STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

Water Supply Availability Committee (WSAC)

Thursday, October 10, 2024, 10 a.m. – 11:30 a.m.
Zoom: Click to join. (Call-in: 253.205.0468; Meeting ID: 816 5686 6078; Passcode: 038972)

Meeting Objectives – October:

- Share pertinent info and assess water supply conditions in Washington as we near fall.
- Share Ecology's process to update the permanent drought relief rule (WAC 173-166).

Agenda

Time	Agenda item	Responsible
10:00 a.m.	Welcome and agenda review Recap: Drought Declaration and implications	Caroline Mellor, Ecology
10:10 a.m.	Update to Ecology's permanent drought rule • Rulemaking process & engagement options	Danielle Gallatin, Ecology
10:20 a.m.	Regional Climate Setting/ ENSO • Water Year meeting & survey	Karin Bumbaco, OWSC
10:35 a.m.	Streamflow and Groundwater	Nick Sutfin, USGS
10:50 a.m.	Yakima Project	Chris Lynch, BOR
11:00 a.m.	Water Supply Forecasts	Amy Burke, NWRFC
11:15 a.m.	Discussion – Updated: What concerns do folks have for drought recovery and Water Year 2025?	All participants Ecology facilitates
11:25 a.m.	Wrap-up and next steps	Caroline Mellor, Ecology

Committee Purpose

WSAC provides an important consultative and advisory role to Ecology related to current and forecasted water supply conditions and whether the hydrologic drought threshold has been met or is forecasted to be met: seventy-five percent of normal water supply within a geographic area (RCW 43.83B.405 and WAC 173-166-050).

Resources

WSAC Website: Water Supply Availability Committee - WA State Department of Ecology
Ecology Drought homepage: Drought response - WA State Department of Ecology

Contact

Committee Chair: Caroline Mellor, Statewide Drought Lead, WA Department of Ecology
Caroline.Mellor@ecy.wa.gov | (c) 360.628.4666

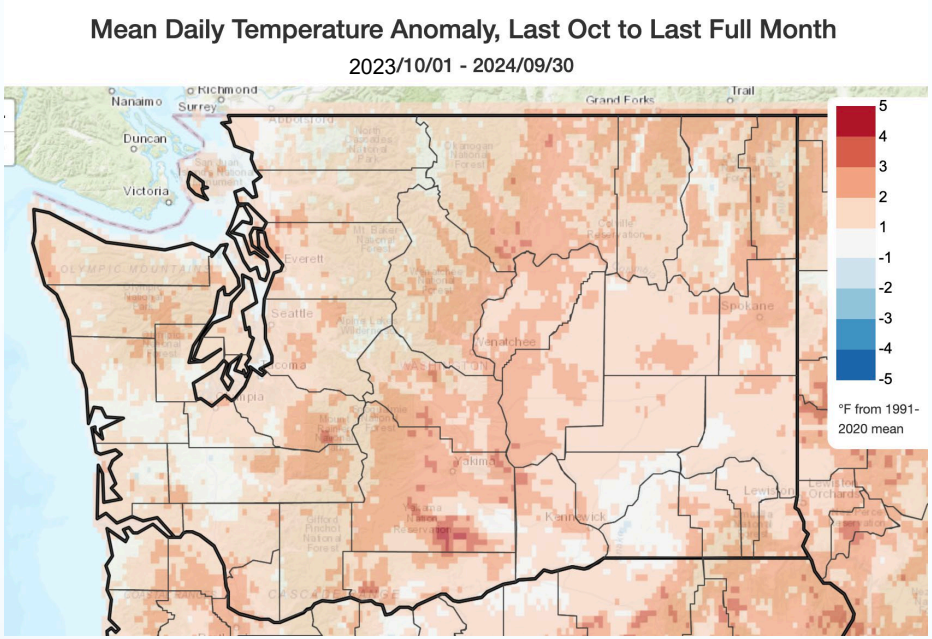
Office of the Washington State Climatologist

Current Conditions and Seasonal Outlook

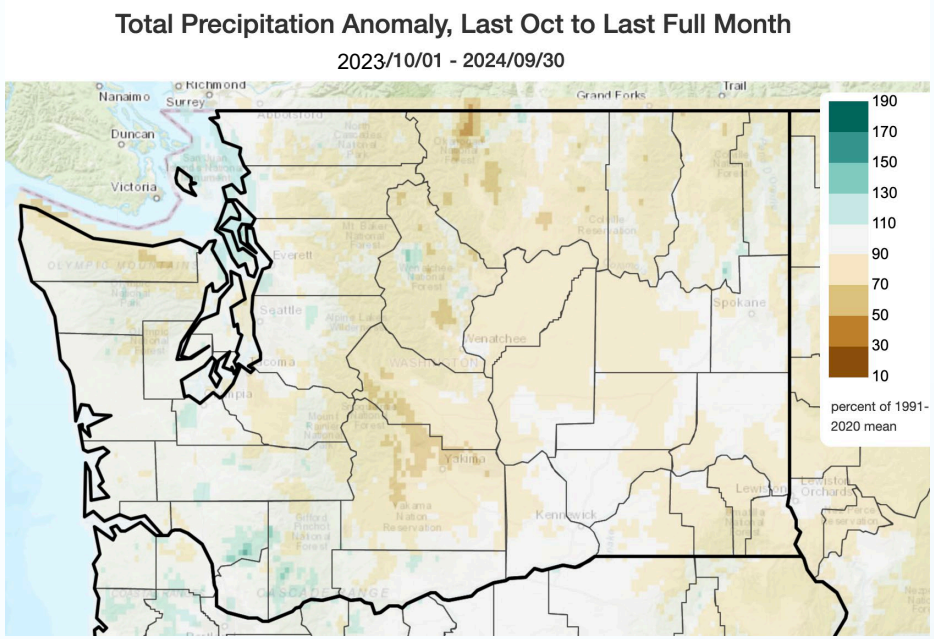
Karin Bumbaco
Office of the Washington State Climatologist
Climate Impacts Group
University of Washington
October 10, 2024

