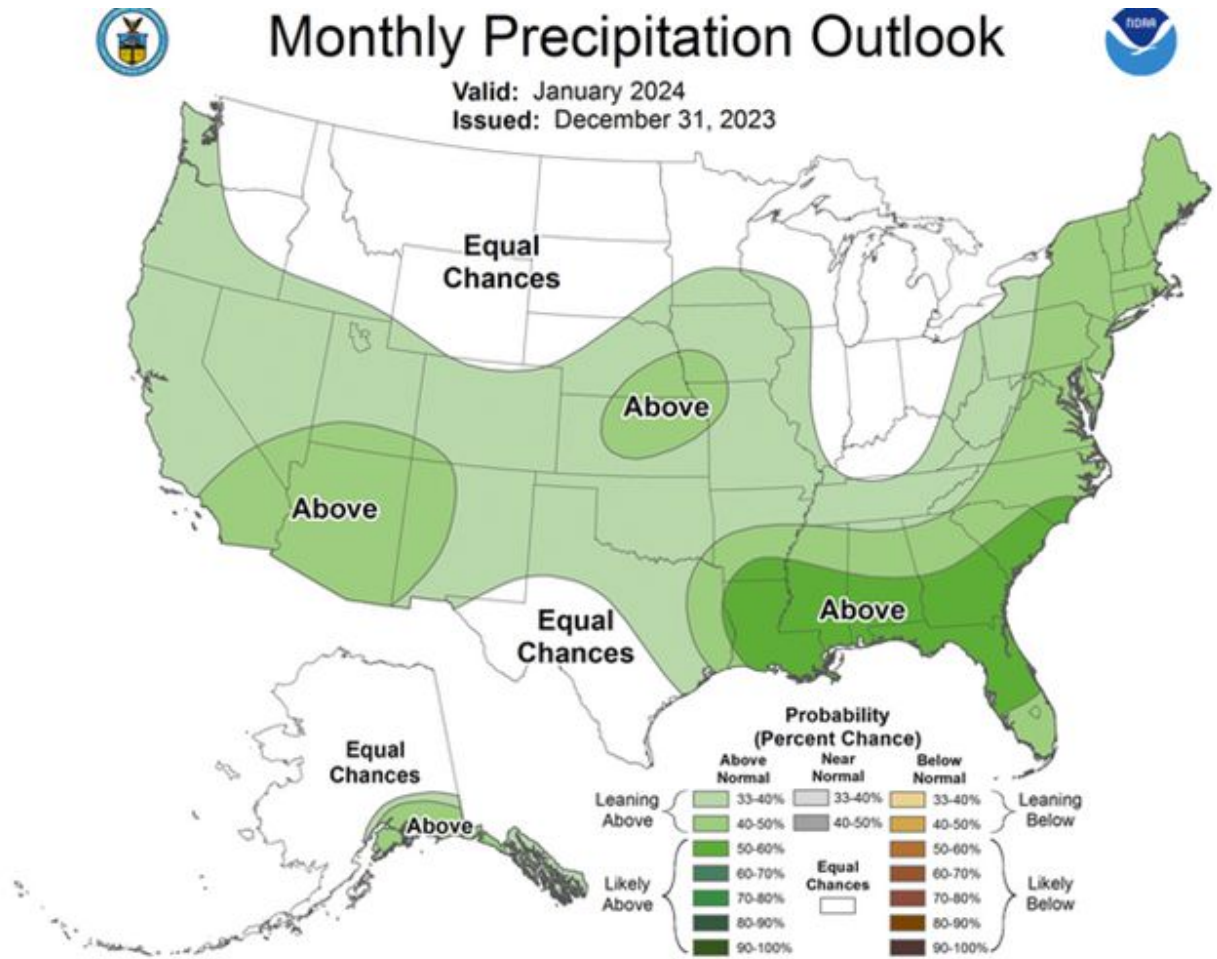
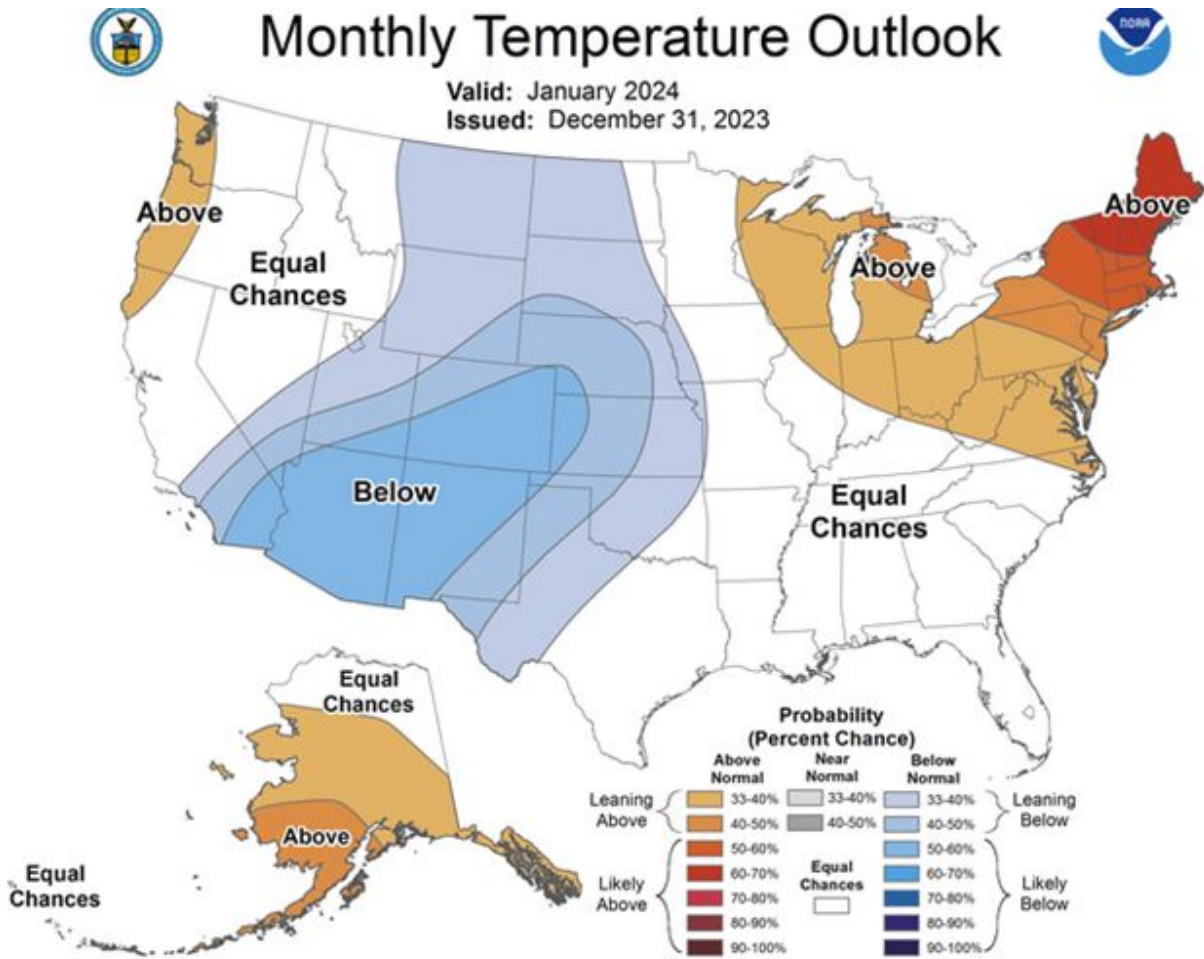


Combining drought metrics, the warm and dry start to the snow season has presented short term drought pressure across the state.

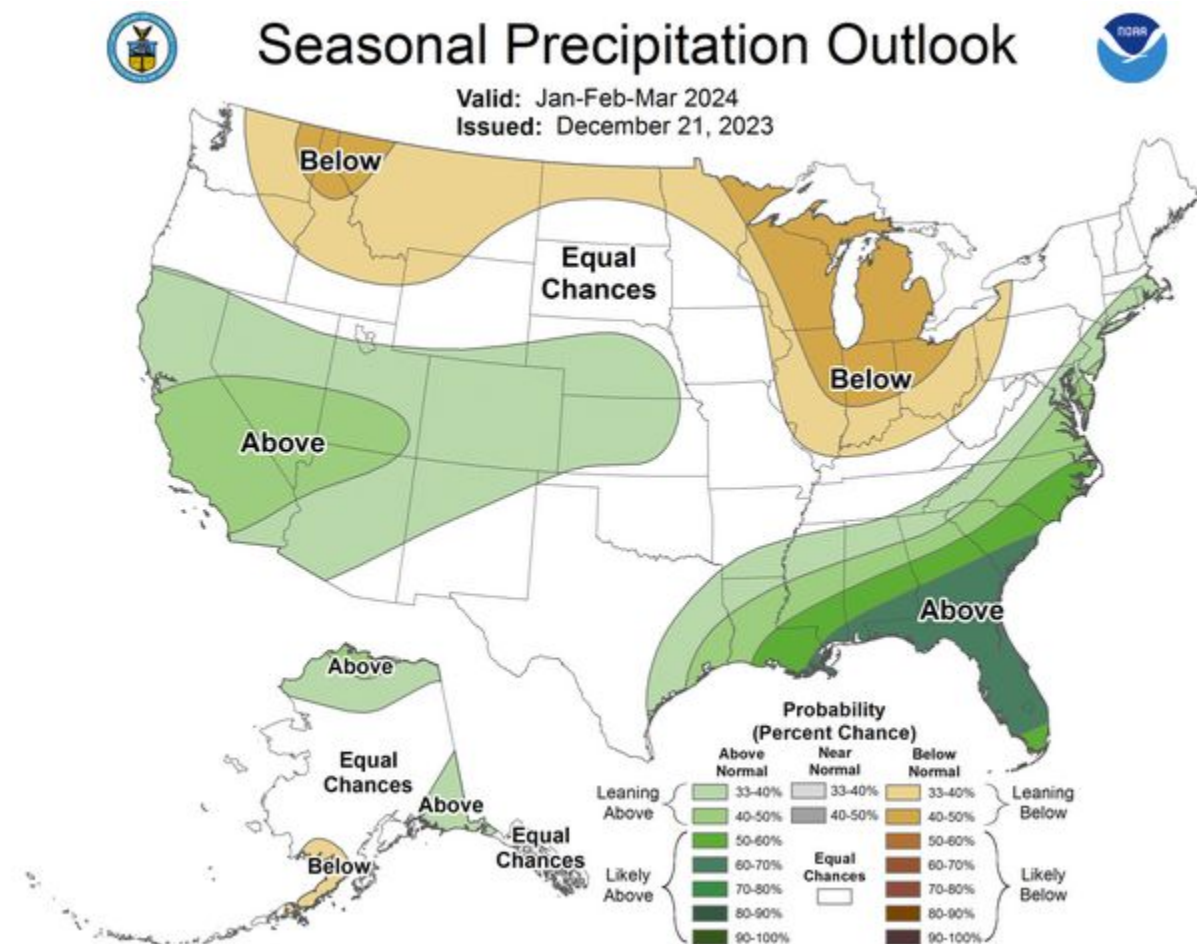
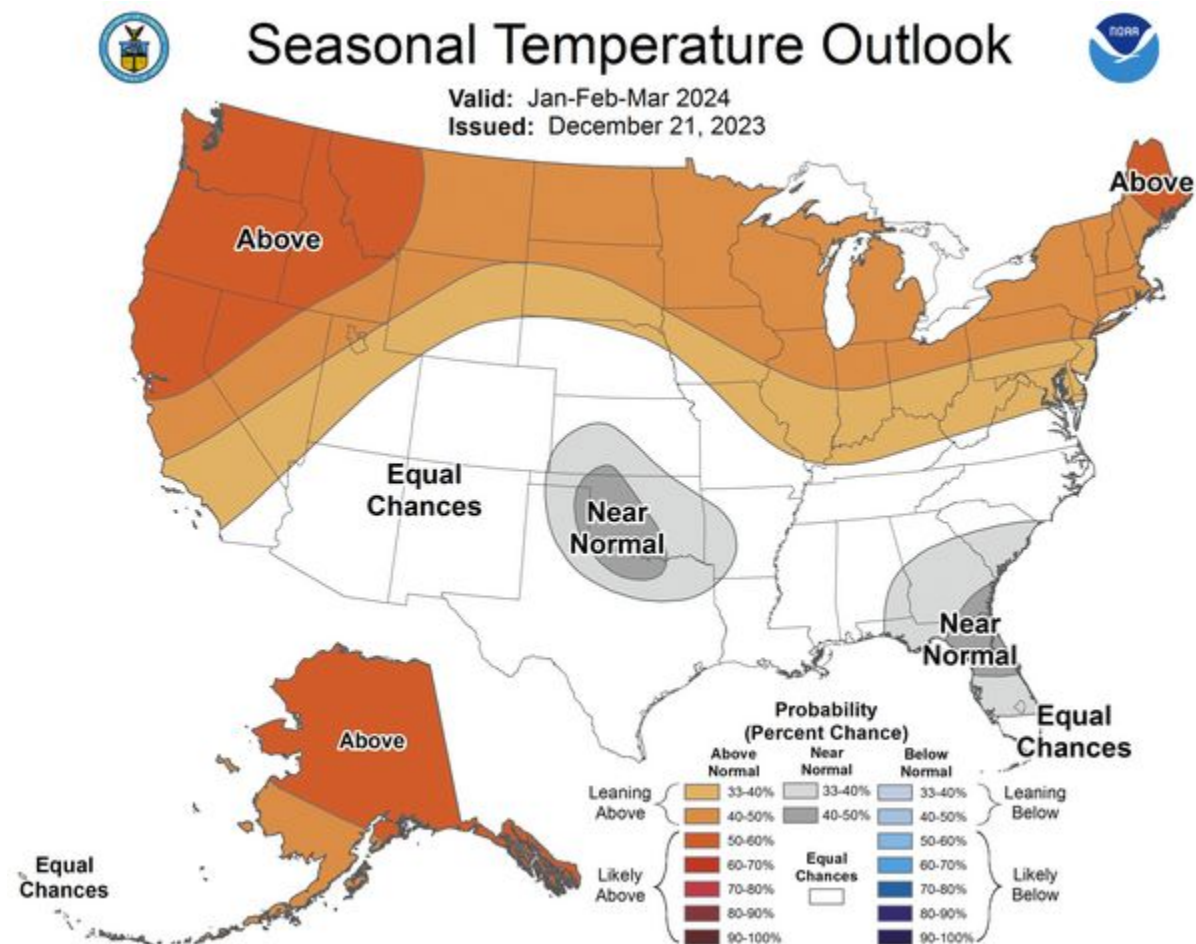
Is it time to panic?

Not yet! Plenty of productive snow season ahead and the state has plenty of time to return to normal or better. February to April are far more impactful periods for snow accumulation so patience will be my recommendation for another 4-6 weeks.

