



# Water Supply Update

Water Resources Advisory Committee

July 12, 2021

Jeff Marti, Water Resources Program



# 2021 Drought Advisory by County

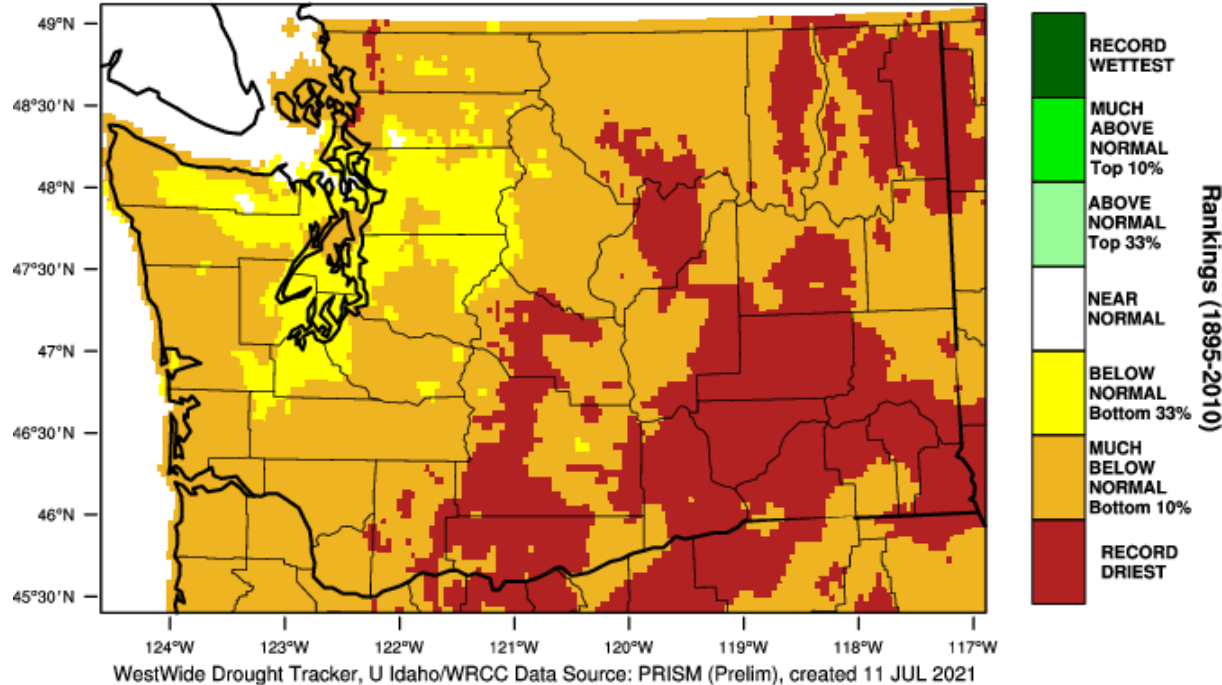


# EWEC Recommendation for Drought Declaration

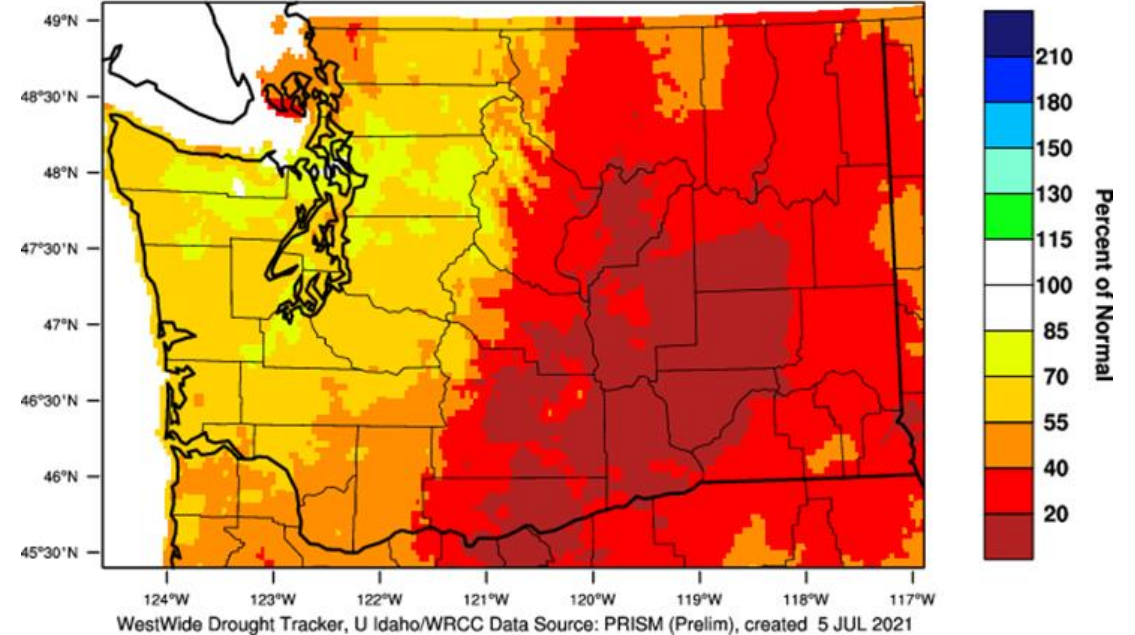
- Executive Water Emergency Committee (EWEC) recommended that Ecology issue an Emergency Drought Declaration.
- Area subject to declaration to include all watersheds except the following:
  - Duwamish – Green (Tacoma Water Supply)
  - Cedar – Sammamish (Seattle Water Supply)
  - Snohomish (Everett Water Supply)
- Look for Governor's Announcement on Wednesday
- A formal Order would authorize emergency water right permitting.

# March – June Precipitation

Washington - Precipitation  
March-June 2021 Percentile



Washington - Precipitation  
March-June 2021 Percent of 1981-2010 Normal



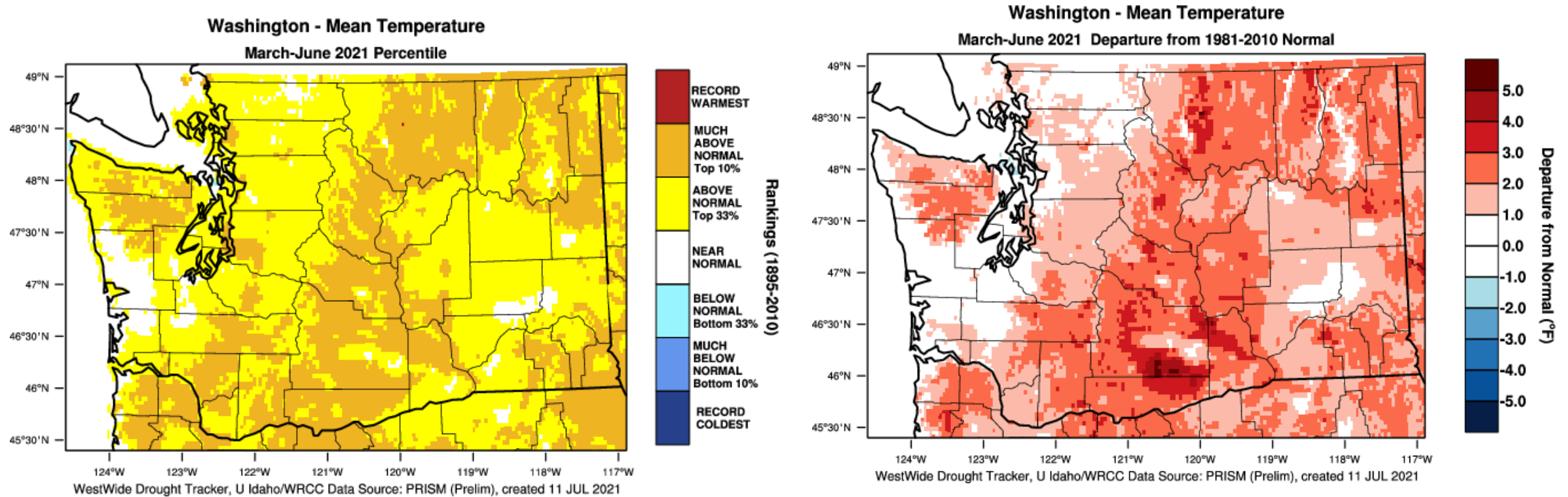
Averaged Statewide, March – June tied for 2<sup>nd</sup> driest year since 1895

Driest March-June area also dry (45-75% of normal) since start of the water year.