Water Year 2024

Temperature



Precipitation



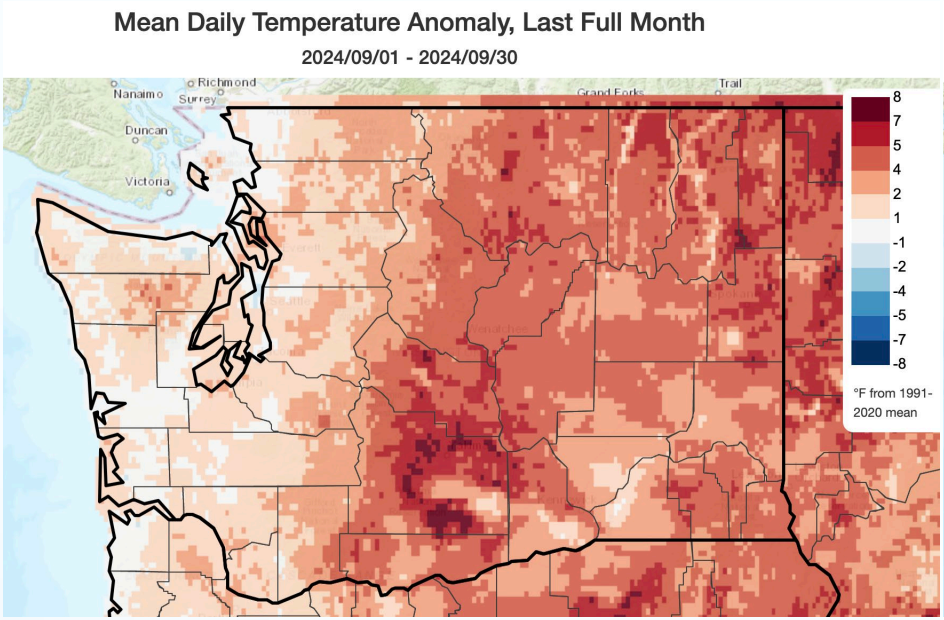
Climate Toolbox

- Averaged statewide, the 2024 water year temperatures were about 1.3°F above normal*
- Averaged statewide, the 2024 water year precipitation was about 90% normal

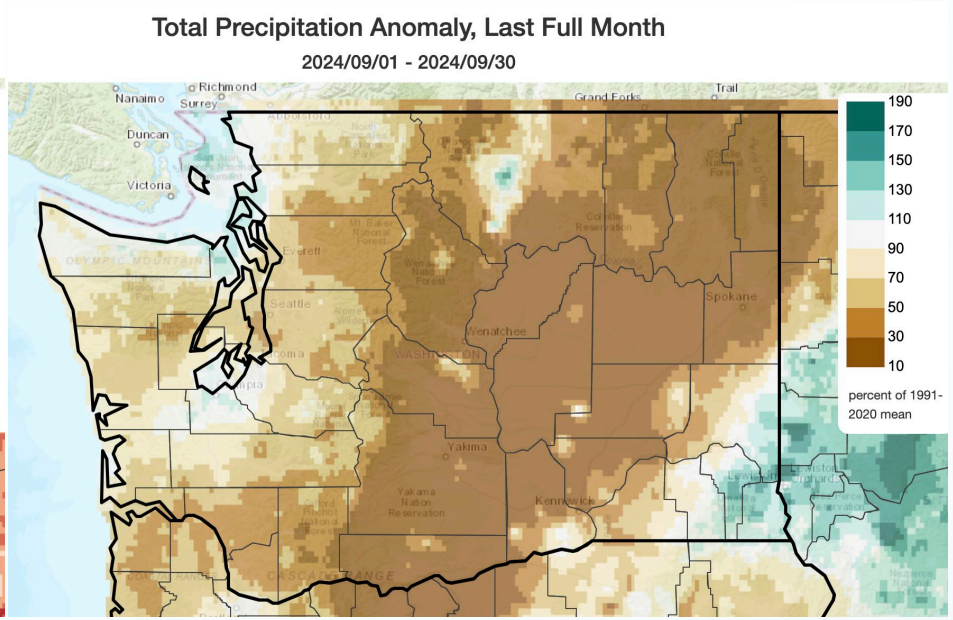
*Normal is 1991-2020

September 2024

Temperature



Precipitation



Climate Toolbox

- Averaged statewide, September temperatures were about 3.2°F above normal*
- Averaged statewide, September precipitation was about 43% of normal

