

[Jeff Marti is inviting you to a scheduled Zoom meeting.](#)

The Washington State Water Supply Availability Committee Meeting meets periodically to review current and forecasted water supply conditions for Washington State.

Join Zoom Meeting

<https://waecy-wa-gov.zoom.us/j/9245850348?pwd=ckRlMFhBWl9keDNuL2JpOWkwb2FjQT09>

Meeting ID: 924 585 0348

Passcode: rainDance

One tap mobile

+12532050468,,9245850348#,,, *024558771# US

+12532158782,,9245850348#,,, *024558771# US (Tacoma)

Dial by your location

- +1 253 205 0468 US

- +1 253 215 8782 US (Tacoma)

Meeting ID: 924 585 0348

Passcode: 024558771

Find your local number: <https://waecy-wa-gov.zoom.us/j/kdg5ckJMCg>

The Washington State Water Supply Availability Committee Meeting meets periodically to review current and forecasted water supply conditions for Washington State.

Water Supply Availability Committee

Friday, June 23

Start Time	End Time	Duration, min	Description	
10:00	10:15	15	Welcome & Introductions	Jeff Marti, Ecology
10:15	10:30	15	Mountain Conditions	Scott Patte, NRCS
10:30	10:45	15	Regional Climate Setting/ ENSO	Karin Bumbaco & Nick Bond, OWSC
10:45	10:55	10	Streamflow and Groundwater	Jeff Marti, Ecology
10:55	11:10	15	Water Supply Forecasts	Amy Burke, NWRFC Robin Fox, NWS Spokane
11:10	11:25	15	Yakima Project	Chris Lynch, BOR
11:25	12:00	35	Discussion: Has the hydrologic threshold for drought conditions been met? Should EWEC convene to consider the potential for hardship?	All



Pacific Northwest Drought Early Warning System June Drought & Climate Outlook Webinar Monday, June 26, 2023 at 11 am - 12 pm PT

According to the June 20, 2023 U.S. Drought Monitor, 32% of the Pacific Northwest Drought Early Warning System (DEWS) is in drought. While drought coverage has dropped from 56% since the beginning of spring (March 20), the region experienced an unusually rapid snowmelt and coastal areas of WA/OR have worsened. This webinar will provide more information on the current regional conditions and outlooks as well as presentations on "Weakened Orographic Influence on Cool-Season Precipitation in Simulations of Future Warming Over the Western U.S." and a demo of the newly expanded state pages on drought.gov.

These webinars provide the region's stakeholders and interested parties with timely information on current and developing drought conditions, as well as climatic events like El Niño and La Niña. Speakers will also discuss the impacts of these conditions on things such as wildfires, floods, disruption to water supply and ecosystems, as well as impacts to affected industries like agriculture, tourism, and public health.

Featured Presentations

Climate Recap & Current Conditions

Karin Bumbaco | Office of the Washington State Climatologist

Seasonal Conditions & Climate Outlook

Ed Townsend | NWS Weather Forecast Office, Pendleton, OR

Weakened Orographic Influence on Cool-Season Precipitation in Simulations of Future Warming Over the Western U.S.

Matthew Koszuta | Oregon State University

Demo: Newly Expanded Drought.gov State Pages

Kelsey Satalino | NOAA/ NIDIS, CU Boulder/CIRES

Register Now

For additional information, contact [Britt Parker, NOAA/NIDIS](#).

<https://register.gotowebinar.com/register/798301944690632282>

Drought Statute (RCW 43.83B)

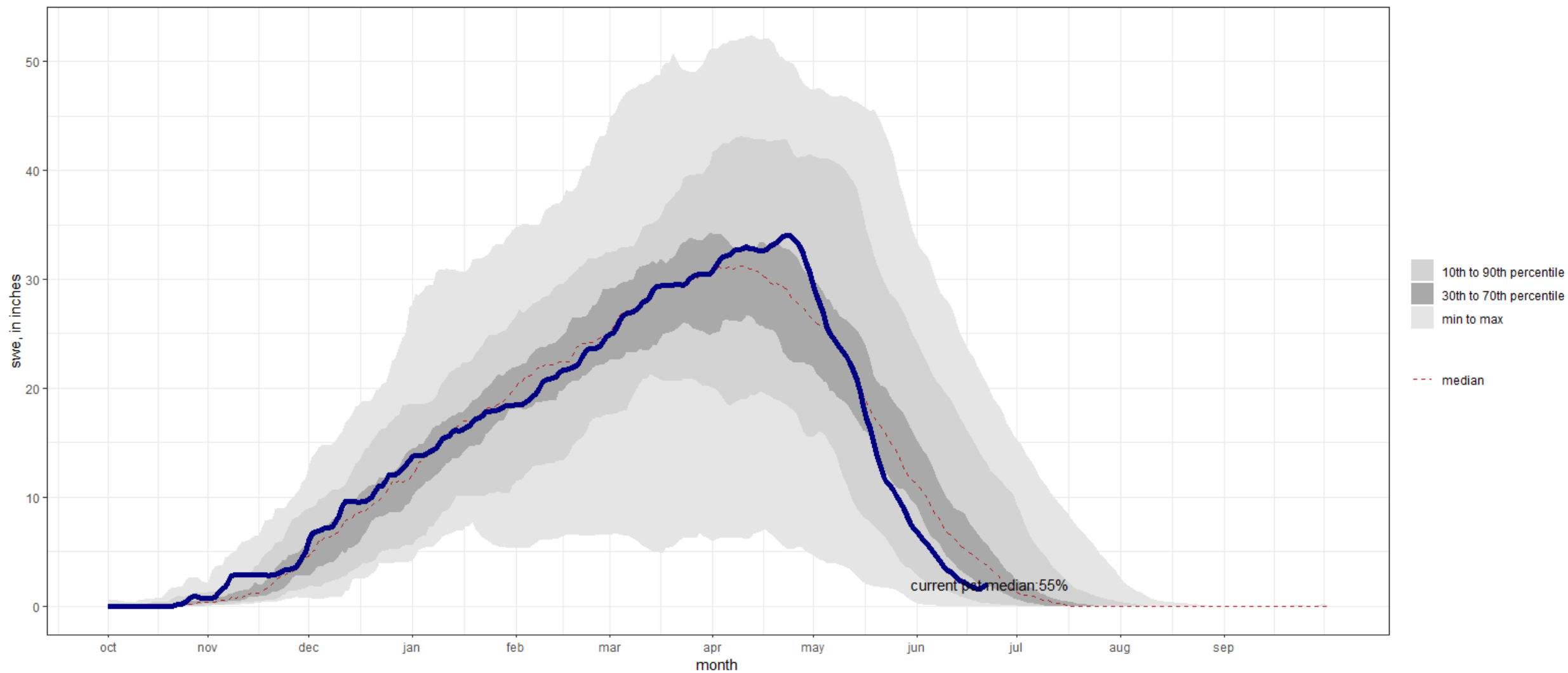
- "Drought condition" means that the water supply for a geographic area, or for a significant portion of a geographic area, is below seventy-five percent of normal and the water shortage is likely to create undue hardships for water users or the environment.
- "Normal" water supply, for the purpose of determining drought conditions, means the median amount of water available to a geographical area, relative to the most recent thirty-year base period used to define climate normals.

Drought Rule (WAC 173-166)

- The determination of drought conditions will consider seasonal water supply forecasts, other relevant hydro-meteorological factors (e.g., precipitation, snowpack, soil moisture, streamflow, and aquifer levels) and also may consider extreme departures from normal conditions over subseasonal time frames.

Washington State SWE (SNOTEL)

POR: 1989-10-01 - 2023-06-22 Created on: 2023-06-22

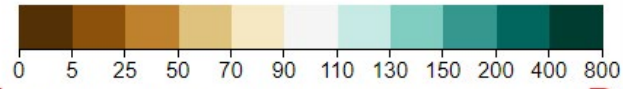


Data: NRCS

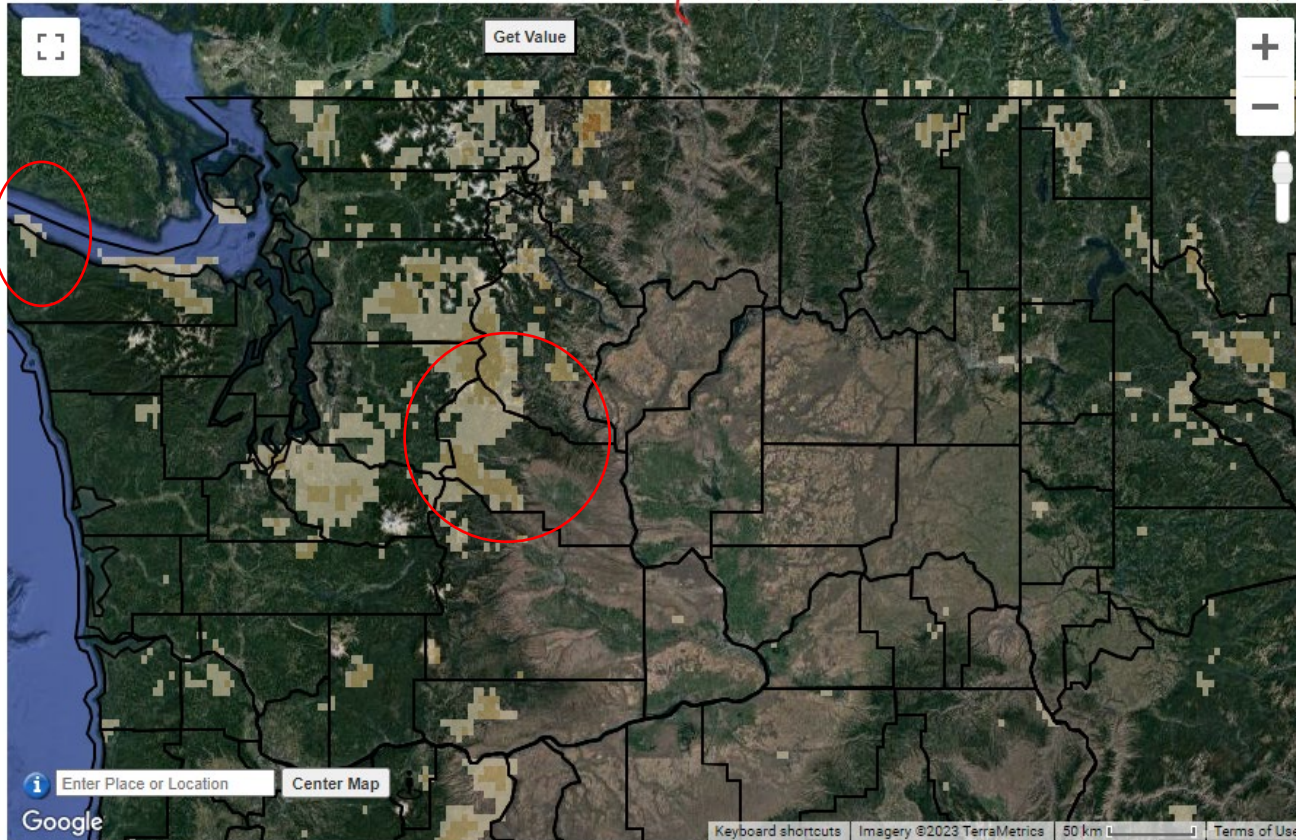
Water Year to Date

Precipitation Percent Of Average (gridMET)

2022-10-01 to 2023-06-19, Total, vs. 1991 - 2020



Precipitation Percent of Average (%) (masking above 75 %)

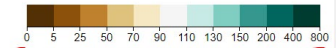


Generated by ClimateEngine.org

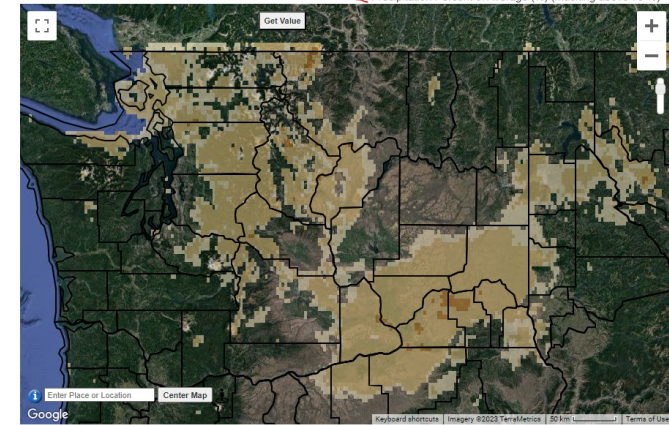
90 days

Precipitation Percent Of Average (gridMET)

2023-03-22 to 2023-06-19, Total, vs. 1991 - 2020



Precipitation Percent of Average (%) (masking above 75 %)

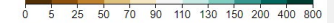


Generated by ClimateEngine.org

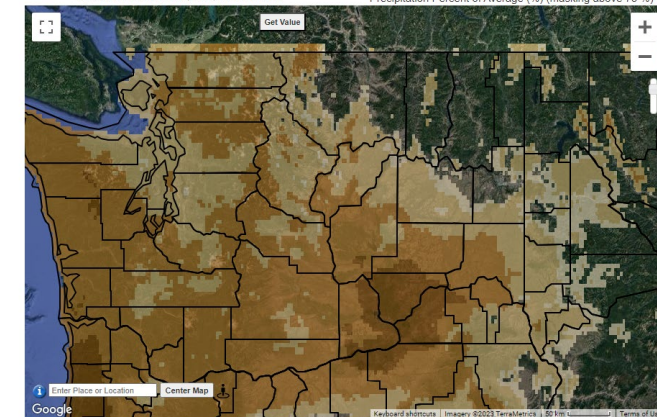
60 days

Precipitation Percent Of Average (gridMET)

2023-04-21 to 2023-06-19, Total, vs. 1991 - 2020

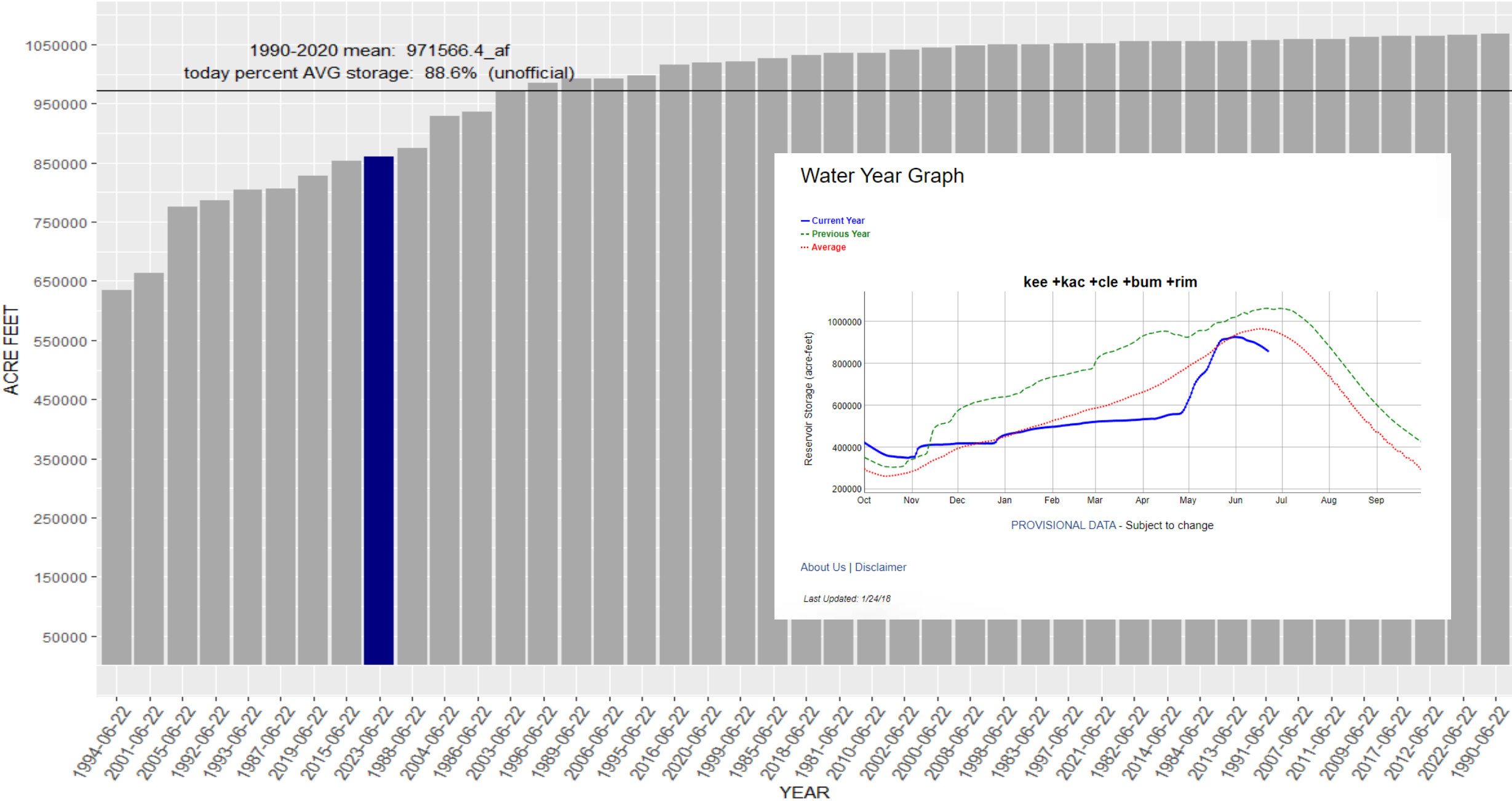


Precipitation Percent of Average (%) (masking above 75 %)

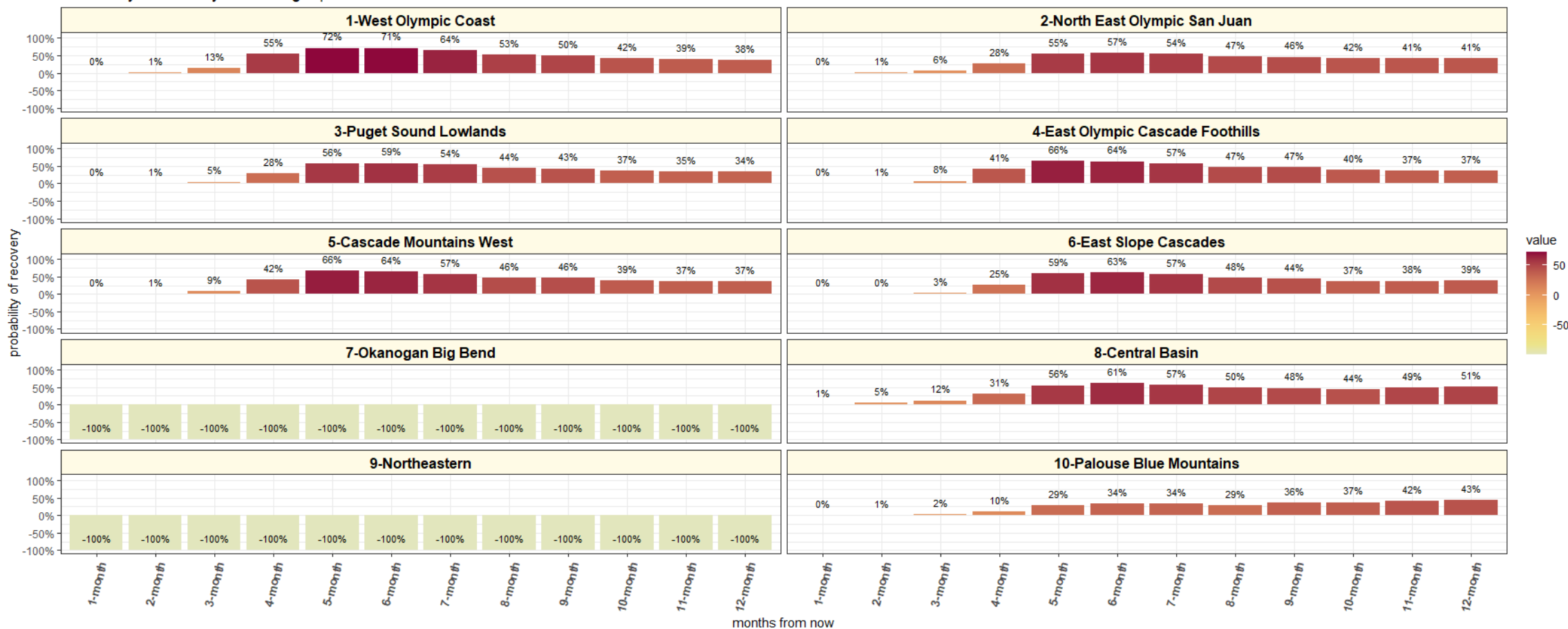


Generated by ClimateEngine.org

2023-06-22 YAKIMA TOTAL SYSTEM STORAGE (Oct 1980-current)



Probability of recovery from drought | 2023-06-22



Data: NOAA Drought Termination Tool

Assumes climatological conditions for the remainder of the month.

Monthly timesteps are not interdependent.

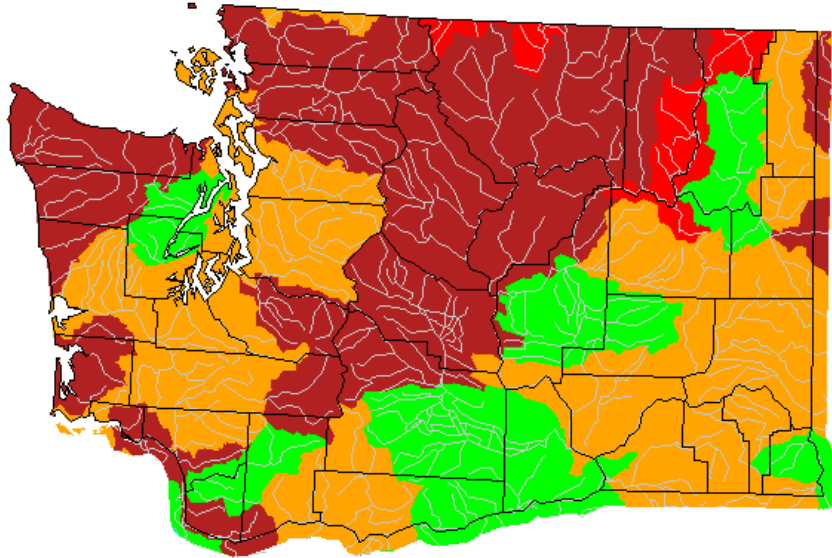
A drought is considered to be ameliorated when the PHDI is raised to -2.0, and ended when above -0.5.

Stop here for now.

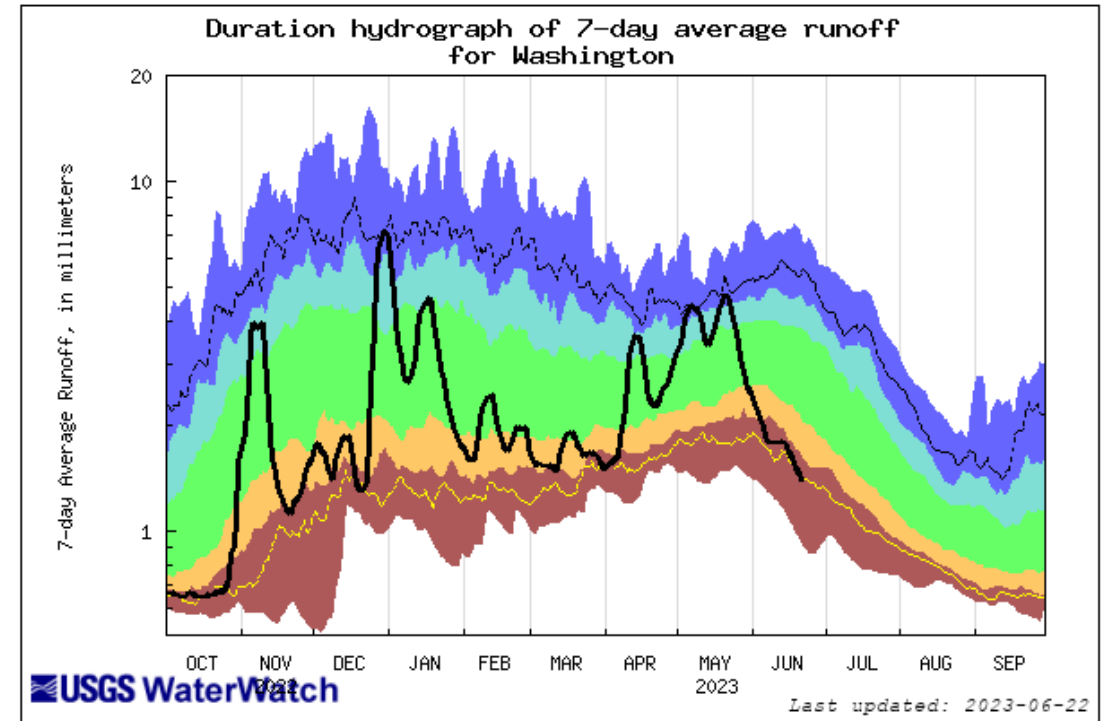
Map of 7-day average streamflow compared to historical streamflow for the day of the year (Washington)

Washington ▼ or Water-Resources Regions ▼ All Days

Hednesday, June 21, 2023



Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

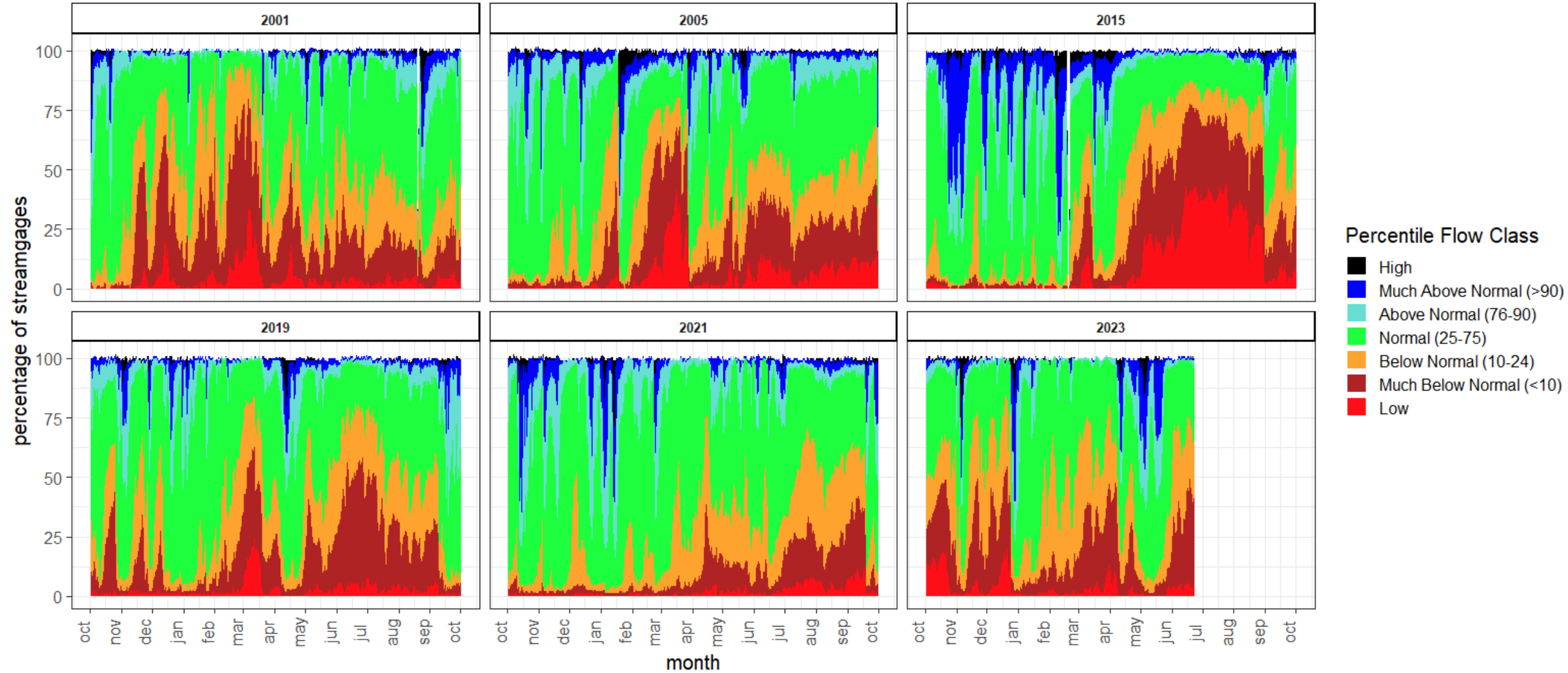


Explanation - Percentile classes						
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile-highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		

Day-of-Year Status

All-time high for this day-of-year	2	0.8%	
Much above normal for this day-of-year	2	0.8%	
Above normal for this day-of-year	6	2.4%	
Normal for this day-of-year	60	23.8%	<div></div>
Below normal for this day-of-year	60	23.8%	<div></div>
Much below normal for this day-of-year	60	23.8%	<div></div>
All-time low for this day-of-year	18	7.1%	<div></div>
Not ranked - insufficient record	24	9.5%	<div></div>
Not ranked - no recent measurement	14	5.6%	<div></div>
Not ranked - no measurement	4	1.6%	
Not ranked - stream not flowing	2	0.8%	

Time series plot of daily streamflow compared to historical streamflow for the day of the water year (Washington)



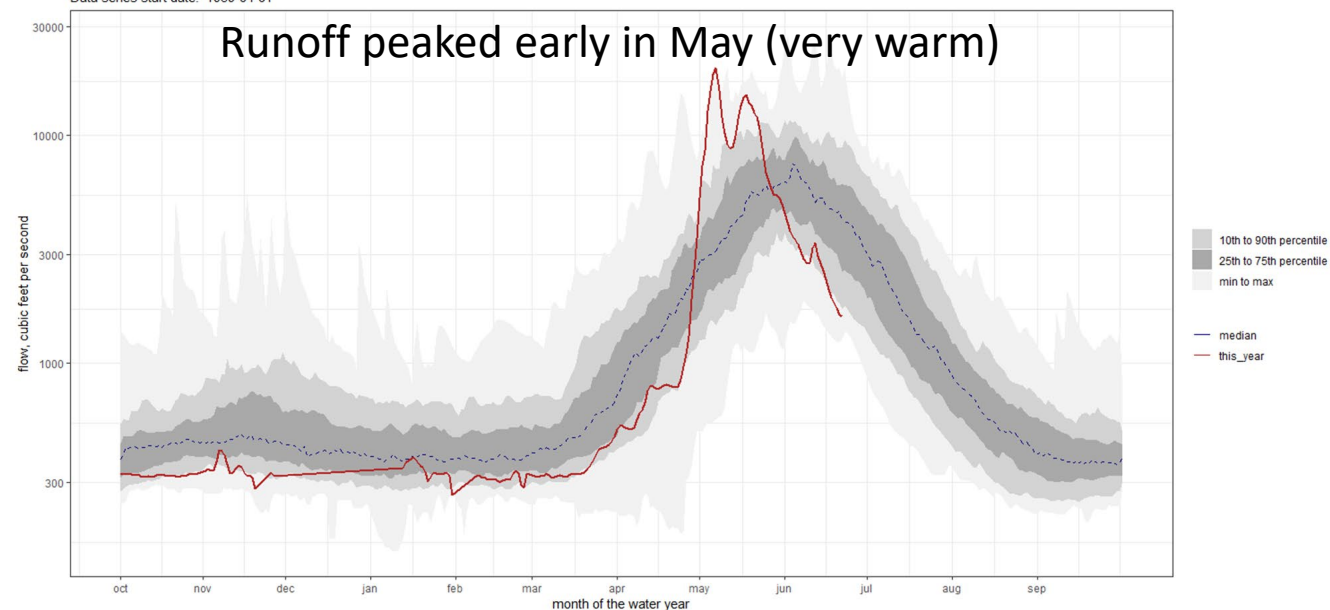
data: USGS WaterWatch

Snow-dominant →

Rain-dominant ↓

METHOW RIVER NEAR PATEROS, WA

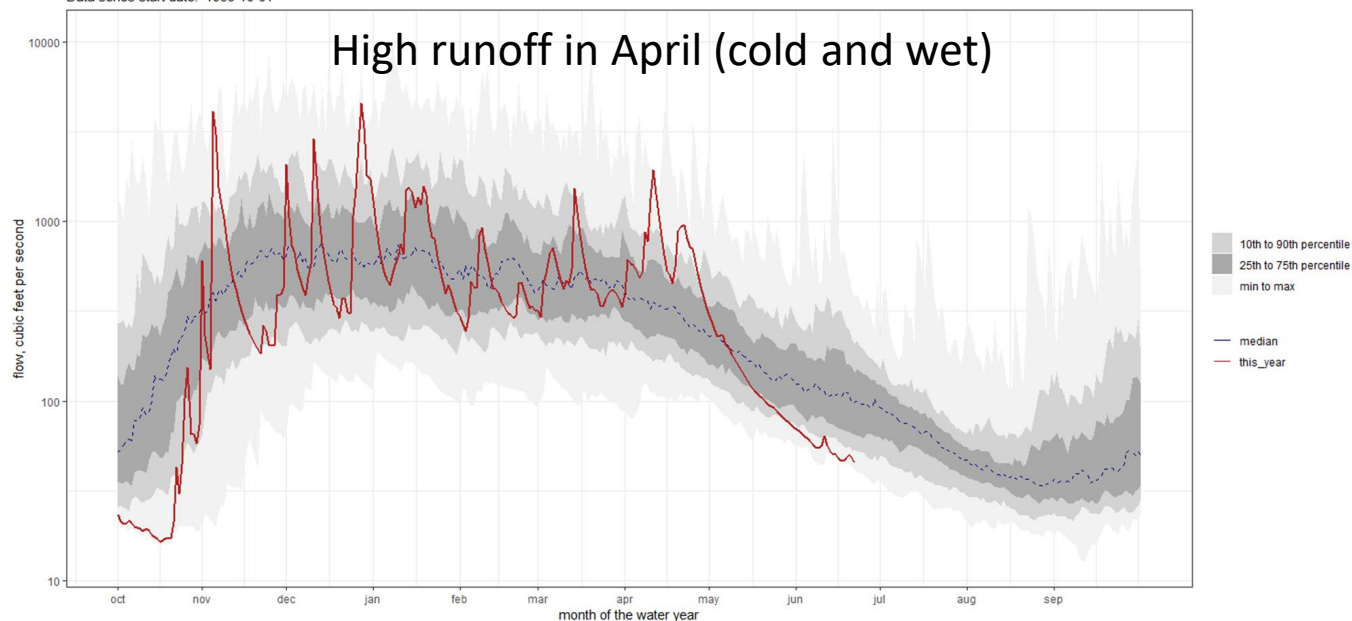
Daily flows
USGS gauge 12449950
Data series start date: 1959-04-01



Data: USGS
graph inspired by
<https://github.com/johnrfeck/water-tools>

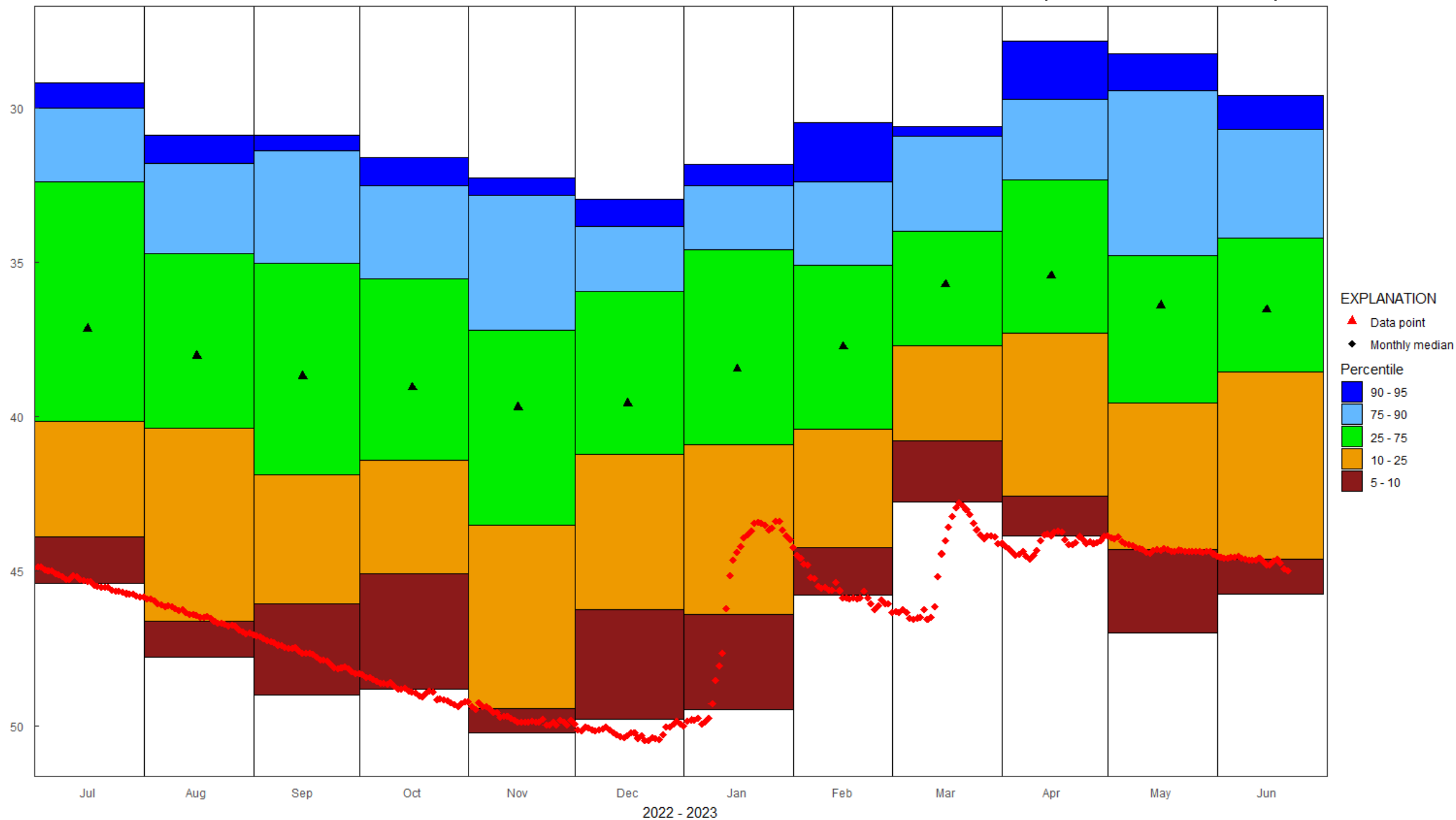
NASELLE RIVER NEAR NASELLE, WA

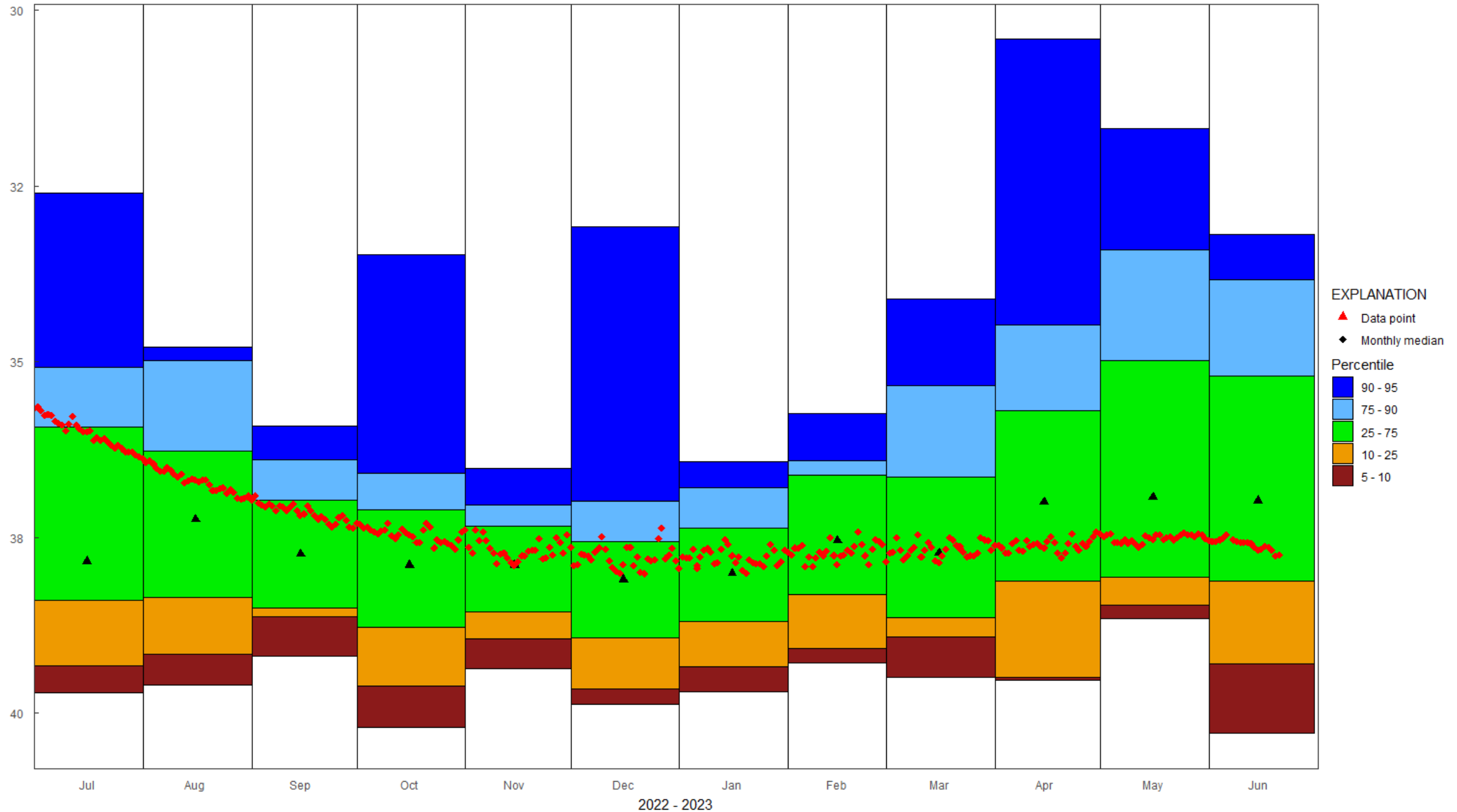
Daily flows
USGS gauge 12010000
Data series start date: 1950-10-01



