Utah Drought Monitor Webinar

The meeting will begin shortly

UTAH CLIMATE CENTER

NRCS Natural Resources Conservation Service

NOAA

USGS science for a changing world

Thank you to our contributors

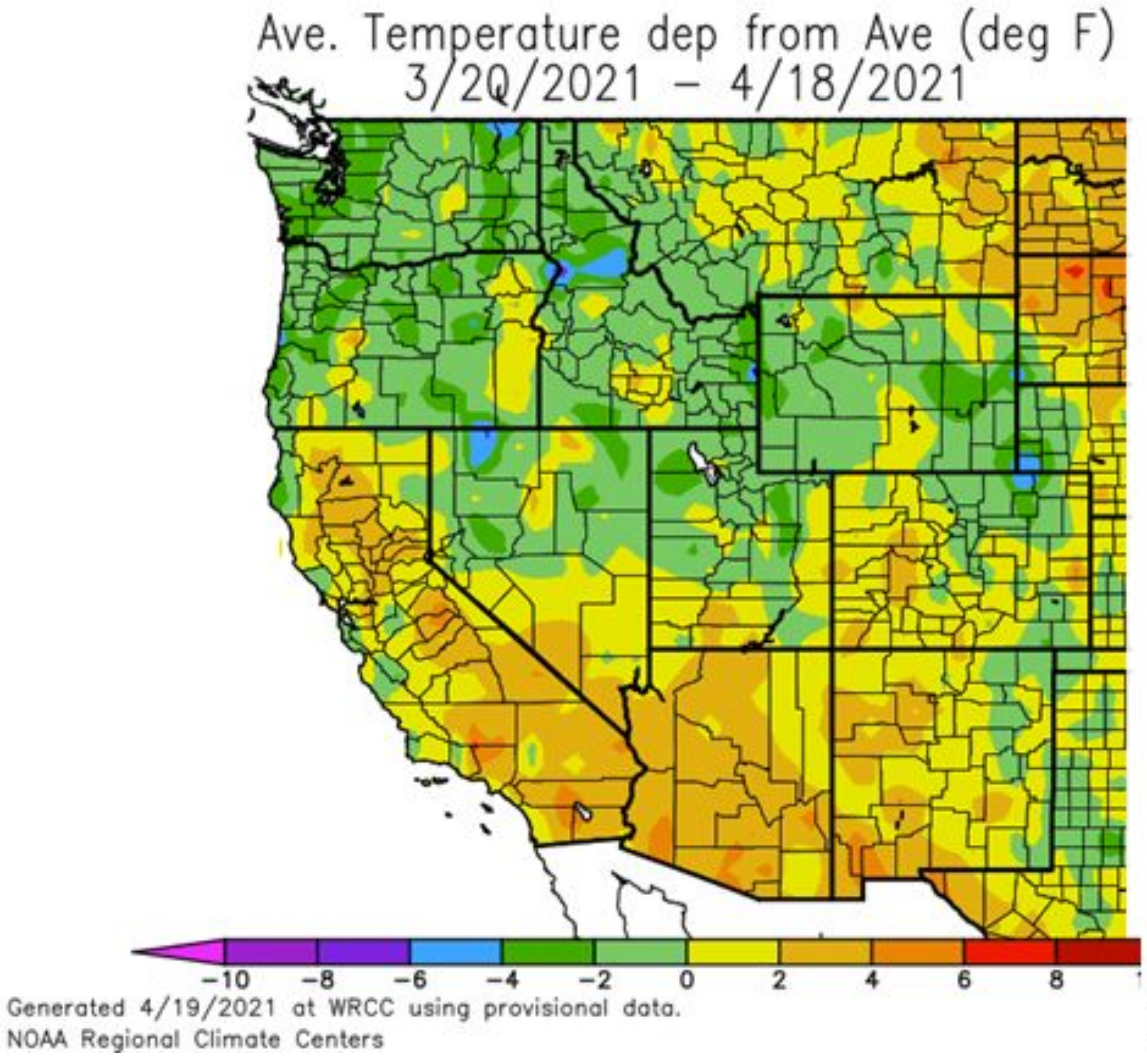
UDAF

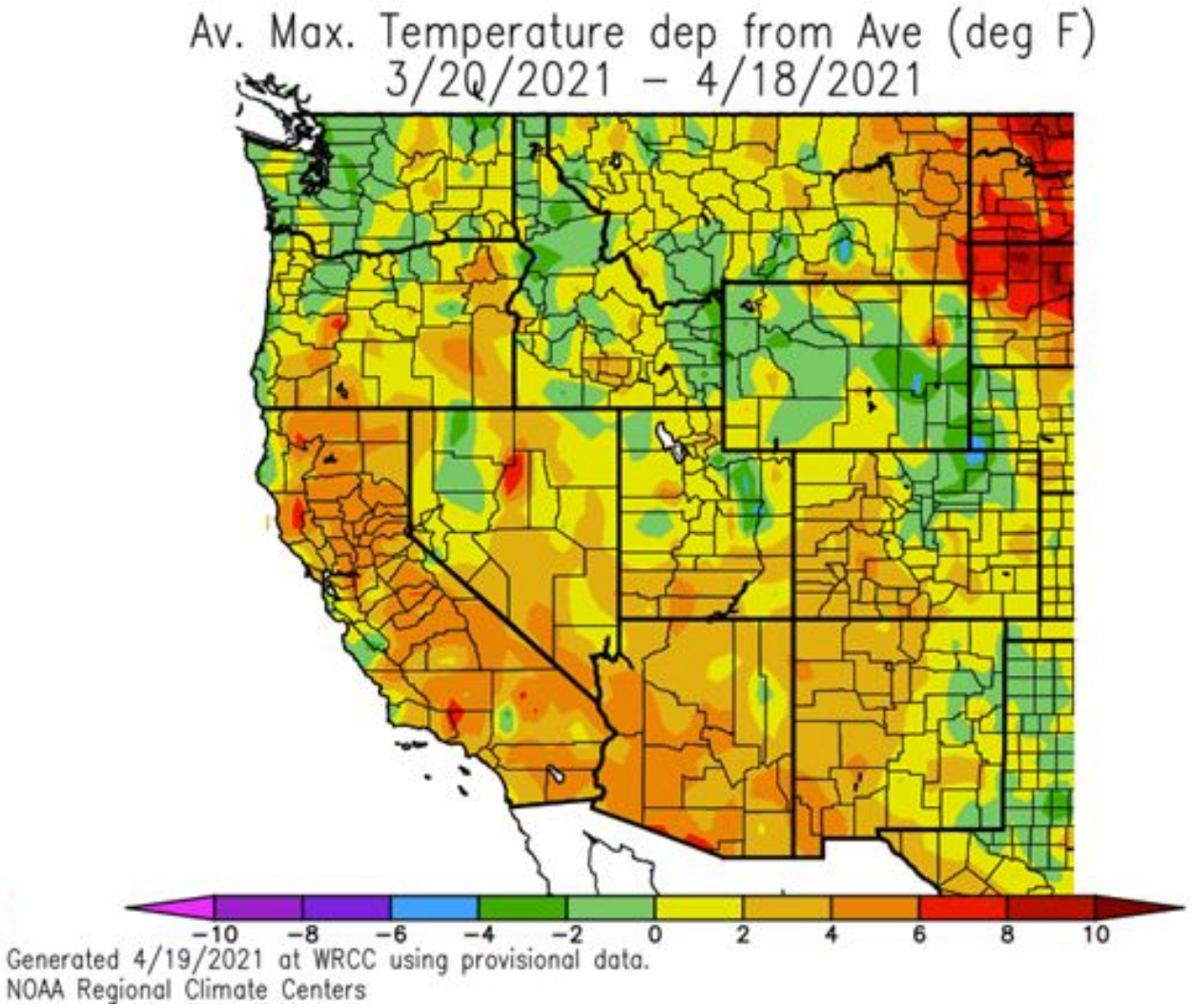
UTAH DNR WATER RESOU

Utah Drought Monitor Webinar

April 20, 2021

30-day Temperature





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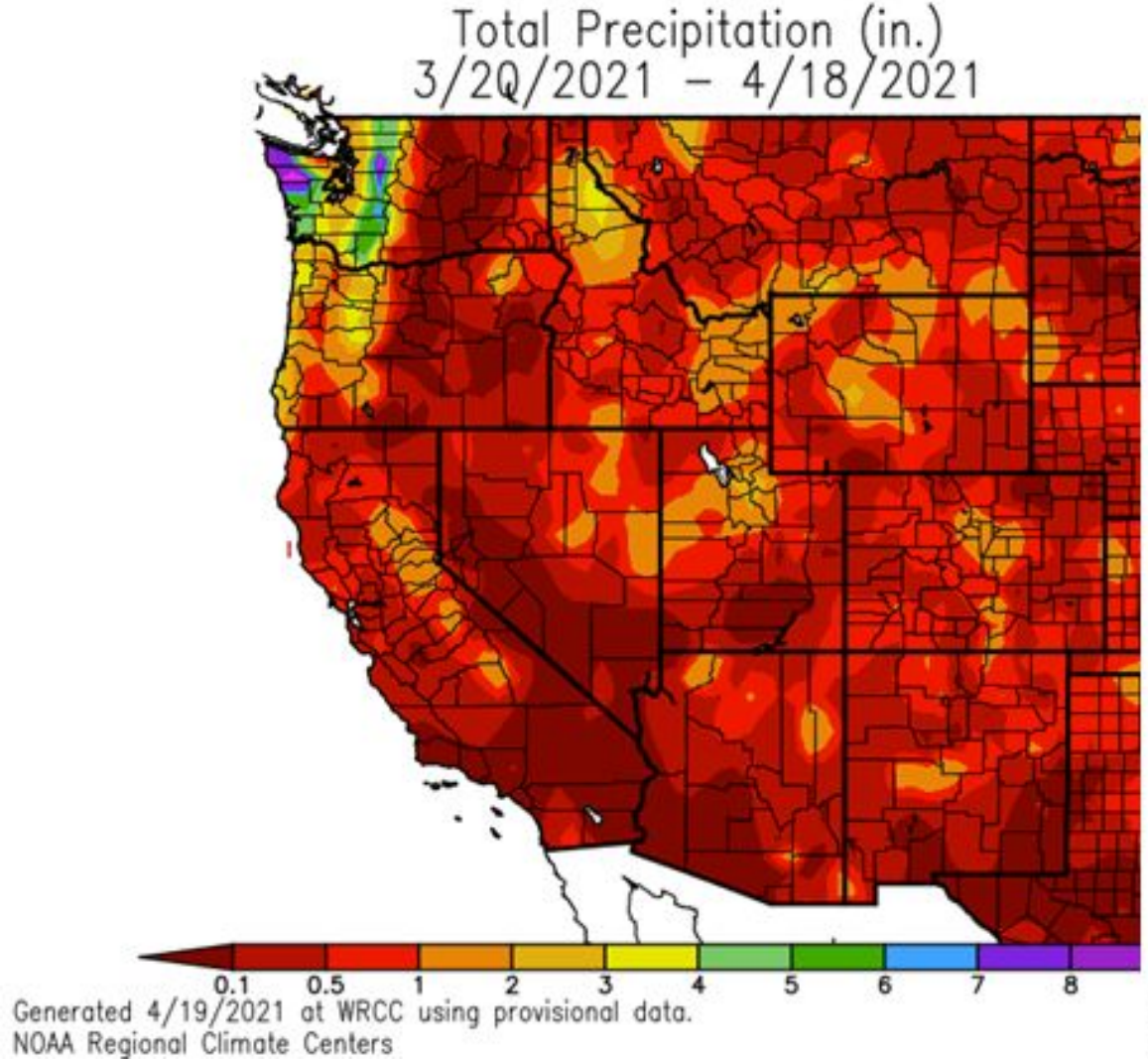
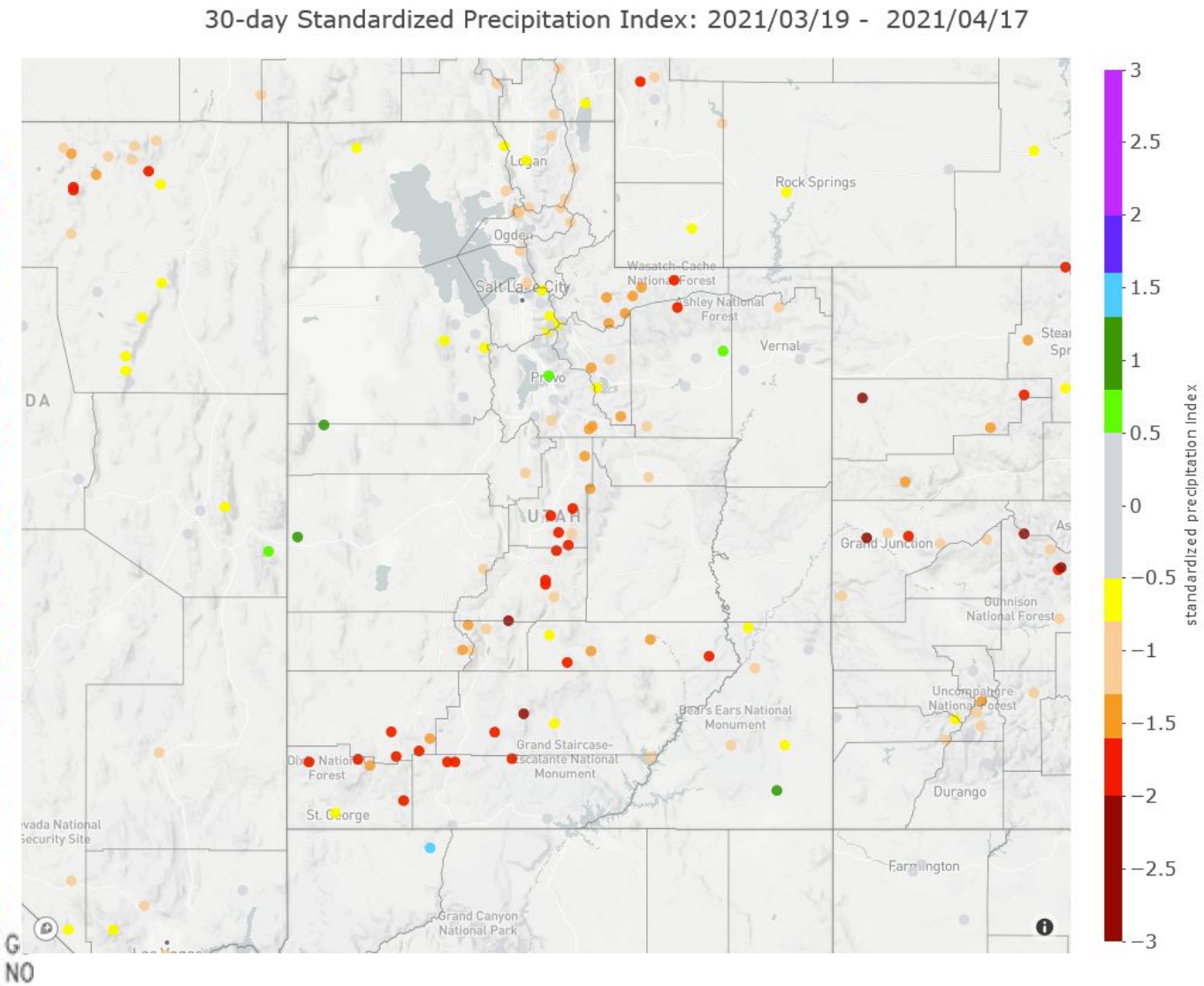
Presenter - Jon Meyer