Modeled soil moisture shows exceptionally dry conditions statewide (only exception is for the Olympics and Cascades)



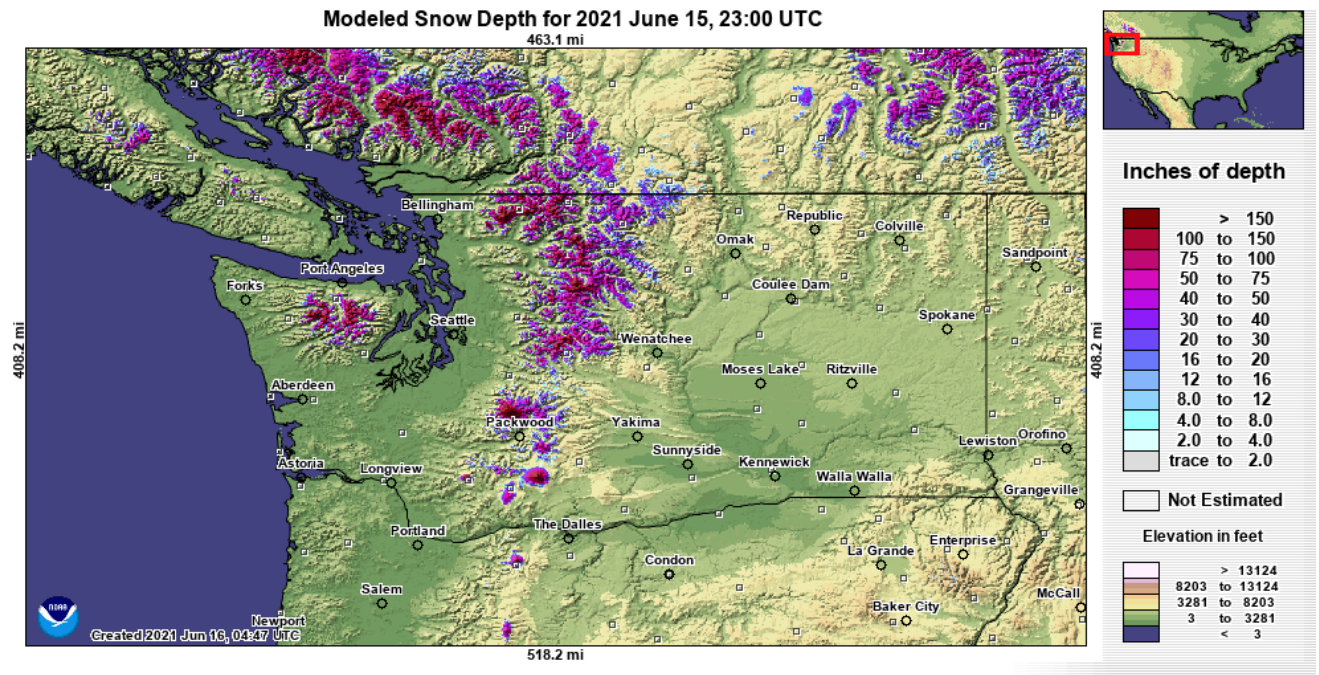
# March – June Temperature



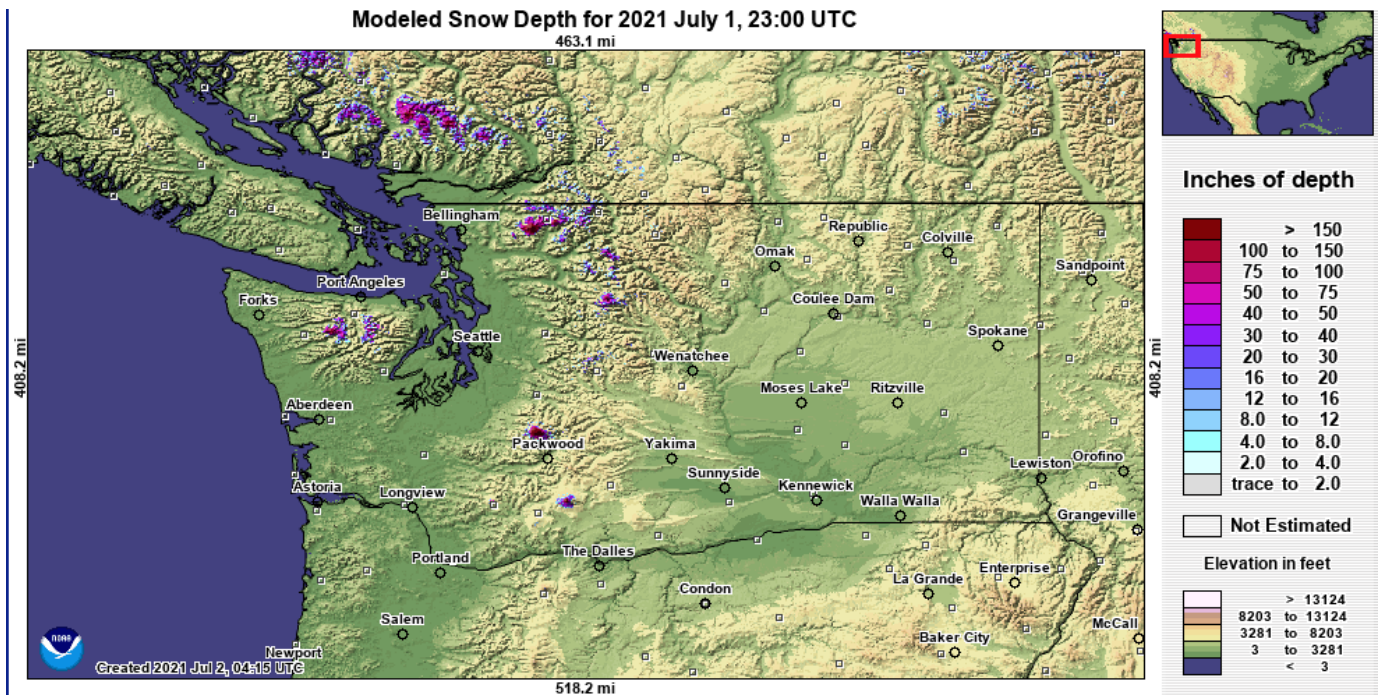
March – June: 9<sup>th</sup> Warmest Since 1895