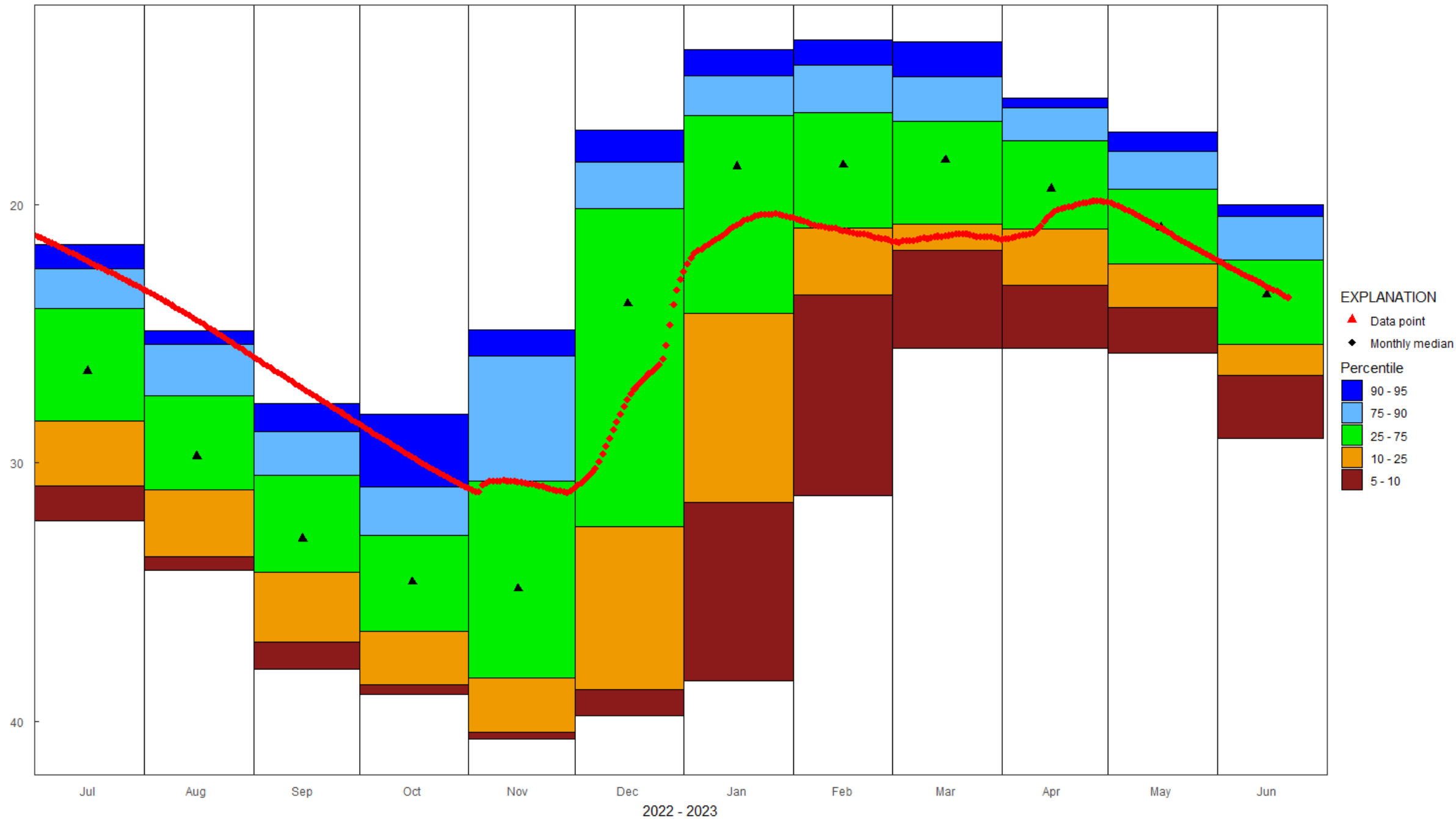
Data: USGS
graph inspired by
<https://github.com/johnrfeck/water-tools>

Well SW of Davenport, Lincoln County

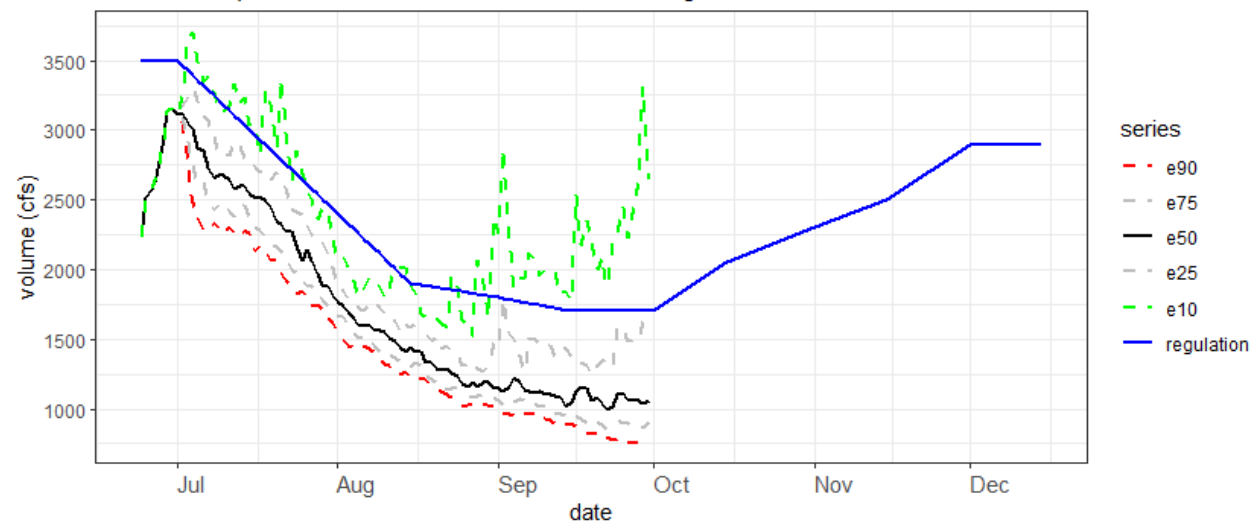




Well near Scatter Creek, Thurston County

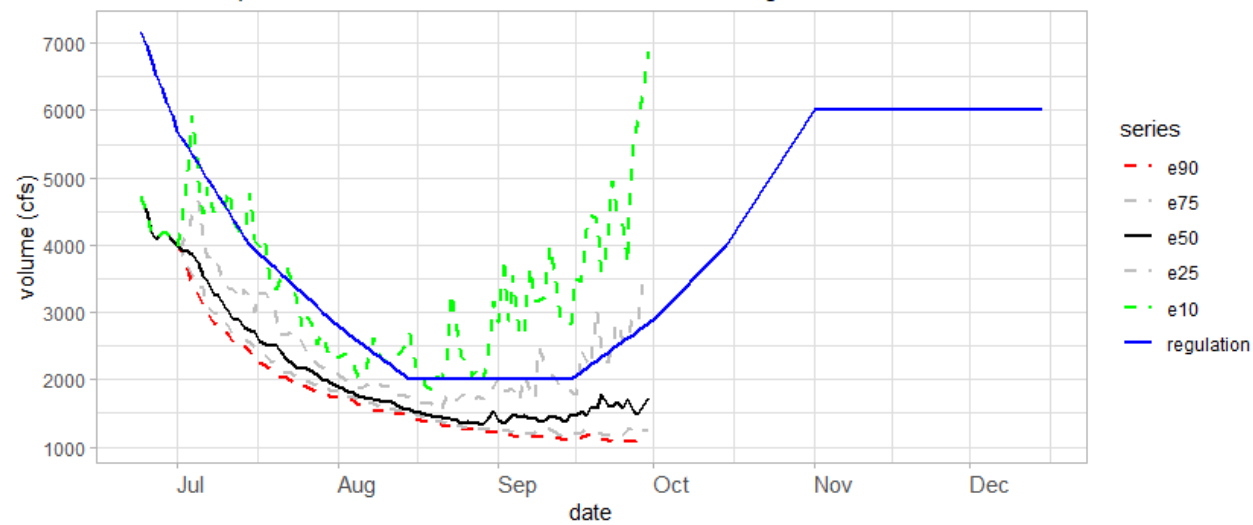


2023-06-22|forecast vs Nooksack at Ferndale reg flow



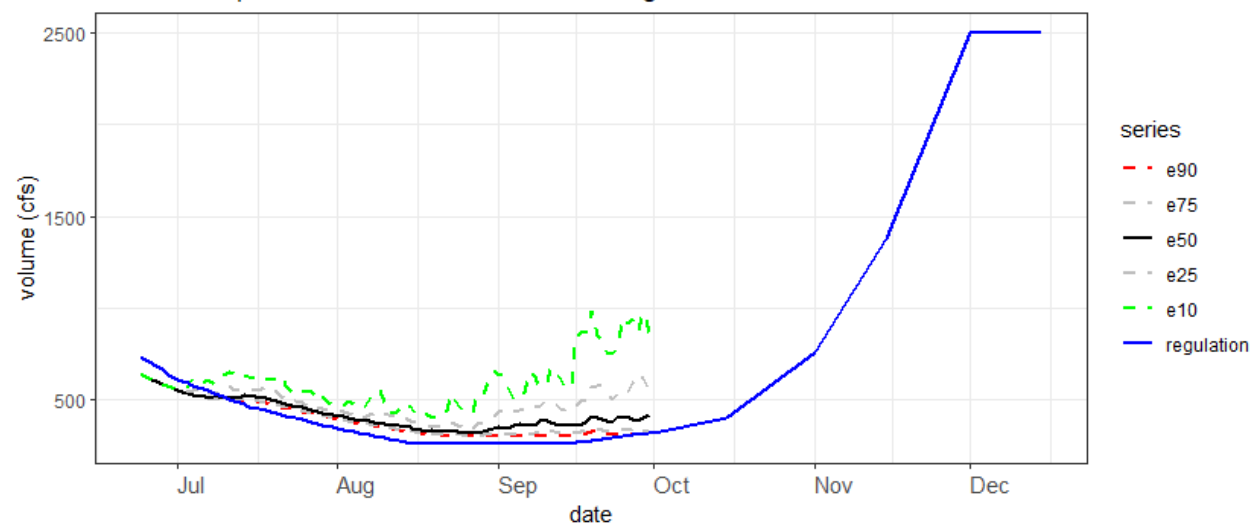
data: NWRFC ,WDOE

2023-06-22| forecast vs Snohomish River nr Monroe reg flow



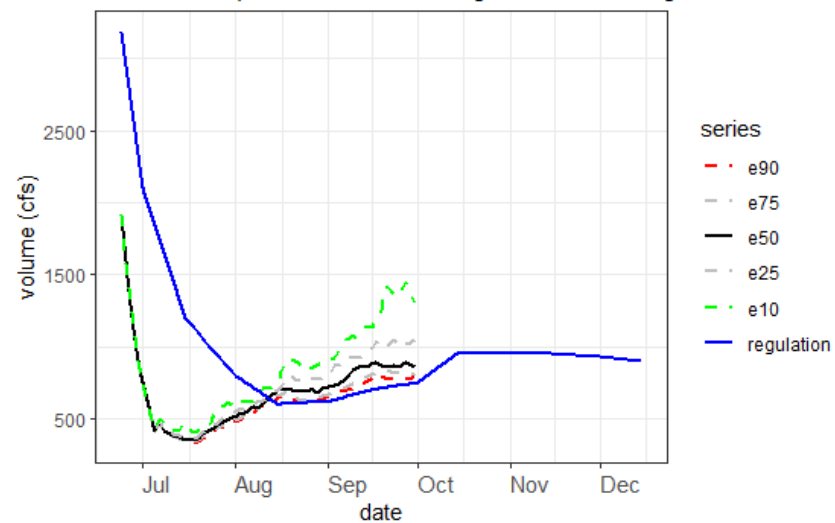
data: NWRFC ,WDOE

2023-06-22| forecast vs Chehalis at Porter reg flow



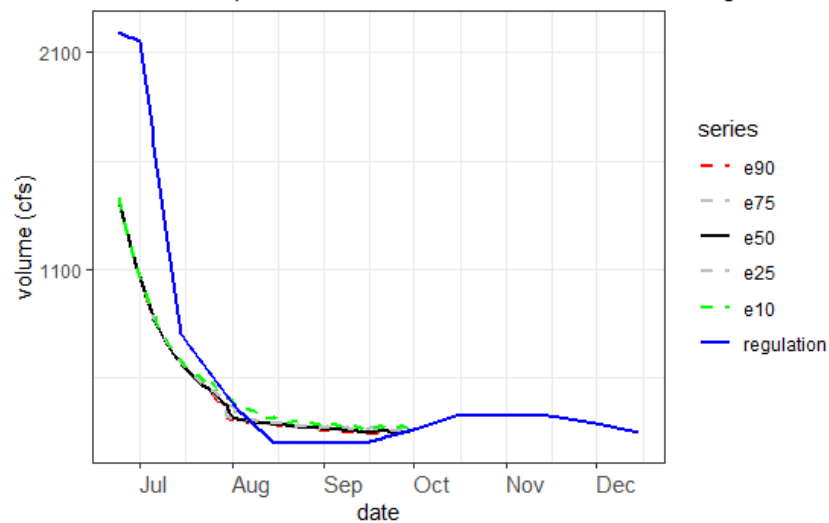
data: NWRFC ,WDOE

2023-06-22| forecast vs Okanogan at Malott reg flow



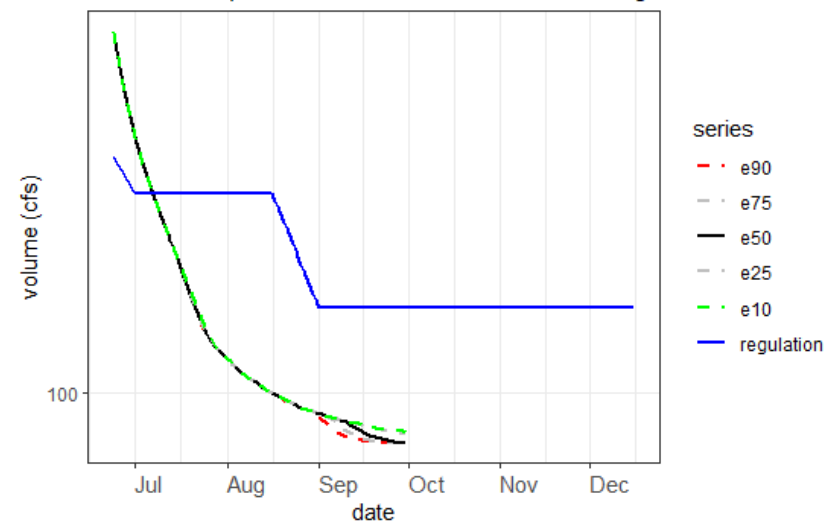
data: NWRFC ,WDOE

2023-06-22| forecast vs Methow River nr Pateros reg flow



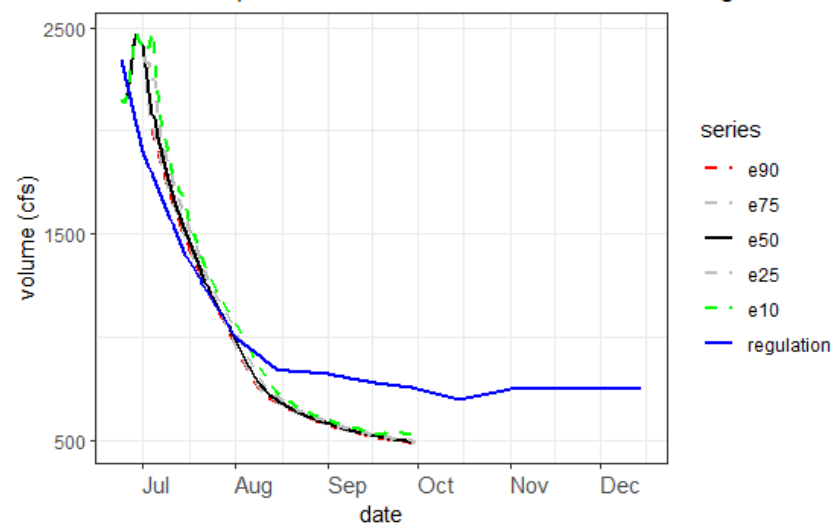
data: NWRFC ,WDOE

2023-06-22|forecast vs Entiat nr Ardenvoir reg flow



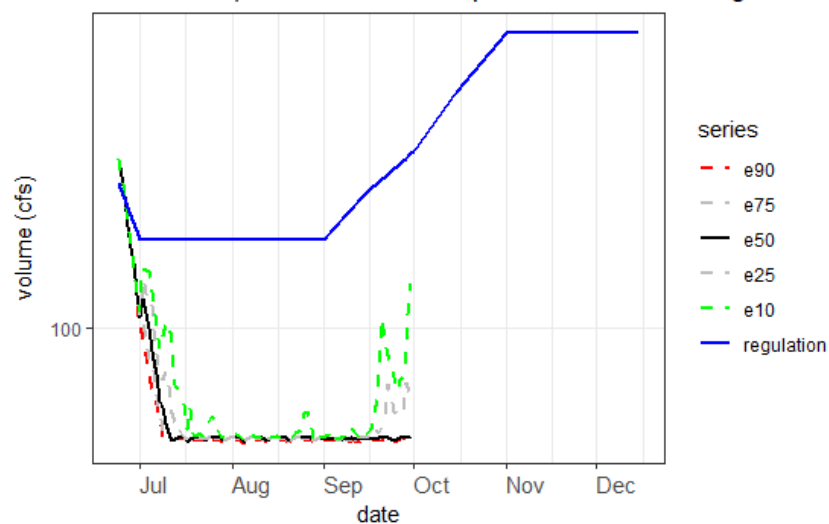
data: NWRFC ,WDOE

2023-06-22| forecast vs Wenatchee at Peshastin reg flow



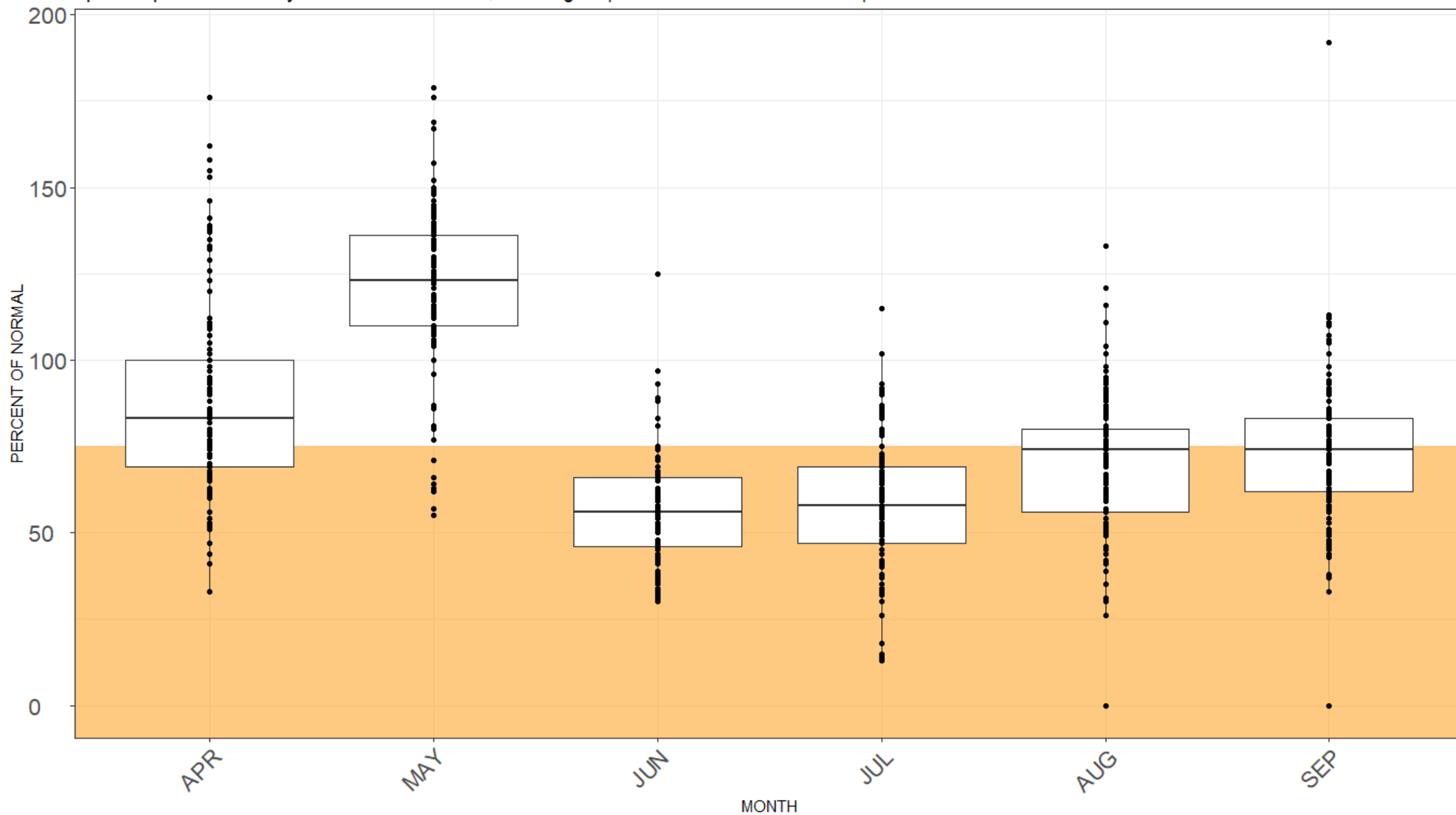
data: NWRFC ,WDOE

2023-06-22| forecast vs Little Spokane at Dartford reg flow

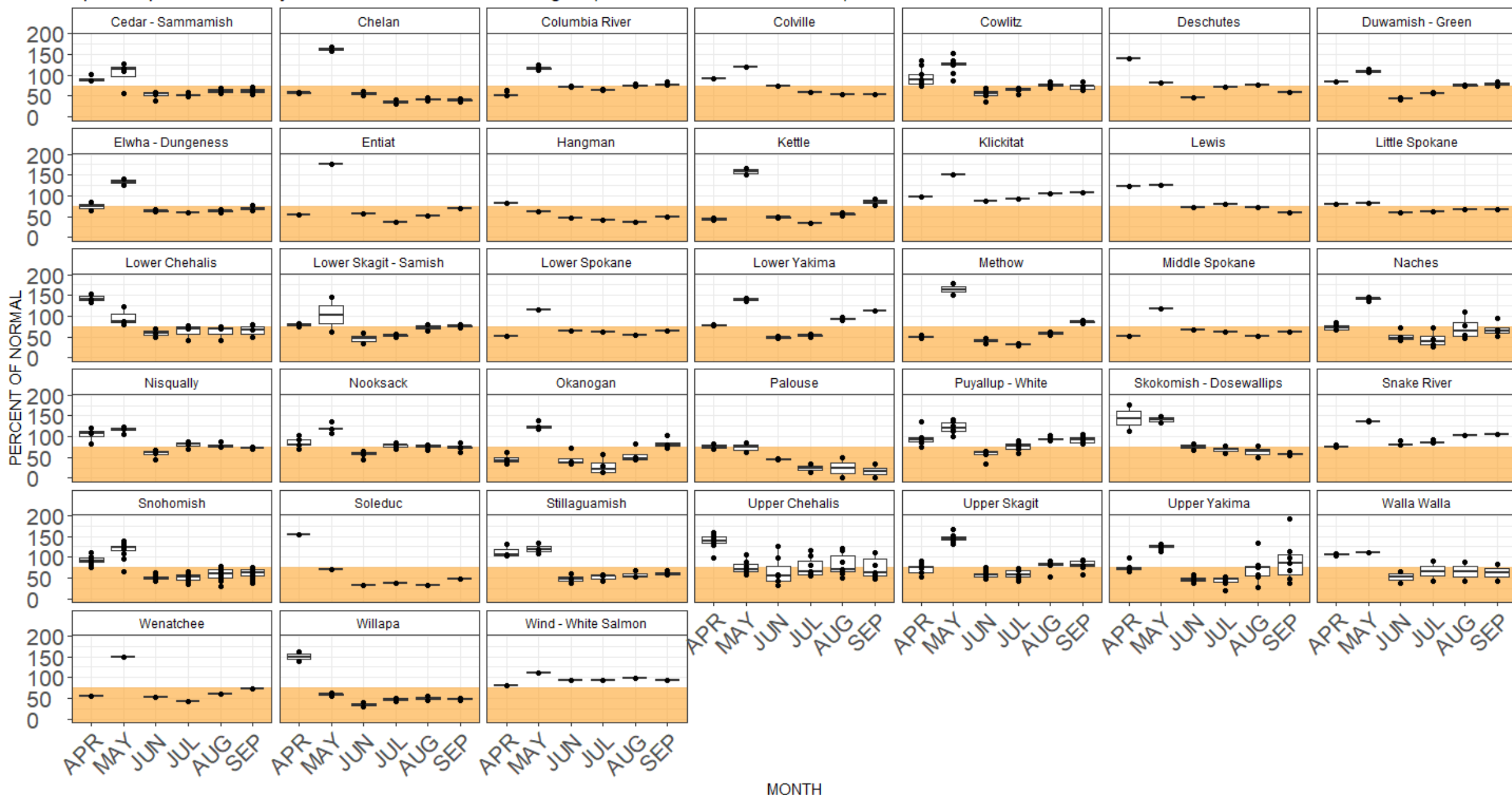


data: NWRFC ,WDOE

This is the end.

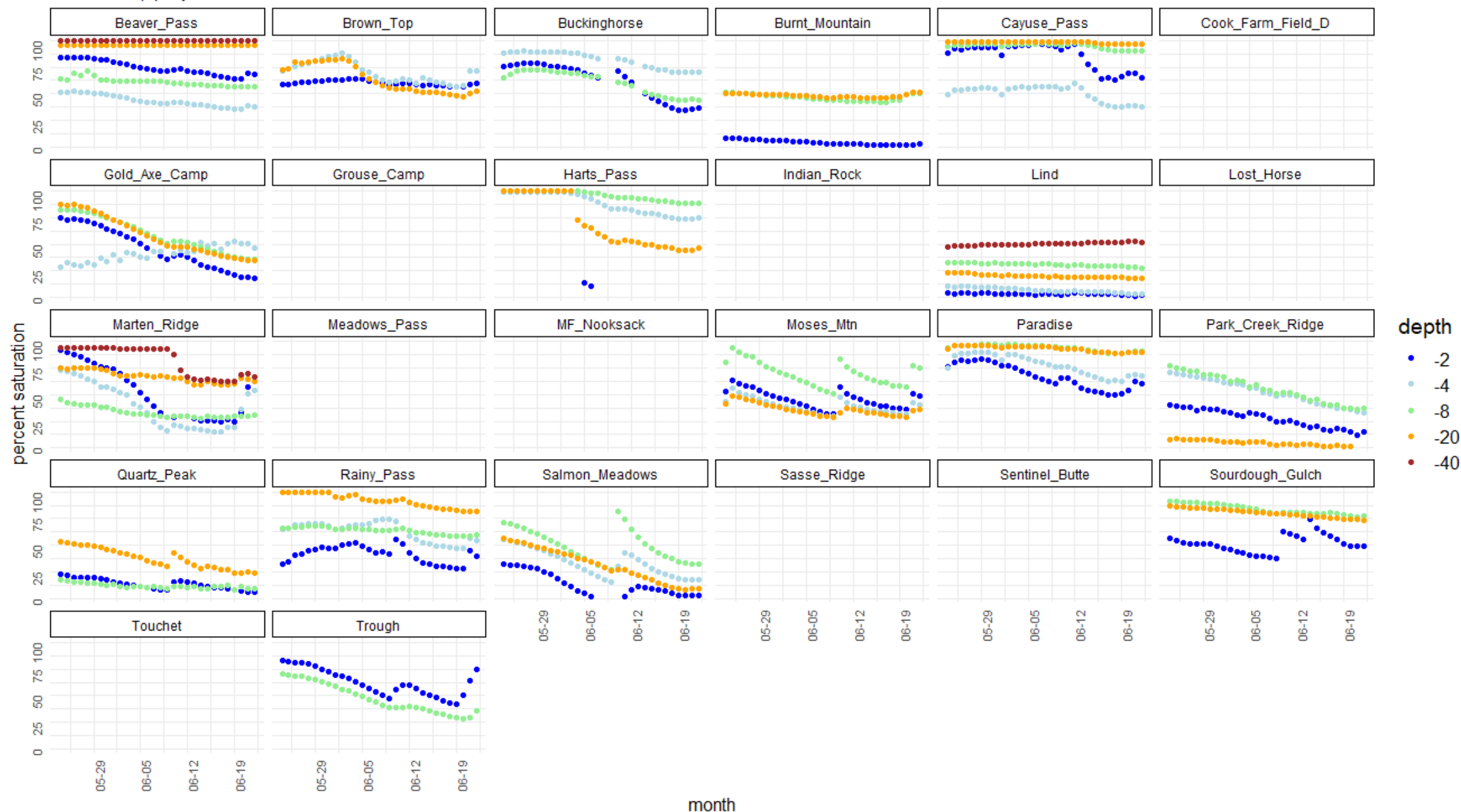


April - September Monthly Streamflow Forecasts, Washington | Forecast Date: 2023-06-21 | station count=125