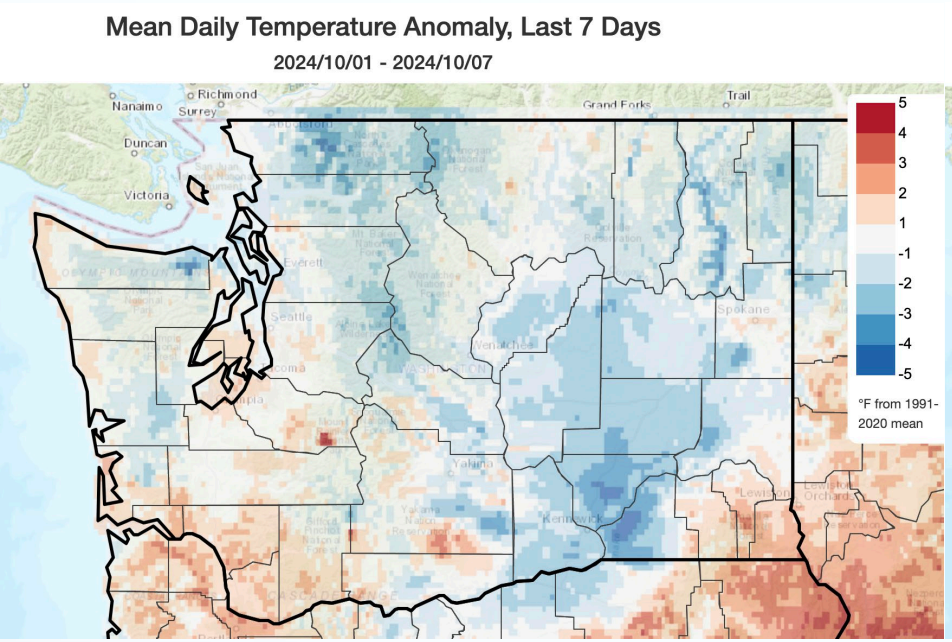
*Normal is 1991-2020

September Rankings

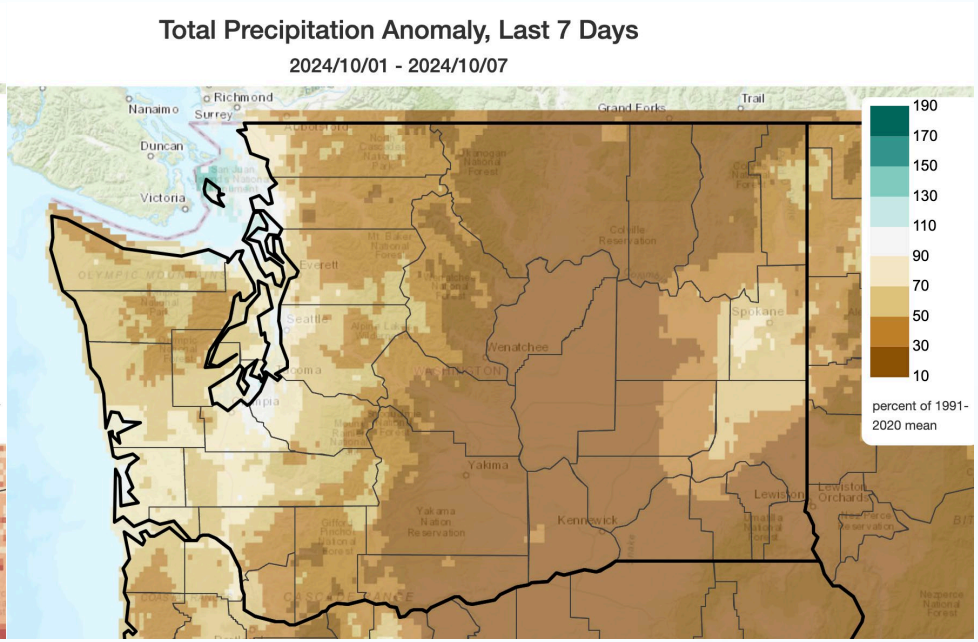
Station	Temperature ranking	Temperature Anomaly (°F)	Precipitation Ranking	Period of Record
Wenatchee	Warmest	+4.5	Driest (tied)	1959
Omak	Warmest	+5.2	5th driest	1998
Yakima AP	Warmest	+4.5	17th driest	1946
Pullman	Warmest (tied)	+5.1 (*4 days missing)	16th wettest	1940
Spokane Airport	2nd warmest	+5.6	9th driest	1881

