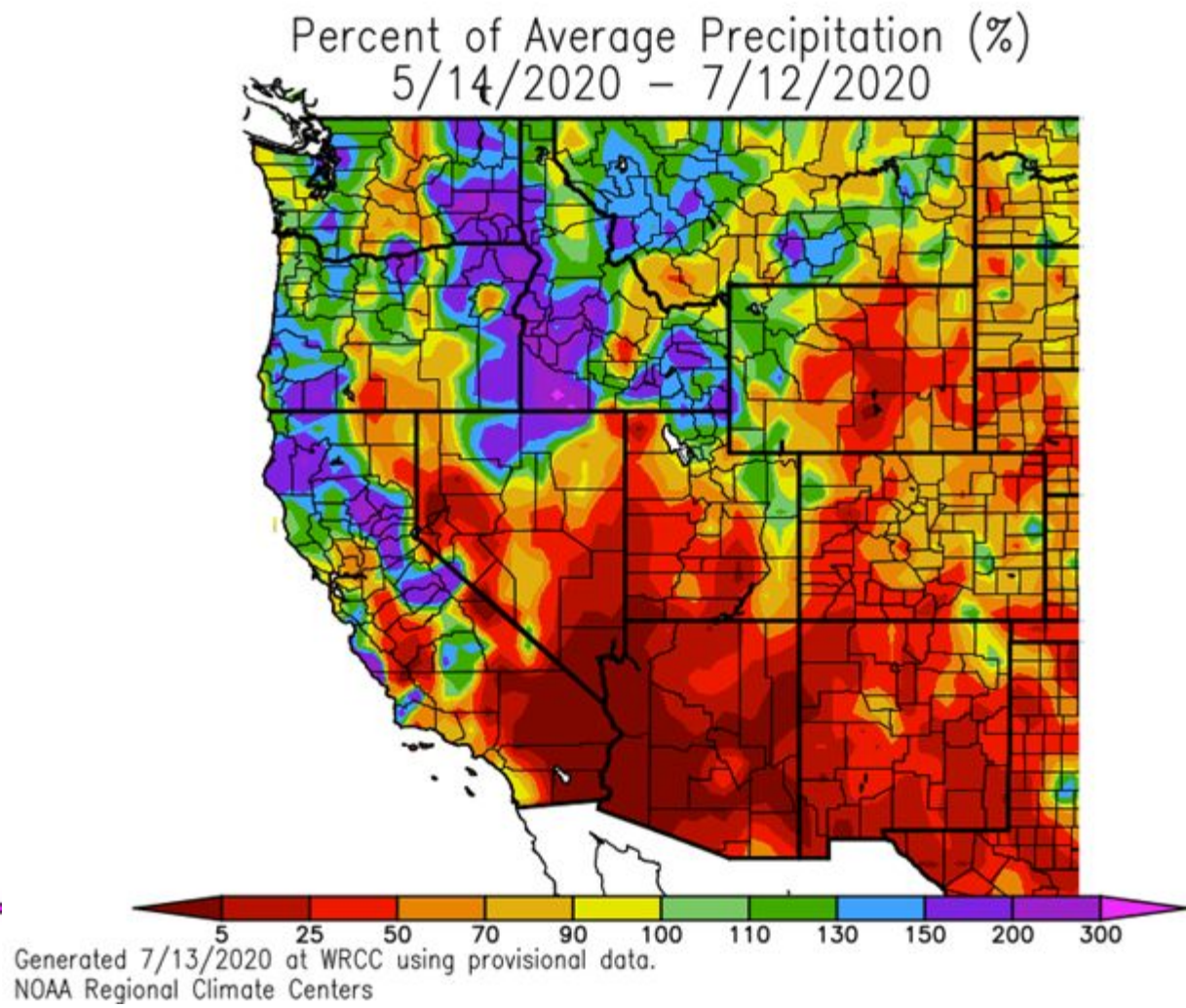
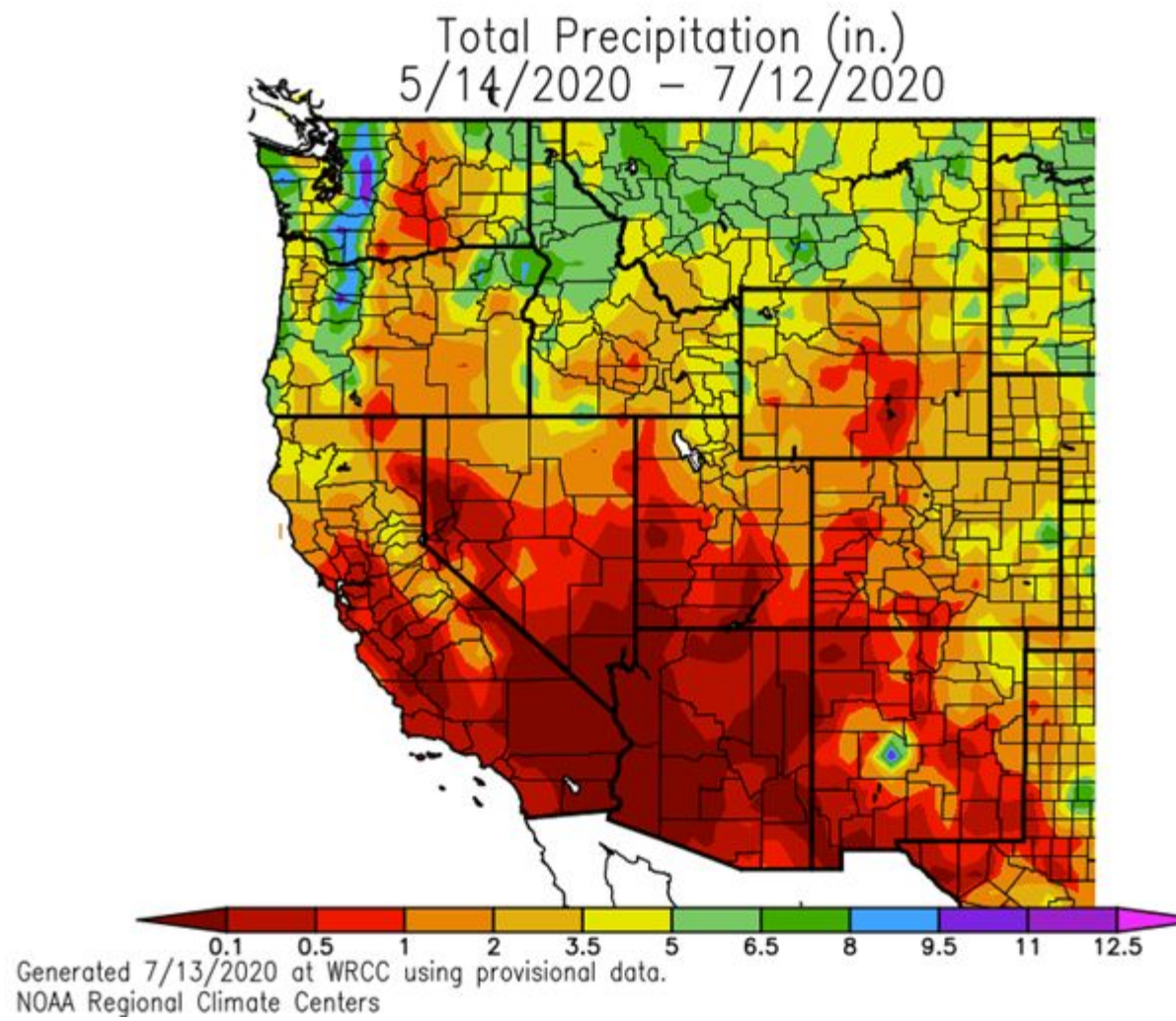




# **Utah Drought Monitor Feedback Webinar**

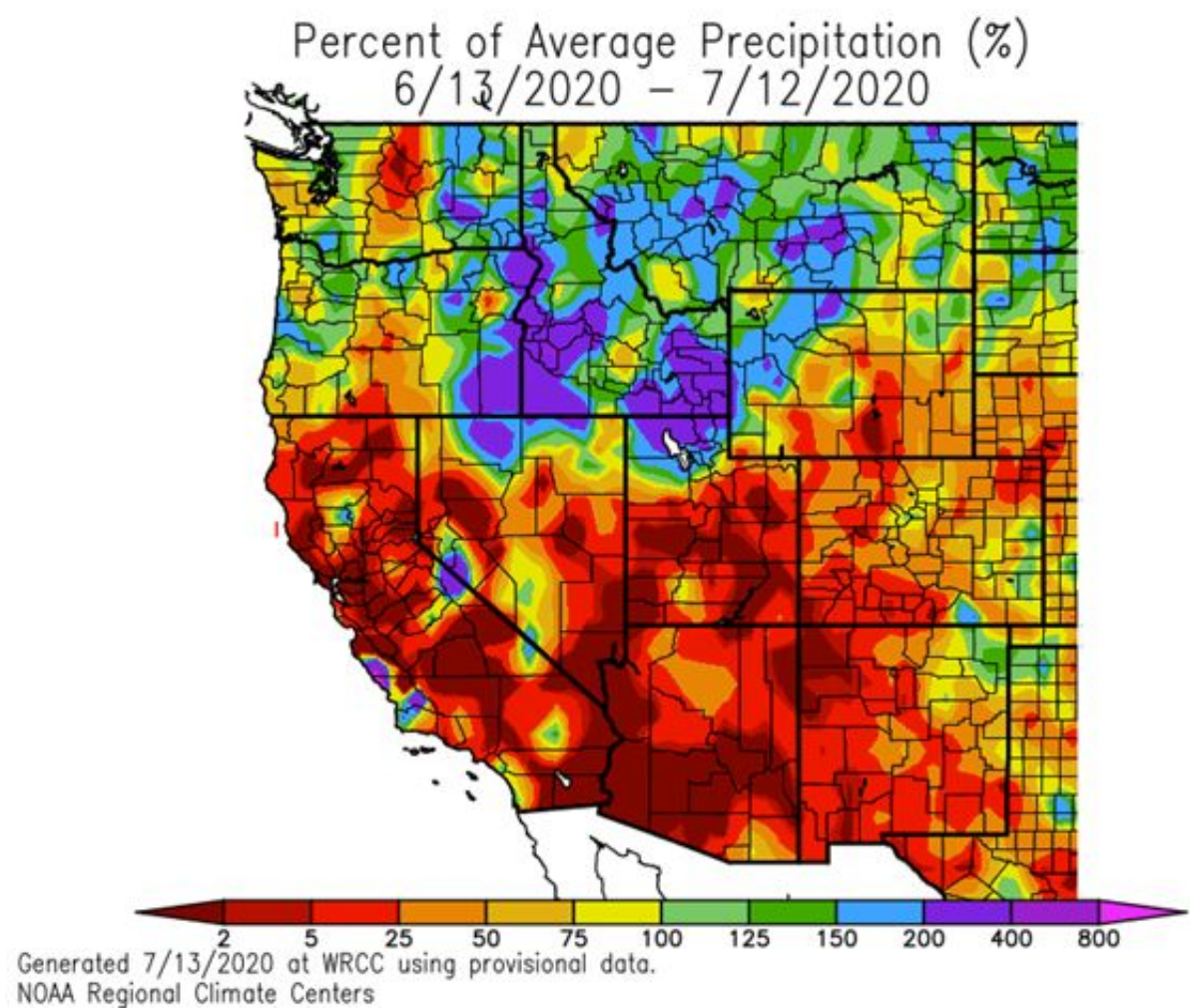
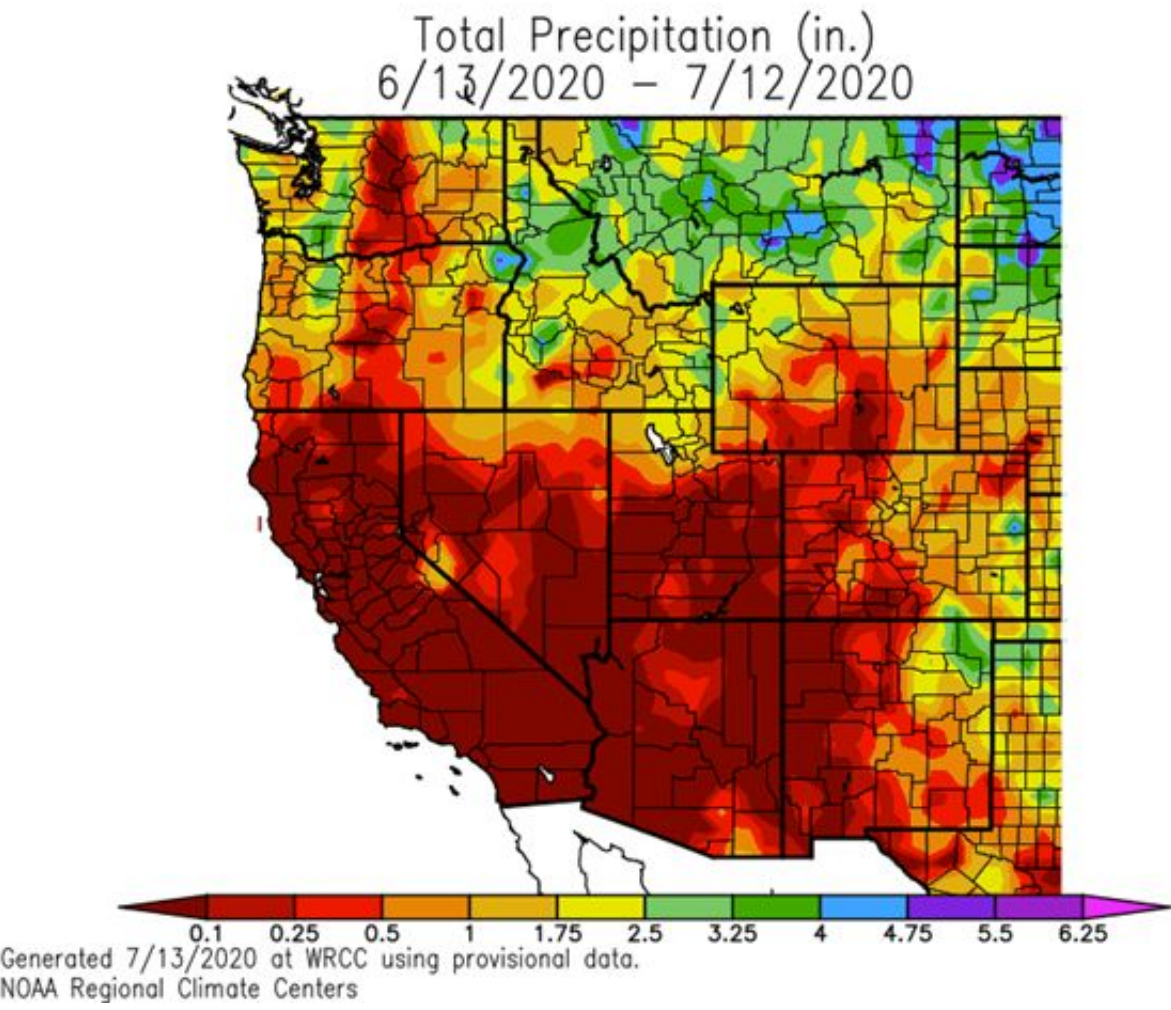
**July 14, 2020**

# Precipitation 60 day history (Percent of Average)





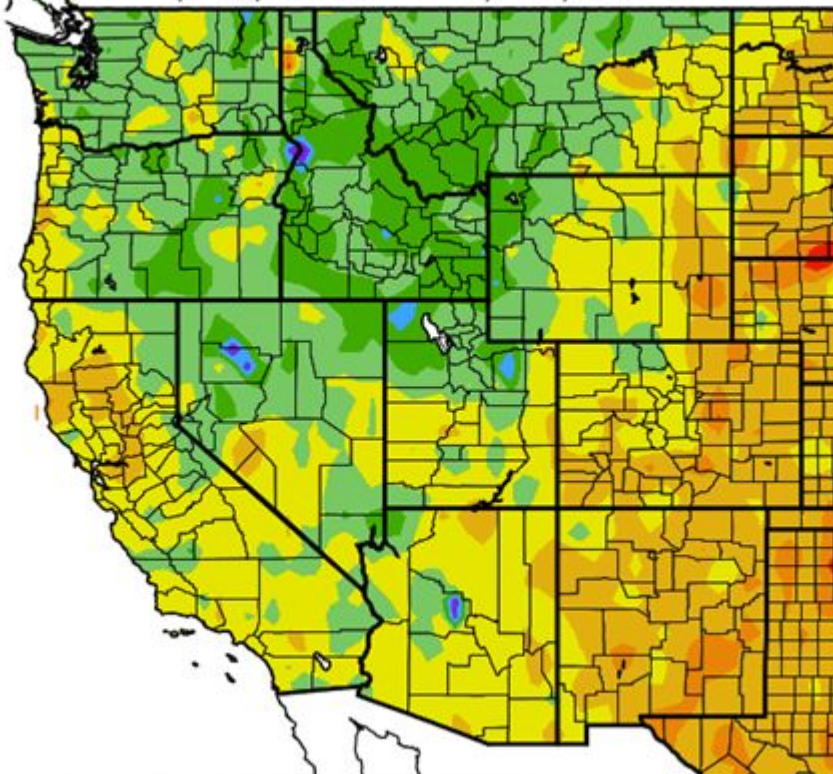
# Precipitation 30 day history (Percent of Average)





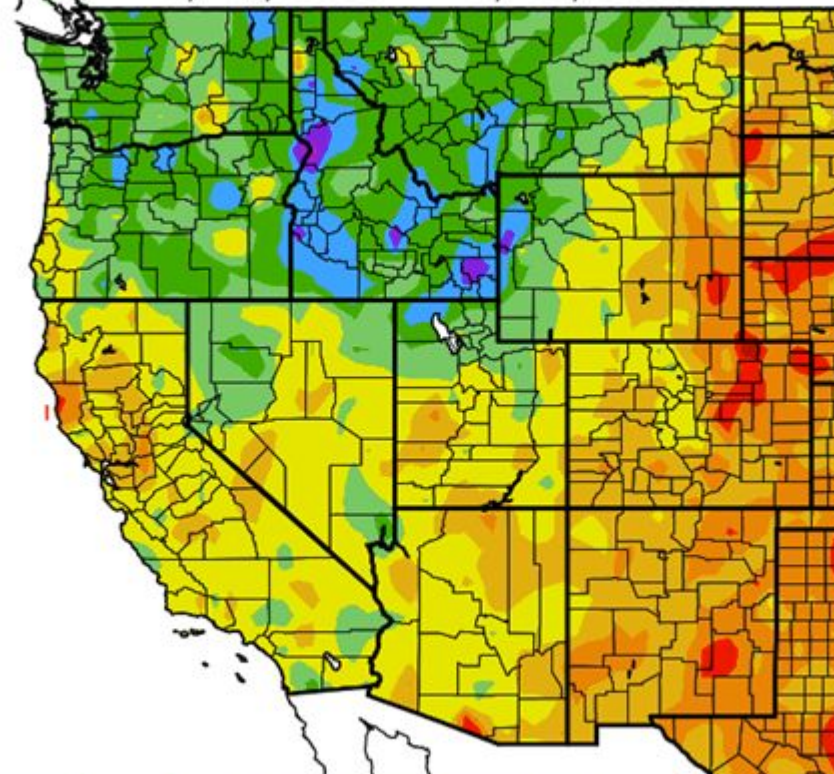
# Temperature 30 day (Related to Average)

Ave. Temperature dep from Ave (deg F)  
6/13/2020 – 7/12/2020



Generated 7/13/2020 at WRCC using provisional data.  
NOAA Regional Climate Centers

Av. Max. Temperature dep from Ave (deg F)  
6/13/2020 – 7/12/2020

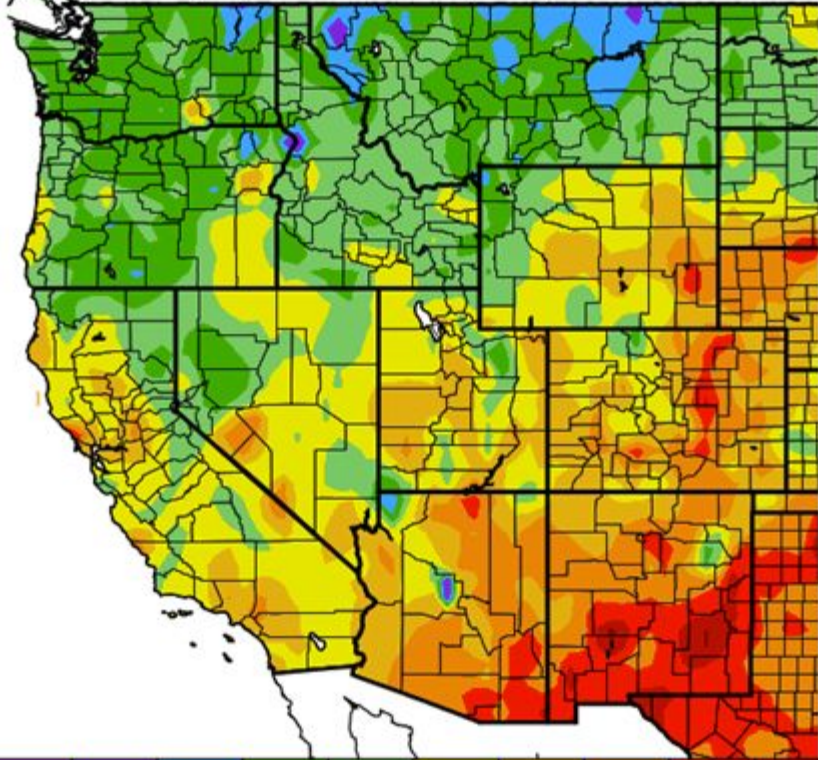


Generated 7/13/2020 at WRCC using provisional data.  
NOAA Regional Climate Centers