soil moisture saturation for the last 30 days at selected NRCS stations

NRCS Data | query date: 06-22

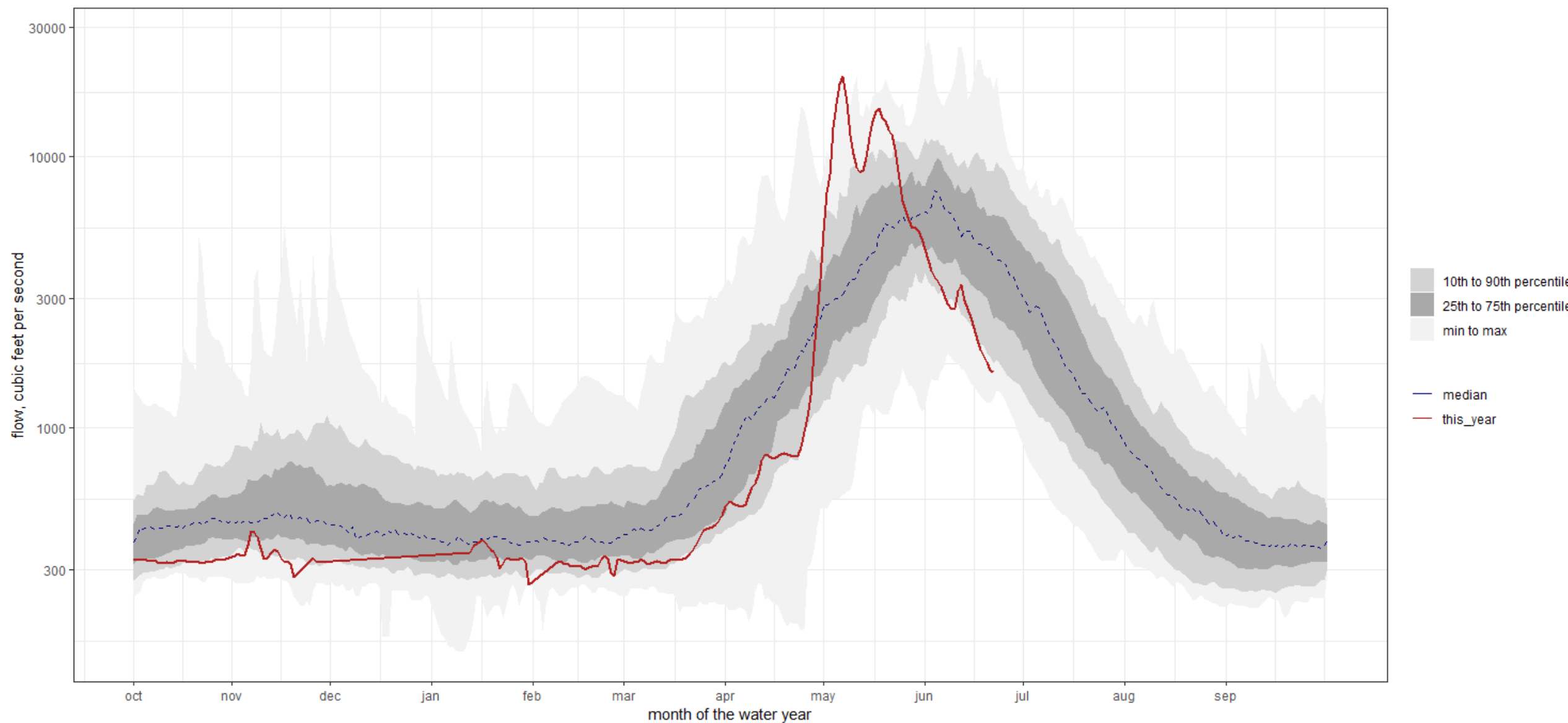


METHOW RIVER NEAR PATEROS, WA

Daily flows

USGS gauge 12449950

Data series start date: 1959-04-01

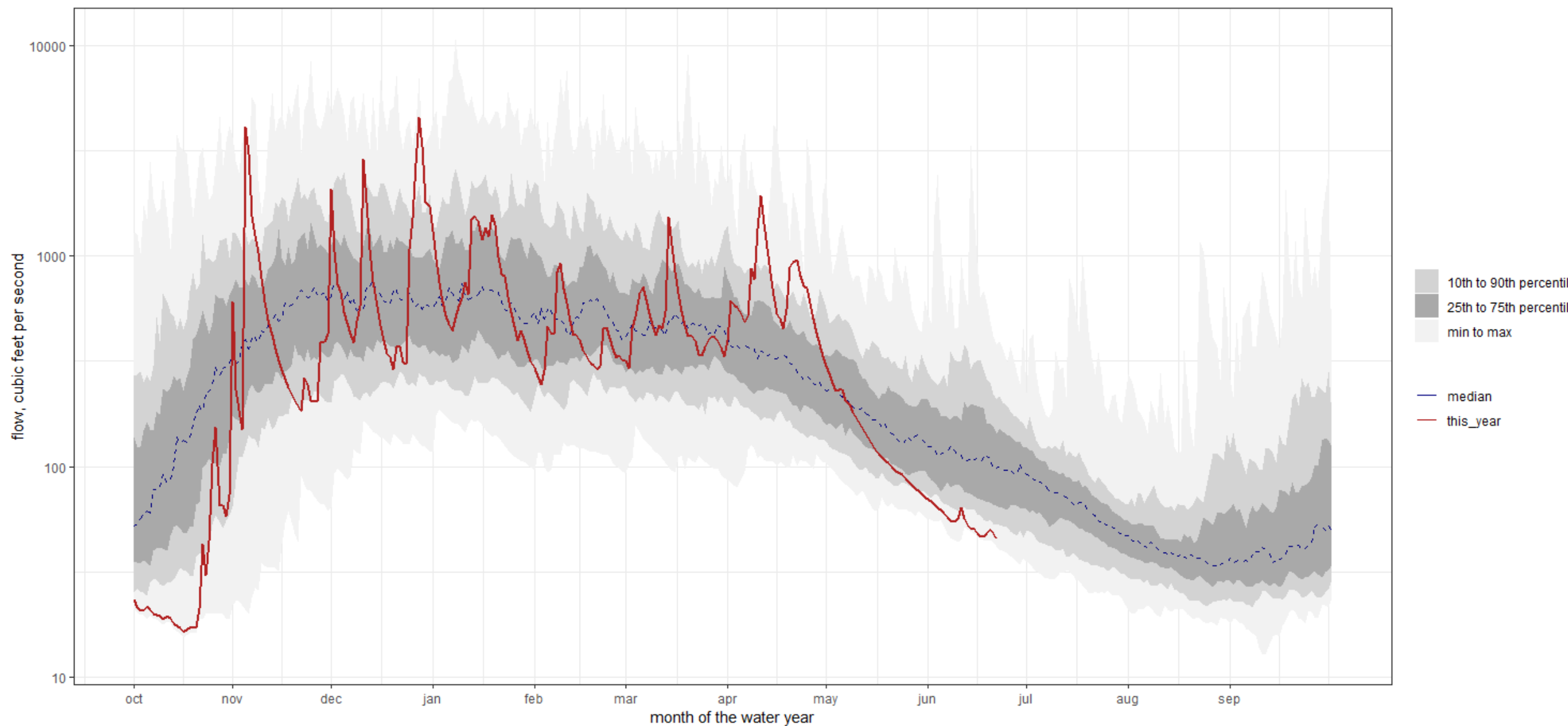


NASELLE RIVER NEAR NASELLE, WA

Daily flows

USGS gauge 12010000

Data series start date: 1950-10-01

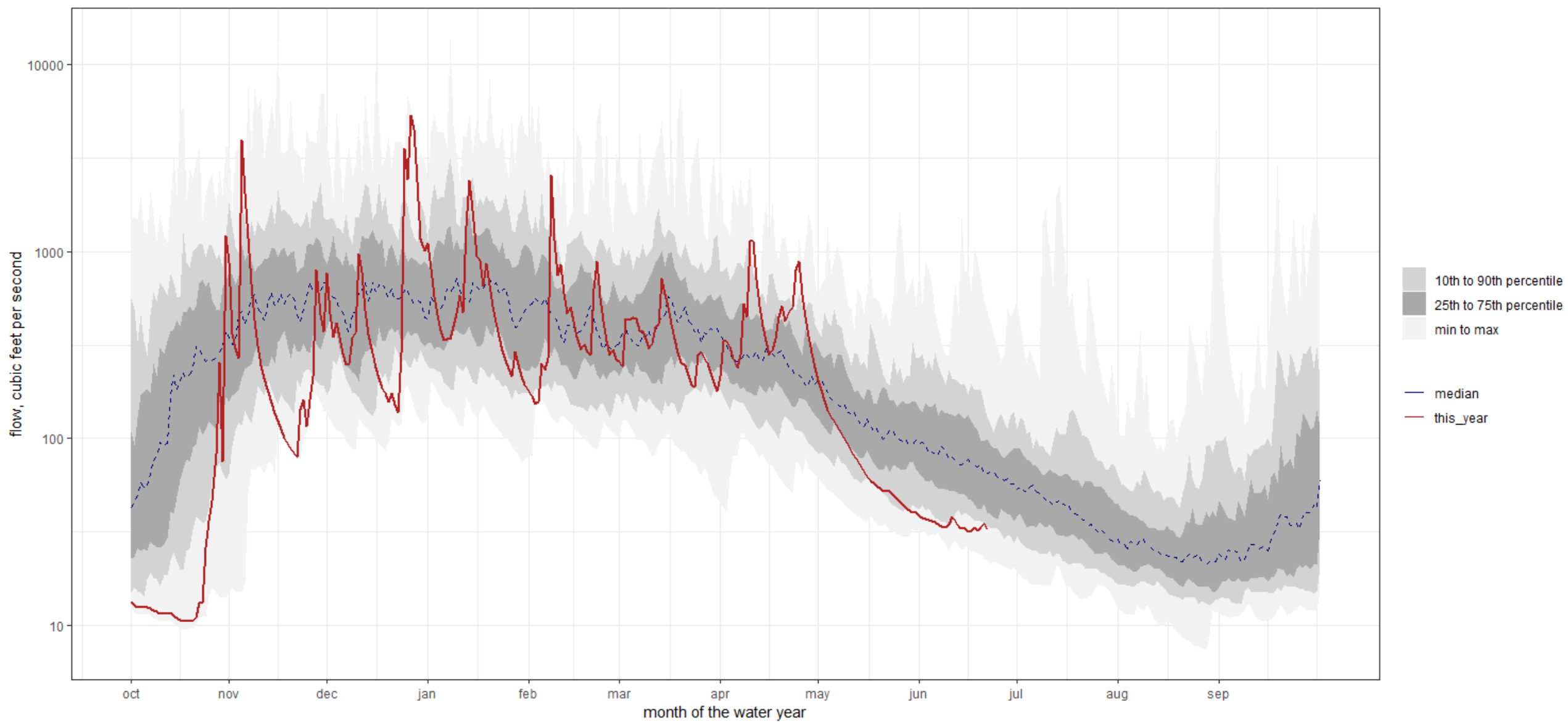


HOKO RIVER NEAR SEKIU, WA

Daily flows

USGS gauge 12043300

Data series start date: 1962-08-01

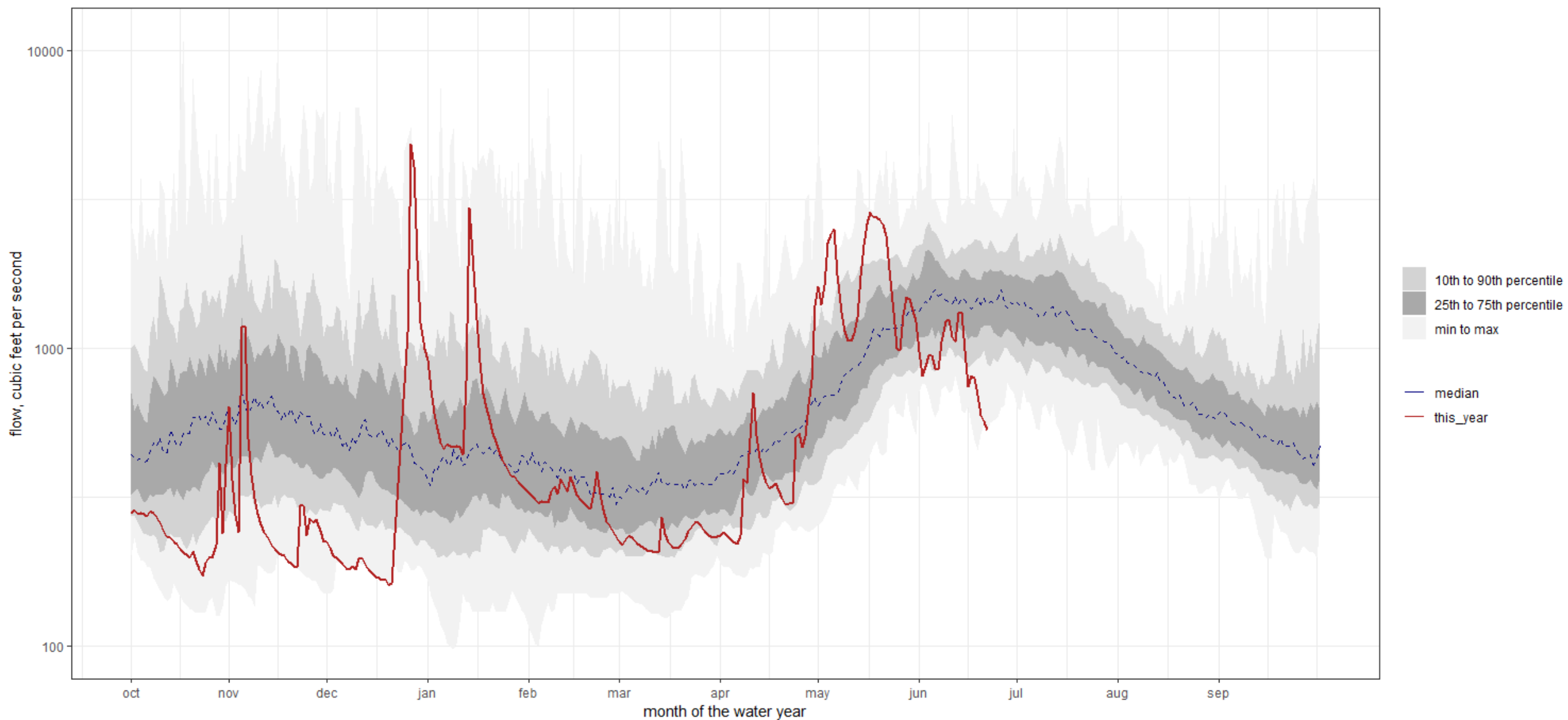


NF NOOKSACK RIVER BL CASCADE CREEK NR GLACIER, WA

Daily flows

USGS gauge 12205000

Data series start date: 1950-10-01

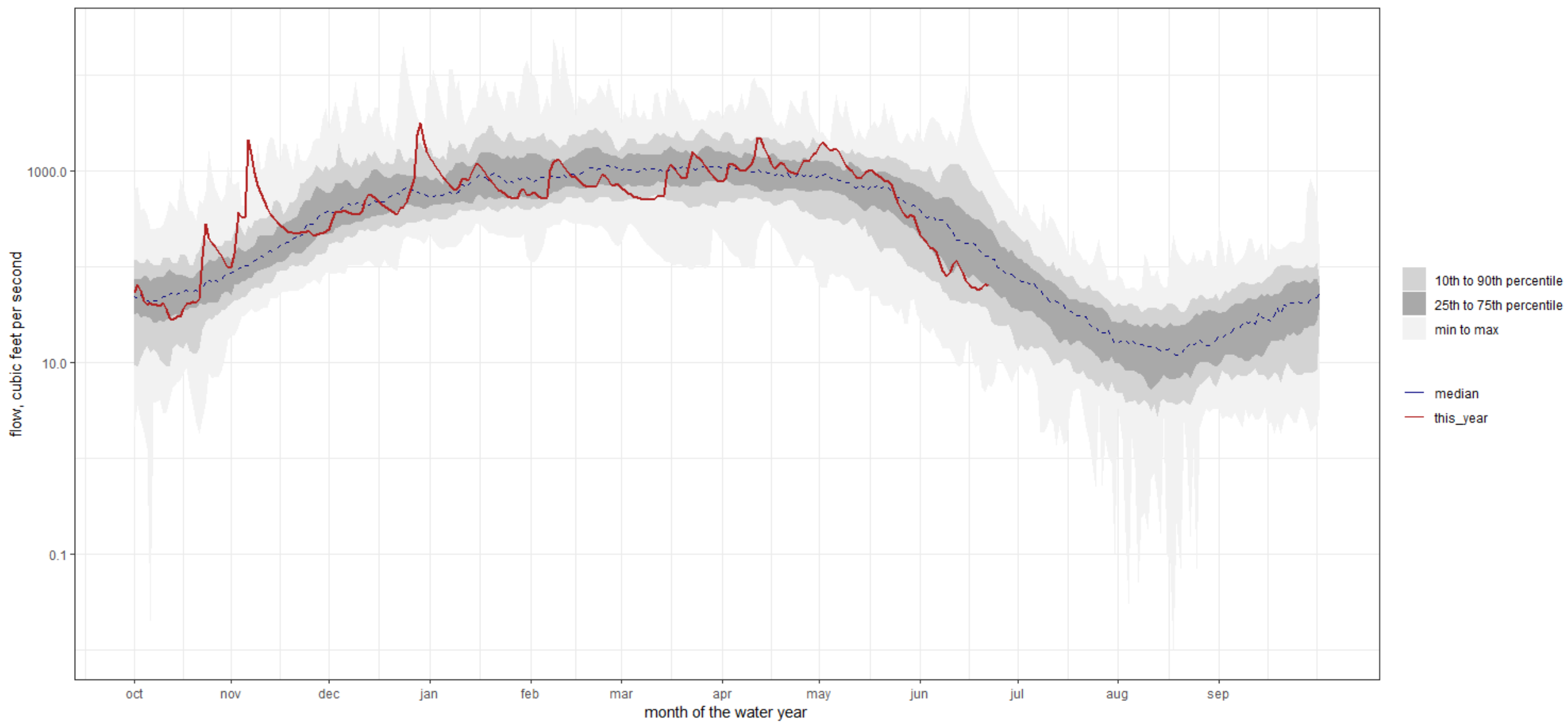


WALLA WALLA RIVER NEAR TOUCHET, WA

Daily flows

USGS gauge 14018500

Data series start date: 1951-10-01

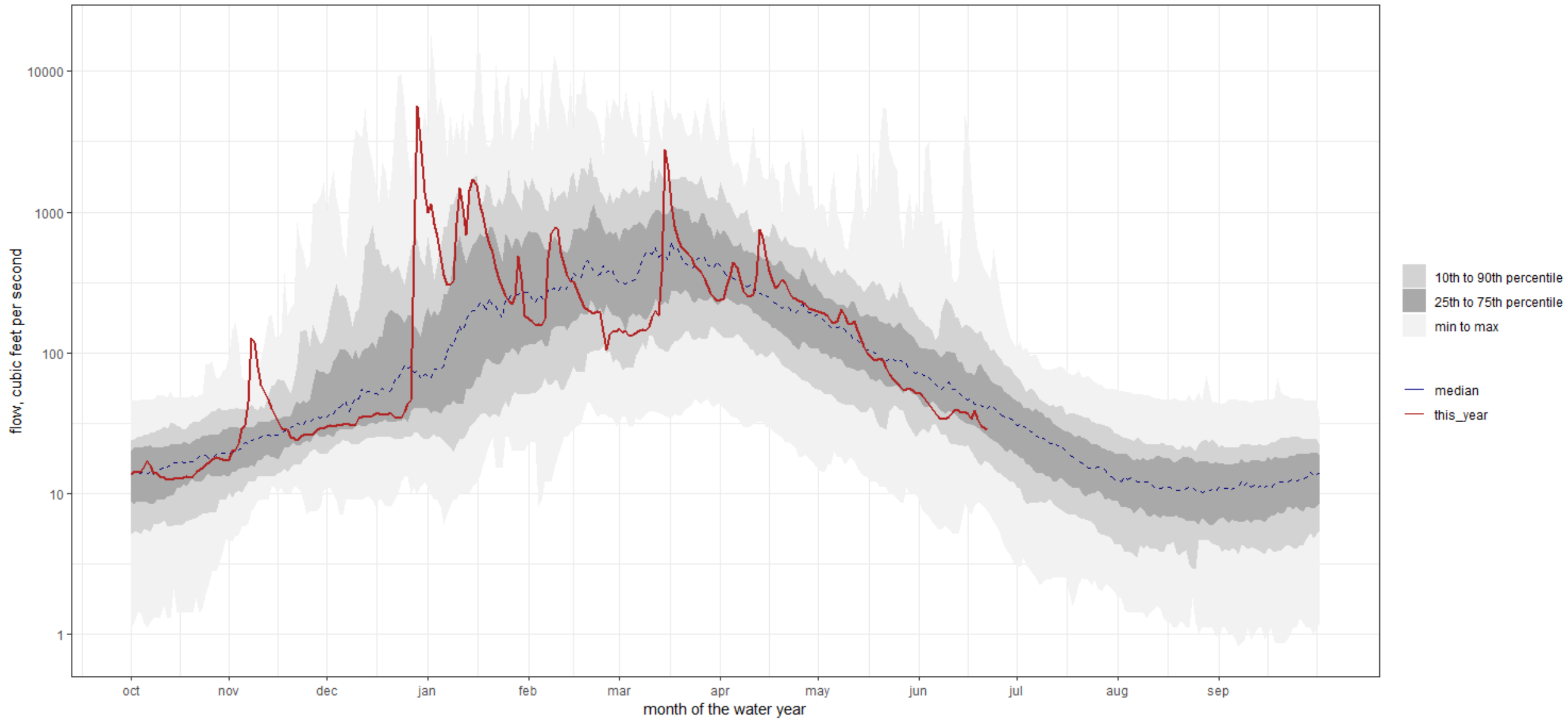


Hangman Creek at Spokane, WA

Daily flows

USGS gauge 12424000

Data series start date: 1950-10-01

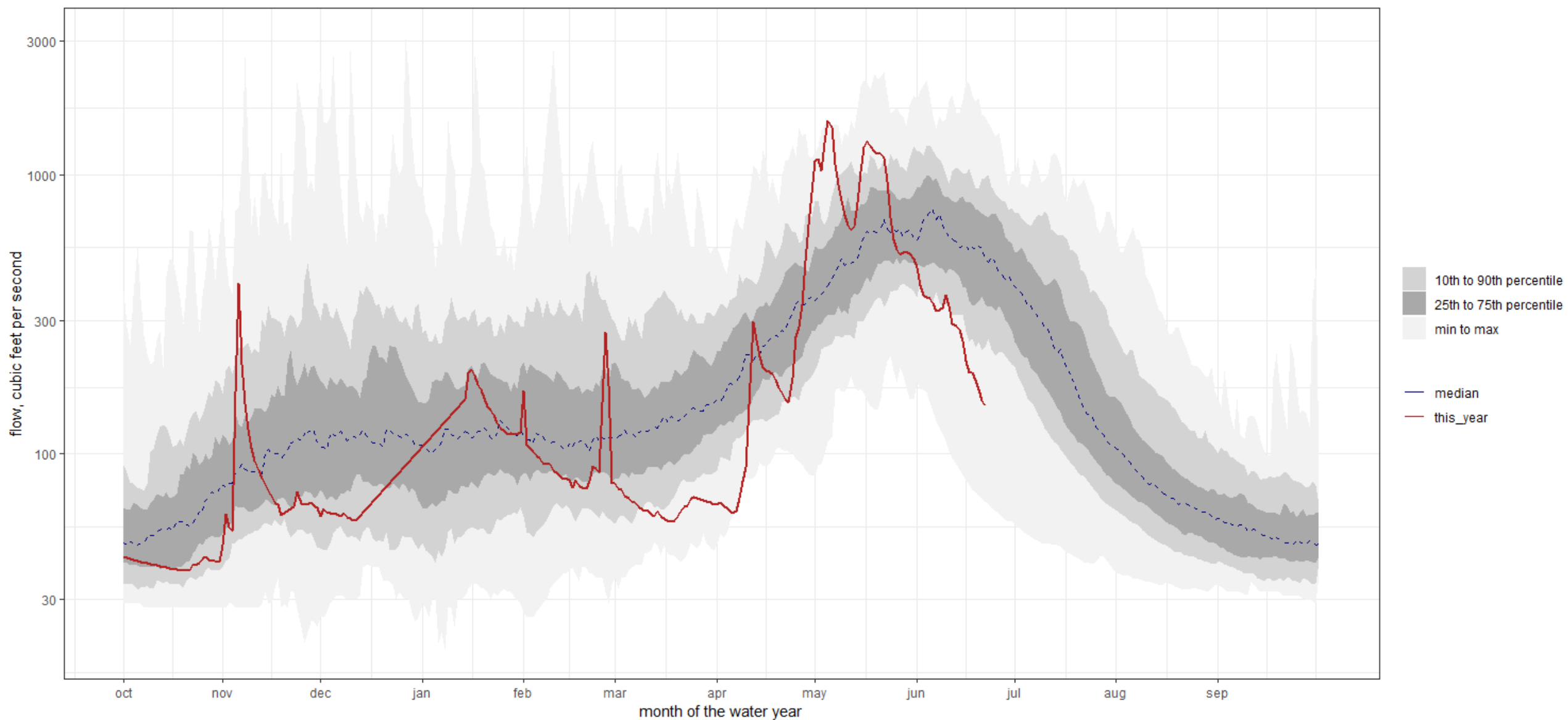


AMERICAN RIVER NEAR NILE, WA

Daily flows

USGS gauge 12488500

Data series start date: 1950-10-01

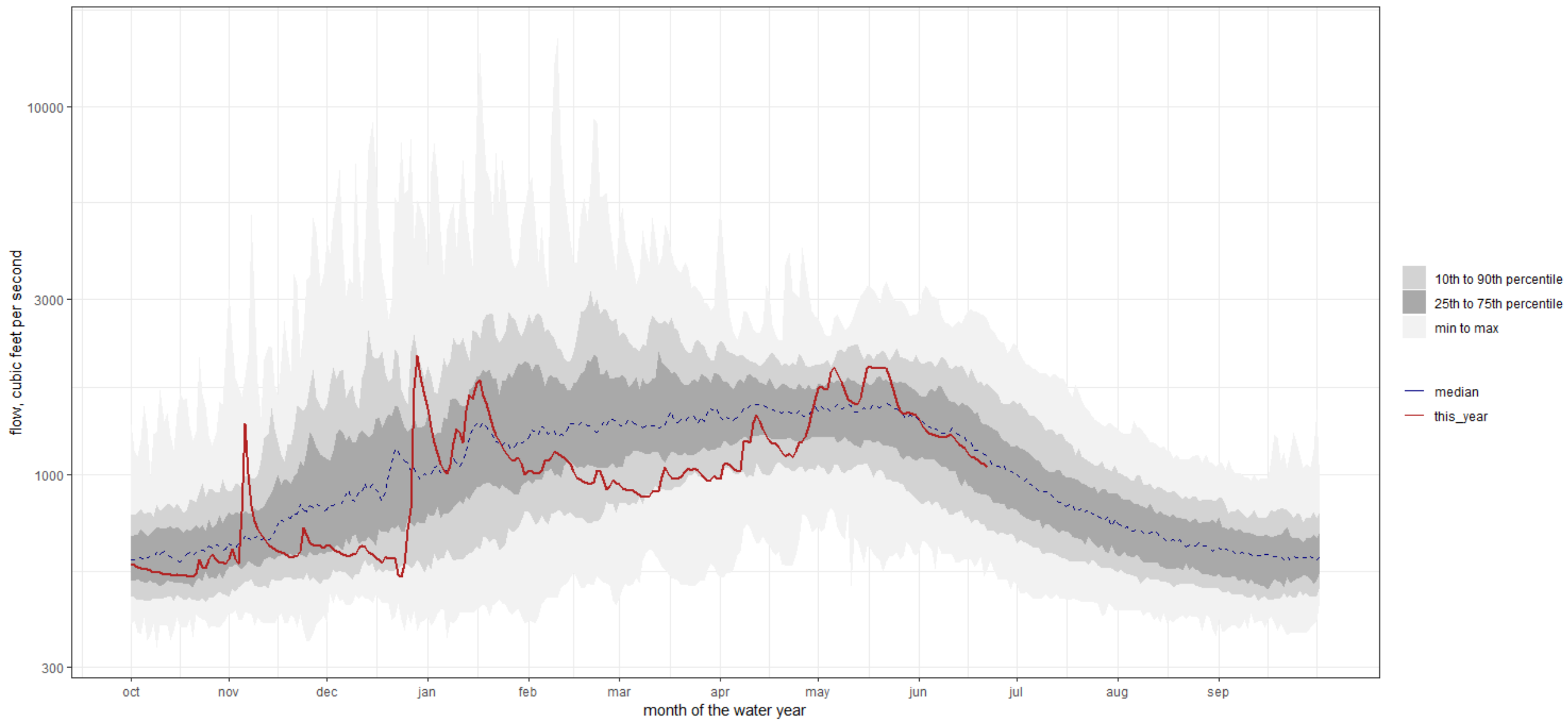


WHITE SALMON RIVER NEAR UNDERWOOD, WA

Daily flows

USGS gauge 14123500

Data series start date: 1950-10-01

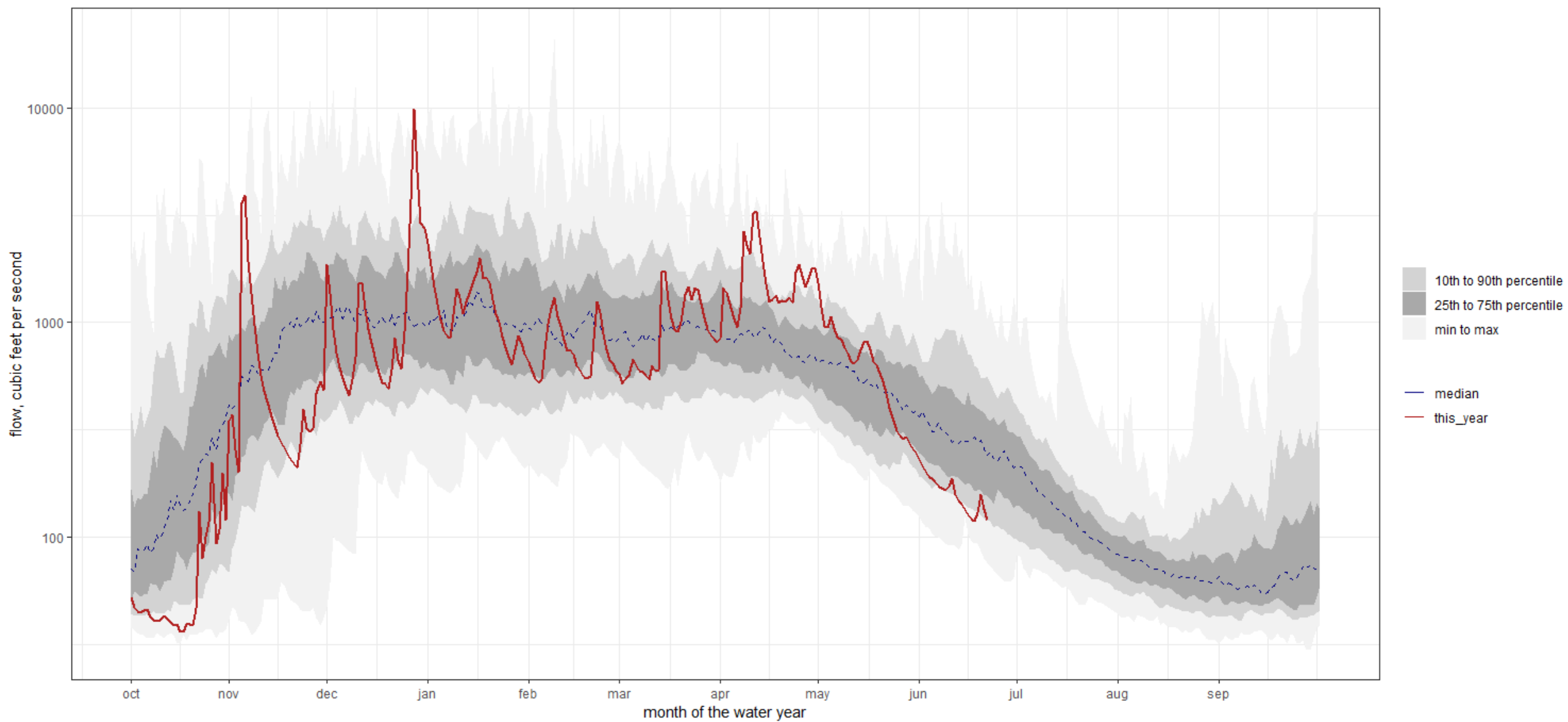


EAST FORK LEWIS RIVER NEAR HEISSON, WA

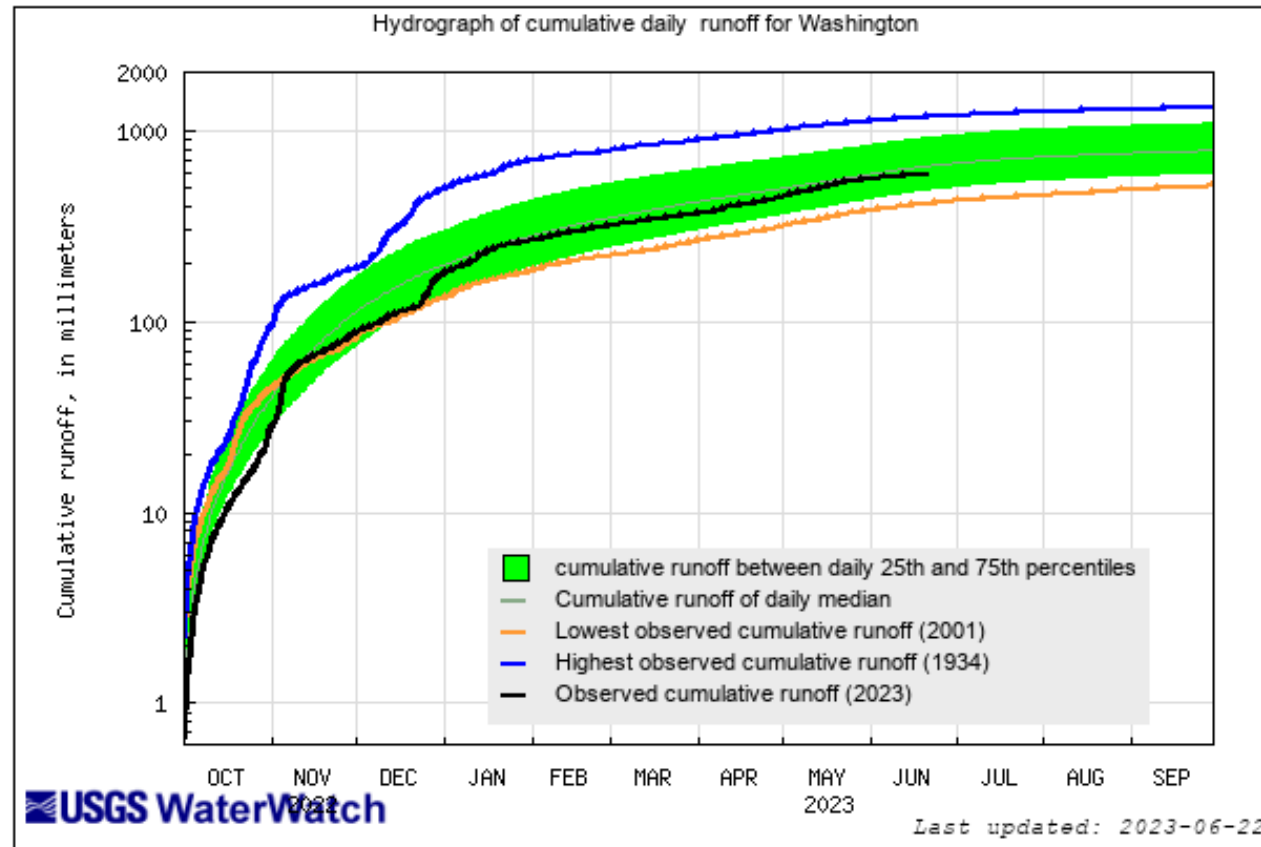
Daily flows

USGS gauge 14222500

Data series start date: 1950-10-01



Area-based runoff may have been computed from mixed regulated and unregulated streamflows



Statewide Cumulative Runoff ~ 92 pct of median

Explanation - Percentile classes							Runoff
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile -highest	
Much below Normal	Below normal	Normal	Above normal	Much above normal			



Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

 Search



CONSERVATION BASICS

GETTING ASSISTANCE

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Washington Snow Survey & Water Supply Program

WSAC May 2023

[Home](#) > [Conservation Basics](#) > [Conservation By State](#) > [Washington](#) > [Washington Snow Survey & Water Supply Program](#)

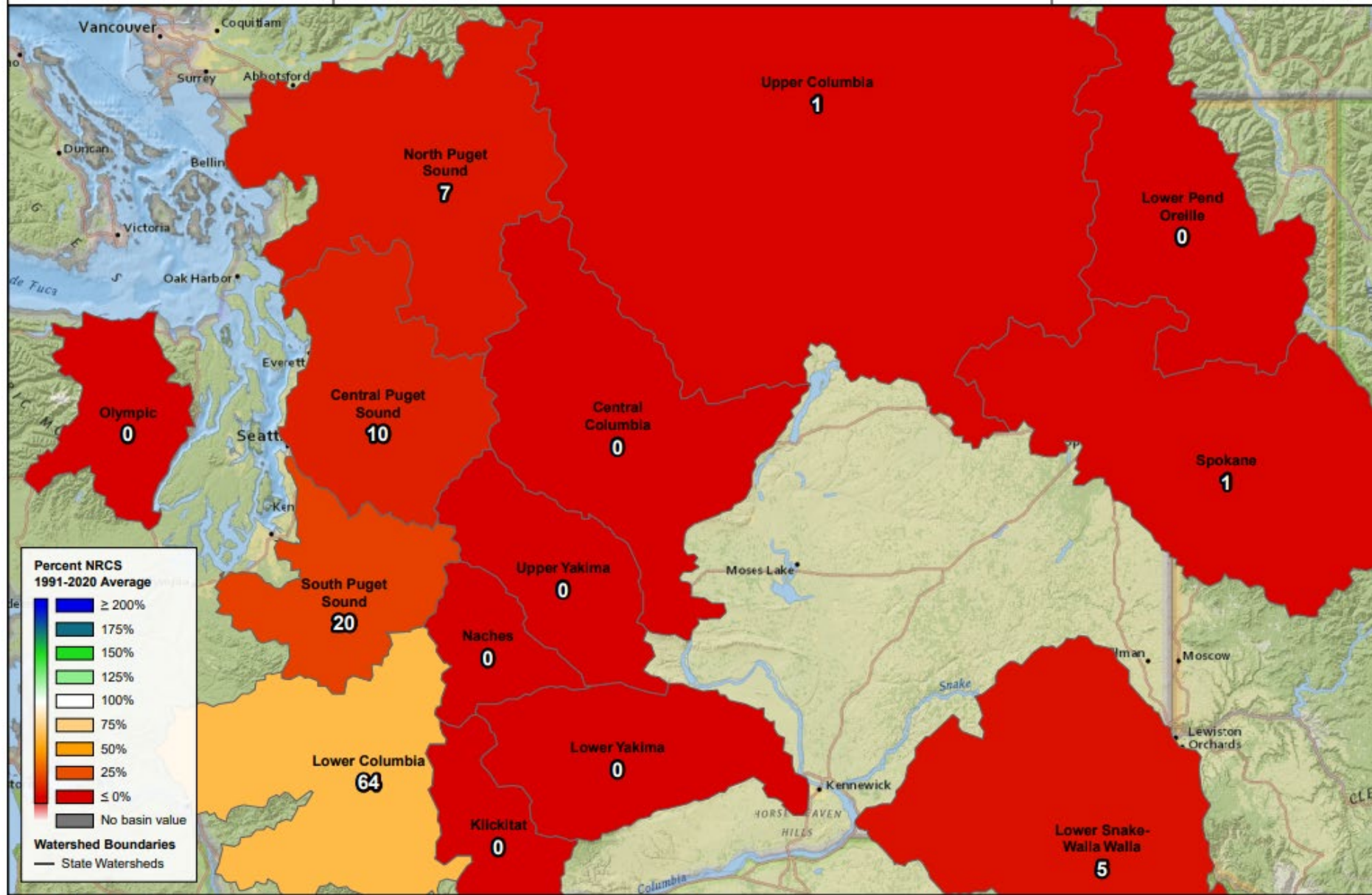
The NRCS Snow Survey Program provides mountain snowpack data and streamflow forecasts for the western United States. Applications of snow survey products include water supply management, flood control, climate modeling, recreation, and



Snow Water Equivalent

Percent NRCS 1991-2020 Average

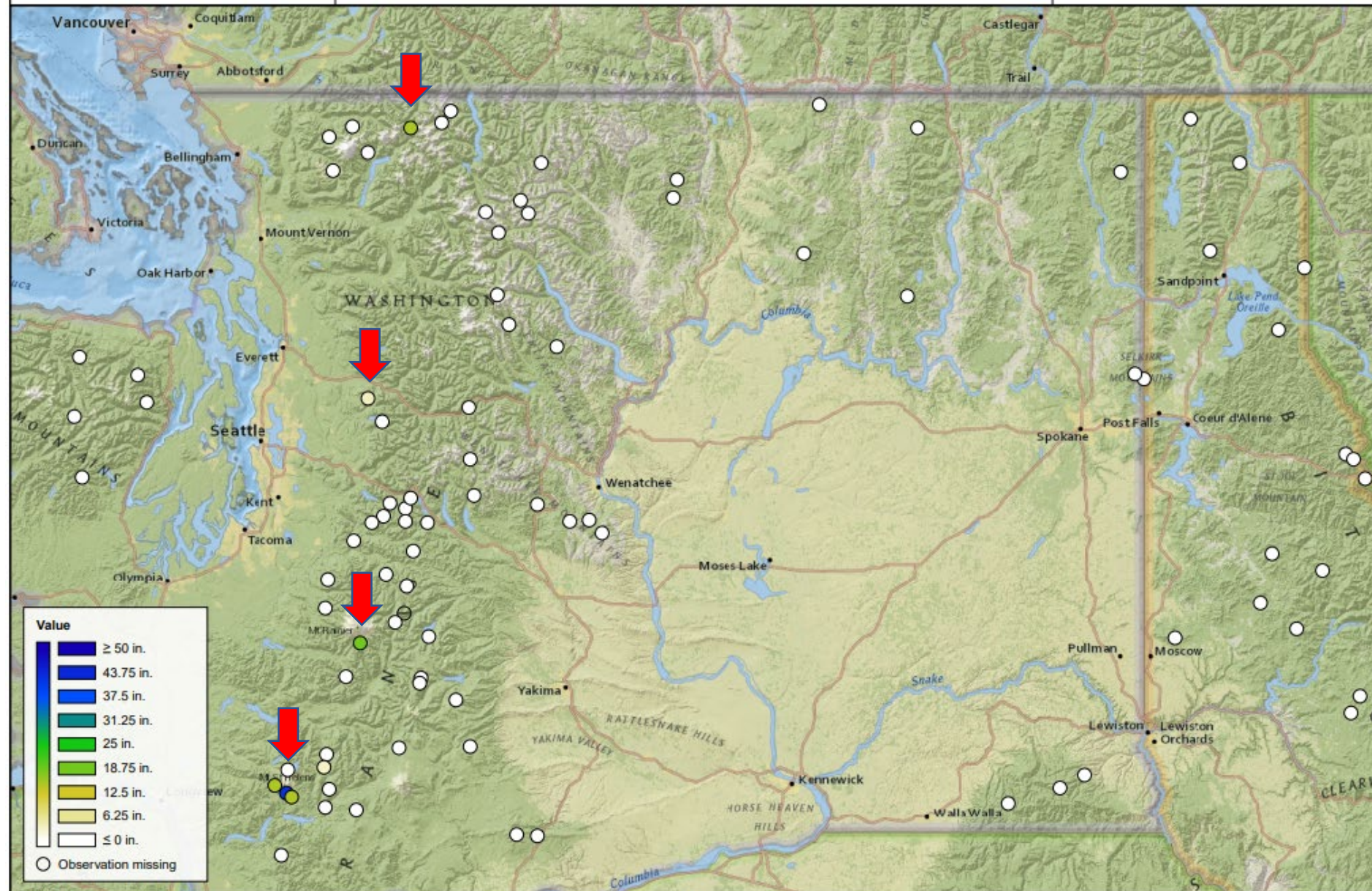
June 20, 2023, first of day



Snow Water Equivalent

Value

June 20, 2023, first of day

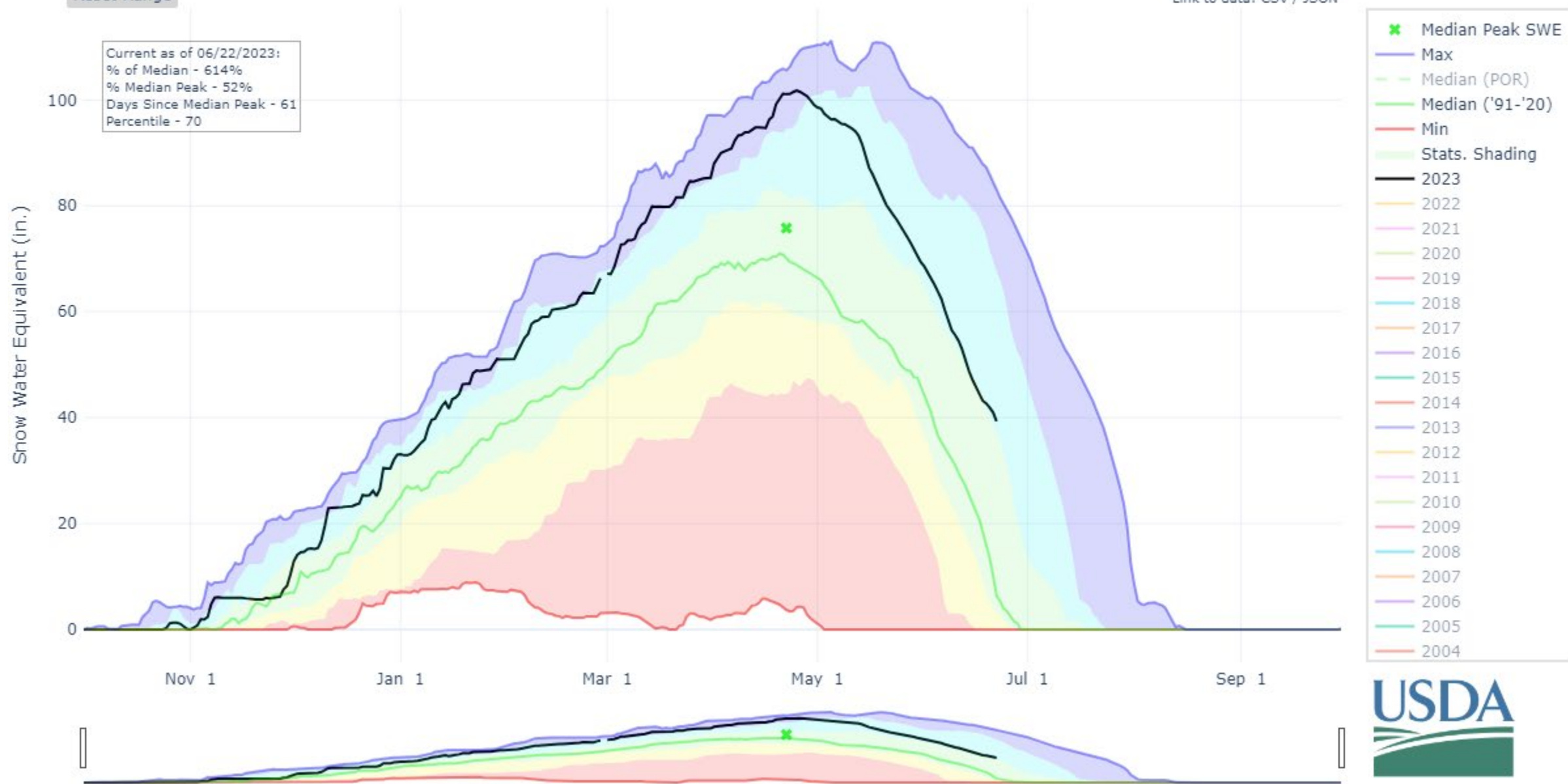


SNOW WATER EQUIVALENT AT SWIFT CREEK

Reset Range

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

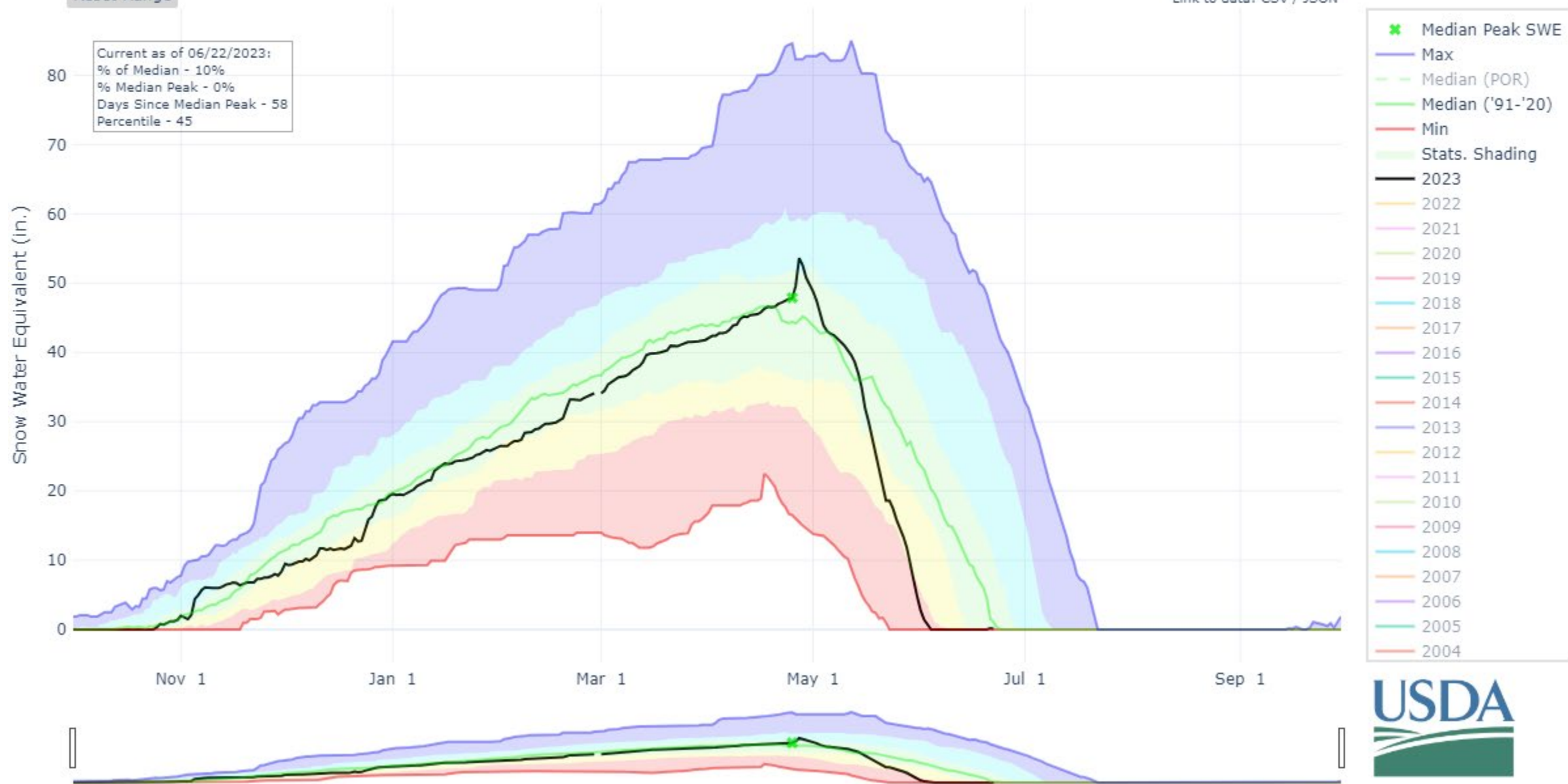
Current as of 06/22/2023:
% of Median - 614%
% Median Peak - 52%
Days Since Median Peak - 61
Percentile - 70