CPC January Outlook



CPC January-March Outlook

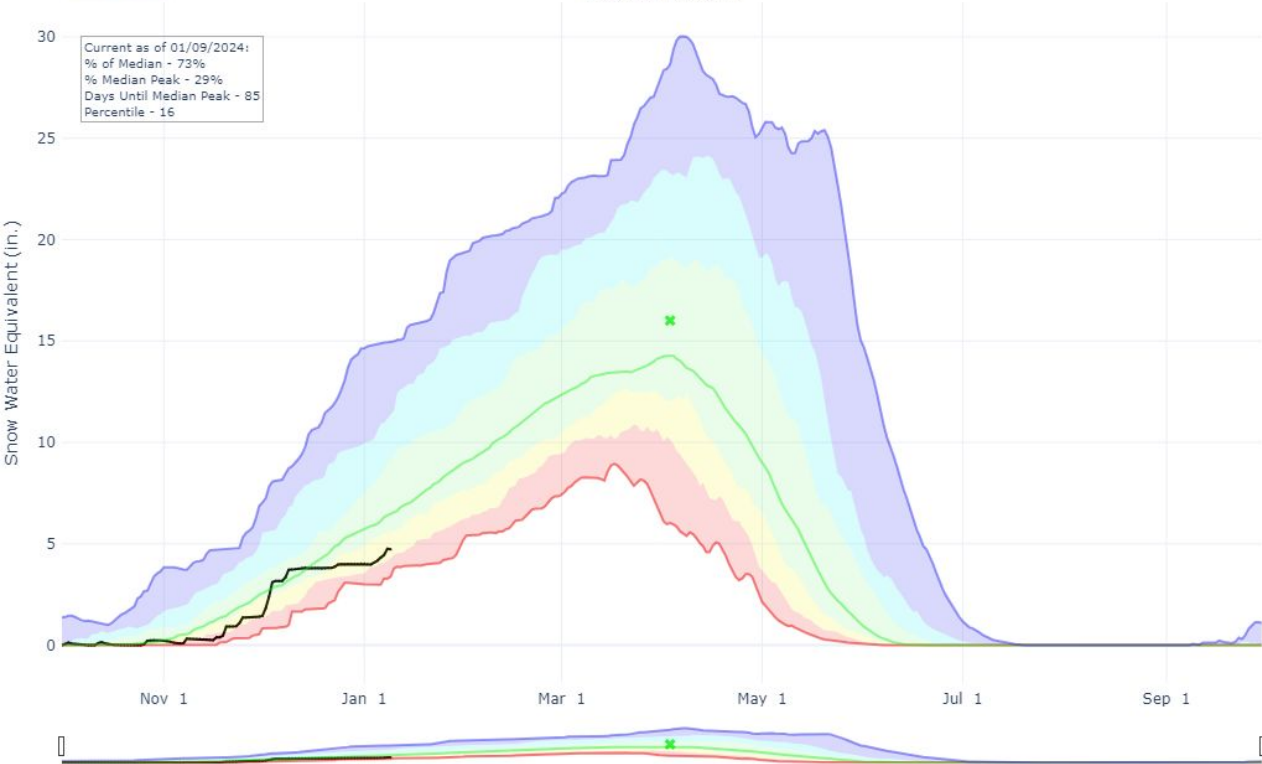


Snowpack

SNOW WATER EQUIVALENT IN STATE OF UTAH

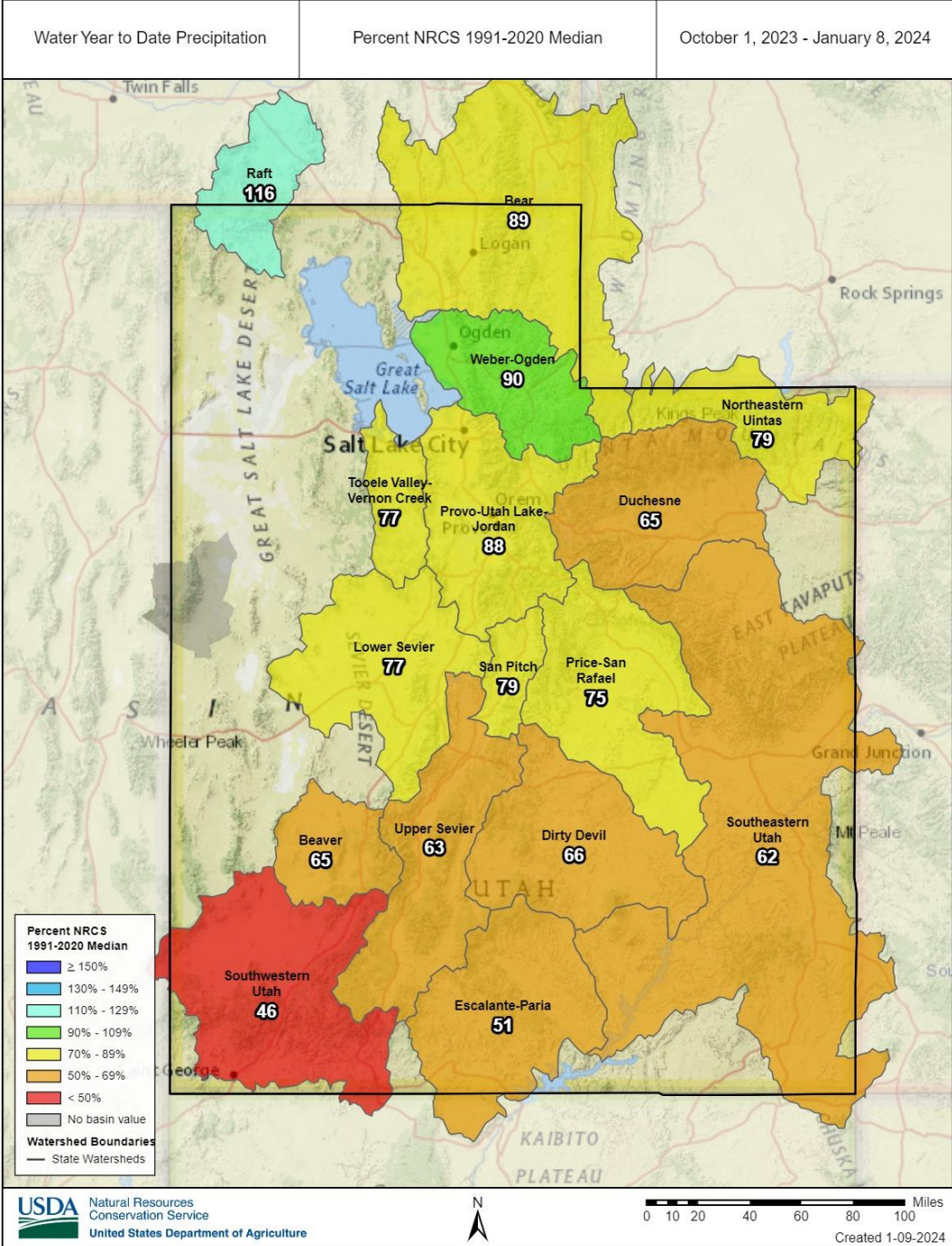
Reset Range

Link to data: CSV / JSON



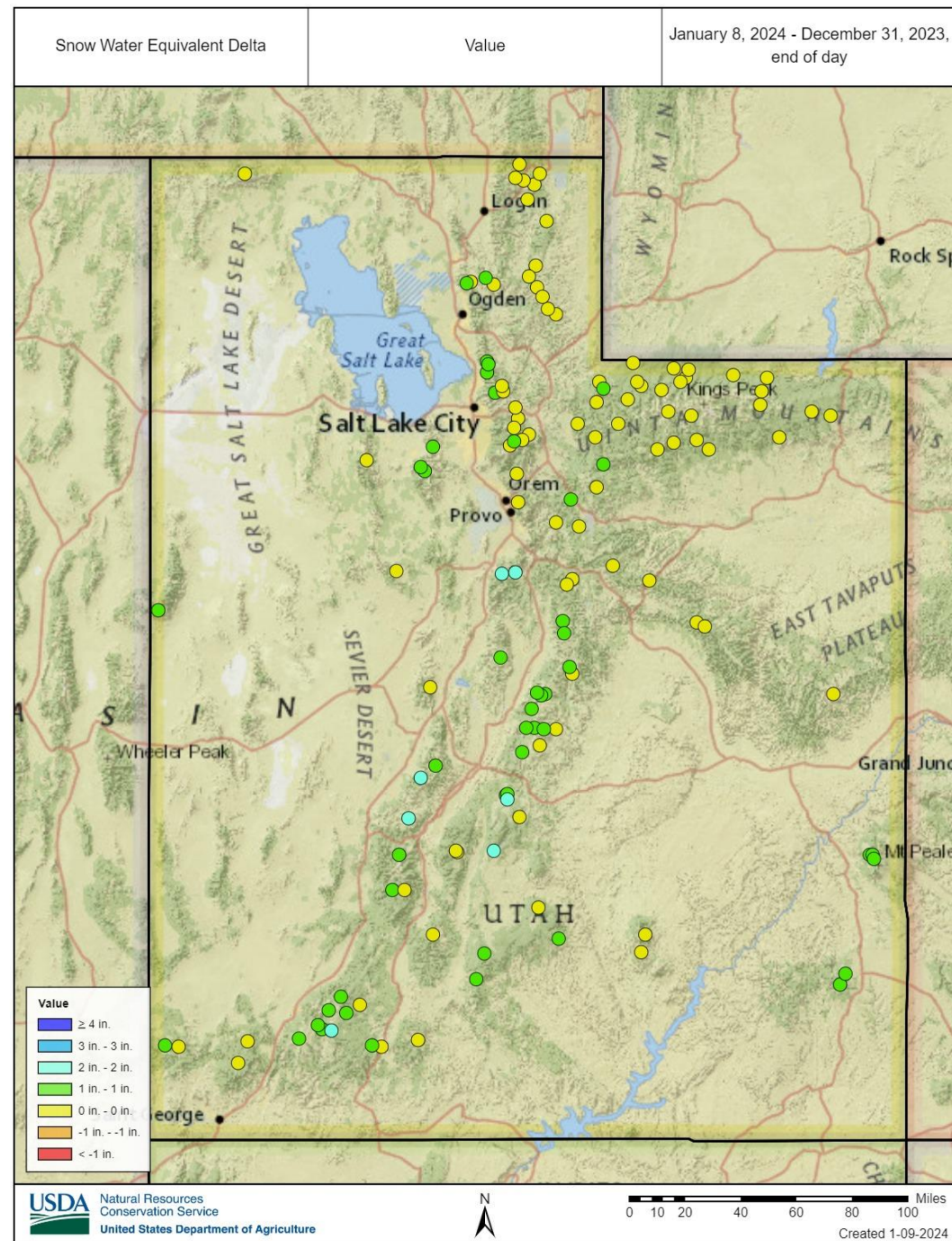
Station List

- Median Peak S
- Max
- Median (POR)
- Median ('91-'2
- Min
- Stats. Shading
- 2024 (114 site
- 2023 (114 site
- 2022 (114 site
- 2021 (114 site
- 2020 (114 site
- 2019 (114 site
- 2018 (113 site
- 2017 (114 site
- 2016 (114 site
- 2015 (114 site
- 2014 (114 site
- 2013 (114 site
- 2012 (114 site
- 2011 (114 site
- 2010 (105 site
- 2009 (99 sites
- 2008 (99 sites
- 2007 (96 sites
- 2006 (96 sites
- 2005 (96 sites
- 2004 (92 sites
- 2003 (92 sites

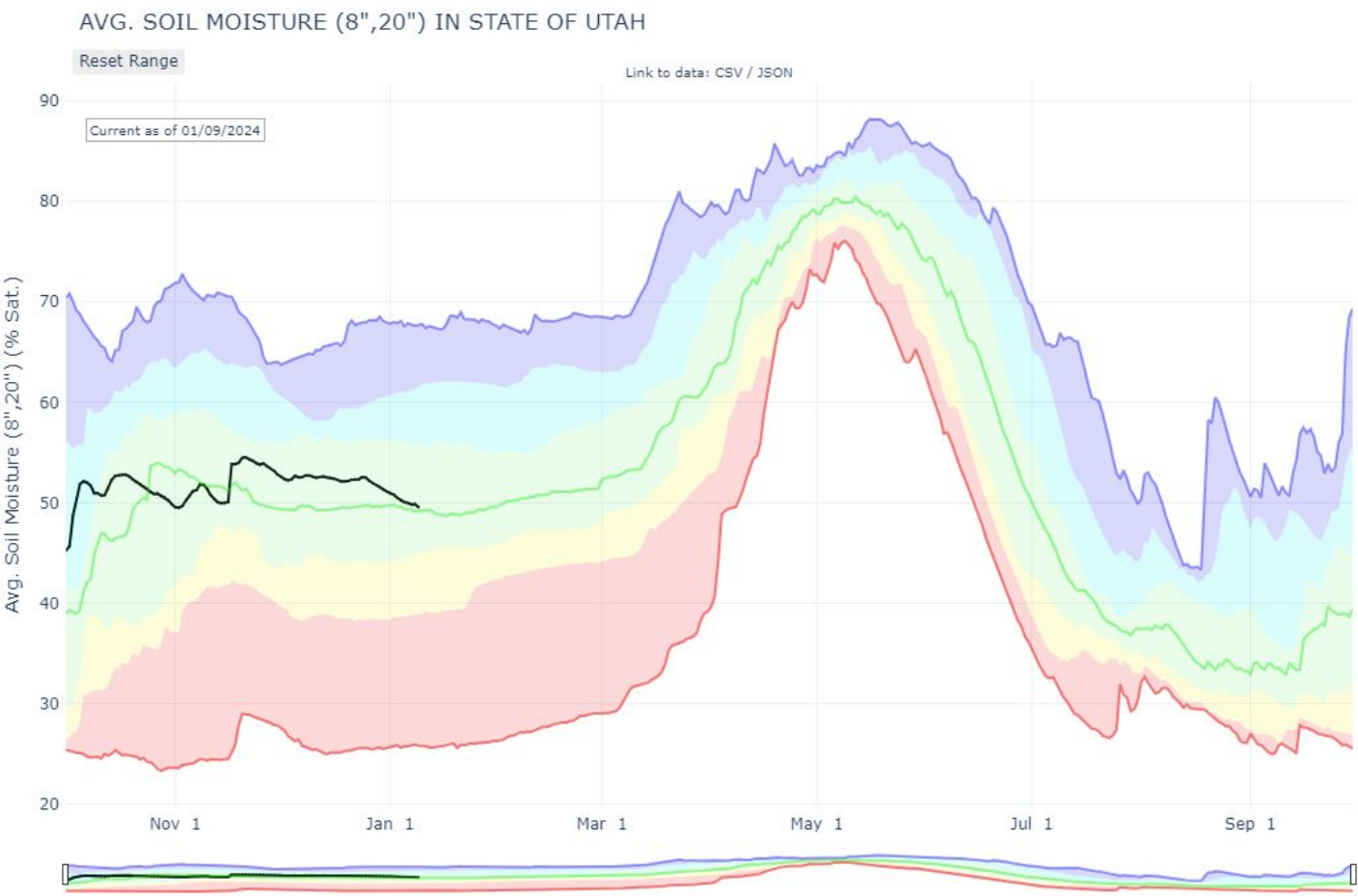


Agency - NRCS Snow Survey
Presenter - Jordan Clayton

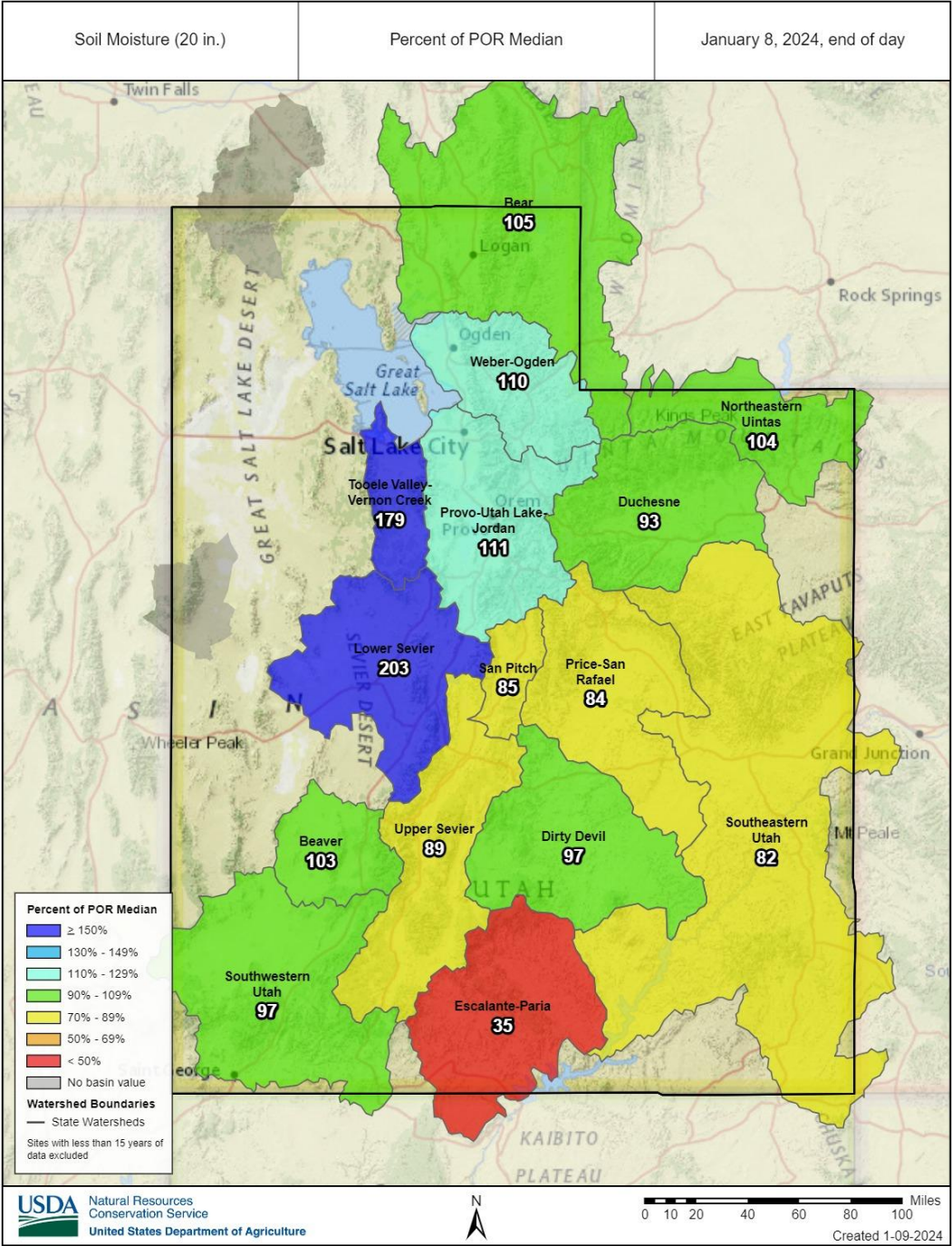
January snow has benefitted skiing more than water supply (very low density so far)