June: 2nd Warmest Since 1895

# Modeled Snow Depth June 15



# Modeled Snow Depth July 1



# SNOW WATER EQUIVALENT AT EASY PASS

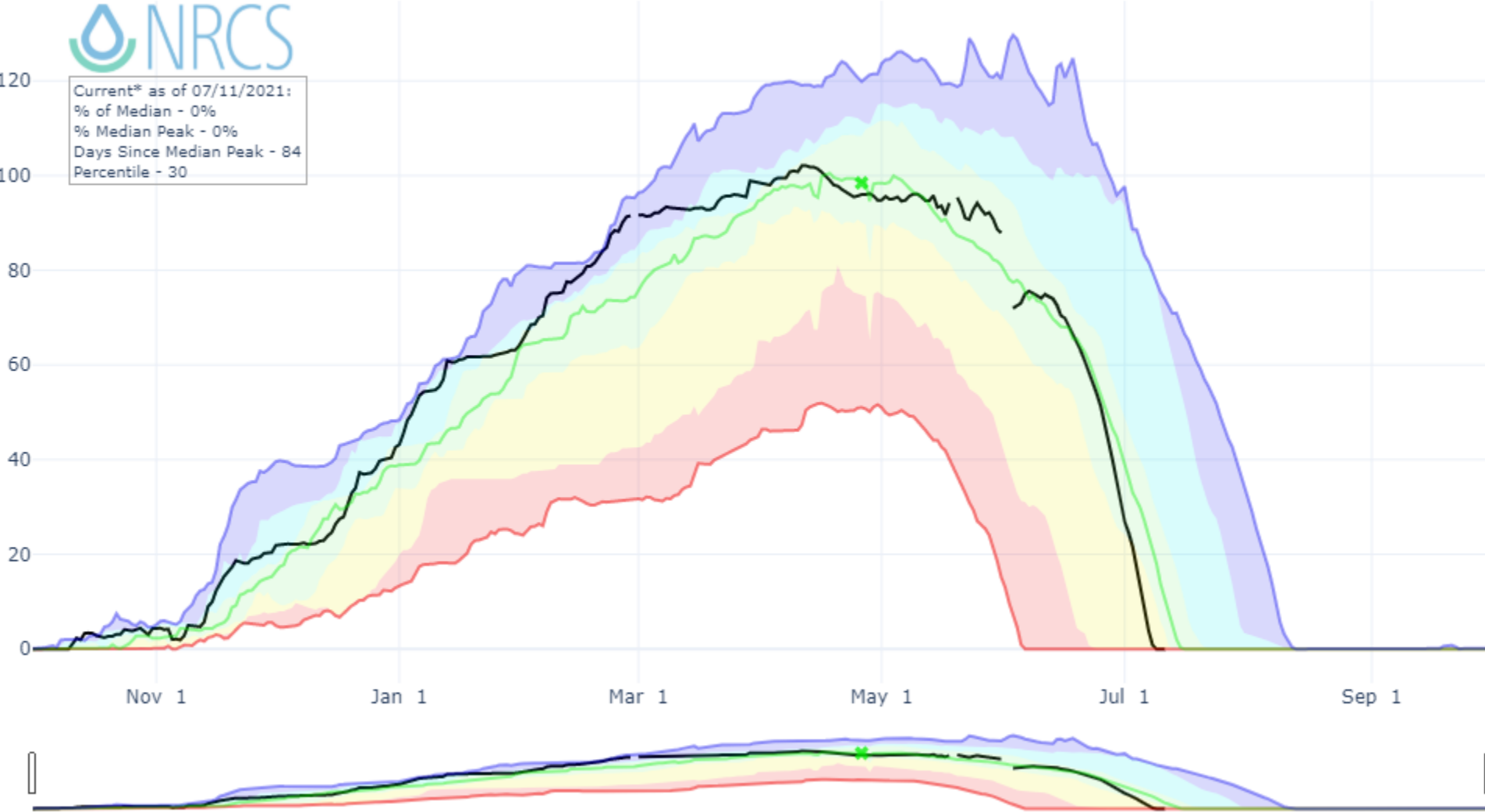
Reset Range

[Link to data: CSV / JSON](#)



Current\* as of 07/11/2021:  
% of Median - 0%  
% Median Peak - 0%  
Days Since Median Peak - 84  
Percentile - 30

Snow Water Equivalent (in.)



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

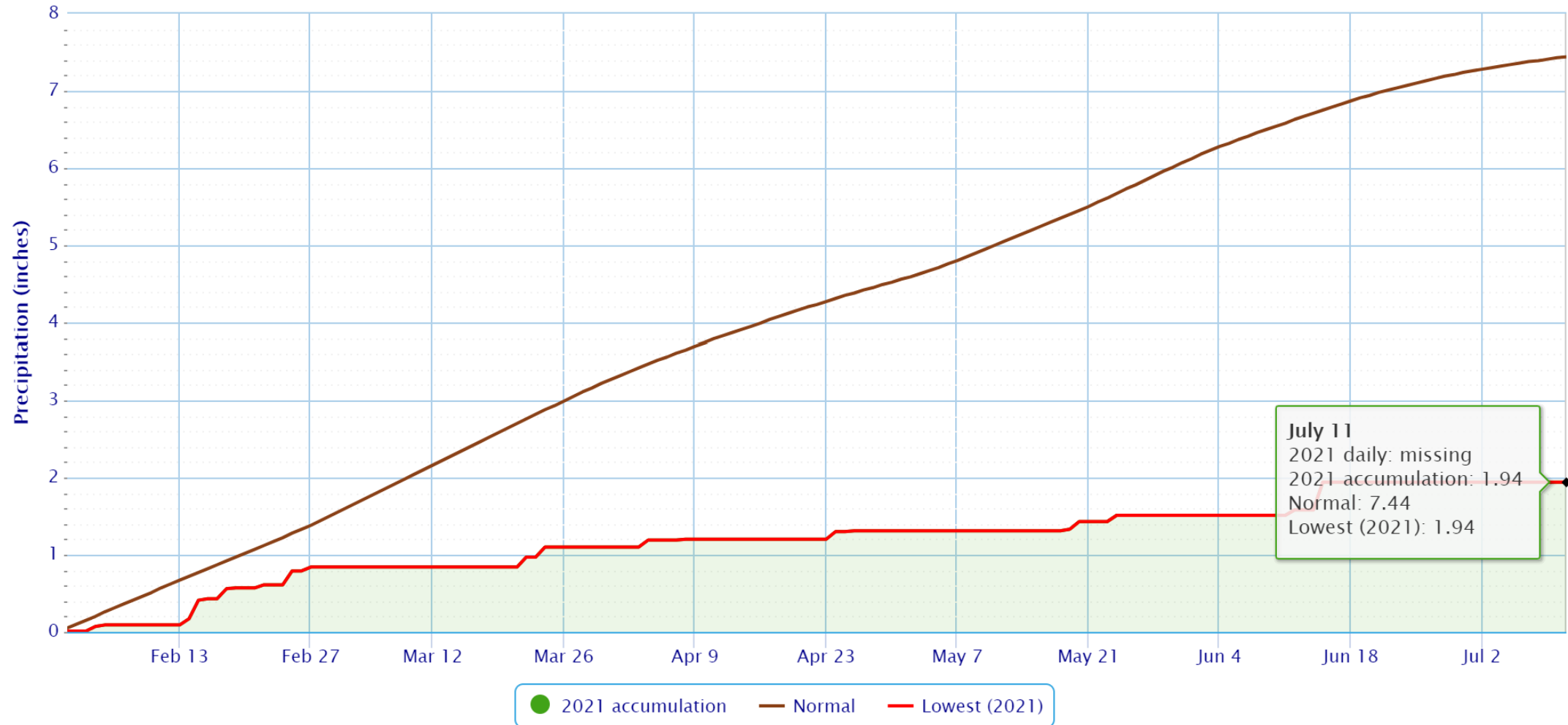
\*POR data used to calculate Normals since no published 30-year normals available for this site

51.3 inches on June 25 to 0 inches on July 9

## Accumulated Precipitation – SPOKANE INTL AP, WA



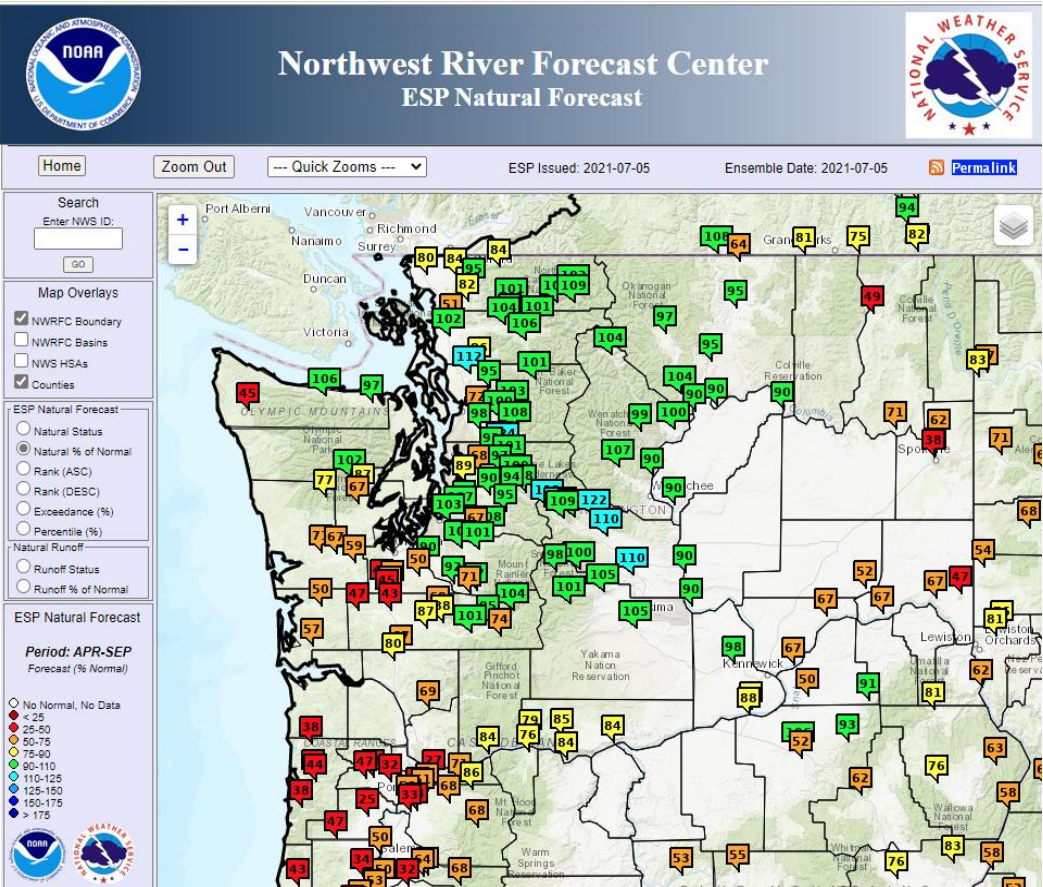
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