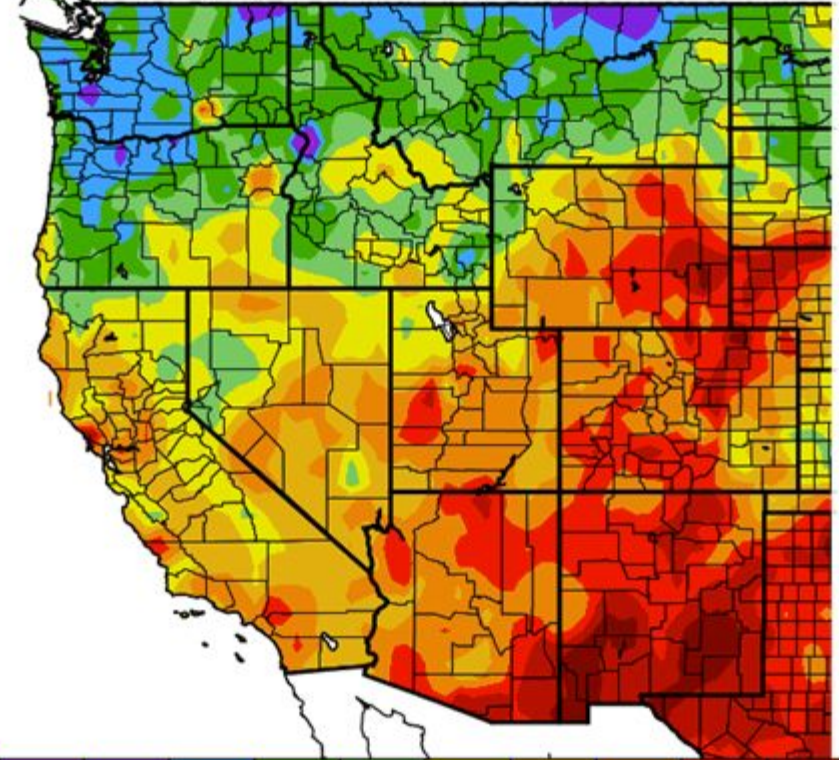
# Temperature 7 day (Related to Average)

Ave. Temperature dep from Ave (deg F)  
7/6/2020 – 7/12/2020



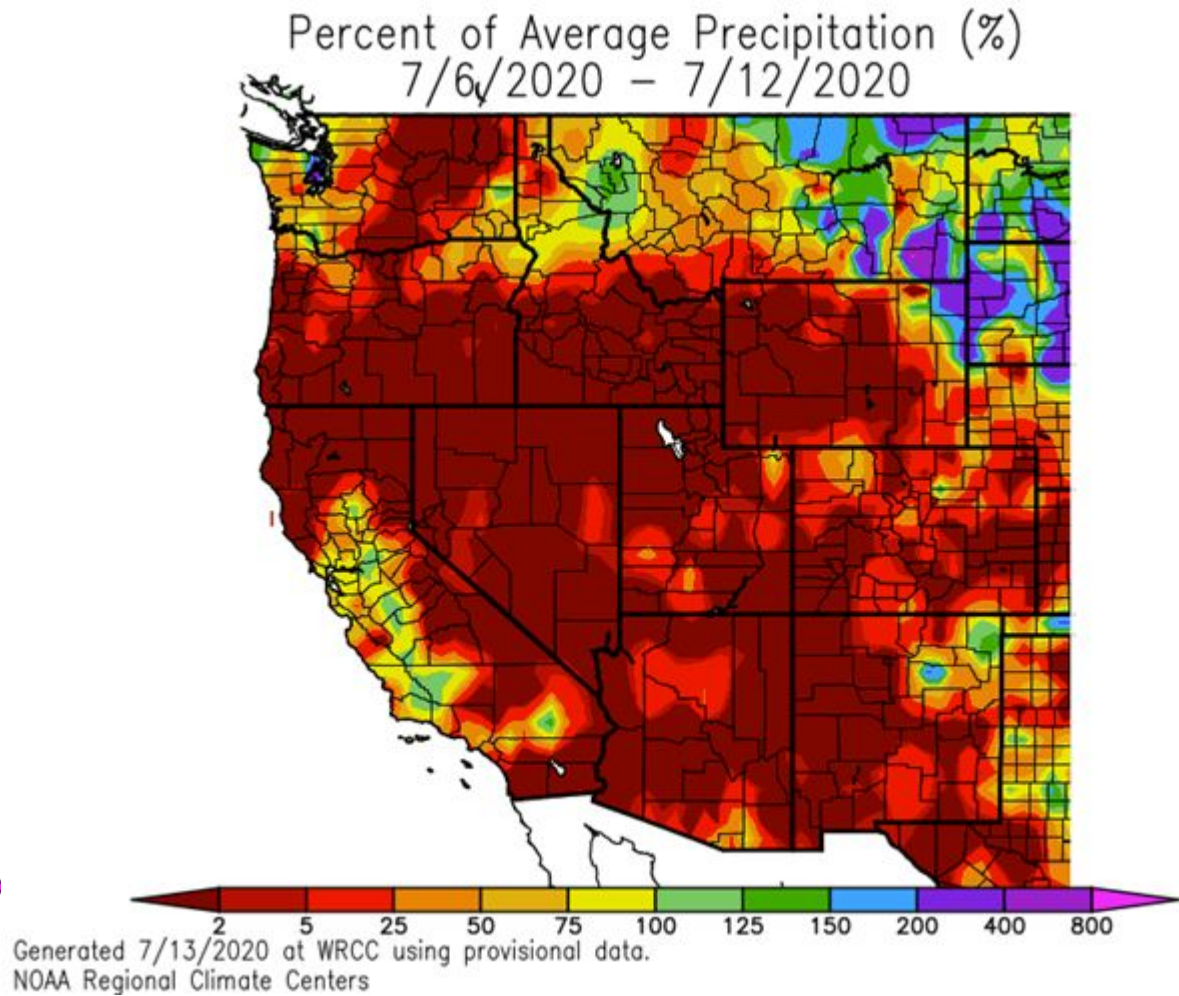
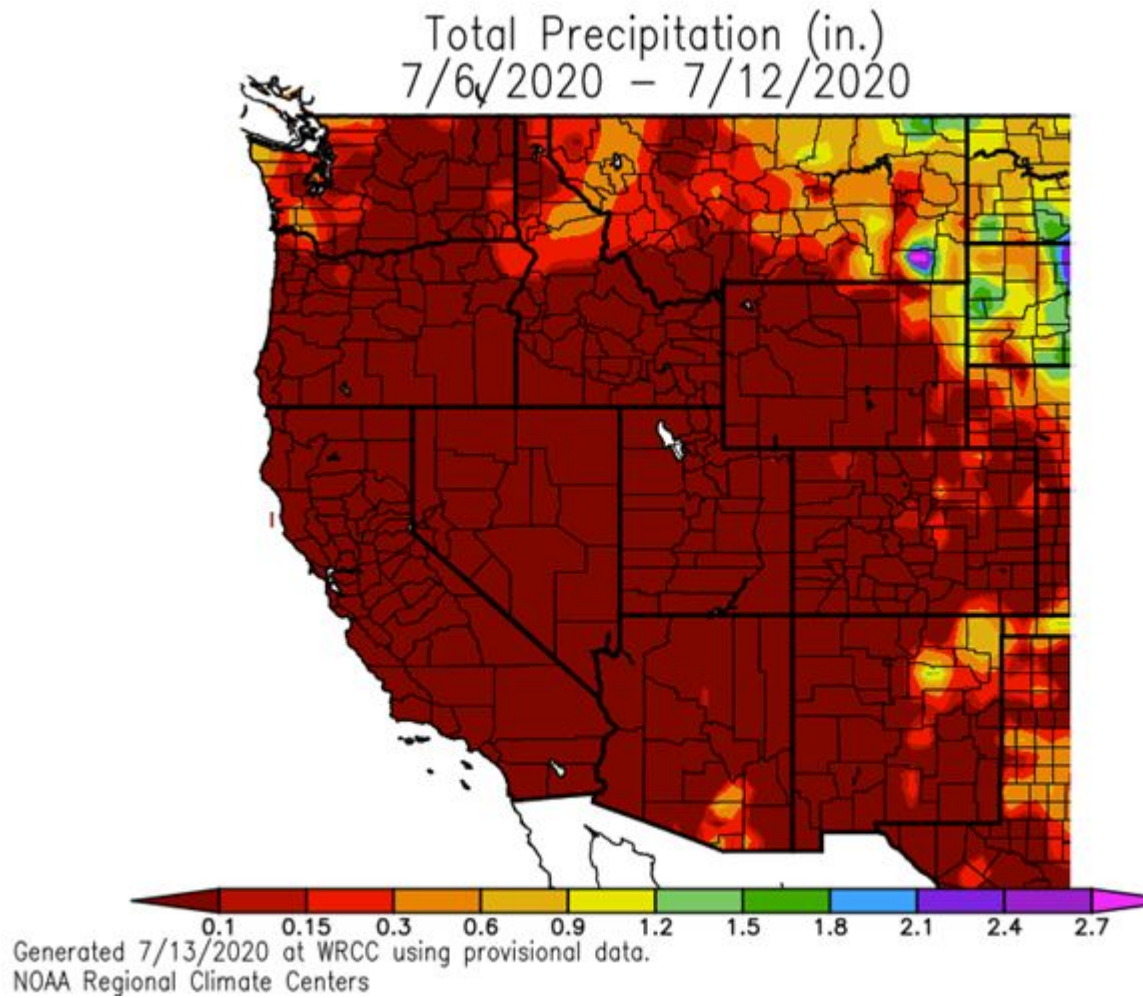
Generated 7/13/2020 at WRCC using provisional data.  
NOAA Regional Climate Centers

Av. Max. Temperature dep from Ave (deg F)  
7/6/2020 – 7/12/2020



Generated 7/13/2020 at WRCC using provisional data.  
NOAA Regional Climate Centers

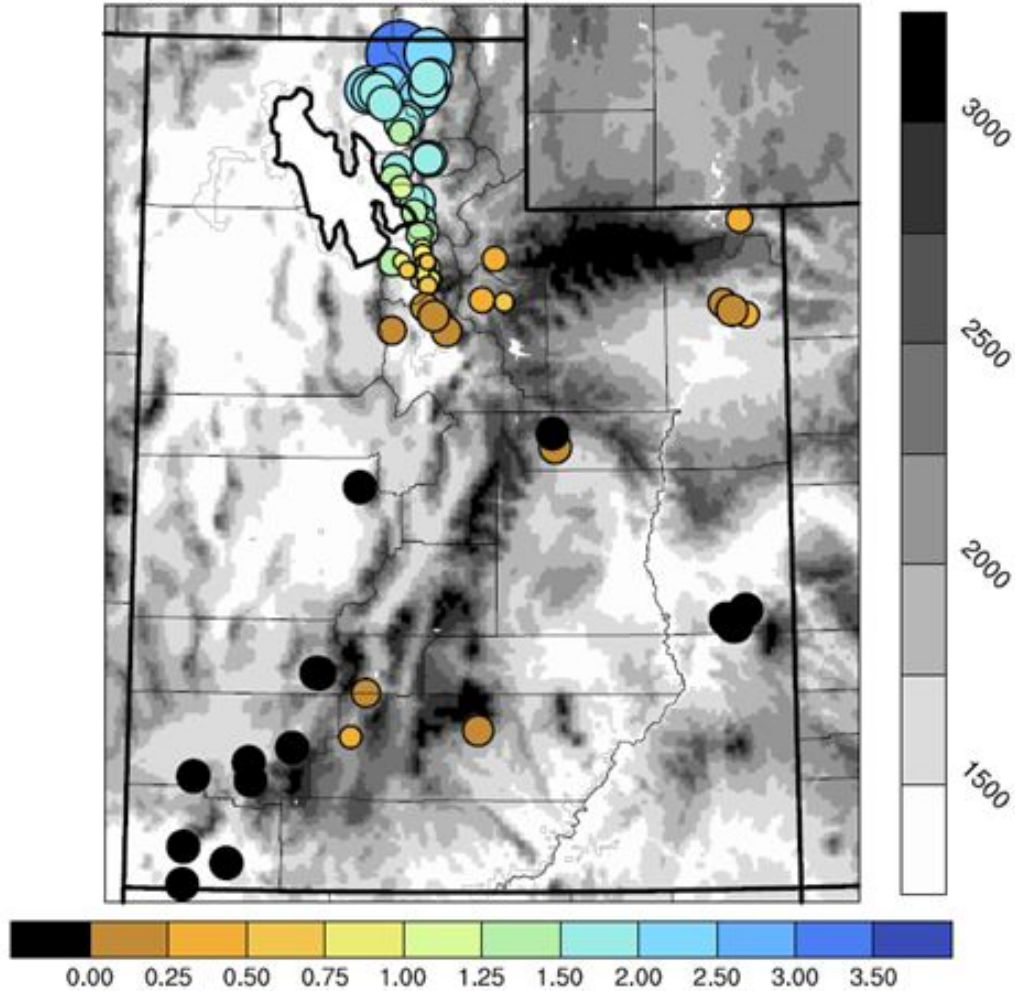
# Precipitation 7 day history (Percent of Average)