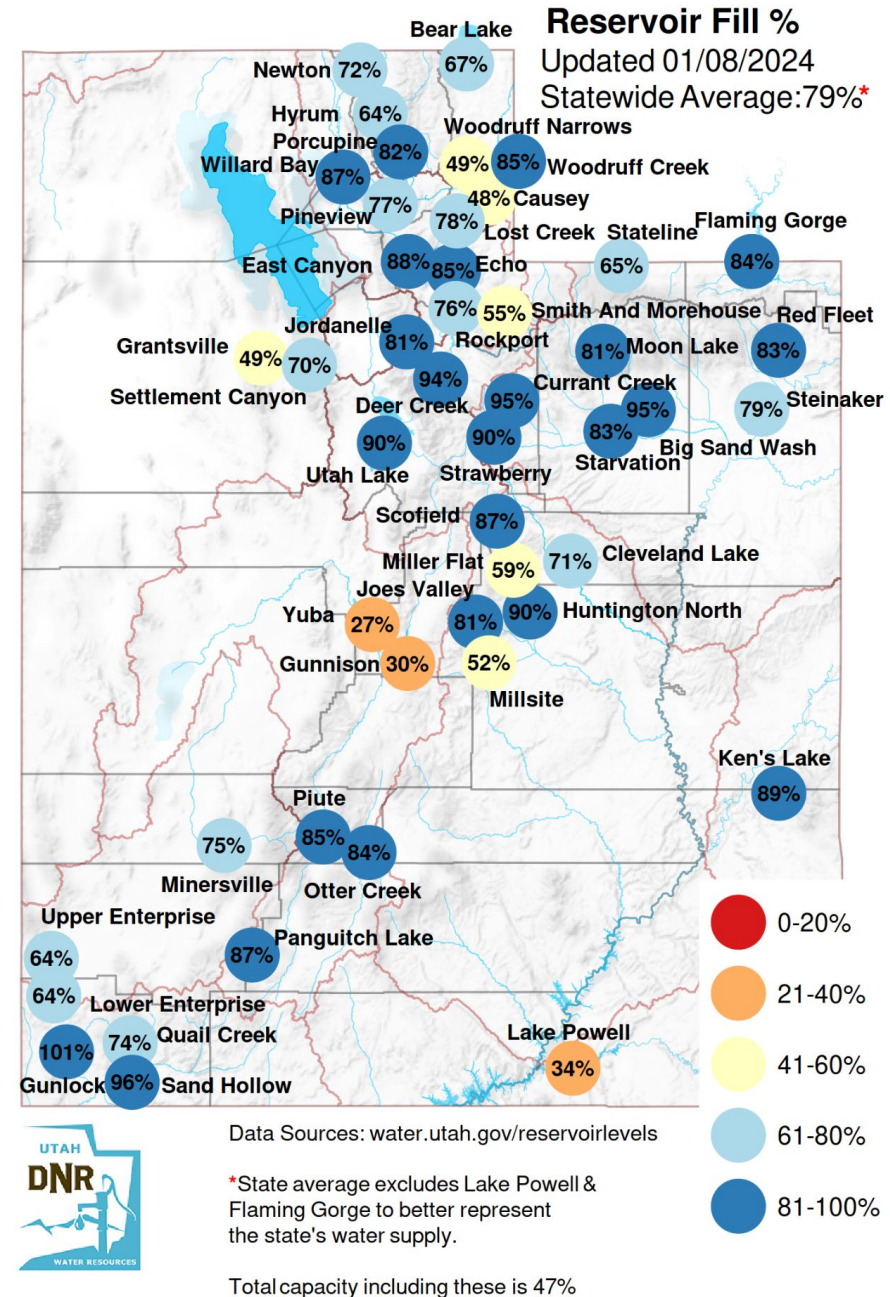
Soil Moisture



Agency - NRCS Snow Survey
Presenter - Jordan Clayton

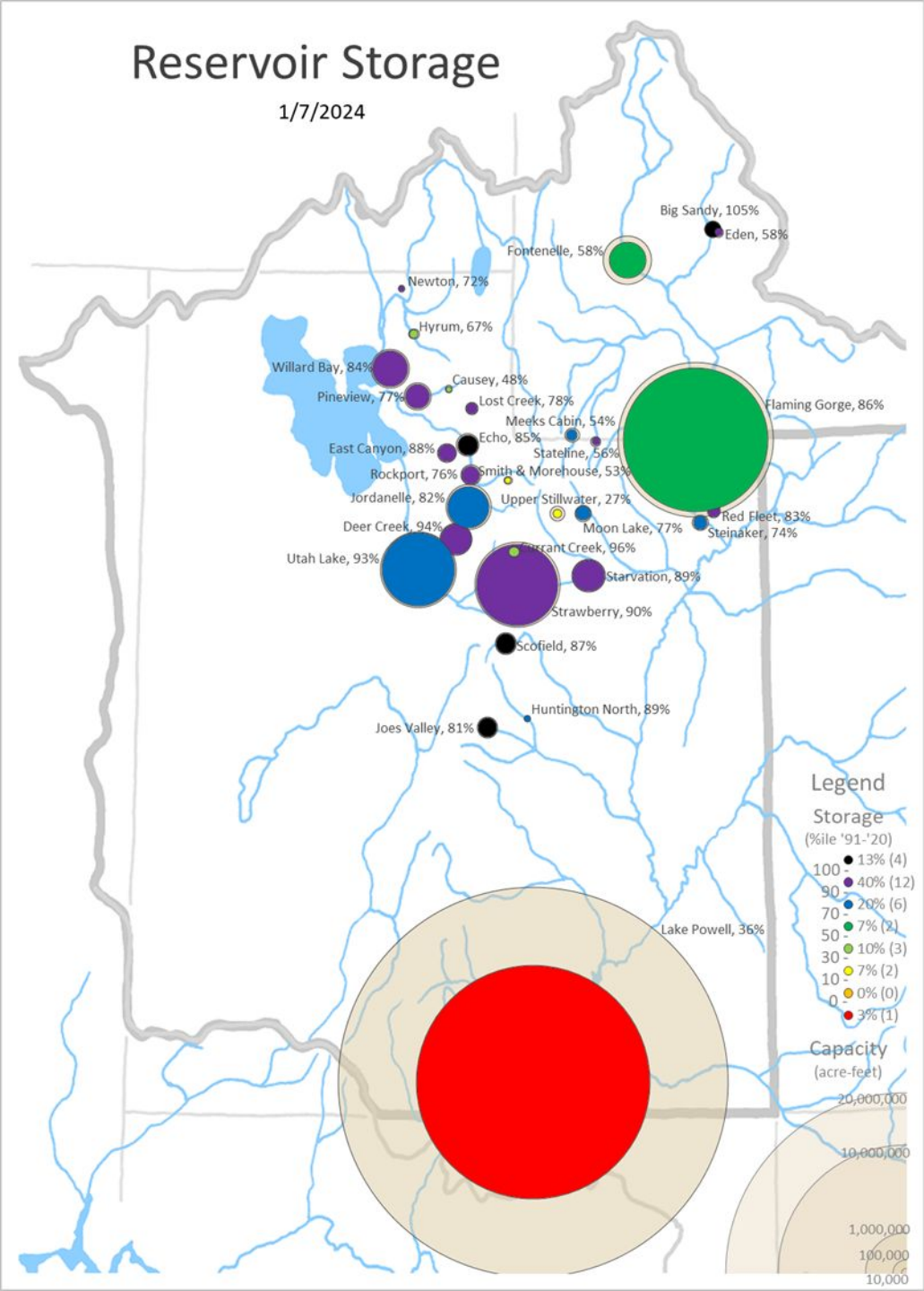


Current statewide storage 79.5%
 Median 57.2%
 Last year 45.2%

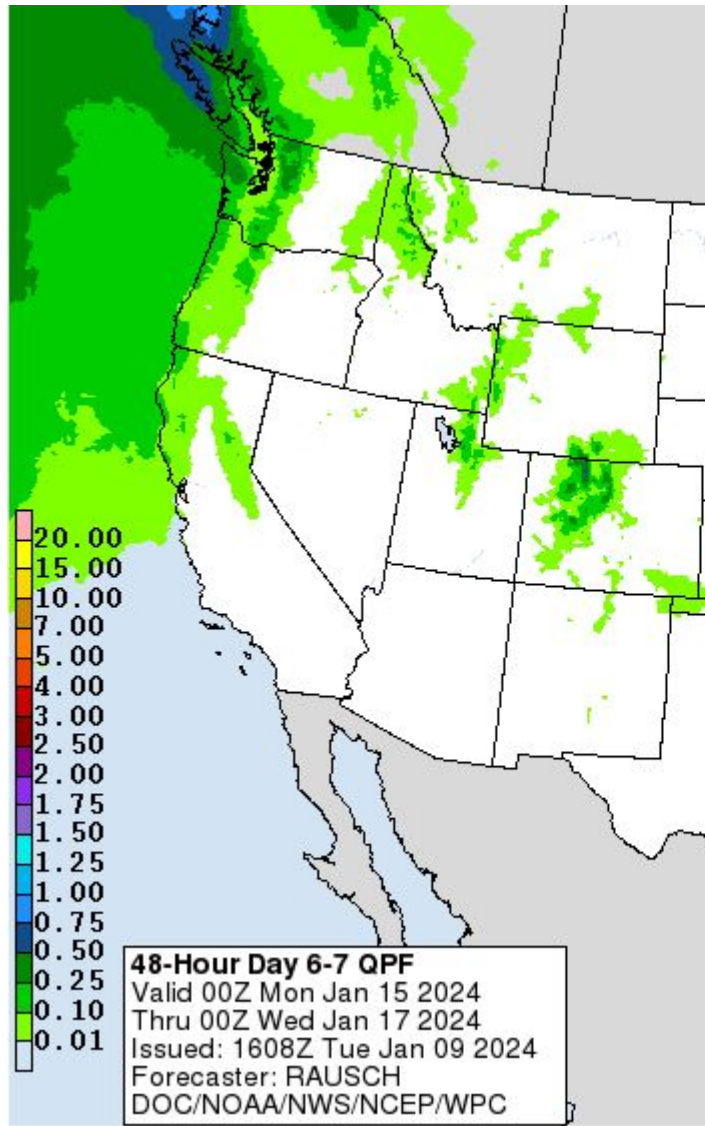
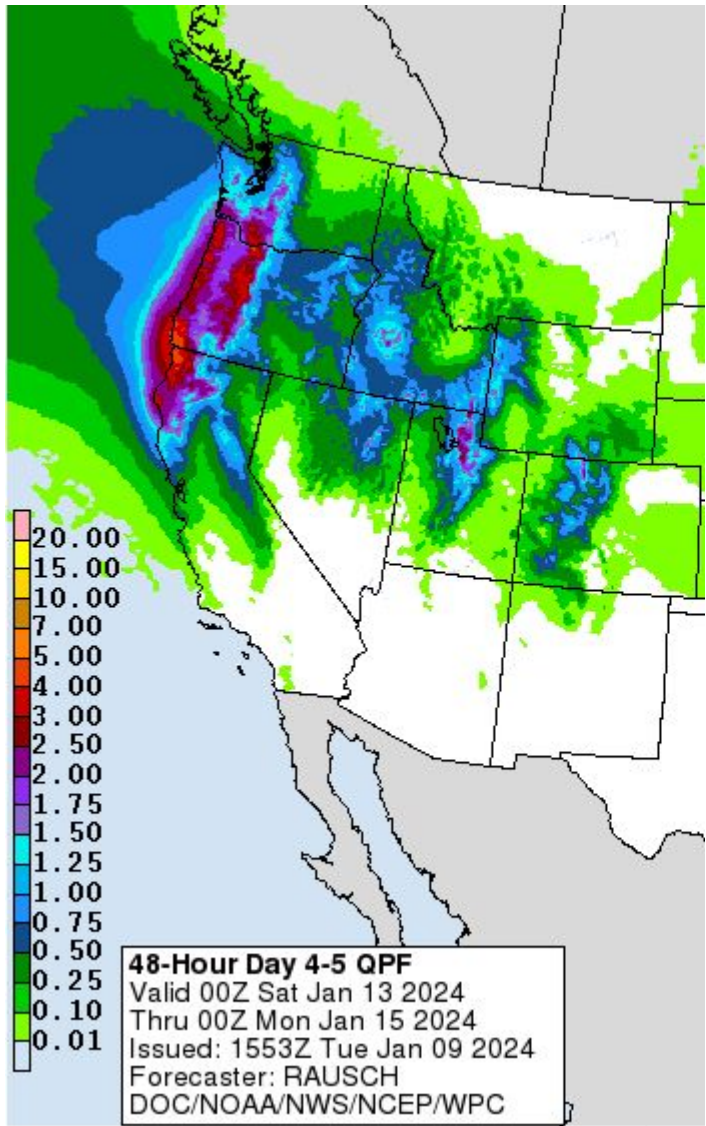
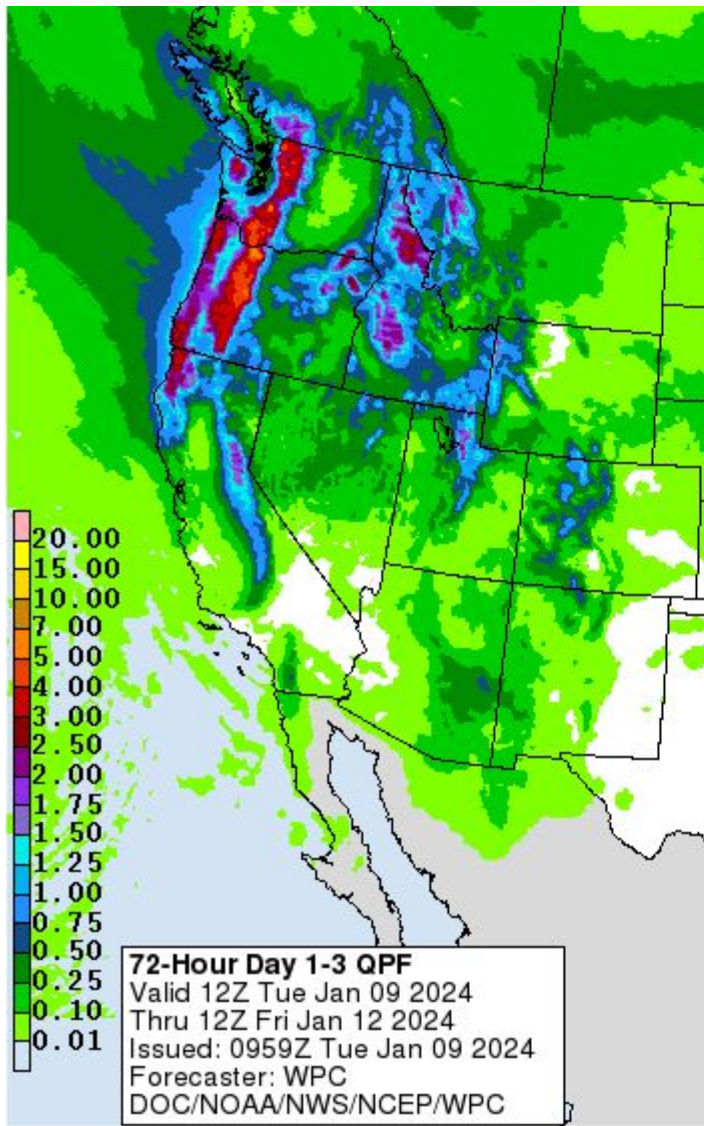
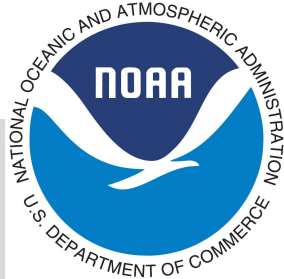


Reservoir Levels

Agency - BOR
Presenter - Gary Henrie



Weather Forecast Office Utah Day 1-7 Outlook



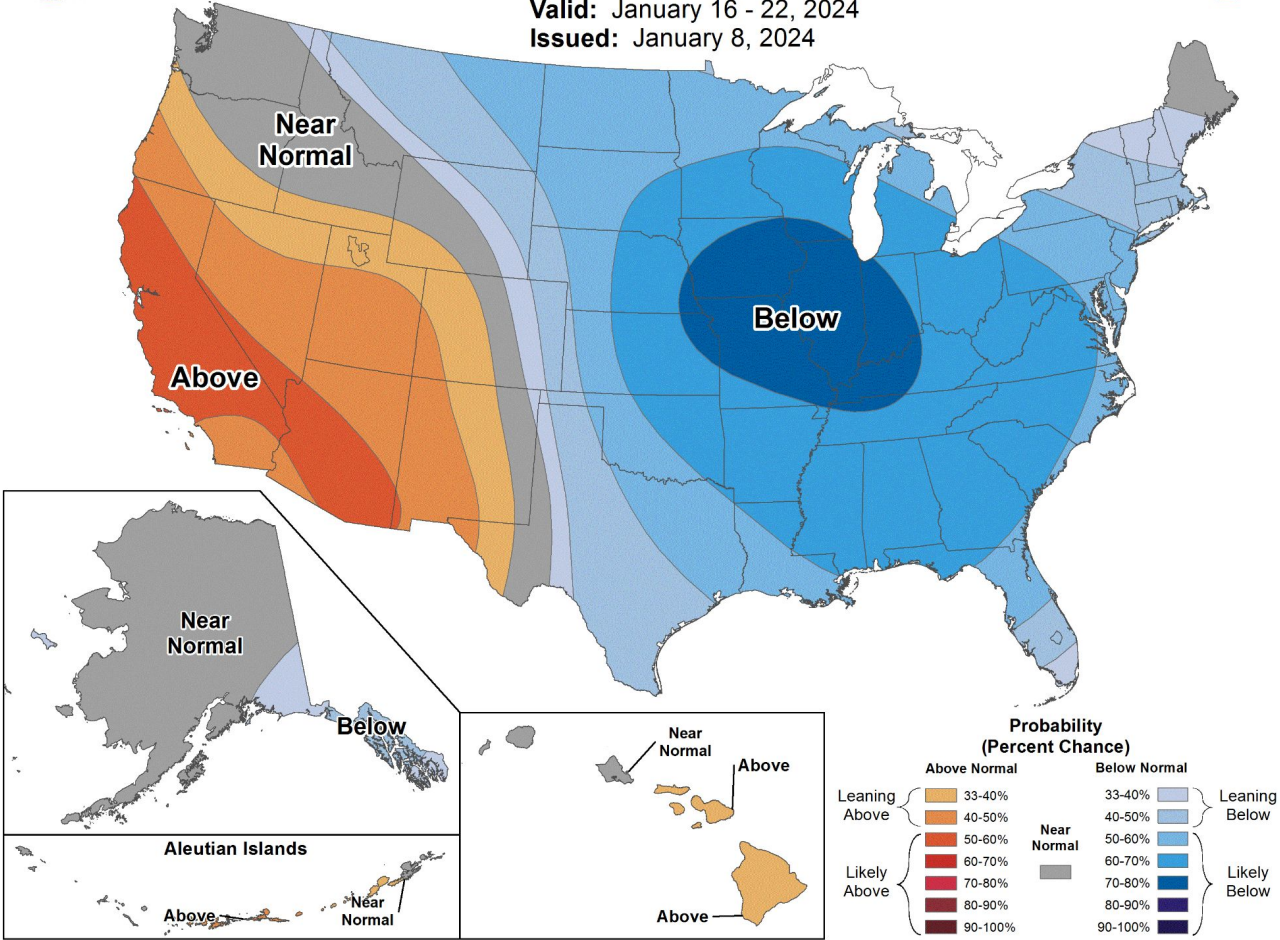
Climate Prediction Center 8 to 14 Day Outlooks - Temperature