SNOW WATER EQUIVALENT AT HARTS PASS

Reset Range

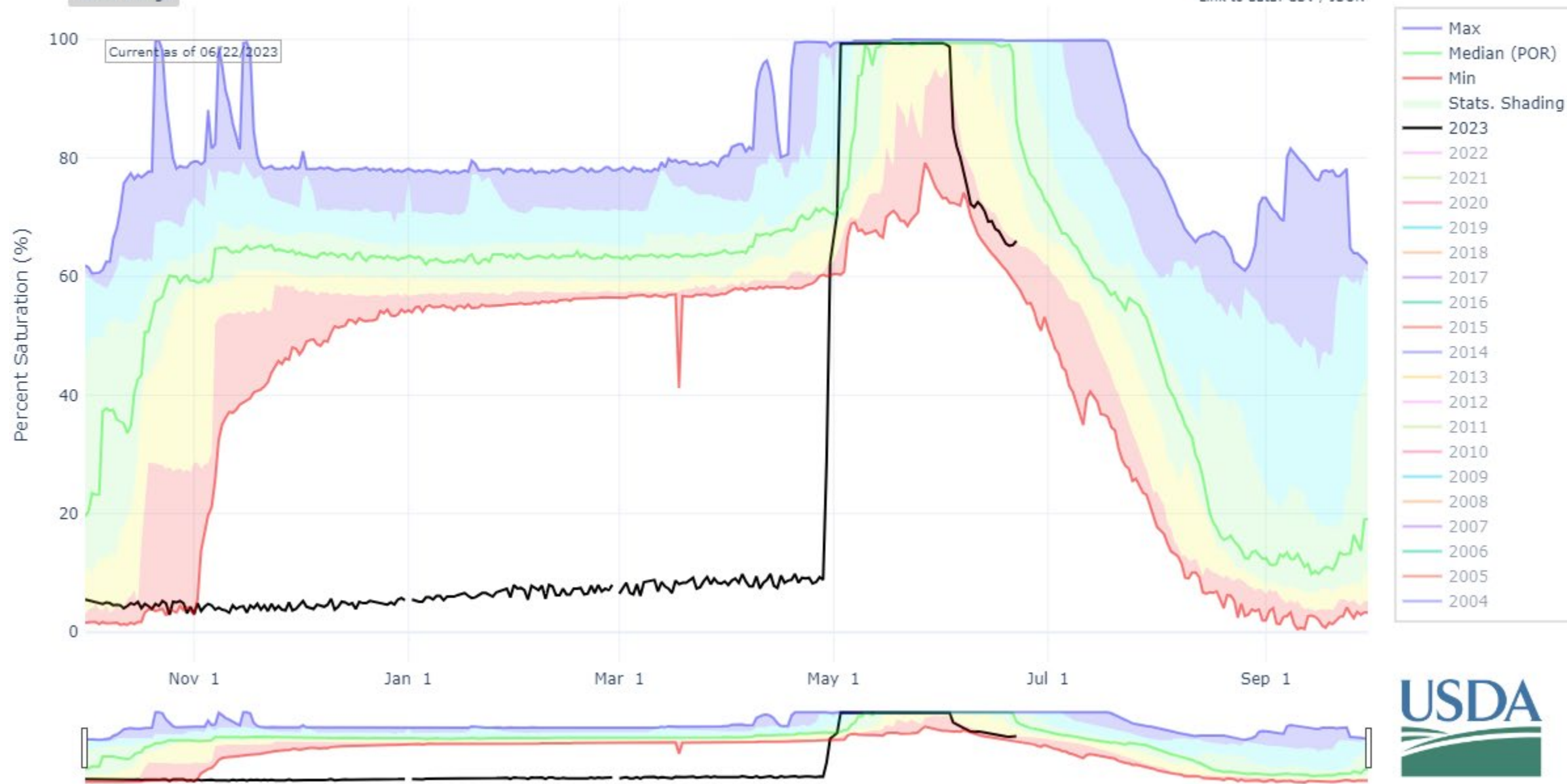
[Link to data: CSV / JSON](#)



DEPTH AVERAGED SOIL SATURATION AT HARTS PASS

Reset Range

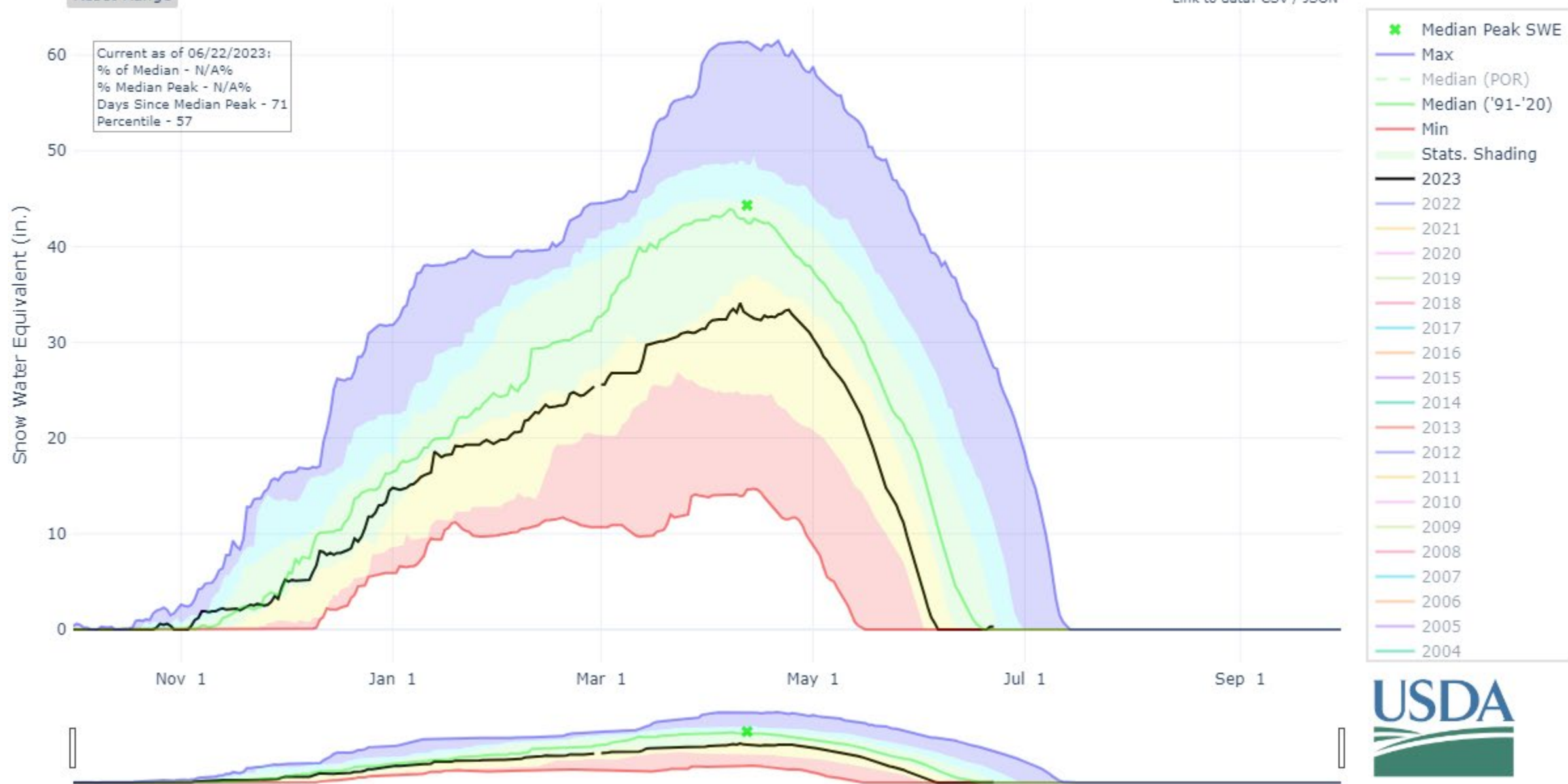
[Link to data: CSV / JSON](#)



SNOW WATER EQUIVALENT AT BEAVER PASS

Reset Range

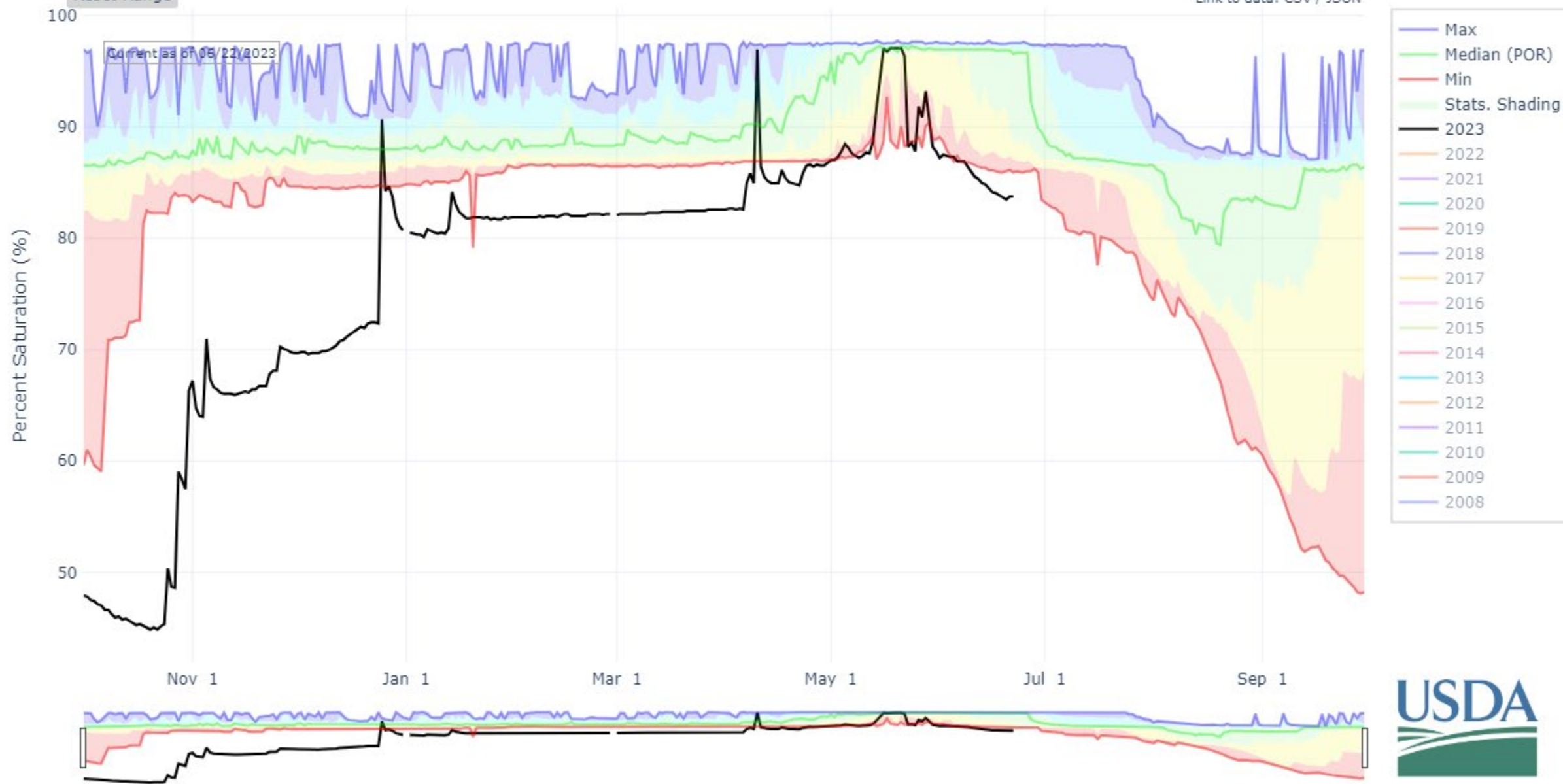
[Link to data: CSV / JSON](#)



DEPTH AVERAGED SOIL SATURATION AT BEAVER PASS

Reset Range

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

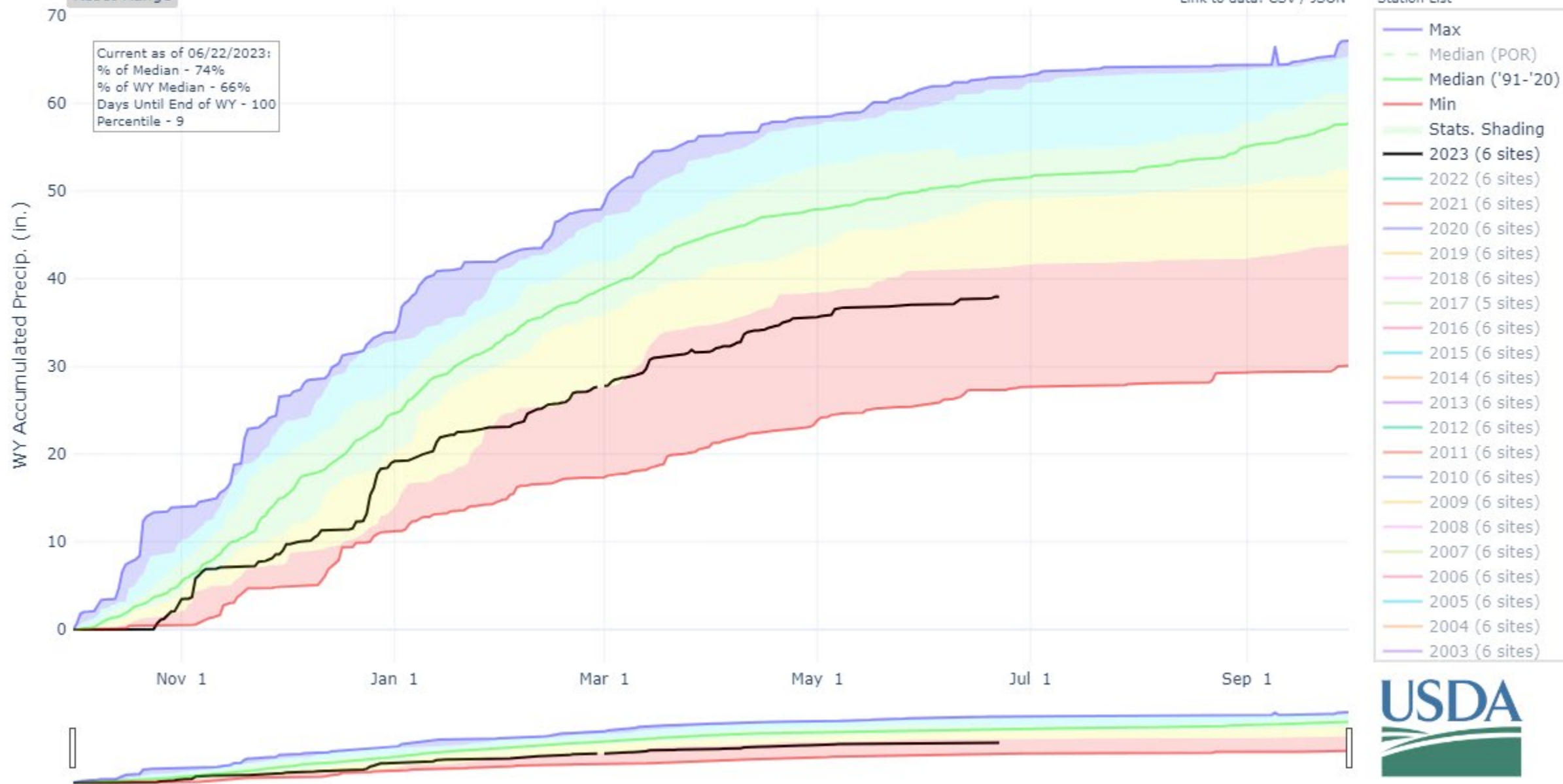


PRECIPITATION IN SKAGIT

Reset Range

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

Station List



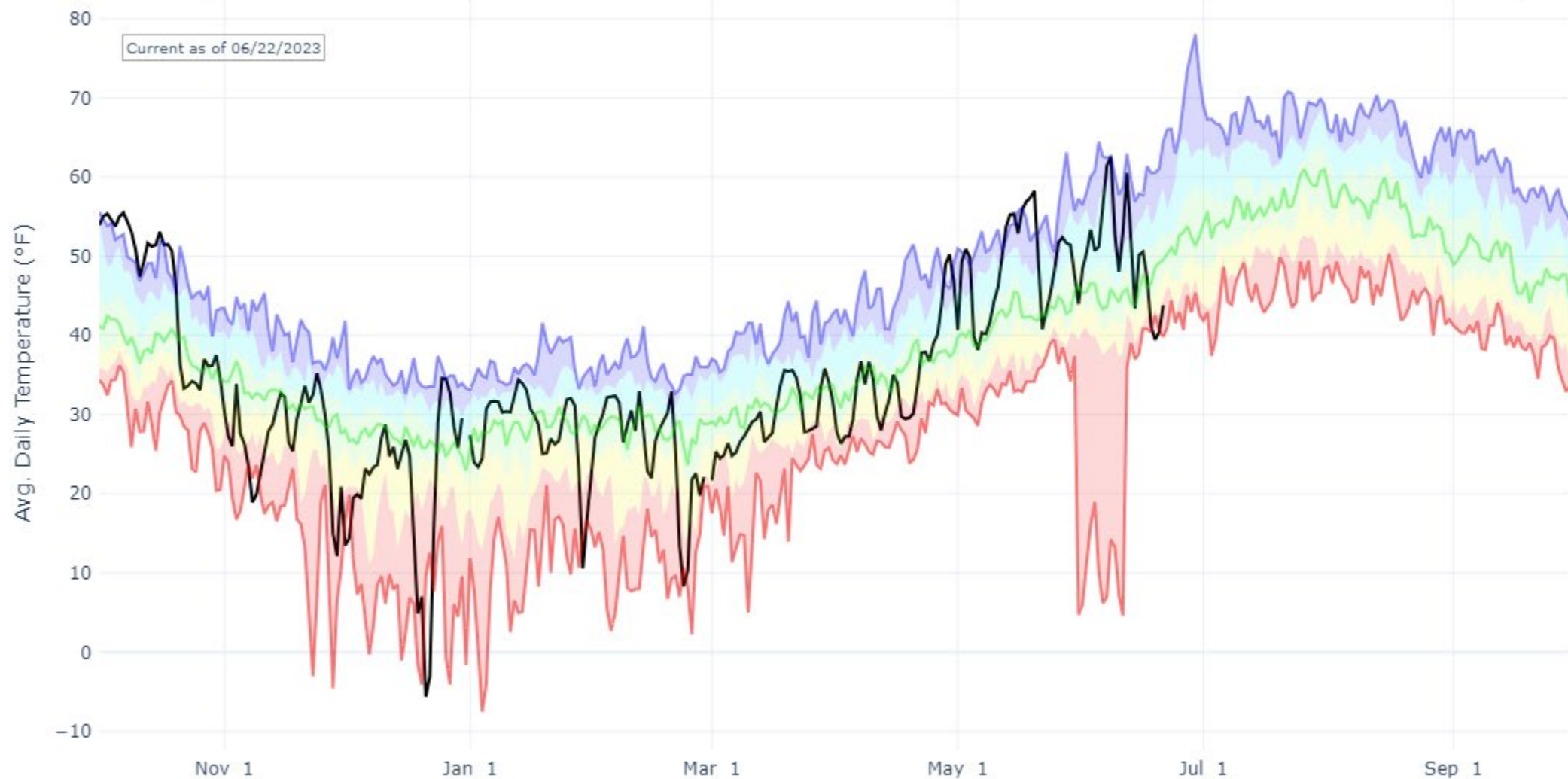
DAILY AVERAGE TEMPERATURE IN SKAGIT

Reset Range

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

Station List

- Max
- Median (POR)
- Min
- Stats. Shading
- 2023 (7 sites)
- 2022 (7 sites)
- 2021 (7 sites)
- 2020 (7 sites)
- 2019 (7 sites)
- 2018 (7 sites)
- 2017 (7 sites)
- 2016 (7 sites)
- 2015 (7 sites)
- 2014 (7 sites)
- 2013 (7 sites)
- 2012 (7 sites)
- 2011 (7 sites)
- 2010 (7 sites)
- 2009 (6 sites)
- 2008 (6 sites)
- 2007 (6 sites)
- 2006 (6 sites)
- 2005 (6 sites)
- 2004 (5 sites)
- 2003 (6 sites)
- 2002 (6 sites)



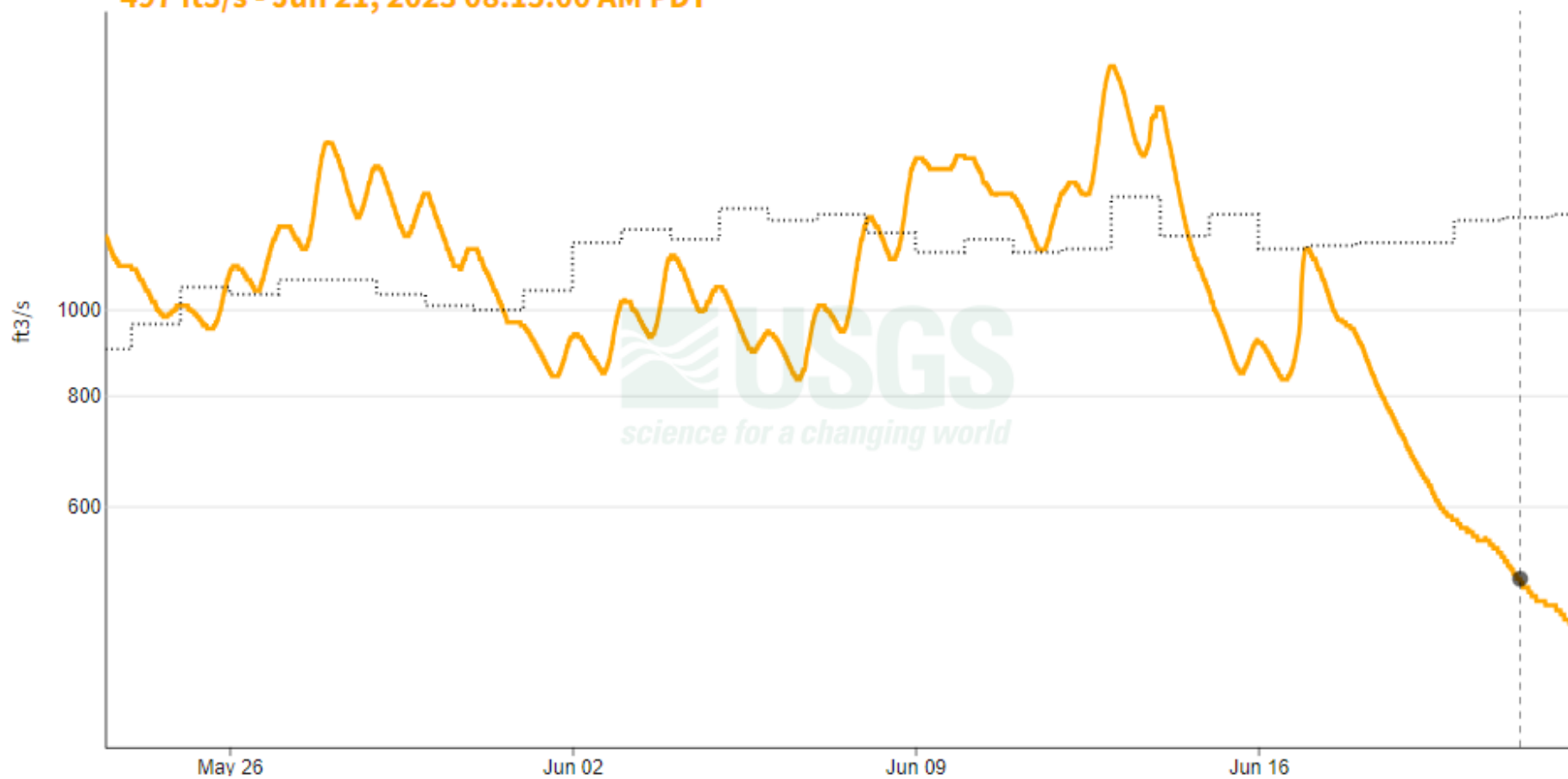
☐ 7 days ☒ 30 days ☐ 1 year

Thunder Creek Near Newhalem, WA - 12175500

May 23, 2023 - June 22, 2023

Streamflow, ft³/s ⓘ

497 ft³/s - Jun 21, 2023 08:15:00 AM PDT



Current: — Provisional

Median: 1931 - 2023

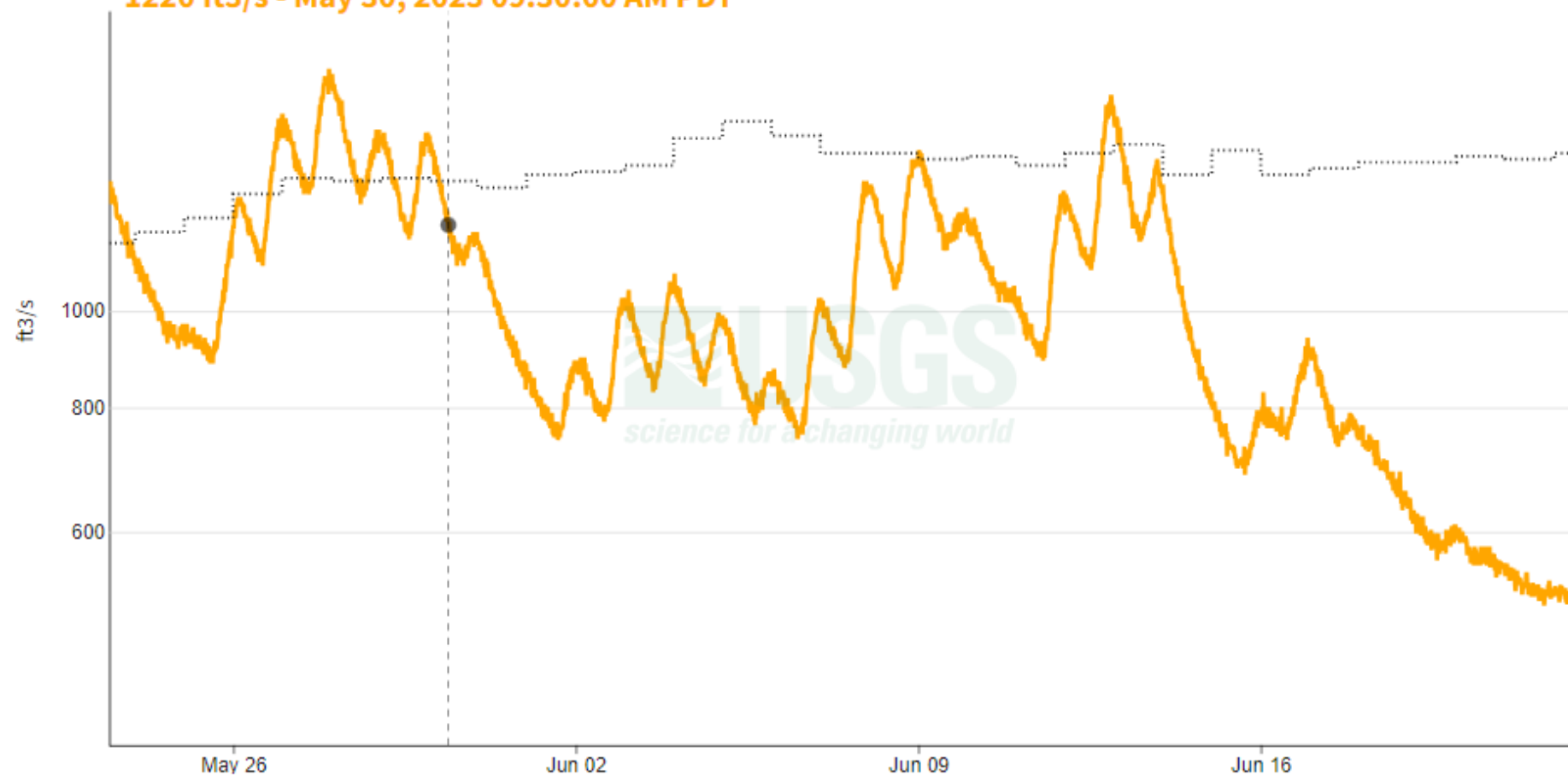
☐ 7 days ☒ 30 days ☐ 1 year

NF Nooksack River BL Cascade Creek NR Glacier, WA - 12205000

May 23, 2023 - June 22, 2023

Streamflow, ft³/s ⓘ

1220 ft³/s - May 30, 2023 09:30:00 AM PDT



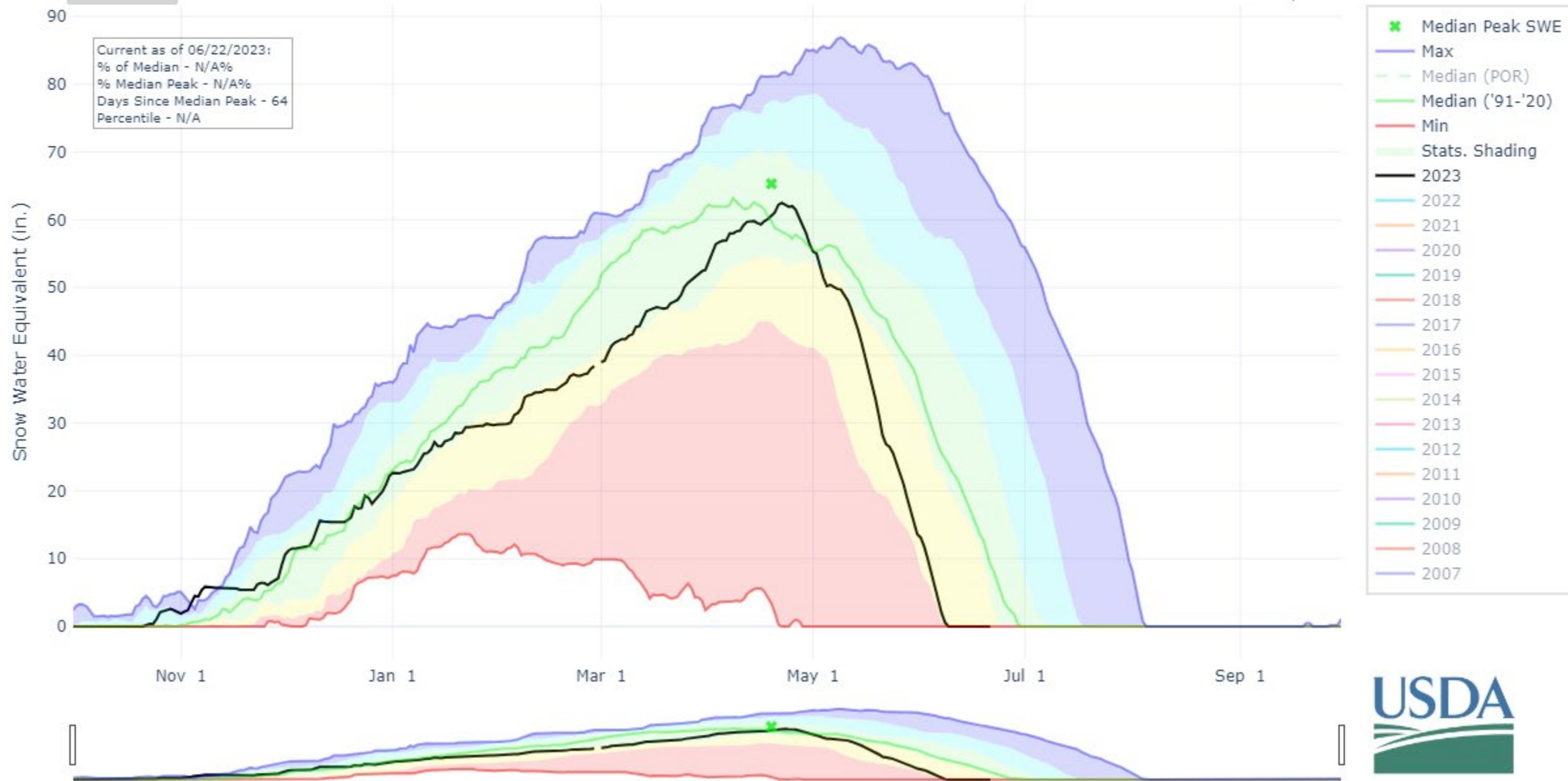
Current: — Provisional

Median: 1938 - 2021

SNOW WATER EQUIVALENT AT CAYUSE PASS

Reset Range

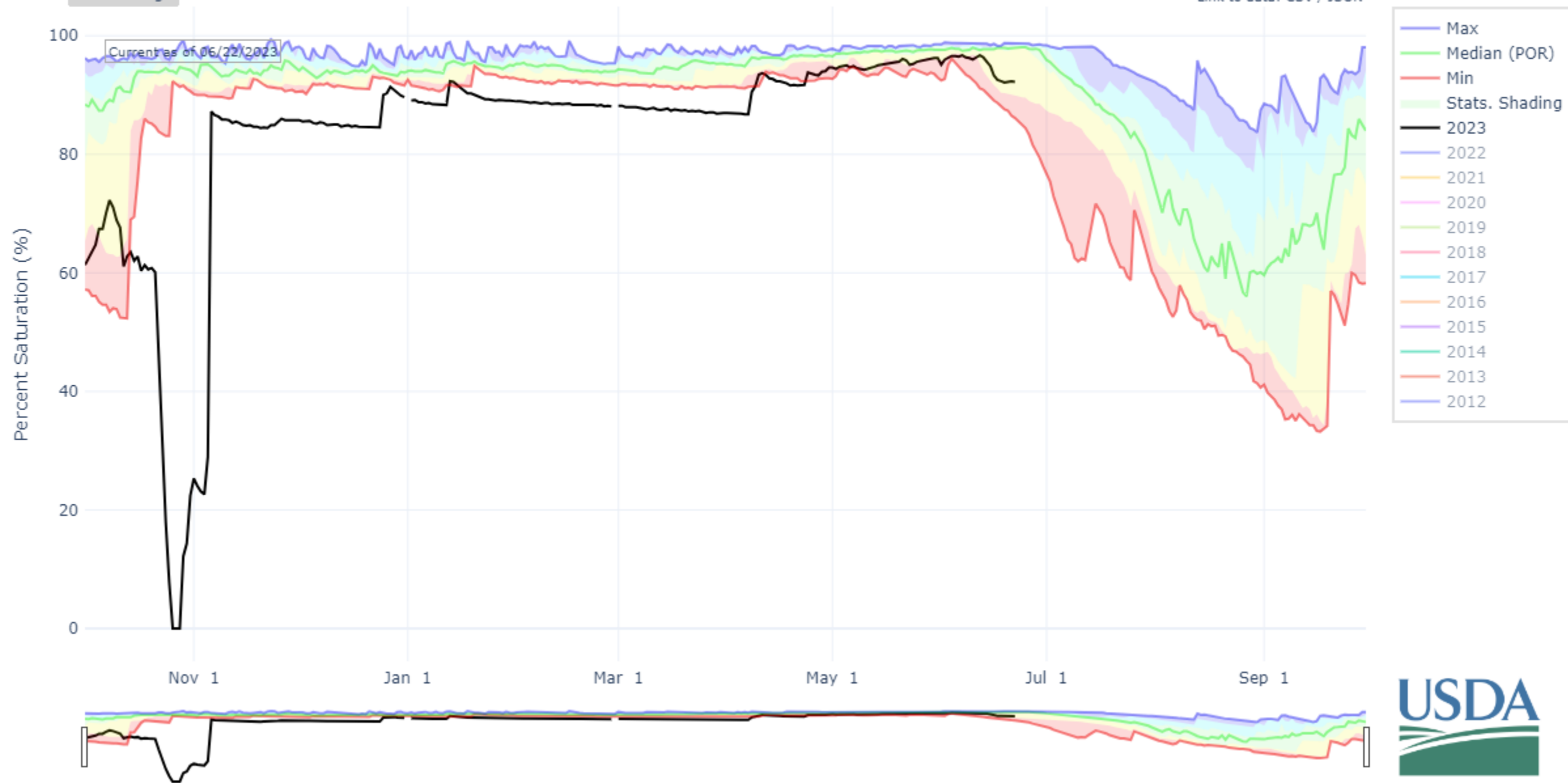
[Link to data: CSV / JSON](#)