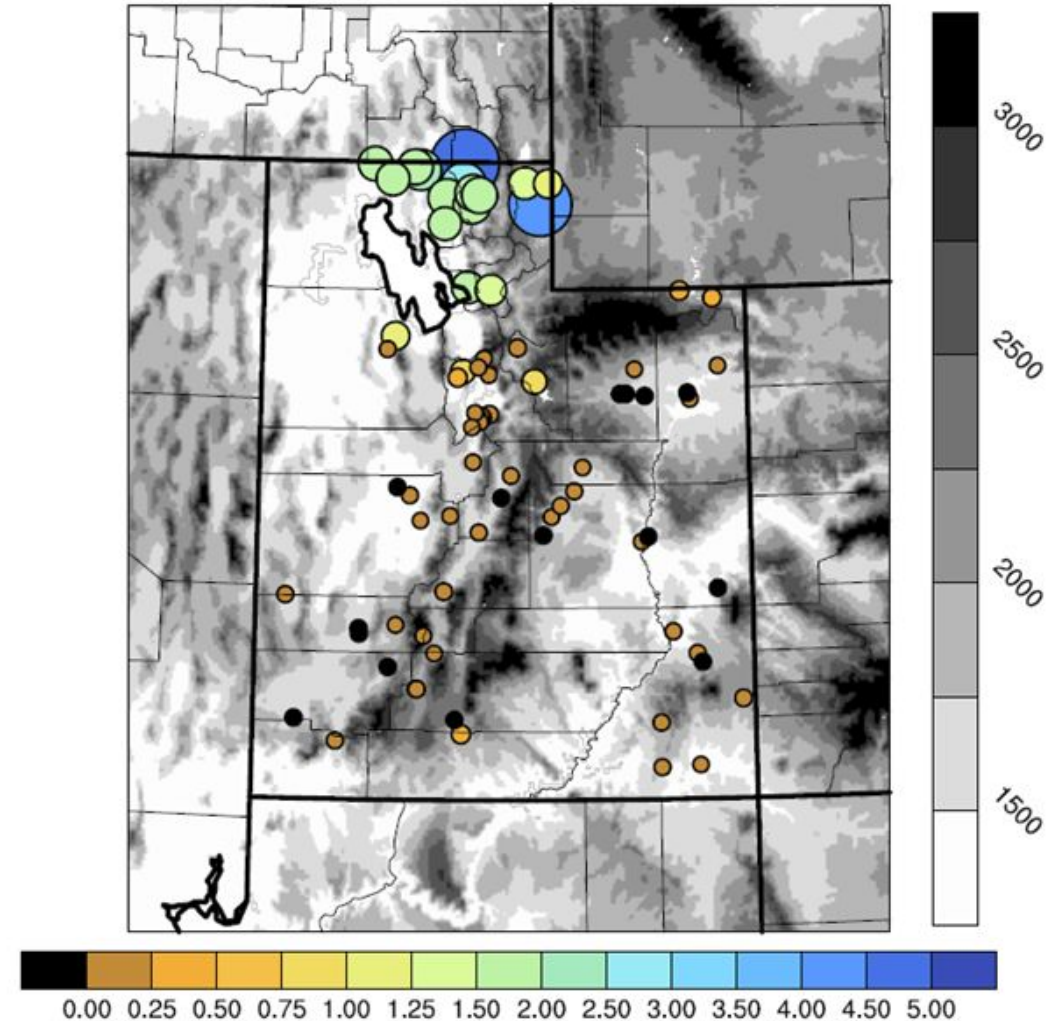


# Surface station Observations: 30 day

CoCoRaHS Total Liquid Precip:  
06132020 to 07132020

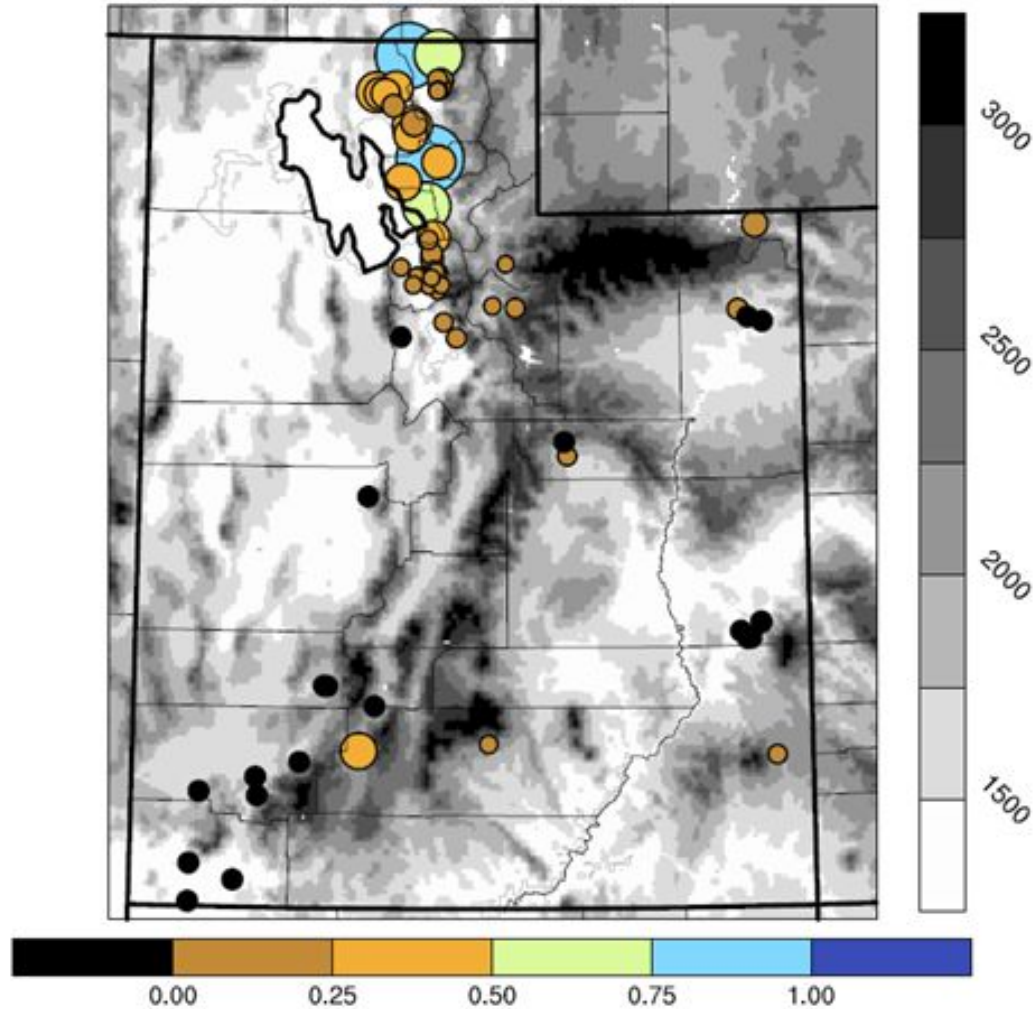


UCC Stations: Total Liquid Precip:  
2020-6-13 to 2020-7-13

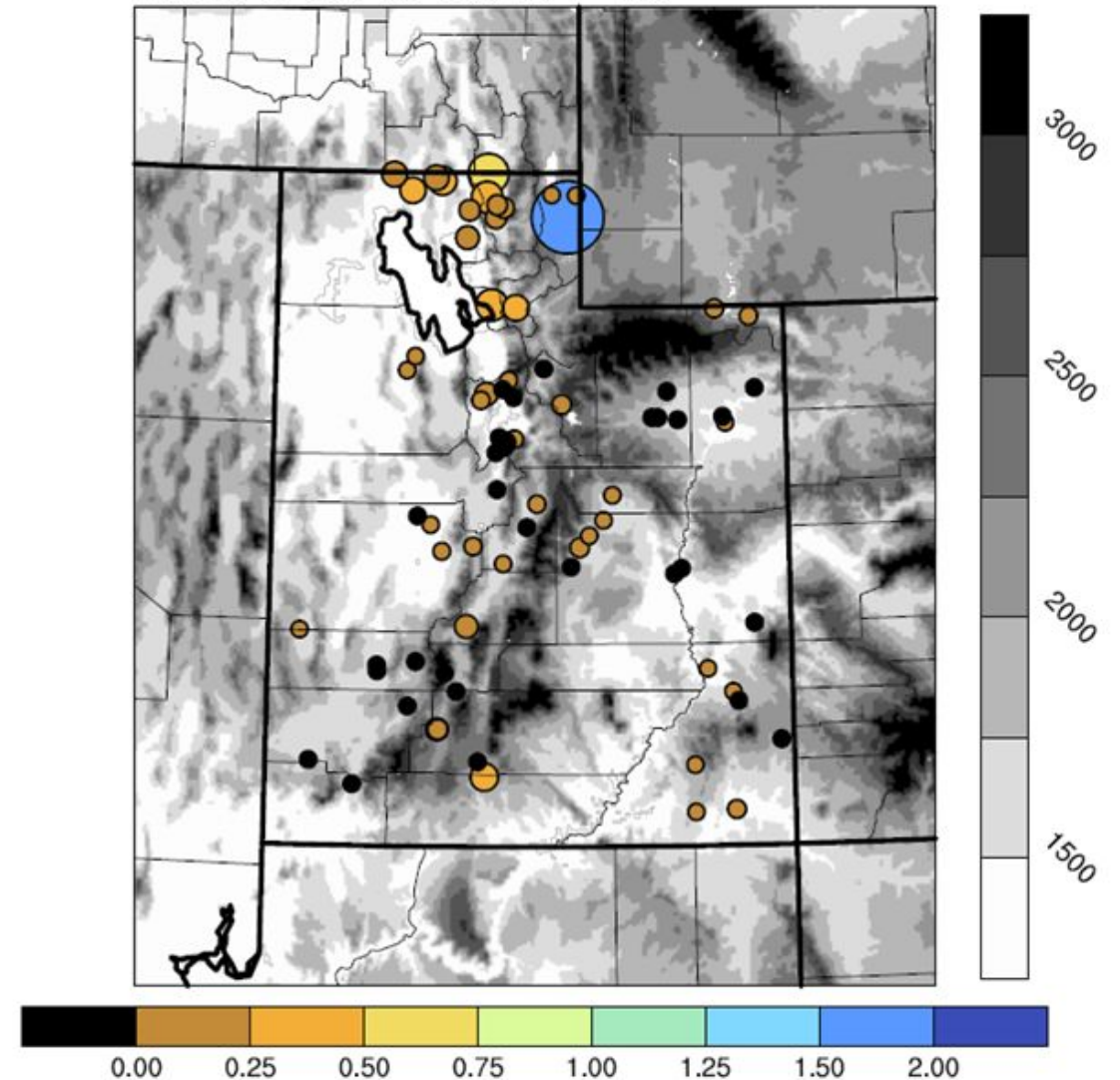


# Surface station Observations: 14 day

CoCoRaHS Total Liquid Precip:  
06302020 to 07132020



UCC Stations: Total Liquid Precip:  
2020-6-30 to 2020-7-13





# Incorporating Drought Indices

## What is SPI?

**Standardized Precipitation Index** quantifies observed precipitation as a standard departure from a select probability distribution with the resulting value comparable to a standard deviation from normal.

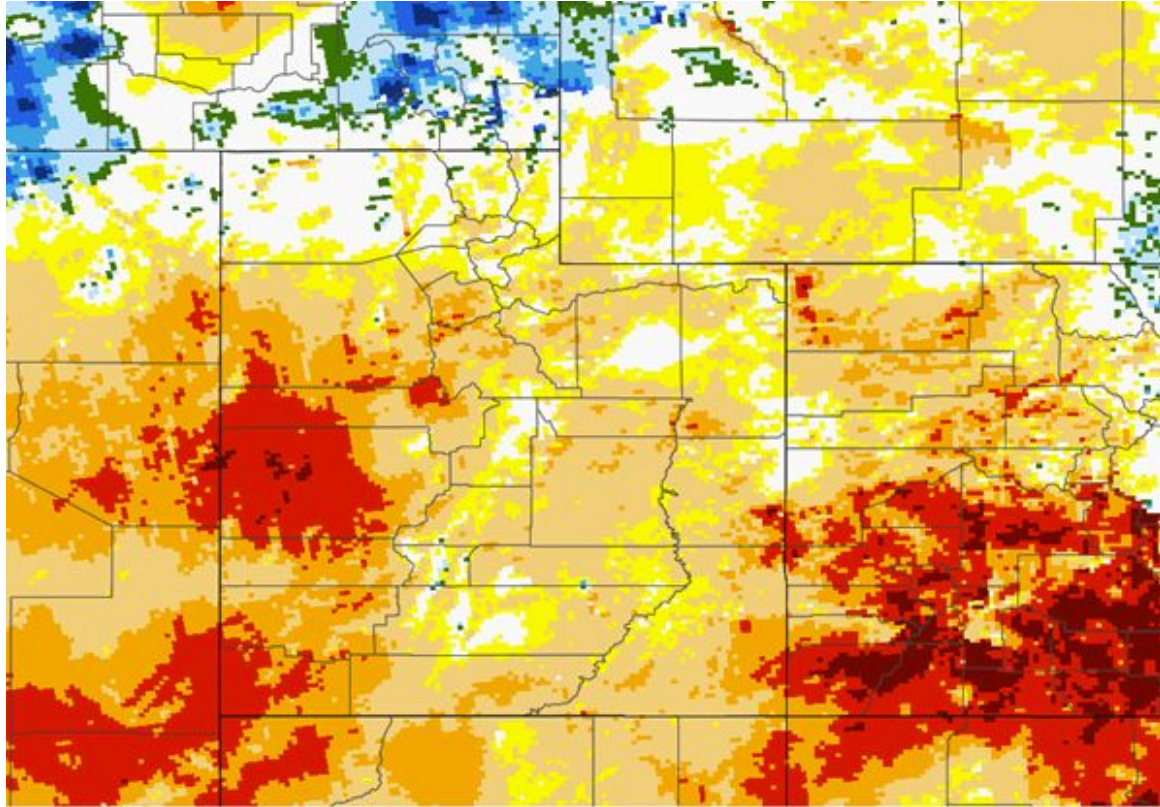
### Advantages:

- ❑ On short timescales, the SPI is closely related to soil moisture, while at longer timescales, the SPI can be related to groundwater and reservoir storage.
- ❑ Allows comparison across climatically-unique regions.

### Limitations:

- ❑ SPI does not account for evapotranspiration, so complementary drought metrics should be combined with SPI for a more well-rounded picture of drought conditions.
- ❑ Does not consider the intensity of precipitation and its potential impacts on runoff, streamflow, and water availability within the system of interest

# 90-day SPI

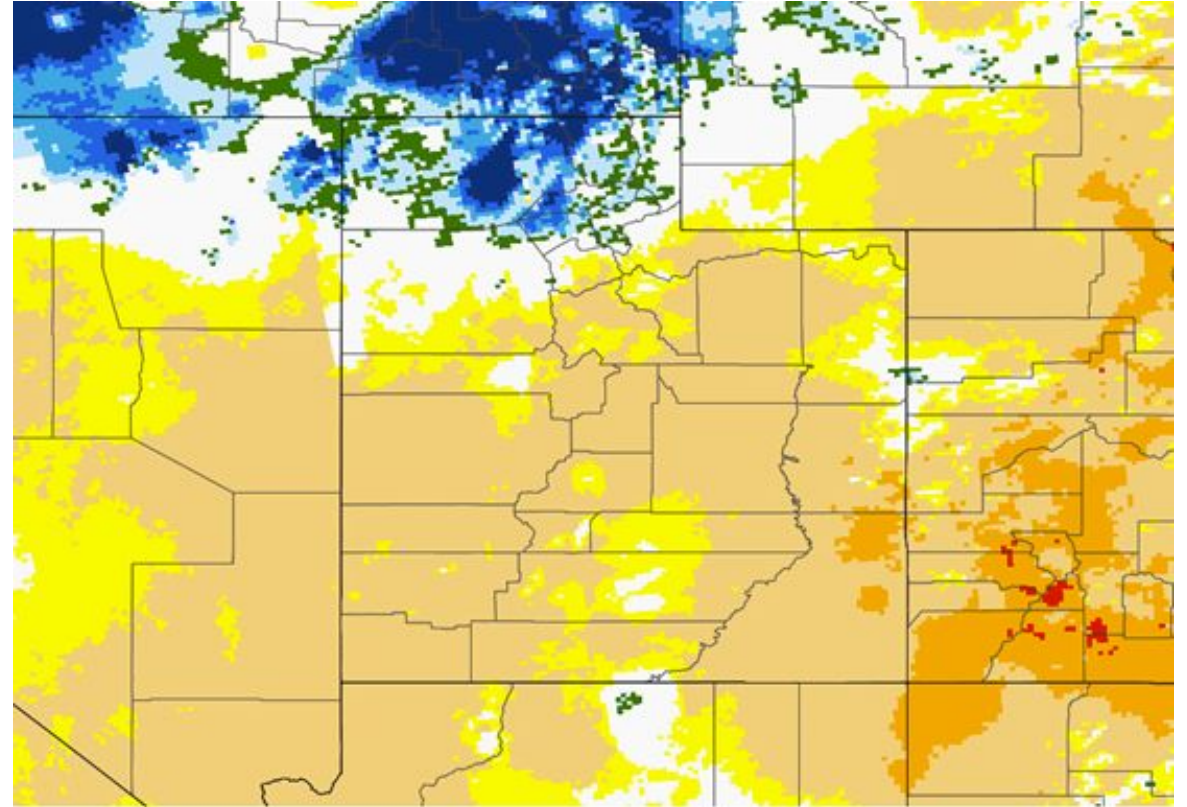


Jul 13, 2020

90-day SPI

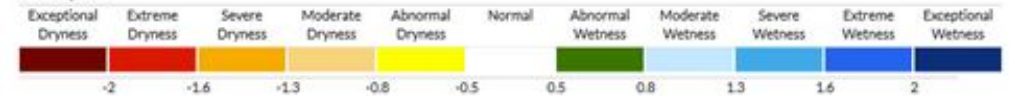


# 30-day SPI



Jul 13, 2020

30-day SPI





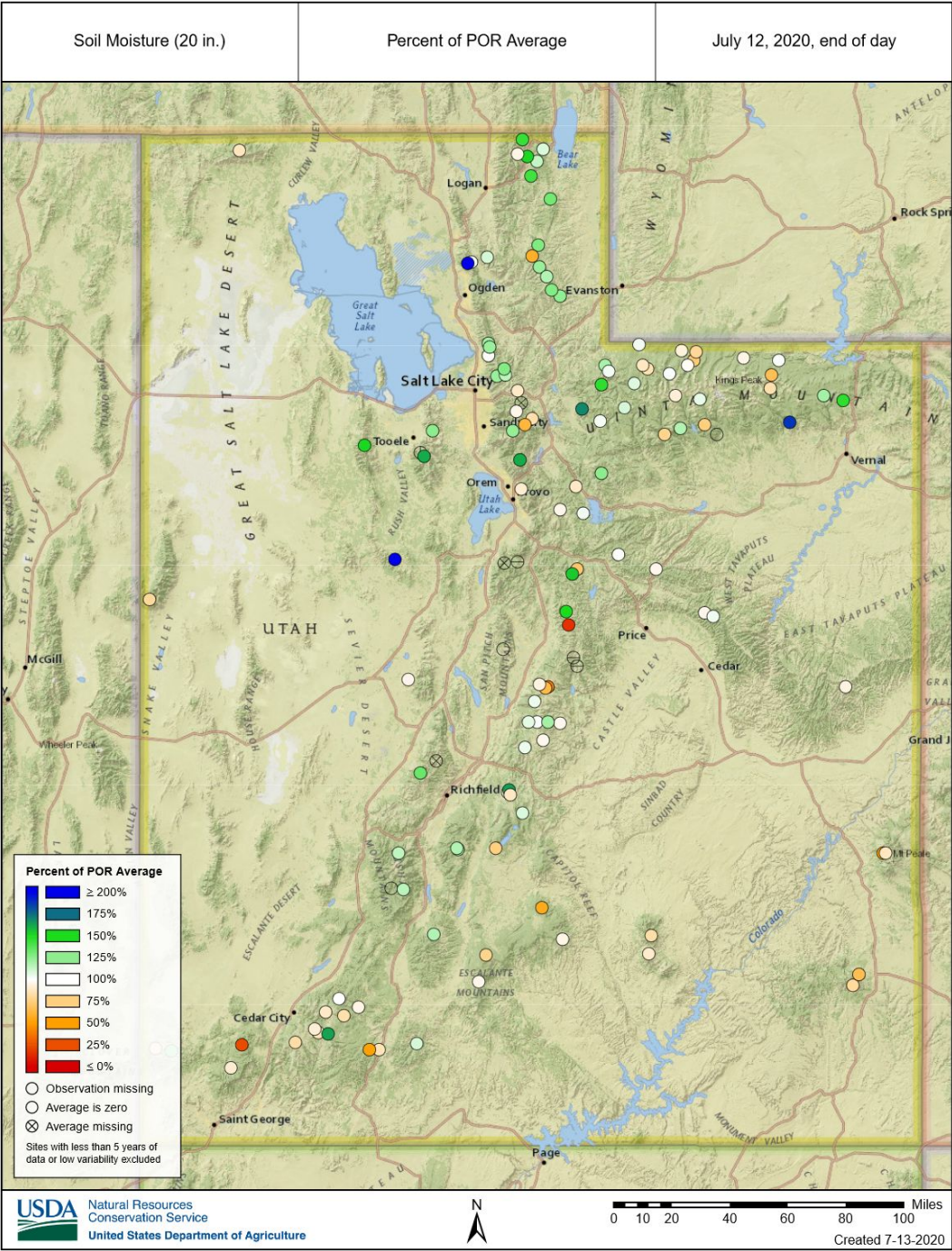
# Soil Moisture (Current)

## Mountain locations

### (SNOTEL)

#### 20" depth sensor

Agency - NRCS Snow Survey  
Presenter - Jordan Clayton

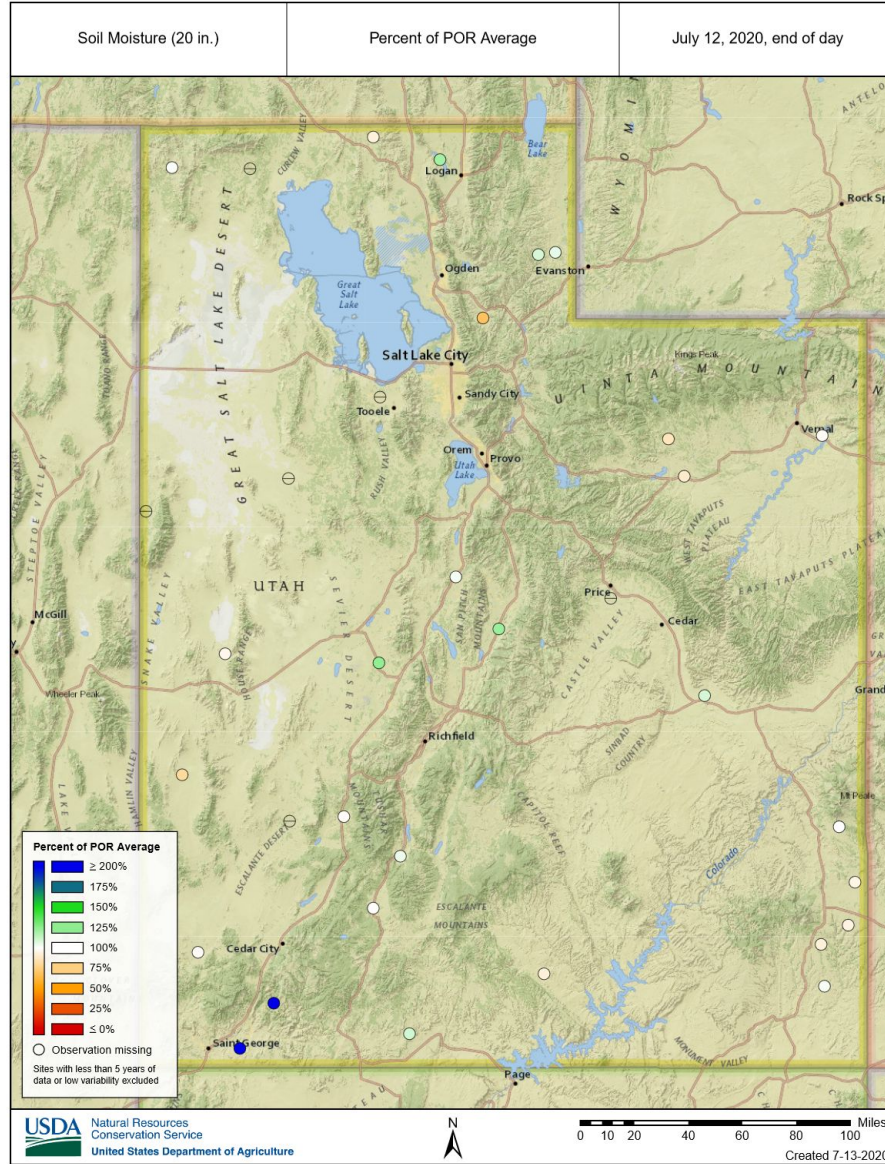





# Soil Moisture (Current)

## Valley locations (SCAN)

### 20" depth sensor



Agency - NRCS Snow Survey  
Presenter - Jordan Clayton

<b>Site name</b>	<b>Weekly Precip<sup>3</sup></b>	<b>Total Current Precip<sup>1</sup></b>	<b>% of Normal Precip<sup>2</sup></b>	<b>Soil Moisture</b>				
				<b>2"</b>	<b>4"</b>	<b>8"</b>	<b>20"</b>	<b>40"</b>
				<i>volume %</i>				
<b>WESTERN</b>								
Grouse Creek	0.00	9.8	94	3	10	14	18	17
Park Valley	0.00	7.0	82	4	4	7	na	na
Goshute	0.00	5.2	62	na	na	na	na	na
Dugway	0.00	3.6	56	na	na	na	na	na
Tule Valley	0.00	2.6	43	7	9	9	14	12
Hal's Canyon	0.00	3.3	75	3	0	4	7	5
Enterprise	0.00	7.3	92	6	19	21	14	15
<b>DIXIE</b>								
Sand Hollow	0.00	10.2	132	1	1	1	2	0
<b>NORTH CENTRAL</b>								
Blue Creek	0.00	8.7	79	14	17	18	23	22
Cache Junction	0.00	12.7	81	30	32	44	39	40
Grantsville	0.00	6.6	70	2	na	na	na	na
<b>SOUTH CENTRAL</b>								
Nephi	0.00	6.0	60	9	9	15	9	9
Ephraim	0.00	7.3	95	5	19	23	26	26
Holden	0.02	5.6	76	5	6	13	16	14
Milford	0.00	6.1	92	7	15	12	na	nd
Manderfield	0.00	6.9	78	1	5	16	12	13
Circleville	0.00	5.5	103	3	7	7	11	15
Panguitch	0.00	6.4	106	4	16	12	20	26
Cave Valley	0.00	17.0	109	0	2	1	2	1
Vermillion	0.00	10.1	95	0	1	3	5	9
Spooky	0.00	5.4	96	2	1	3	7	8
<b>NORTHERN MOUNTAINS</b>								
Chicken Ridge	0.00	8.2	80	5	8	10	17	15
Buffalo Jump	0.00	7.7	83	8	12	10	11	bd
Morgan	0.00	12.3	82	21	22	15	13	16
<b>UTAH BASIN</b>								
Mountain Home	0.00	6.2	80	2	13	15	12	14
Little Red Fox	0.00	5.1	82	4	14	19	23	19
Split Mountain	0.00	5.3	86	3	17	14	15	11
<b>SOUTHEAST</b>								
Price	0.01	6.5	107	1	9	17	na	13
Green River	0.00	4.3	98	11	11	12	7	5
Hamm's Way	0.00	6.2	81	4	12	14	15	8
West Summit	0.00	4.9	83	6	11	15	17	19
Eastland	0.00	5.7	79	7	10	12	23	21
Alkali Mesa	0.00	5.7	68	3	3	15	18	17
McCracken Mesa	0.00	5.6	87	7	11	15	19	16

<sup>1</sup>From: 10/1/2018 to present    <sup>2</sup>Percent of avg accumulation, water year to date

<sup>3</sup>Precip. accumulation over previous 7-day period, scaled by max accumulation