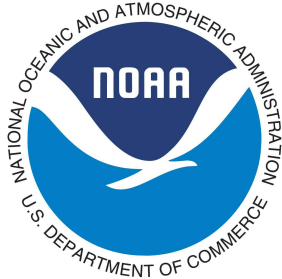
8-14 Day Temperature Outlook



Valid: January 16 - 22, 2024
Issued: January 8, 2024



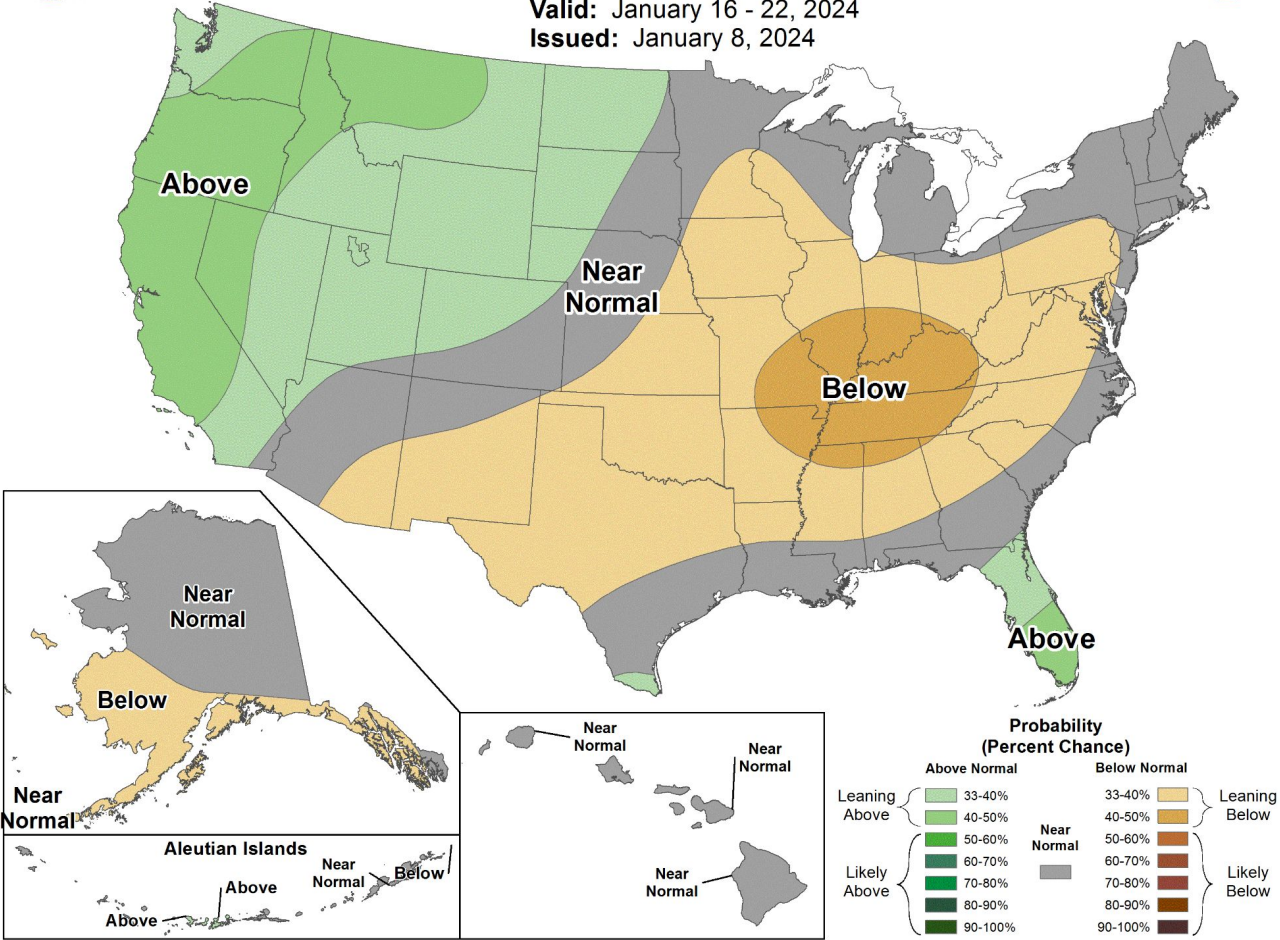
Climate Prediction Center 8 to 14 Day Outlooks - Precipitation



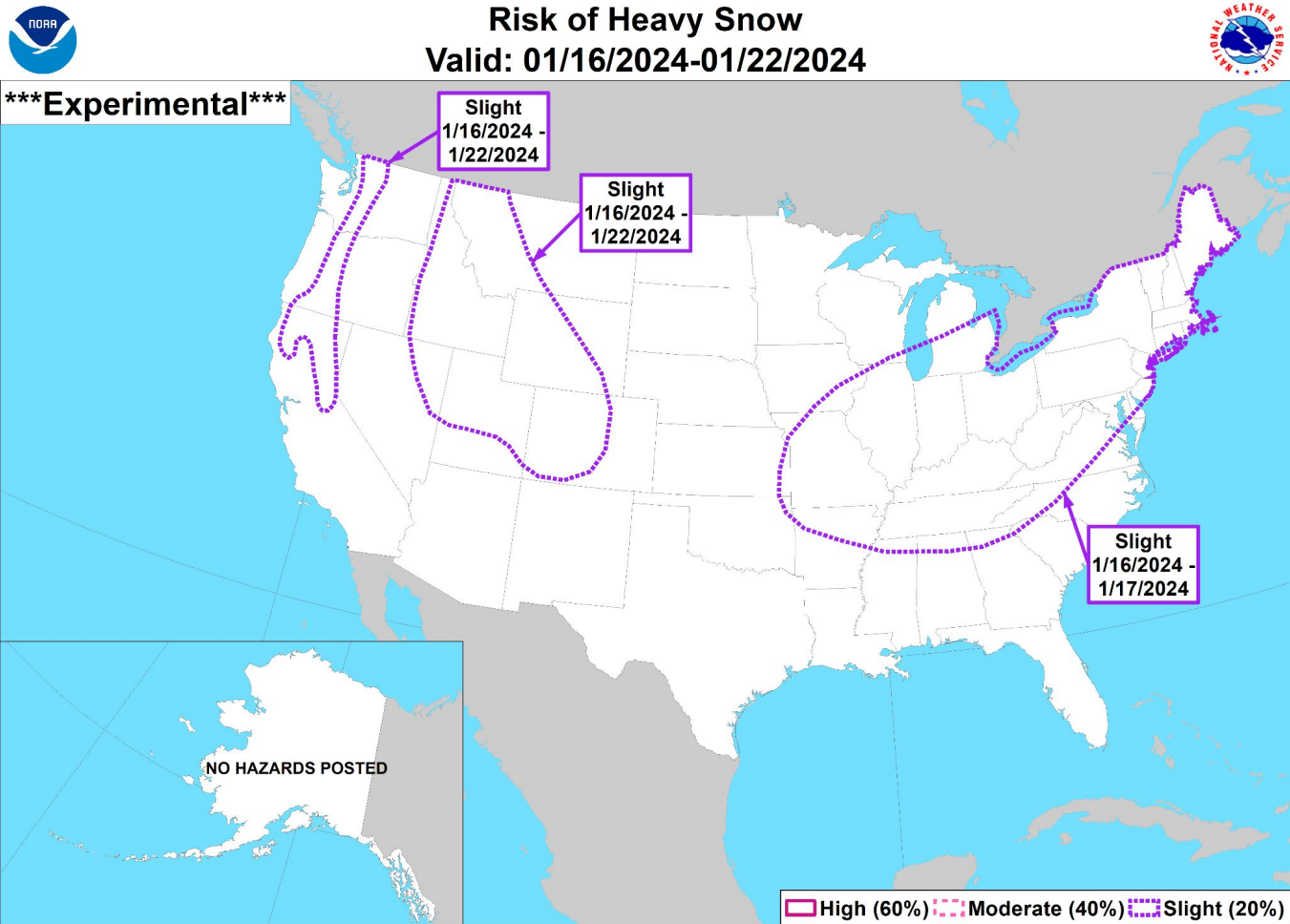
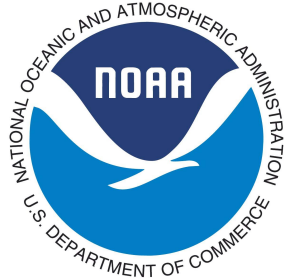
8-14 Day Precipitation Outlook



Valid: January 16 - 22, 2024
Issued: January 8, 2024



Climate Prediction Center U.S. Week-2 Hazards Outlook

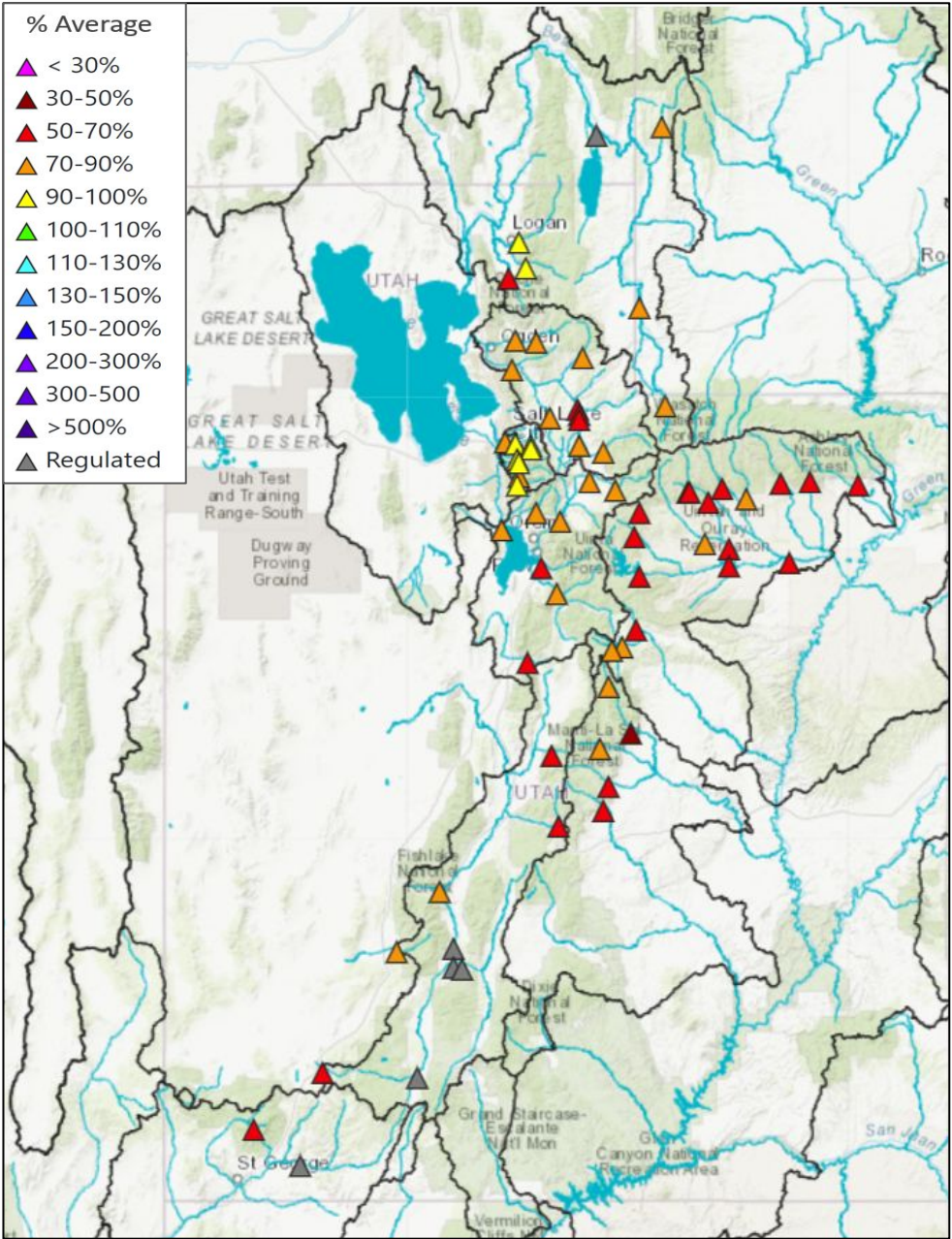


Climate Prediction Center
Made: 01/08/2024 3PM EST

Follow us:
www.cpc.ncep.noaa.gov

Utah Water Supply Forecasts: Overview

Agency - CBRFC
Presenter - Trevor Grout



Utah April-July volume forecasts are near to below normal.

Forecasts are more favorable in areas that have:

- better soil moisture conditions
- better snowpack conditions

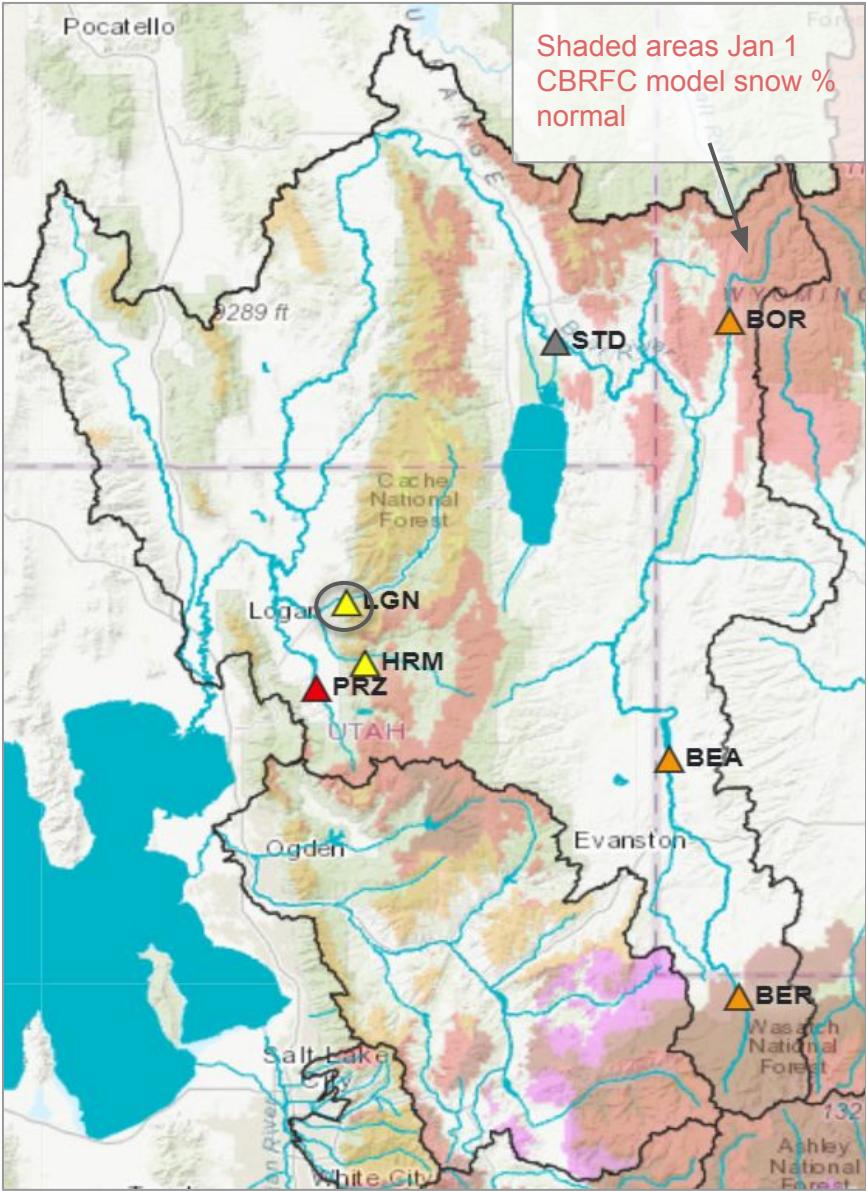
Colorado Basin River Forecast Center Water Supply Forecasts January 1, 2024

UTAH			
Basin	Volume (KAF)	%Normal (1991-2020)	Period
Bear-UT/WY State Line	87	80	Apr-Jul
Weber-Oakley	83	75	Apr-Jul
Big Cottonwood Creek	29	85	Apr-Jul
Provo-Woodland	76	79	Apr-Jul
Duchesne-Tabiona	73	71	Apr-Jul
Sevier-Hatch (*Regulated)	30	62	Apr-Jul
Virgin-Virgin (*Regulated)	47	84	Apr-Jul