(First week of) October 2024

Temperature

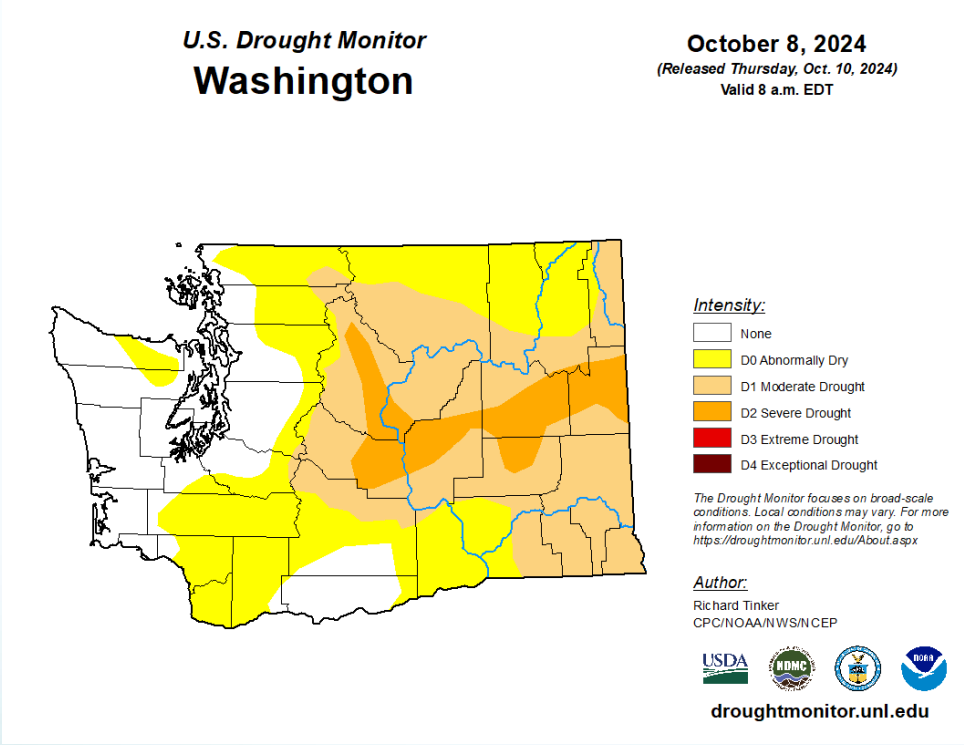


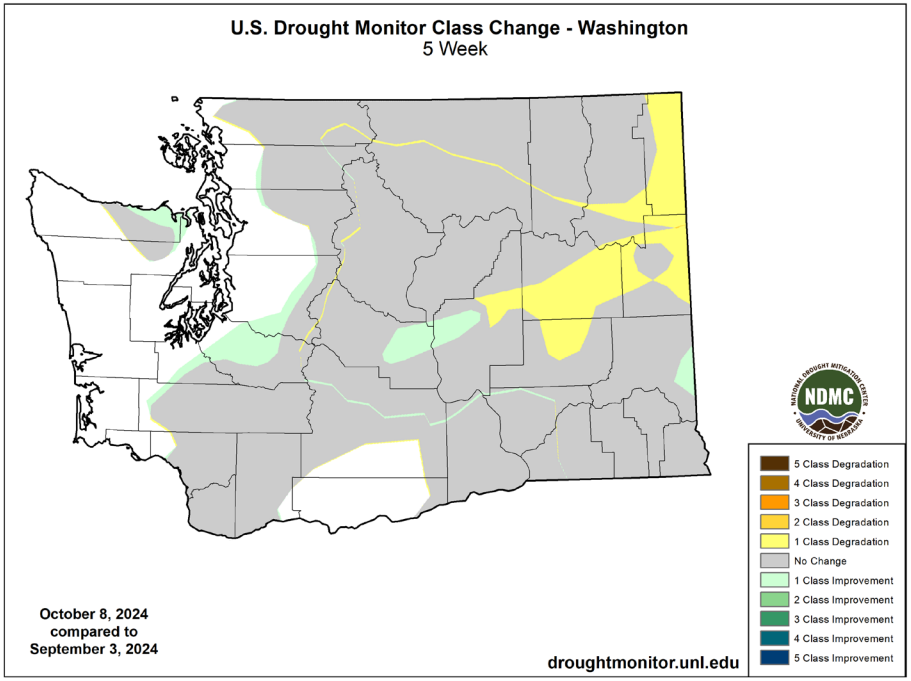
Precipitation



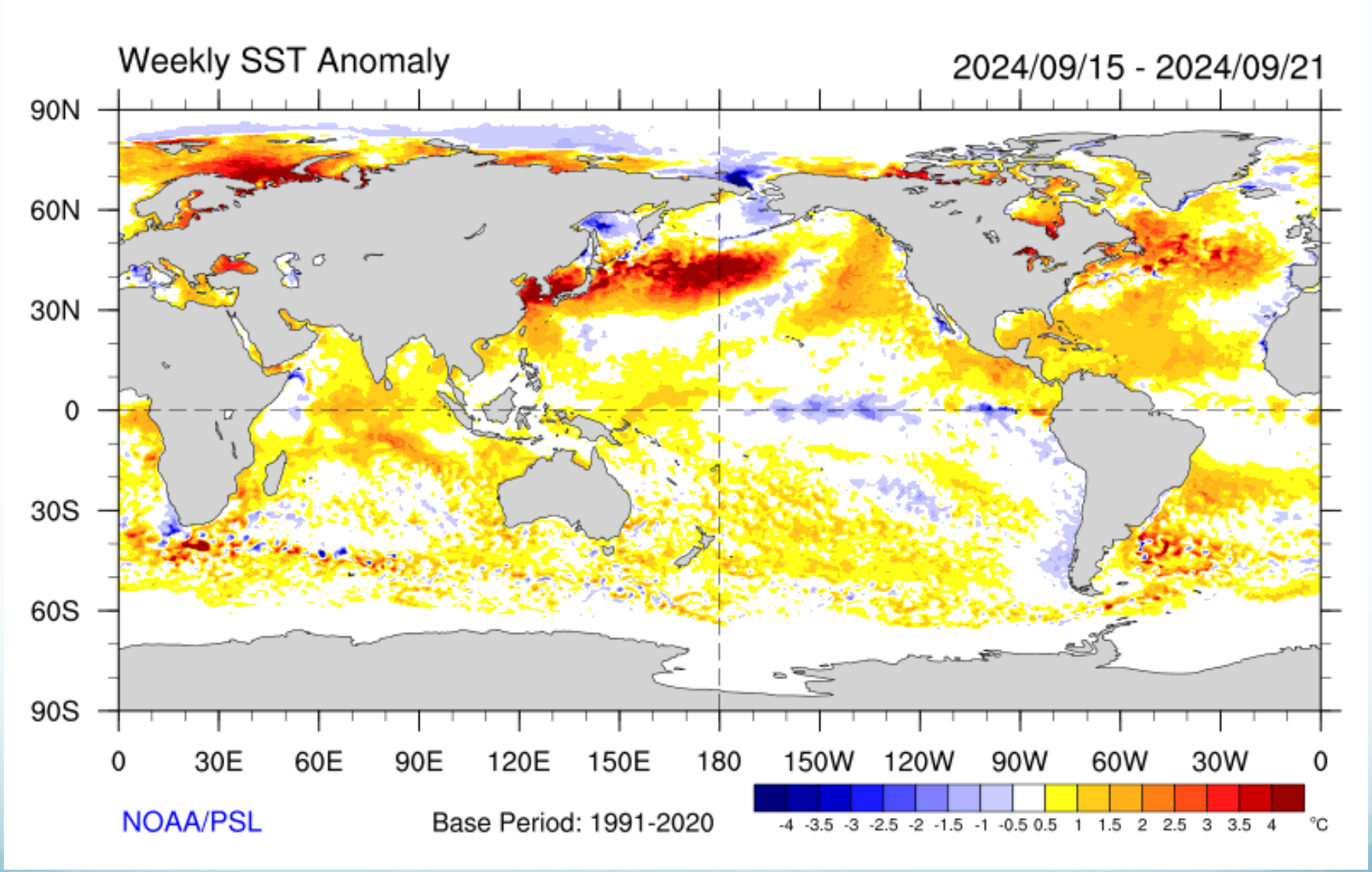