30-day Precipitation





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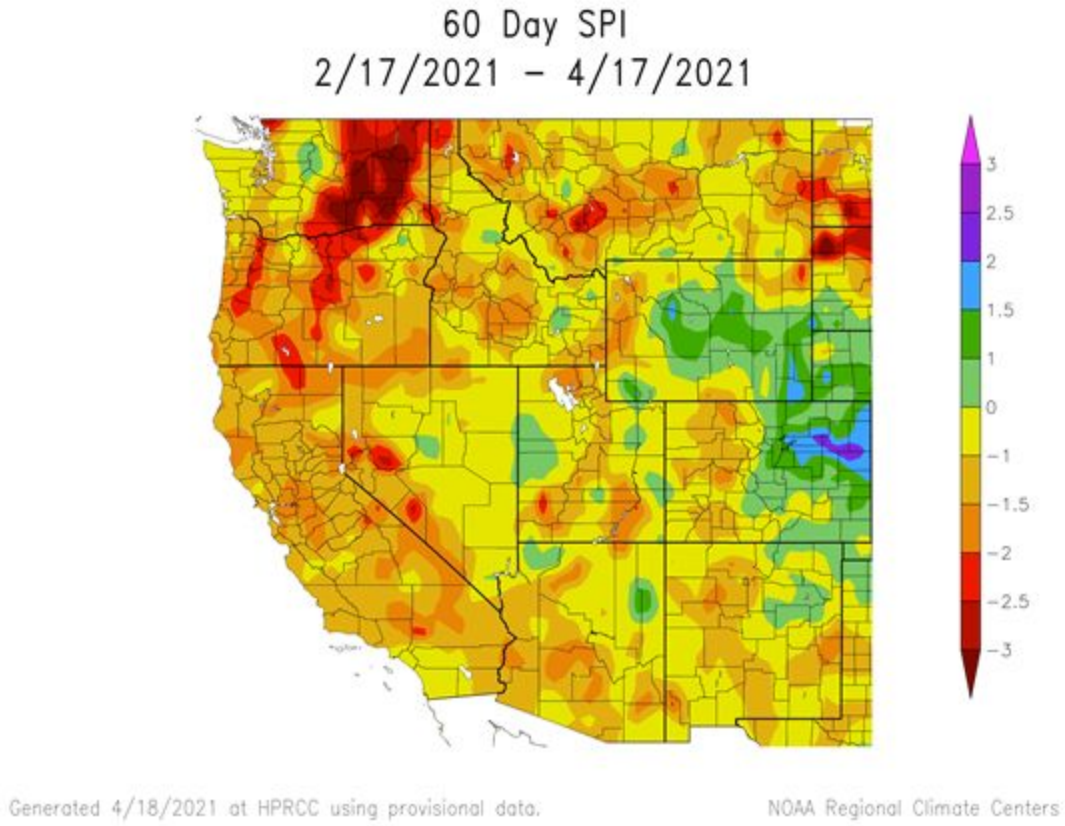
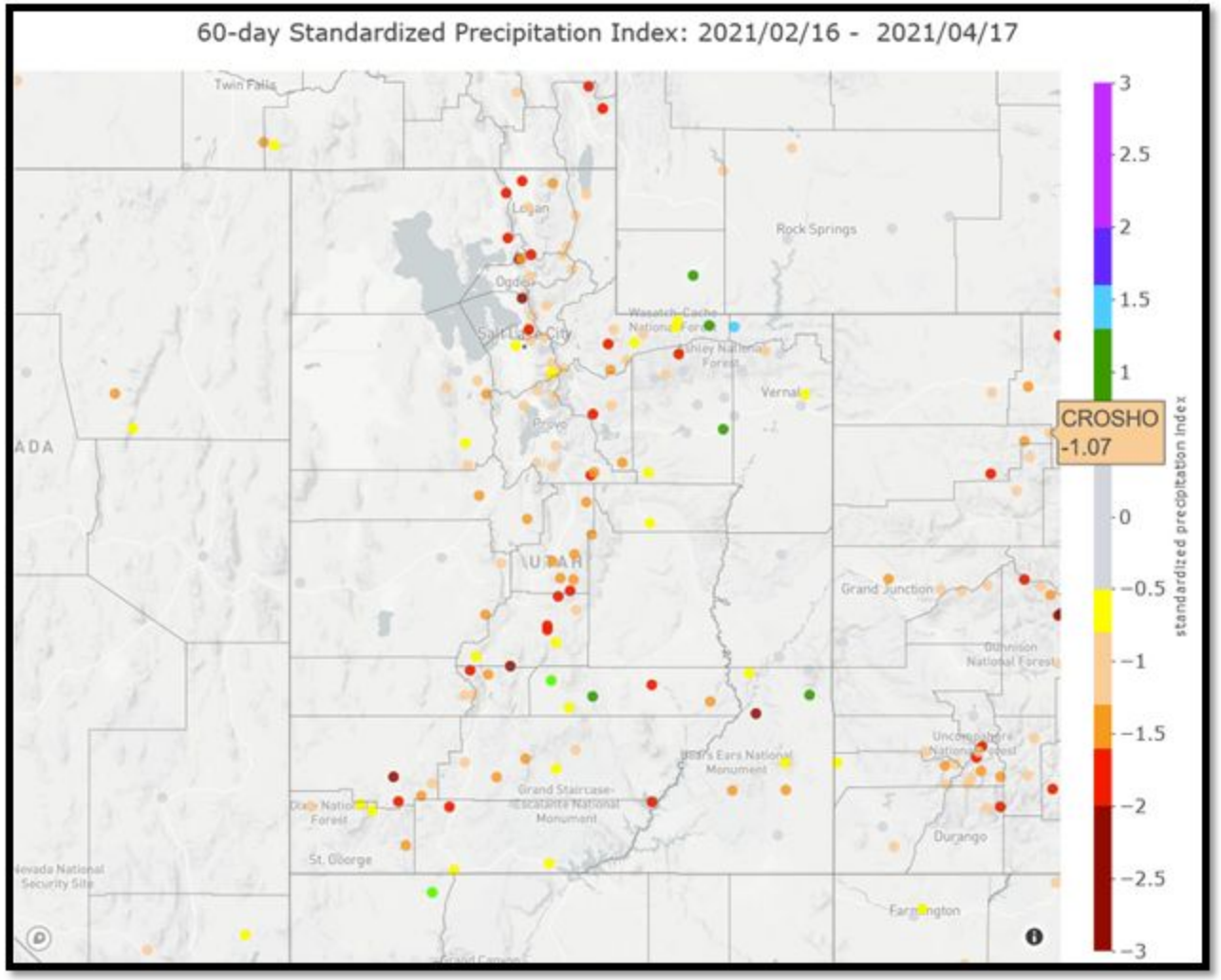
60-day SPI (Roughly covers the “wet” part of our winter)





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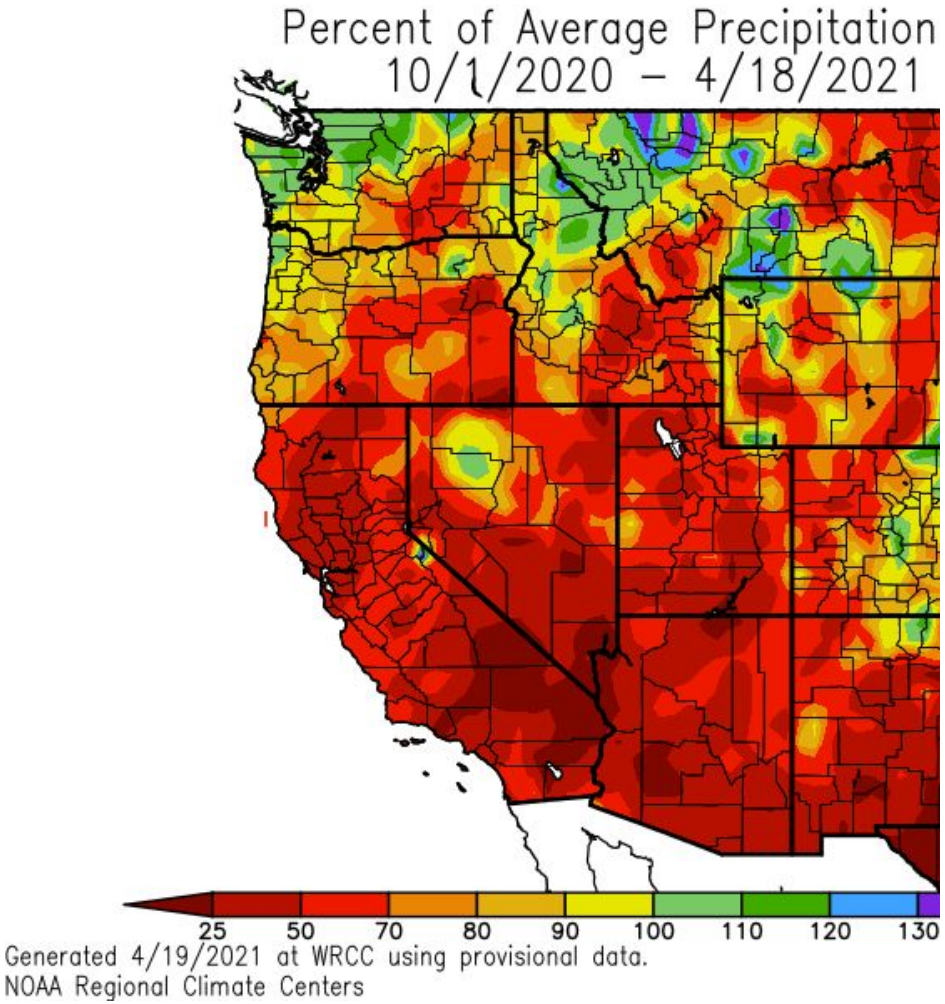
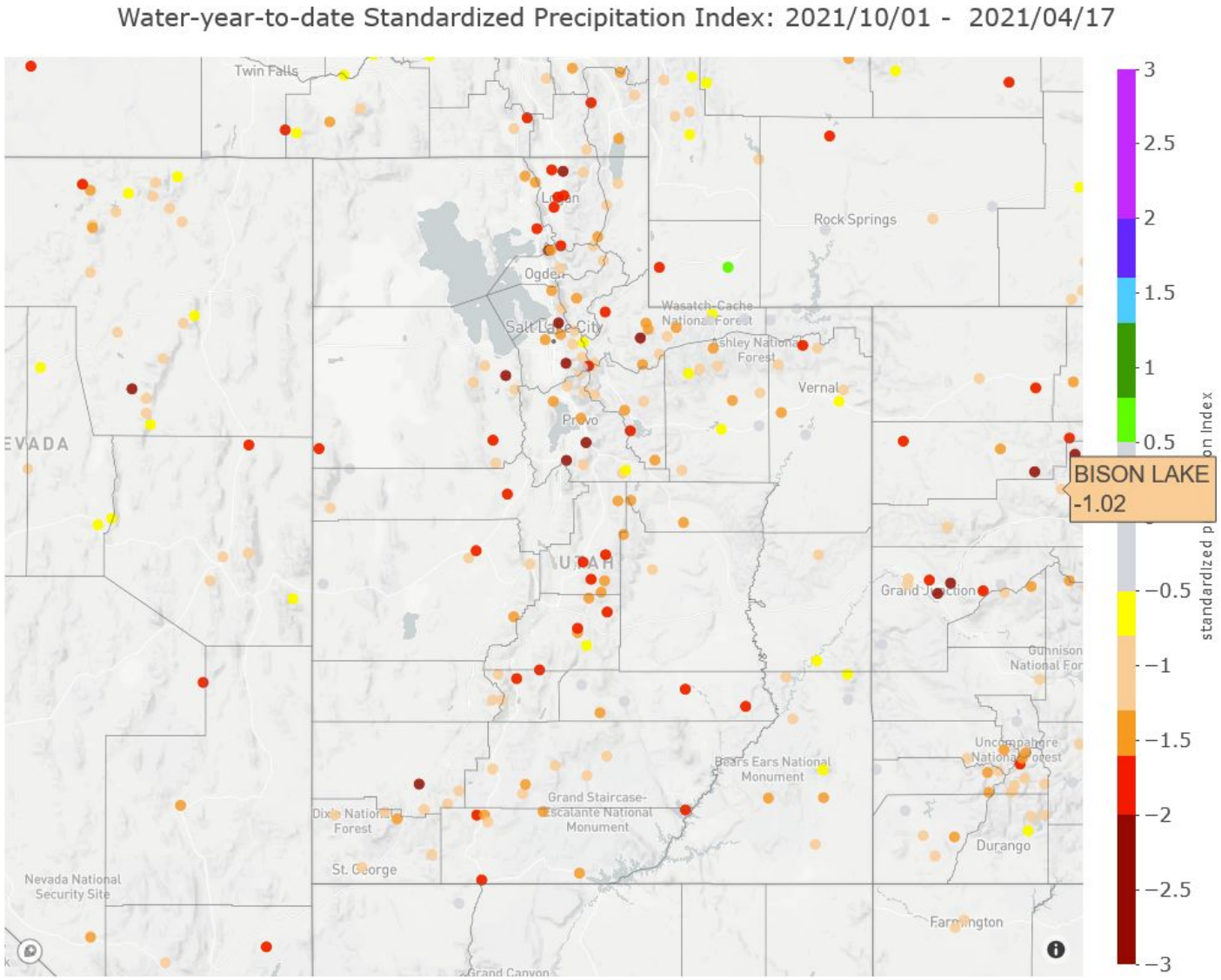
Water Year Precipitation (Since Oct 1)





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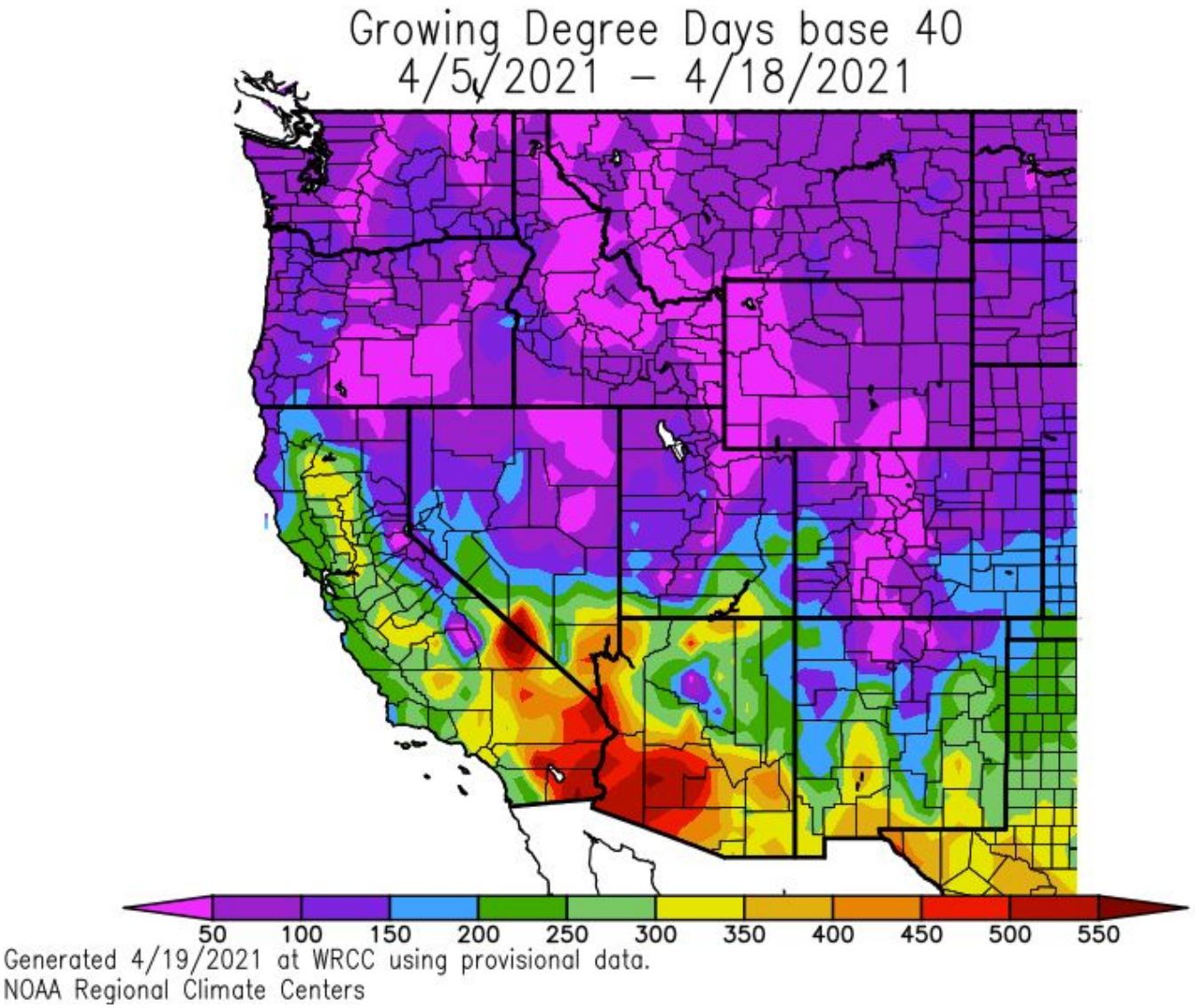
Growing season is beginning to ramp up:

Time to start looking at vegetation-based drought indices!