KAF = thousand acre-feet

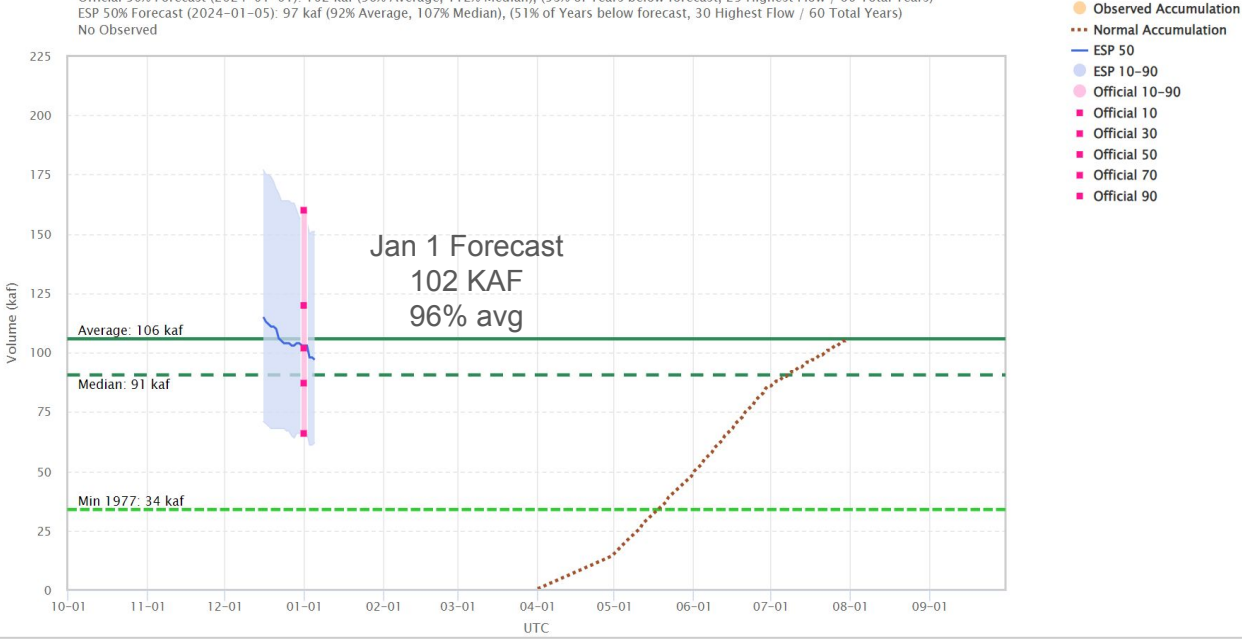
Bear River Basin

Forecast Range: 70-95%
Median: 80%



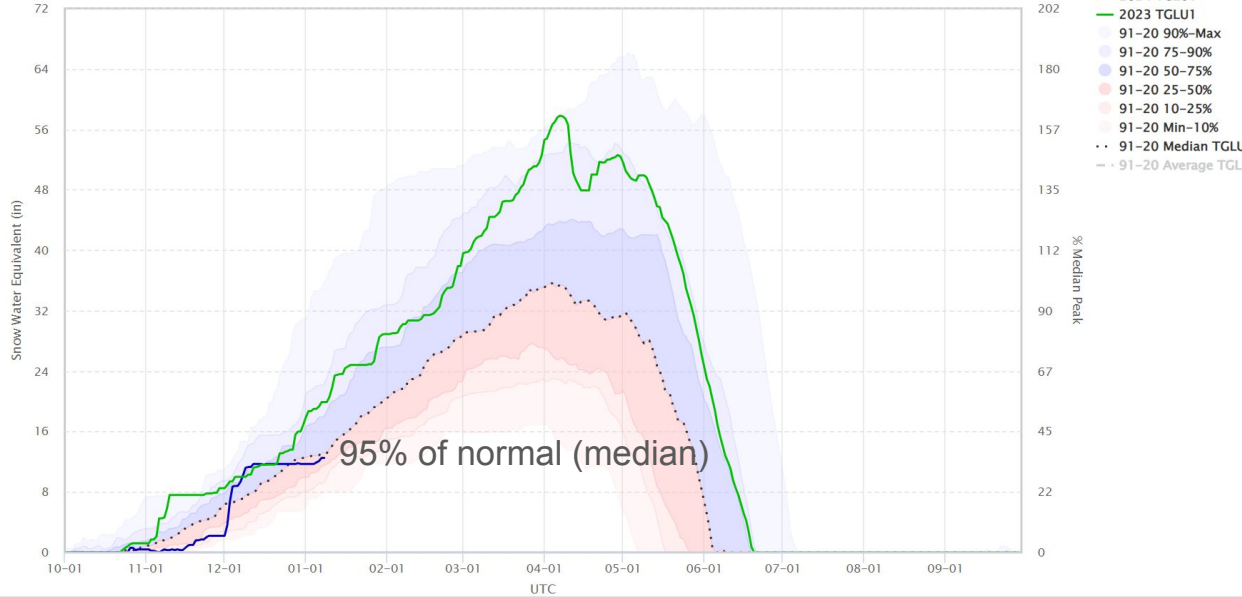
2024 Water Supply Forecast – Logan – Logan, Nr, State Dam, Abv (LGNU1)

ESP is Unregulated and No Precipitation Forecast Included
Official 50% Forecast (2024-01-01): 102 kaf (96% Average, 112% Median), (53% of Years below forecast, 29 Highest Flow / 60 Total Years)
ESP 50% Forecast (2024-01-05): 97 kaf (92% Average, 107% Median), (51% of Years below forecast, 30 Highest Flow / 60 Total Years)
No Observed



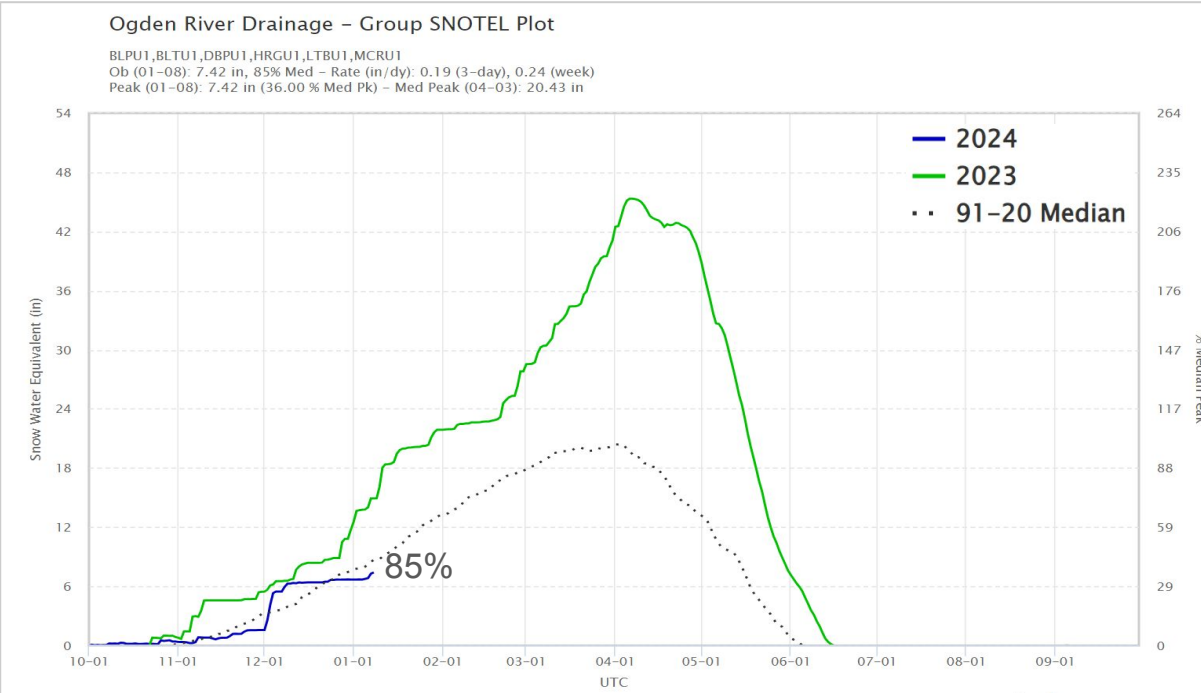
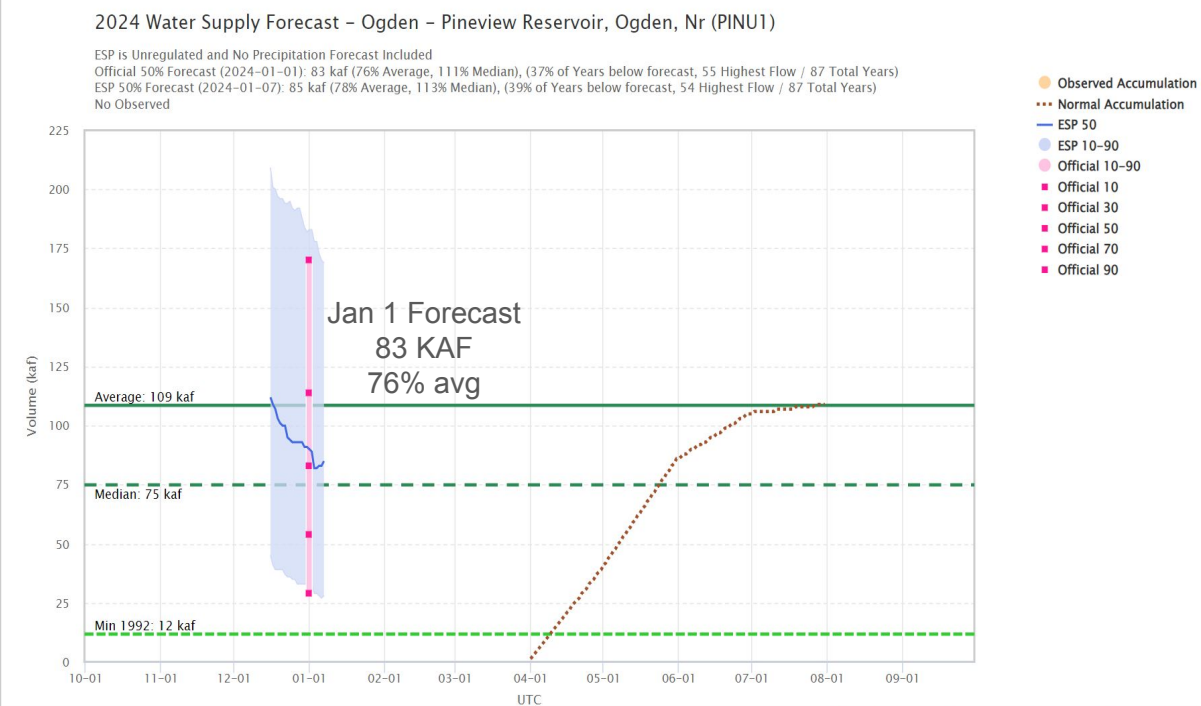
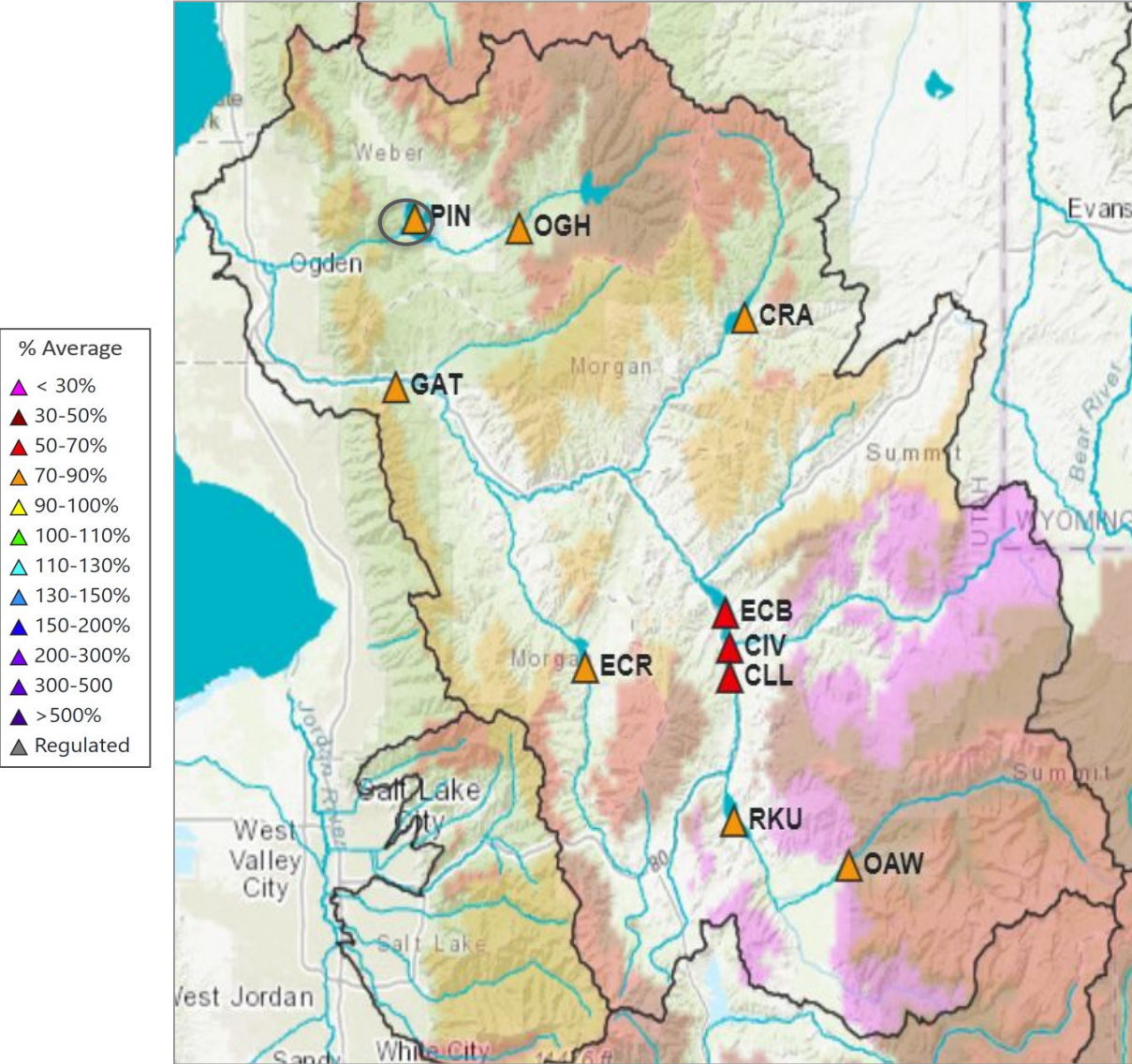
SNOTEL Plot – Tony Grove Lake (TGLU1) – 8386 ft

Ob (01-08): 12.50 in, 95% Med – Rate (in/dy): 0.13 (3-day), 0.27 (week)
Peak (01-07): 12.50 in (35.00 % Med Pk) – Med Peak (04-03): 35.65 in