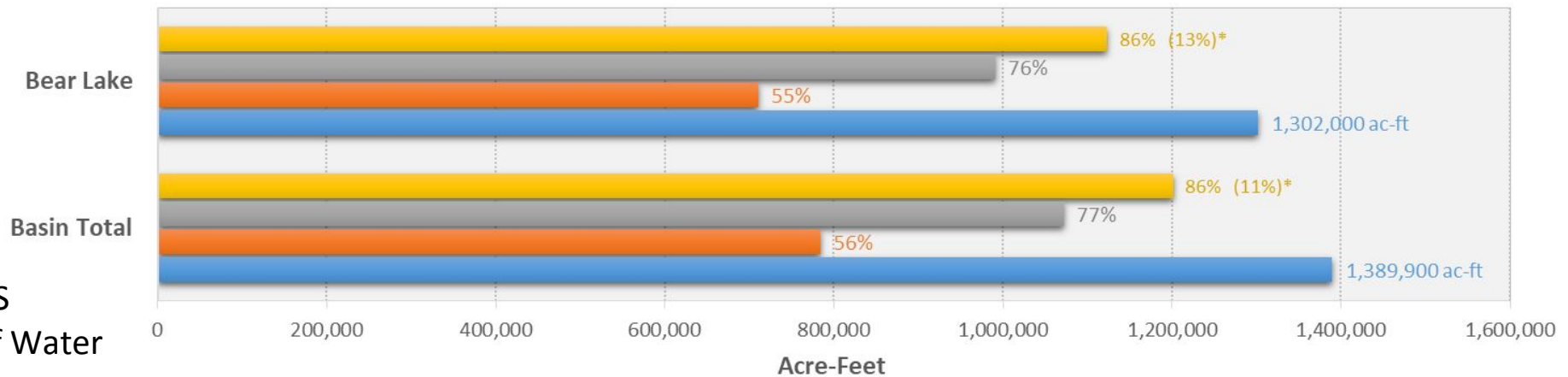
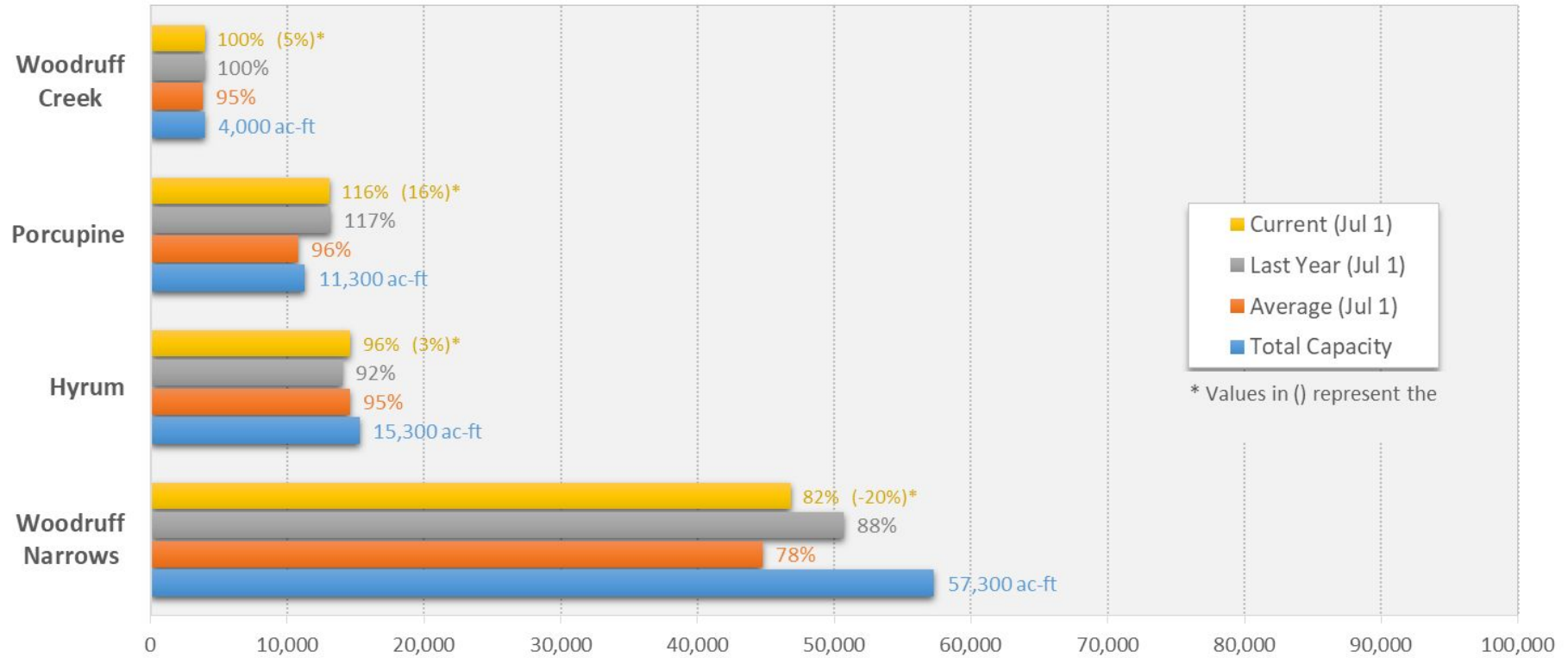
\*\*plant avail. water in the top 40" of soil                                      nd = missing data

\*total plant available soil water (to 40"), scaled from 0 to 100%        bd = bedrock

**What the colors mean:**  
 = below wilting point (WP); too dry  
 = between WP & FC; ideal  
 = above field capacity (FC)

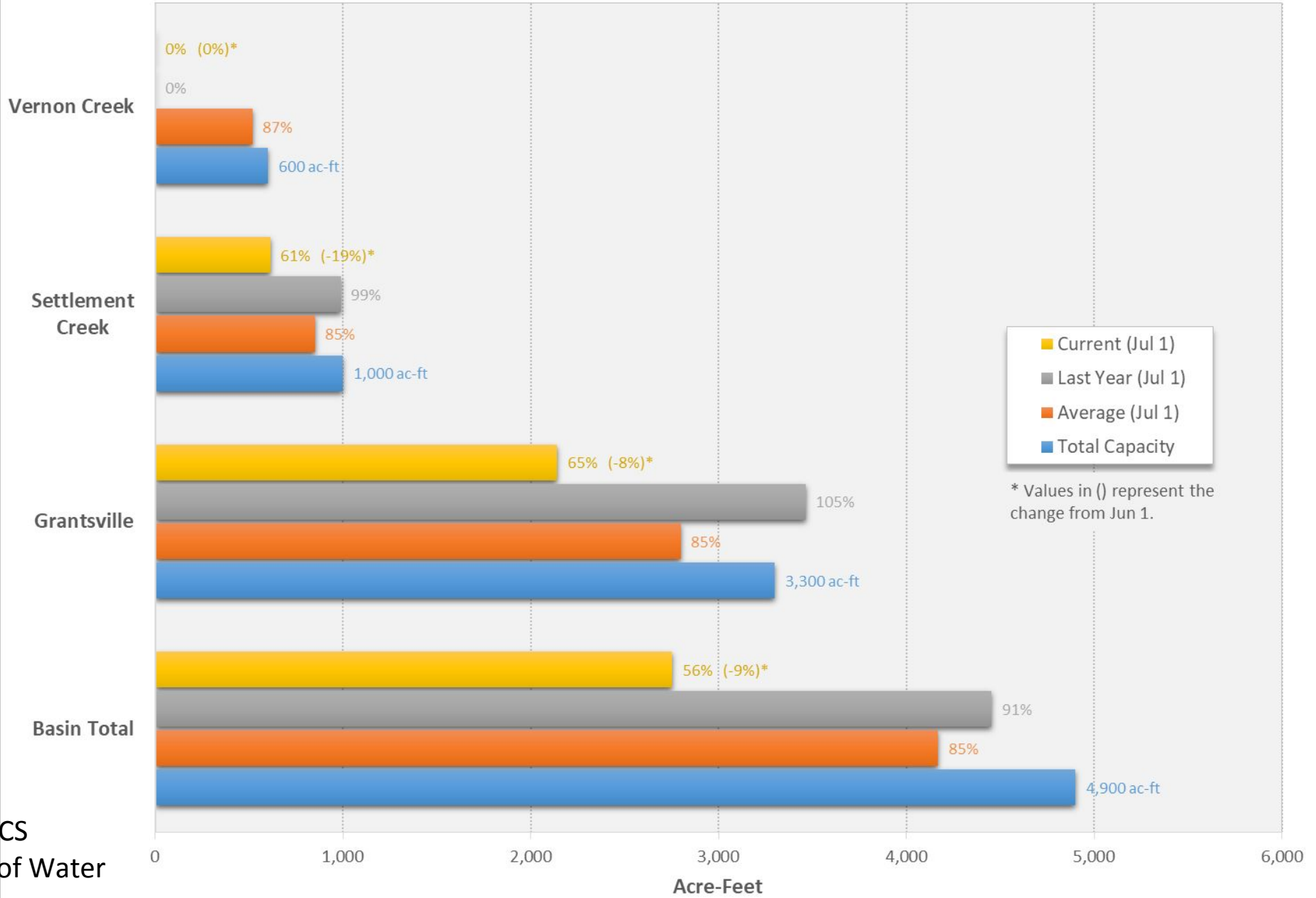


## Bear River Basin Reservoir Storage (Jul 1)

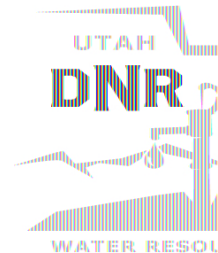


Data Collected by NRCS  
Compiled by Division of Water  
Resources

# West Desert Basin Reservoir Storage (Jul 1)

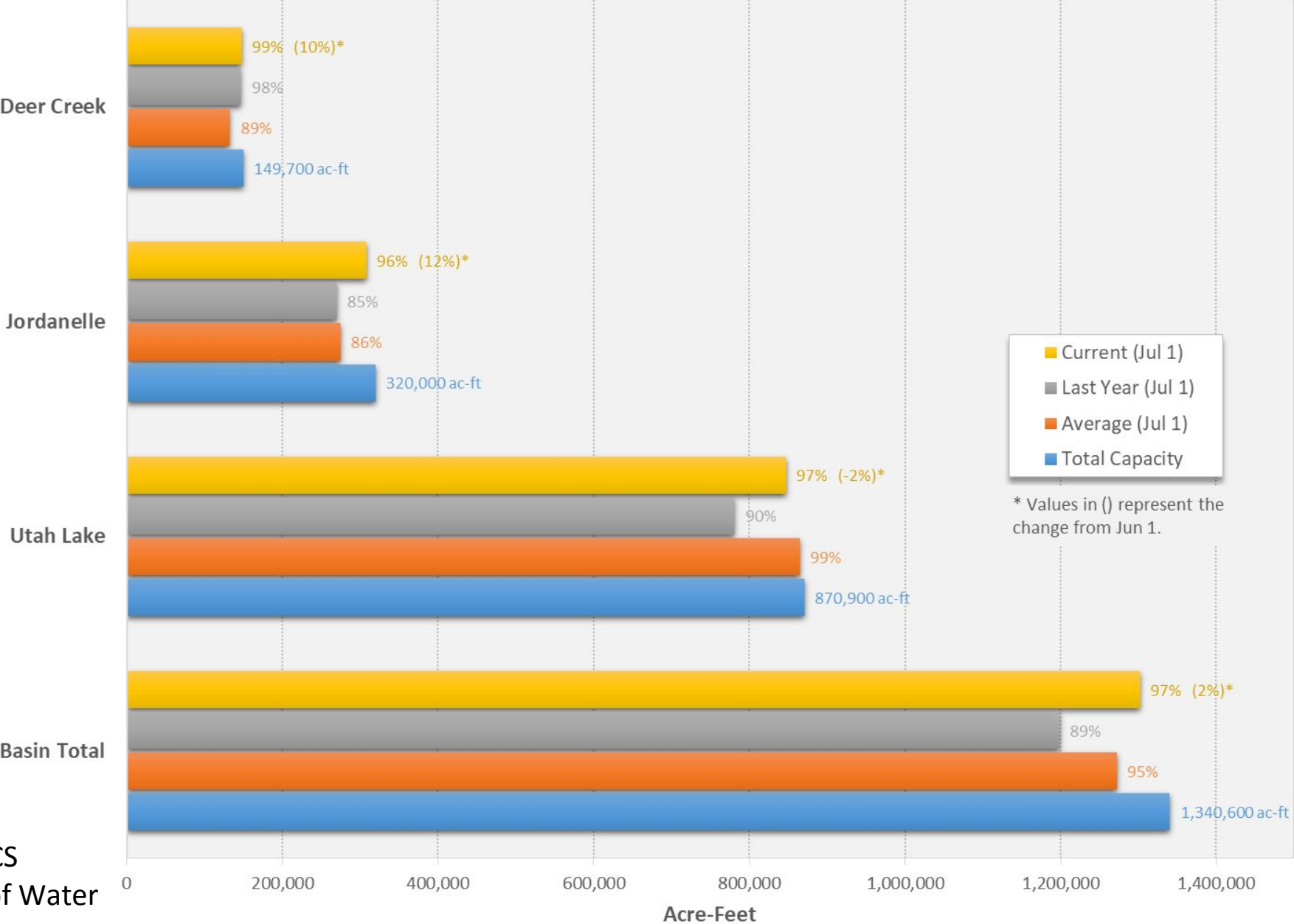


Data Collected by NRCS  
Compiled by Division of Water Resources





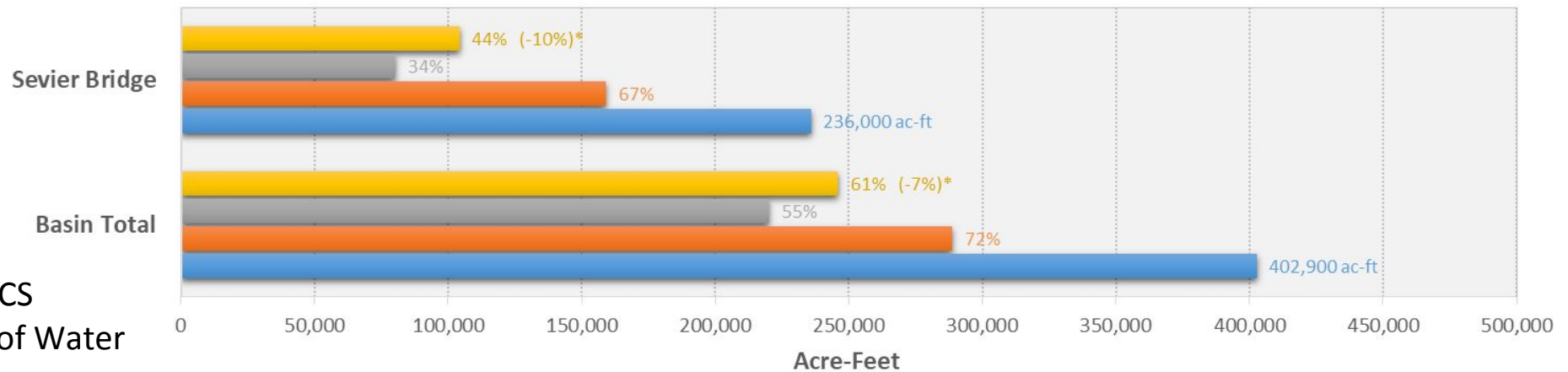
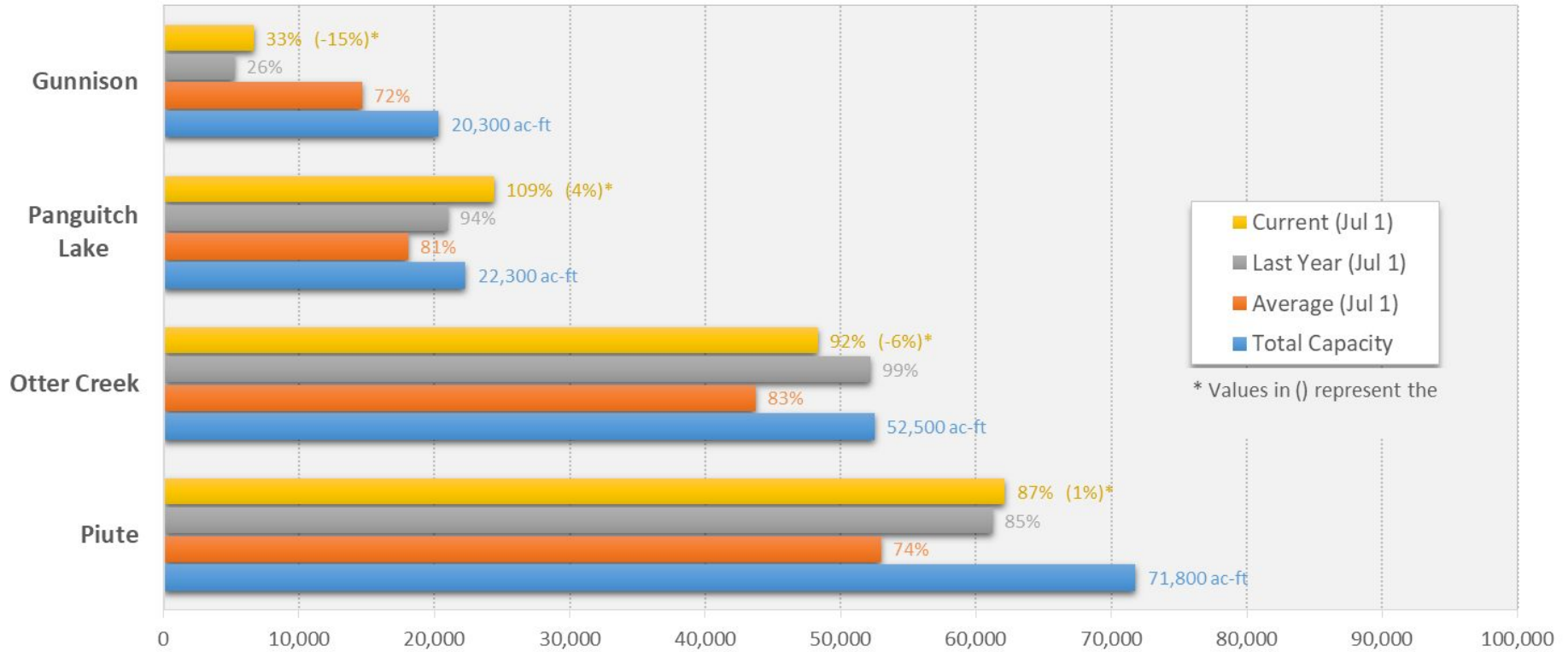
Utah Lake Basin Reservoir Storage (Jul 1)



Data Collected by NRCS  
Compiled by Division of Water  
Resources



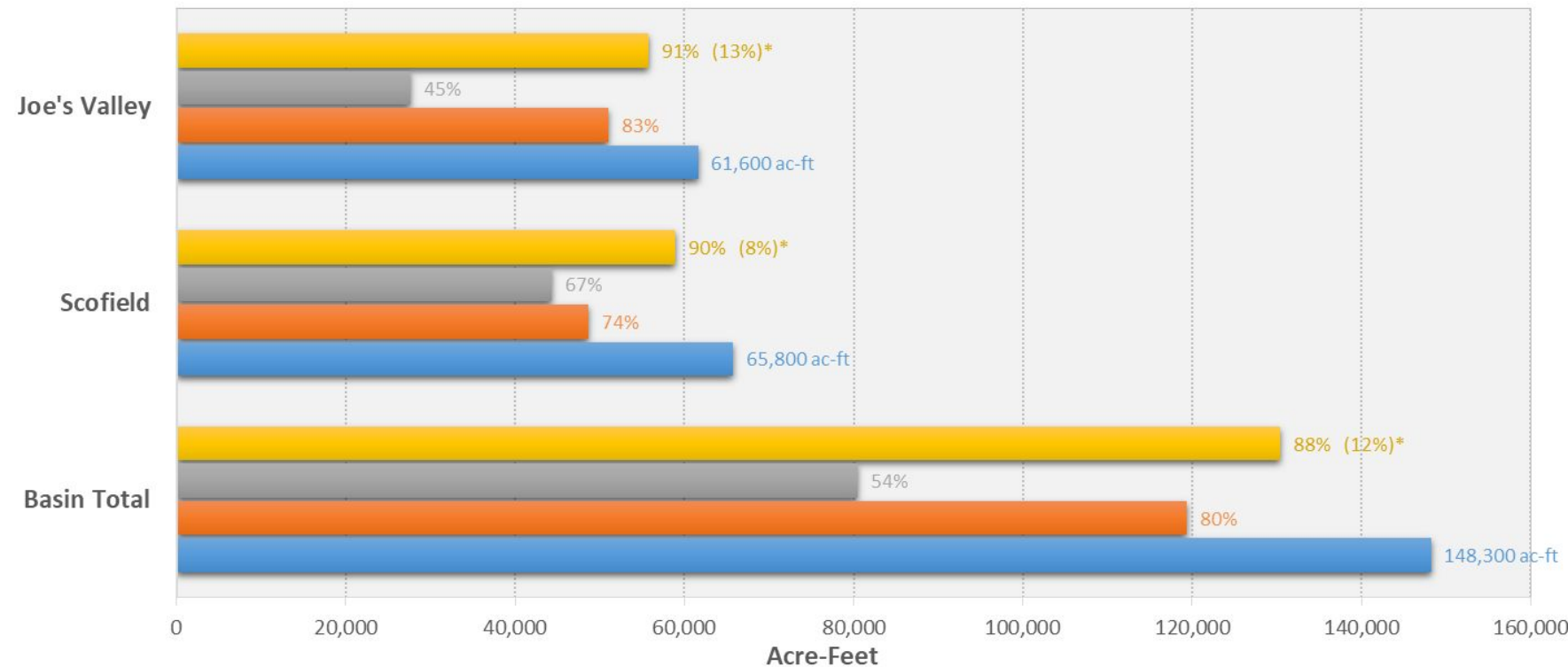
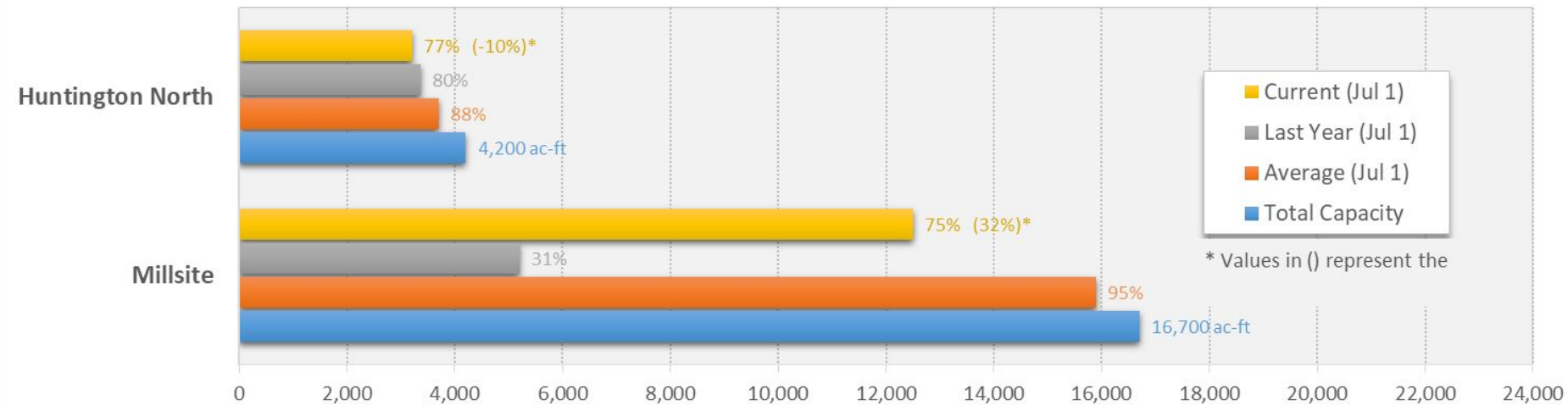
## Sevier River Basin Reservoir Storage (Jul 1)