Climate Toolbox

U.S. Drought Monitor



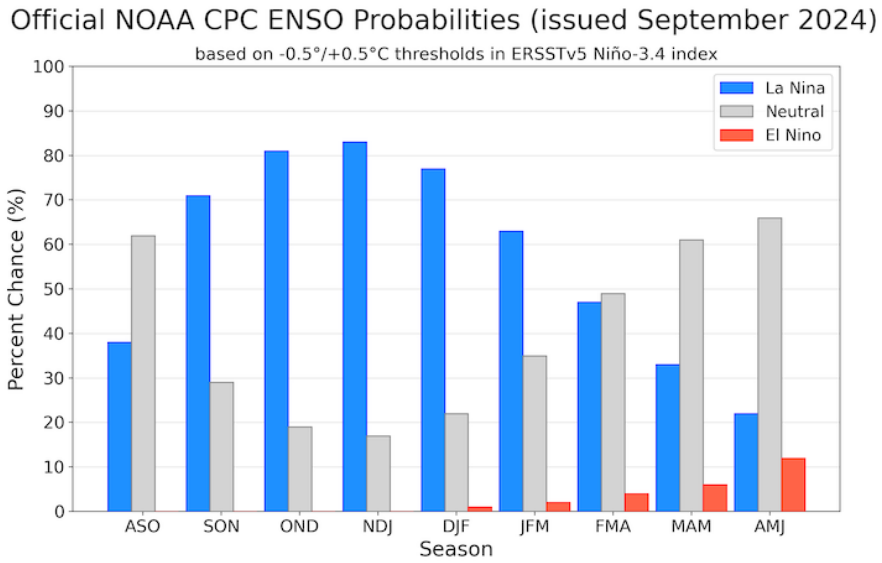


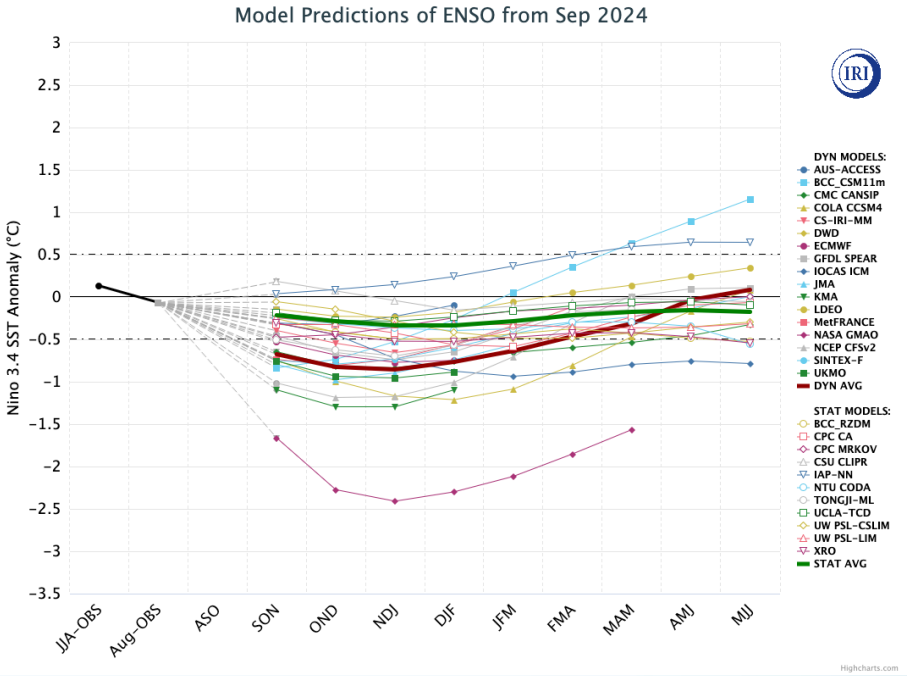
Sea Surface Temperature Anomalies: Sept 15-21, 2024