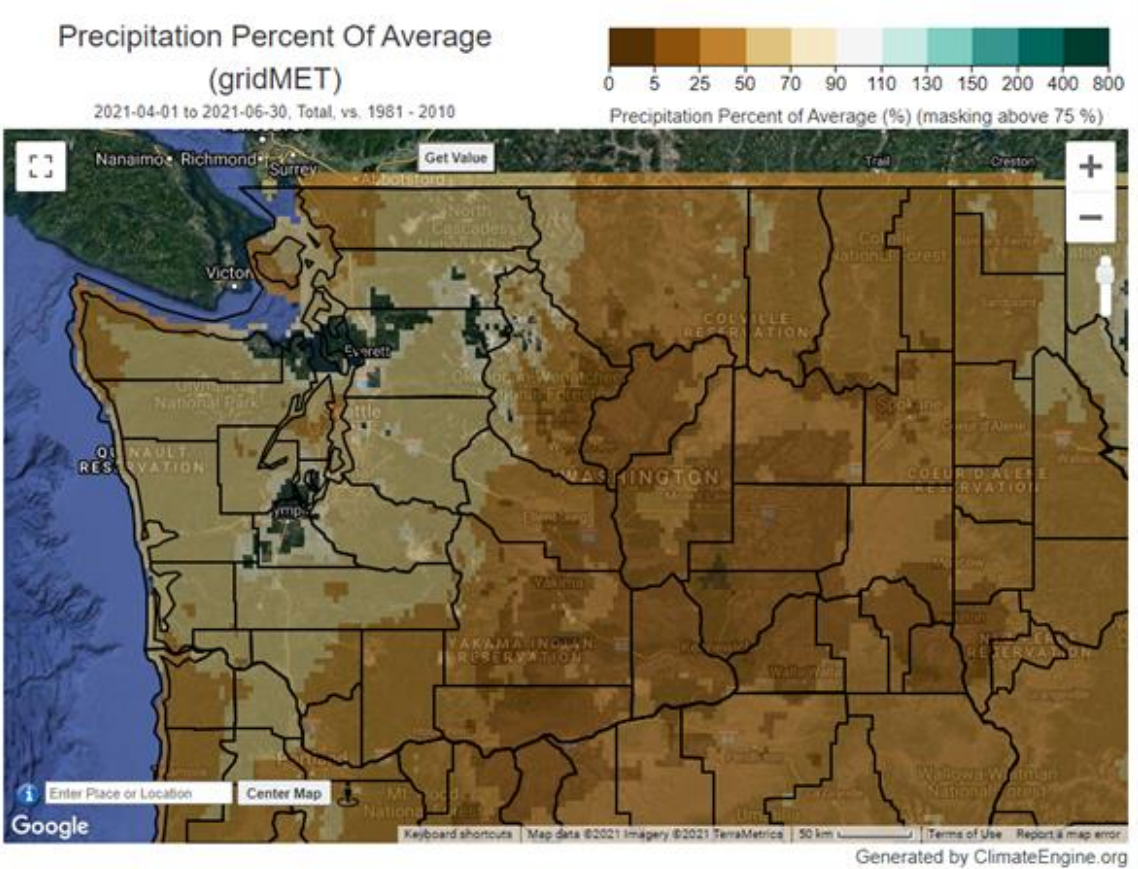
July 11  
2021 daily: missing  
2021 accumulation: 1.94  
Normal: 7.44  
Lowest (2021): 1.94



Forecasted April – September Runoff



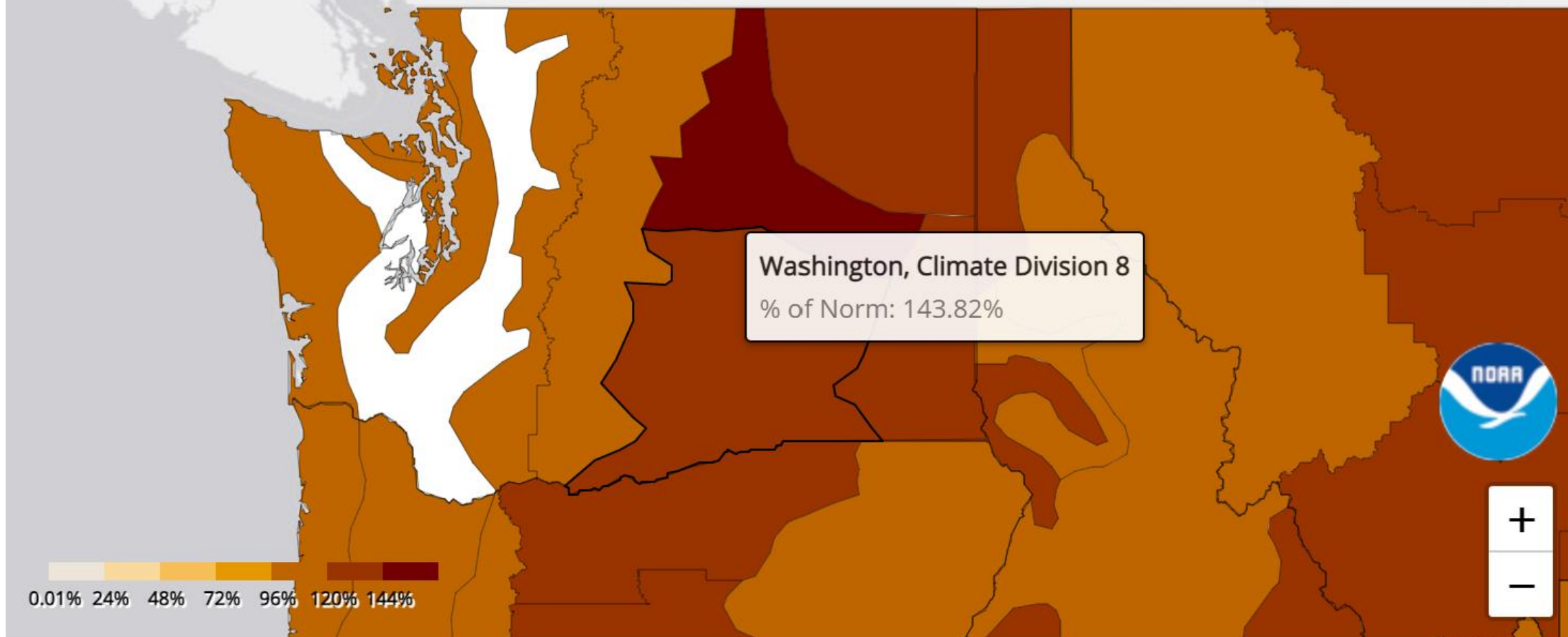
April – June Precipitation Percent of Average  
(only areas below 75% Colorized)