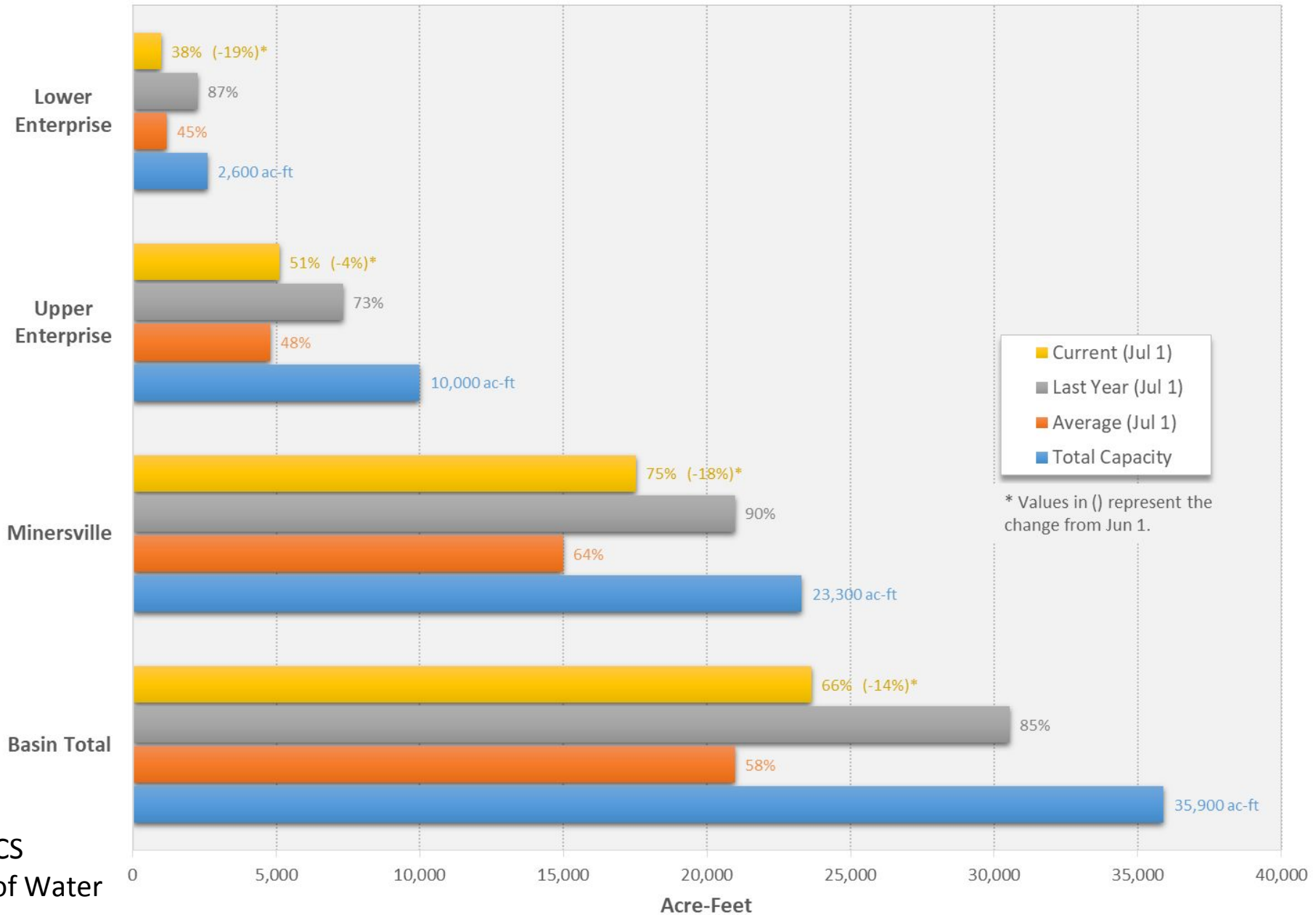
Data Collected by NRCS  
Compiled by Division of Water  
Resources



West Colorado Basin Reservoir Storage (Jul 1)



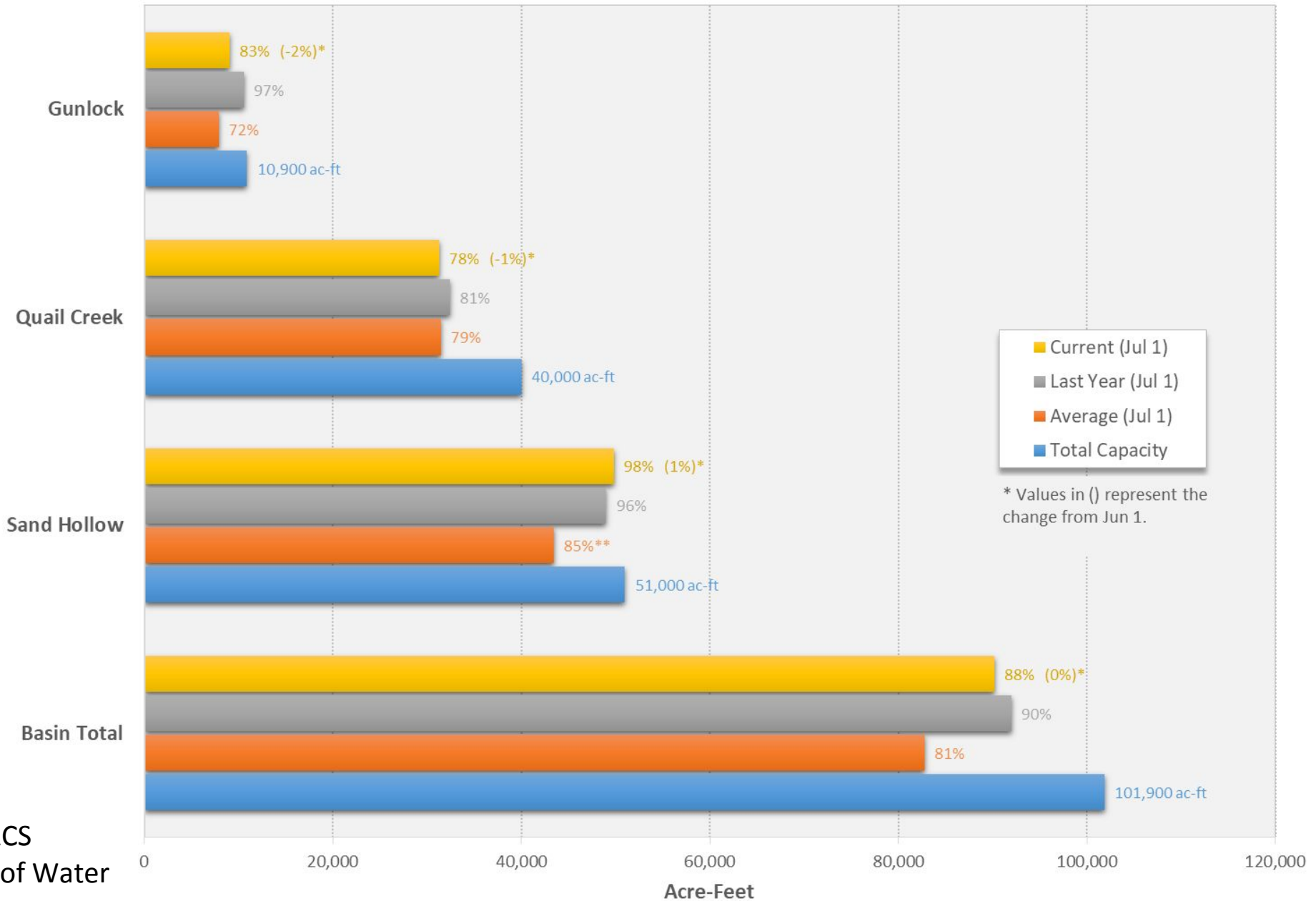
## Cedar/Beaver Basin Reservoir Storage (Jul 1)



Data Collected by NRCS  
Compiled by Division of Water  
Resources



## Virgin River Basin Reservoir Storage (Jul 1)



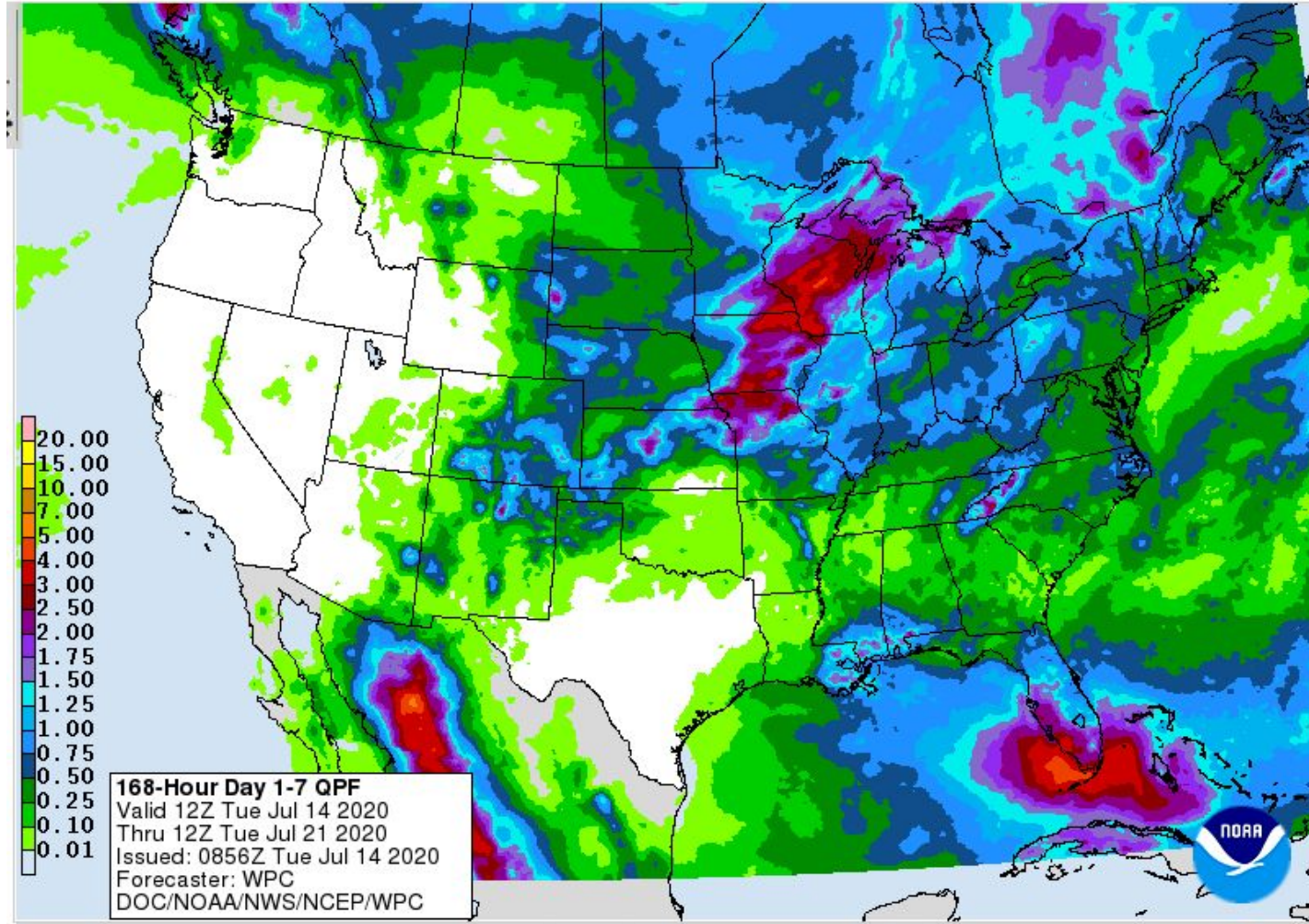
Data Collected by NRCS  
Compiled by Division of Water  
Resources

# Weather Forecast Office Utah Day 1-7 Outlook

Quantitative Precipitation Forecasts [Legacy Page:](#)

Valid 12Z 07/14/2020 - 12Z 07/21/2020

Day 1 Day 2 Day 3 Day 4 Day 5 Day 6 Day 7 | Total: Day 1-2 Day 1-3 Day 1-5 Day 1-7



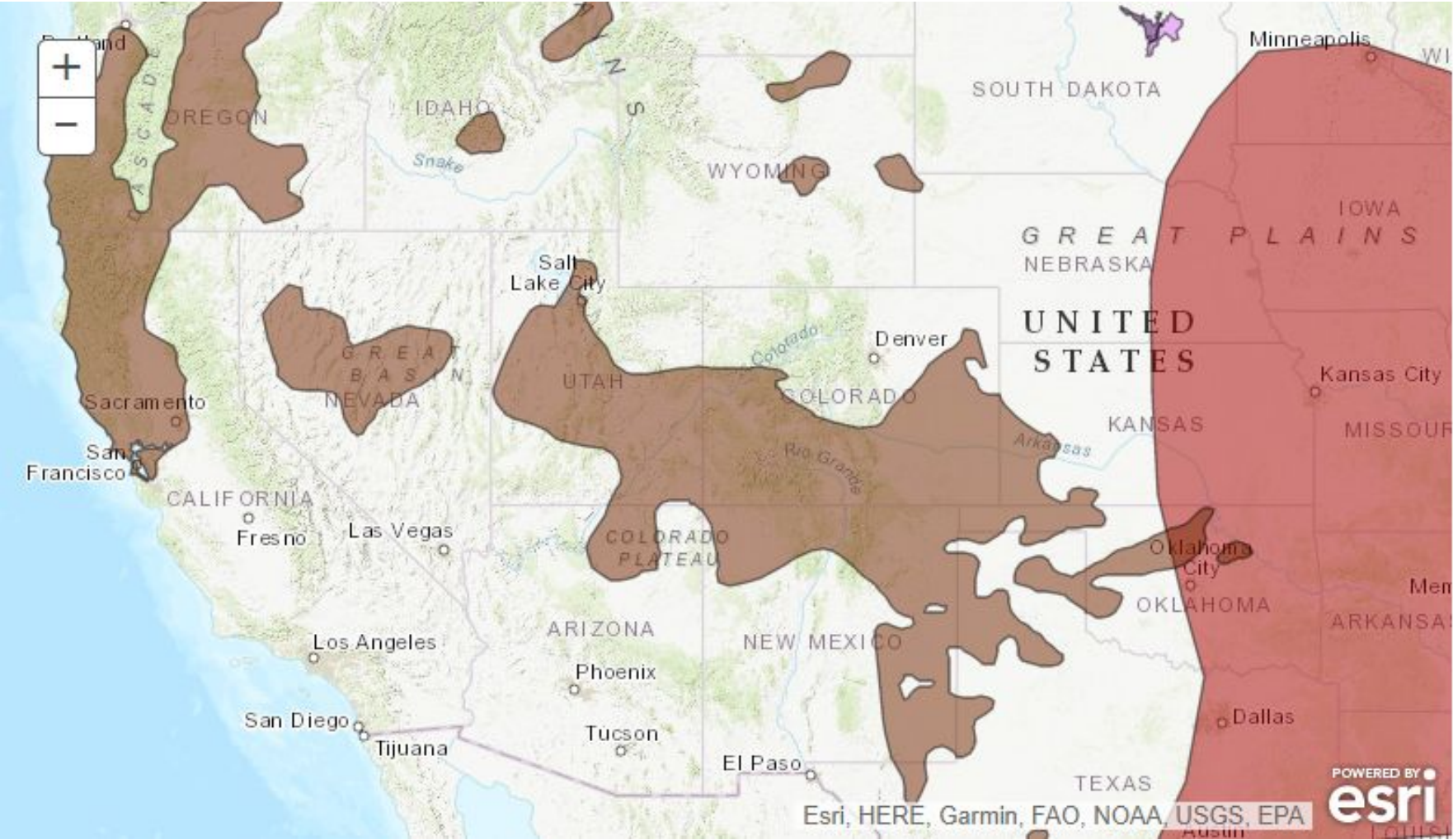
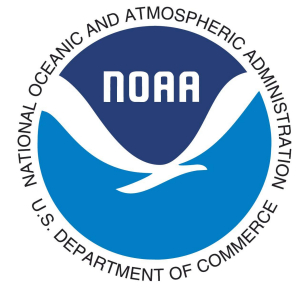
- Slight increase in moisture expected over the next 7 days with mountain storms expected.
- Total QPF values remain low with less than 0.10" forecast through this period.
- Any shift of the upper level ridge over Texas could allow the developing monsoonal moisture to shift westward across Utah.
- Focus for now, remains south and east of the state.