Current Status: Neutral Conditions

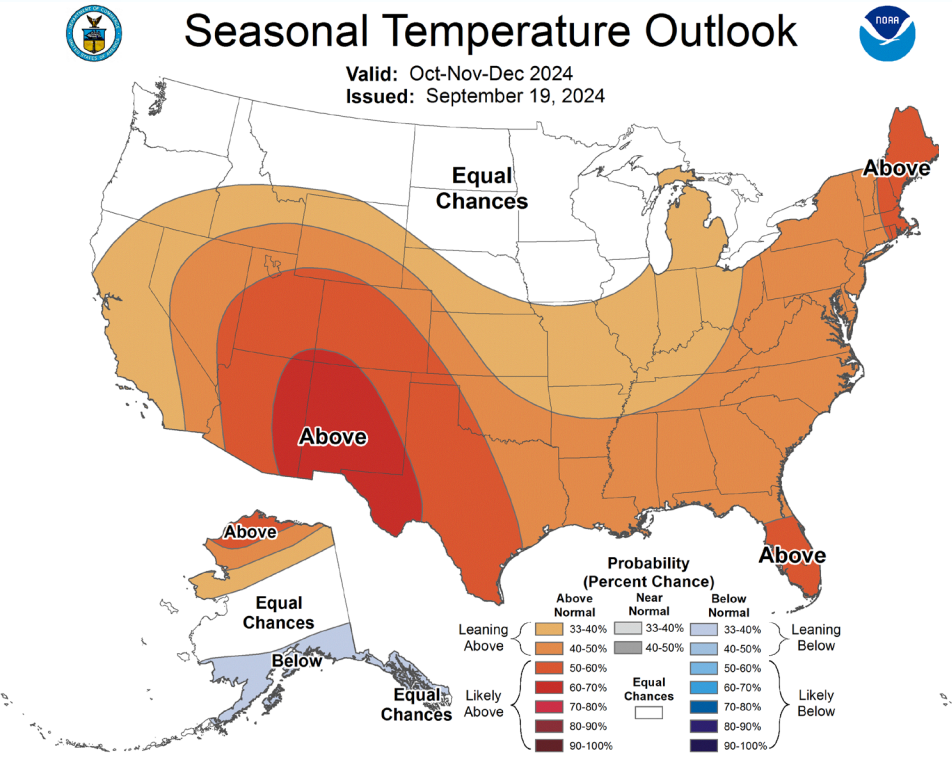
La Niña Watch

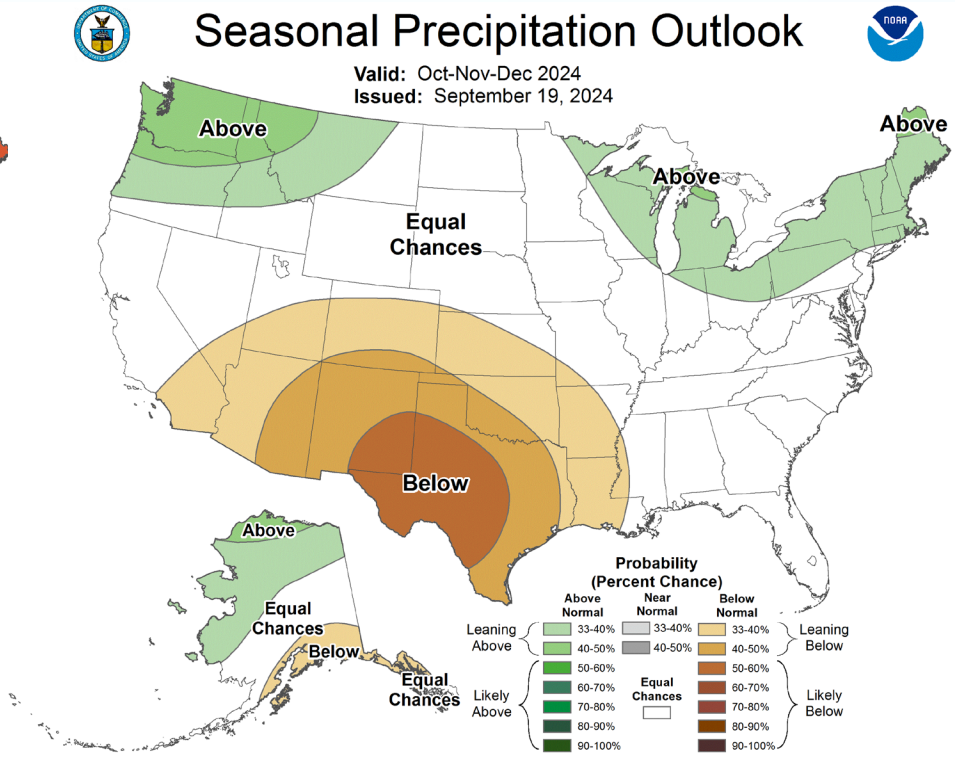




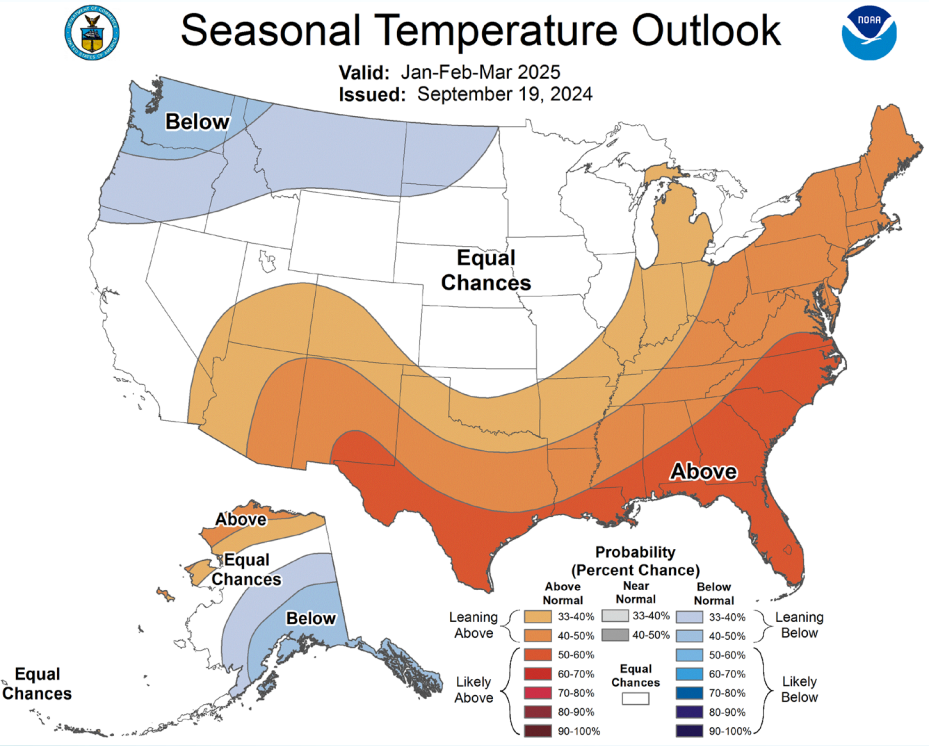
- Probabilities of La Niña have increased slightly and still expected to emerge over Sept-Nov
- Chances of a moderate to strong event are less than 50%