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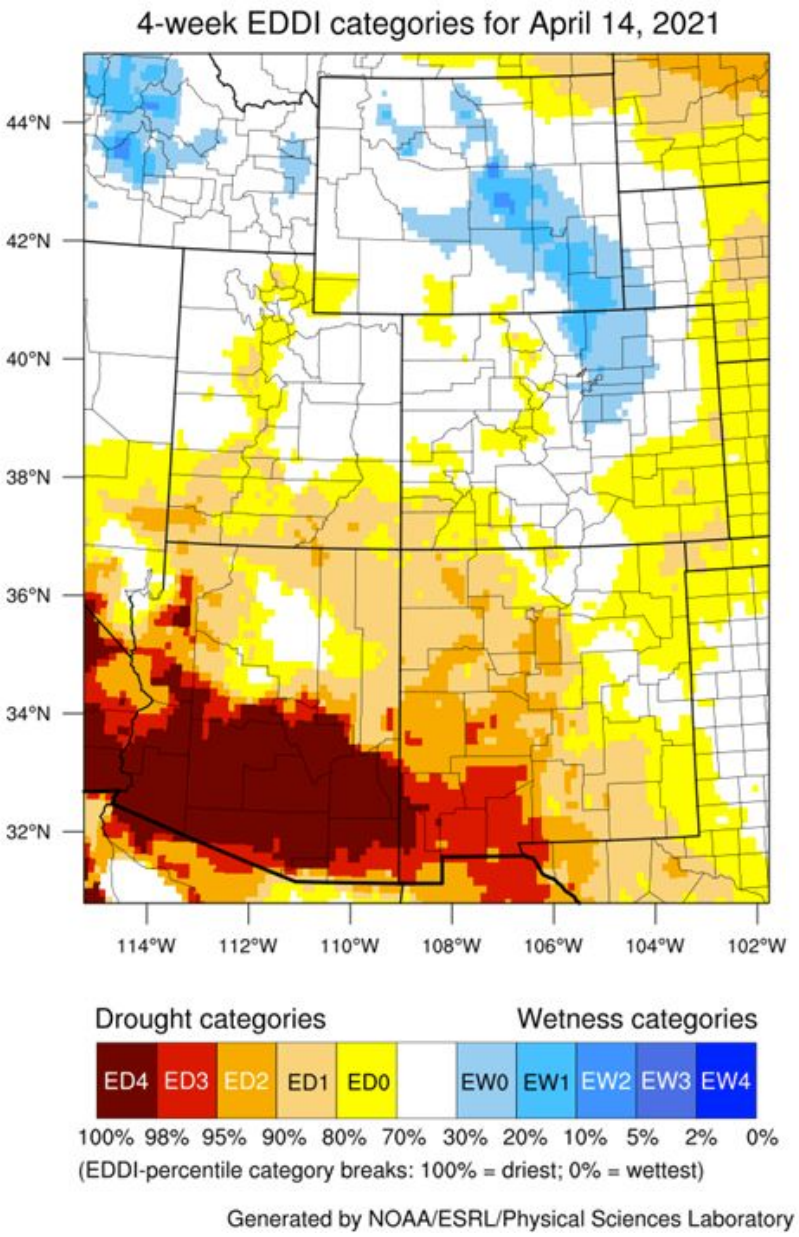
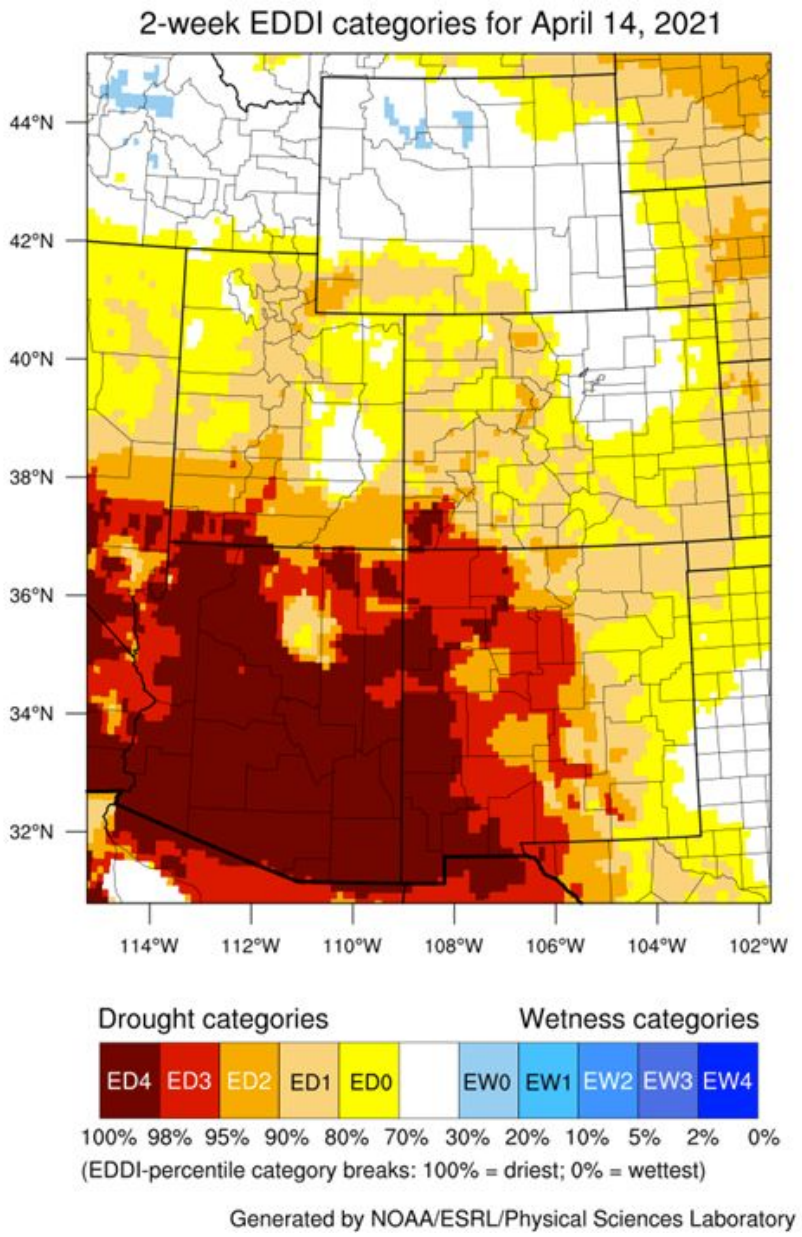
Evaporative Demand Drought Index (EDDI)

Cool temperatures have helped limit EDDI in the last month, but high wind events and low humidity has recently driven increasing evaporative demand.

Fire season already off and running?





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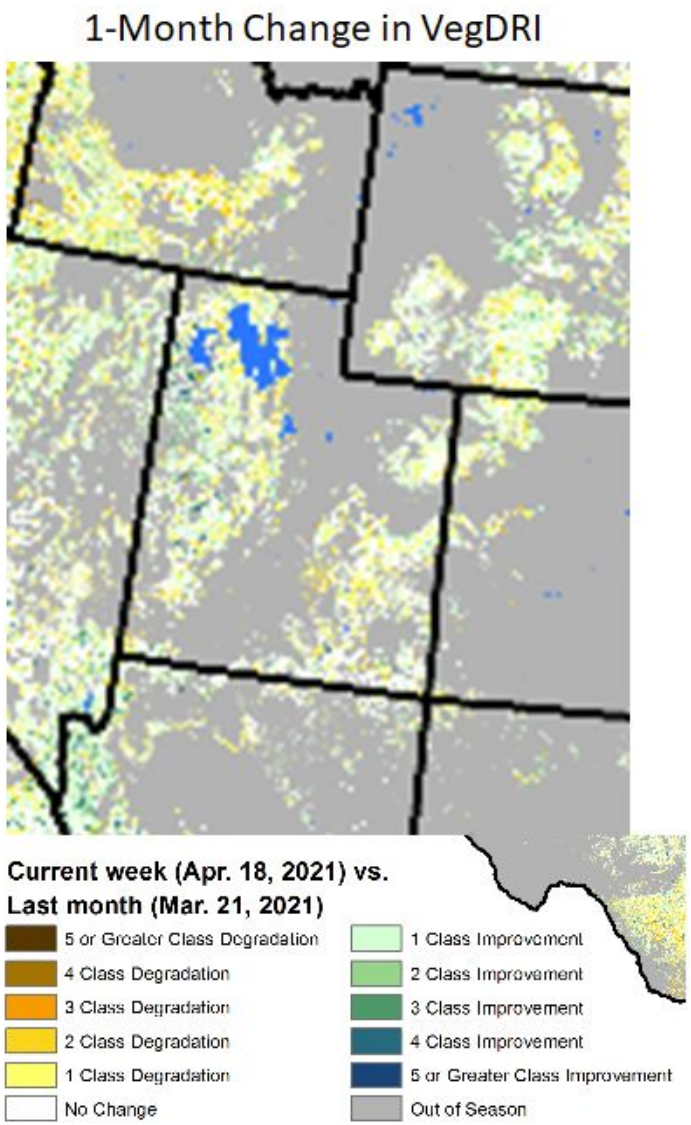
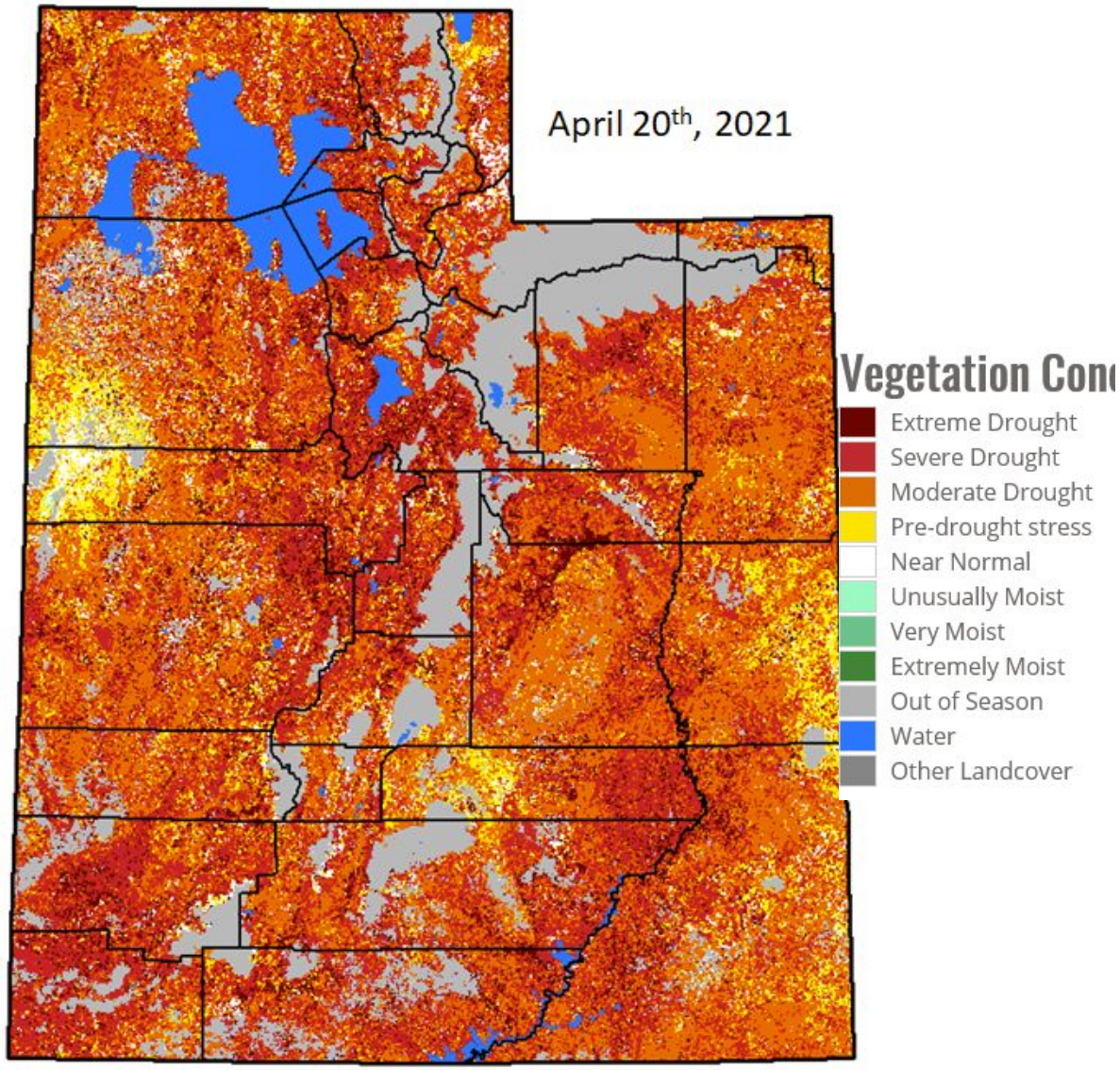
VegDRI

What goes into VegDRI?

1. Palmer Drought Severity Index (PDSI)
2. Standard Precipitation Index (SPI) (36-week)
3. Two variables related to general vegetation conditions – the Percent Average Seasonal Greenness (PASG) and Start of Season Anomaly (SOSA) – are calculated from satellite-based observations and incorporated into the VegDRI.





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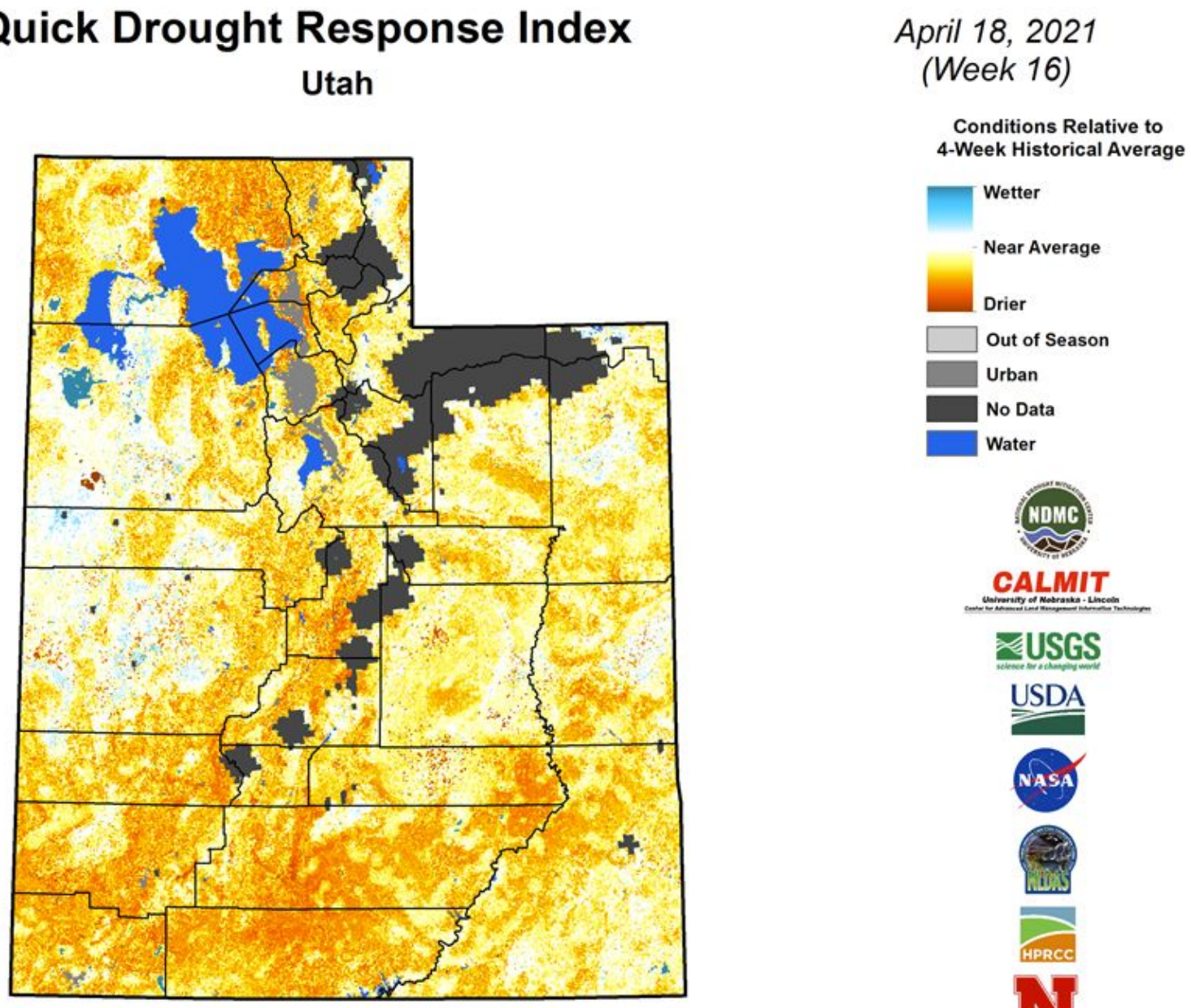
Presenter - Jon Meyer

QuickDRI

The Quick Drought Response Index (QuickDRI) is a shorter-term indicator of dryness. It is calculated through the analysis of satellite- and model-based observations of conditions that influence drought.

QuickDRI is designed to provide a snapshot of anomalously dry or wet conditions over the past 4 weeks and serves as an indicator of emerging or rapidly changing drought conditions.