# Percent of Normal Precip Needed to End Drought Conditions in 9 Months

Climatological Conditions

9 Jul 2021

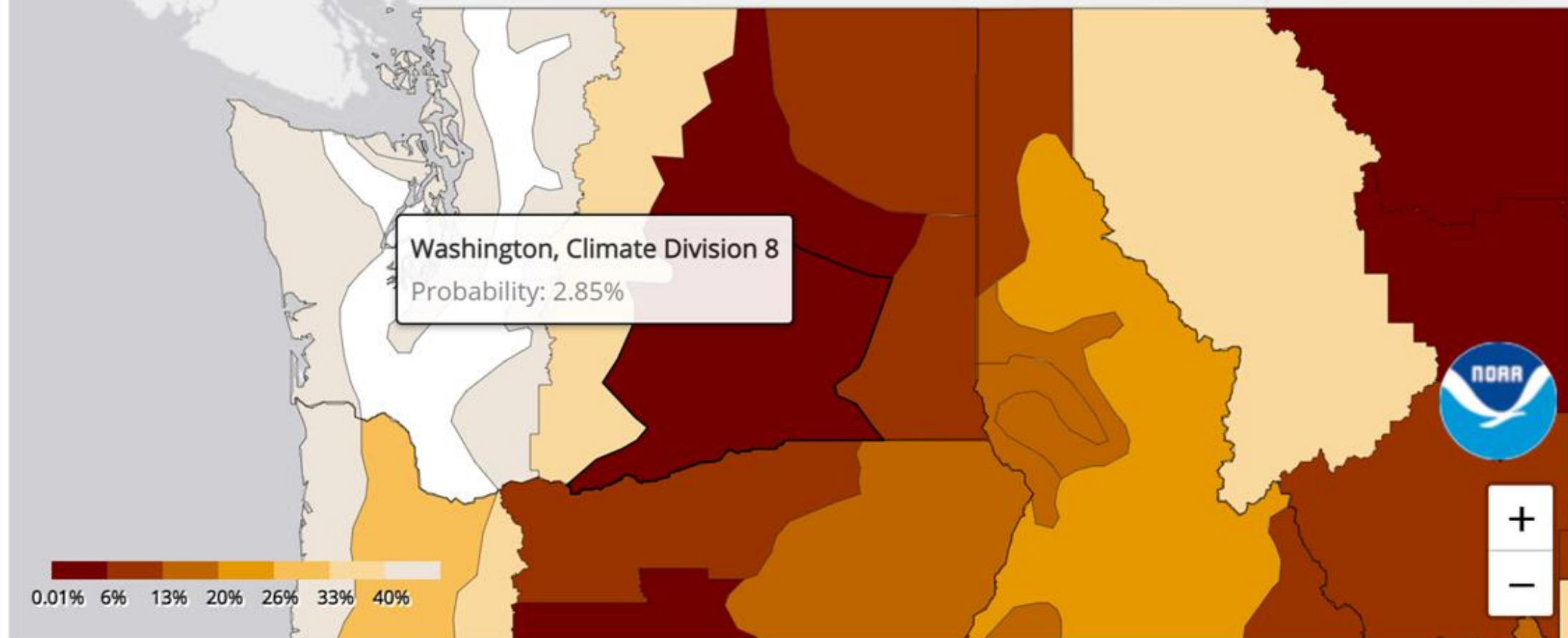


*Based on the PHDI. PHDI is a primary measure of long-term drought but may not apply to all areas, including those with heavily managed surface water. No additional precipitation is needed for white areas. The Base Period is 1981-2010.*



## Probability of Ending Drought Conditions in 9 Months

Climatological Conditions  
9 Jul 2021

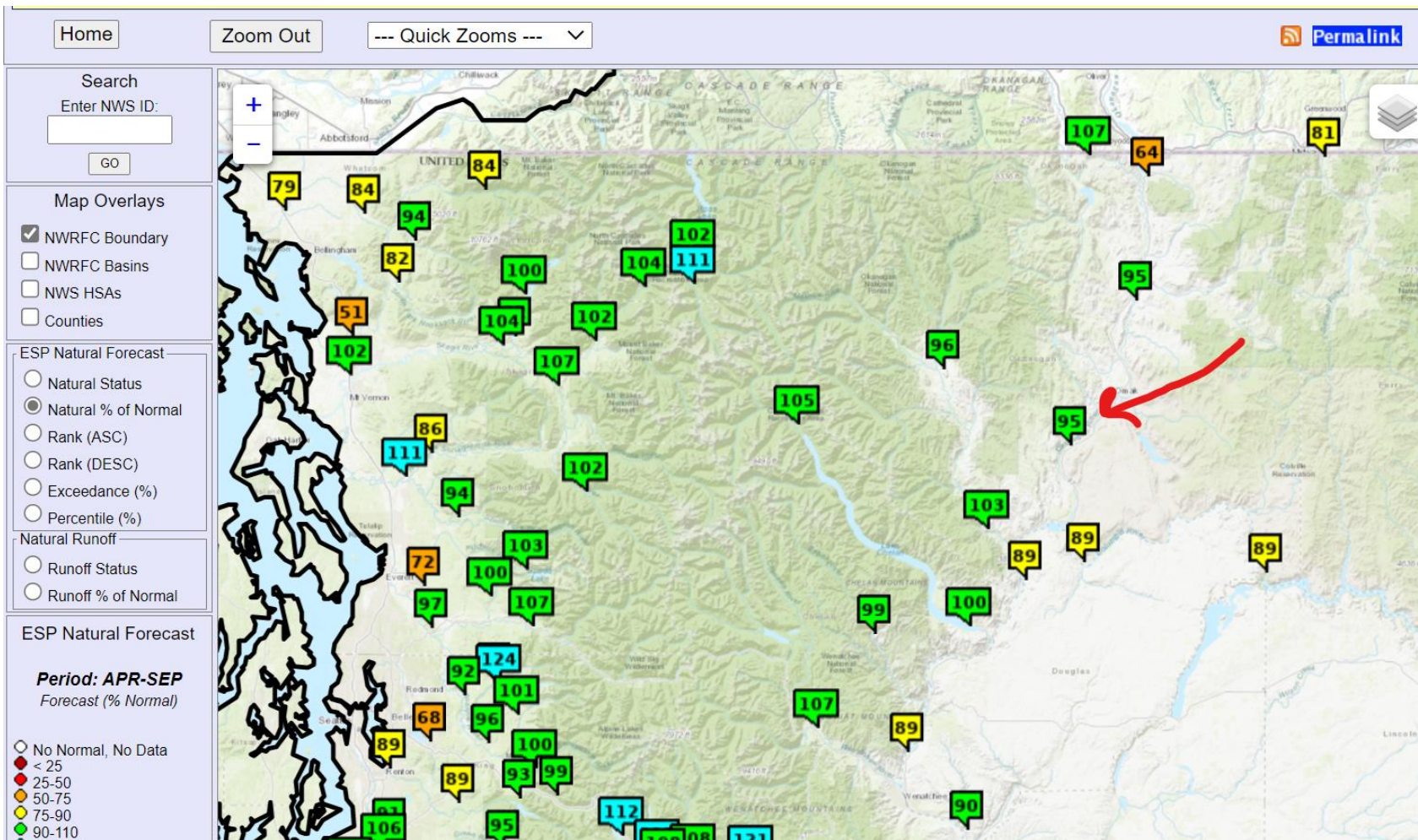


*Based on the PHDI. PHDI is a primary measure of long-term drought but may not apply to all areas, including those with heavily managed surface water. No additional precipitation is needed for white areas.*



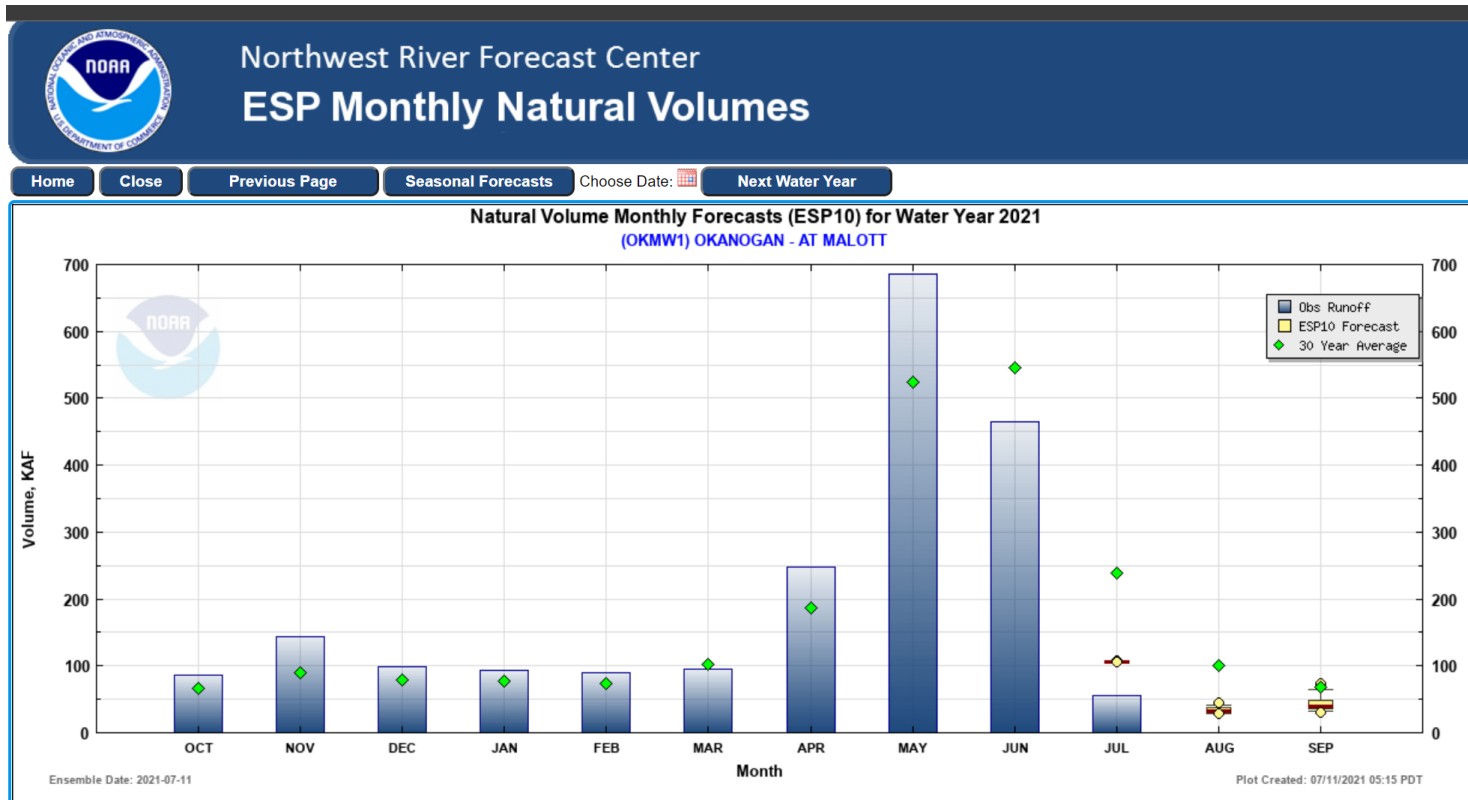
# Seasonal (Apr – Sep) vs Sub-Seasonal Runoff