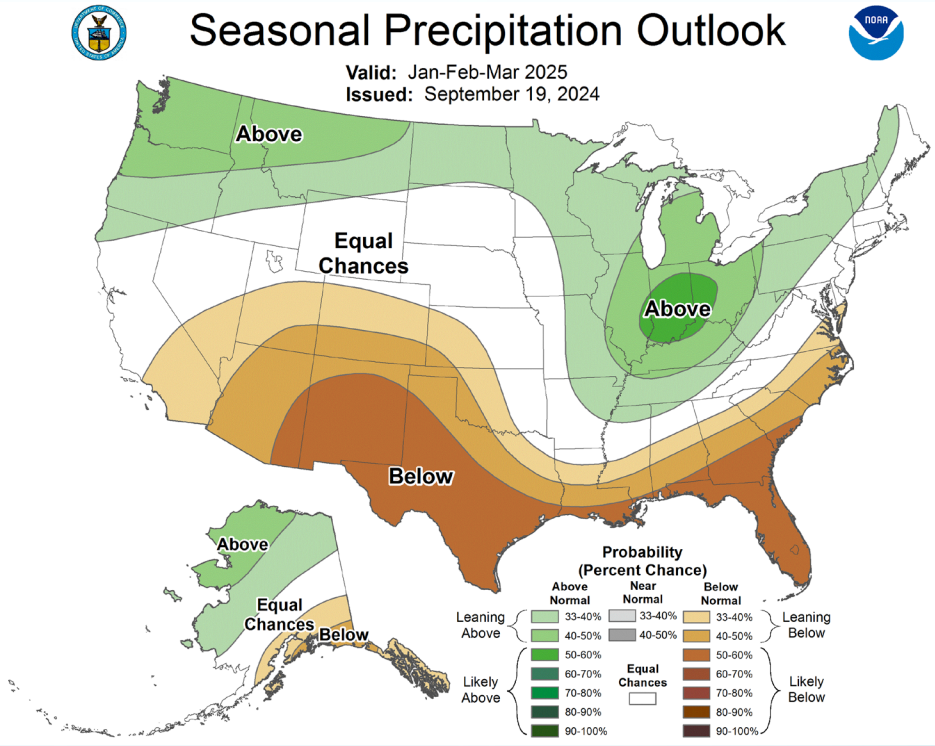
Climate Prediction Center Outlook: **Oct-Dec**





Climate Prediction Center Outlook: **Jan-Mar**





NMME shows near-normal temperatures during January-March

Better consistency among products for wetter than normal Jan-Mar.

Oregon-Washington Water Year Meeting

What: Recap the weather and climate of water year 2024 and review sector-specific impacts

With presentations from:

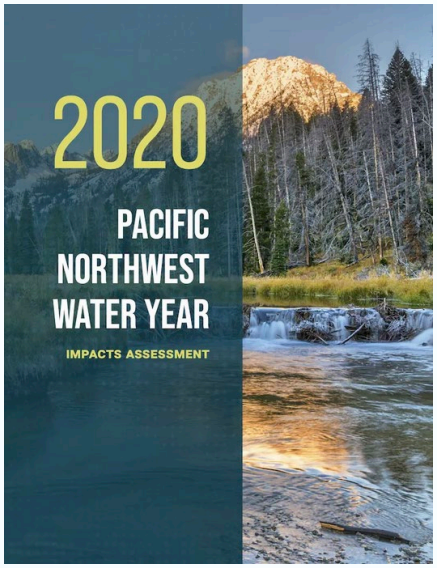
- Amy Burke (Retrospective on Water Year 2024 streamflow forecasts)
- Guillaume Mauger (Recap of WY2024)
- Michael Garrity (Resilient Columbia Basin Initiative)

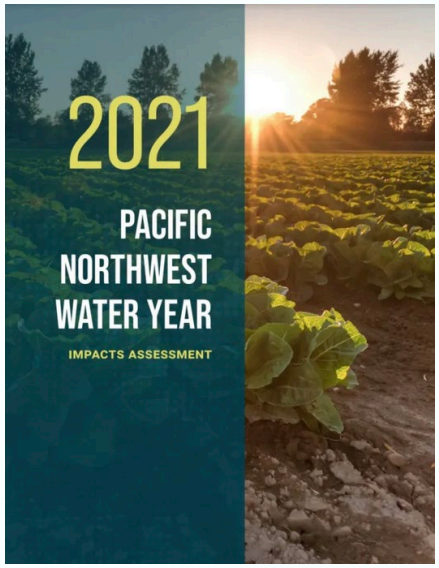
When: 9 am – noon on Tues, Oct 29 and Wed, Oct 30