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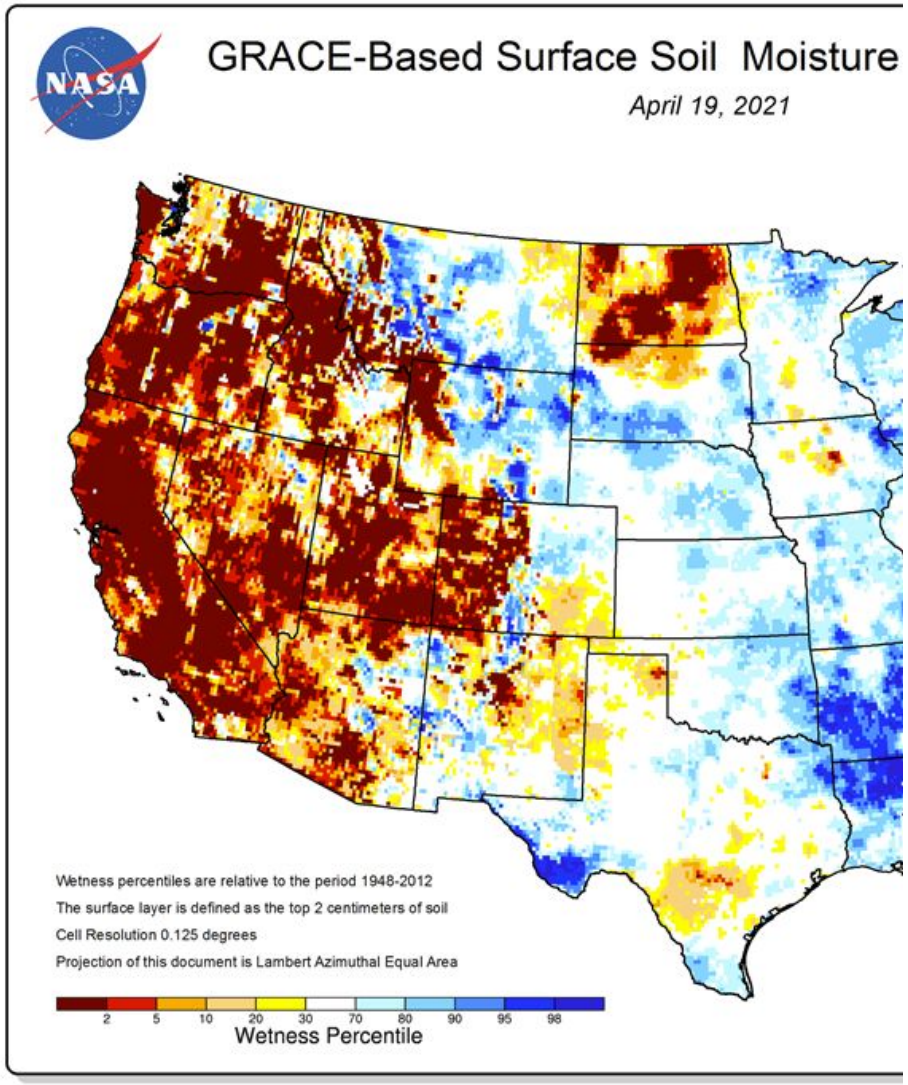
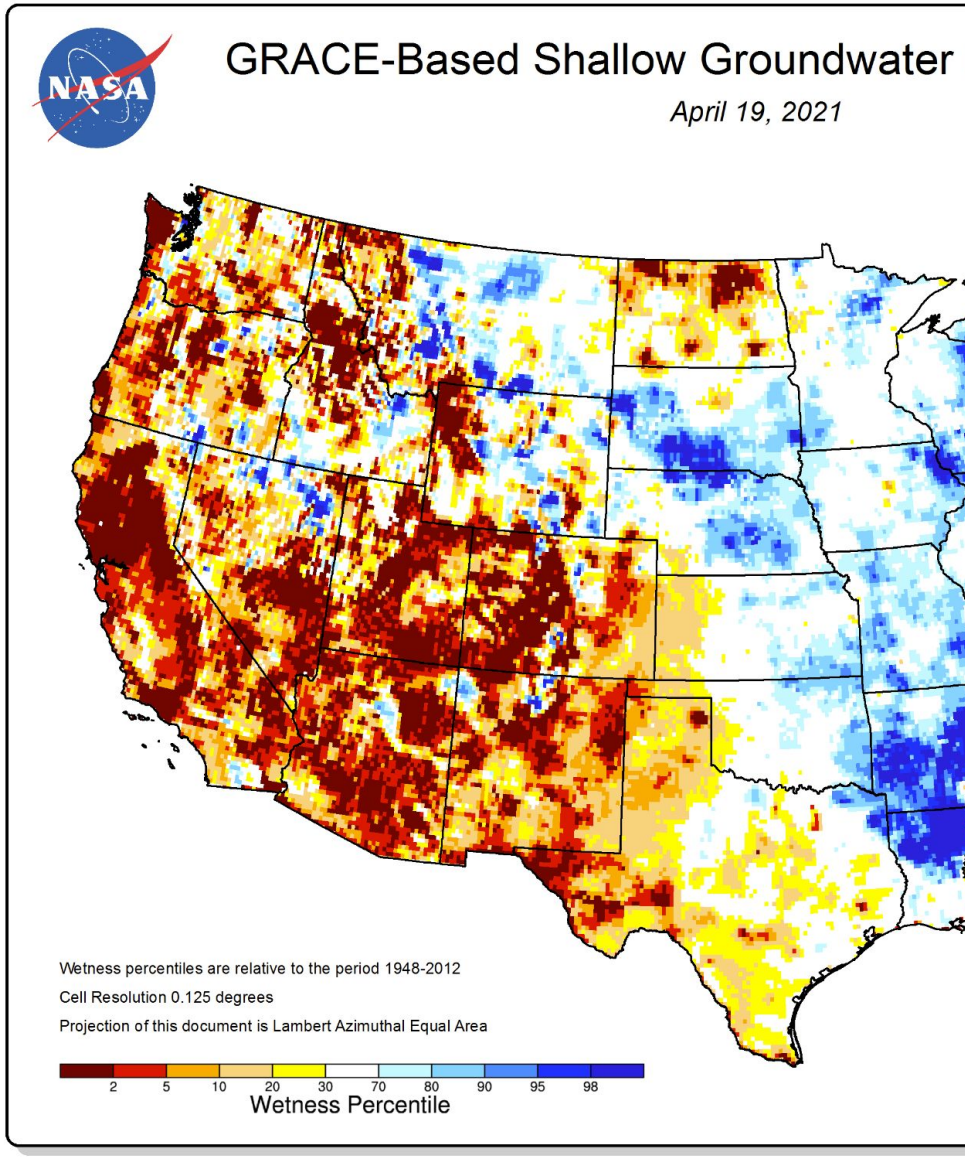
Grace Satellite Soil Moisture





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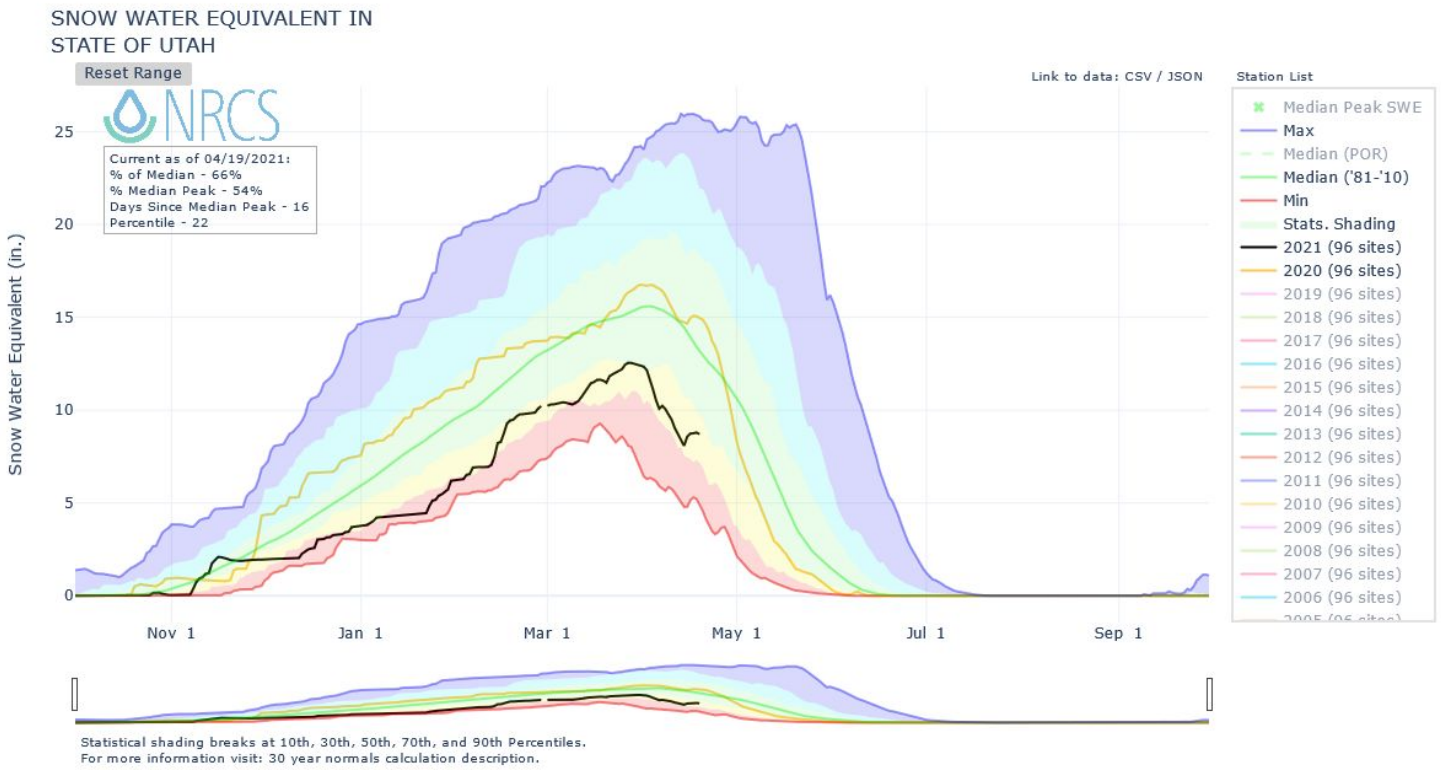
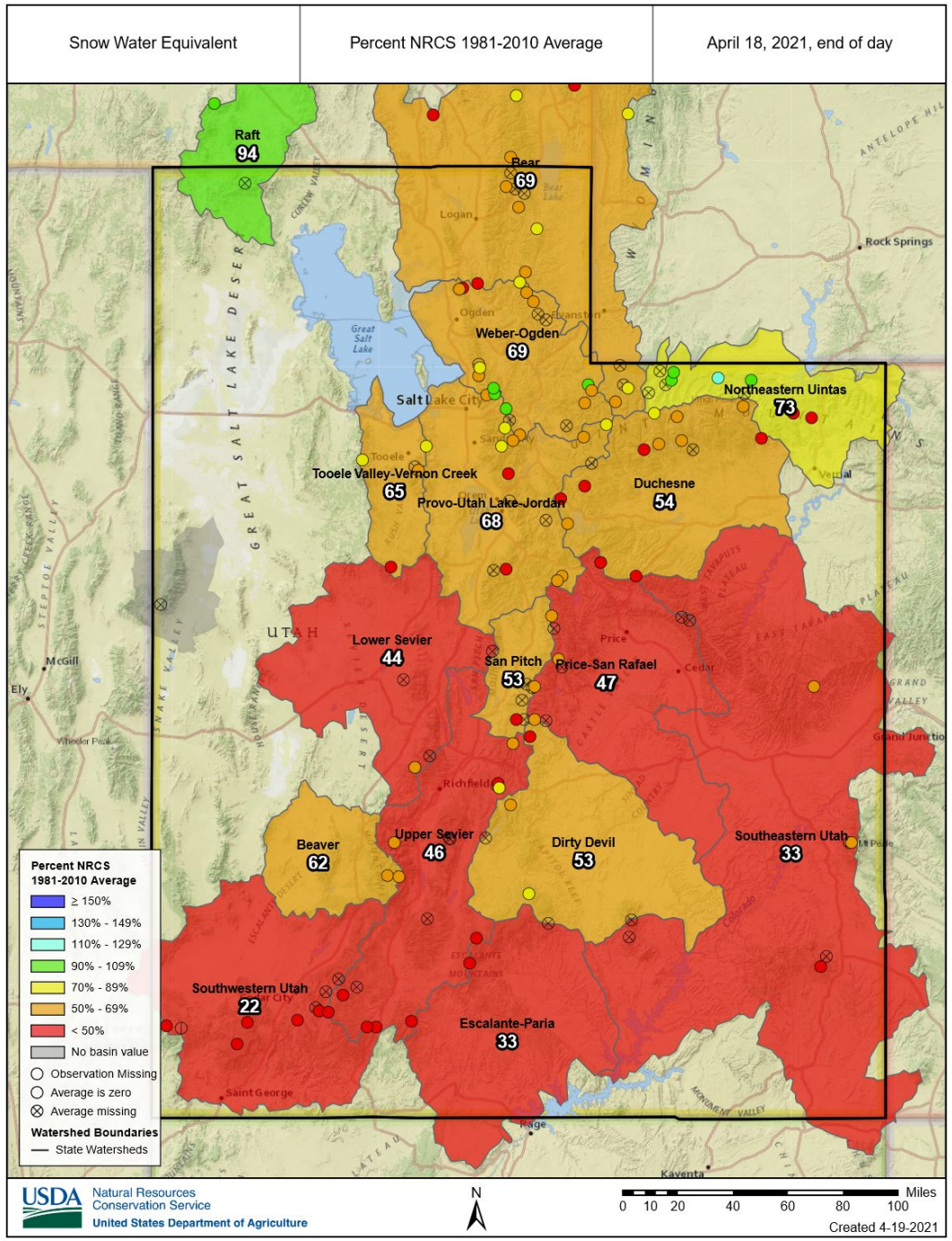
Presenter - Jon Meyer

Snowpack



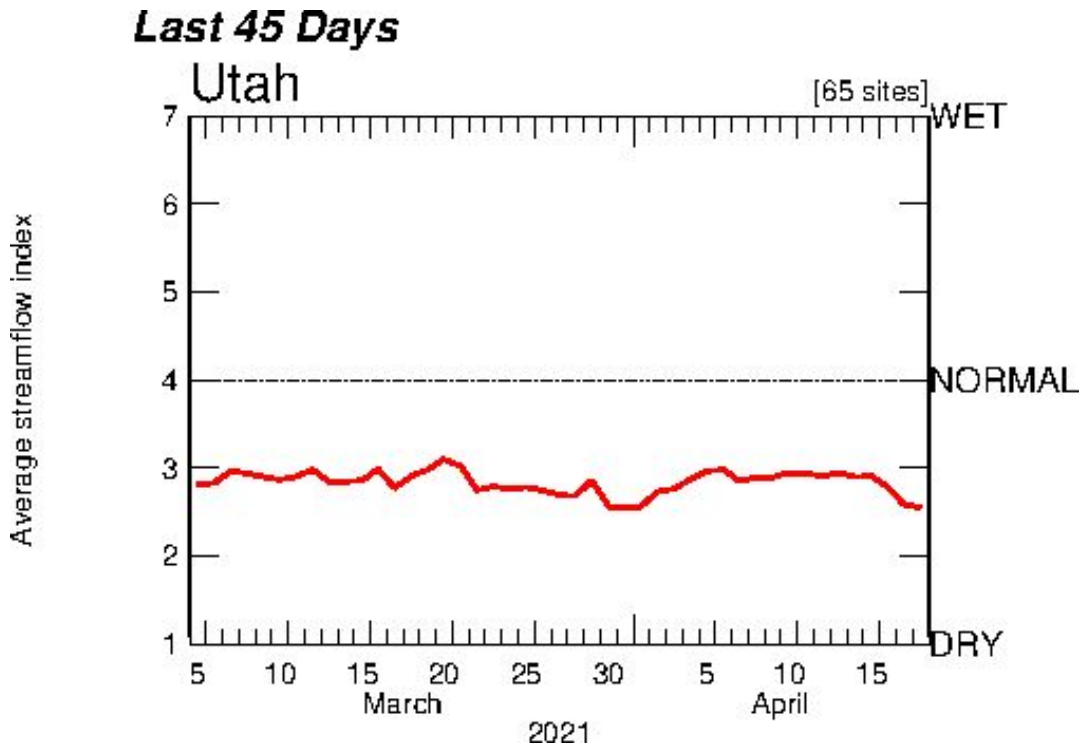


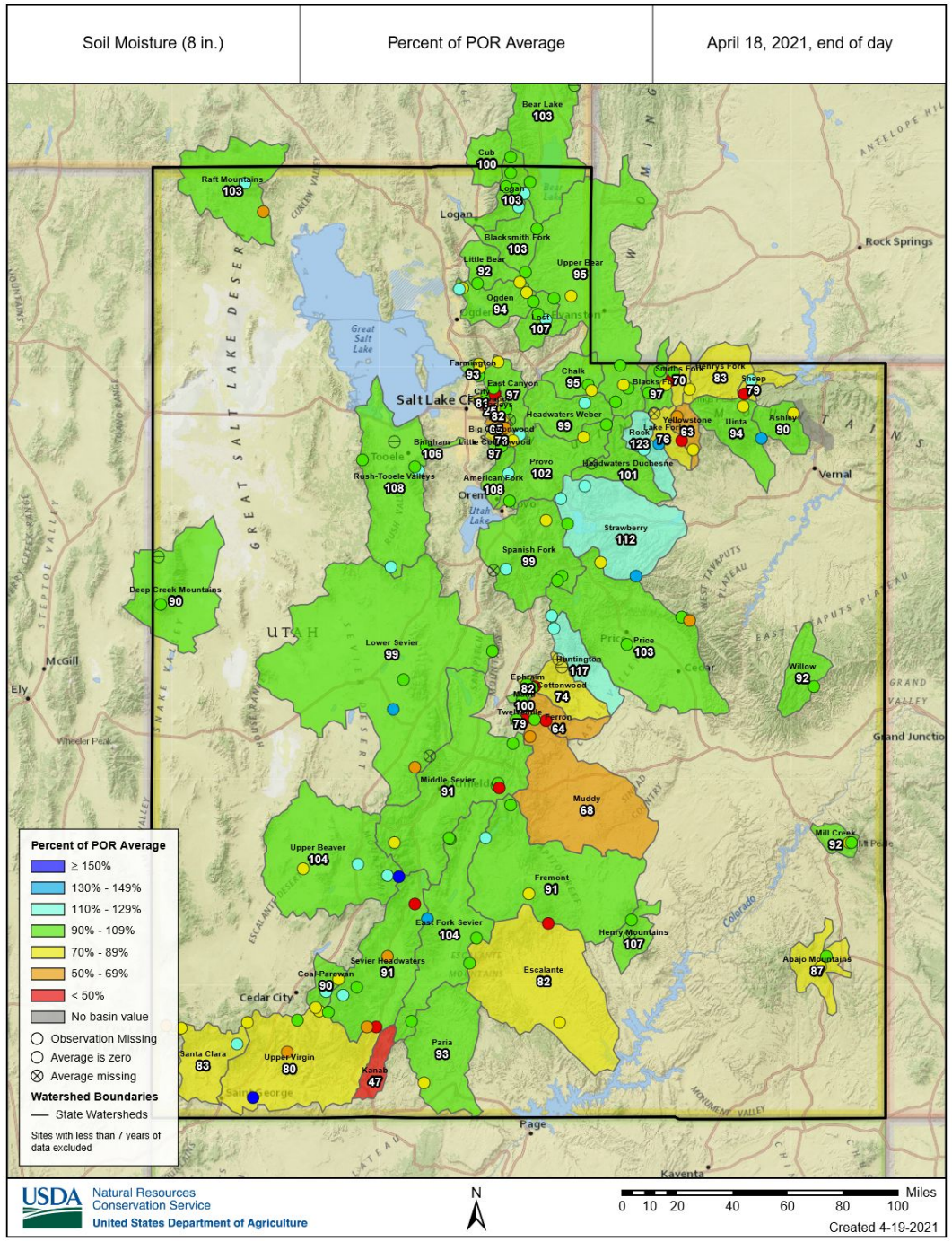
Agency - NRCS Snow Survey
Presenter - Kent Sutcliffe