DEPTH AVERAGED SOIL SATURATION AT CAYUSE PASS

Reset Range

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



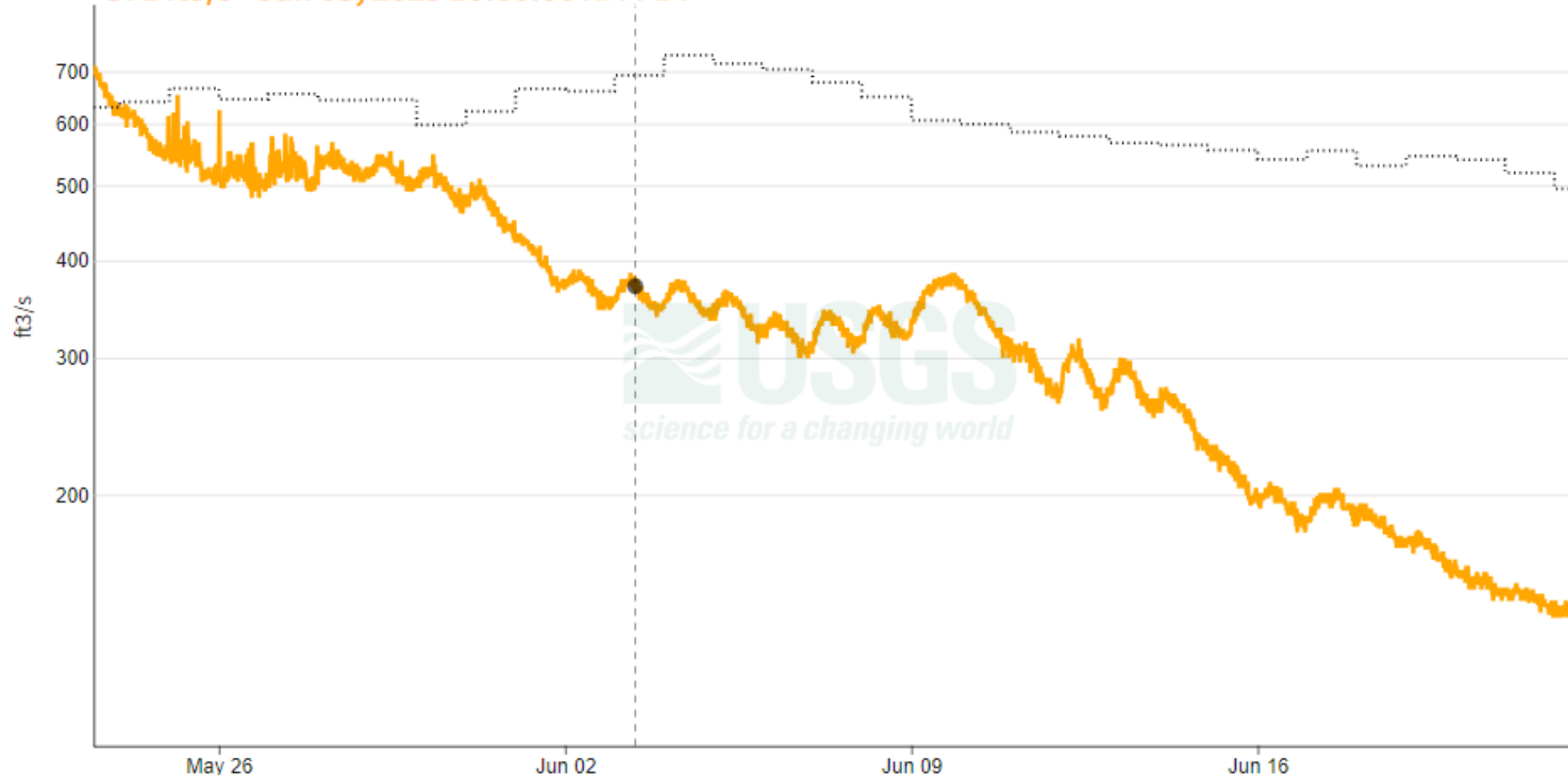
☐ 7 days ☒ 30 days ☐ 1 year

American River Near Nile, WA - 12488500

May 23, 2023 - June 22, 2023

Streamflow, ft³/s ⓘ

371 ft³/s - Jun 03, 2023 10:00:00 AM PDT



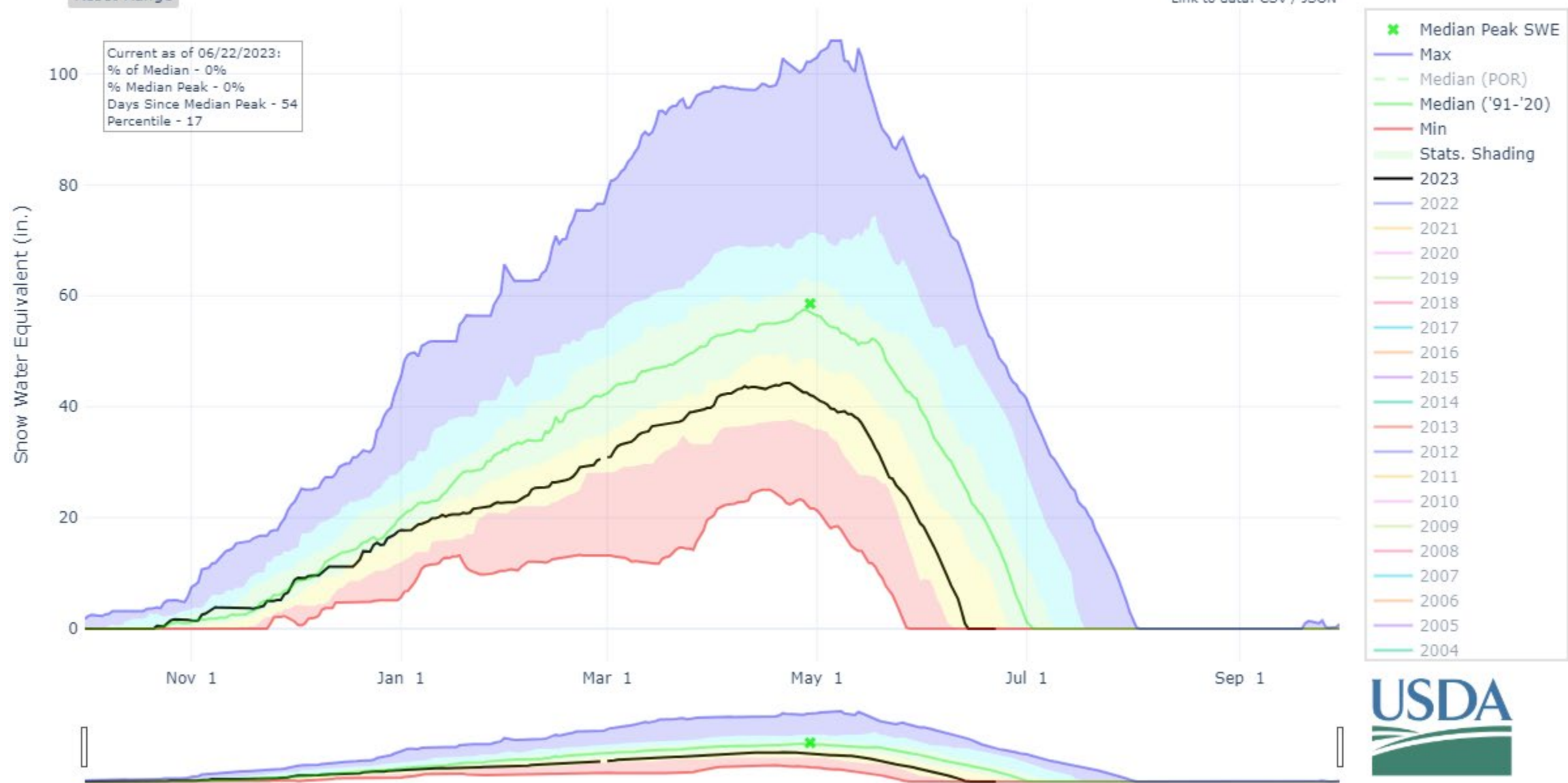
Current: — Provisional

Median: 1940 - 2022

SNOW WATER EQUIVALENT AT PIGTAIL PEAK

Reset Range

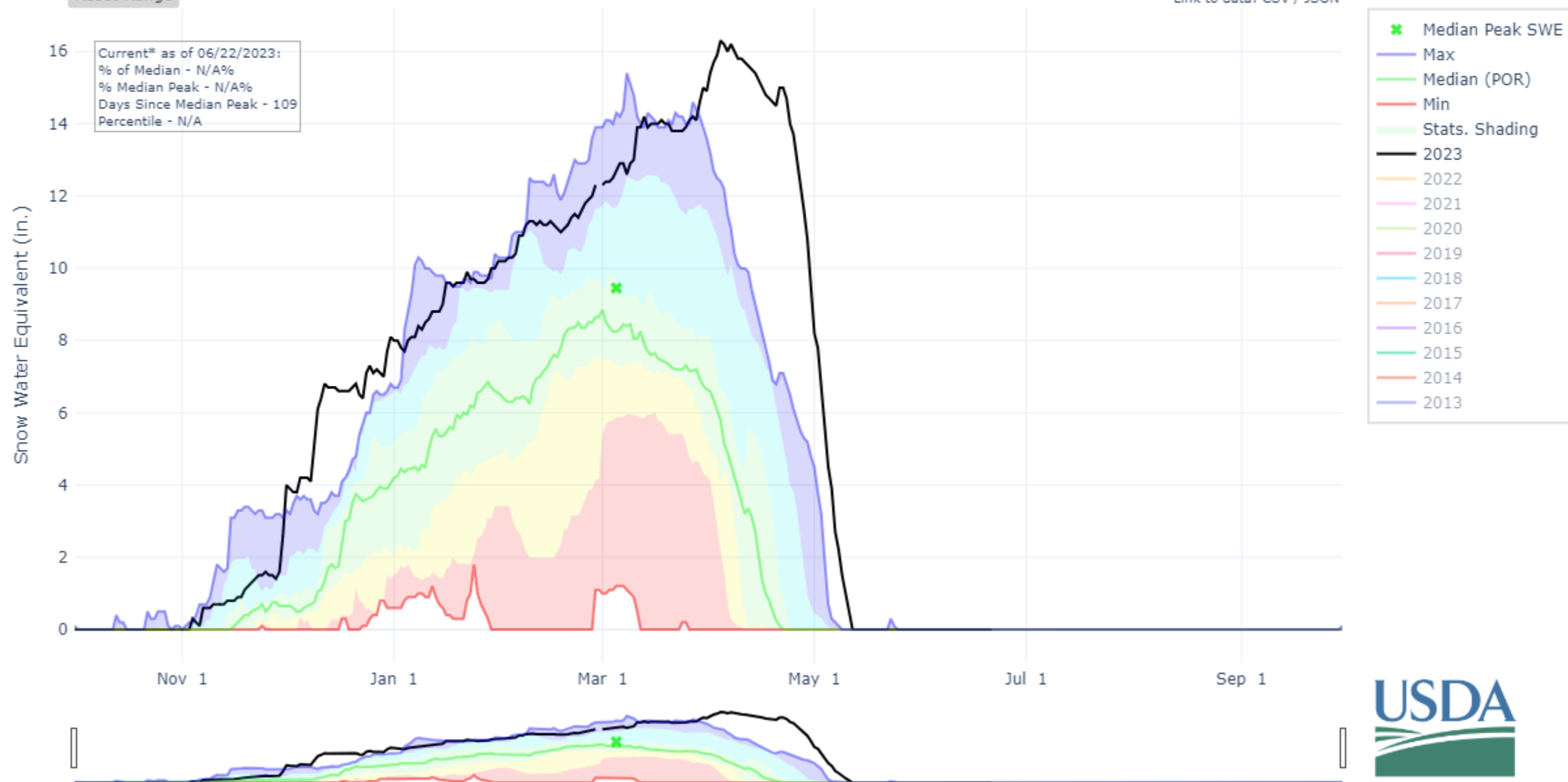
[Link to data: CSV / JSON](#)



SNOW WATER EQUIVALENT AT SATUS PASS

Reset Range

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



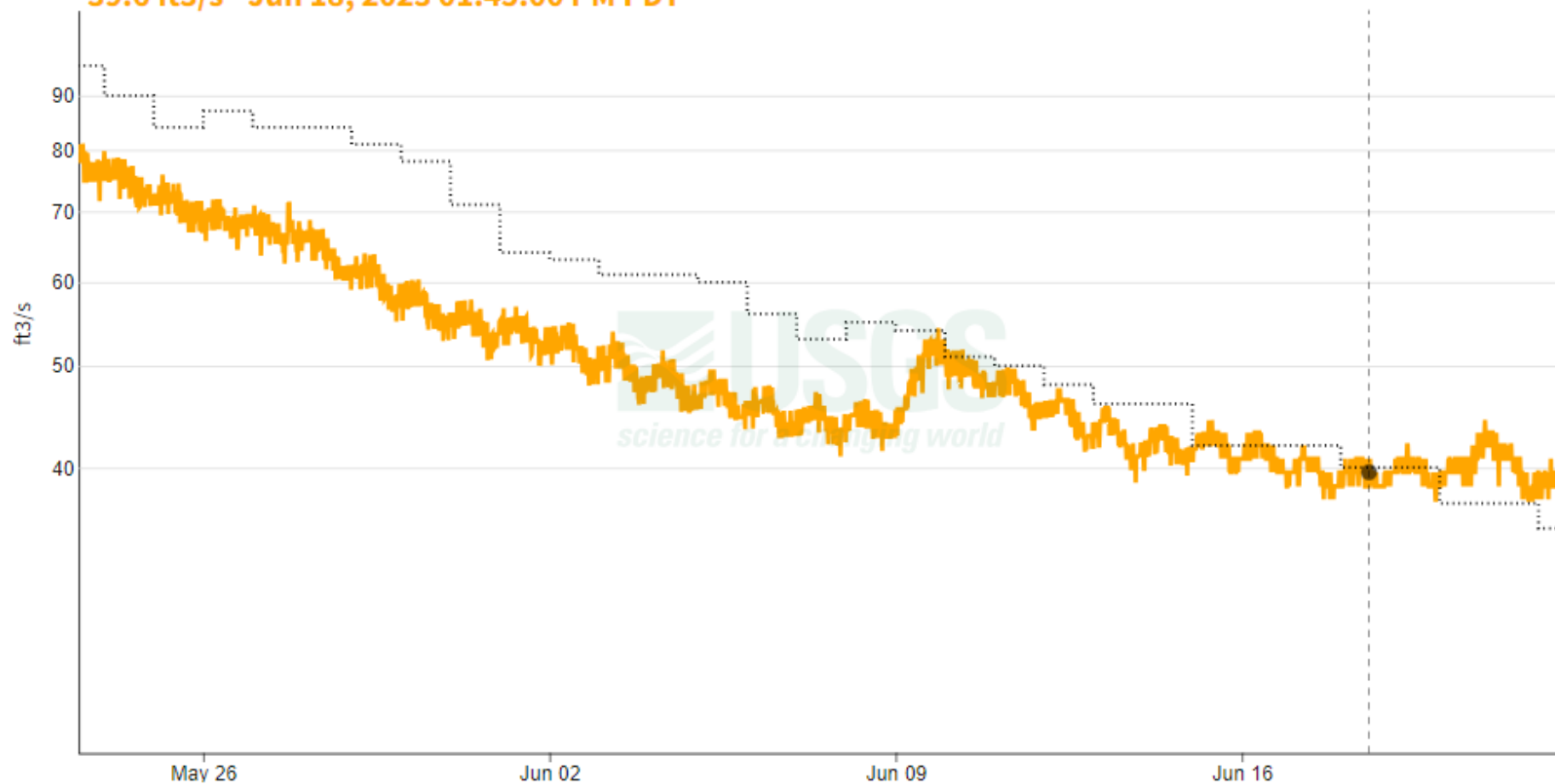
☐ 7 days ☒ 30 days ☐ 1 year

Toppenish Creek Near Fort Simcoe, WA - 12506000

May 23, 2023 - June 22, 2023

Streamflow, ft^3/s ⓘ

39.6 ft^3/s - Jun 18, 2023 01:45:00 PM PDT



Current: — Provisional

Median: 1910 - 2023

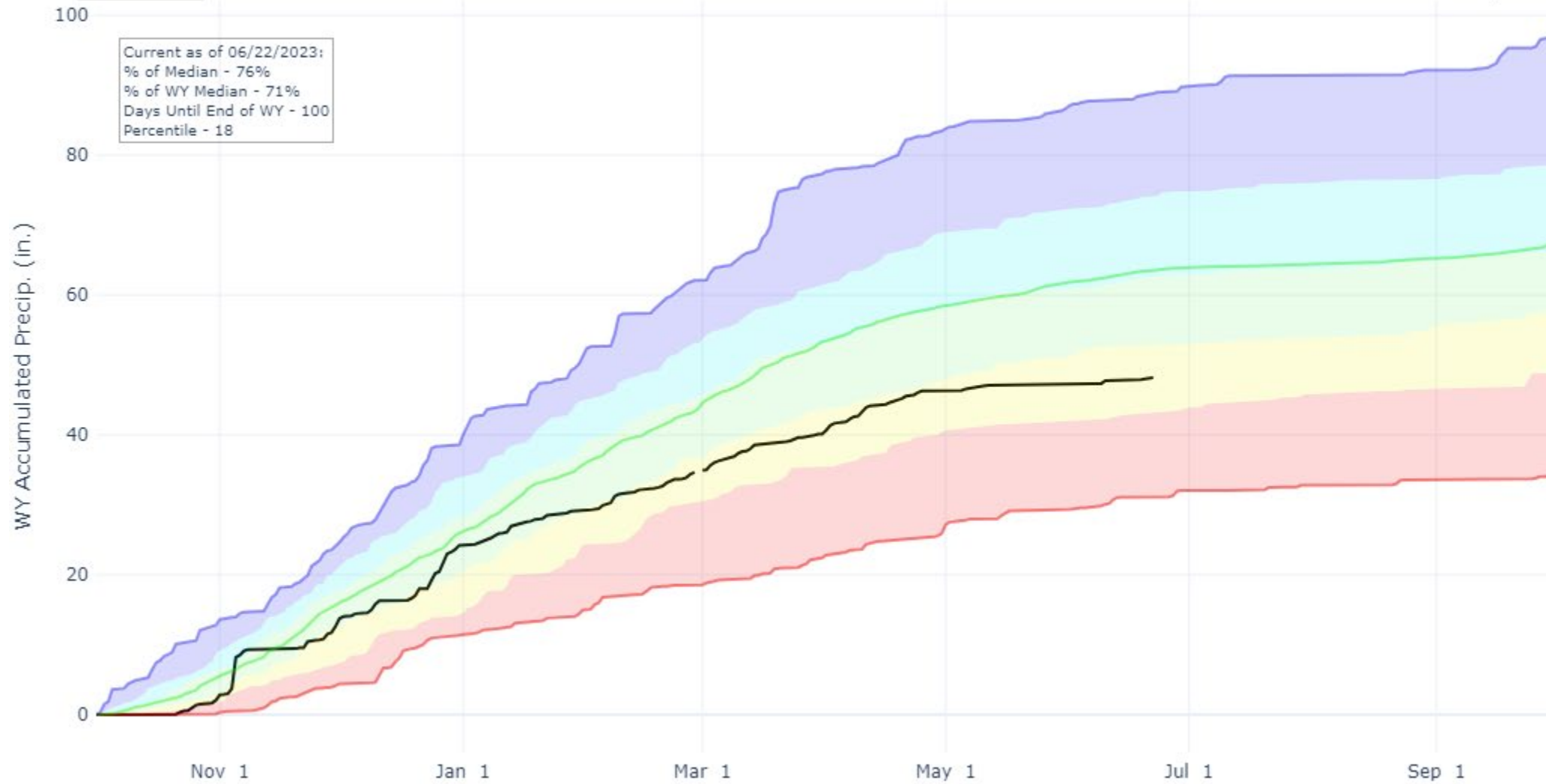
PRECIPITATION IN NACHES

Reset Range

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

Station List

- Max
- Median (POR)
- Median ('91-'20)
- Min
- Stats. Shading
- 2023 (7 sites)
- 2022 (7 sites)
- 2021 (7 sites)
- 2020 (7 sites)
- 2019 (7 sites)
- 2018 (6 sites)
- 2017 (8 sites)
- 2016 (8 sites)
- 2015 (8 sites)
- 2014 (8 sites)
- 2013 (8 sites)
- 2012 (8 sites)
- 2011 (8 sites)
- 2010 (8 sites)
- 2009 (8 sites)
- 2008 (8 sites)
- 2007 (8 sites)
- 2006 (6 sites)
- 2005 (6 sites)
- 2004 (6 sites)
- 2003 (6 sites)

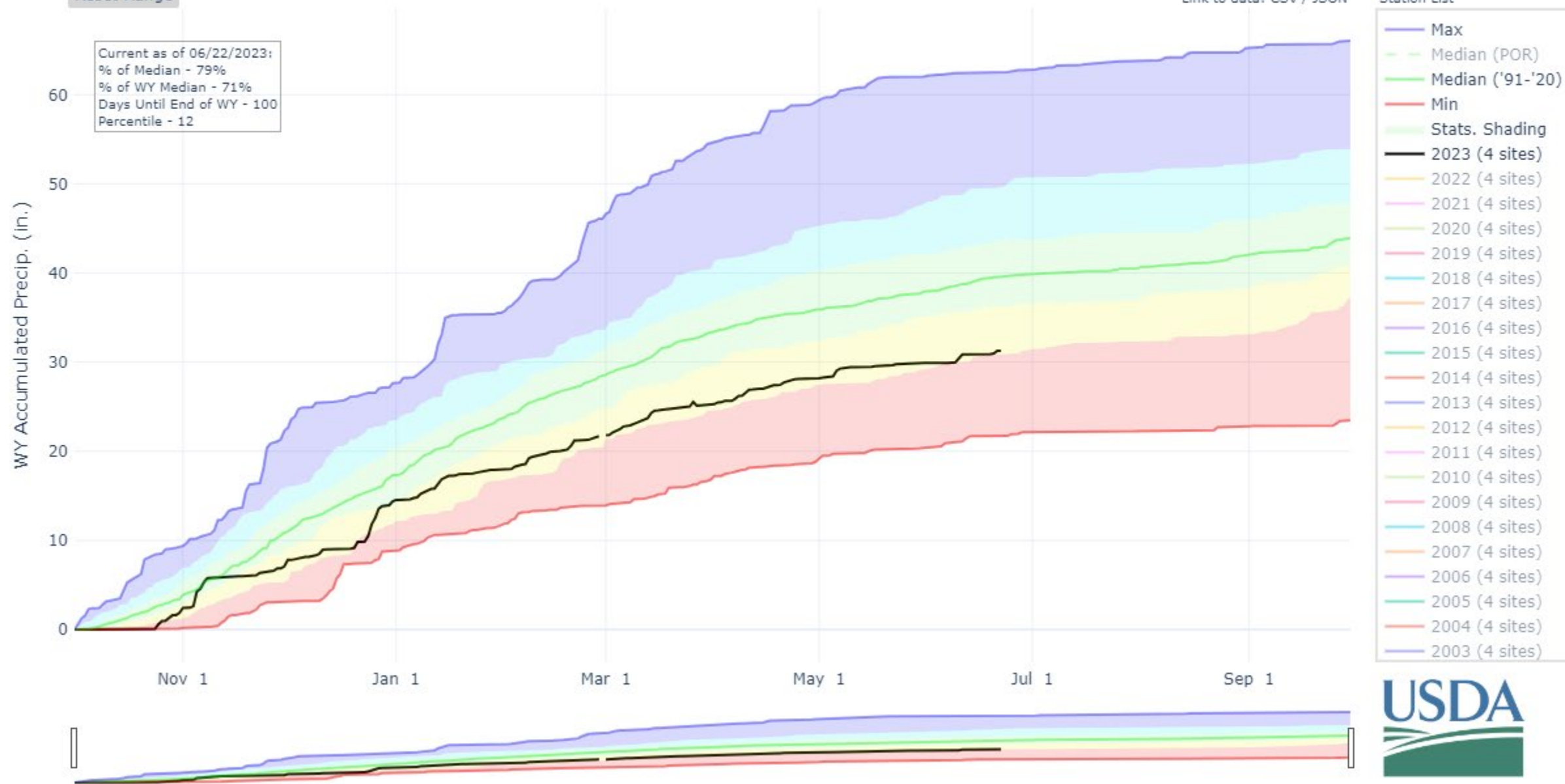


PRECIPITATION IN METHOW

Reset Range

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

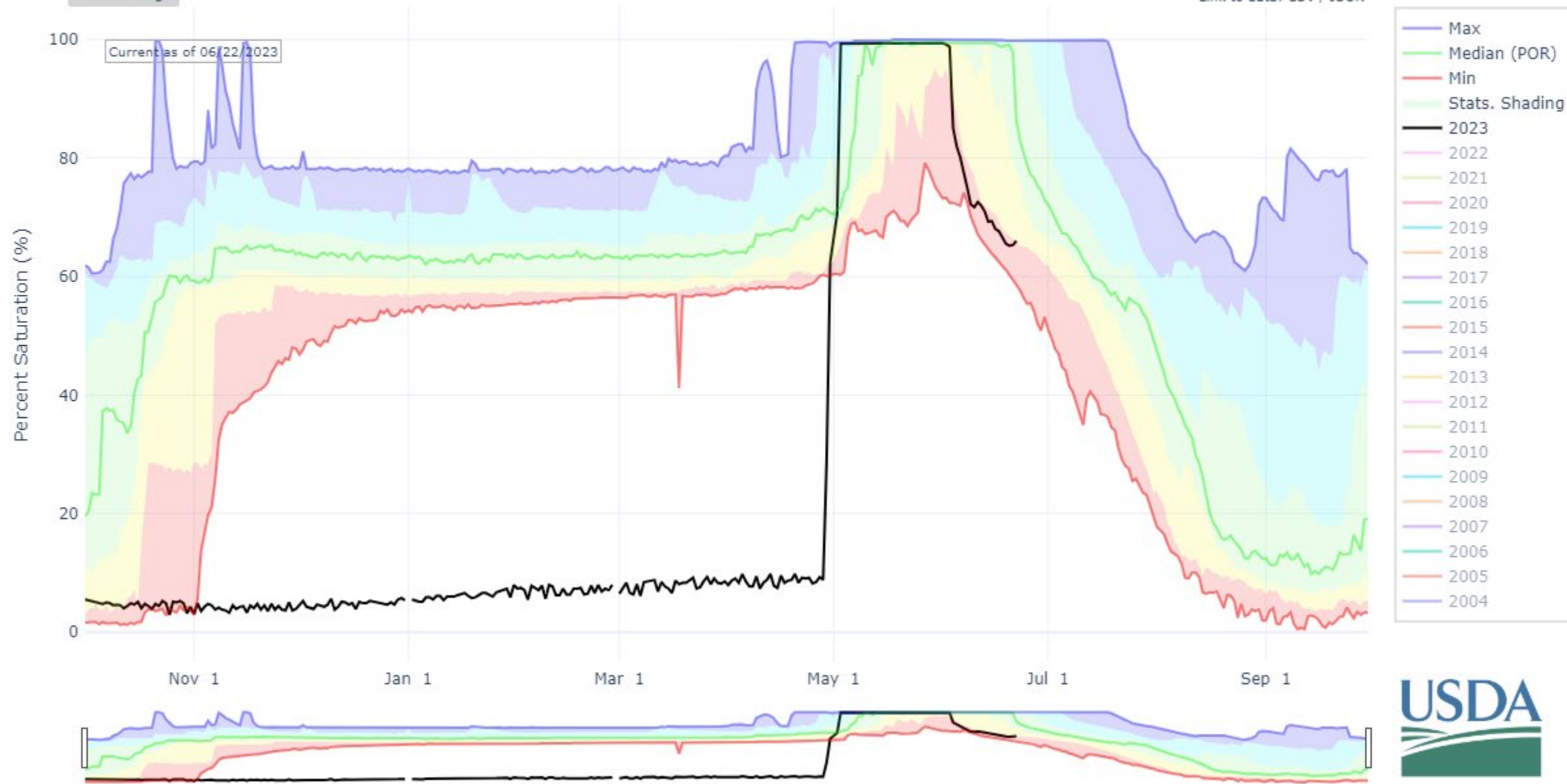
Current as of 06/22/2023:
% of Median - 79%
% of WY Median - 71%
Days Until End of WY - 100
Percentile - 12



DEPTH AVERAGED SOIL SATURATION AT HARTS PASS

Reset Range

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



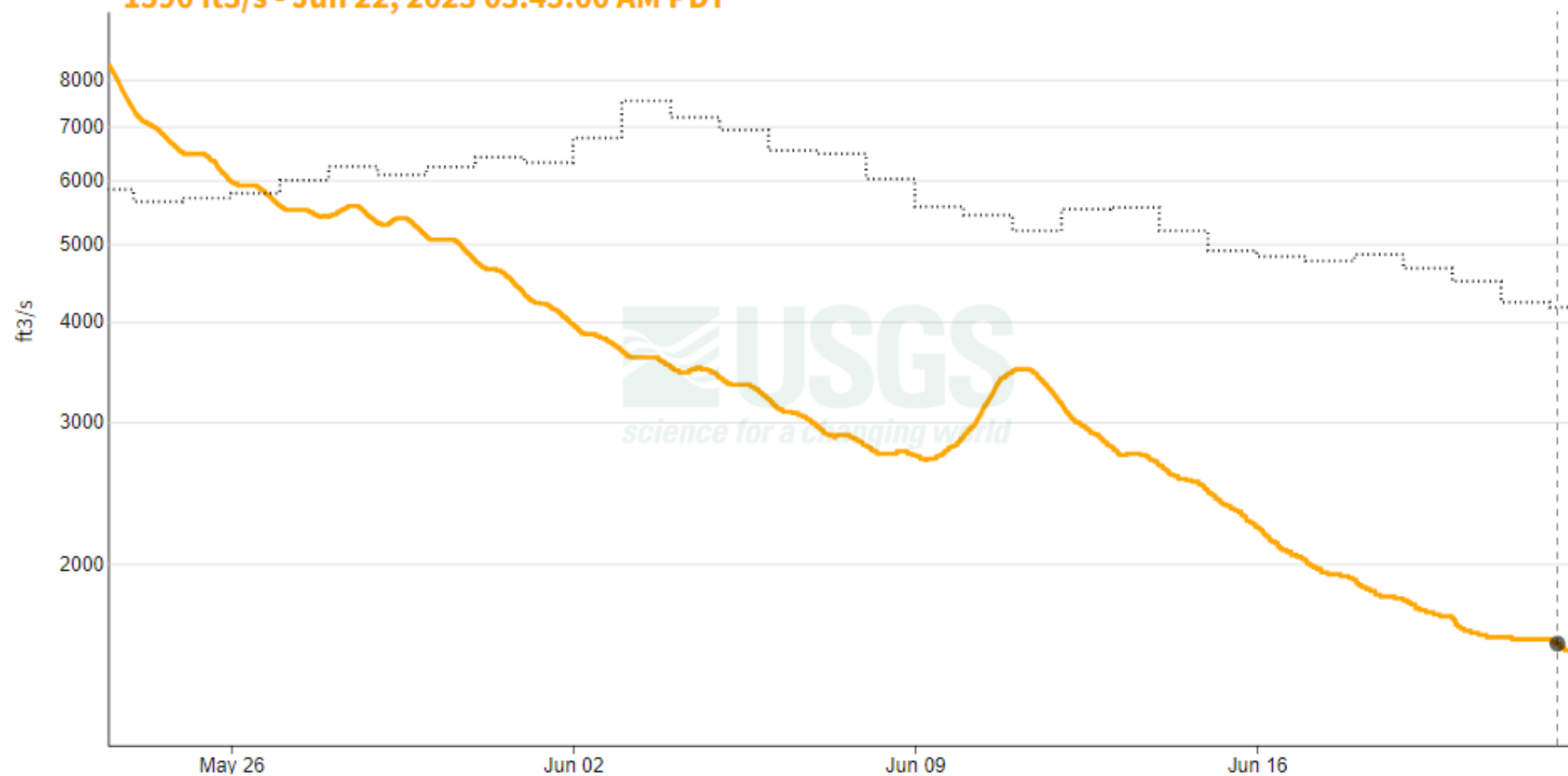
☐ 7 days ☒ 30 days ☐ 1 year

Methow River Near Pateros, WA - 12449950

May 23, 2023 - June 22, 2023

Streamflow, ft³/s ⓘ

1590 ft³/s - Jun 22, 2023 03:45:00 AM PDT



Current: — Provisional

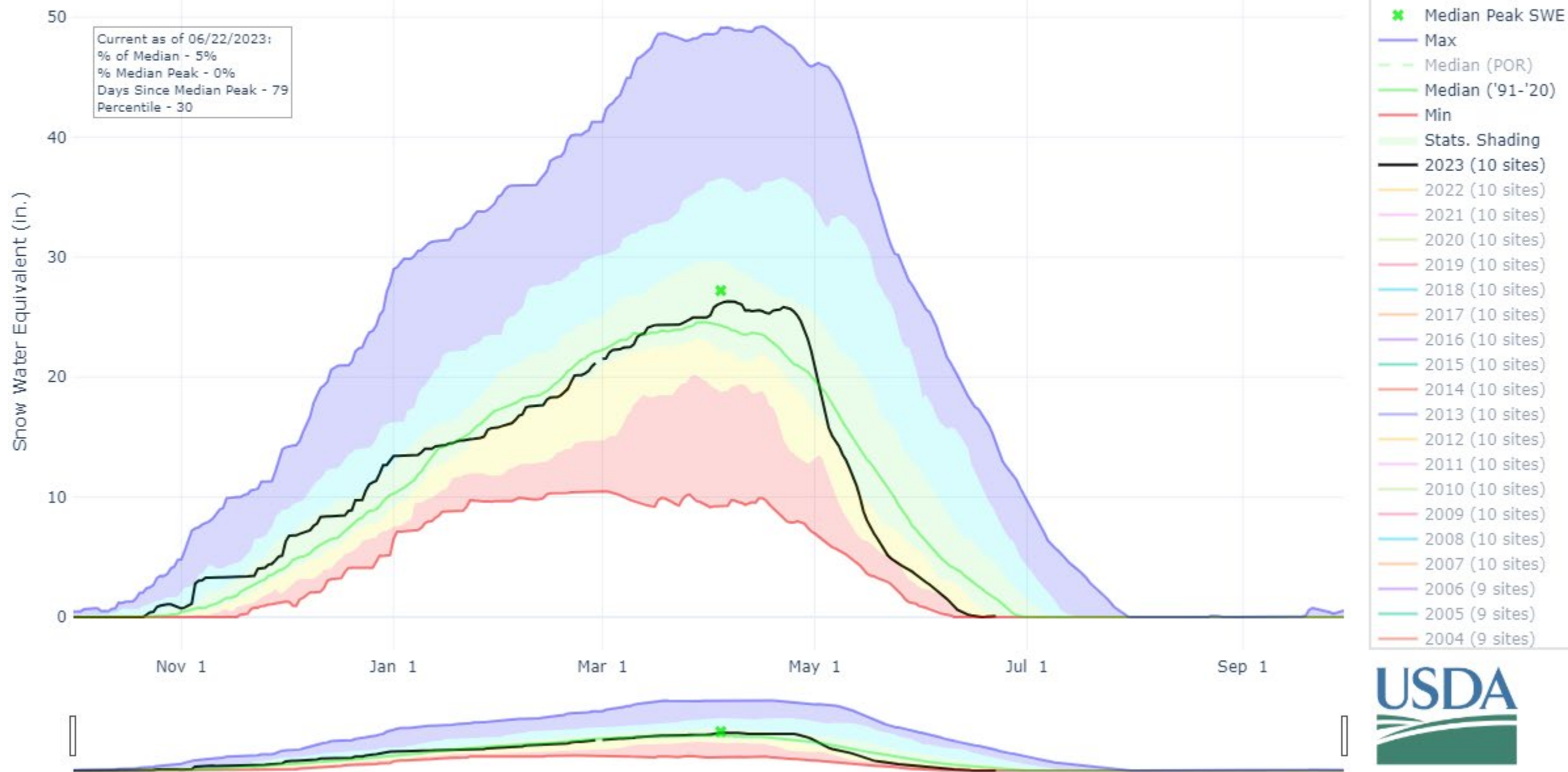
Median: 1960 - 2022

SNOW WATER EQUIVALENT IN SPOKANE

Reset Range

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

Station List

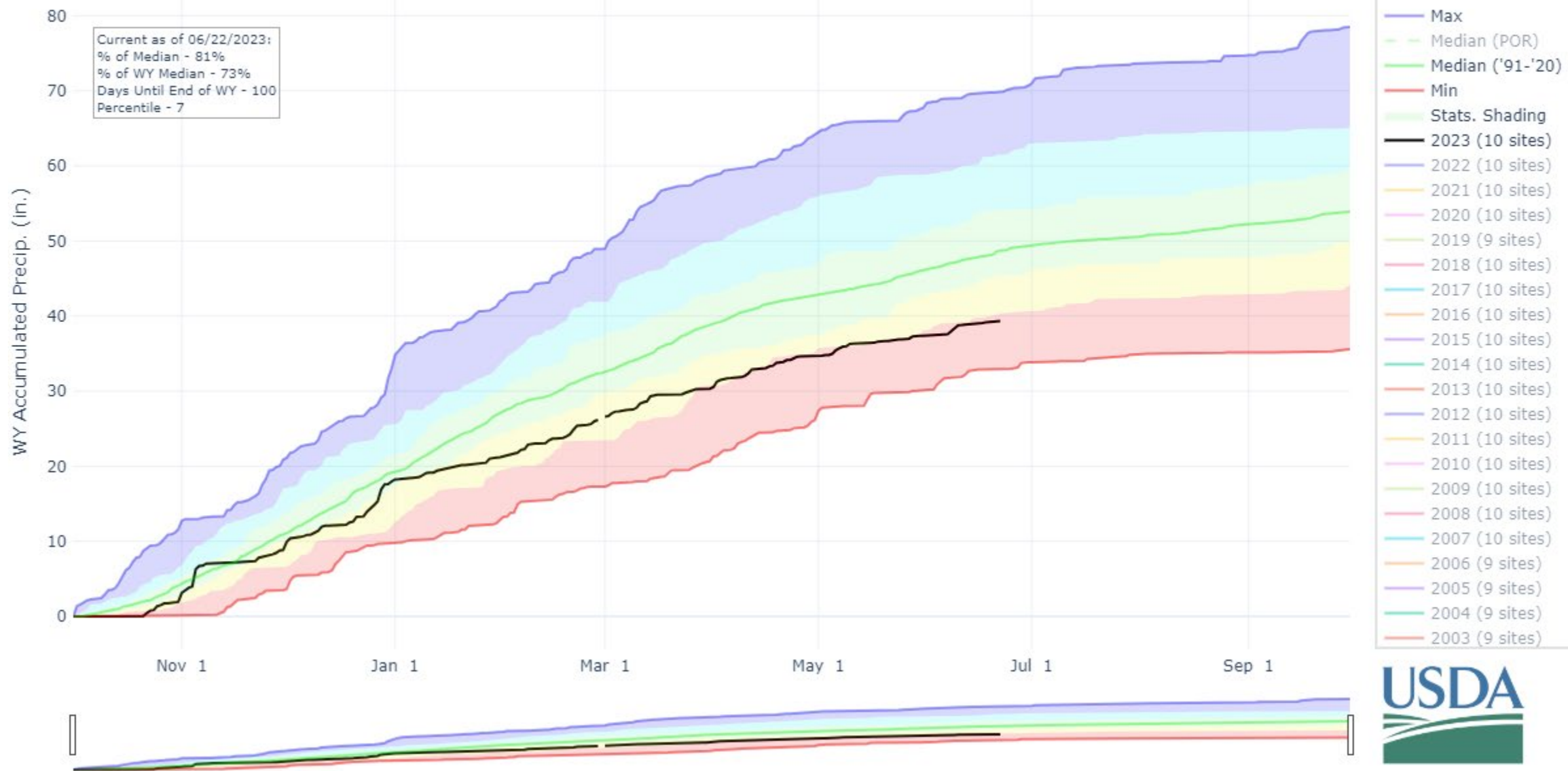


PRECIPITATION IN SPOKANE

Reset Range

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

Station List

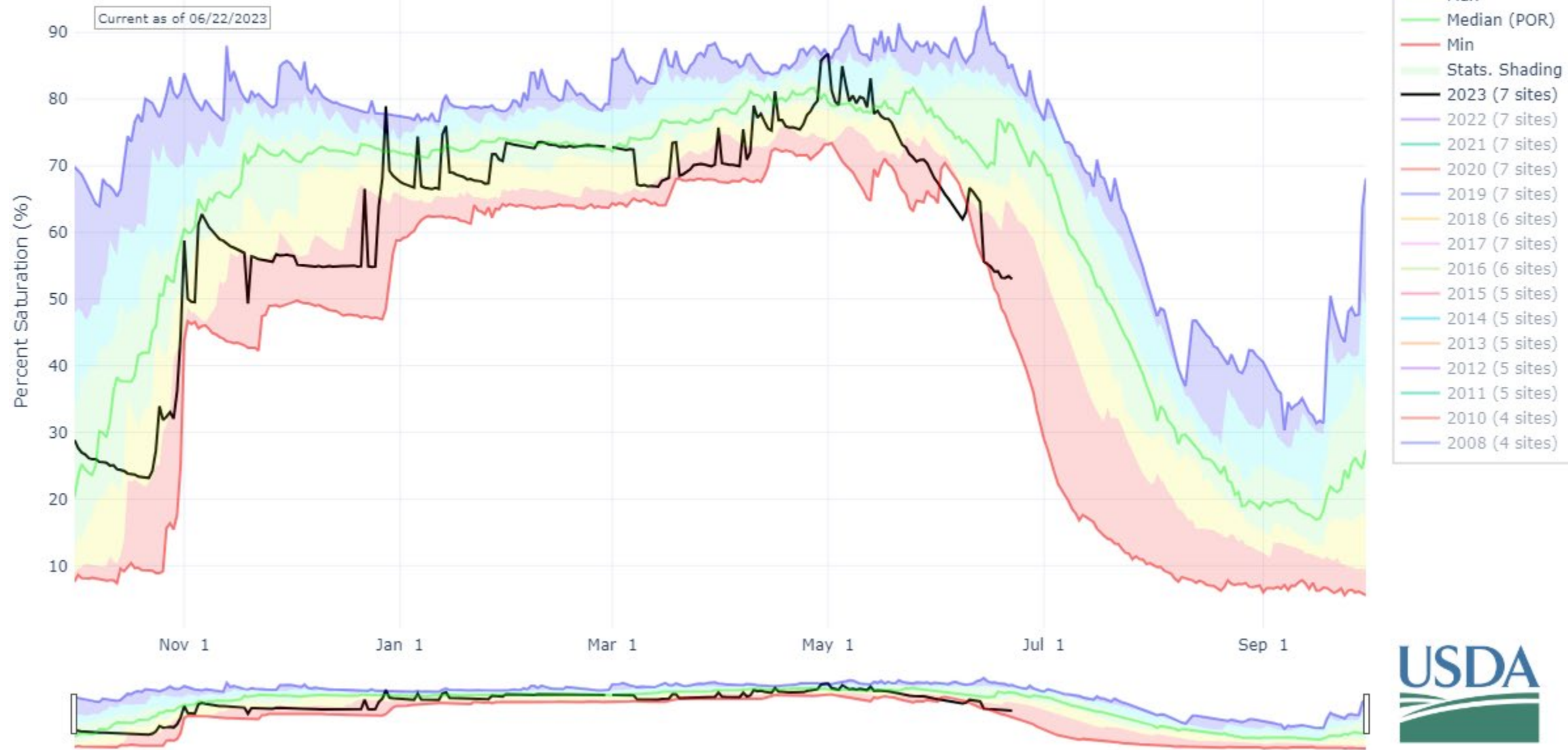


DEPTH AVERAGED SOIL SATURATION IN SPOKANE

Reset Range

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

Station List



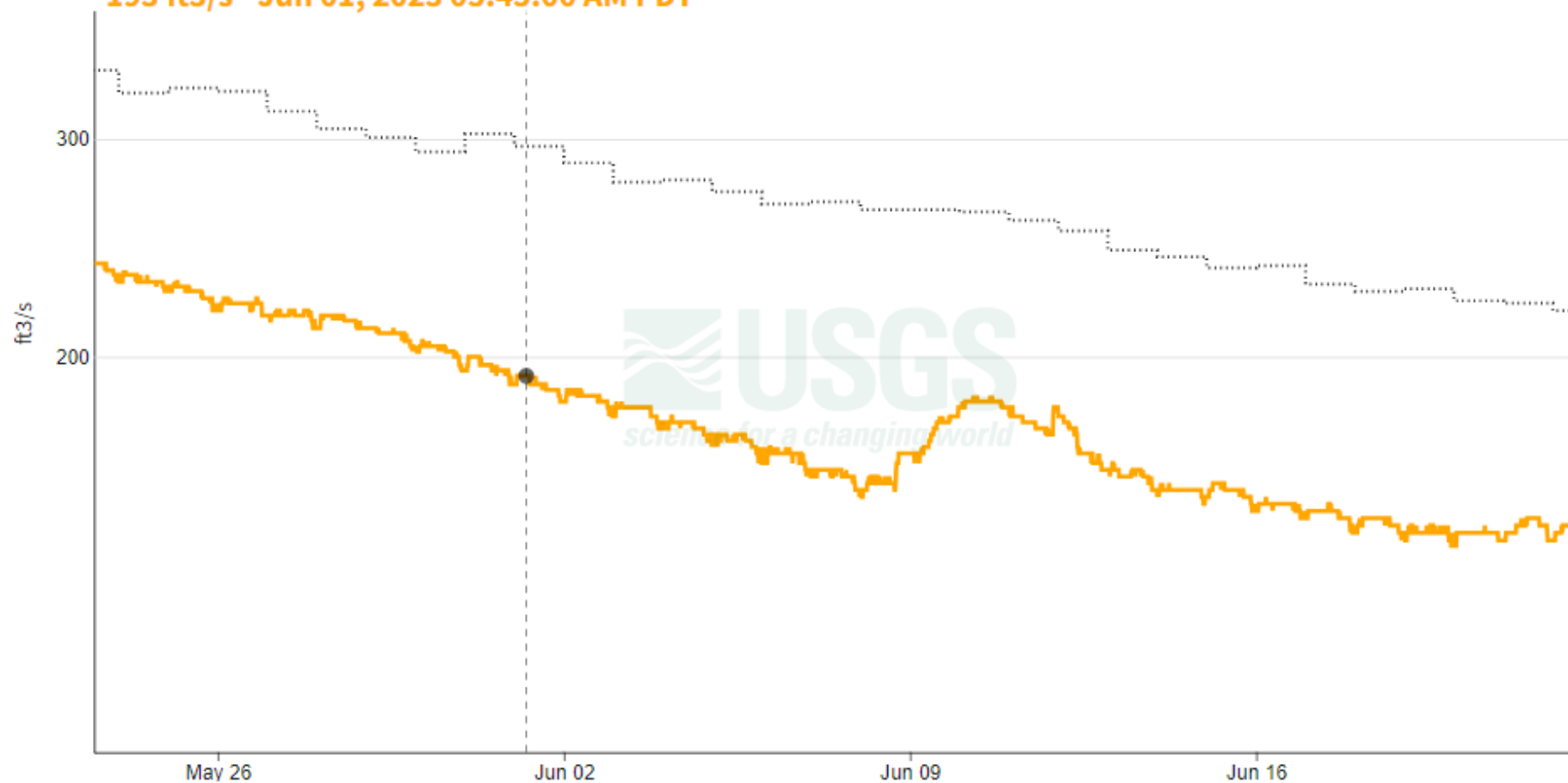
☐ 7 days ☒ 30 days ☐ 1 year

Little Spokane River at Dartford, WA - 12431000

May 23, 2023 - June 22, 2023

Streamflow, ft³/s ⓘ

193 ft³/s - Jun 01, 2023 05:45:00 AM PDT



Current: — Provisional
Median: 1930 - 2023



Questions?