## Example: Okanogan at Malott



OKANOGAN - AT MALOTT (OKMW1) Forecasts for Water Year 2021					
Official Water Supply					
ESP with 10 Days QPF Ensemble: 2021-07-11 Issued: 2021-07-11					
Forecast Period	Forecasts Are in KAF				30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %	
APR-SEP	1567	1580	95	1605	1663
APR-JUL	1504	1504	101	1505	1494
JAN-SEP	1847	1859	97	1885	1916
JAN-JUL	1783	1784	102	1785	1746
OCT-SEP	2178	2190	102	2216	2151

# Sub-seasonal -- Monthly Natural Volume Forecast Okanogan at Malott



**Official Water Supply**  
*ESP with 10 days QPF*  
Ensemble: **2021-07-11** Issued: 2021-07-11

Forecast Period	Forecasts Are in KAF				Obs Runoff (2021-07-11)	30 Year Average (1981-2010)
	90 %	50 %	% Average	10 %		
<b>OCT</b>					<b>87</b>	<b>66</b>
NOV					144	90
DEC					99	79
JAN					94	77
FEB					89	73
MAR					96	103
APR					248	186
MAY					686	525
JUN					465	545
JUL	106	106	45	107	56*	238
AUG	29	33	33	41		101
SEP	33	40	59	64		68

Move the mouse over the desired "Forecast Table" to update graph.  
\* Partial Monthly Total

# Known impacts

- Major deterioration of dryland crop and pasture conditions in Eastern Washington
- Large municipalities and major storage projects are in good shape
- Drinking water supplies holding up, but DOH monitoring some systems closely.
- Some water systems reporting concerning declines of water levels, drying of wells.
- Ongoing curtailment of junior water right holders (Chehalis, Walla Walla, Asotin, Tucannon, Little Spokane, Harvey Ck trib to Pend Oreille). Soon: Methow and potentially the Okanogan and Wenatchee
- Extensive wildfire activity (Governor Emergency Proclamation)
- Historic heat wave/high water temperatures with reports of fish and shellfish kills (not necessarily related to water availability)

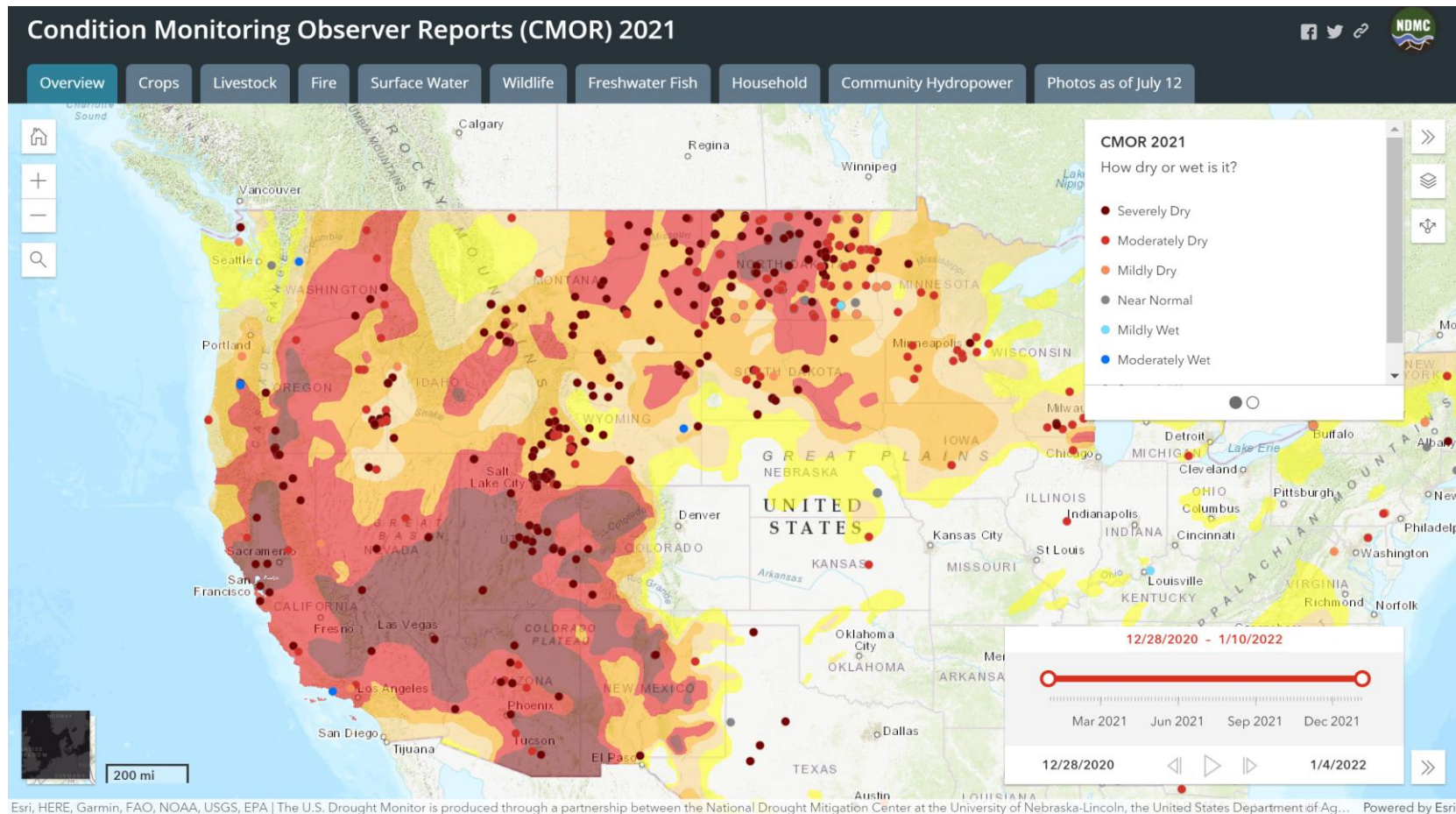


# Report your drought impacts

Conditions Monitoring Observation Reporting System

- <https://droughtimpacts.unl.edu/ConditionMonitoringObservations.aspx>

[px](https://droughtimpacts.unl.edu/ConditionMonitoringObservations.aspx)



# Fish/shellfish die-off report form (WDFW)

Washington Department of Fish and Wildlife > Environmental fish/shellfish die-off report form



Washington Department of  
**FISH and WILDLIFE**

## Environmental fish/shellfish die-off report form

Translate

The recent historic heat wave that swept through the Pacific Northwest has left many waters warmer than usual, and dry conditions have also lowered water levels in many of Washington's rivers and lakes. These environmental conditions can sometimes lead to events known as fish die-offs. Reporting dead fish or shellfish helps the Washington Department of Fish and Wildlife to track problems as they arise and take appropriate action to protect imperiled fish stocks.

Where was the carcass located?

Select "add point" to drop a pin at the approximate location where you discovered the fish or shellfish, and include a comment if desired.