Soil Moisture

8” sensor depth
SNOTEL & SCAN combined

SWE losses are largely being absorbed by headwater soils and not significantly impacting runoff

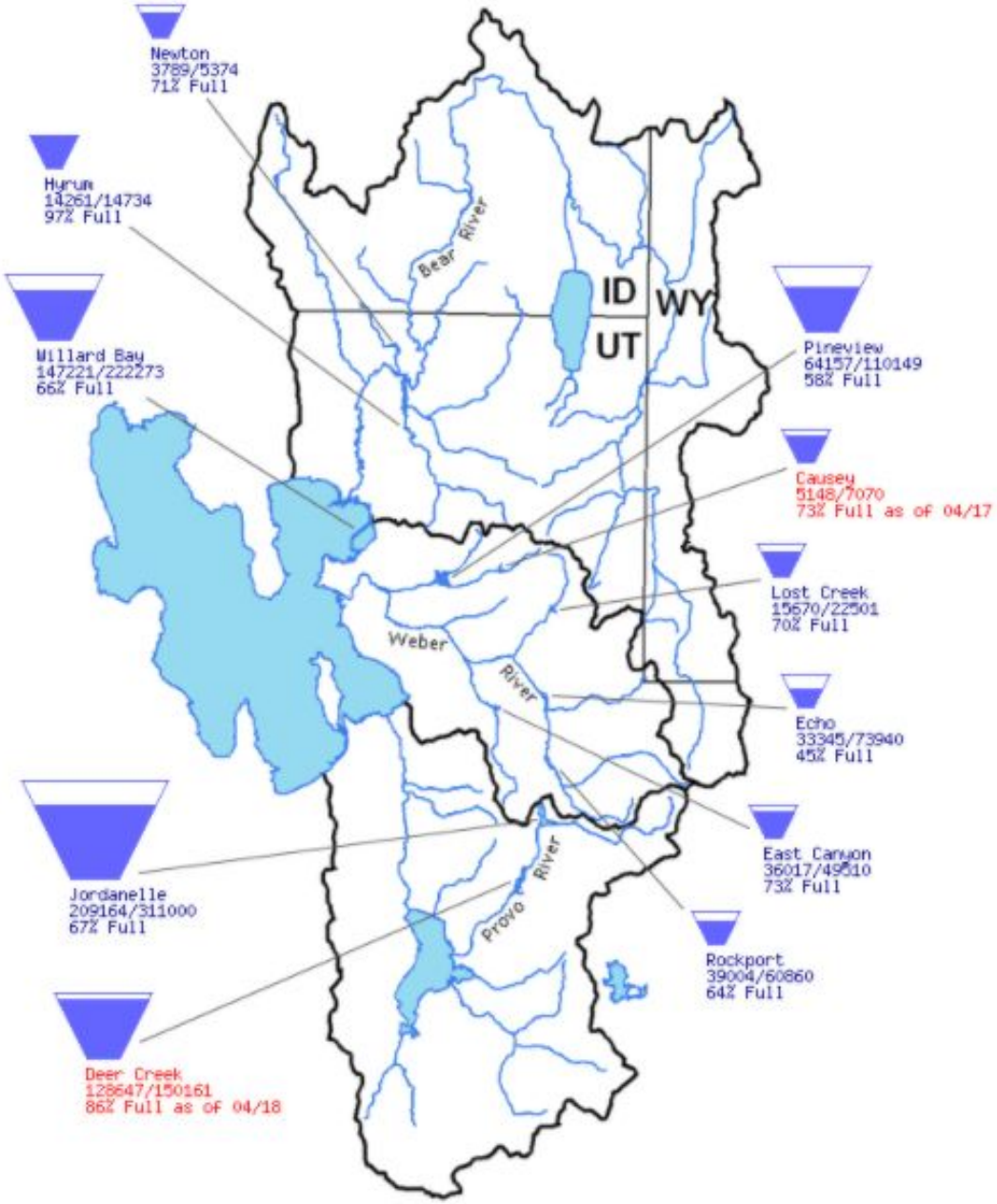




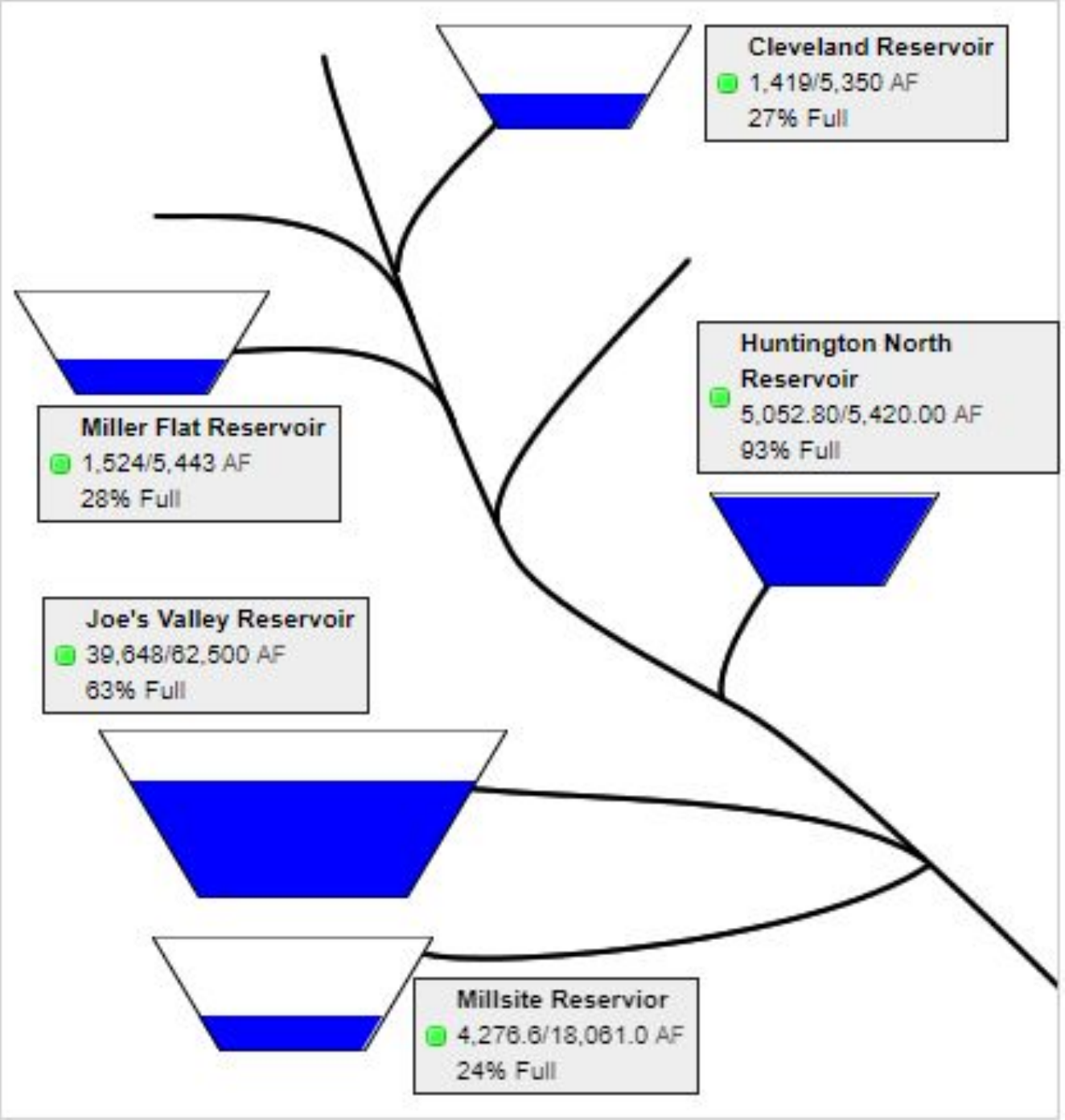
Agency - NRCS Snow Survey
Presenter - Kent Sutcliffe

Data Current as of:
04/19/2021

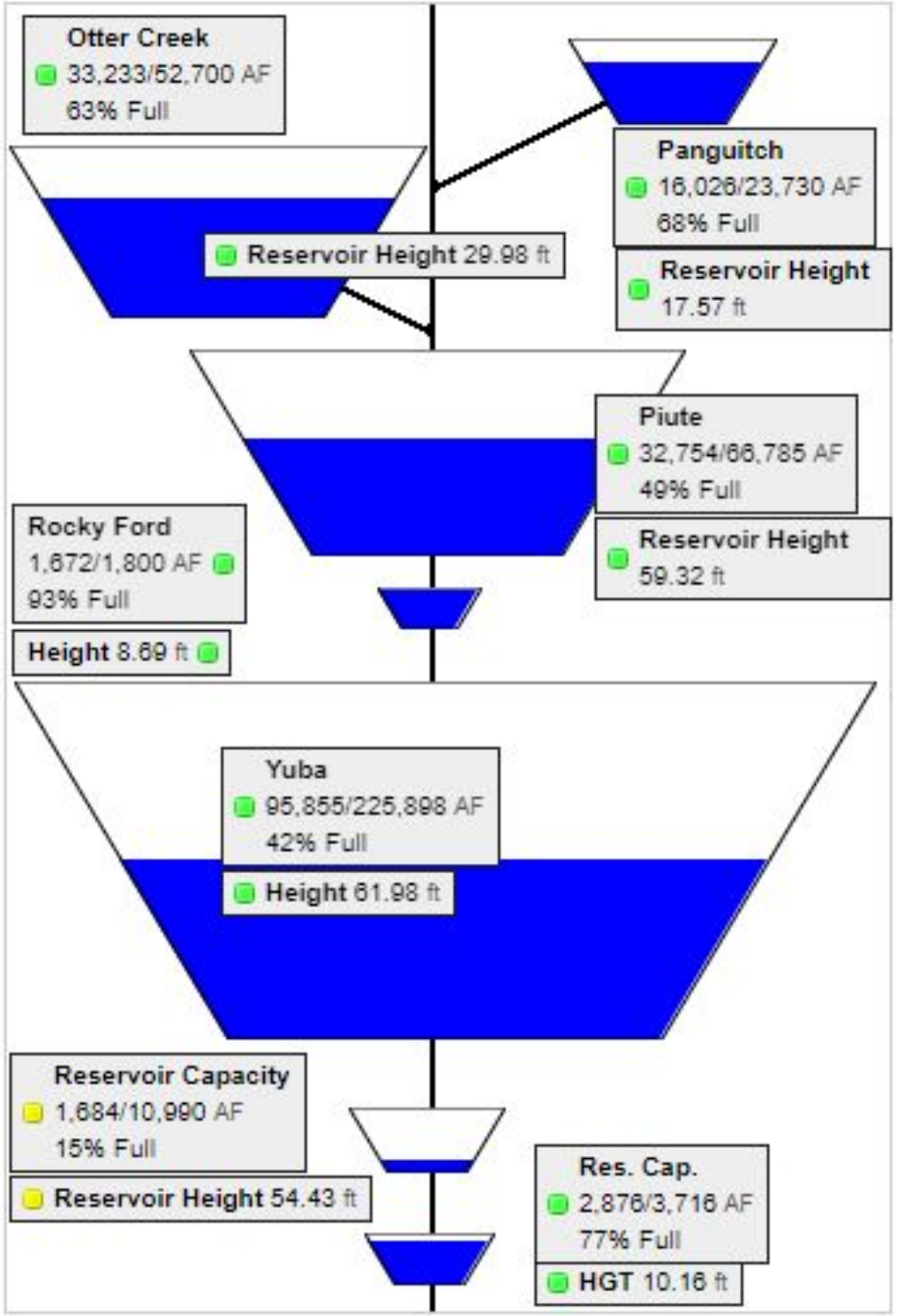
Bear, Weber, and Provo River Basins



Agency - Bureau of Reclamation
Presenter - Laura Haskell

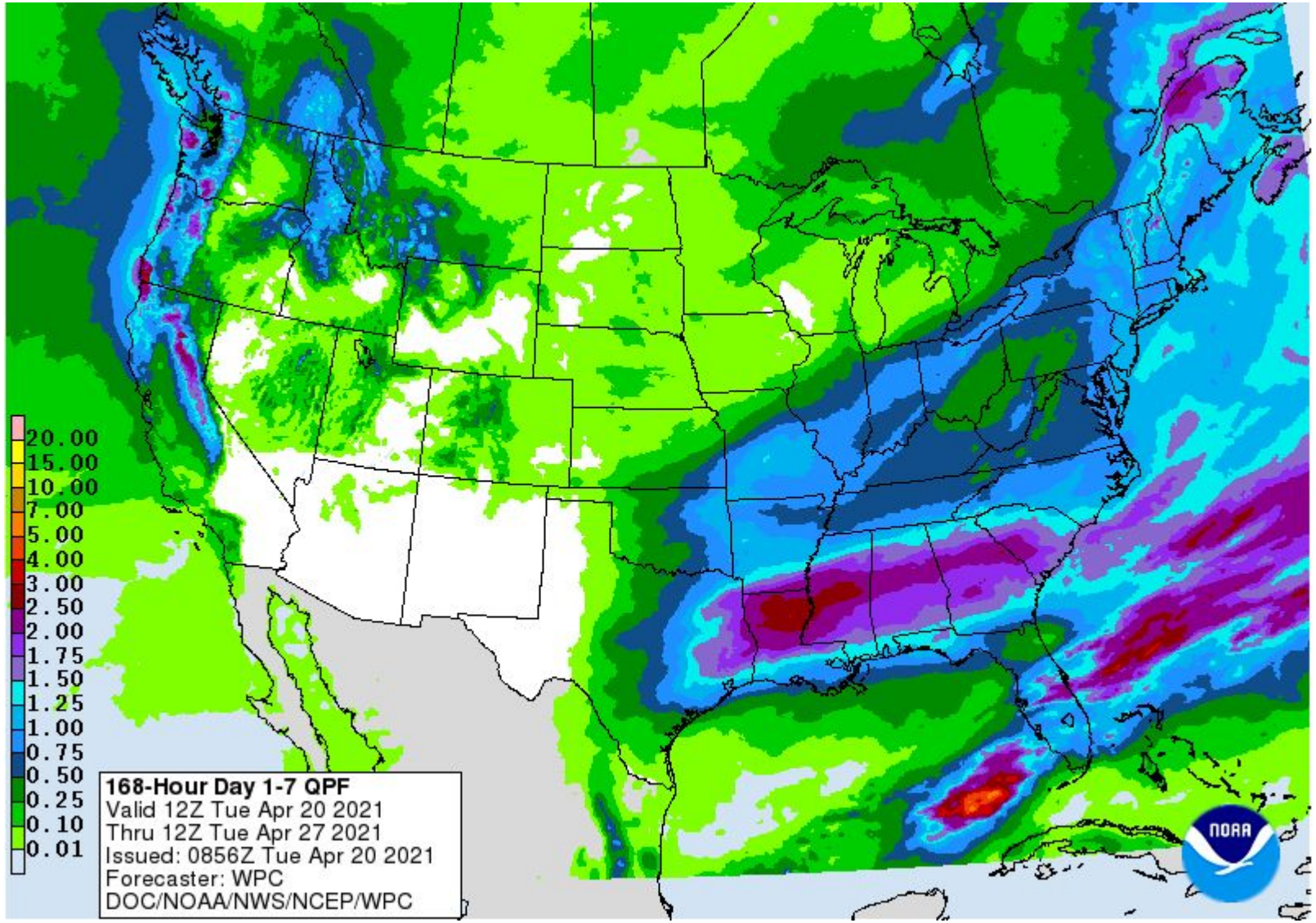


Agency - Emery Water Conservancy District Data
Presenter - Laura Haskell



Agency - Sevier River Water Users Association Data
Presenter - Laura Haskell

Weather Forecast Office Utah Day 1-7 Outlook

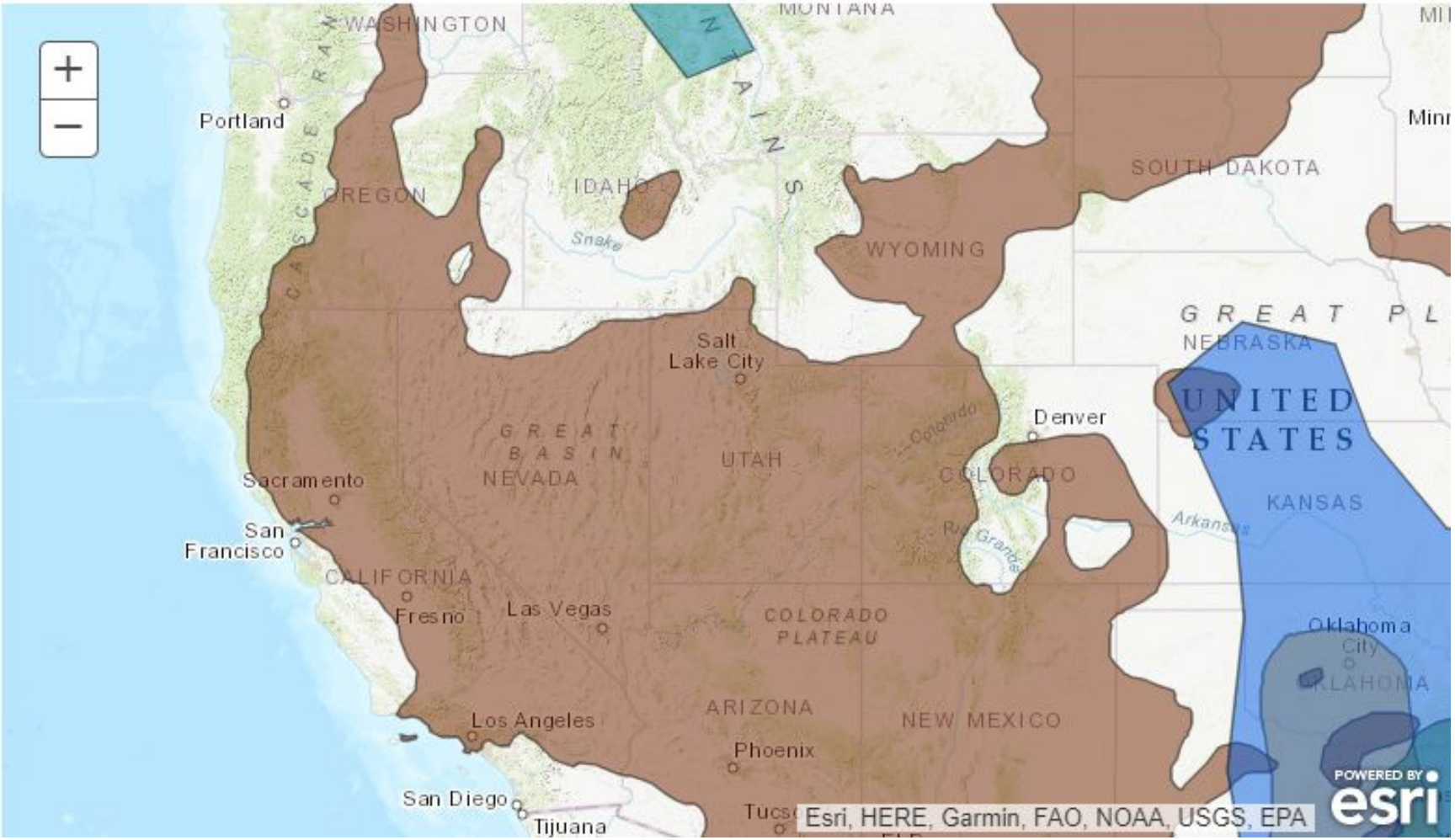


- A few weak storms are expected to pass through the region over the next 7 days.
- Total QPF amounts will vary across the state; ranging from nothing up to an inch in some higher mountains.