Agency - National Weather Service Weather Forecast Office

Presenter - Jeff Colton (GJT)



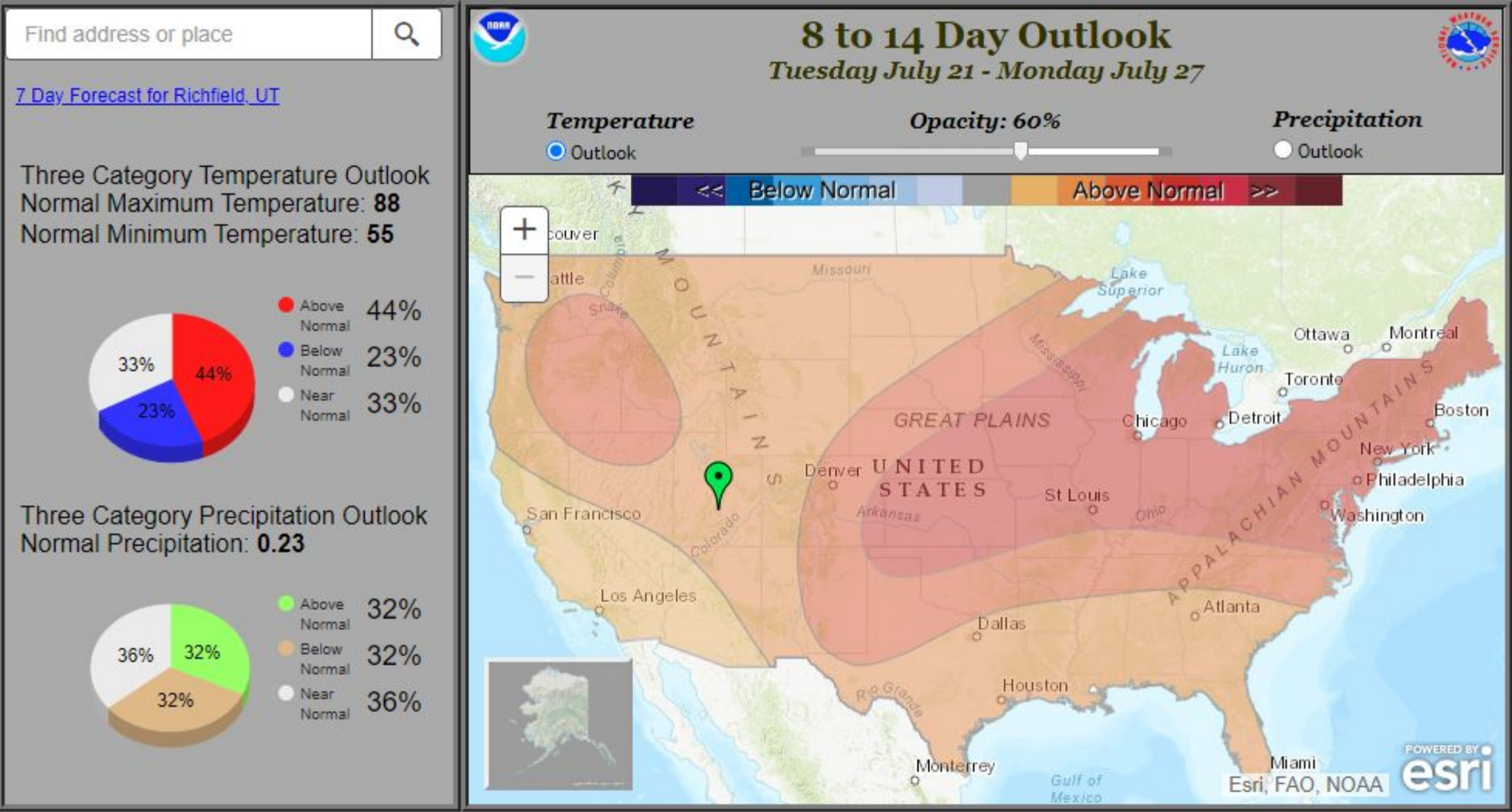
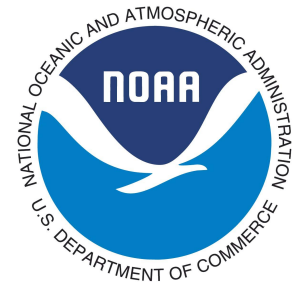
# Weather Prediction Center U.S. Day 3-7 Hazards Outlook



- Severe Drought conditions are forecast to persist

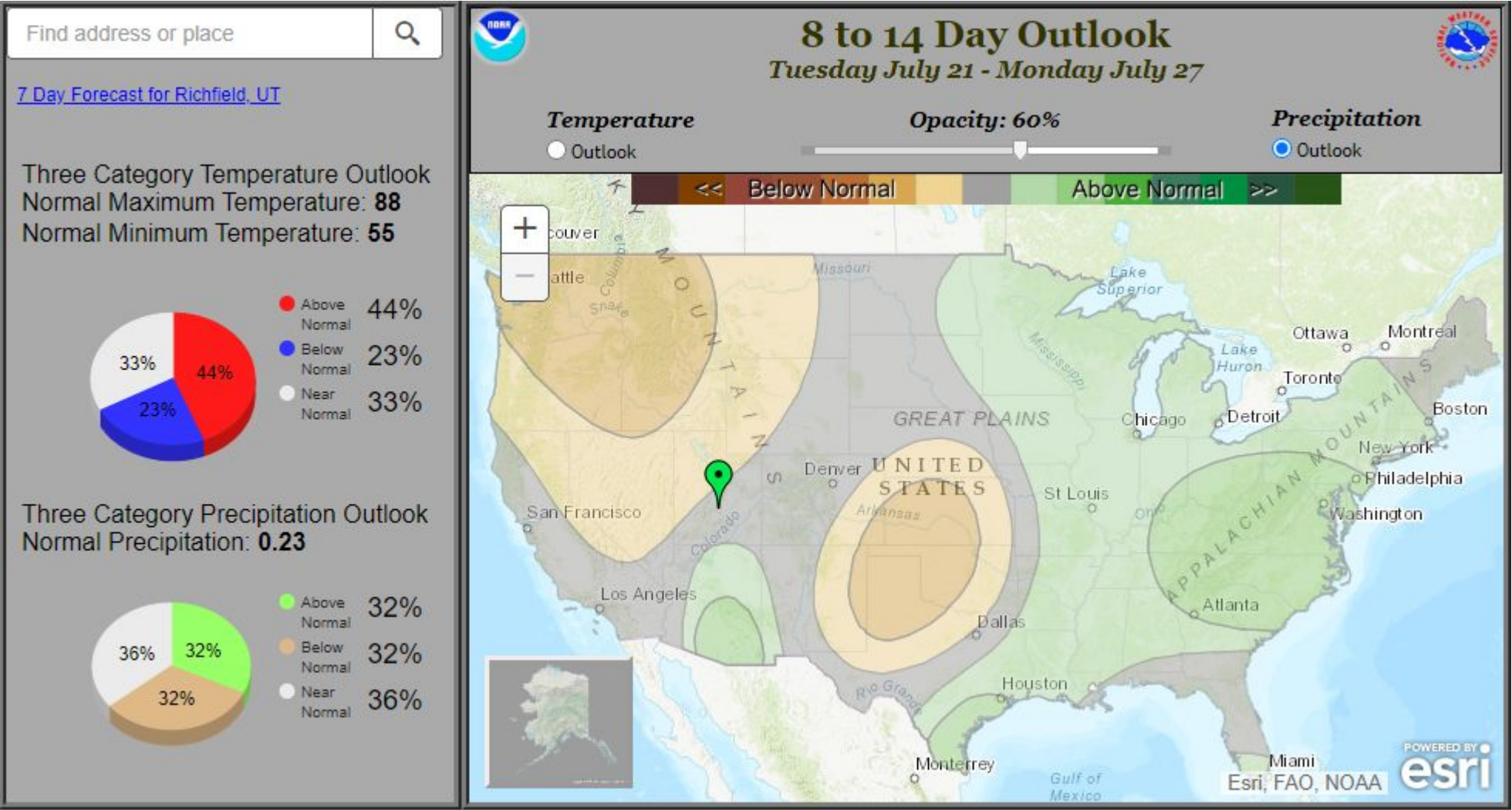
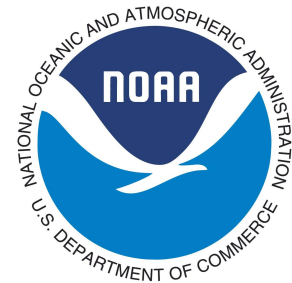
Legend	
Flooding Likely	Excessive Heat
Flooding Occurring or Imminent	High Winds
Flooding Possible	Much Above Normal Temperatures
Freezing Rain	Much Below Normal Temperatures
Heavy Ice	Significant Waves
Heavy Precipitation	Enhanced Wildfire Risk
Heavy Rain	Severe Drought
Heavy Snow	
Severe Weather	

# Climate Prediction Center 8 to 14 Day Outlooks - Temperature



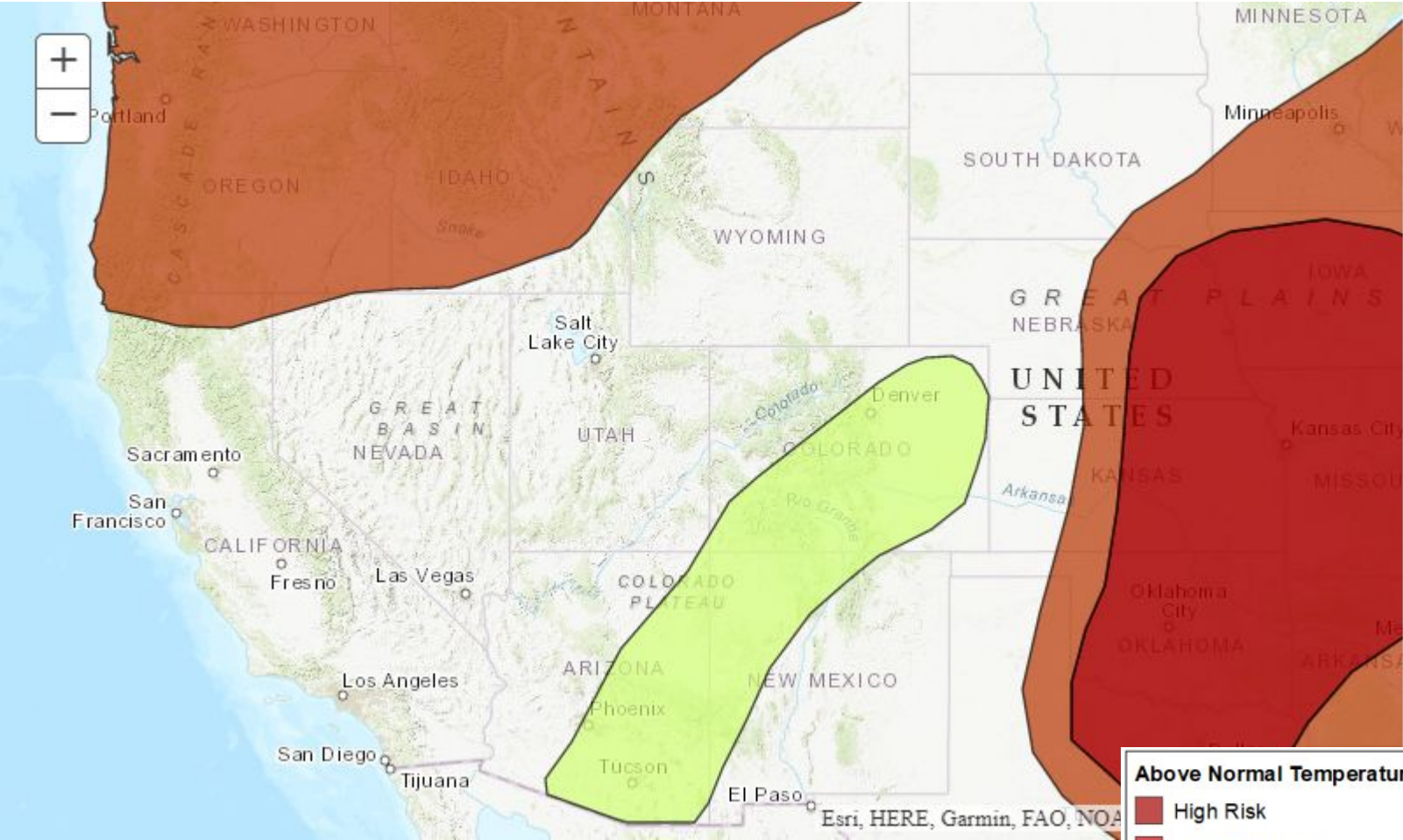
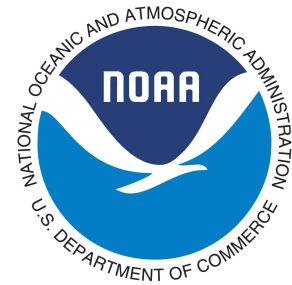


# Climate Prediction Center 8 to 14 Day Outlooks - Precipitation



- Odds favor below normal precipitation across northwest Utah
- No strong signal across the remainder of the state.
- Random point near Richfield, UT selected.
  - 36% chance that precipitation will be near normal at that location.
- Notice above normal push moving north across Arizona.

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

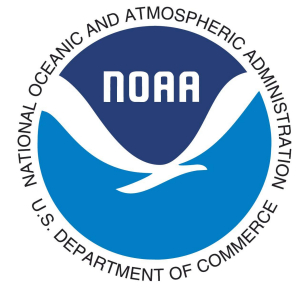


- Slight risk of heavy precipitation approaching southeast Utah.
  - Moisture plume (Monsoonal origin) bends eastward across Colorado
- Slight risk for Excessive Heat to our northwest.

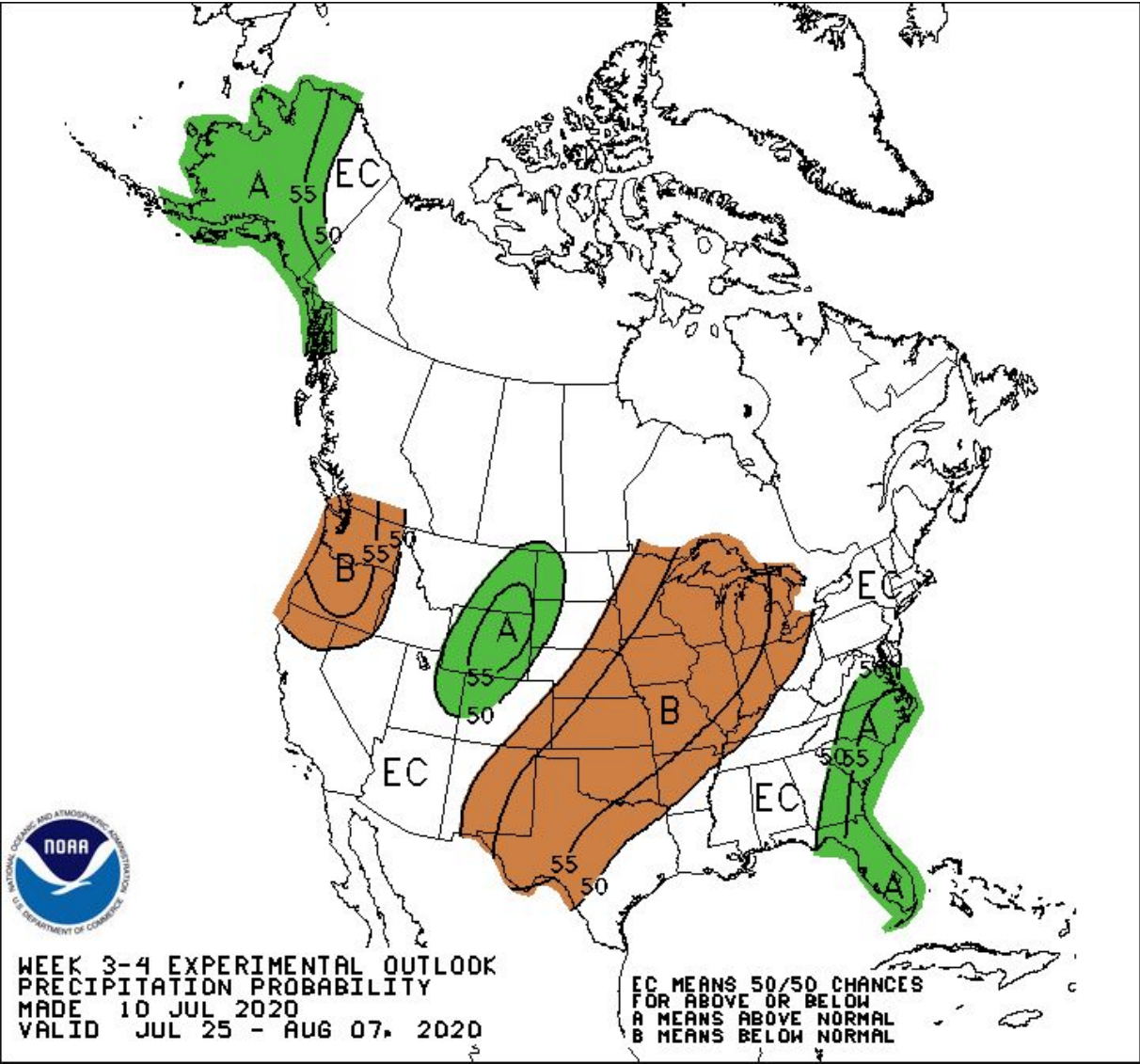
Above Normal Temperatures	Excessive Heat	Heavy Precipitation	Composite
<span style="color: #800000;">■</span> High Risk	<span style="color: #800000;">■</span> High Risk	<span style="color: #008000;">■</span> High Risk	<span style="color: #D3D3D3;">■</span> Flooding Possible
<span style="color: #FF0000;">■</span> Moderate Risk	<span style="color: #800000;">■</span> Moderate Risk	<span style="color: #90EE90;">■</span> Moderate Risk	<span style="color: #ADD8E6;">■</span> Frozen Precipitation
<span style="color: #FFB6C1;">■</span> Slight Risk	<span style="color: #FFA500;">■</span> Slight Risk	<span style="color: #90EE90;">■</span> Slight Risk	<span style="color: #FFD700;">■</span> Severe Weather
Below Normal Temperatures	High Winds	Heavy Snow	
<span style="color: #000080;">■</span> High Risk	<span style="color: #800000;">■</span> Moderate Risk	<span style="color: #800080;">■</span> High Risk	
<span style="color: #0000FF;">■</span> Moderate Risk	<span style="color: #D2B48C;">■</span> Slight Risk	<span style="color: #FF69B4;">■</span> Moderate Risk	
<span style="color: #ADD8E6;">■</span> Slight Risk		<span style="color: #8A2BE2;">■</span> Slight Risk	



# Climate Prediction Center 3 to 4 Week Outlook - Precipitation

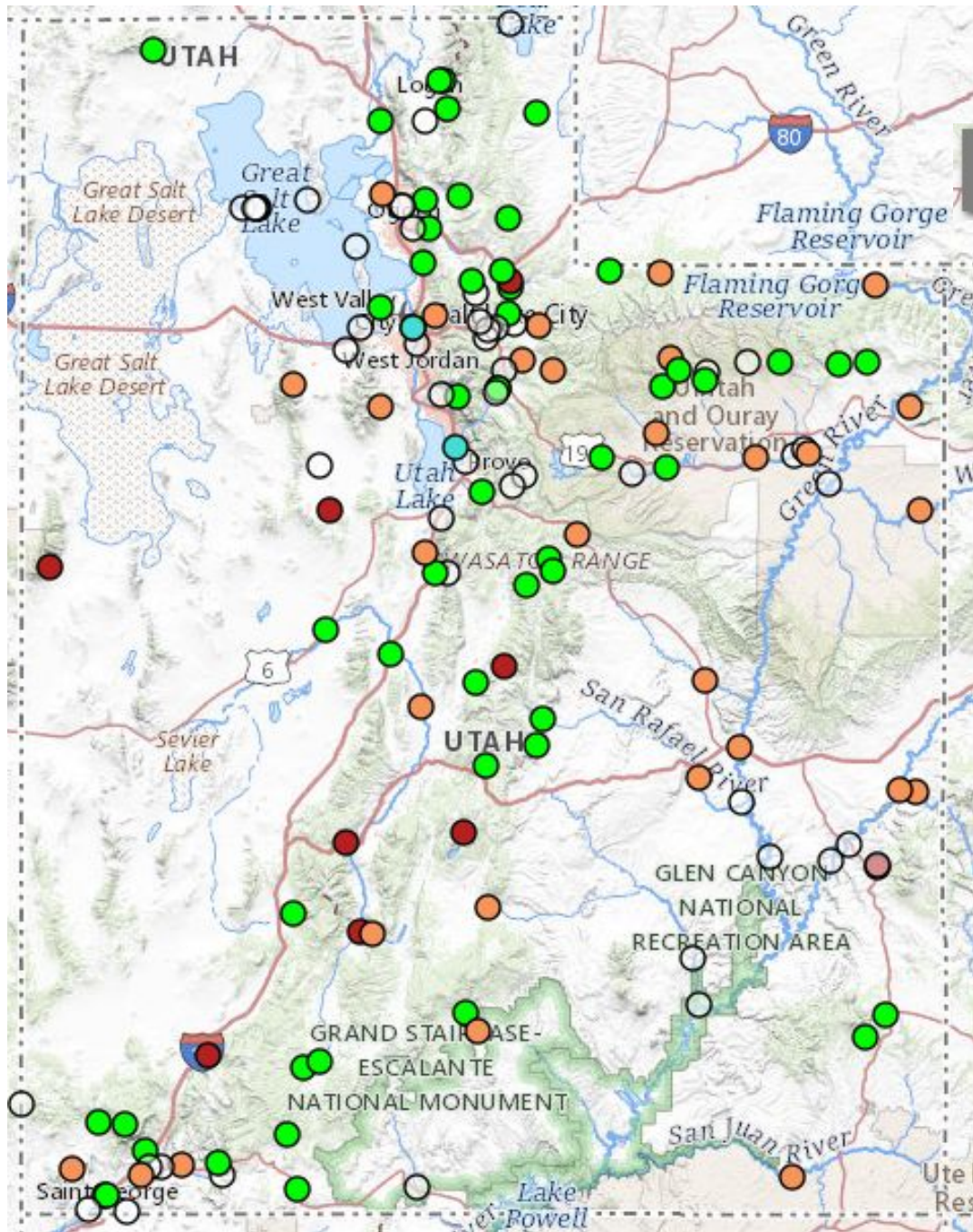


- Experimental 3-4 week outlook from the Climate Prediction Center.
- Odds favoring near to slightly above normal precipitation across the state
  - Best odds across northeast Utah.