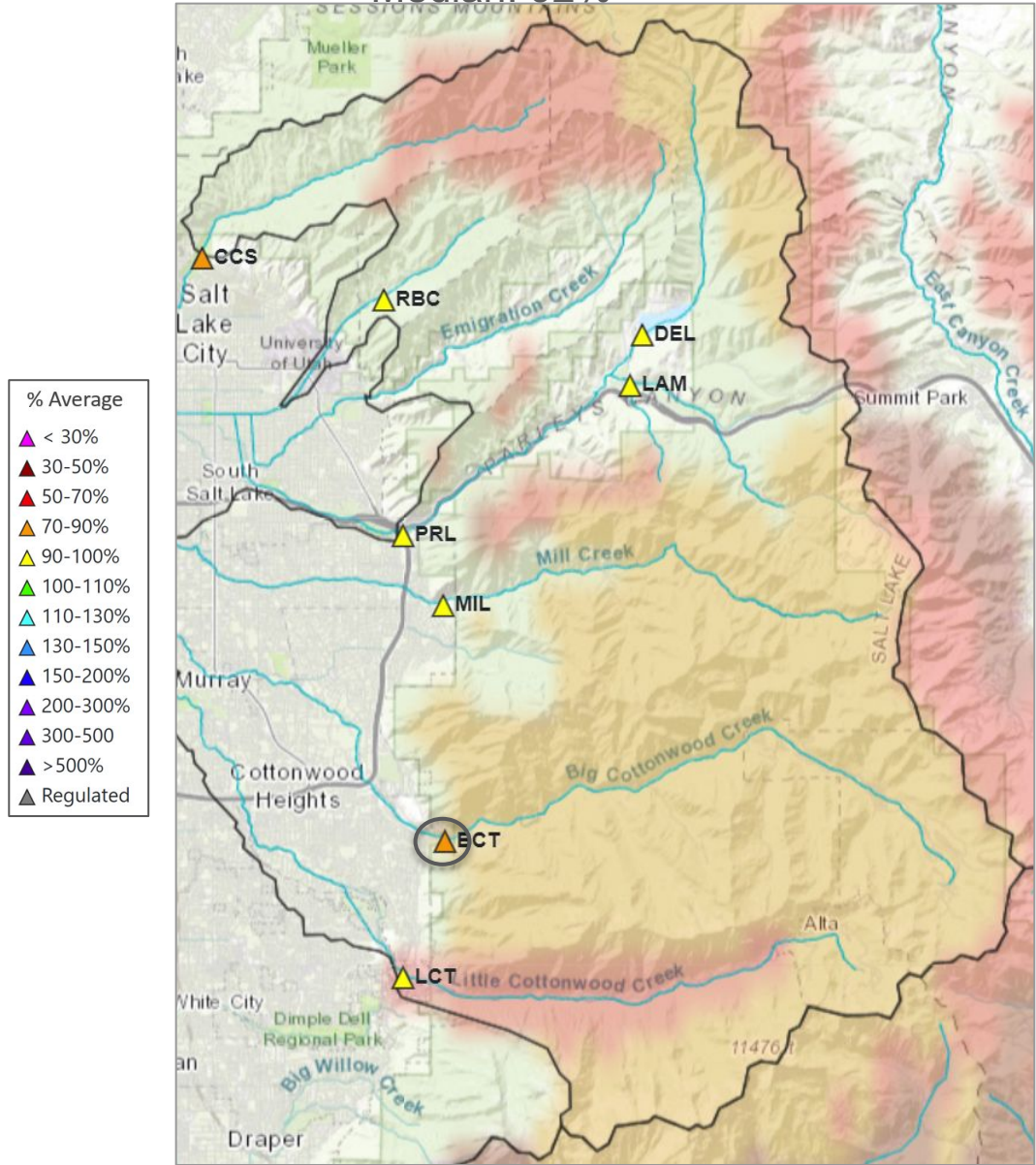
Weber River Basin

Forecast Range: 65-90%
Median: 74%



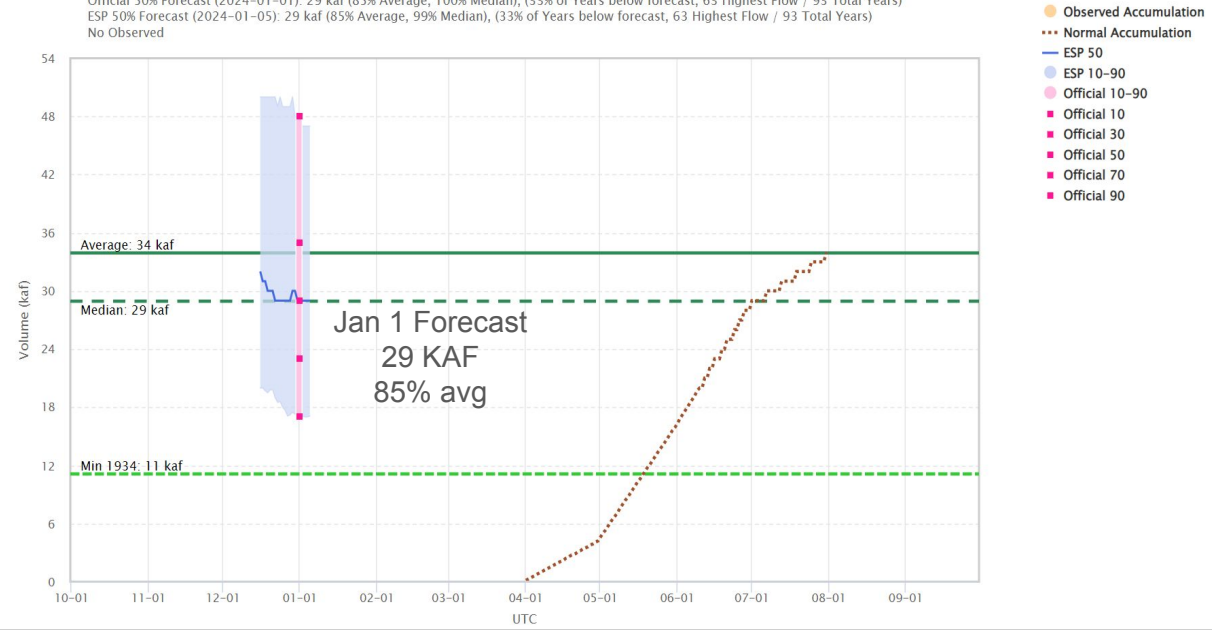
Six Creeks Basin

Forecast Range: 85-100%
Median: 92%



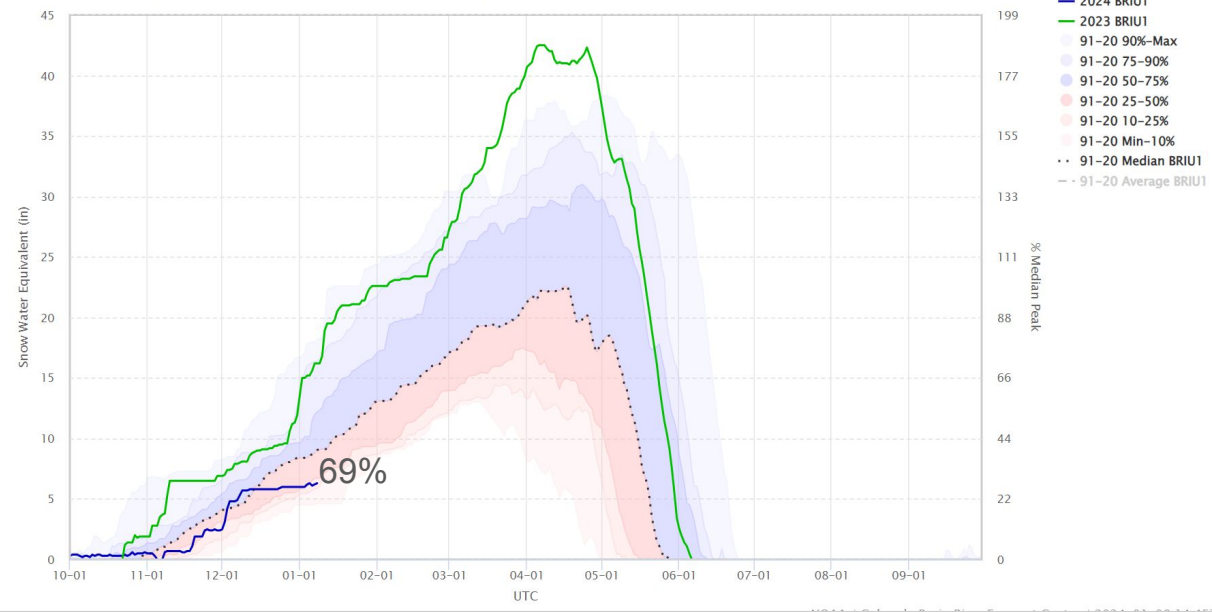
2024 Water Supply Forecast – Big Cottonwood Ck – Salt Lake City, Nr (BCTU1)

ESP is Unregulated and No Precipitation Forecast Included
Official 50% Forecast (2024-01-01): 29 kaf (85% Average, 100% Median), (33% of Years below forecast, 63 Highest Flow / 93 Total Years)
ESP 50% Forecast (2024-01-05): 29 kaf (85% Average, 99% Median), (33% of Years below forecast, 63 Highest Flow / 93 Total Years)
No Observed



SNOTEL Plot – Brighton (BRIU1) – 8750 ft

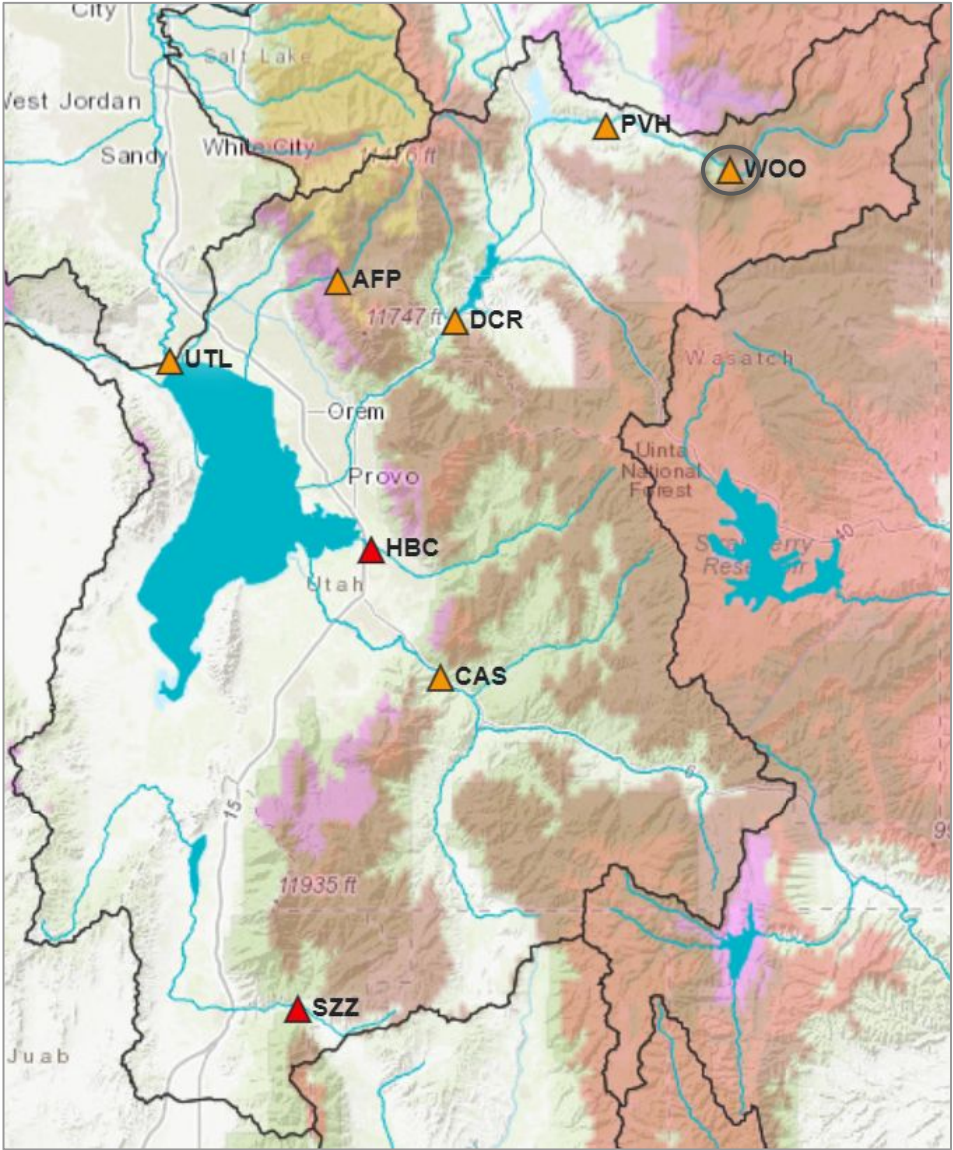
Ob (01-08): 6.30 in, 69% Med – Rate (in/dy): 0.07 (3-day), 0.10 (week)
Peak (01-05): 6.30 in (28.00 % Med Pk) – Med Peak (04-16): 22.60 in



Provo River Basin

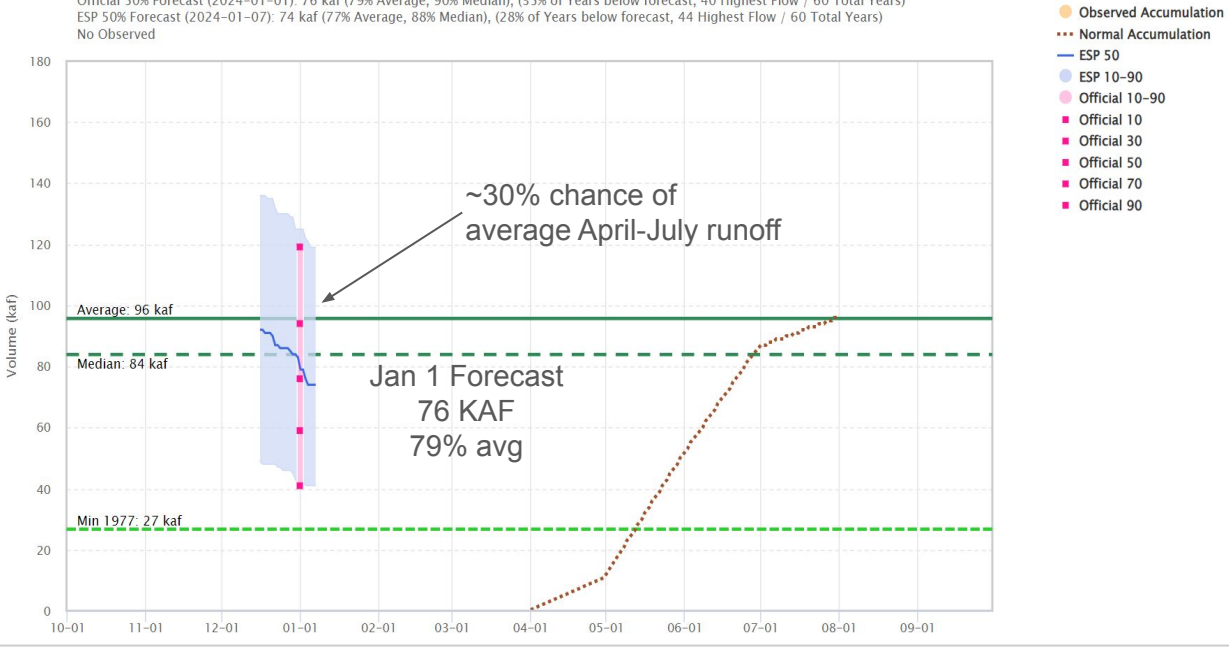
Forecast Range: 55-90%
Median: 75%

- % Average
- < 30%
 - 30-50%
 - 50-70%
 - 70-90%
 - 90-100%
 - 100-110%
 - 110-130%
 - 130-150%
 - 150-200%
 - 200-300%
 - 300-500
 - >500%
 - Regulated



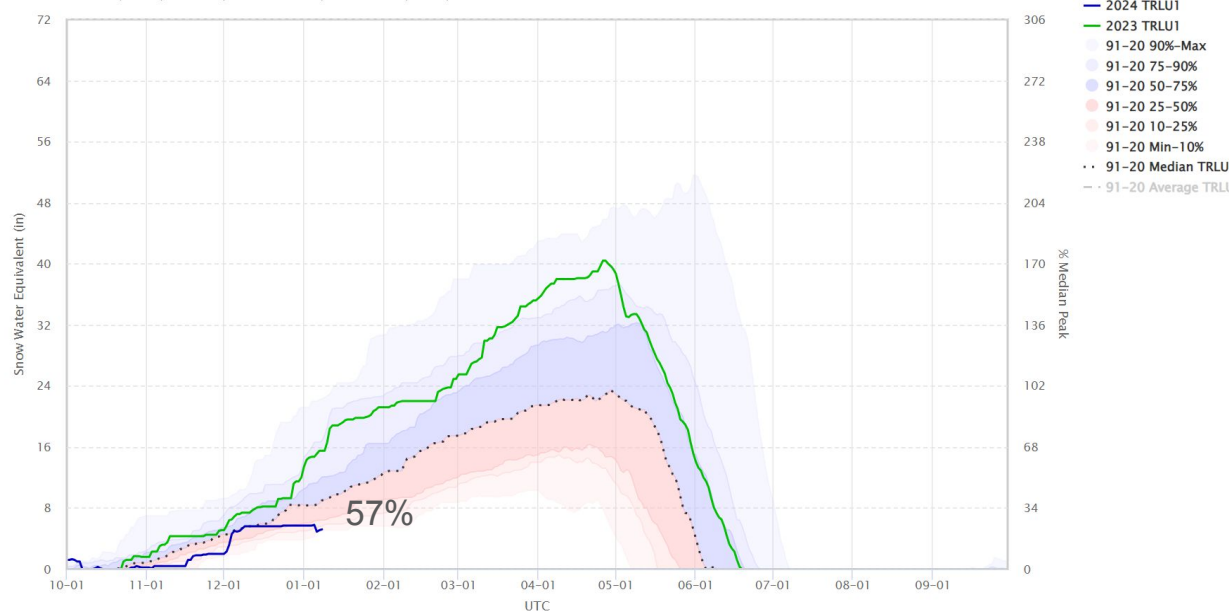
2024 Water Supply Forecast – Provo – Woodland, Nr (WOOU1)

ESP is Unregulated and No Precipitation Forecast Included
Official 50% Forecast (2024-01-01): 76 kaf (79% Average, 90% Median), (35% of Years below forecast, 40 Highest Flow / 60 Total Years)
ESP 50% Forecast (2024-01-07): 74 kaf (77% Average, 88% Median), (28% of Years below forecast, 44 Highest Flow / 60 Total Years)
No Observed