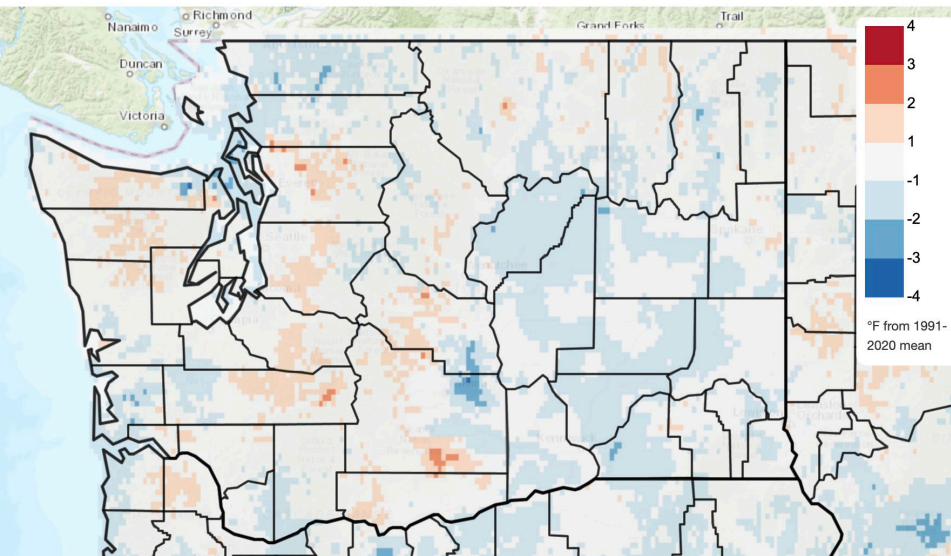
Current Conditions and Seasonal Outlook

Nick Bond & Karin Bumbaco
Office of the Washington State Climatologist
Cooperative Institute for Climate, Ocean, and Ecosystem Studies
University of Washington
23 June 2023

Water Year 2023

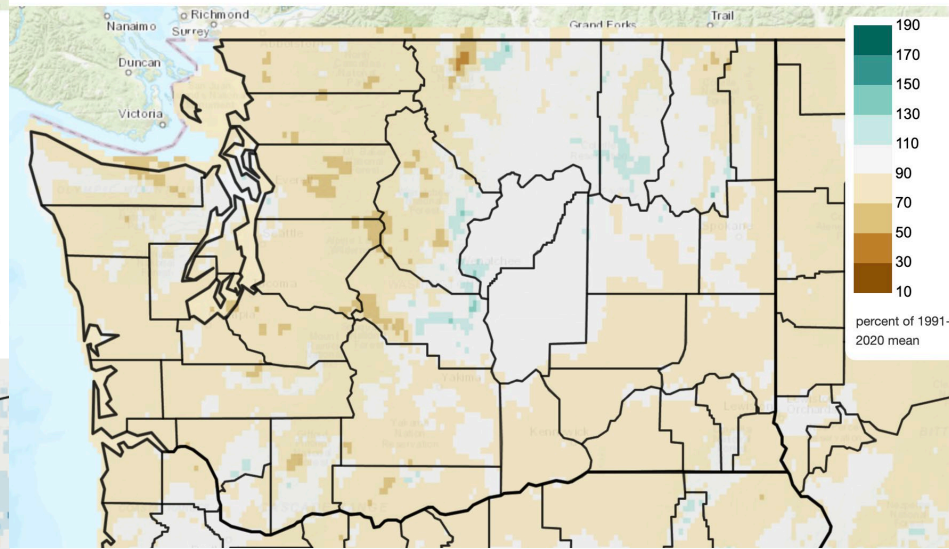
Temperature

Mean Daily Temperature Anomaly, Since Oct 1st
2022/10/01 - 2023/06/19



Precipitation

Total Precipitation Anomaly, Since Oct 1st
2022/10/01 - 2023/06/19



Climate Toolbox

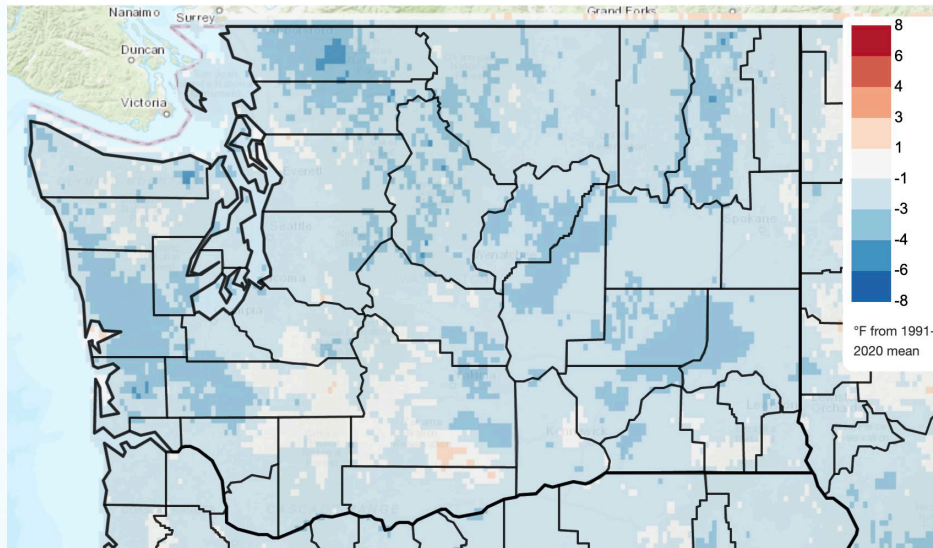
- Averaged statewide, Oct-May temperatures were slightly below normal (-0.4°F)
- Averaged statewide, Oct-May precipitation ranks as the 31st driest ($-5.79''$)*, with 85% of normal

*Records since 1895; 1991-2020 normal

April 2023

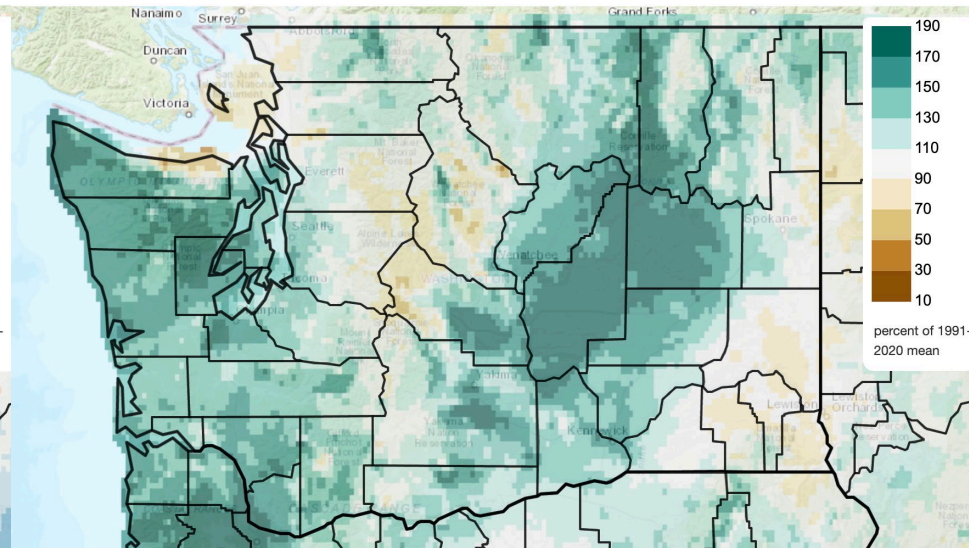
Temperature

Mean Daily Temperature Anomaly, Last Full Month
2023/04/01 - 2023/04/30



Precipitation

Total Precipitation Anomaly, Last Full Month
2023/04/01 - 2023/04/30



Climate Toolbox

- Averaged statewide, April was the 30th coldest on record (-2.2°F)*
- Averaged statewide, April was the 15th wettest ($+0.90''$) on record, with 125% of normal precipitation*

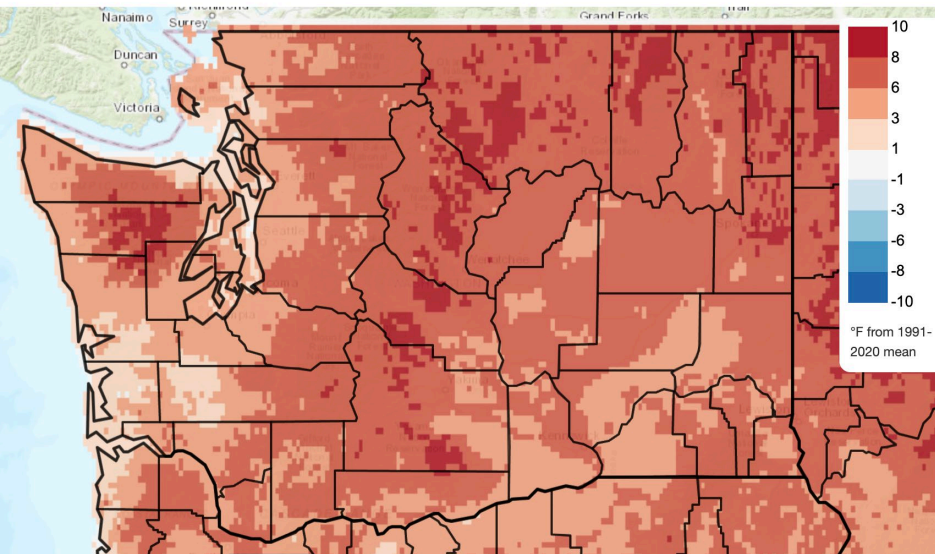
*Records since 1895; 1991-2020 normal

May 2023

Temperature

Mean Daily Temperature Anomaly, Last Full Month

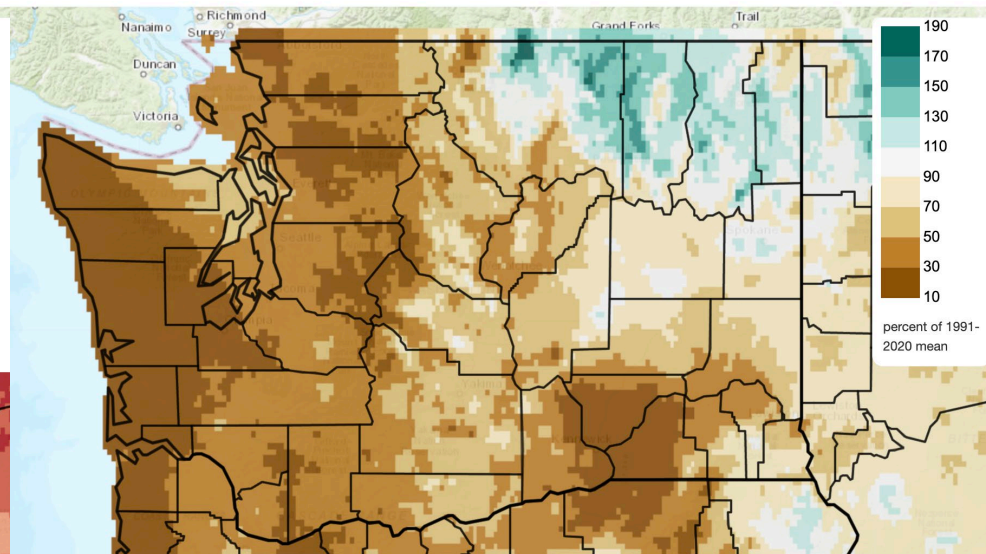
2023/05/01 - 2023/05/31



Precipitation

Total Precipitation Anomaly, Last Full Month

2023/05/01 - 2023/05/31



Climate Toolbox

- Averaged statewide, May tied 1958 as the warmest on record (+5.3°F)*
- Averaged statewide, May was the 15th driest (-1.22") on record, with 51% of normal precipitation*

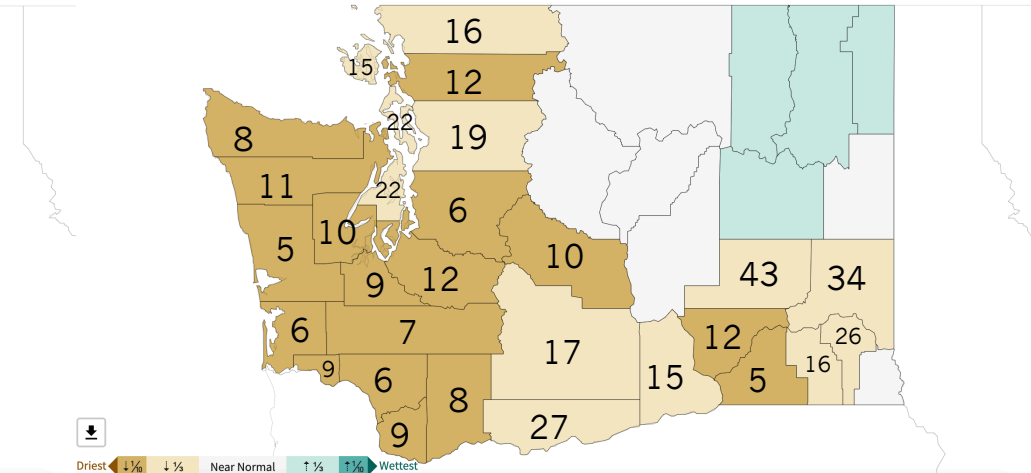
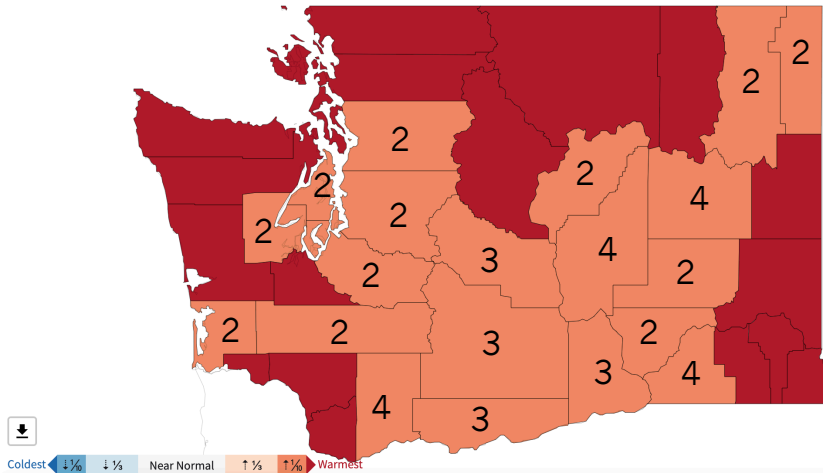
*Records since 1895; 1991-2020 normal

May 2023 & Last 60 Days

County Average Temperature Rank (129 years)

May 2023 County Precipitation Rank (129 years)

May 2023



Washington (Hover over a County)

Temp: 58.2°F

Rank: Warmest

Anomaly: 6.4°F

Mean: 51.8°F



Washington (Hover over a County)

Precip: 1.25"

Rank: 15th Driest

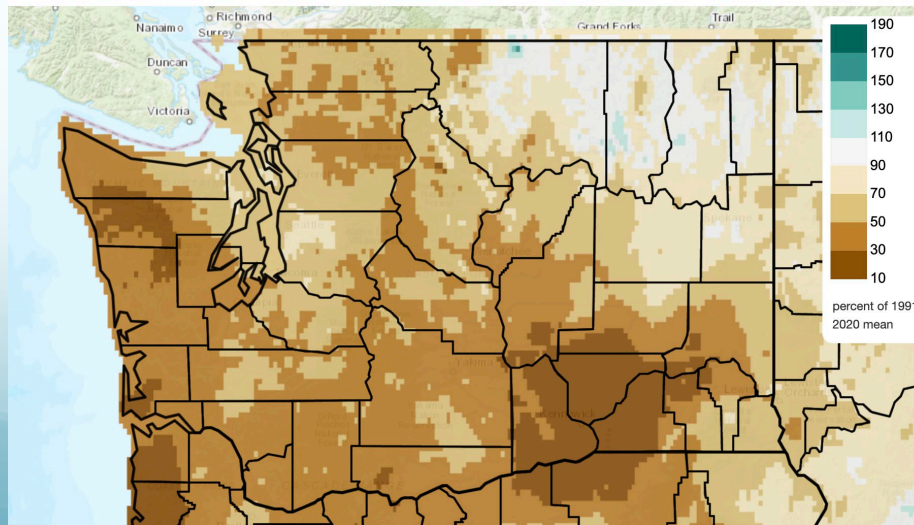
Anomaly: -1.00"

Mean: 2.25"



Total Precipitation Anomaly, Last 60 Days

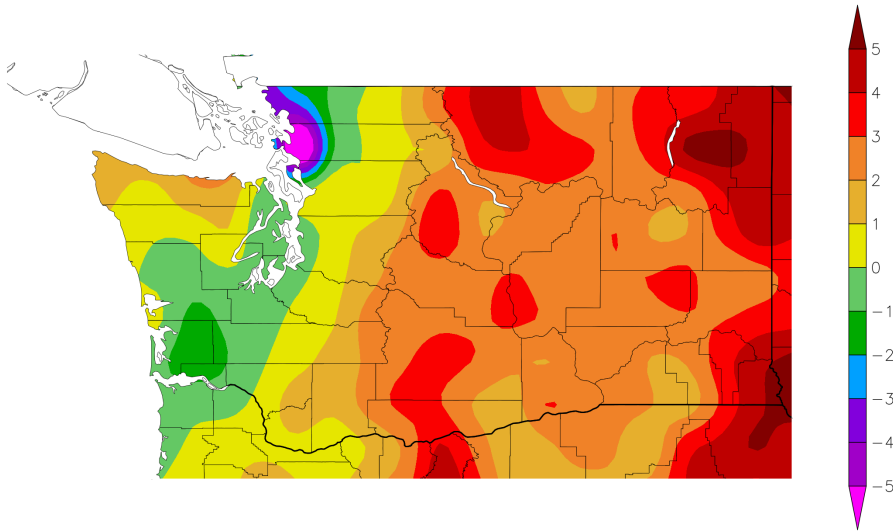
2023/04/22 - 2023/06/20



June 2023 so far...

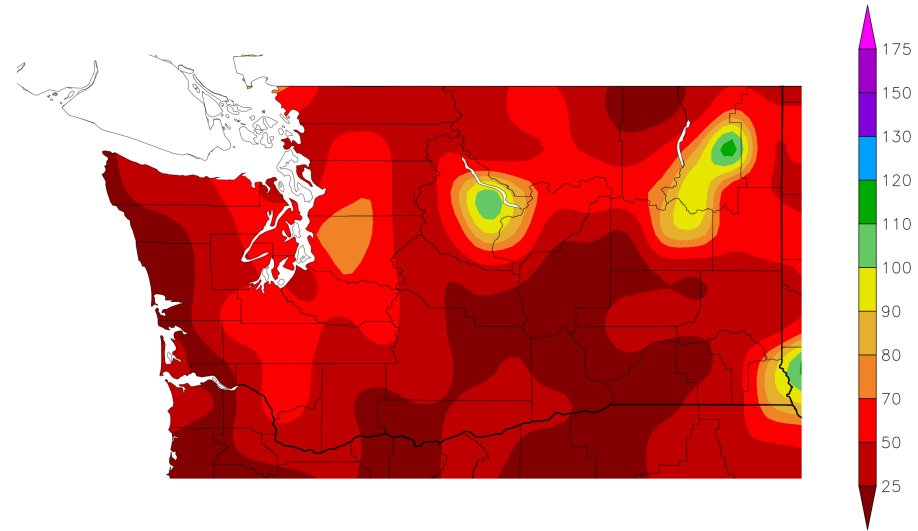
Temperature

Departure from Normal Temperature (F)
6/1/2023 – 6/21/2023



Precipitation

Percent of Normal Precipitation (%)
6/1/2023 – 6/21/2023



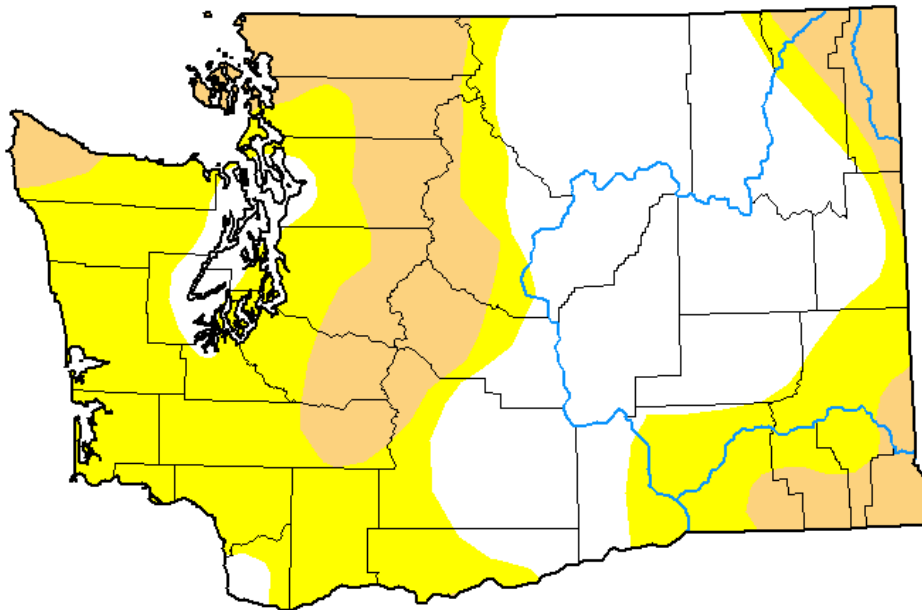
U.S. Drought Monitor

U.S. Drought Monitor Washington

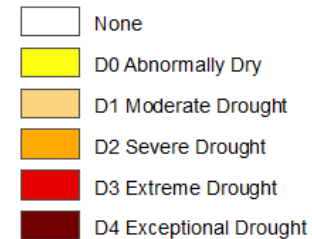
June 20, 2023

(Released Thursday, Jun. 22, 2023)

Valid 8 a.m. EDT



Intensity:



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>

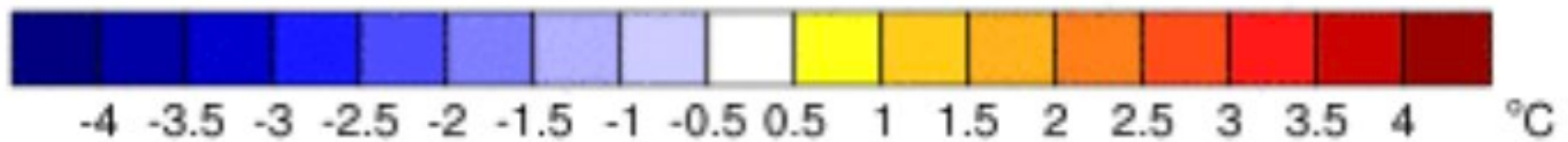
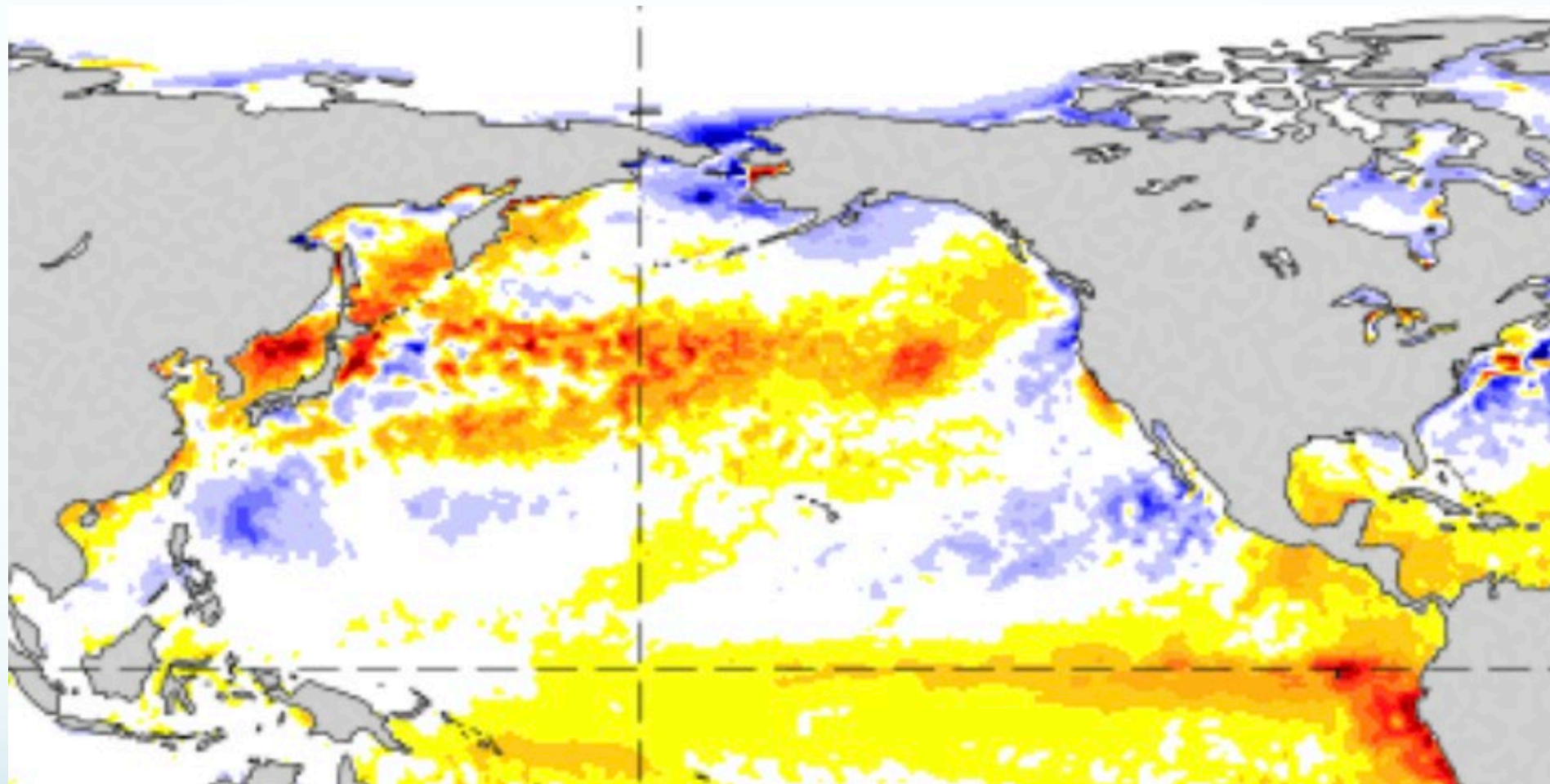
Author:

Adam Hartman
NOAA/NWS/NCEP/CPC



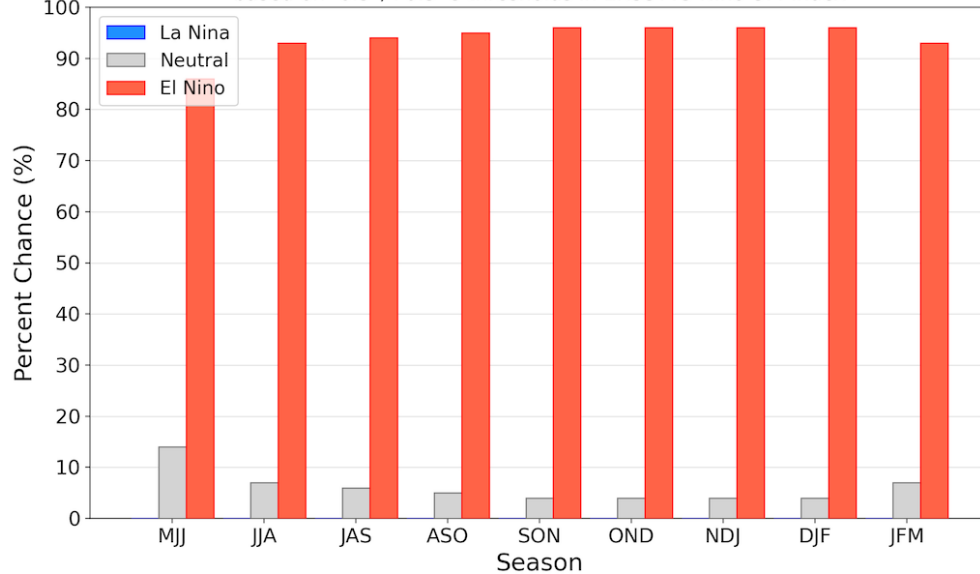
droughtmonitor.unl.edu

Sea Surface Temperature Anomalies: 11-17 June 2023



Official NOAA CPC ENSO Probabilities (issued June 2023)

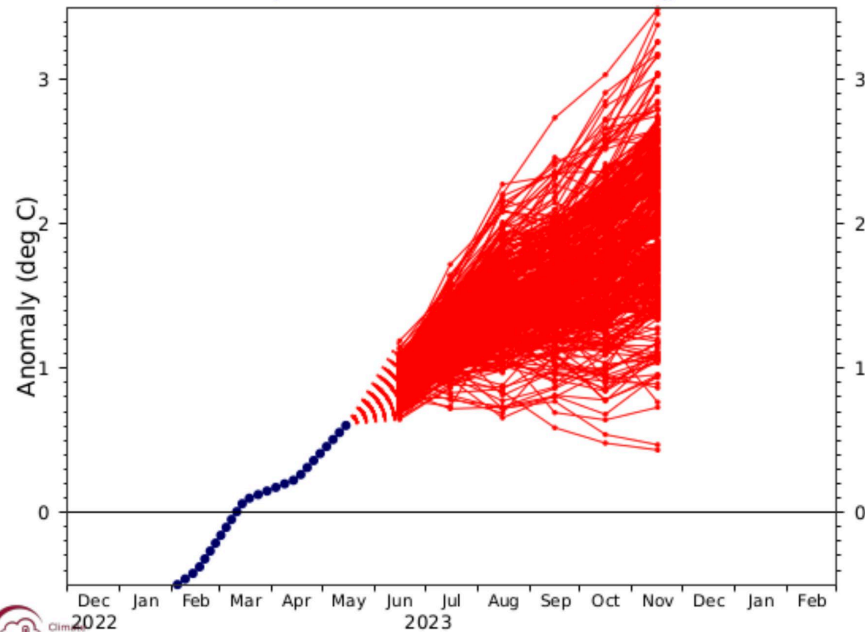
based on $-0.5^{\circ}/+0.5^{\circ}\text{C}$ thresholds in ERSSTv5 Niño-3.4 index



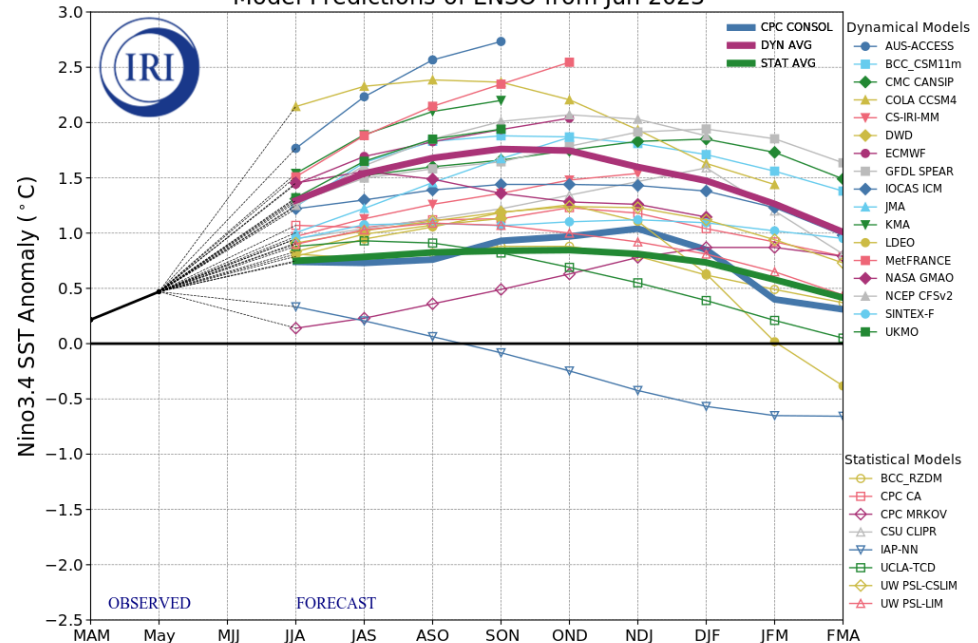
El Nino is here. But will he be a bad boy?