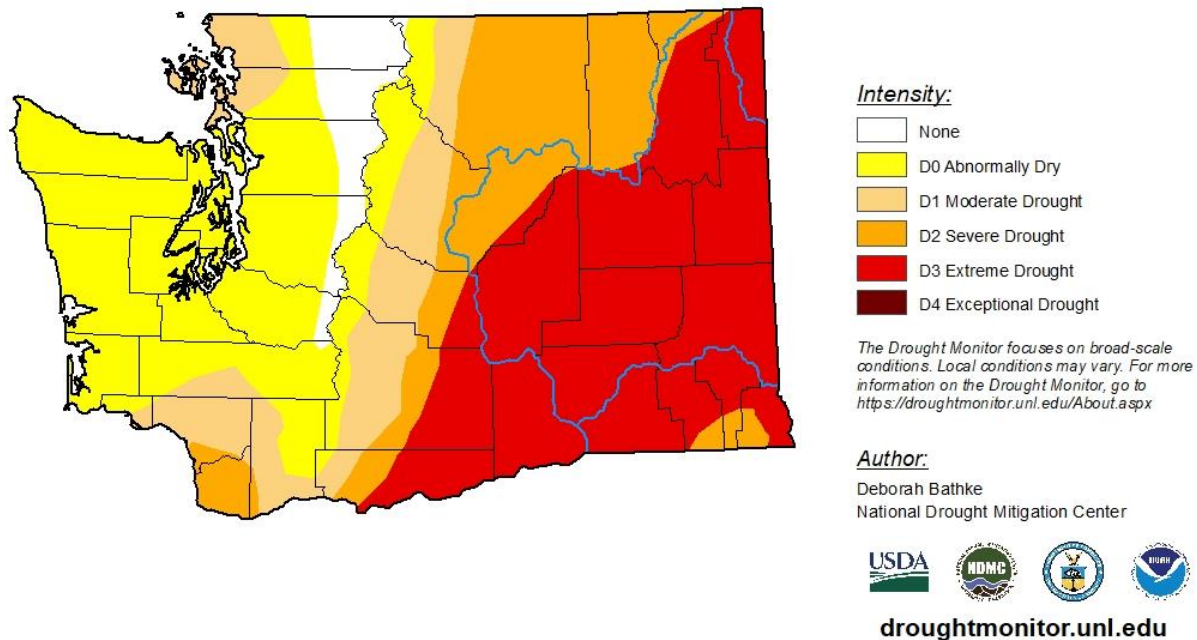


<https://publicinput.com/X7060>

# USDA Disaster Declarations

## U.S. Drought Monitor Washington

**July 6, 2021**  
(Released Thursday, Jul. 8, 2021)  
Valid 8 a.m. EDT

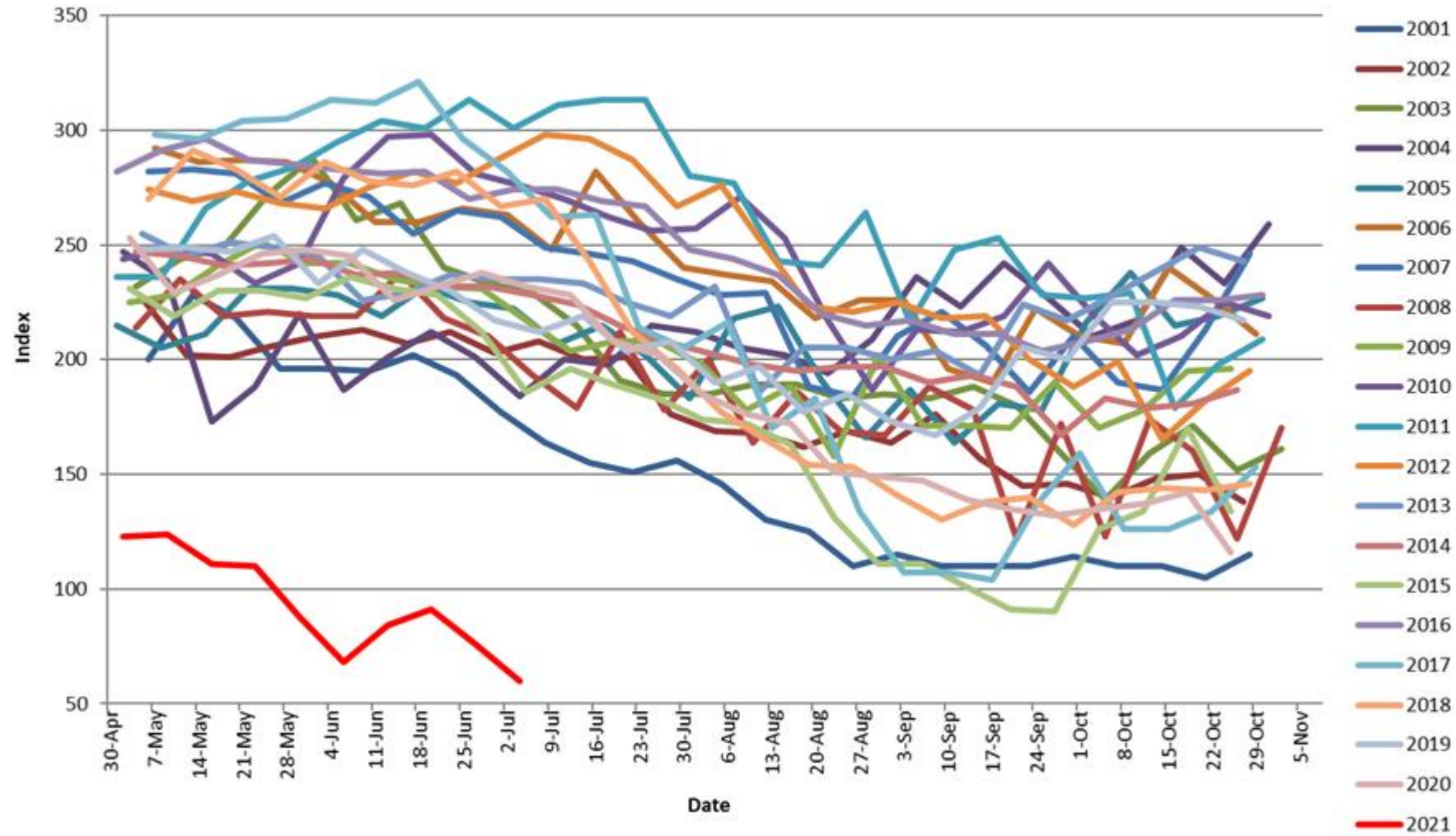


## Recently Announced Primary Disaster Counties

Adams	Garfield	Lincoln	Walla Walla
Asotin	Grant	Spokane	Whitman
Columbia	Kittitas	Stevens	Yakima
Franklin	Klickitat		