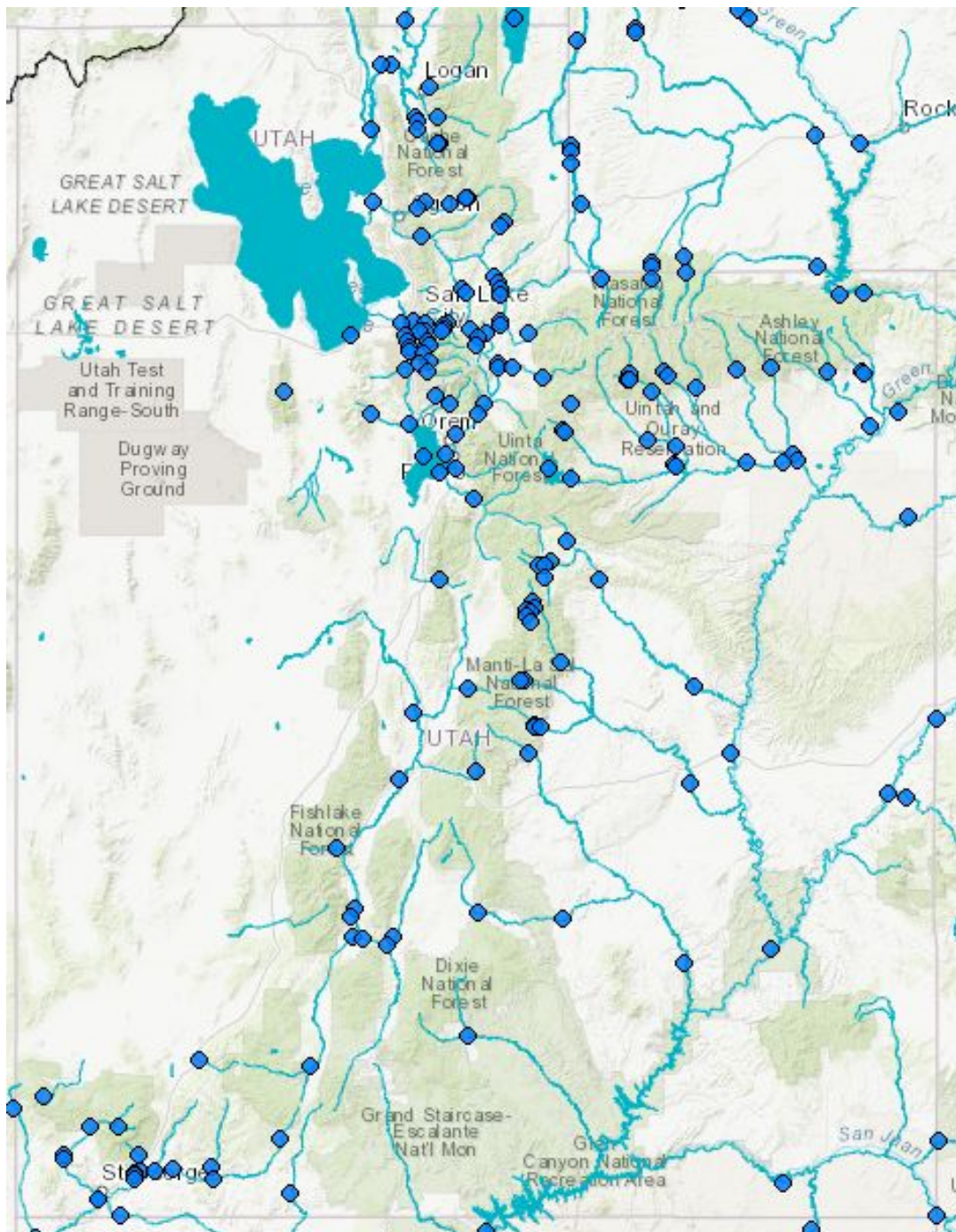




# USGS Gages



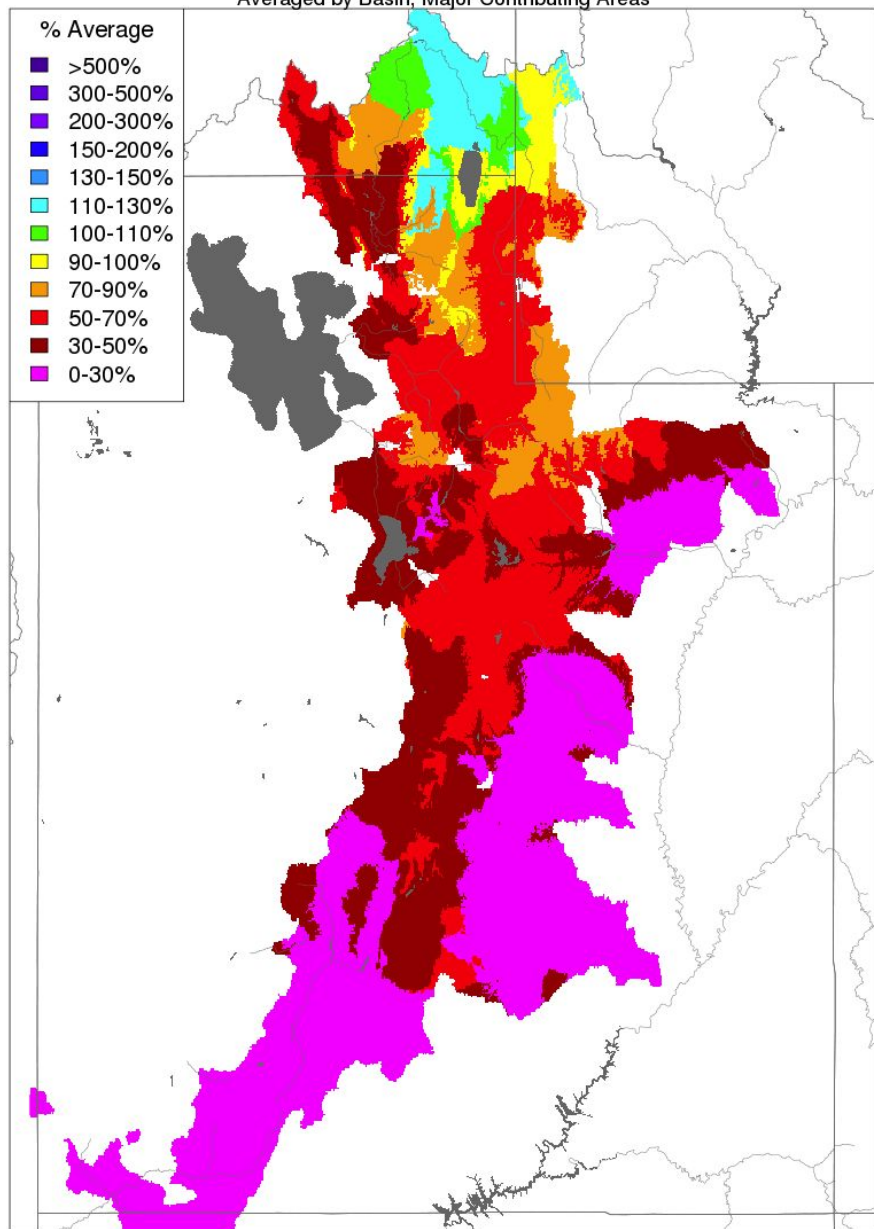




Dry and hot precipitation conditions over the entire Colorado River Basin and Great Basin have resulted in little significant hydrologic activity. Little weather is forecasted over the next 10 days and flows are likely to remain steadily at low levels or decline.

## Water Year Precipitation, October 2019 - October 2019

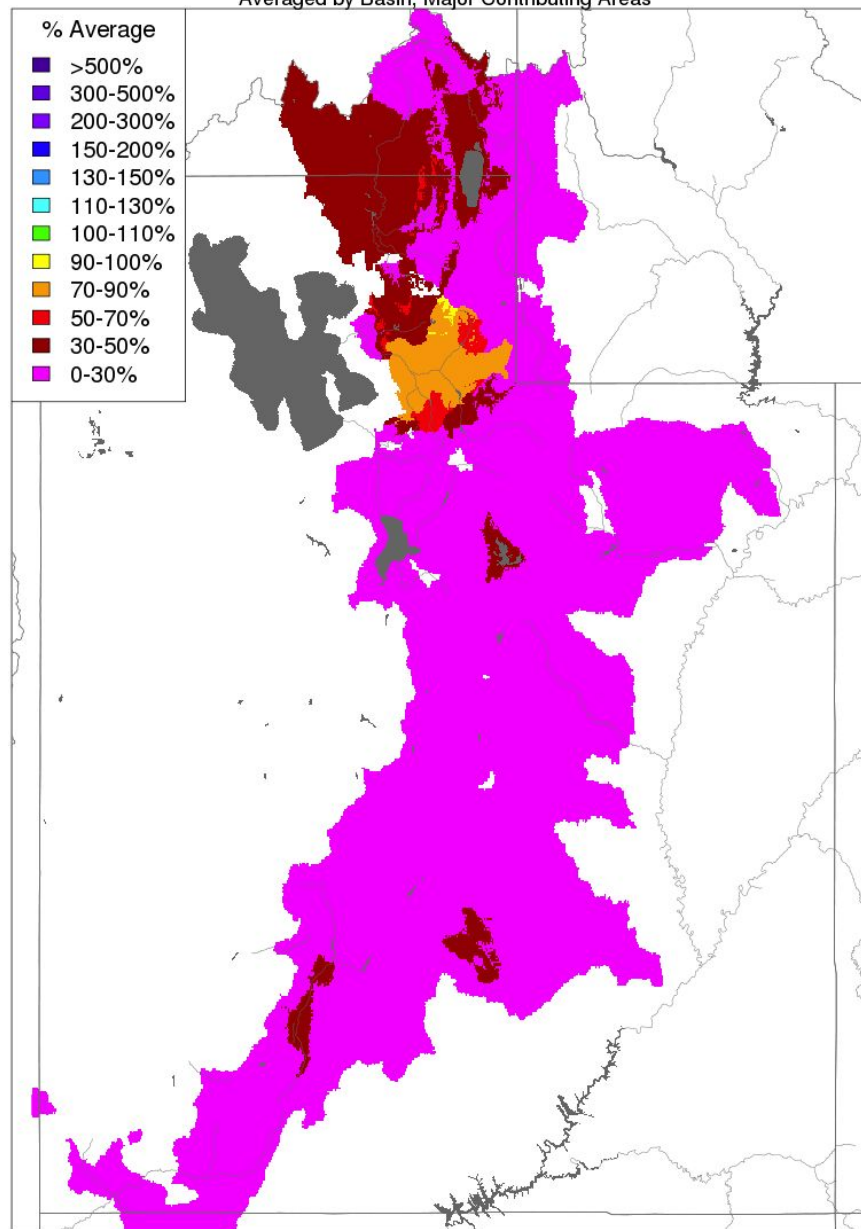
Averaged by Basin, Major Contributing Areas



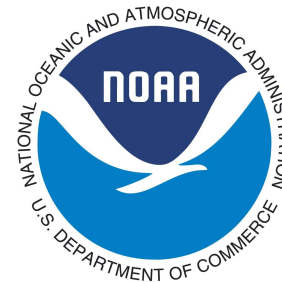
Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)

## Month to Date Precipitation - July 13 2020

Averaged by Basin, Major Contributing Areas



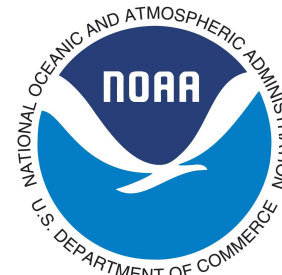
Prepared by NOAA, Colorado Basin River Forecast Center  
Salt Lake City, Utah, [www.cbrfc.noaa.gov](http://www.cbrfc.noaa.gov)



Water year precipitation over Utah is mostly well below average, except for the most northern portion of the Bear River Basin.

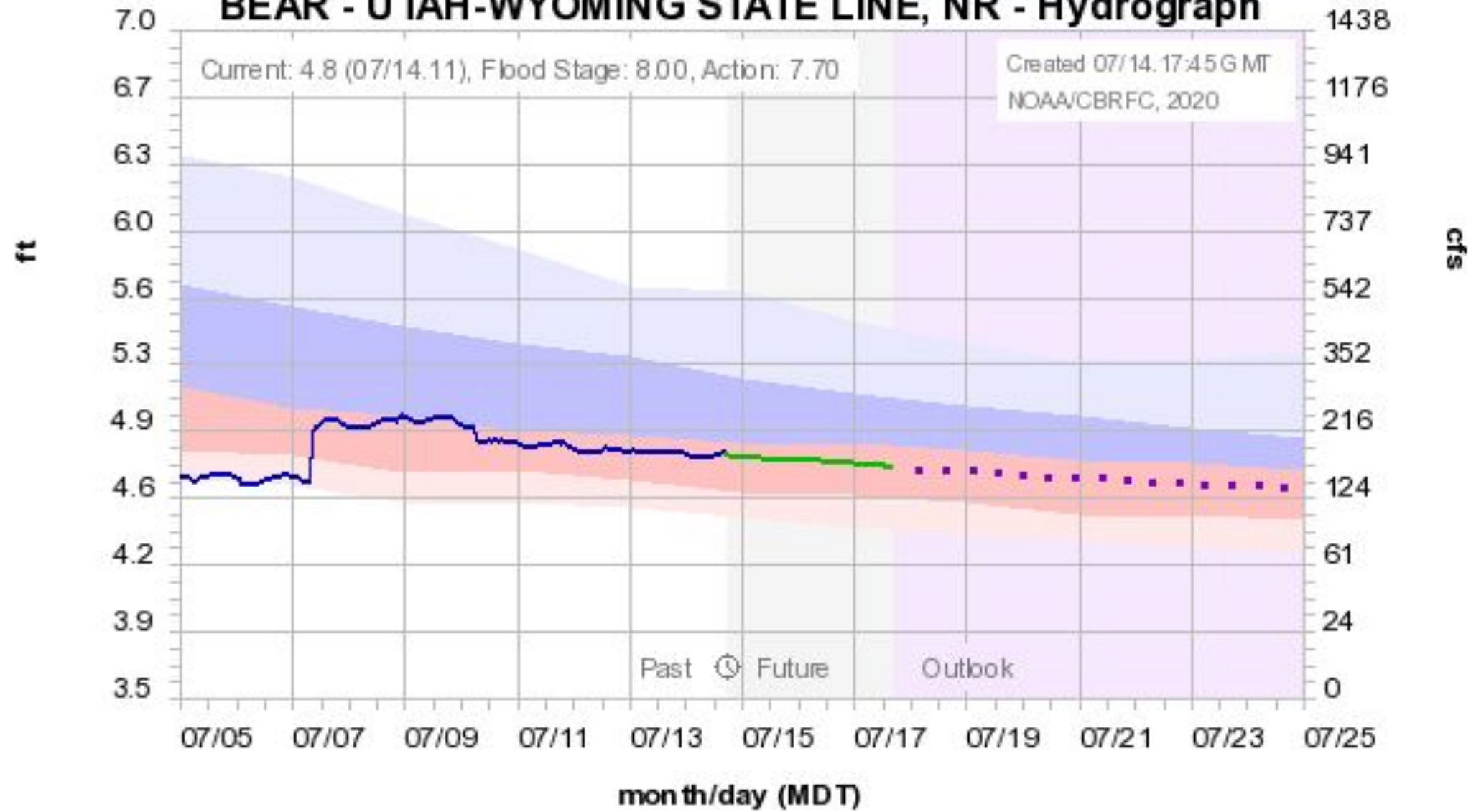
July precipitation to date is well below average conditions everywhere.





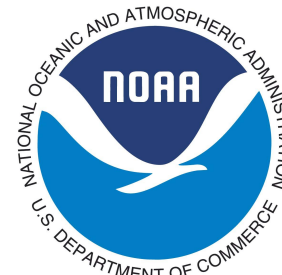
# Colorado Basin River Forecast Center

## BEAR - UTAH-WYOMING STATE LINE, NR - Hydrograph



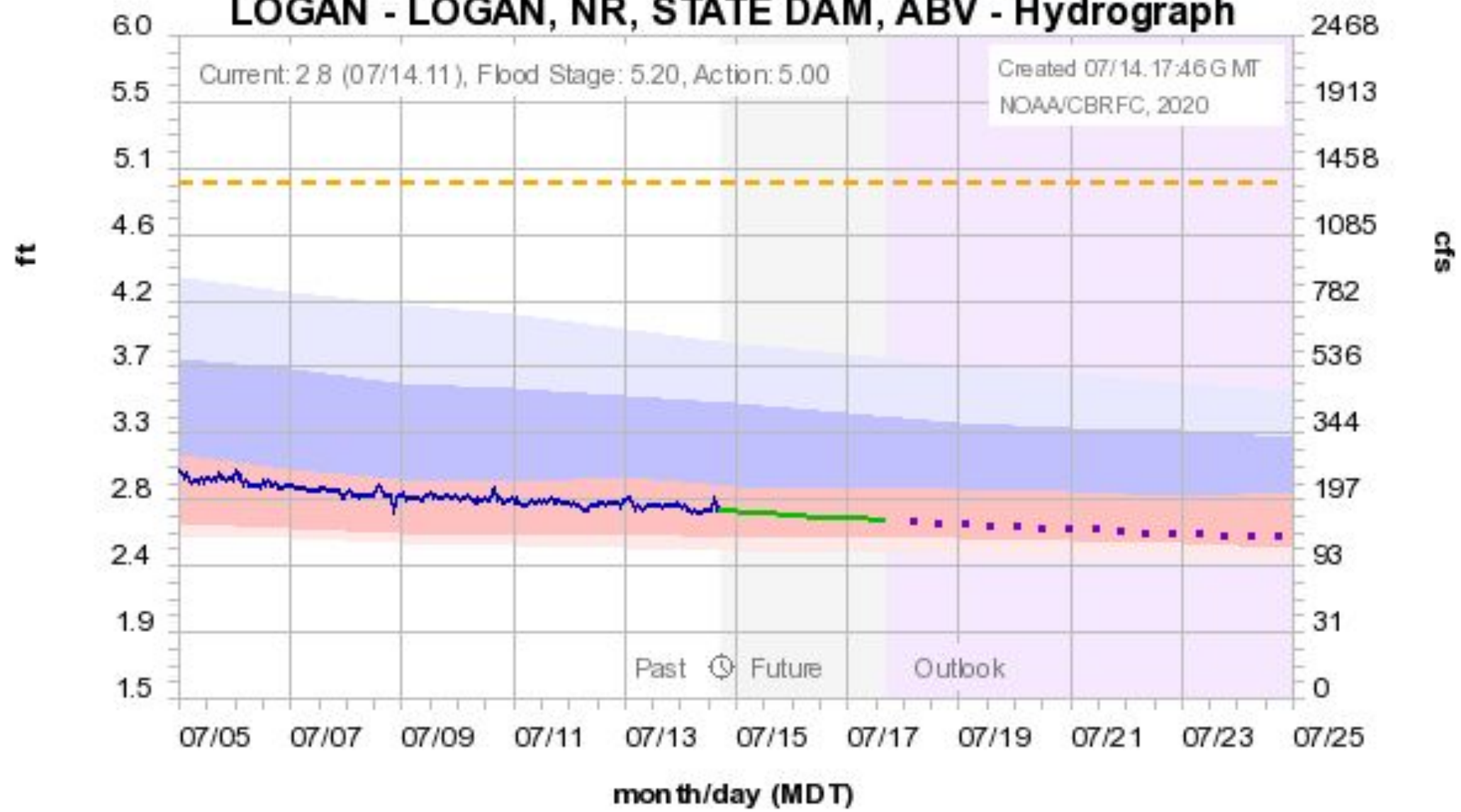
Simulated — Observed — Forecast (07/14.14:00) — Outlook (increasing uncertainty) - - -

Historical Exceedance Probability (USGS): 90-75% 75-50% 50-25% 25-10%



# Colorado Basin River Forecast Center

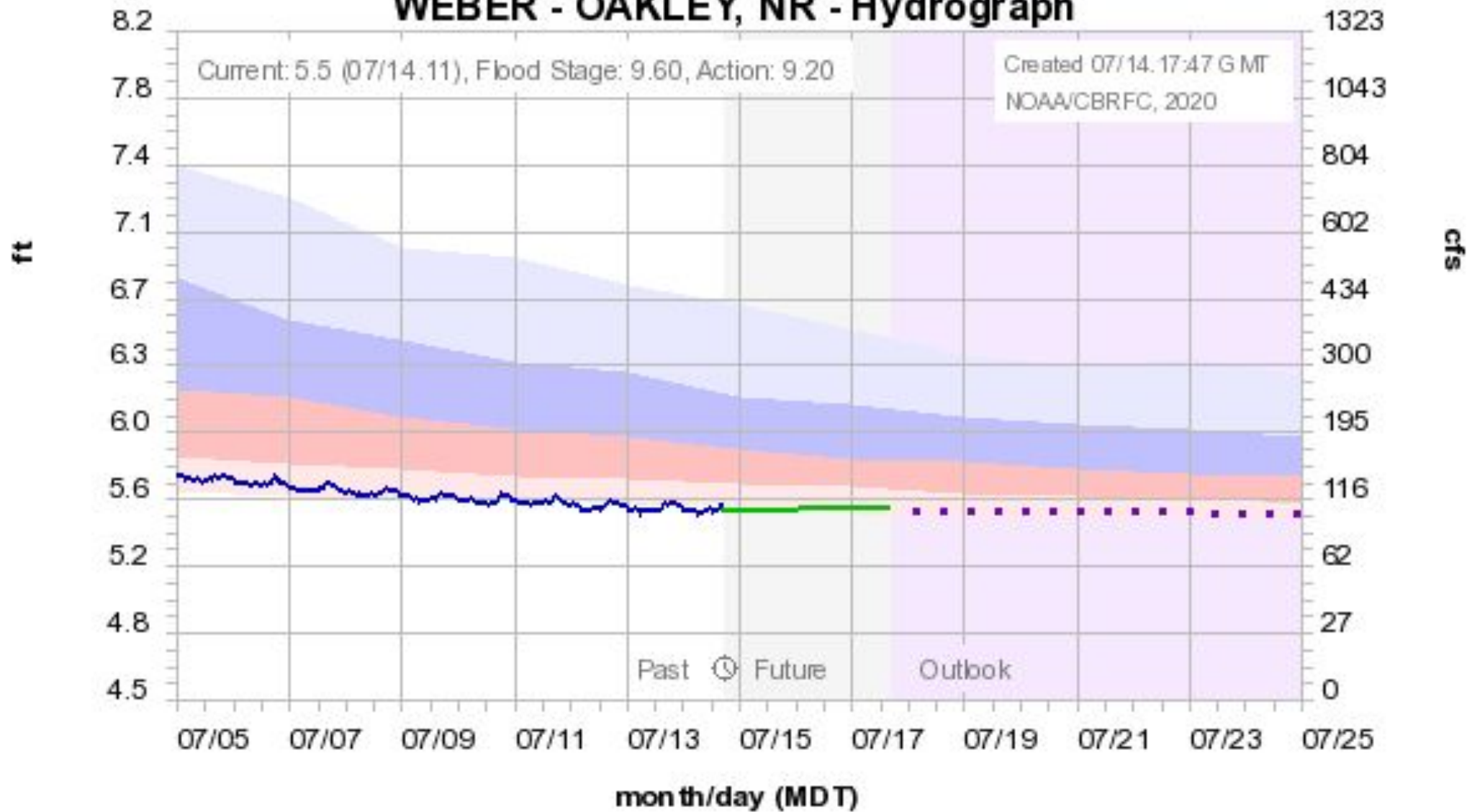
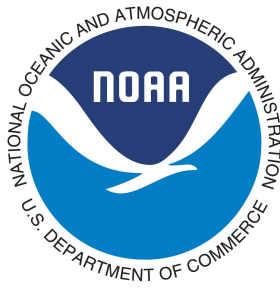
## LOGAN - LOGAN, NR, STATE DAM, ABV - Hydrograph