C3S multi-system forecast from 1 Jun 2023

ECMWF, Met Office, Météo-France, CMCC, DWD, NCEP, JMA, ECCO
Monthly mean anomalies relative to ERA5 1981-2010 climatology



Model Predictions of ENSO from Jun 2023



C3S multi-system seasonal forecast

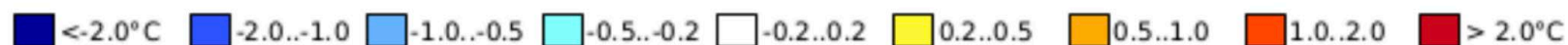
ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP/JMA/ECCC

Mean forecast SST anomaly

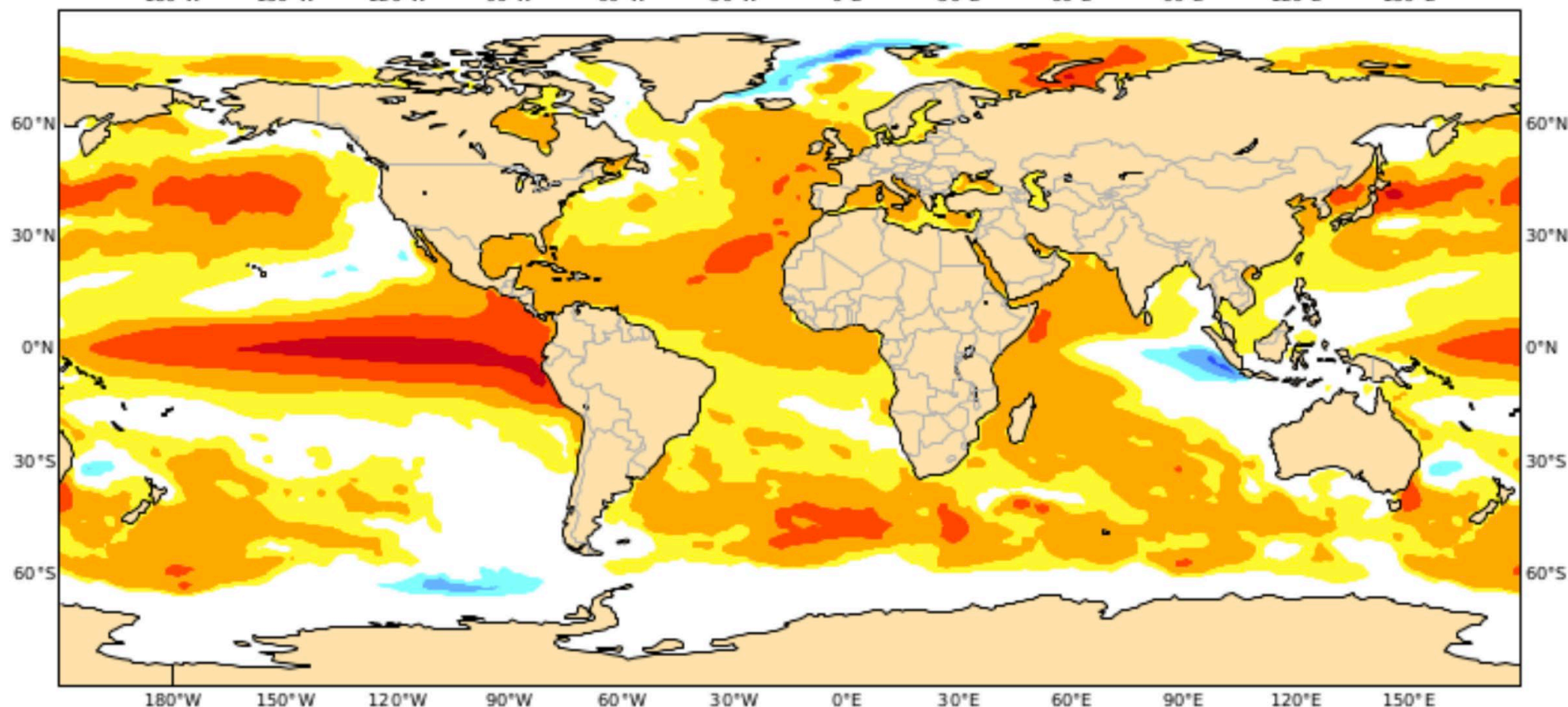
SON 2023

Nominal forecast start: 01/06/23

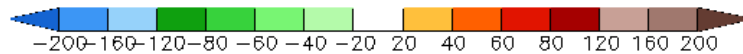
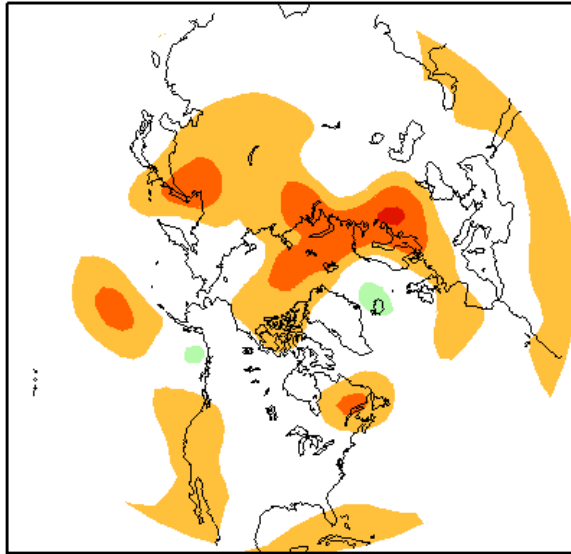
Variance-standardized mean



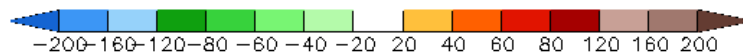
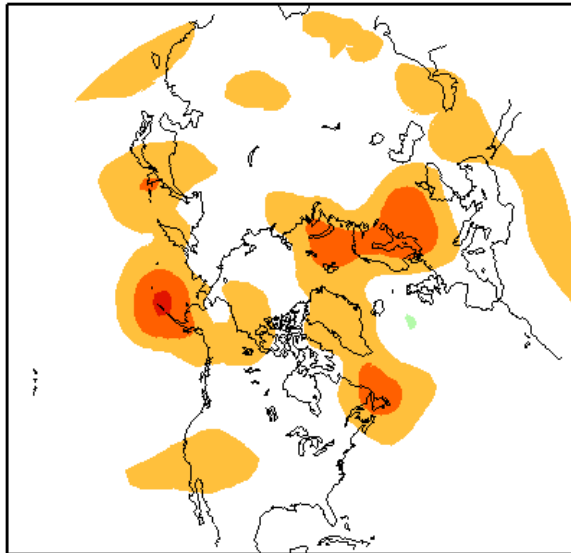
180°W 150°W 120°W 90°W 60°W 30°W 0°E 30°E 60°E 90°E 120°E 150°E



Week 3 5Jul2023–11Jul2023



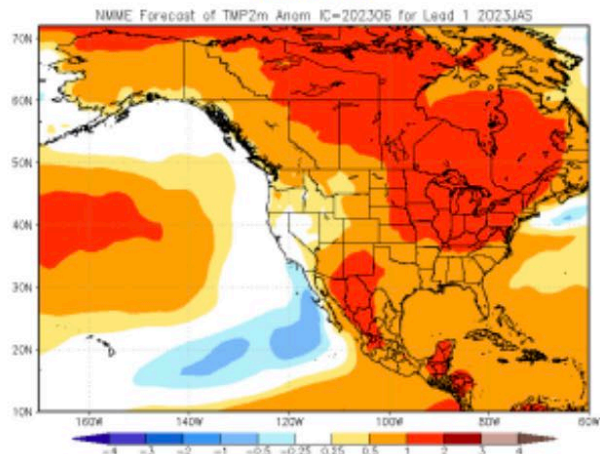
Week 4 12Jul2023–18Jul2023



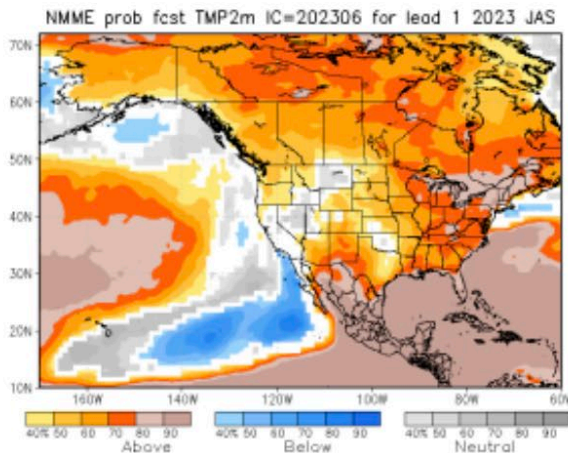
**CFS 3 & 4 Week 500 hPa
Model Projections: Weak
anomalies aloft and modest
warm and dry weather
relative to seasonal norms**

Expecting a warm, but not extreme, summer into early fall

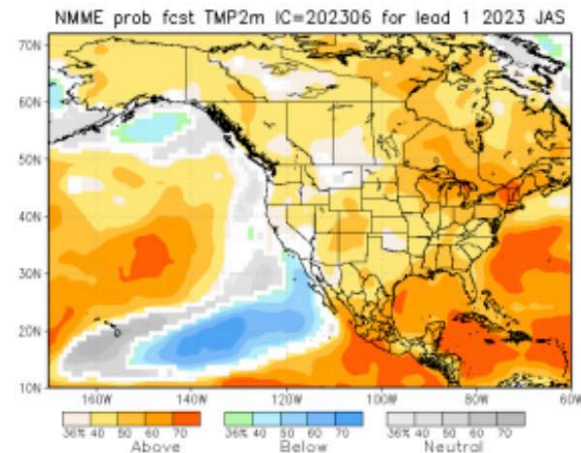
NMME



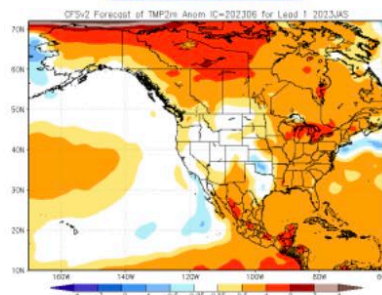
Prob fcast



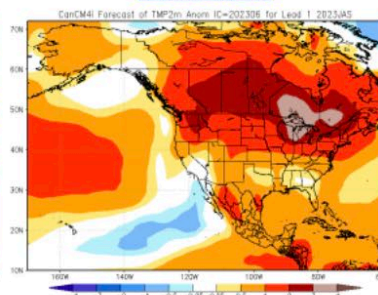
PAC calib. prob fcast



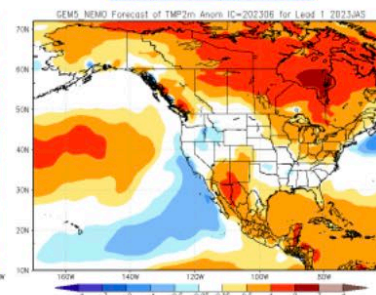
NCEP CFSv2



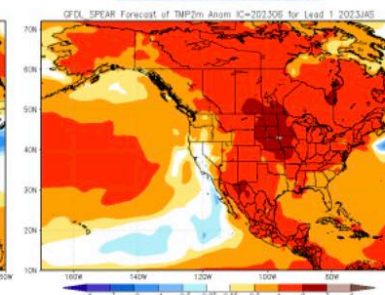
CanCM4i



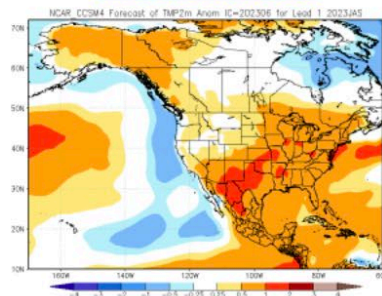
GEM5 NEMO



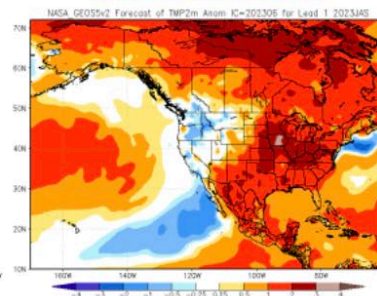
GFDL SPEAR



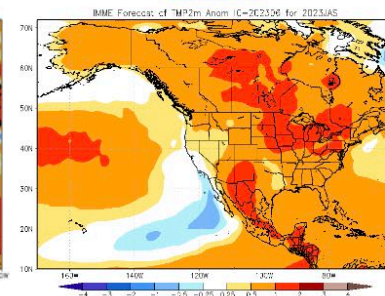
NCAR CCSM4



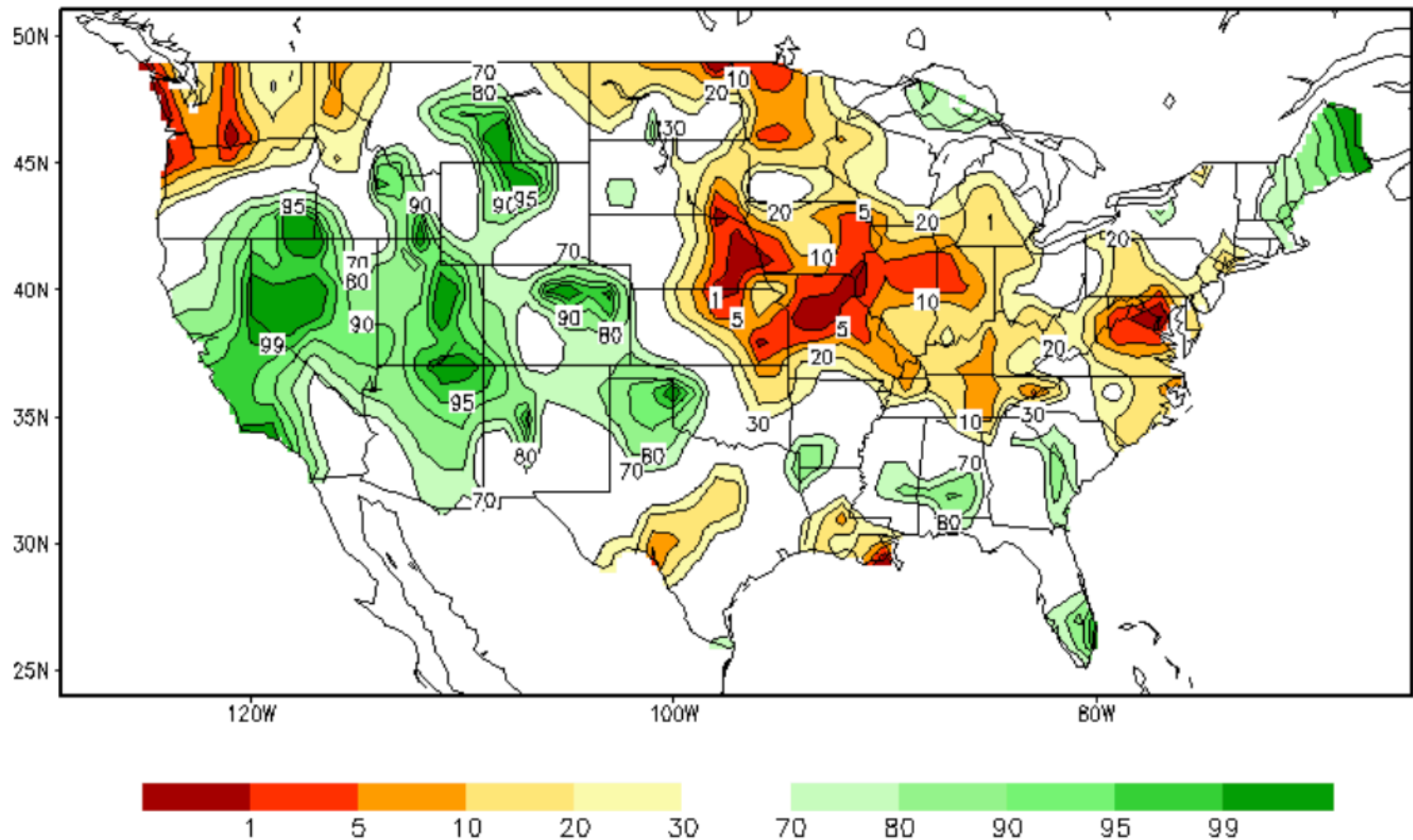
NASA GEOS5v2



IMME



Calculated Soil Moisture Ranking Percentile JUN 18, 2023

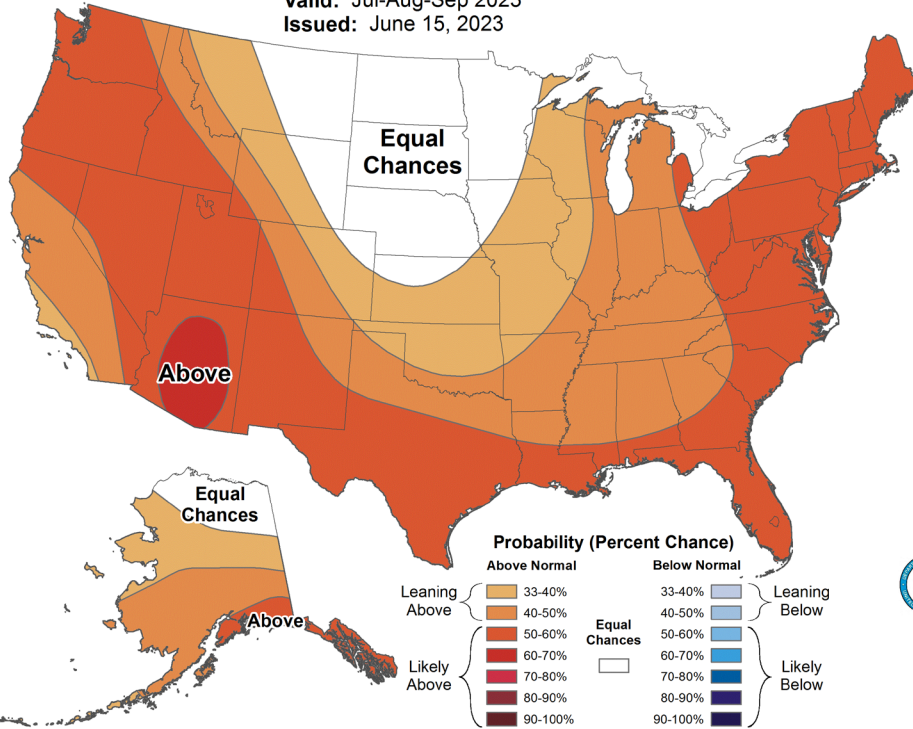




Seasonal Temperature Outlook

Valid: Jul-Aug-Sep 2023

Issued: June 15, 2023



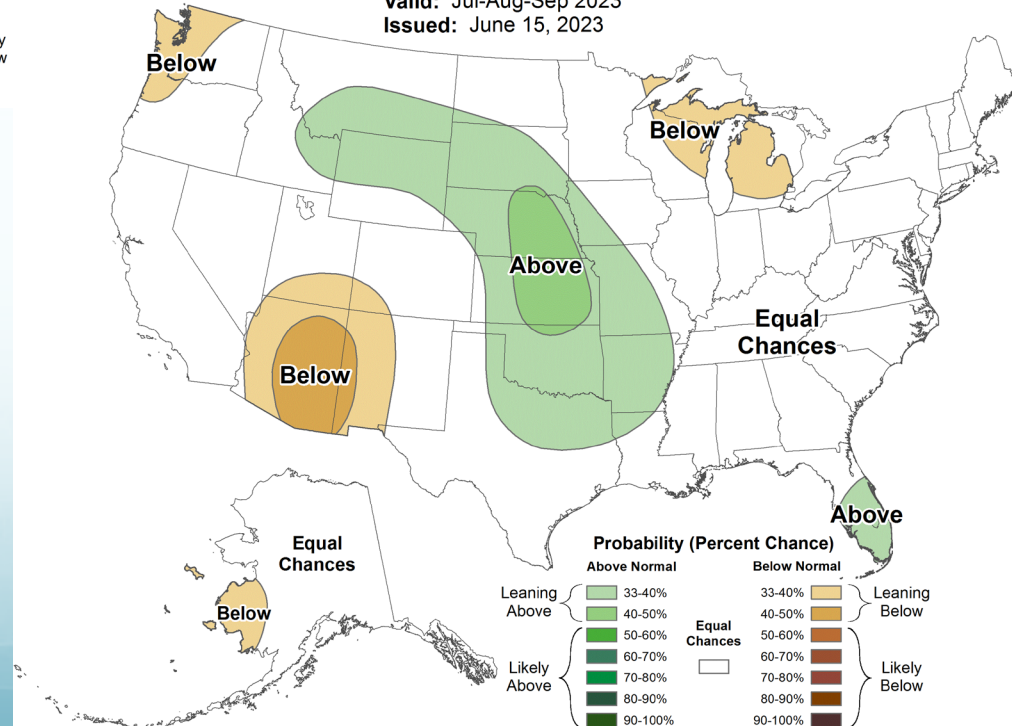
NOAA/CPC Forecasts for Jul-Sep 2023



Seasonal Precipitation Outlook

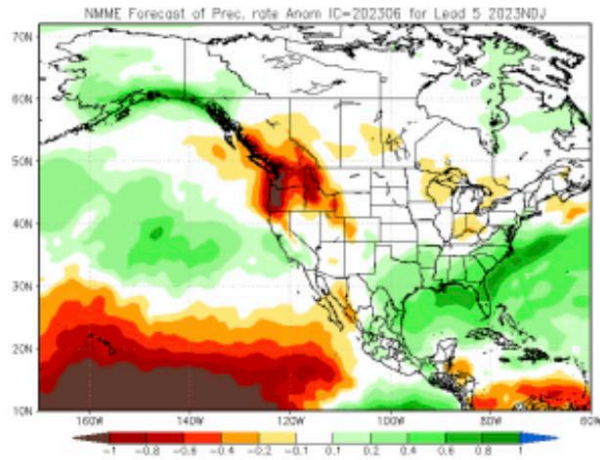
Valid: Jul-Aug-Sep 2023

Issued: June 15, 2023

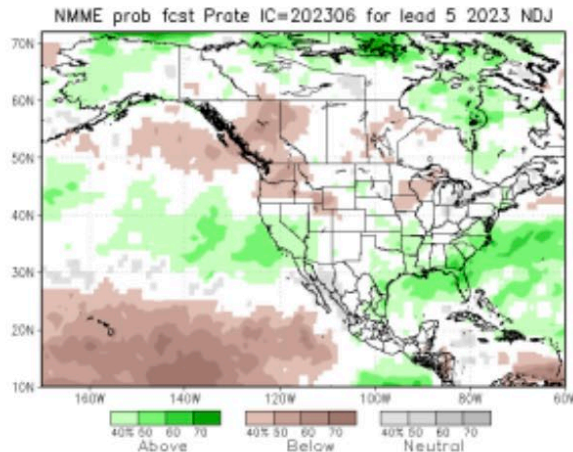


The precipitation projections for late 2023 into 2024 give one pause...

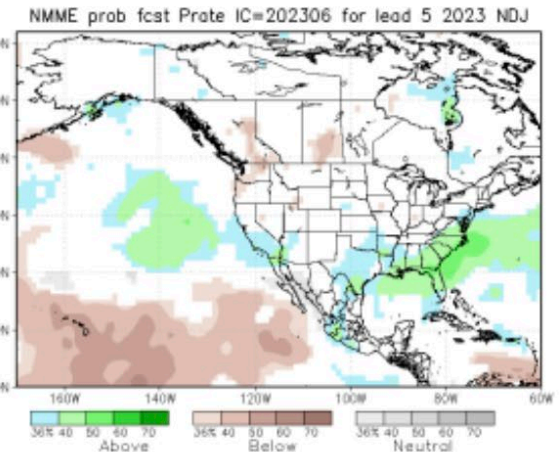
NMME



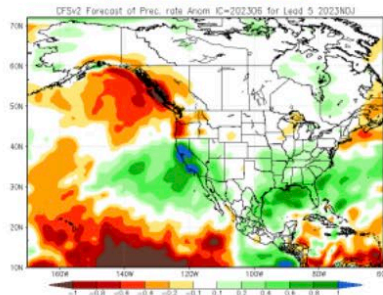
Prob fct



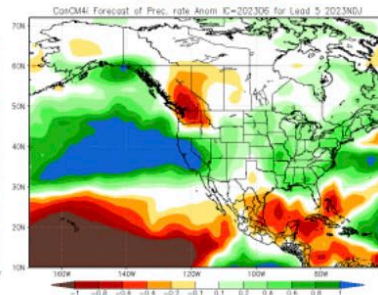
PAC calib. prob fct



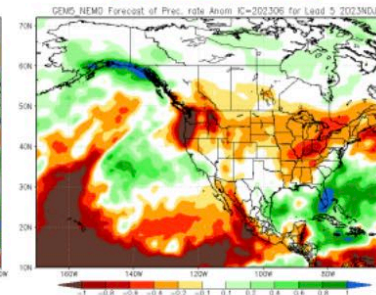
NCEP CFSv2



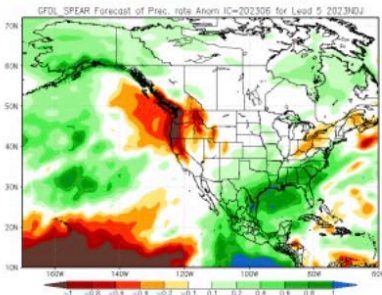
CanCM4i



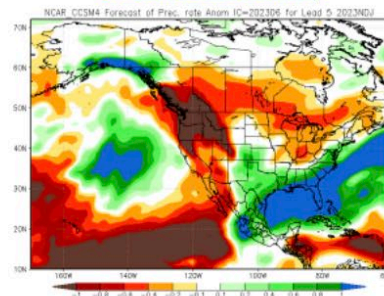
GEM5 NEMO



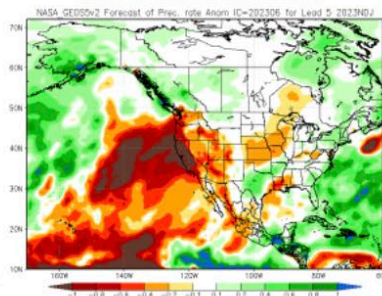
GFDL SPEAR



NCAR CCSM4



NASA GEOS5v2

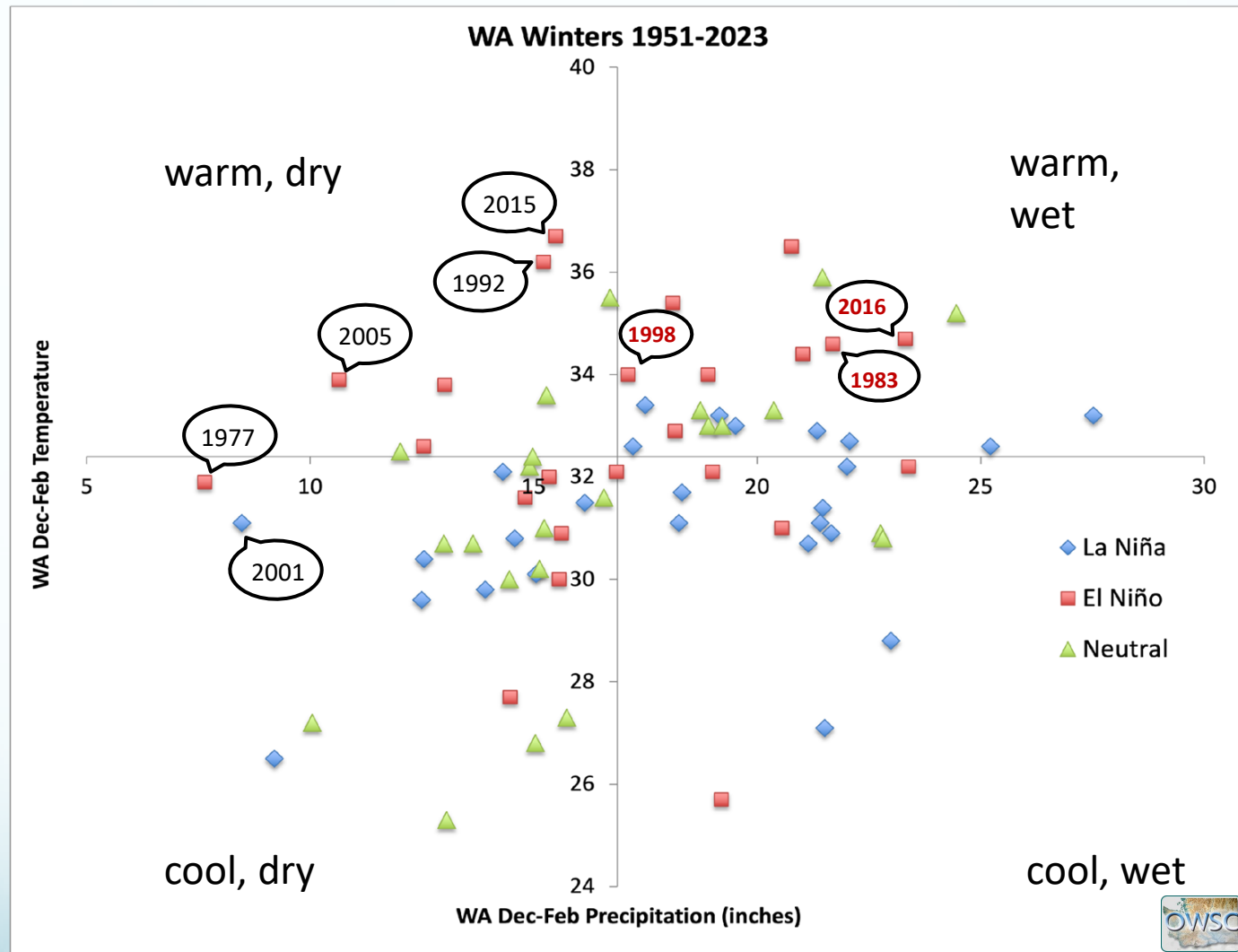


IMME

IMME



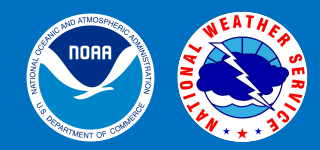
DEC-FEB TEMP & PRECIPITATION



- A few major drought years are highlighted in black; red years are very strong El Niño events

Summary

- Water year to date temperatures have been near-normal to slightly below; precipitation has been below normal for most of the state (but not <75% of normal)
- May was record warm statewide and dry across the western and southern portions of WA; June a bit cooler west of the Cascades but still dry despite the rain over the last week or so
- Summer should be on the warm side, but little reason to think it will necessarily be to an extreme
- This El Niño could be a strong one, which means a very good chance of warm temperatures, but perhaps decent precipitation totals, during the upcoming cool season.



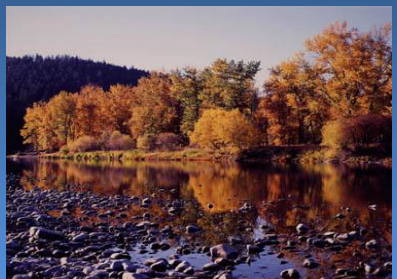
Northwest River Forecast Center



Jun 23, 2023 Washington Water Supply Availability Meeting



Amy Burke
NWRFC.watersupply@noaa.gov



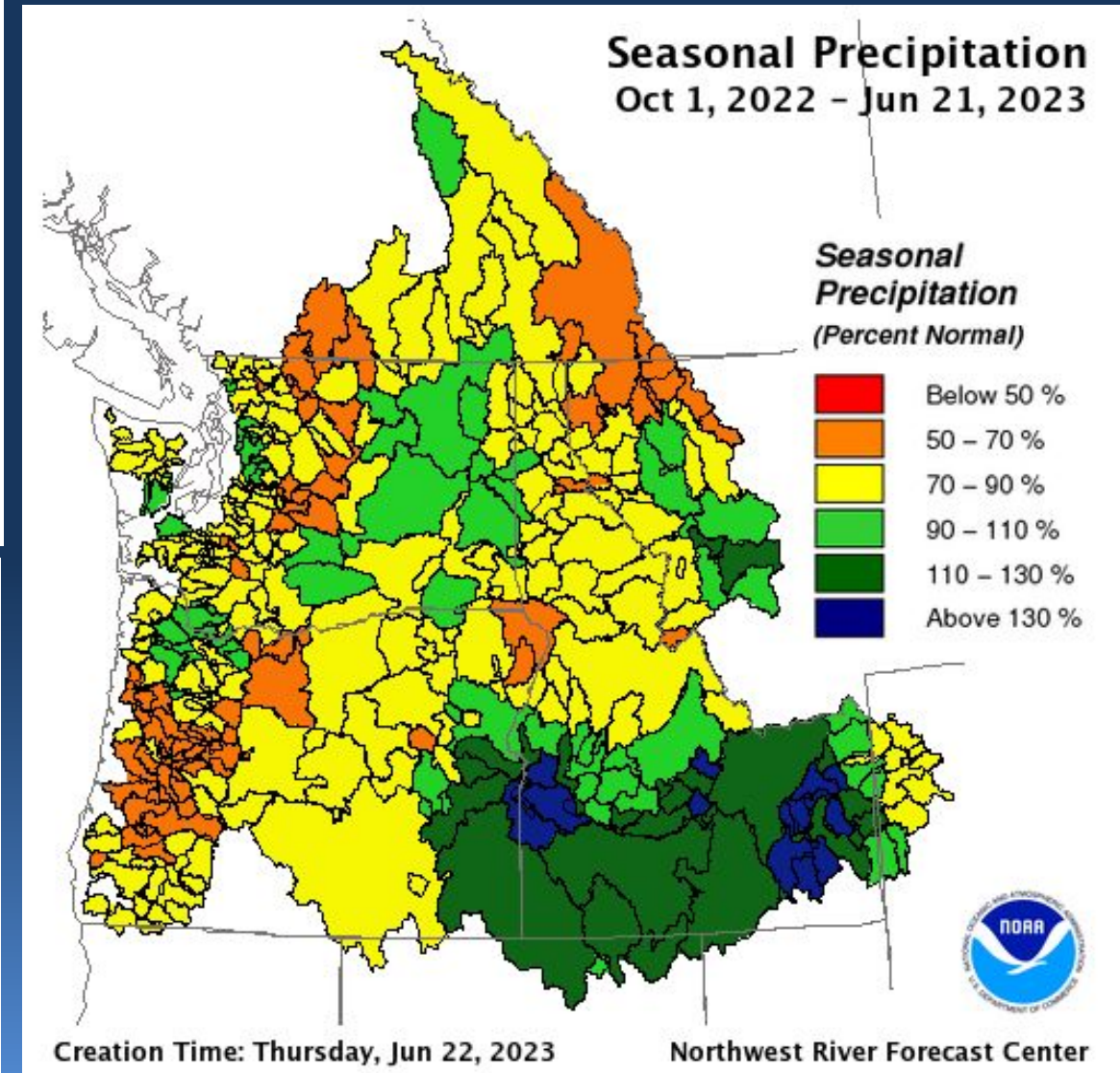
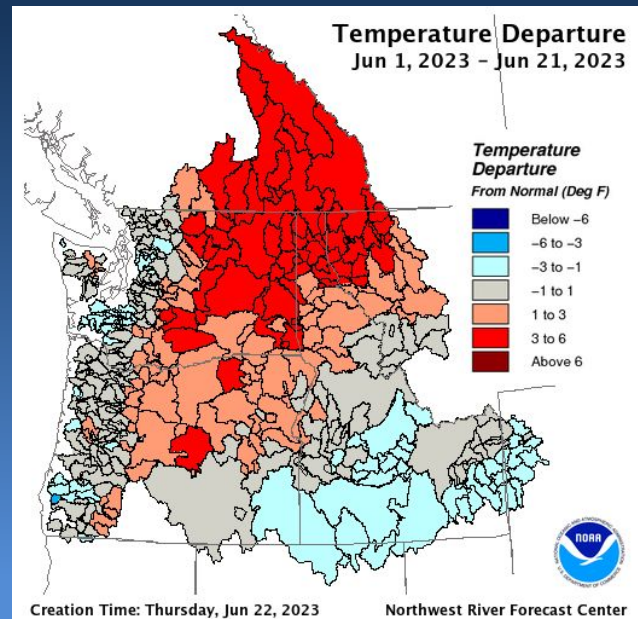
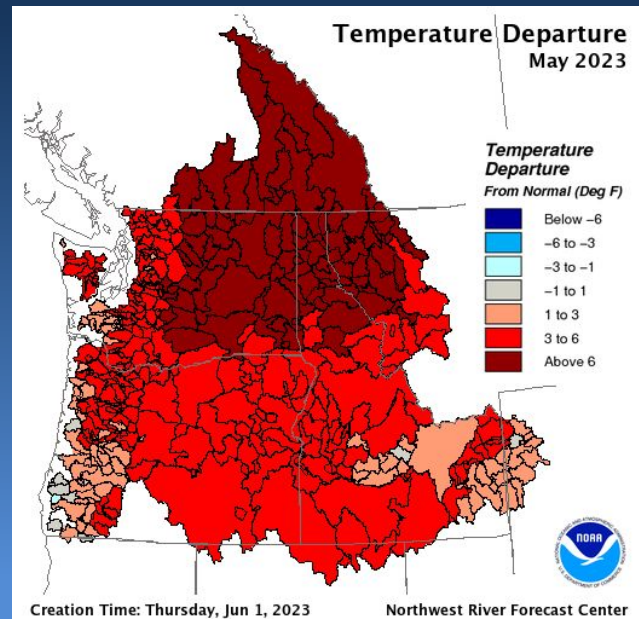
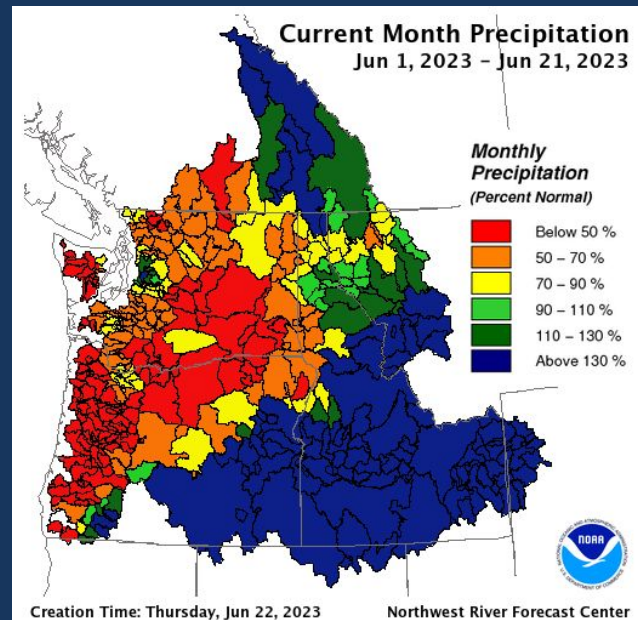
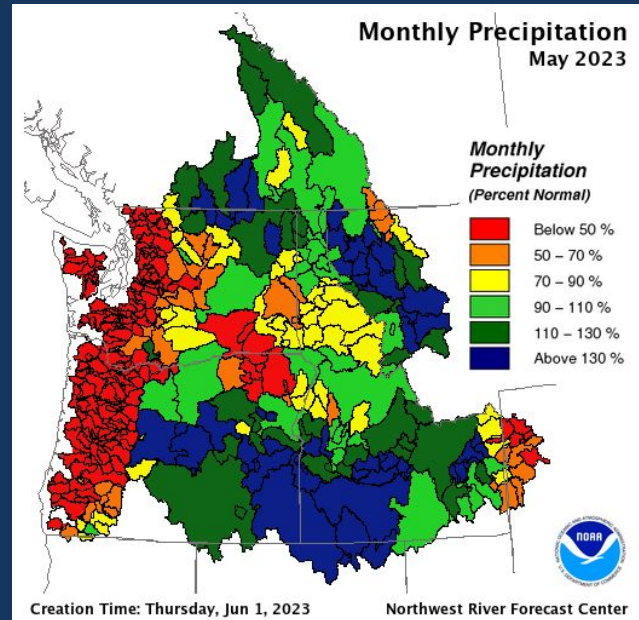


Take Home Messages

- There was rapid snowmelt this May.
- West side precipitation was well below normal in May and June. East side precipitation was mixed.
- May was the big runoff producer in snow driven basins this season.
- Adjusted runoff to date remains largely below normal
- Next 10 days precipitation forecast is below normal
- ESP10 Natural Water Supply forecasts are a mix of normal and below normal. Some forecasts have dropped recently.



Precipitation and Temperature





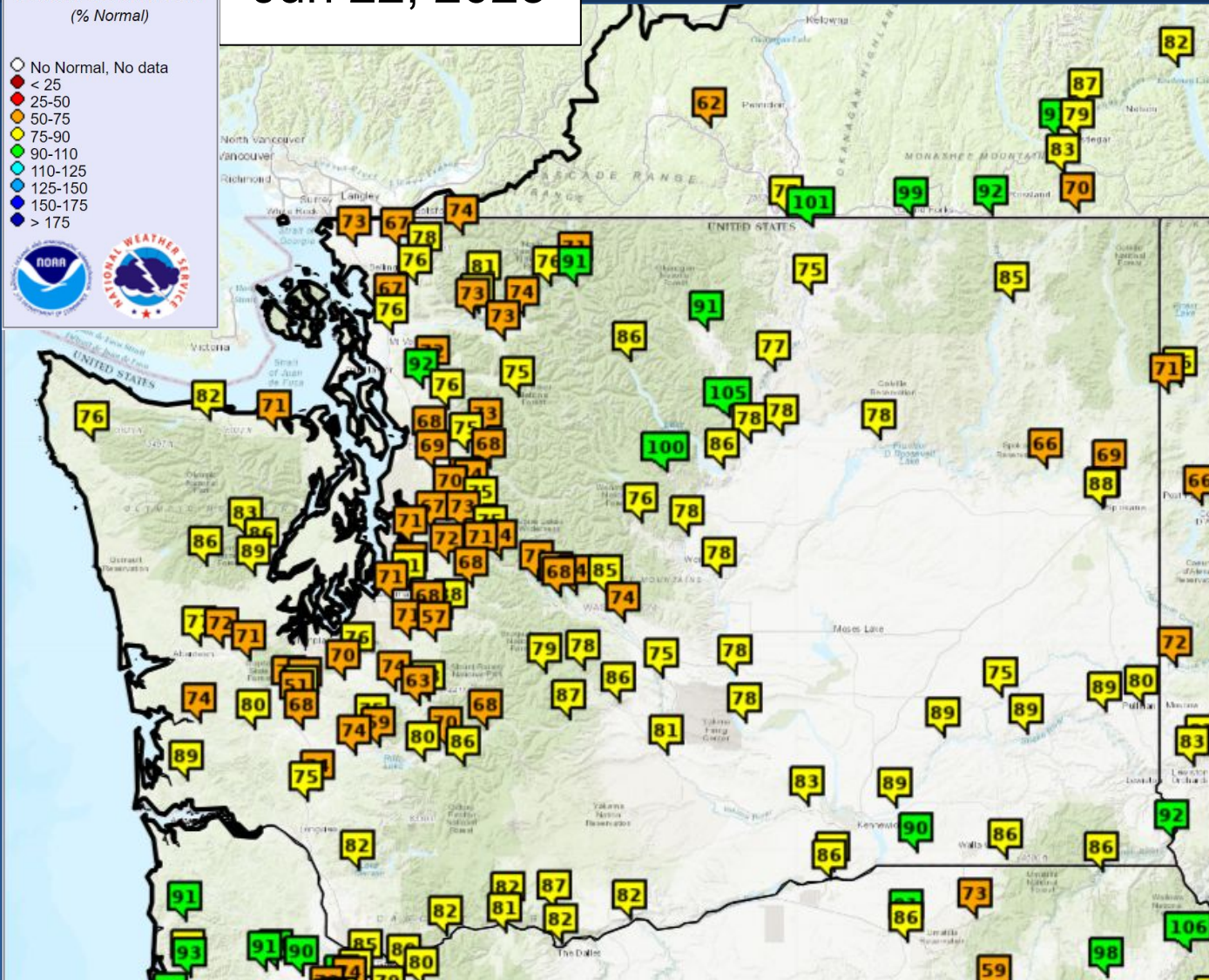
YTD Adjusted Natural Runoff

Natural Runoff

Jun 22, 2023

Period: Oct thru Curr
(% Normal)

○ No Normal, No data
● < 25
● 25-50
● 50-75
● 75-90
● 90-110
● 110-125
● 125-150
● 150-175
● > 175



% Normal Runoff Oct 1 – Jun 22

Washington



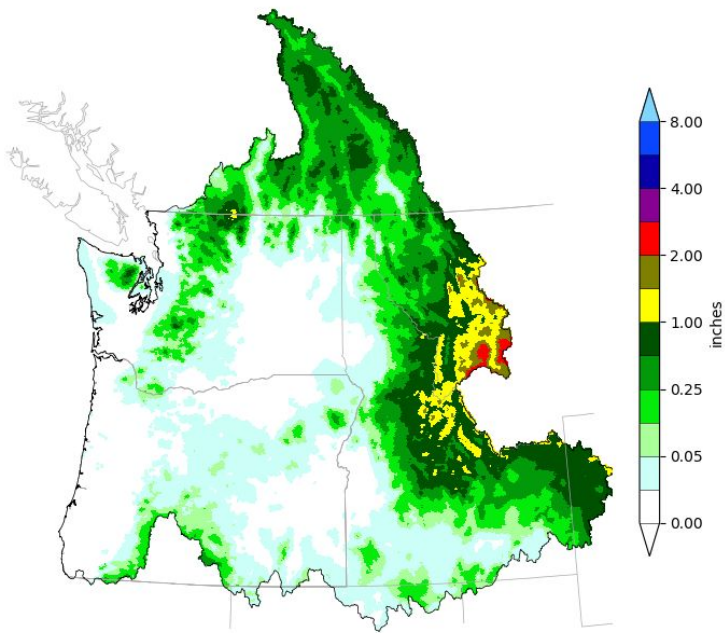
Skagit nr Mt Vernon	76	4
Dungeness nr Sequim	71	4
Chehalis at Porter	71	-1
Okanogan at Malott	77	-1
Methow nr Pateros	105	-9
Yakima at Parker	81	-1
Walla Walla nr Touchet	90	-4



10 Day Precipitation Forecast



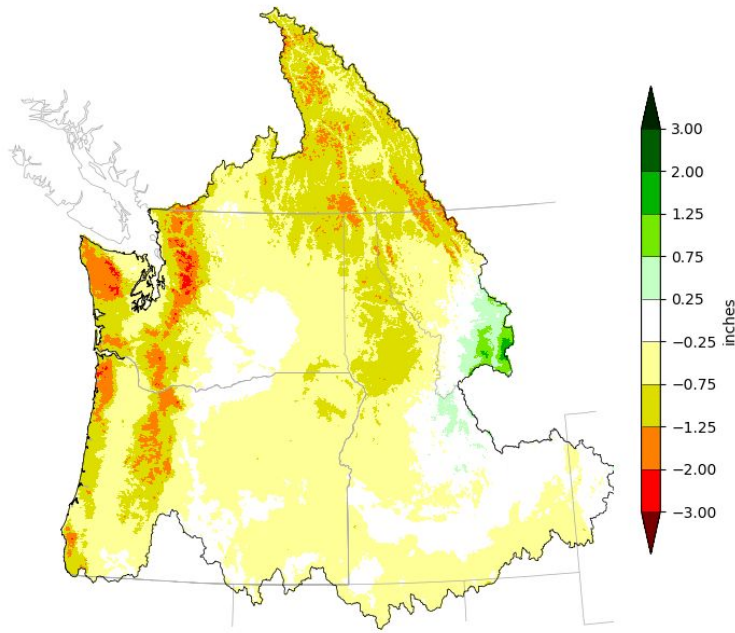
Northwest River Forecast Center
10 Day QPF, Ending 12Z, 07/02/23