Agency - National Weather Service Weather Forecast Office
Presenter - Megan Stackhouse - Grand Junction

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

Valid April 22, 2021 - April 26, 2021



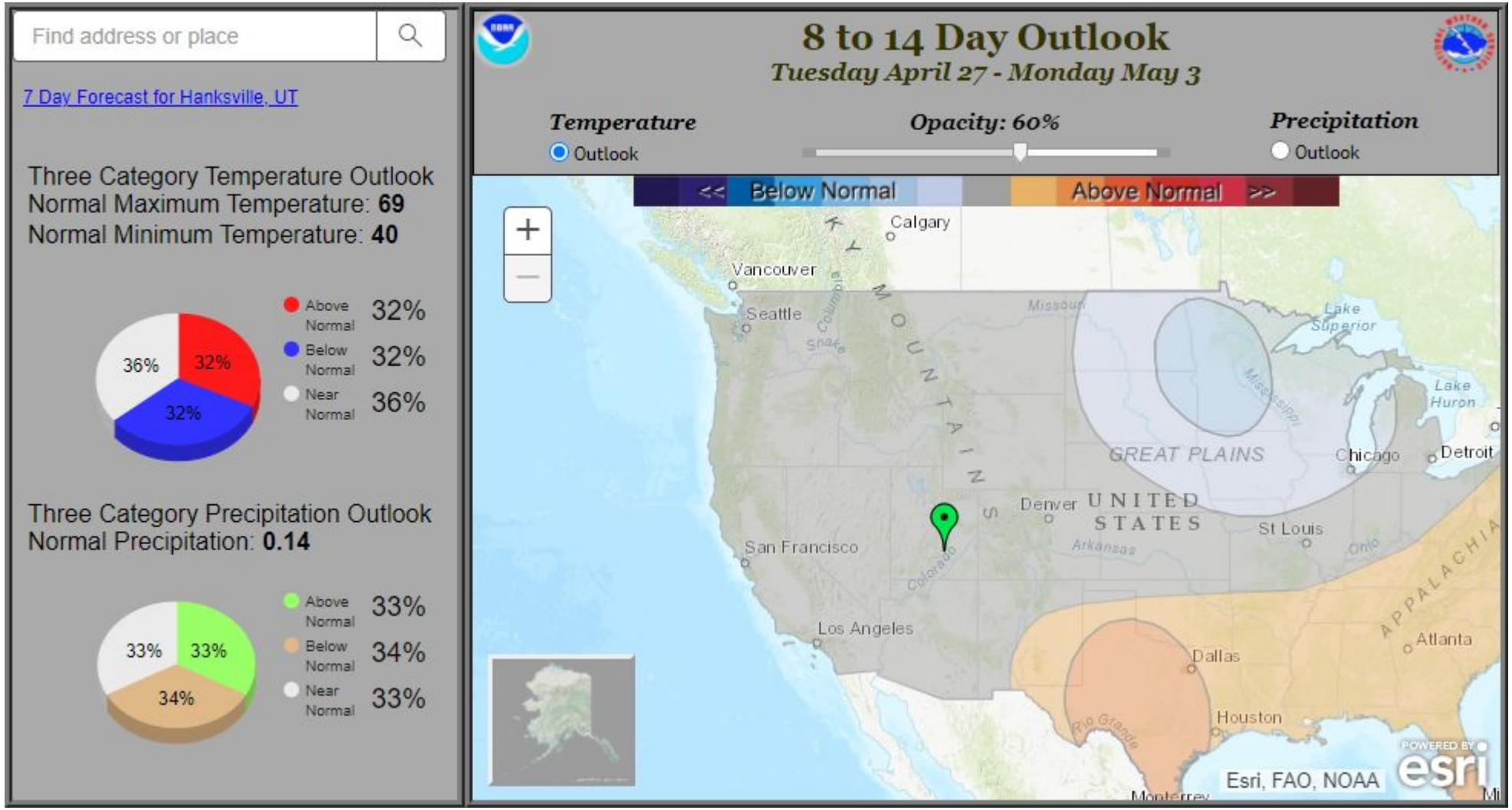
- Drought conditions persist

Legend

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

Agency - National Weather Service Weather Forecast Office
Presenter - Megan Stackhouse - Grand Junction

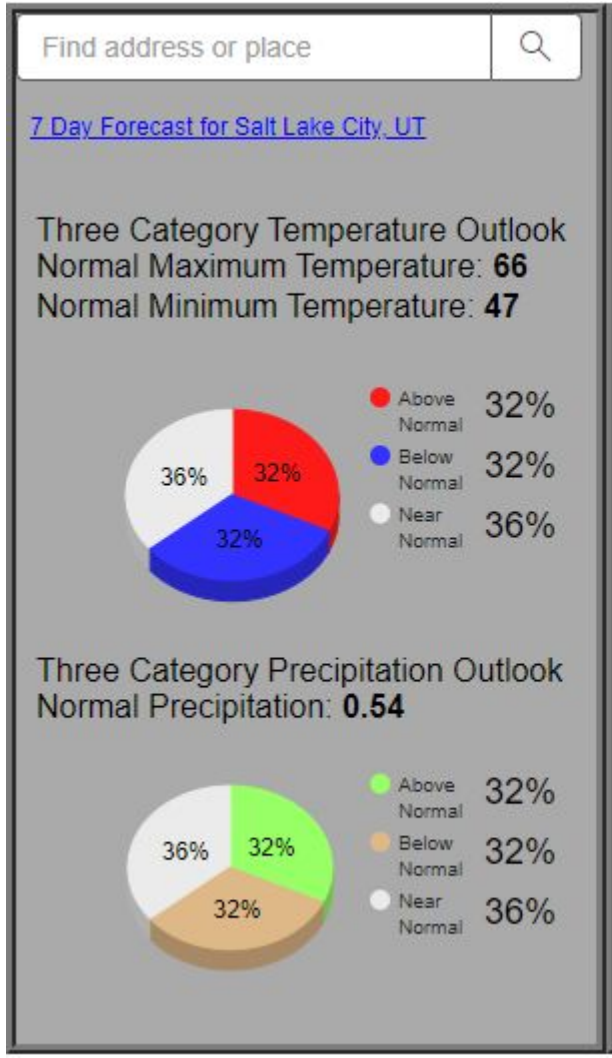
Climate Prediction Center 8 to 14 Day Outlooks - Temperature

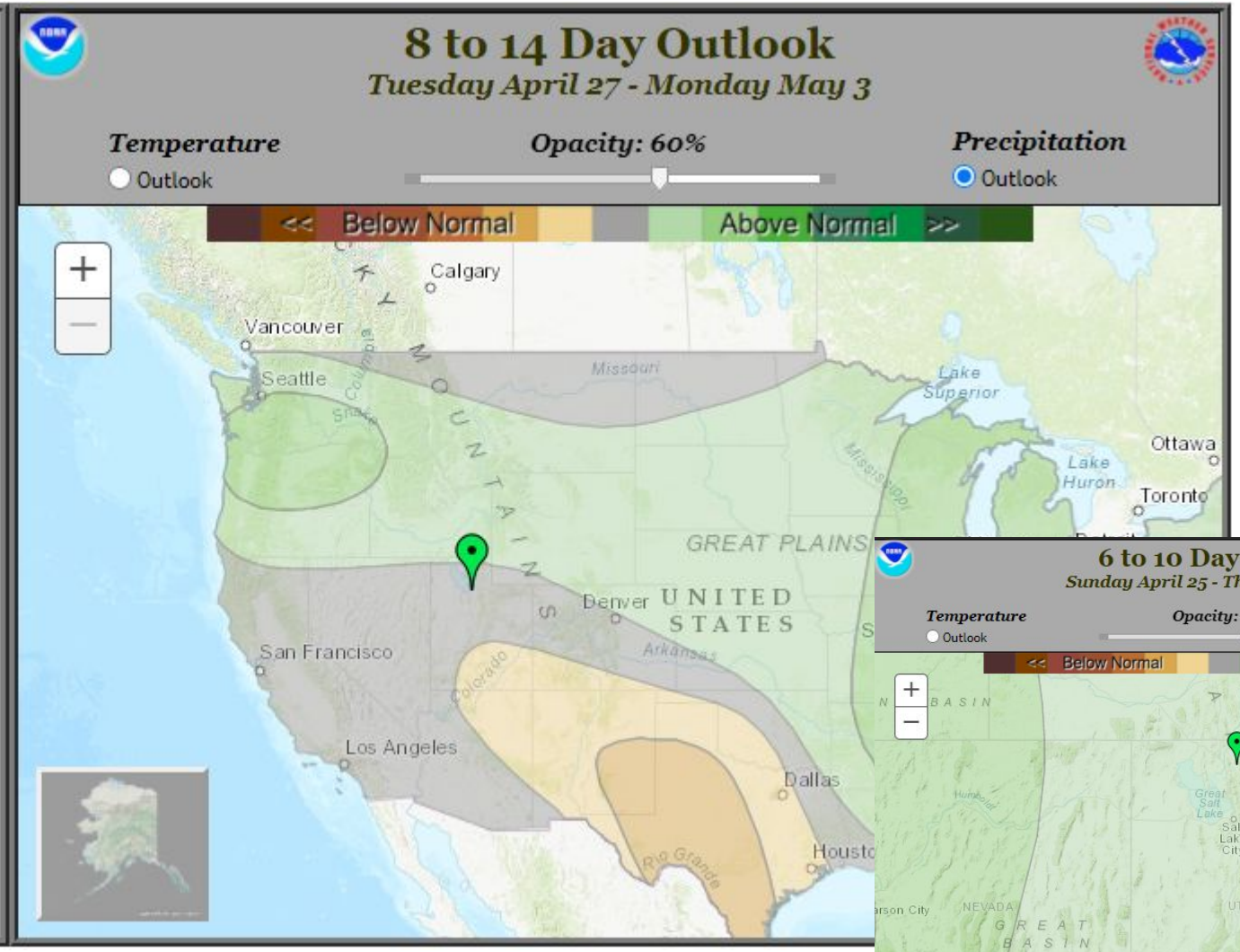


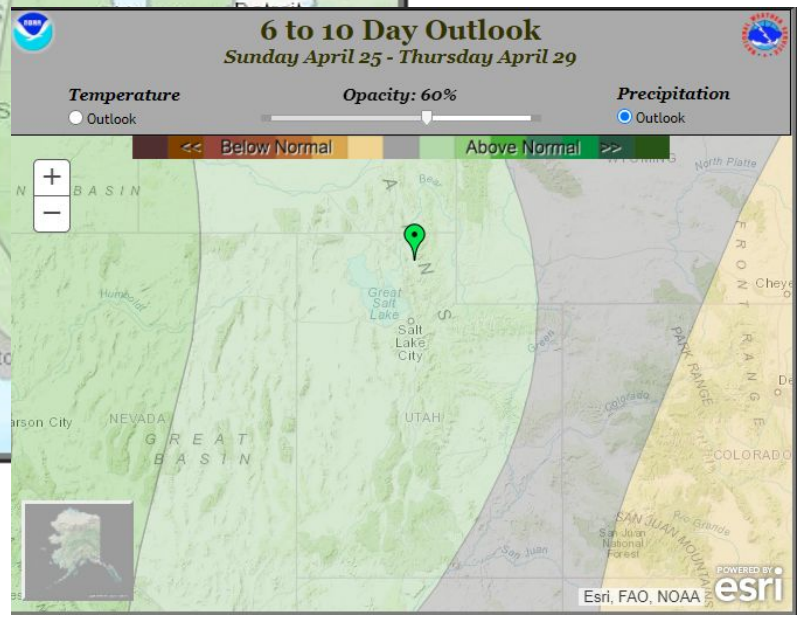
- Near normal temperatures favored from April 27 through May 3
- Pie charts for Hanksville, UT shown

Agency - National Weather Service Weather Forecast Office
Presenter - Megan Stackhouse - Grand Junction

Climate Prediction Center 8 to 14 Day Outlooks - Precipitation





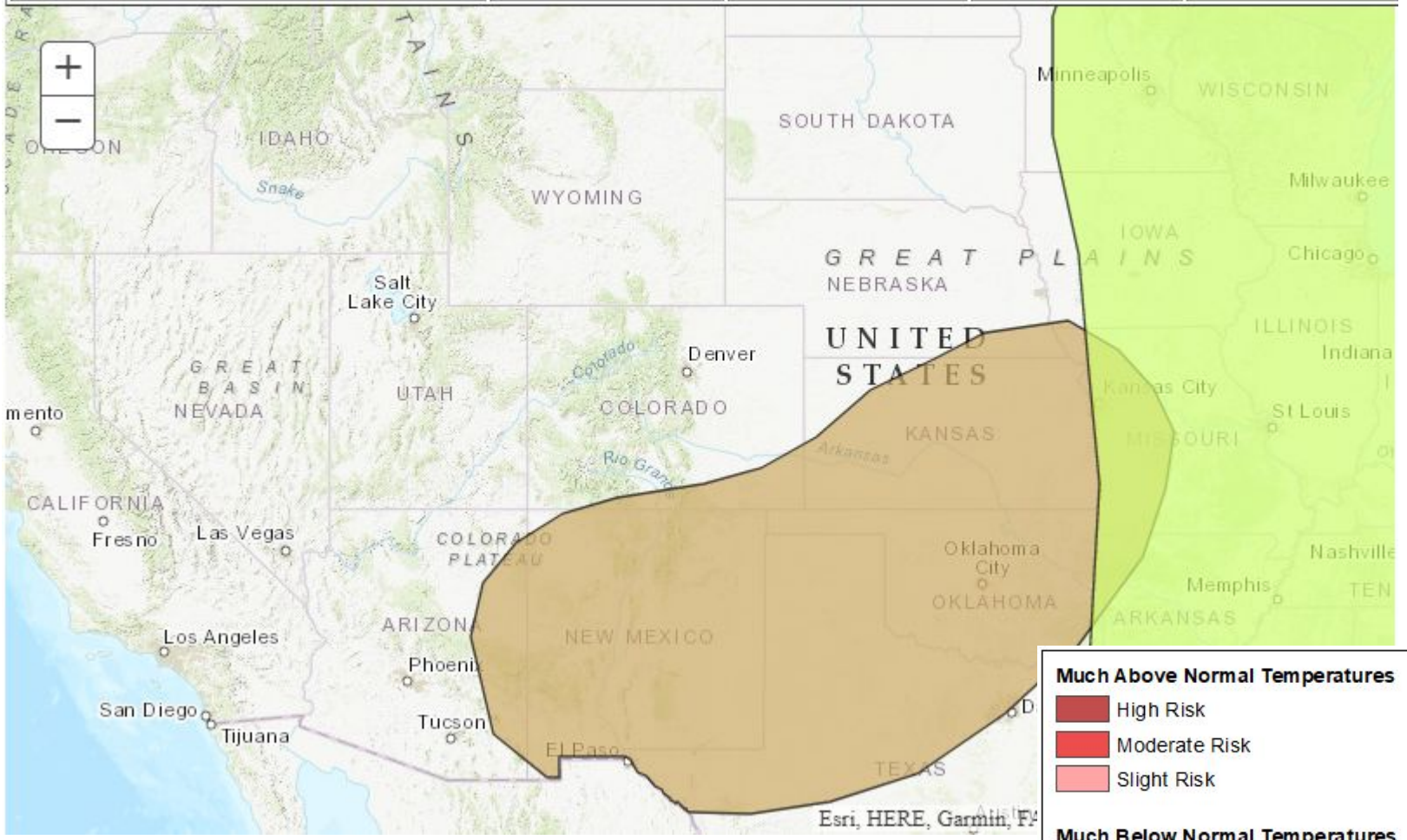


- Odds favor above normal Precip in the 6-10 day window
- Then dropping off to "normal" in the 8-14 day period
- Pie Charts for Salt Lake City shown