# Colorado Basin River Forecast Center

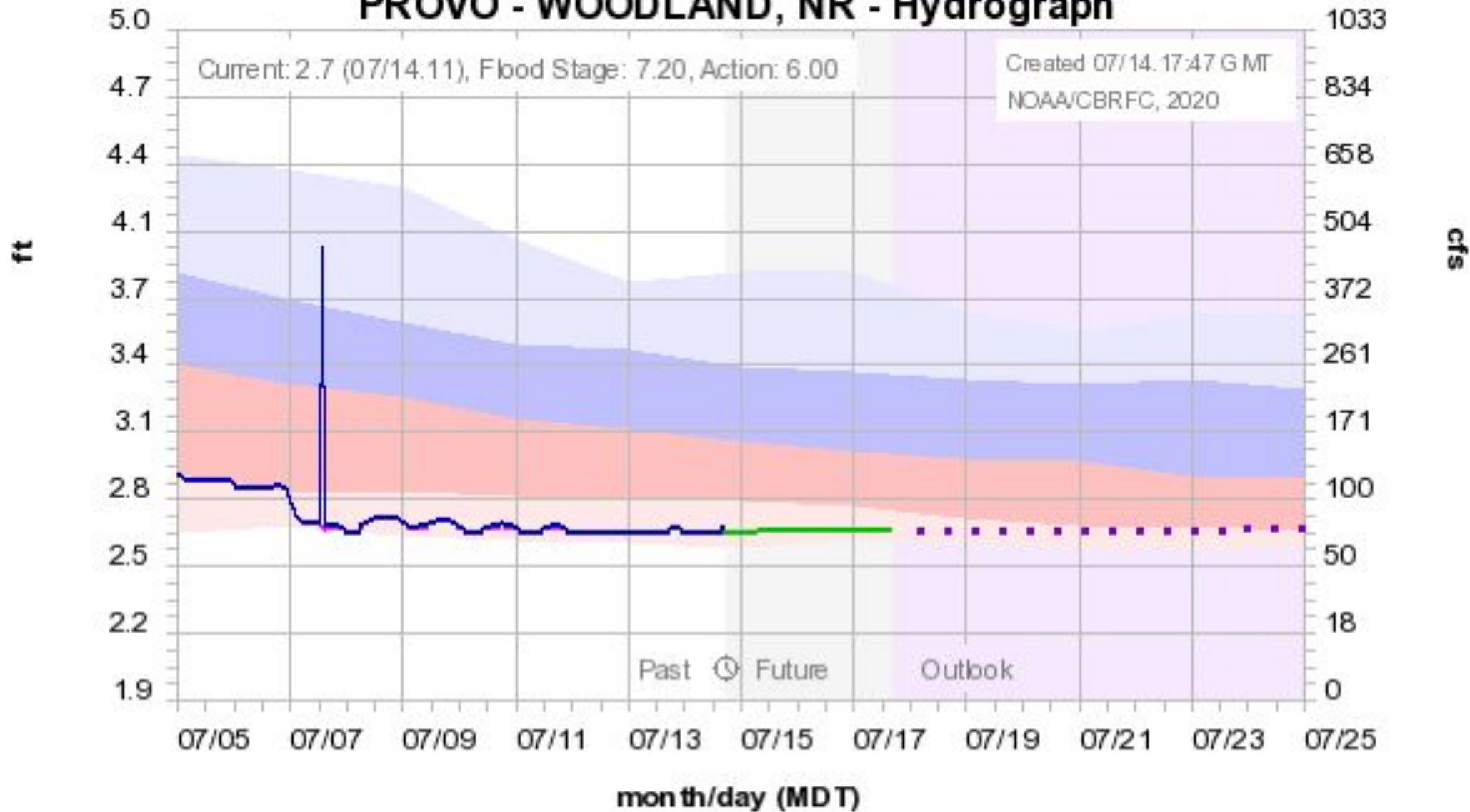
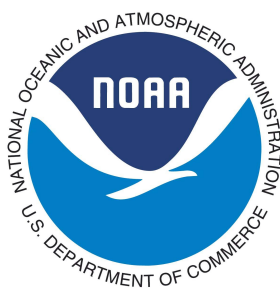
## WEBER - OAKLEY, NR - Hydrograph



Simulated — Observed — Forecast (07/14.14:00) — Outlook (increasing uncertainty) ..

Historical Exceedance Probability (USGS): 90-75% 75-50% 50-25% 25-10%

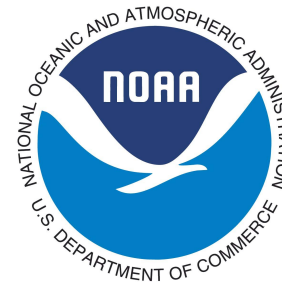
# Colorado Basin River Forecast Center PROVO - WOODLAND, NR - Hydrograph



Simulated — Observed — Forecast (07/14.14:00) — Outlook (increasing uncertainty) ..

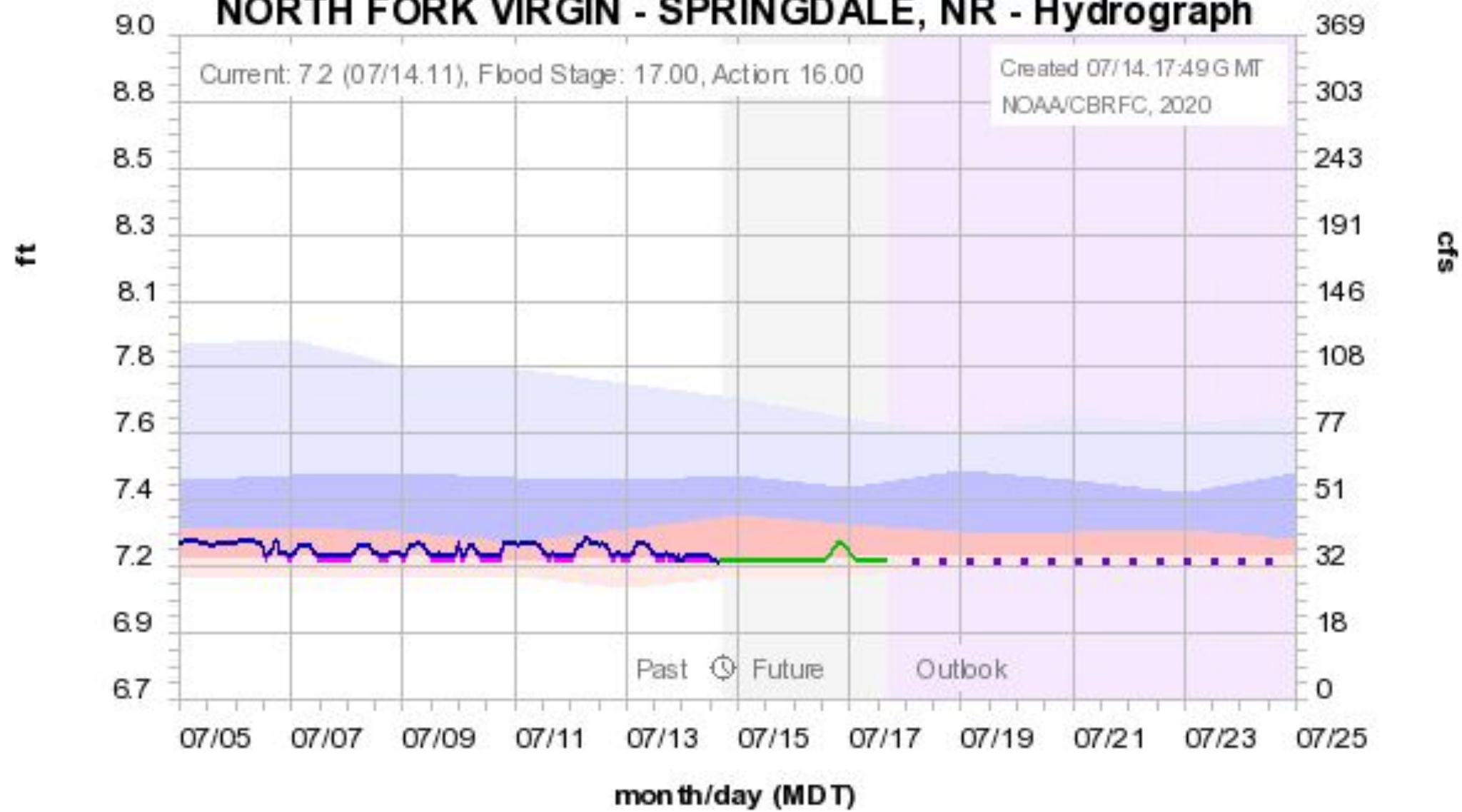
Historical Exceedance Probability (USGS): 90-75% 75-50% 50-25% 25-10%





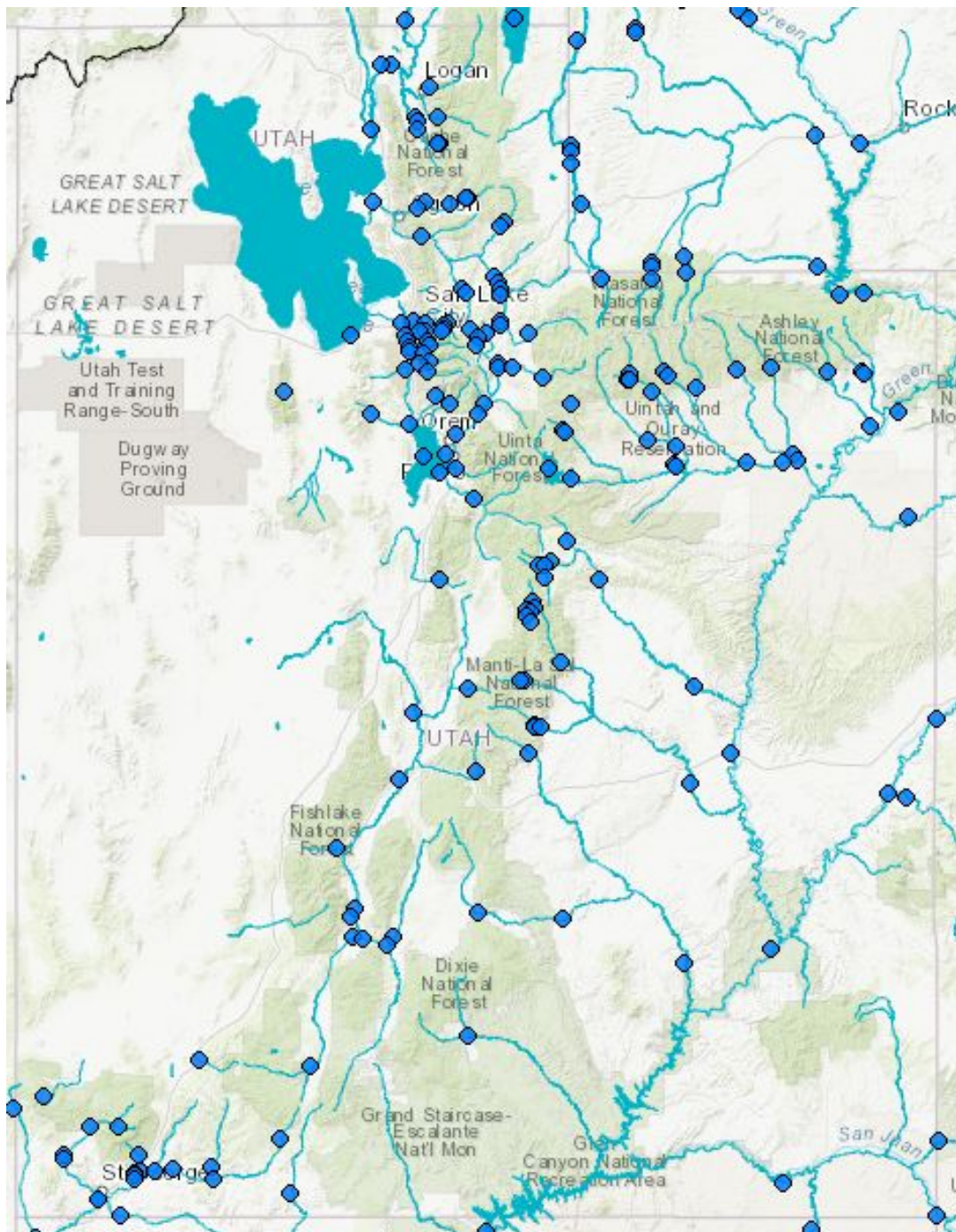
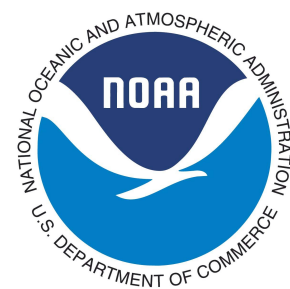
# Colorado Basin River Forecast Center

## NORTH FORK VIRGIN - SPRINGDALE, NR - Hydrograph



Simulated Observed Forecast (07/14.14:00) Outlook (increasing uncertainty)

Historical Exceedance Probability (USGS): 90-75% 75-50% 50-25% 25-10%

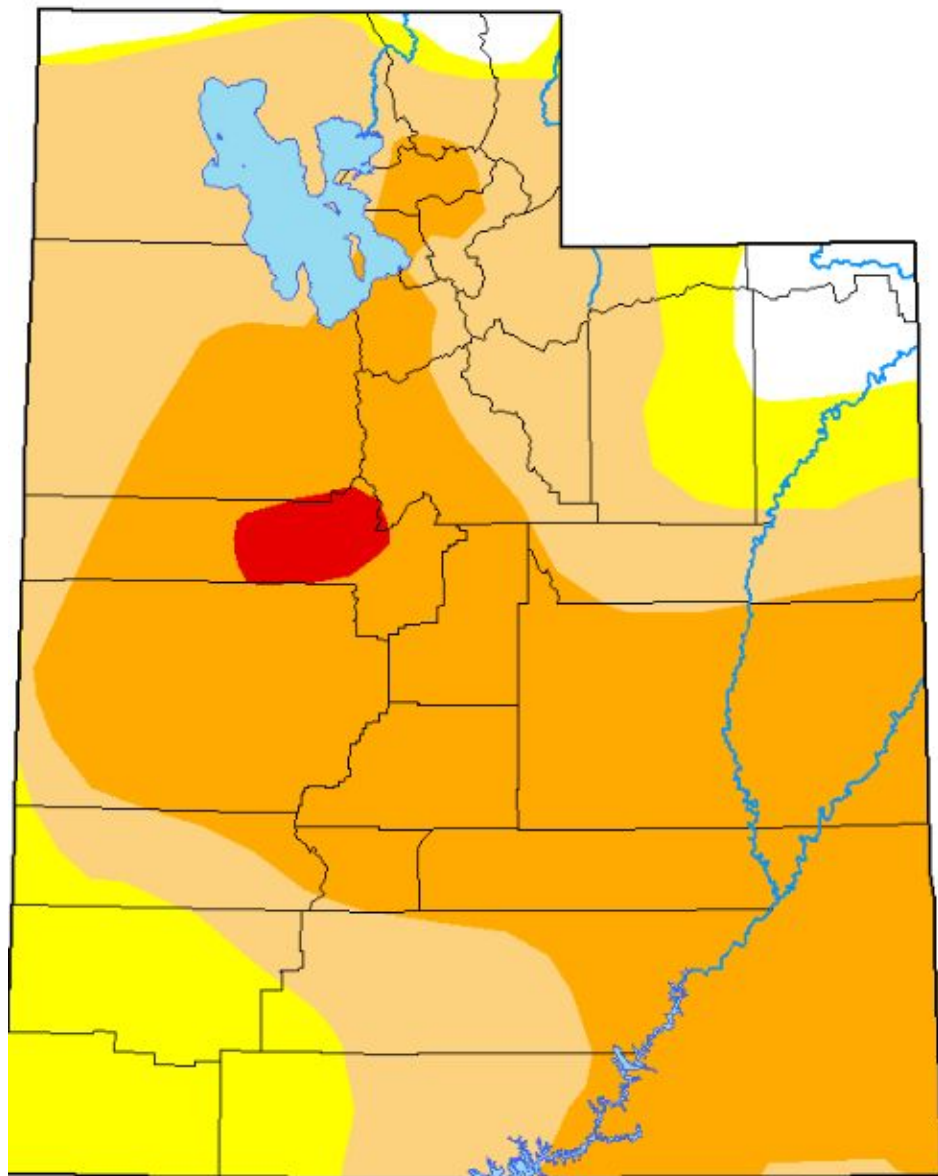


Save the Date! Our annual stakeholder engagement meeting will be virtual this year, October 28th -29th.

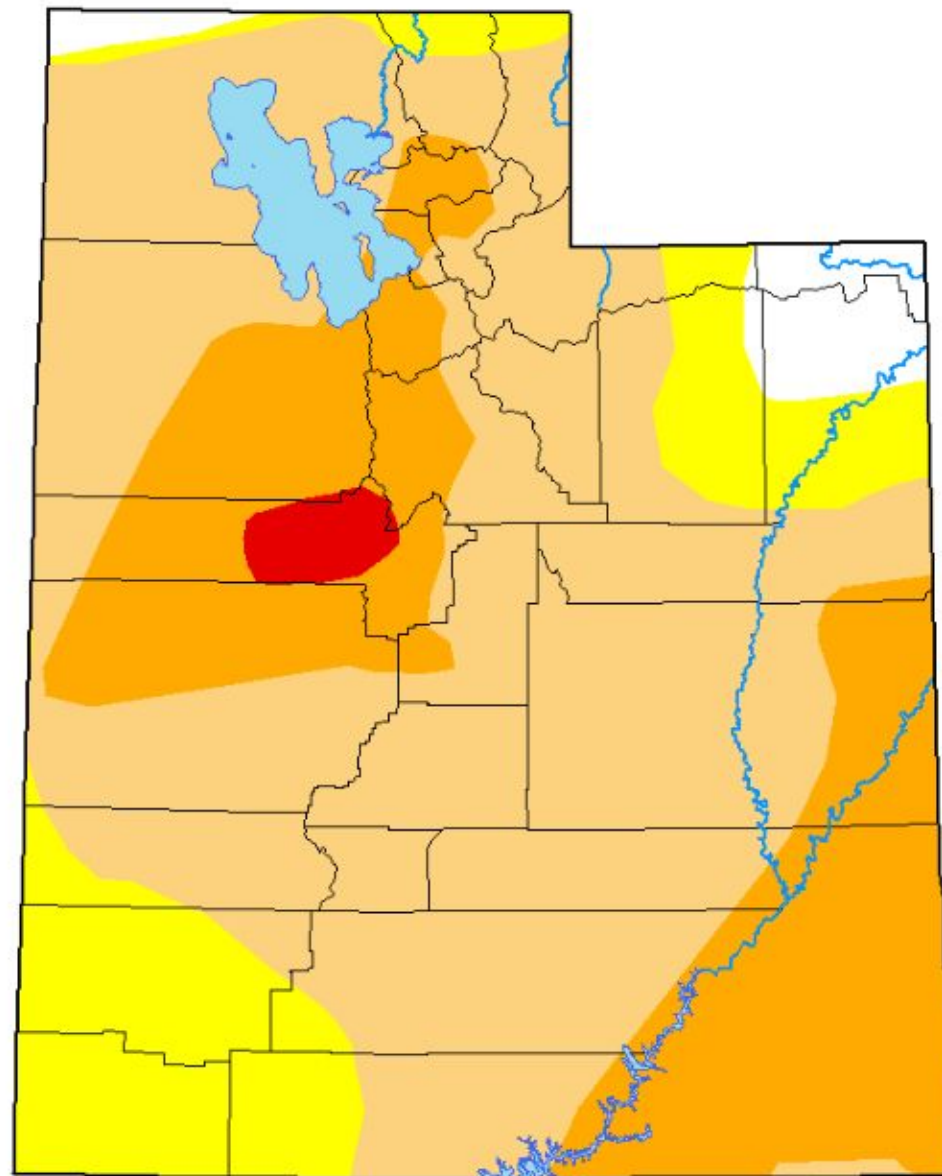
October 28th will be CBRFC basics, which is great for those that are new to CBRFC products and services, people recently hired by your agency, or those that just want a refresher.

October 29th will focus on the future of streamflow forecasting.





◀ July 7, 2020 ▶



◀ June 23, 2020 ▶