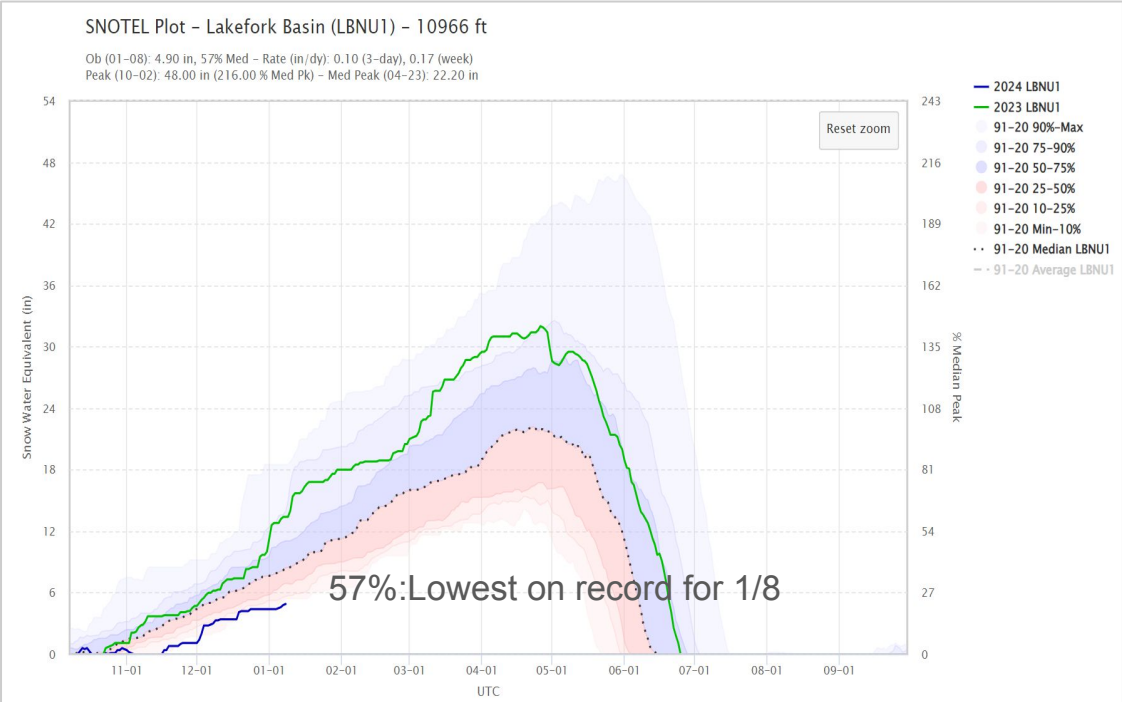
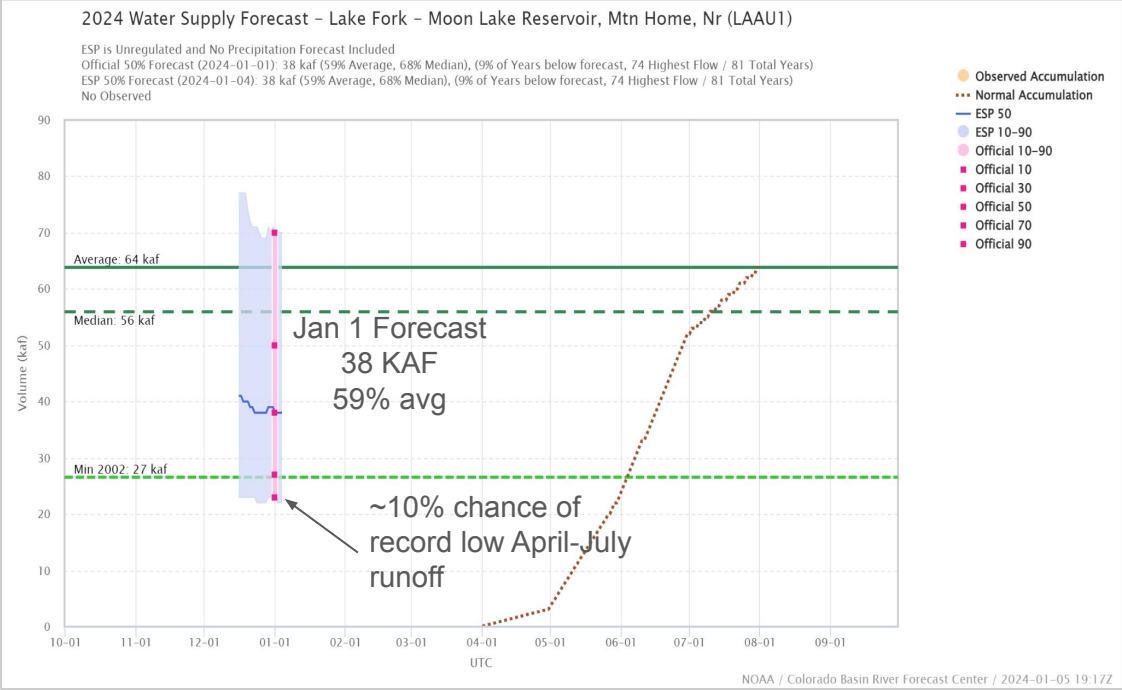
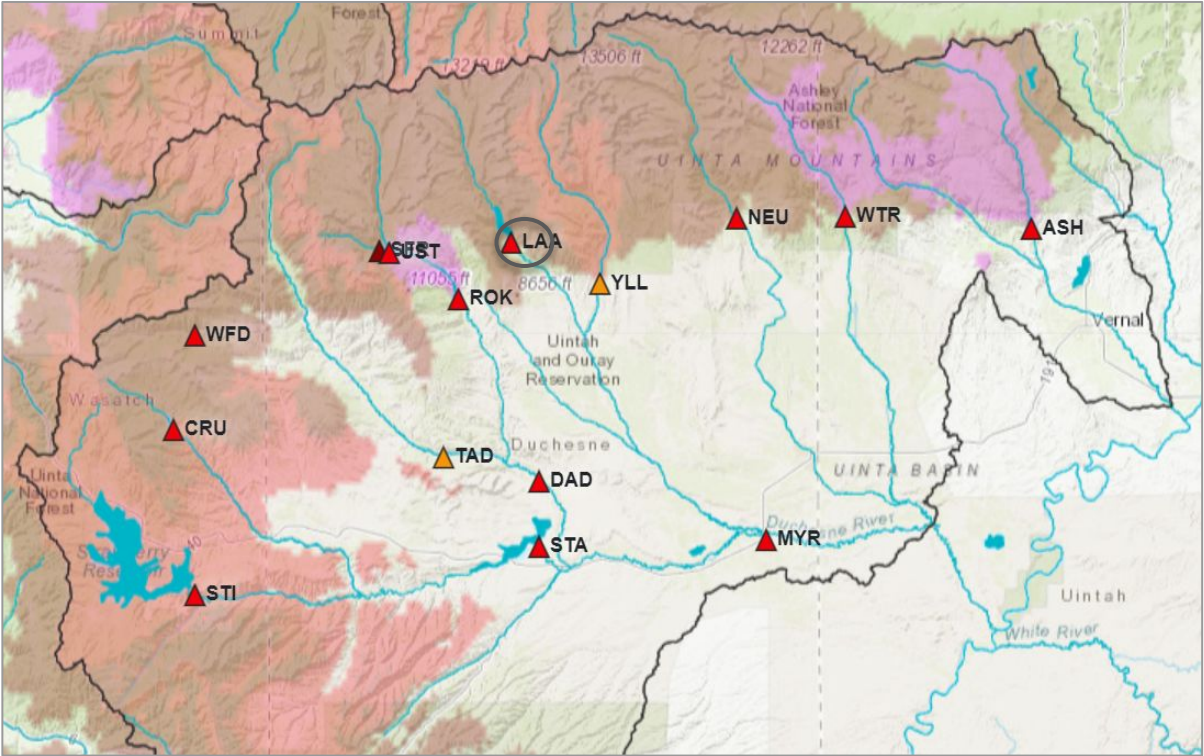
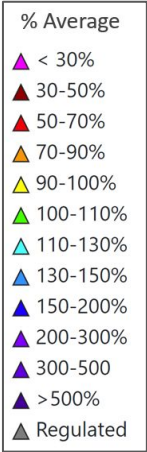
SNOTEL Plot – Trial Lake (TRLU1) – 9992 ft

Ob (01-08): 5.20 in, 57% Med – Rate (in/dy): 0.10 (3-day), -0.17 (week)
Peak (01-05): 5.80 in (25.00 % Med Pk) – Med Peak (04-29): 23.50 in



Duchesne River Basin

Forecast Range: 50-70%
Median: 62%

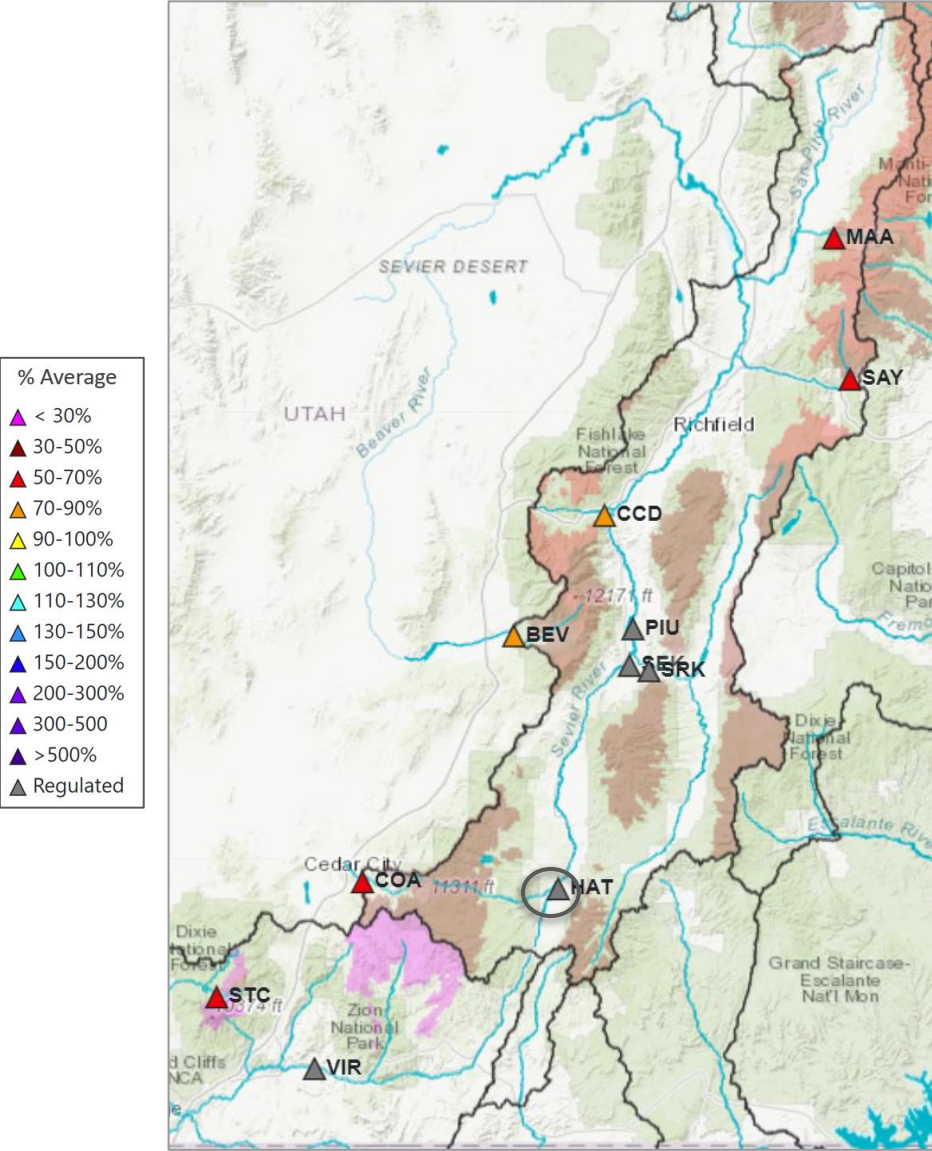


Virgin and Sevier River Basins

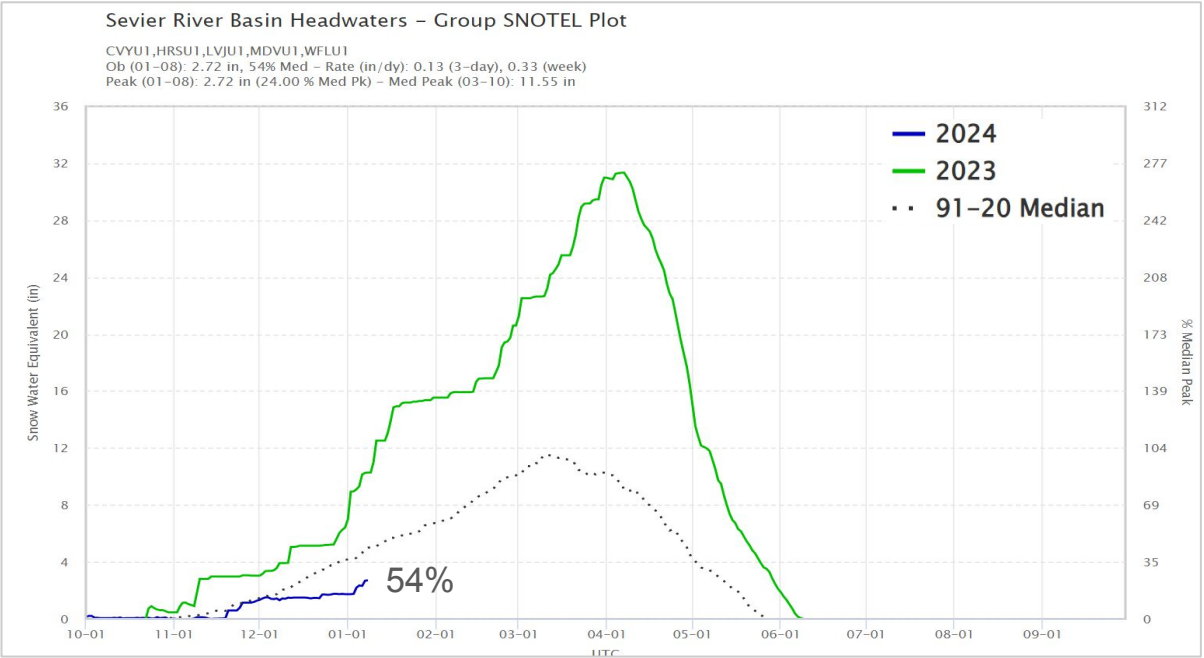
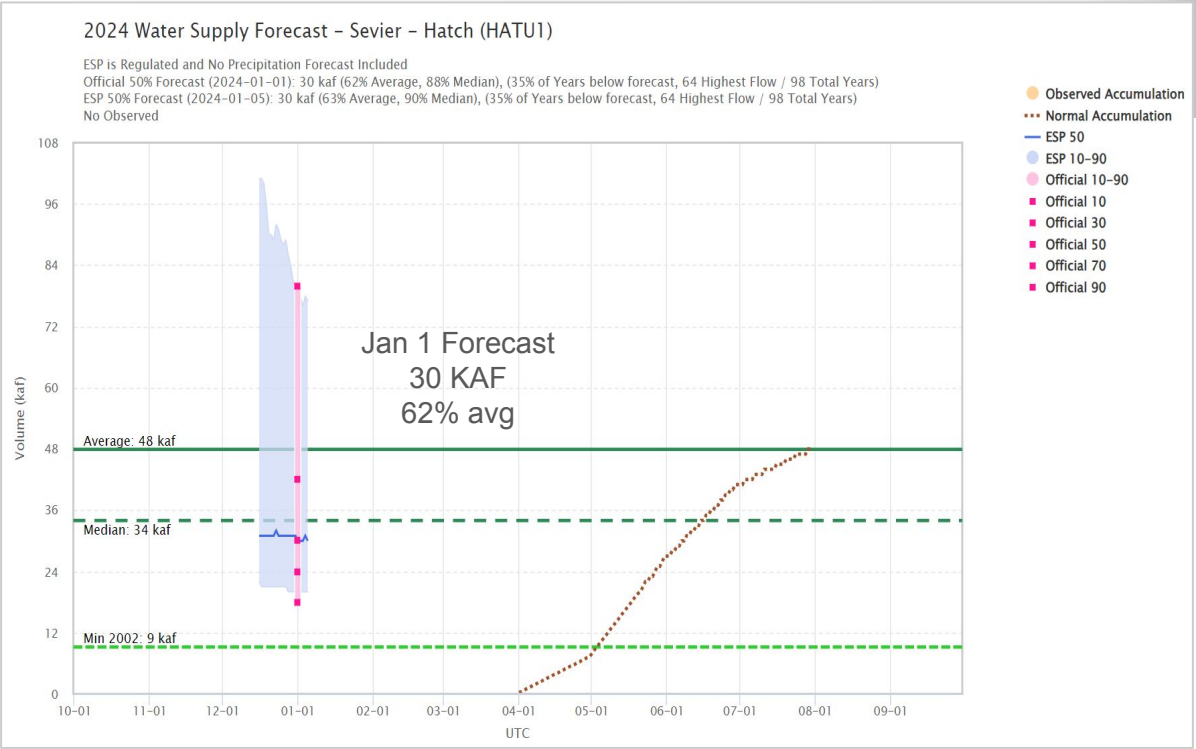
Agency - CBRFC

Presenter - Trevor Grout

Forecast Range: 30-105%
Median: 68%



*Regulated Forecasts



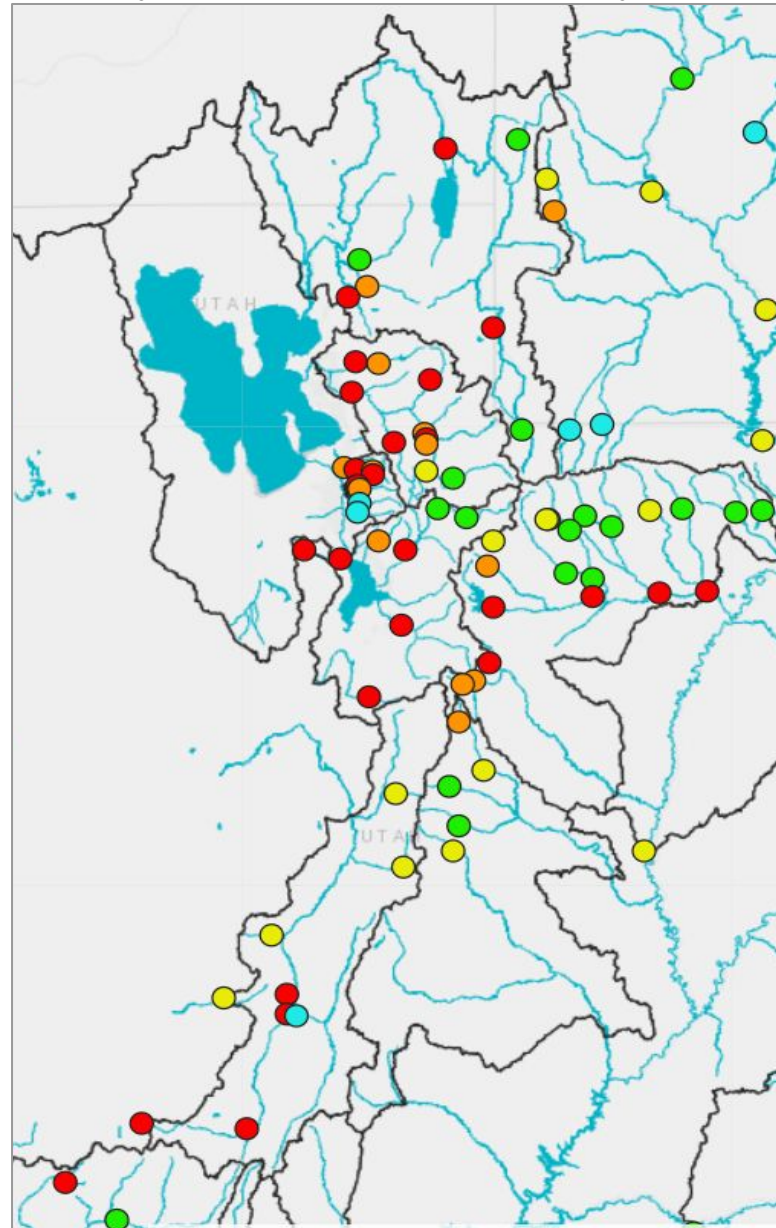
Historical Forecast Verification

Agency - CBRFC

Presenter - Trevor Grout

(trevor.grout@noaa.gov)