Creation Time: Thu Jun 22 14:45:41 UTC 2023



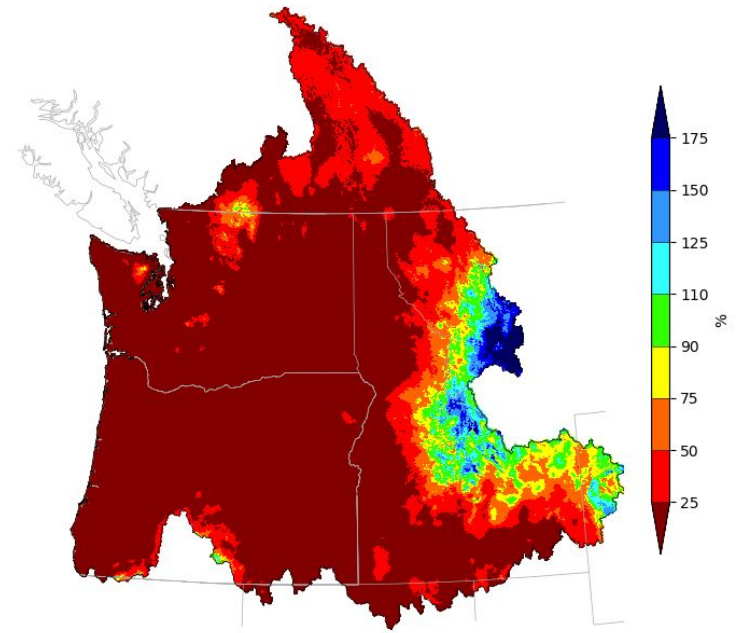
Northwest River Forecast Center
10 Day QPF (Deviation from Climatology), Ending 12Z, 07/02/23



Creation Time: Thu Jun 22 14:47:18 UTC 2023



Northwest River Forecast Center
10 Day QPF (Percent of Climatology), Ending 12Z, 07/02/23

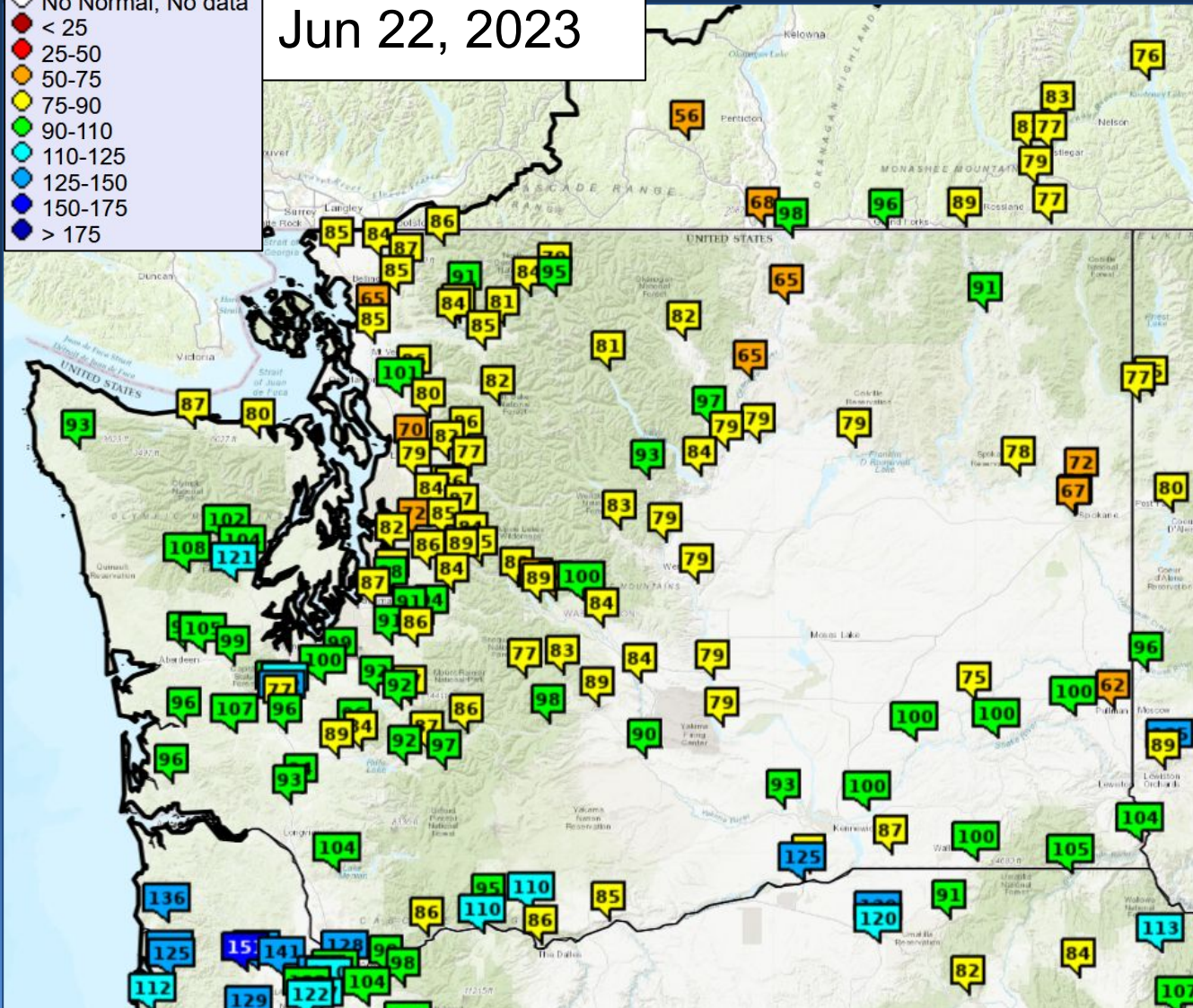
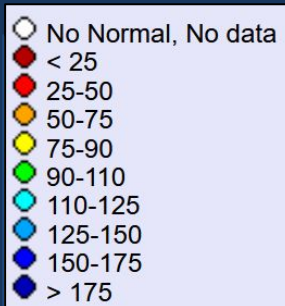


Creation Time: Thu Jun 22 14:46:45 UTC 2023



ESP10 Natural Water Supply Forecasts

Jun 22, 2023



% Normal Apr -Sep Volume

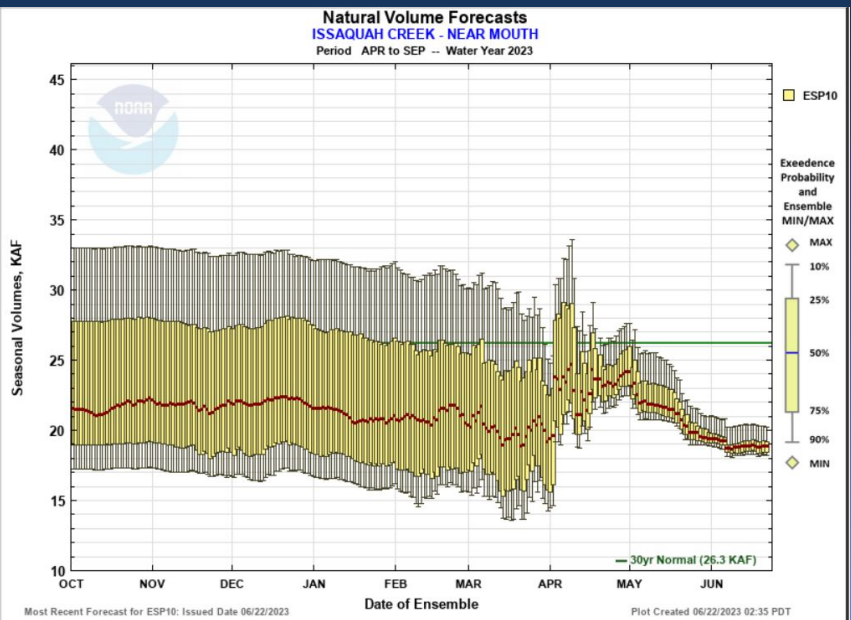
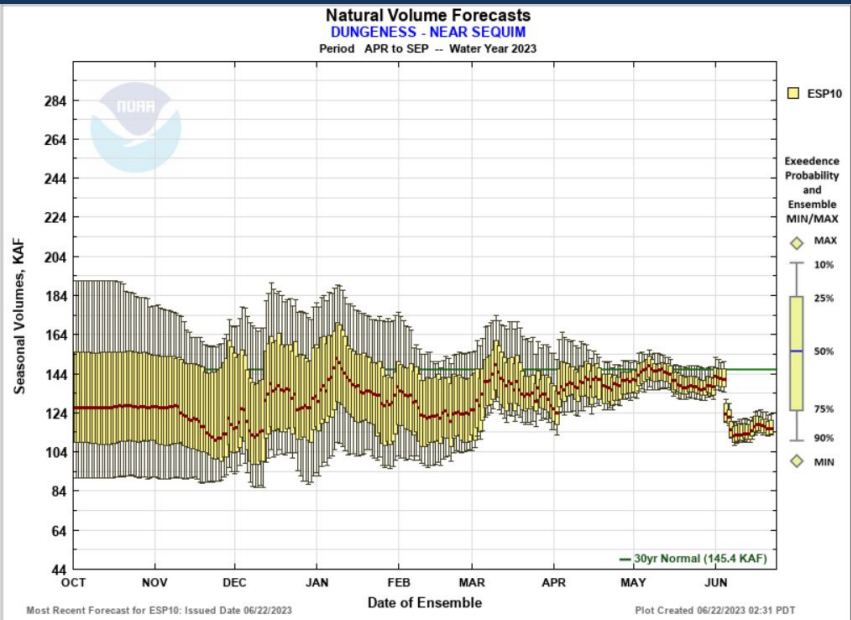
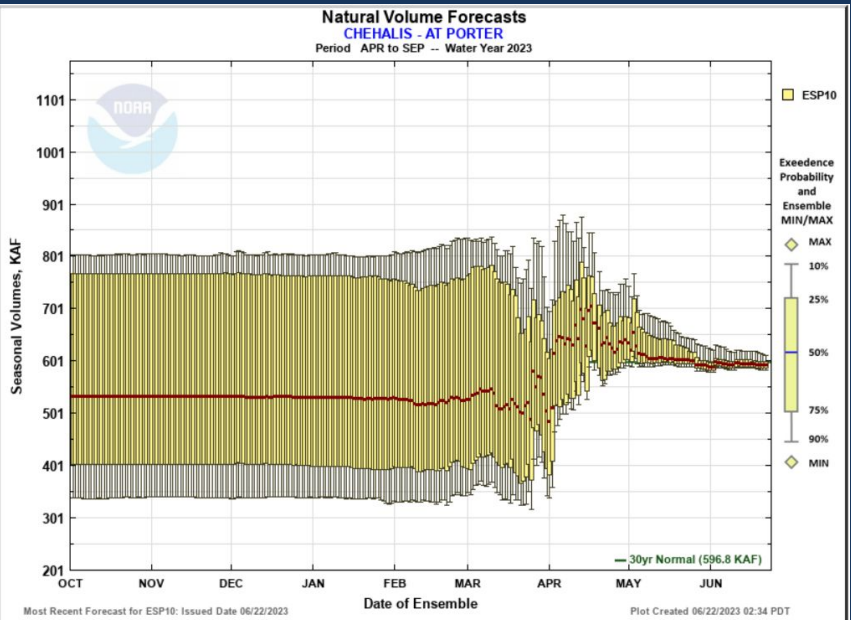
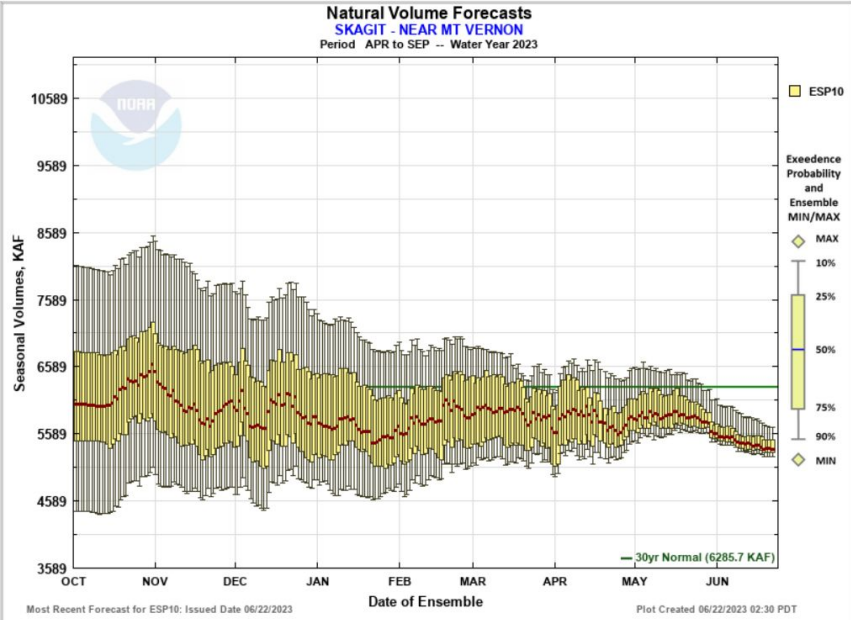
Washington



Skagit nr Mt Vernon	85	-8
Dungeness nr Sequim	80	-15
Chehalis at Porter	99	-2
Okanogan at Malott	65	-14
Methow nr Pateros	97	-12
Yakima at Parker	90	-4
Walla Walla nr Touchet	87	-22



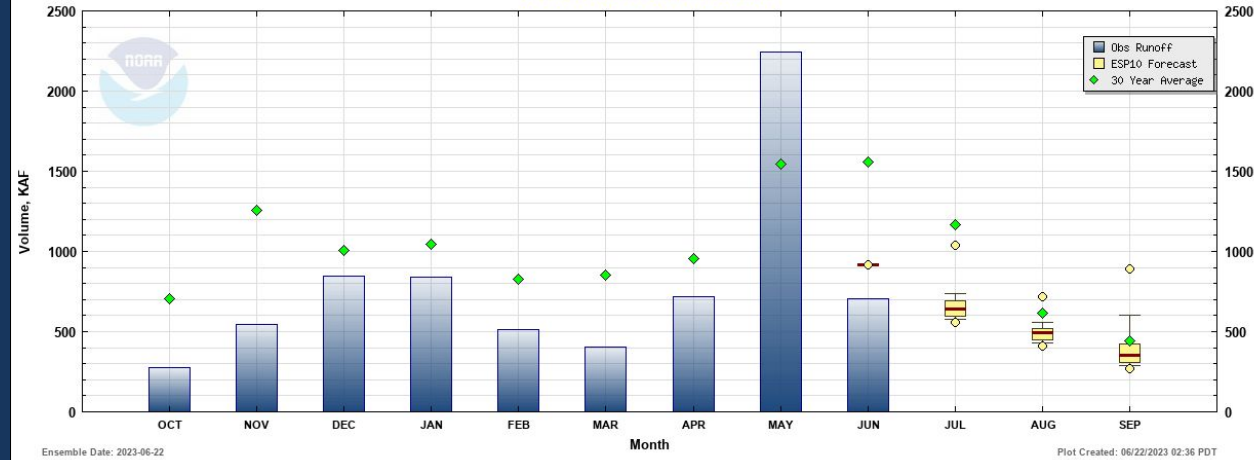
ESP10 Natural Water Supply Forecasts



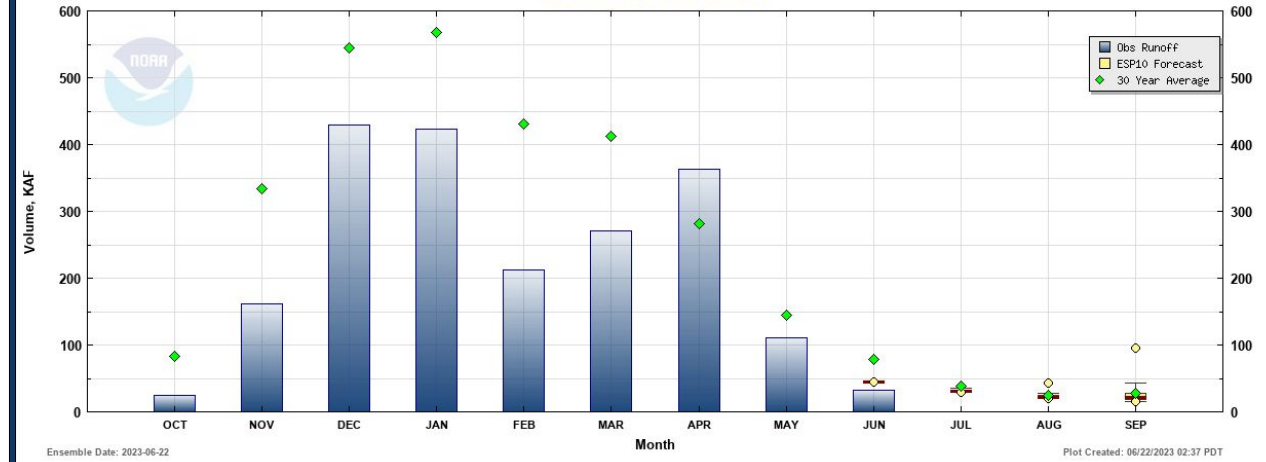


ESP10 Natural Water Supply Forecasts

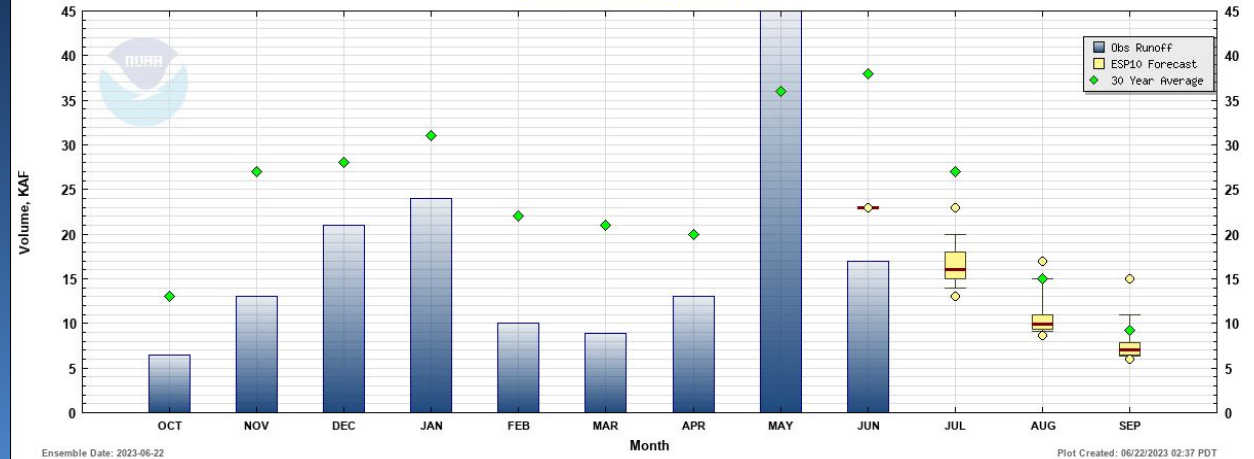
Natural Volume Monthly Forecasts (ESP10) for Water Year 2023
(MVEW1) SKAGIT - NEAR MT VERNON



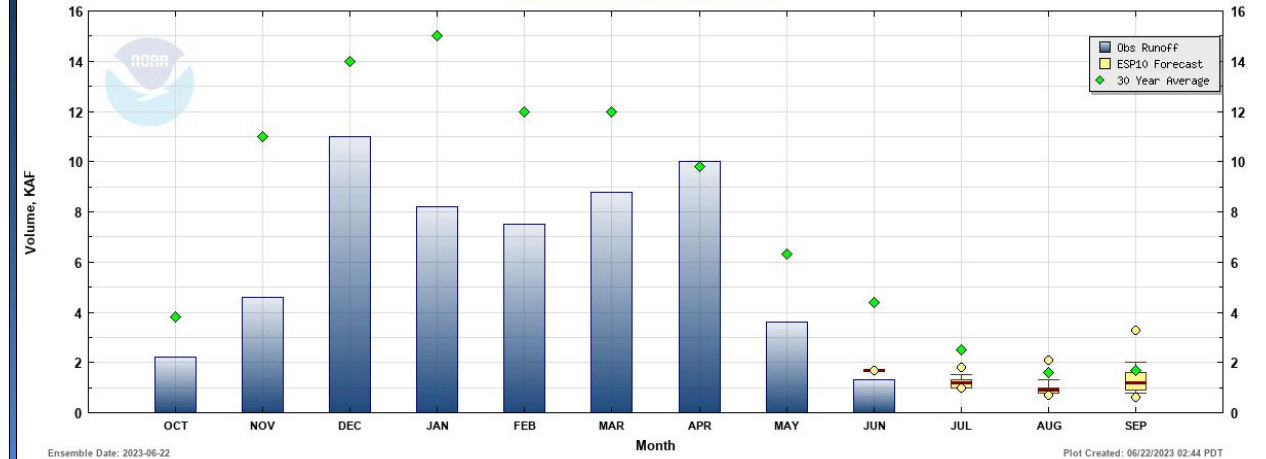
Natural Volume Monthly Forecasts (ESP10) for Water Year 2023
(CRPW1) CHEHALIS - AT PORTER



Natural Volume Monthly Forecasts (ESP10) for Water Year 2023
(DRSW1) DUNGENESS - NEAR SEQUIM

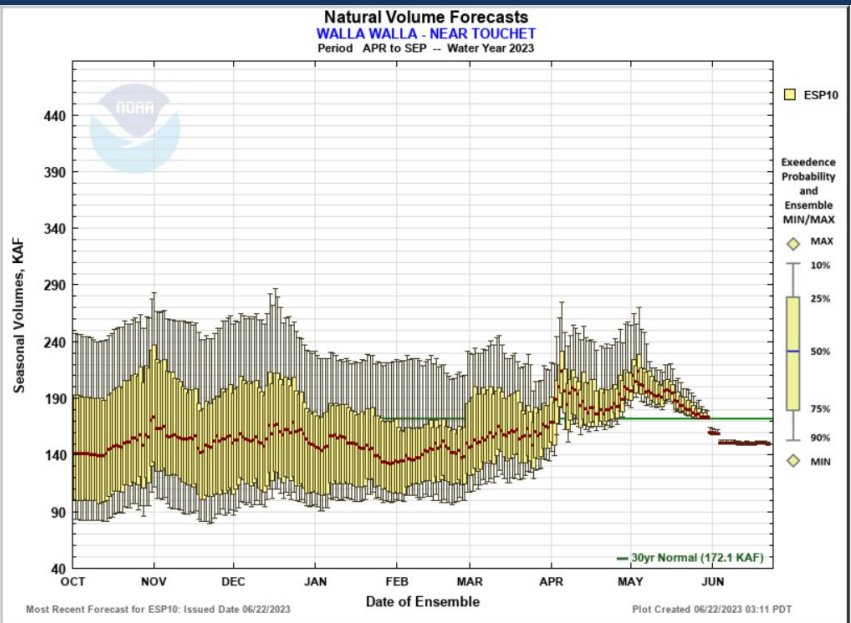
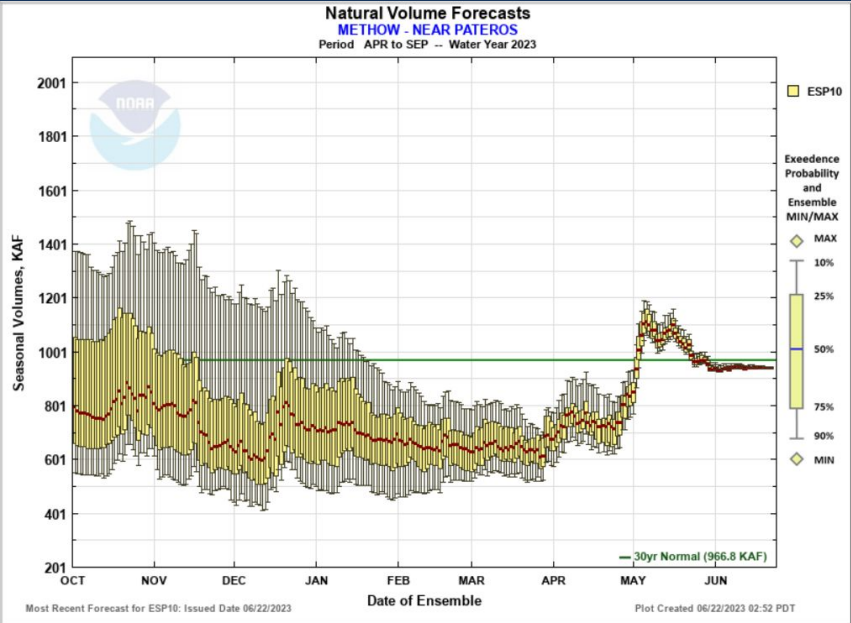
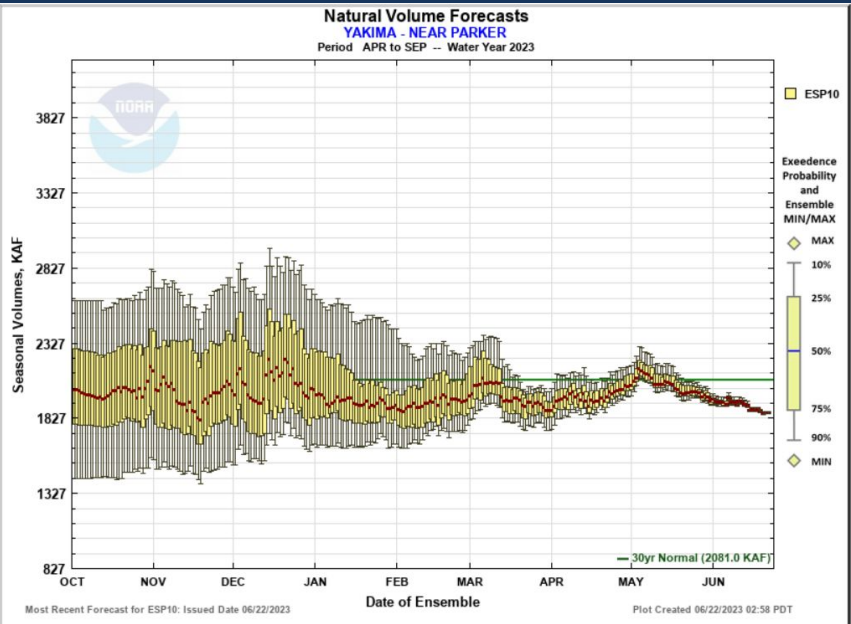
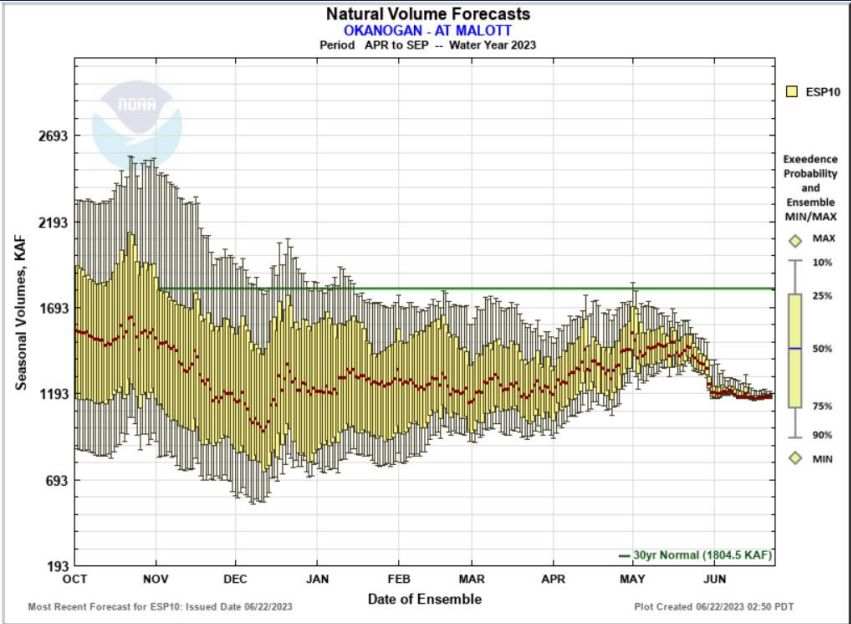


Natural Volume Monthly Forecasts (ESP10) for Water Year 2023
(ISSW1) ISSAQUAH CREEK - NEAR MOUTH





ESP10 Natural Water Supply Forecasts

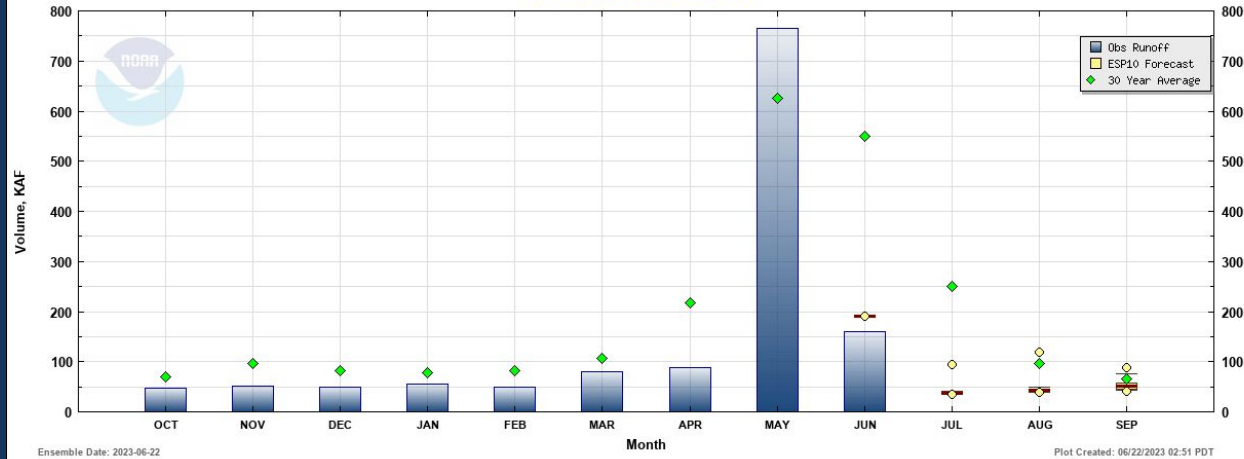




ESP10 Natural Water Supply Forecasts

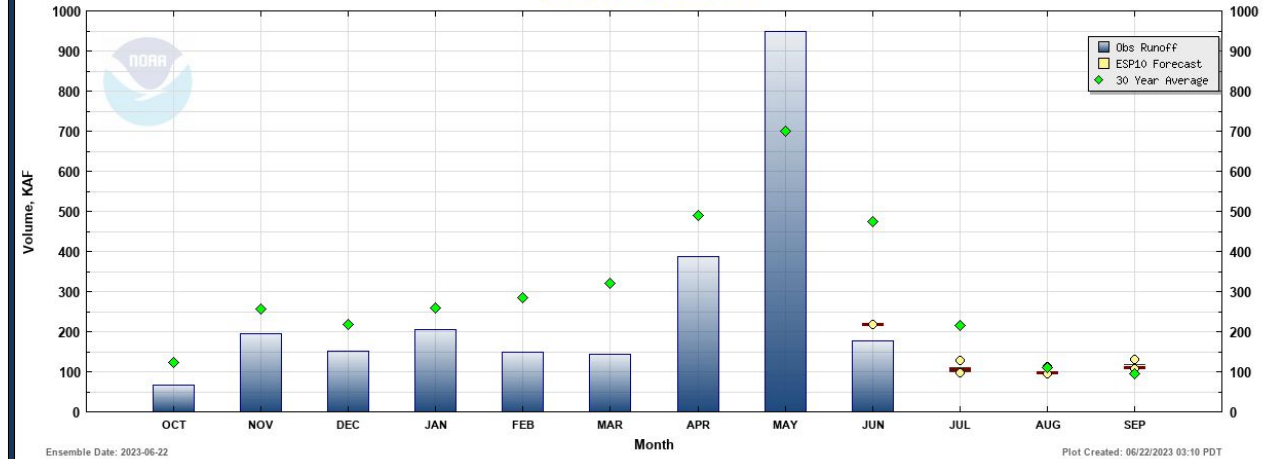
Natural Volume Monthly Forecasts (ESP10) for Water Year 2023

(OKMW1) OKANOGAN - AT MALOTT



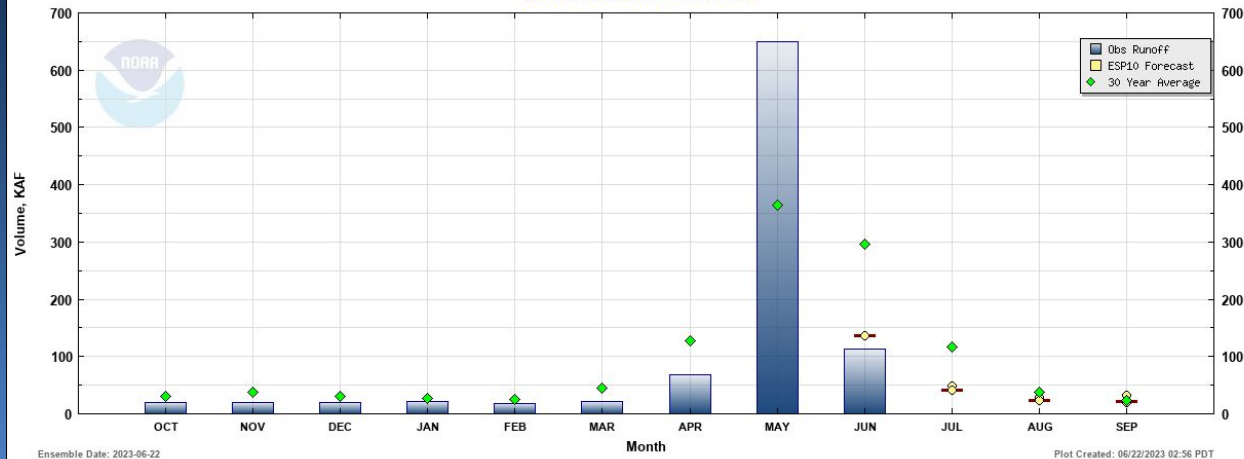
Natural Volume Monthly Forecasts (ESP10) for Water Year 2023

(PARW1) YAKIMA - NEAR PARKER



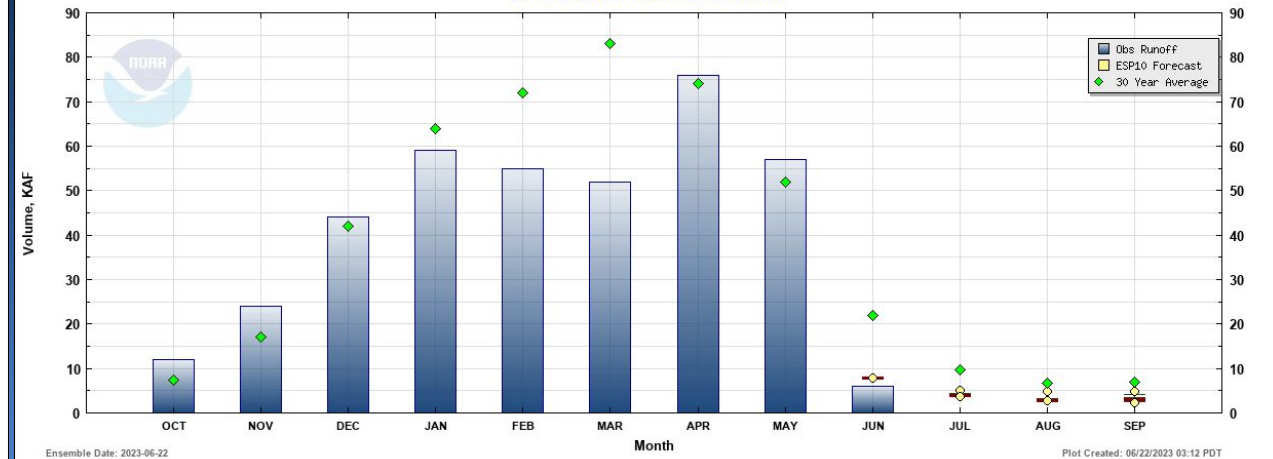
Natural Volume Monthly Forecasts (ESP10) for Water Year 2023

(PATW1) METHOW - NEAR PATEROS



Natural Volume Monthly Forecasts (ESP10) for Water Year 2023

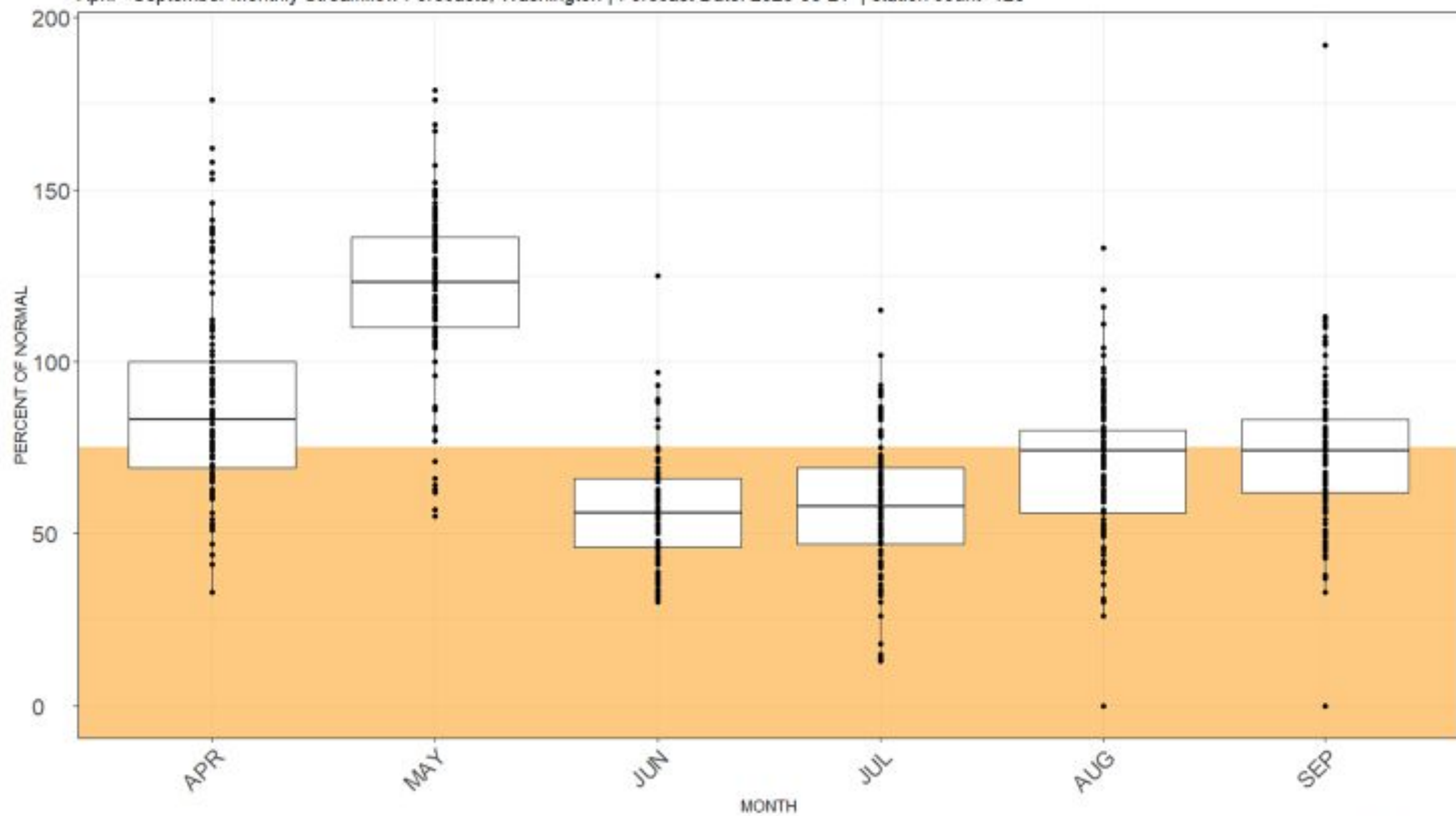
(TCHW1) WALLA WALLA - NEAR TOUCHET





Take Home Messages

- There was rapid snowmelt this May.
- West side precipitation was well below normal in May and June. East side precipitation was mixed.
- May was the big runoff producer in snow driven basins this season.
- Adjusted runoff to date remains largely below normal
- Next 10 days precipitation forecast is below normal
- ESP10 Natural Water Supply forecasts are a mix of normal and below normal. Some forecasts have dropped recently.



April - September Monthly Streamflow Forecasts, Washington | Forecast Date: 2023-06-21 | station count=125