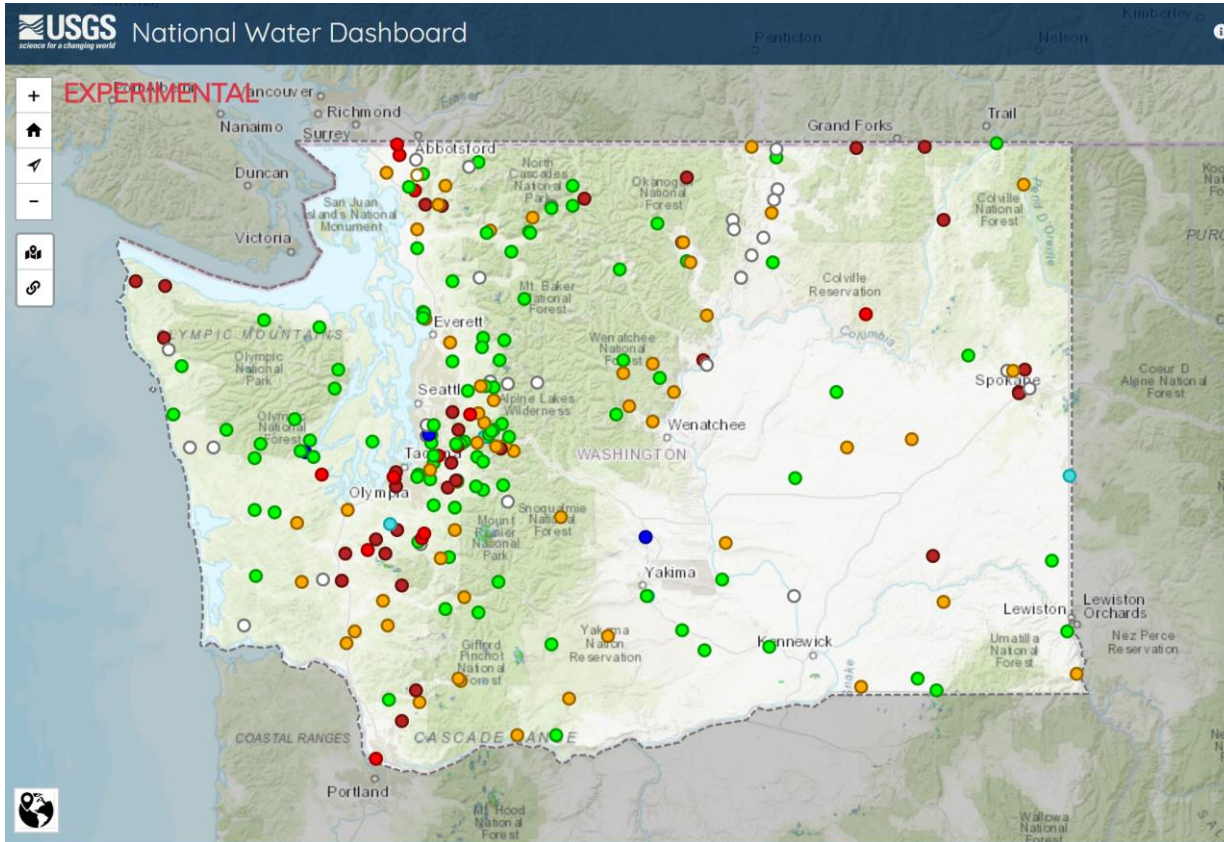
## WA PASTURE AND RANGE Condition Index



Based on NASS crop progress data.

Source: Brad Rippey, USDA

# Streamflow Status



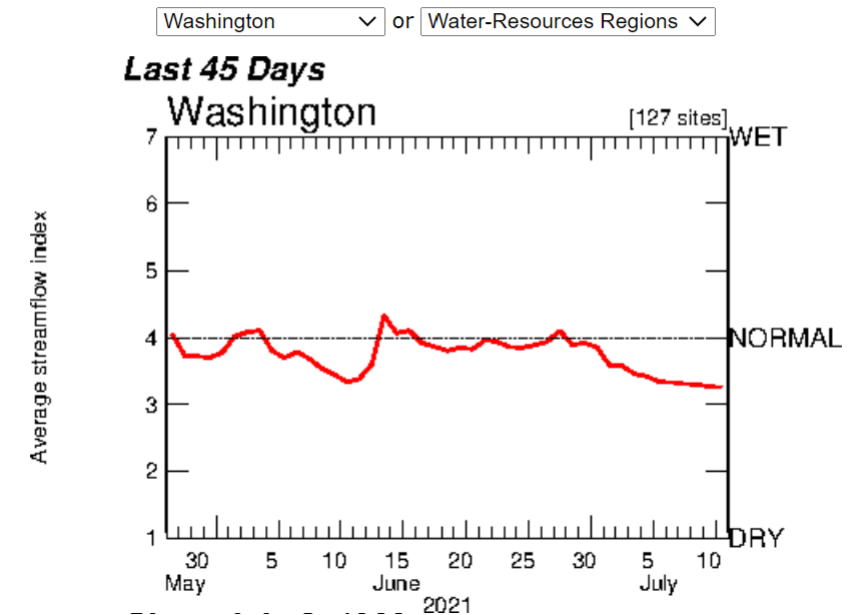
Data accessed July 12, 2021

## Streamflow Summary

### STATION COUNTS BY FLOW STATUS

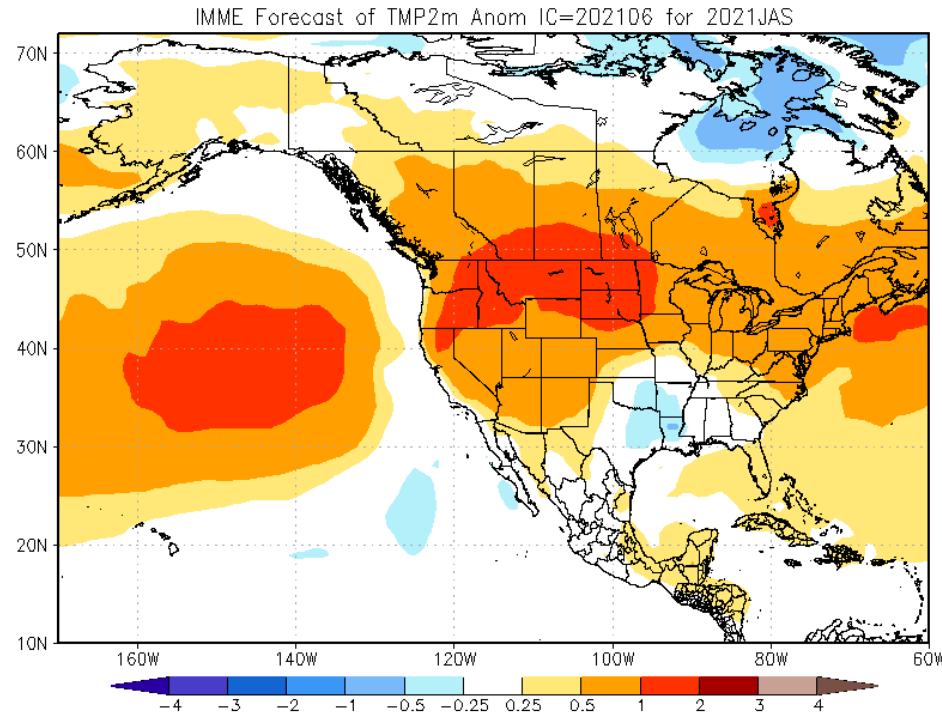
All-time low for this day-of-year	13	5.6%	■
Much below normal for this day-of-year	33	14.1%	■
Below normal for this day-of-year	55	23.5%	■
Normal for this day-of-year	97	41.5%	■
Above normal for this day-of-year	4	1.7%	■
Much above normal for this day-of-year	3	1.3%	■
All-time high for this day-of-year	0	0.0%	
Not ranked - insufficient record	29	12.4%	■

**Time series plot** of real-time streamflow compared to historical streamflow for the day of the year (Washington)

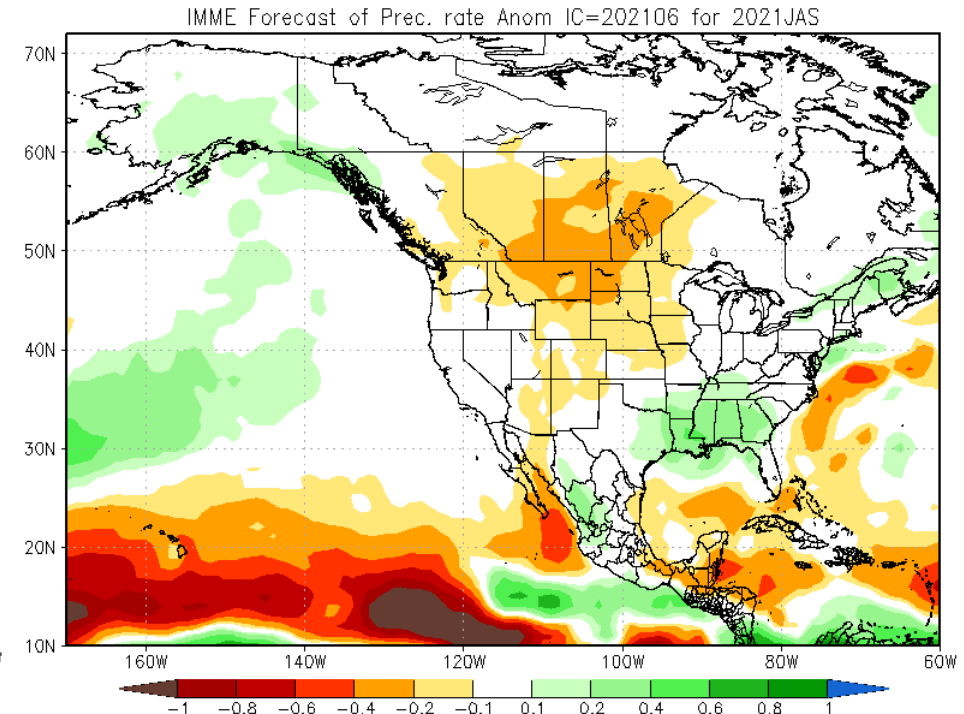


# Outlook: July-September 2021

## Temperature



## Precipitation



- Official July-Sept outlook from the Climate Prediction Center indicates a higher likelihood of warmer and drier conditions statewide



Questions?