January Forecast Error: April-July Volume



Location

Average Jan 1 Forecast Error

BEAR - UTAH-WYOMING STATE	25%
BEAR - WOODRUFF NARROWS	45%
LOGAN - LOGAN- NR	25%
WEBER - OAKLEY- NR	25%
WEBER - ROCKPORT RES	35%
BIG COTTONWOOD CK	20%
PROVO - WOODLAND- NR	30%
PROVO - DEER CK RES	40%
VIRGIN - VIRGIN	45%

Error tends to decrease each month into the spring

Where Forecasts are Better:

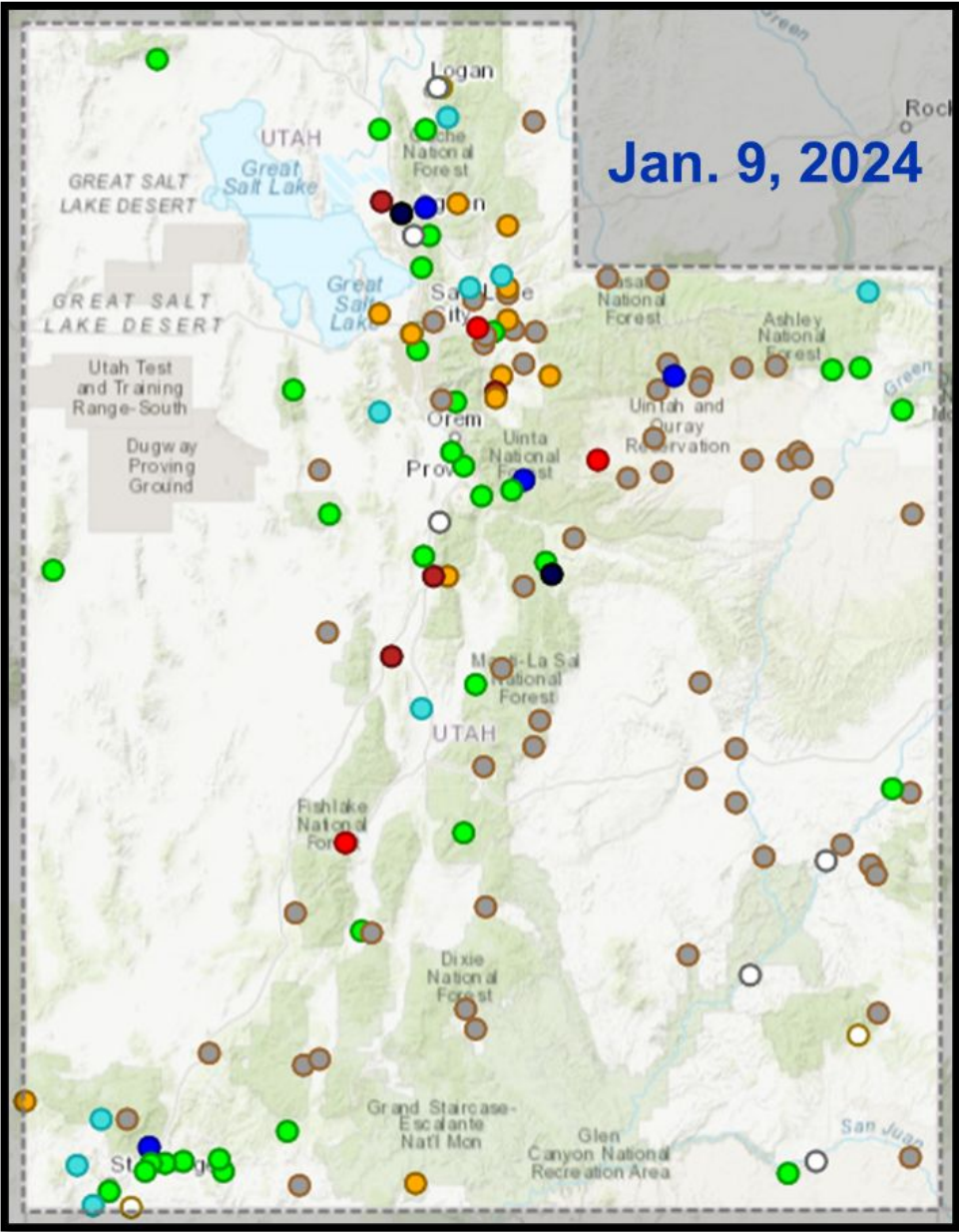
- Headwaters
- Primarily snow melt basins
- Known diversions / demands

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.

Current Streamflow Conditions



*Sites must have at least 10 years of streamflow record to be ranked on this graphic

Day-of-Year Status		
All-time high for this day-of-year	2	1.4%
Much above normal for this day-of-year	4	2.9%
Above normal for this day-of-year	10	7.2%
Normal for this day-of-year	37	26.6%
Below normal for this day-of-year	12	8.6%
Much below normal for this day-of-year	4	2.9%
All-time low for this day-of-year	3	2.2%
Not ranked - insufficient record	13	9.4%
Not ranked - no measurement	51	36.7%
Not ranked - stream not flowing	3	2.2%

Streamflow: Status

Above flood stage

All-time high for this day

Much above normal

Above normal

Normal

Below normal

Much below normal

All-time low for this day

Not flowing

Not ranked

Measurement flag

Recent measurement unavailable

100th percentile (maximum)

>90th percentile

76th – 90th percentile

25th – 75th percentile

10th – 24th percentile

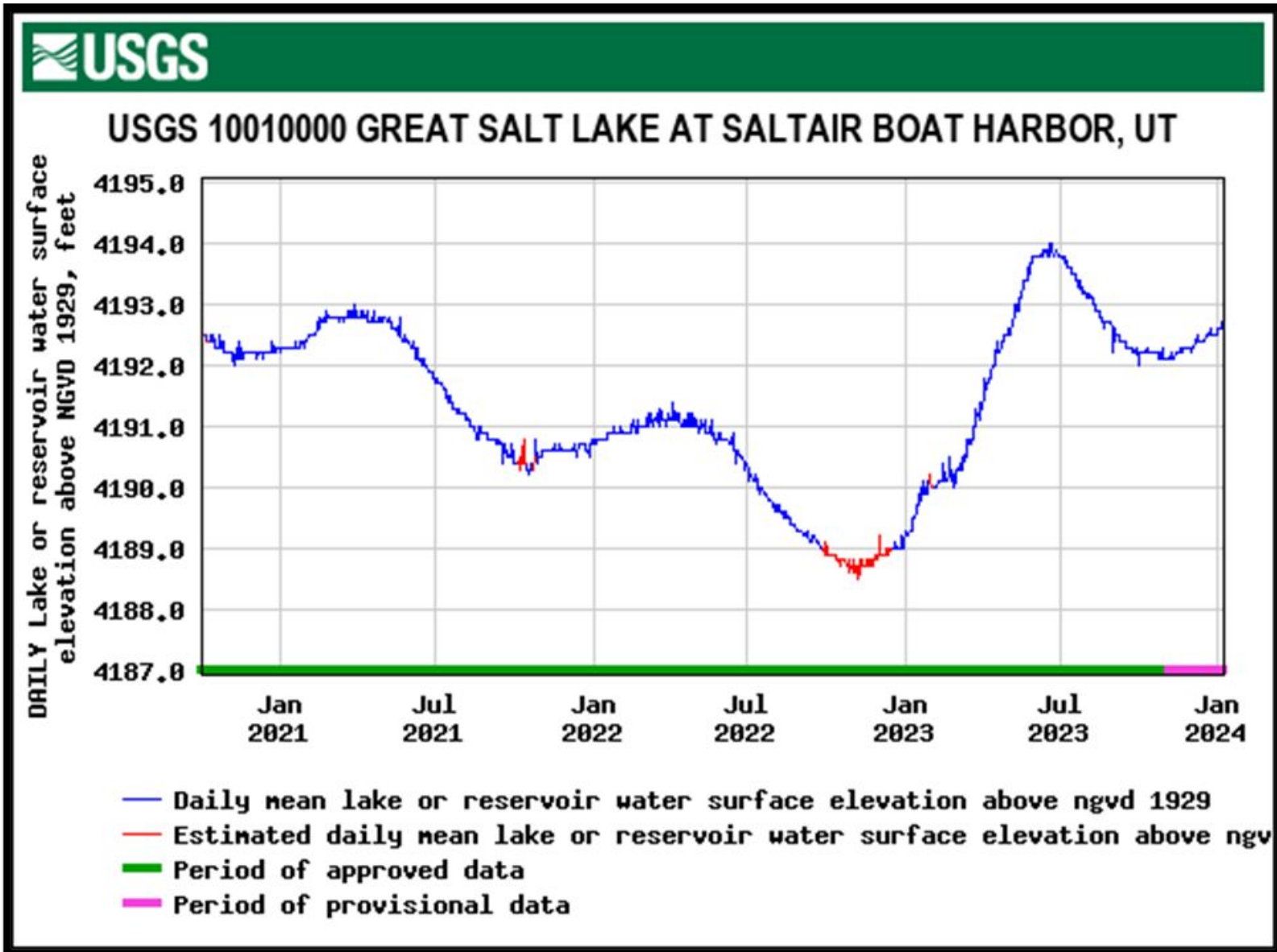
<10th percentile

0th percentile (minimum)

Agency - USGS Utah WSC
Presenter - Ryan Rowland

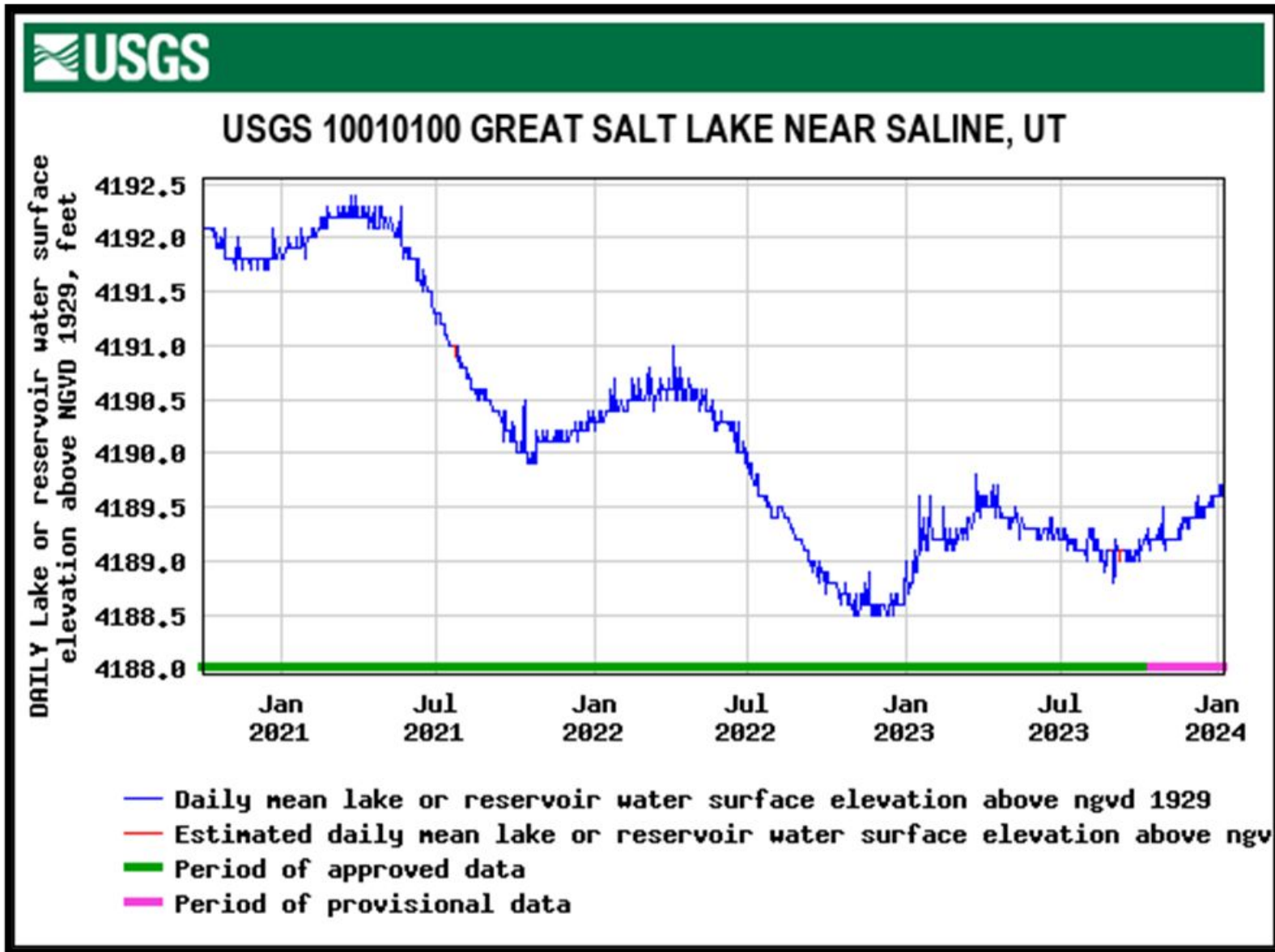


Great Salt Lake Water Surface Elevation - South Arm

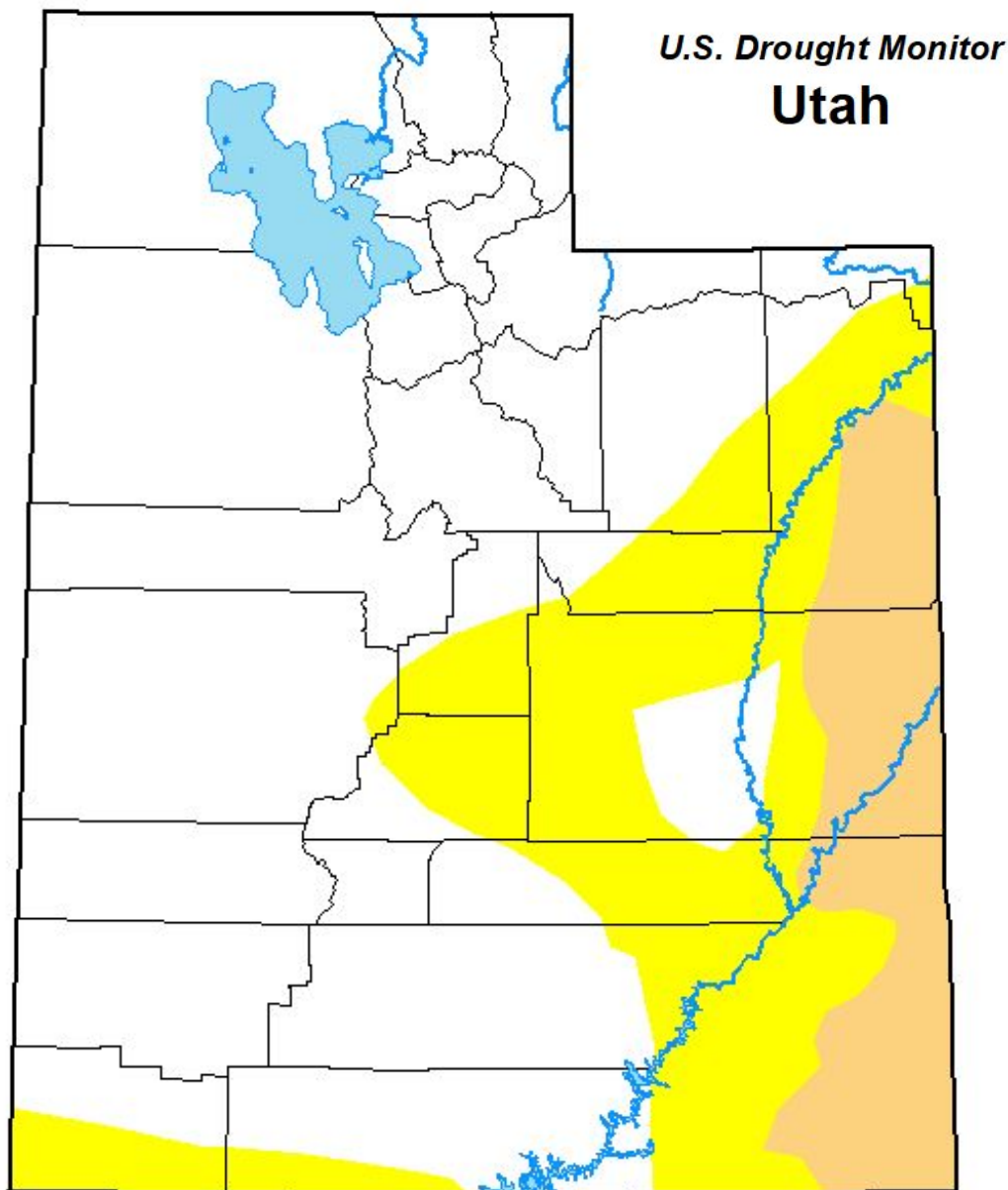


- ❑ Daily value
1/8/2024 =
4,192.6'
- ❑ Up 0.6' since
seasonal
minimum in
October 2023

Great Salt Lake Water Surface Elevation - North Arm









- ❑ Daily value
1/8/2024 =
4,189.7'
- ❑ Up 0.9' since
seasonal
minimum in
September
2023



January 2, 2024
(Released Thursday, Jan. 4, 2024)
Valid 7 a.m. EST

Intensity:

-  None
-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Lindsay Johnson
National Drought Mitigation Center



droughtmonitor.unl.edu

To report on conditions between meetings:

Submit a report on CMOR drought website

Email Lhaskell@utah.gov

email drought@utah.gov