Agency - National Weather Service Weather Forecast Office
Presenter - Megan Stackhouse - Grand Junction

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

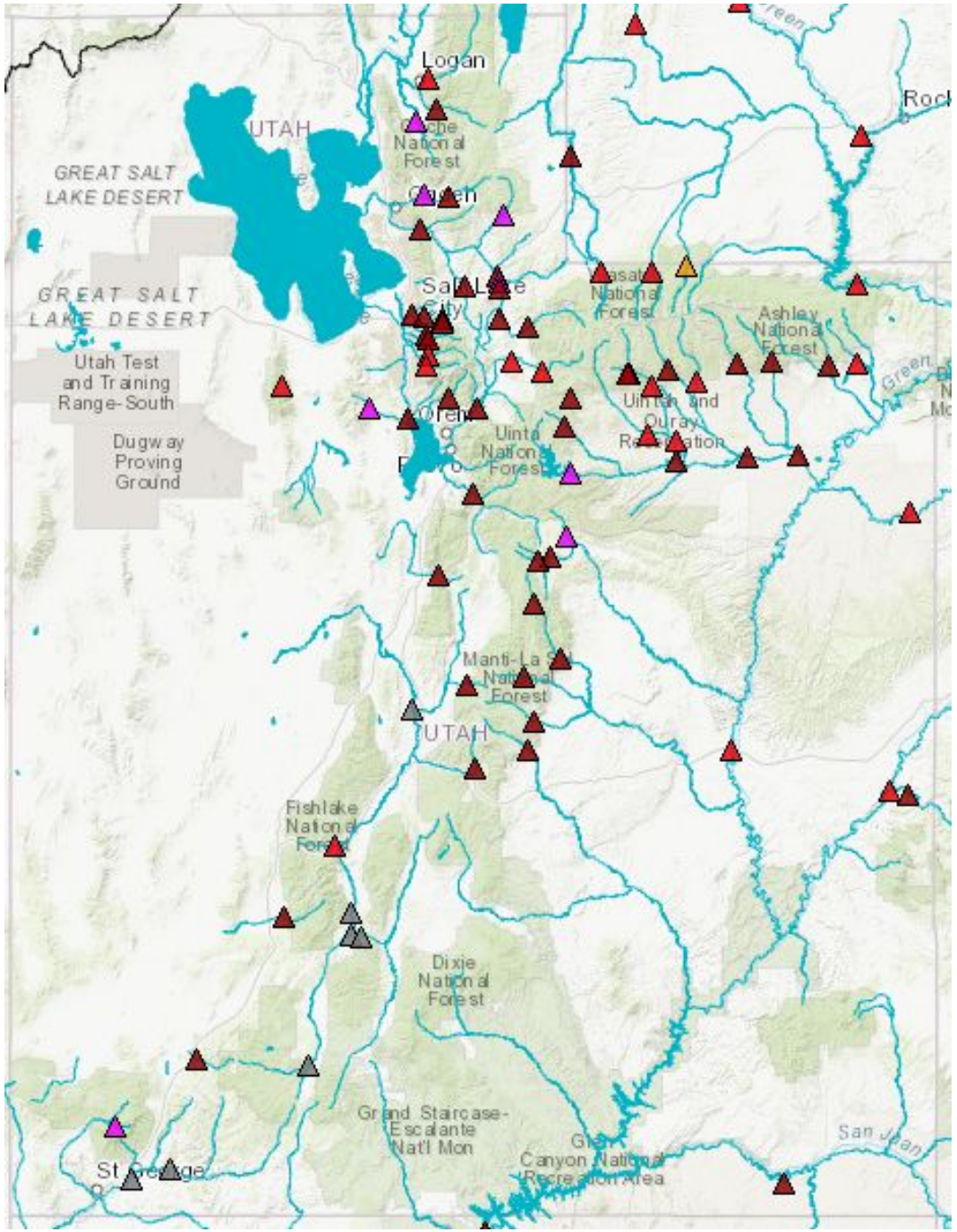
Type and Period	Temperature	Precipitation	Snow	Wind
Composite Days 8-14 Map	No Hazards	No Hazards	No Hazards	No Hazards
Probabilistic Days 8-14 Map	No Hazards	☑	No Hazards	☑



Much Above Normal Temperatures	Excessive Heat	Heavy Precipitation	Composite
High Risk	High Risk	High Risk	Flooding Possible
Moderate Risk	Moderate Risk	Moderate Risk	Frozen Precipitation
Slight Risk	Slight Risk	Slight Risk	
Much Below Normal Temperatures	**High Winds**	**Heavy Snow**	
High Risk	Moderate Risk	High Risk	
Moderate Risk	Slight Risk	Moderate Risk	
Slight Risk		Slight Risk	

- No significant Hazards forecast over the next 2 weeks.
- Windy across Eastern Arizona and New Mexico into the Southern Plains

Agency - National Weather Service Weather Forecast Office
Presenter - Megan Stackhouse - Grand Junction

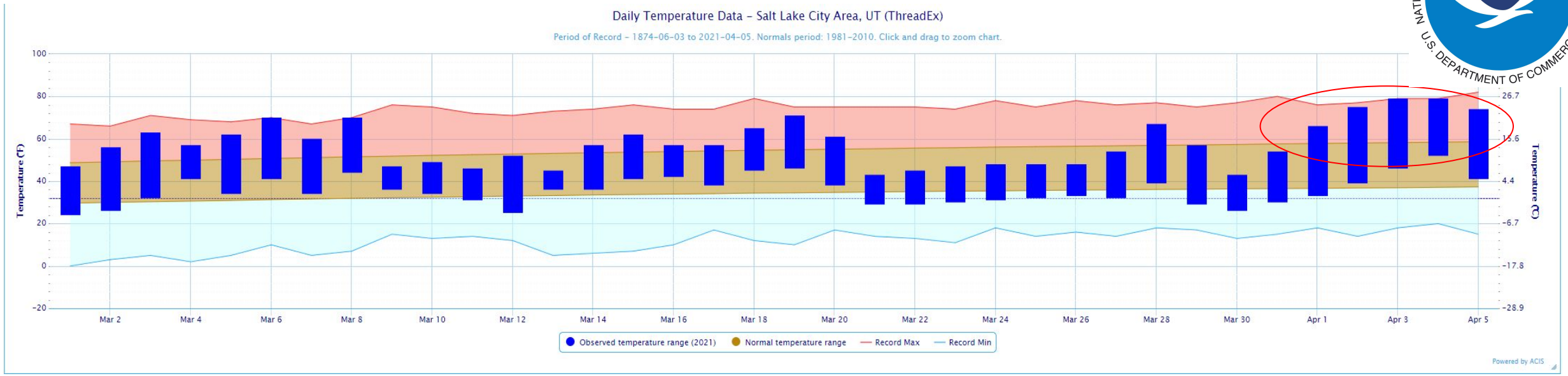


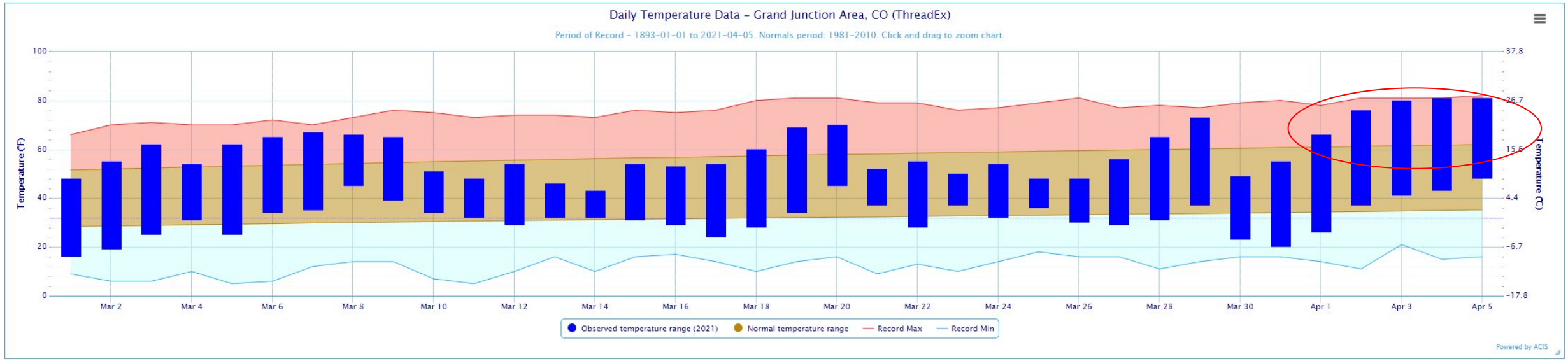
Dry conditions continue to persist throughout Utah, driving seasonal water supply forecasts well below average.

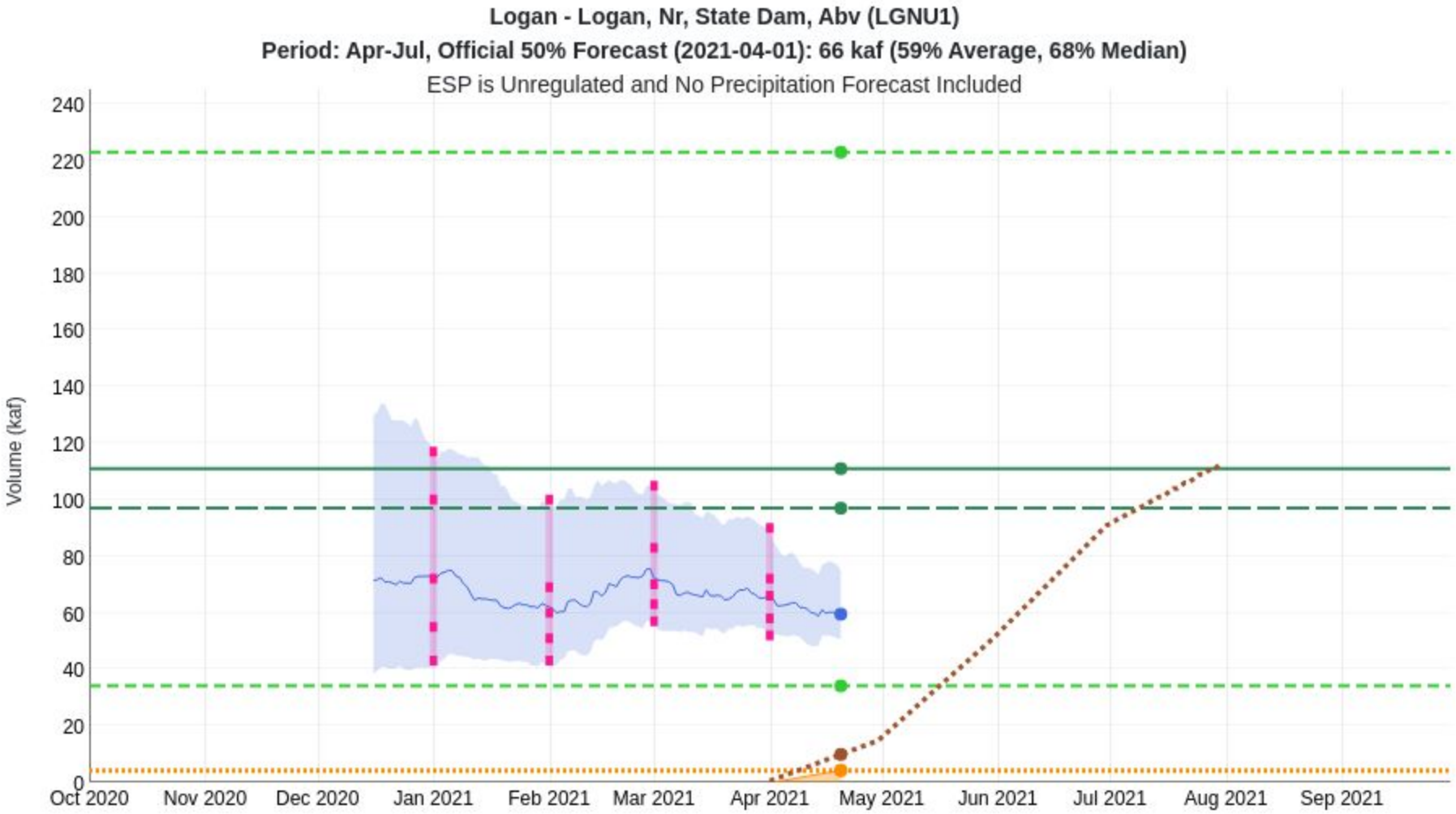
A warm start to April started to drive snowmelt conditions.

Not likely that we'll achieve average conditions.

March/Early April Temperatures







2021/04/20:

Max 1986: 222.92

Min 1977: 34.12

Average: 111

Median: 97

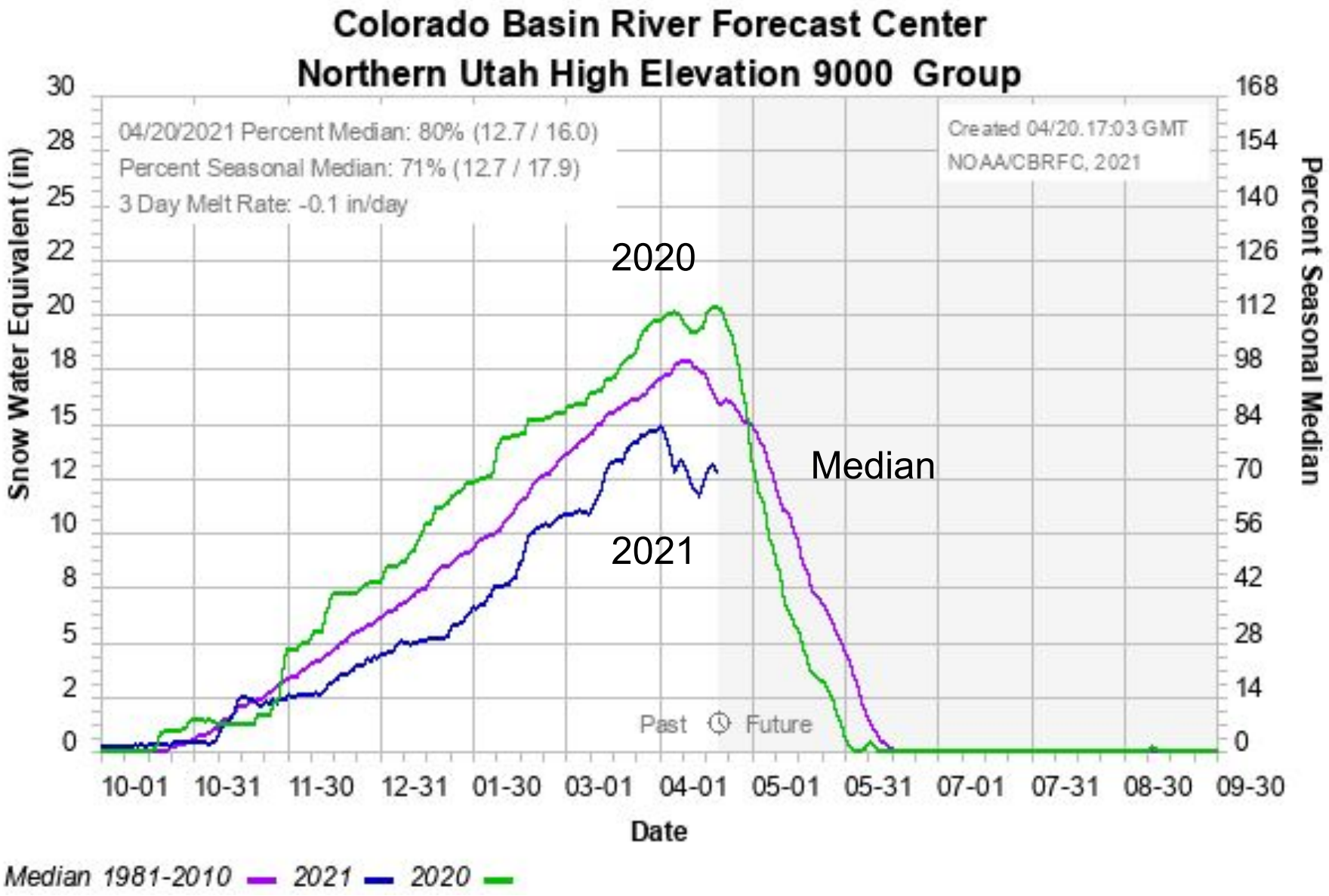
Observed Accumulation: 4.22

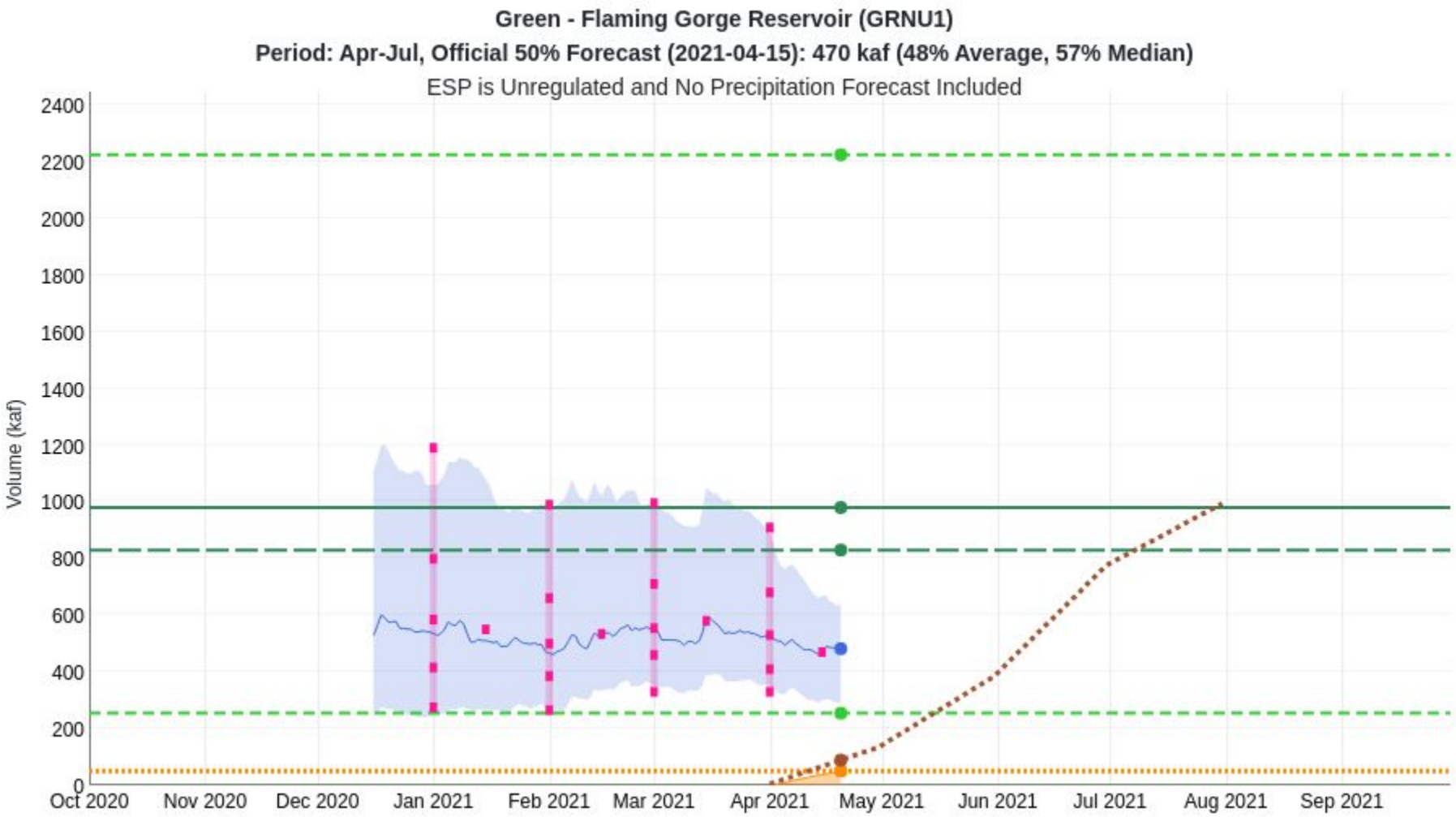
Observed Total: 4.22

Normal Accumulation: 9.87

ESP: 59.5

Utah Current Snowpack





2021/04/20:

Max 1986: 2224.35

Min 1977: 254.3

Average: 980

Median: 830

Observed

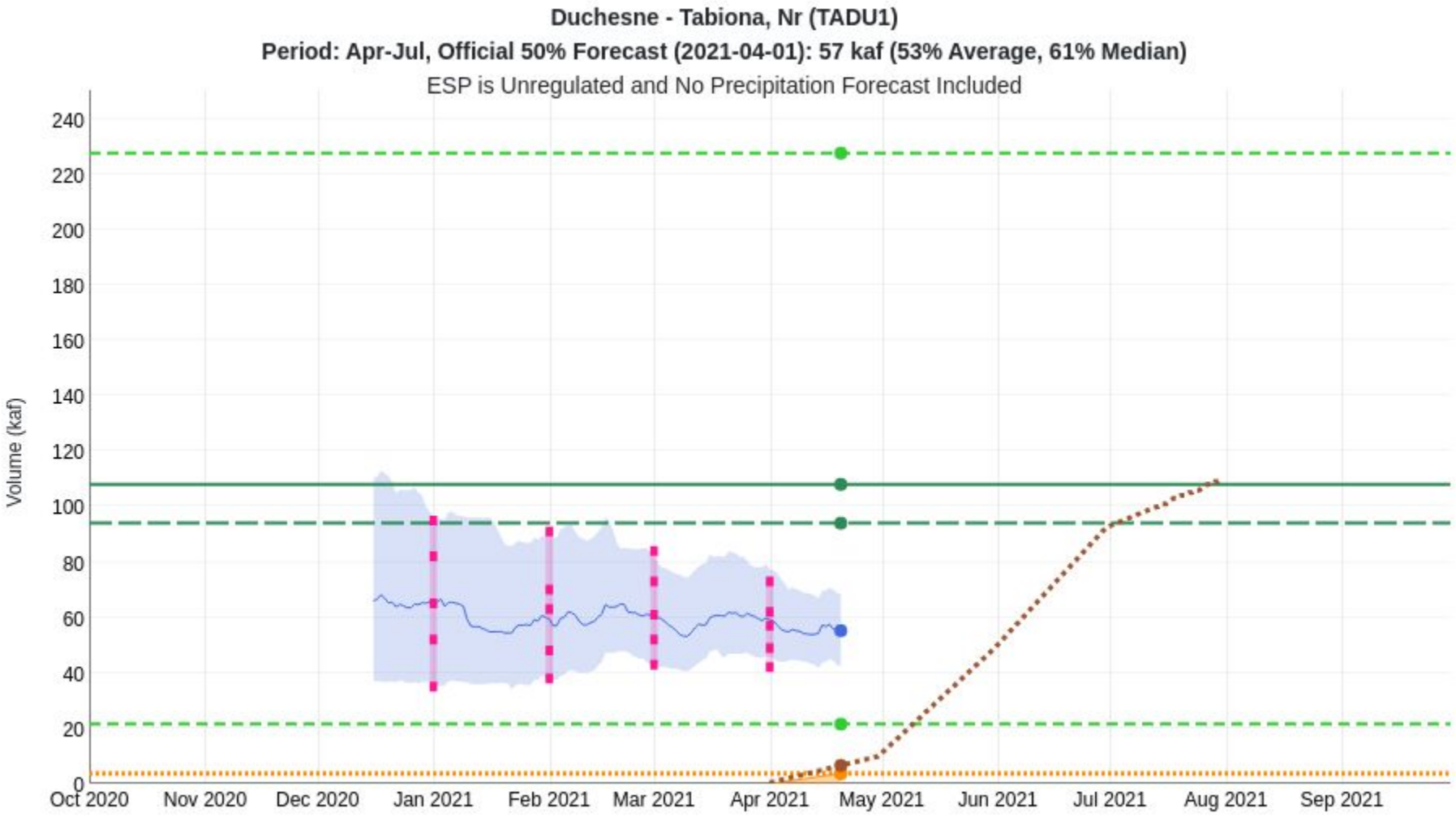
Accumulation: 50.8

Observed Total: 50.8

Normal

Accumulation: 88.9

ESP: 482



2021/04/20:

Max 2011: 227.52

Min 1934: 21.48

Average: 108

Median: 94

Observed

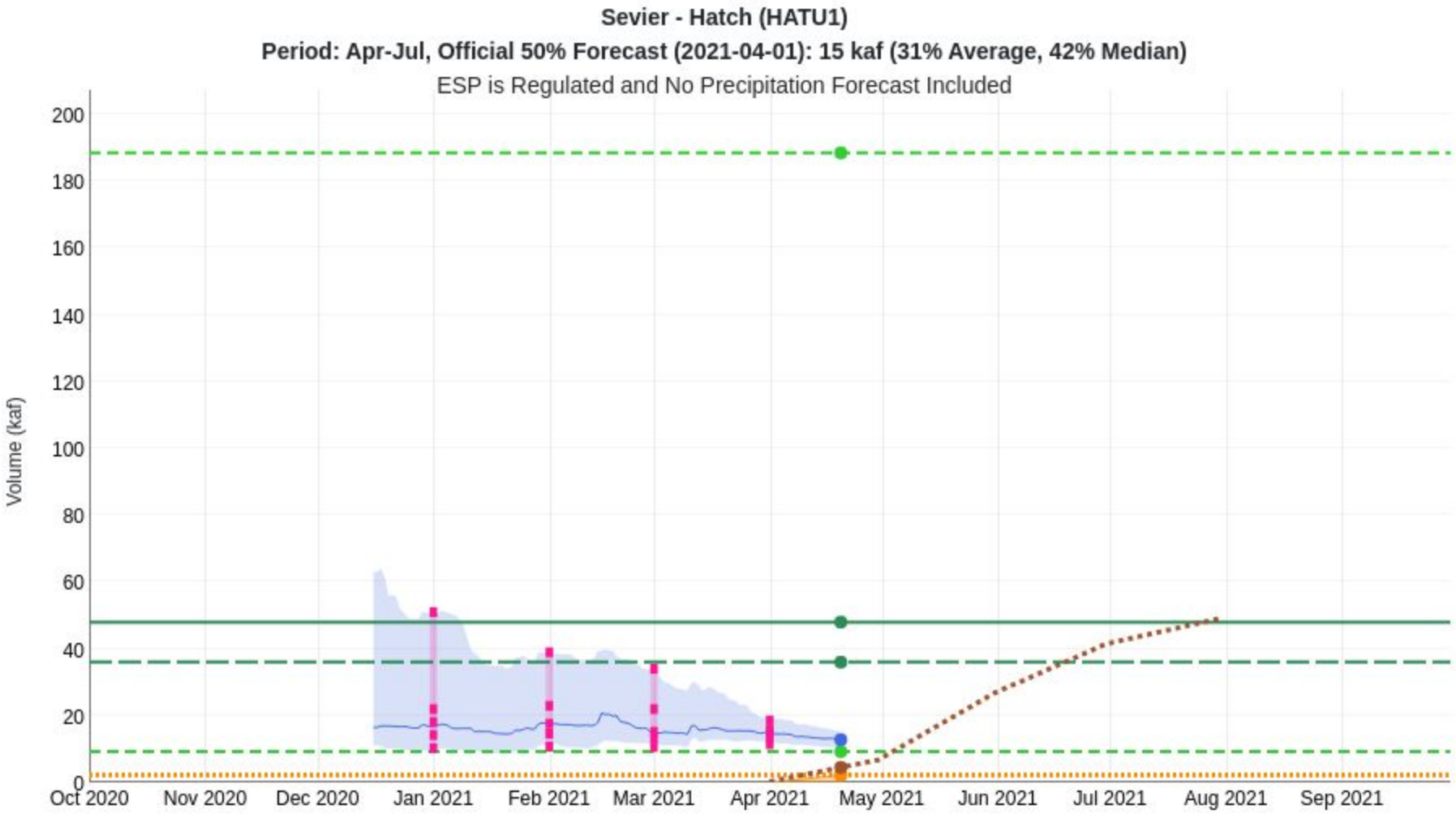
Accumulation: 3.67

Observed Total: 3.67

Normal

Accumulation: 6.57

ESP: 55.2



2021/04/20:

Max 2005: 188.48

Min 2002: 9.25

Average: 48

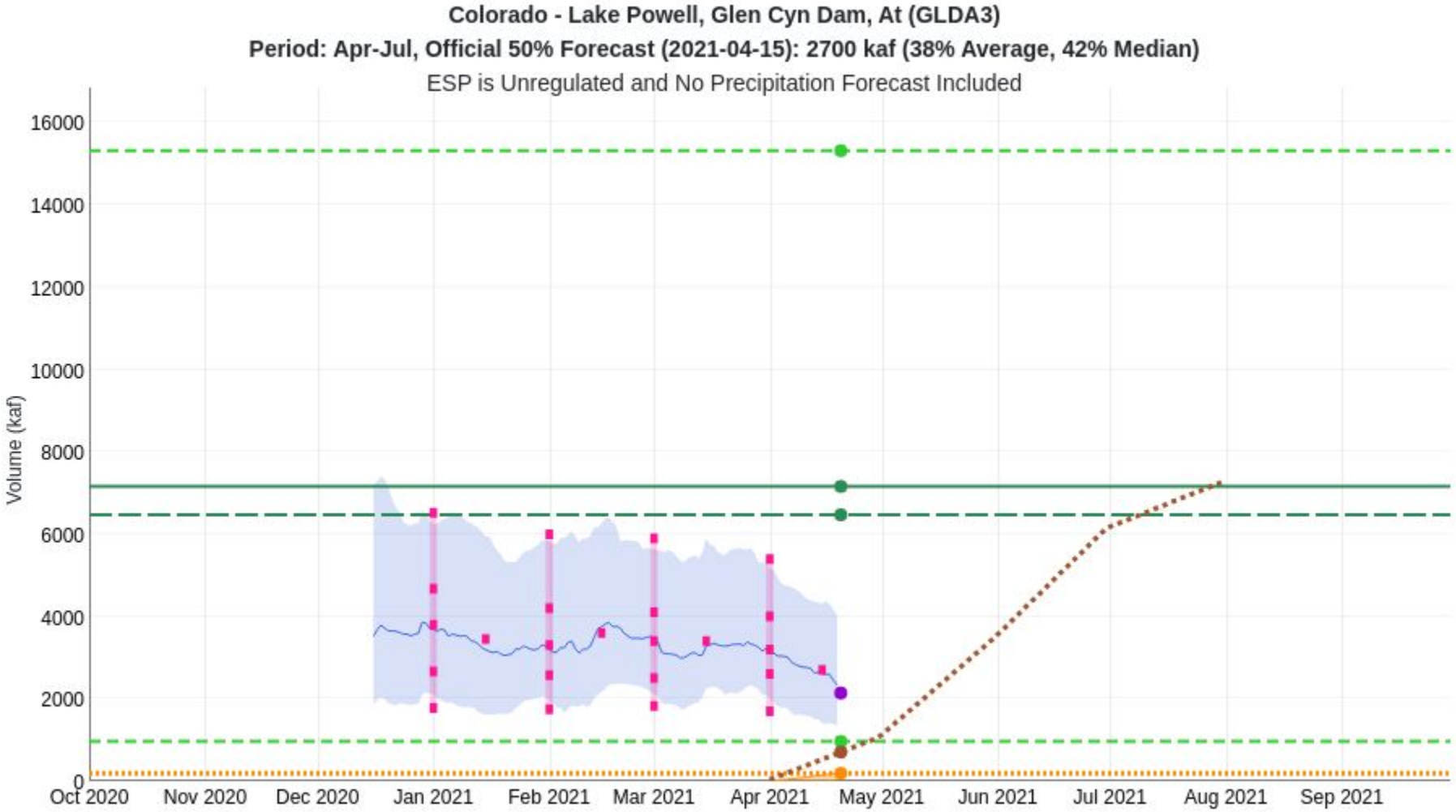
Median: 36

Observed Accumulation: 2.21

Observed Total: 2.21

Normal Accumulation: 4.48

ESP: 12.8



2021/04/20:

Max 1984: 15316.11

Min 2002: 963.96

Average: 7160

Median: 6470

Observed Total: 191

Normal Accumulation: 704

ESP (wo Obs): 2140

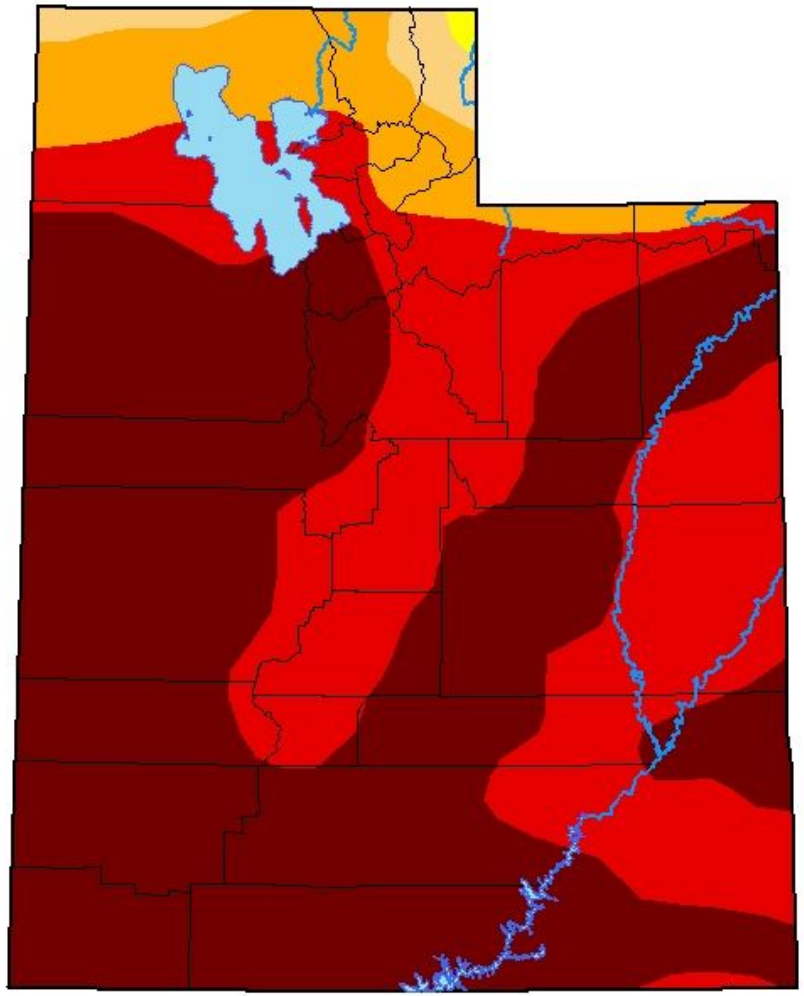
U.S. Drought Monitor

Utah

April 13, 2021

(Released Thursday, Apr. 15, 2021)

Valid 8 a.m. EDT



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

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National Drought Mitigation Center

droughtmonitor.unl.edu