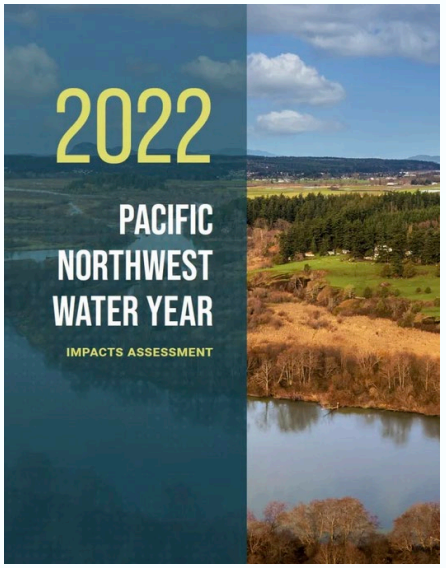
Where: Zoom

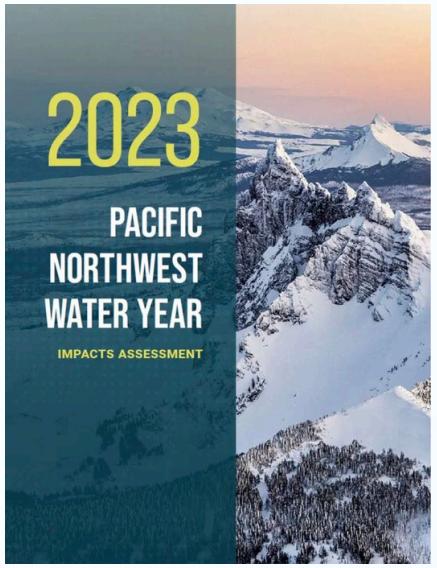
https://cig.uw.edu/2024/08/register-today-for-water-year-2024-recap-2025-outlook-meeting/

PNW Water Year Impacts Assessment









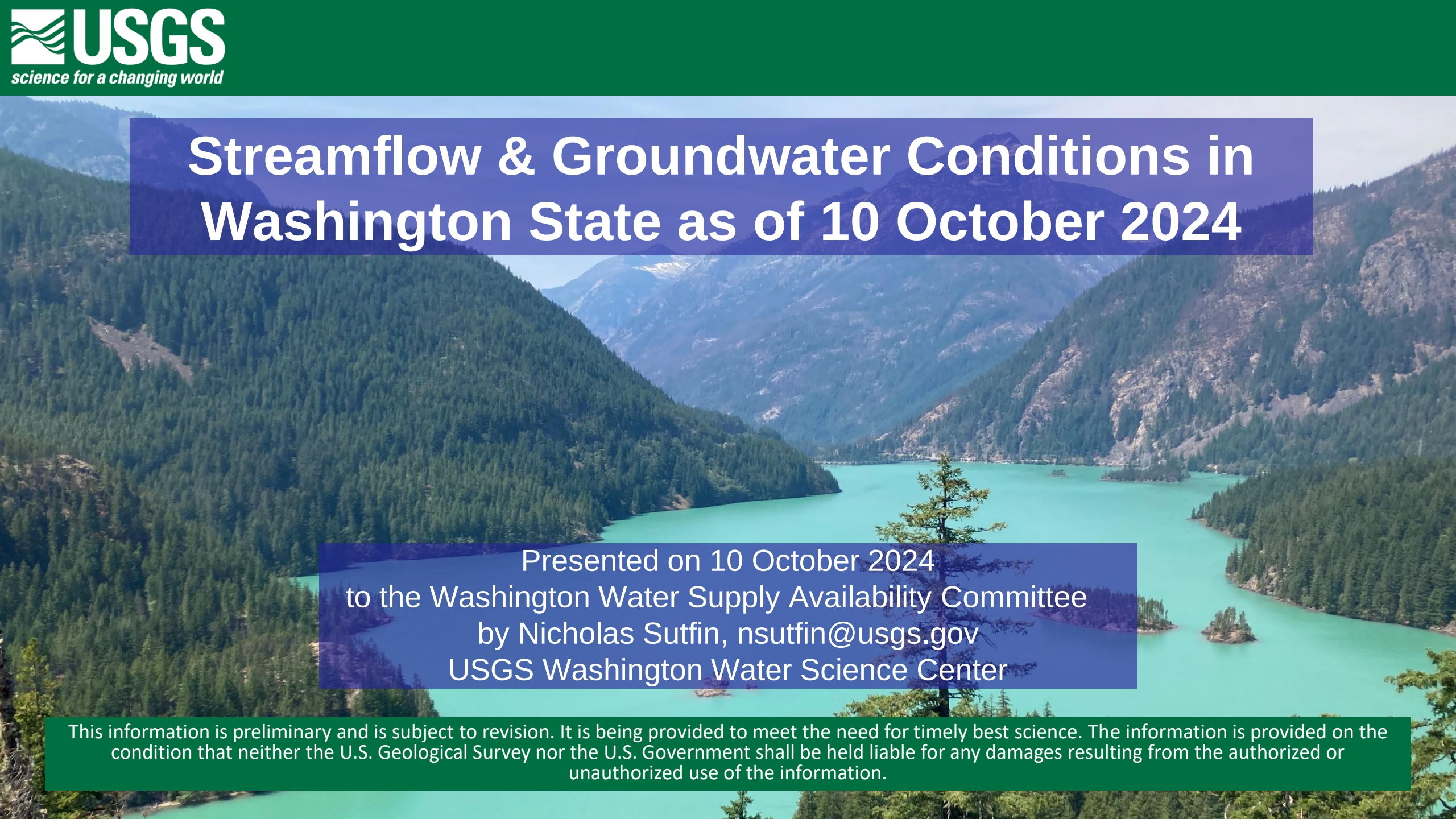
2024

Your Input Here

Take the PNW 2024 Water Year Impacts Survey!

Summary

- Water year 2024 was warmer than normal statewide and drier than normal for a majority of the state
- September precipitation was minimal across most of eastern WA with above normal temperatures statewide
  - Fall rain has not yet been consistent enough to claim drought recovery
- Weak La Niña is likely to develop by late Fall
- There are higher chances of above normal fall and winter precipitation; fall and winter temperatures are more uncertain



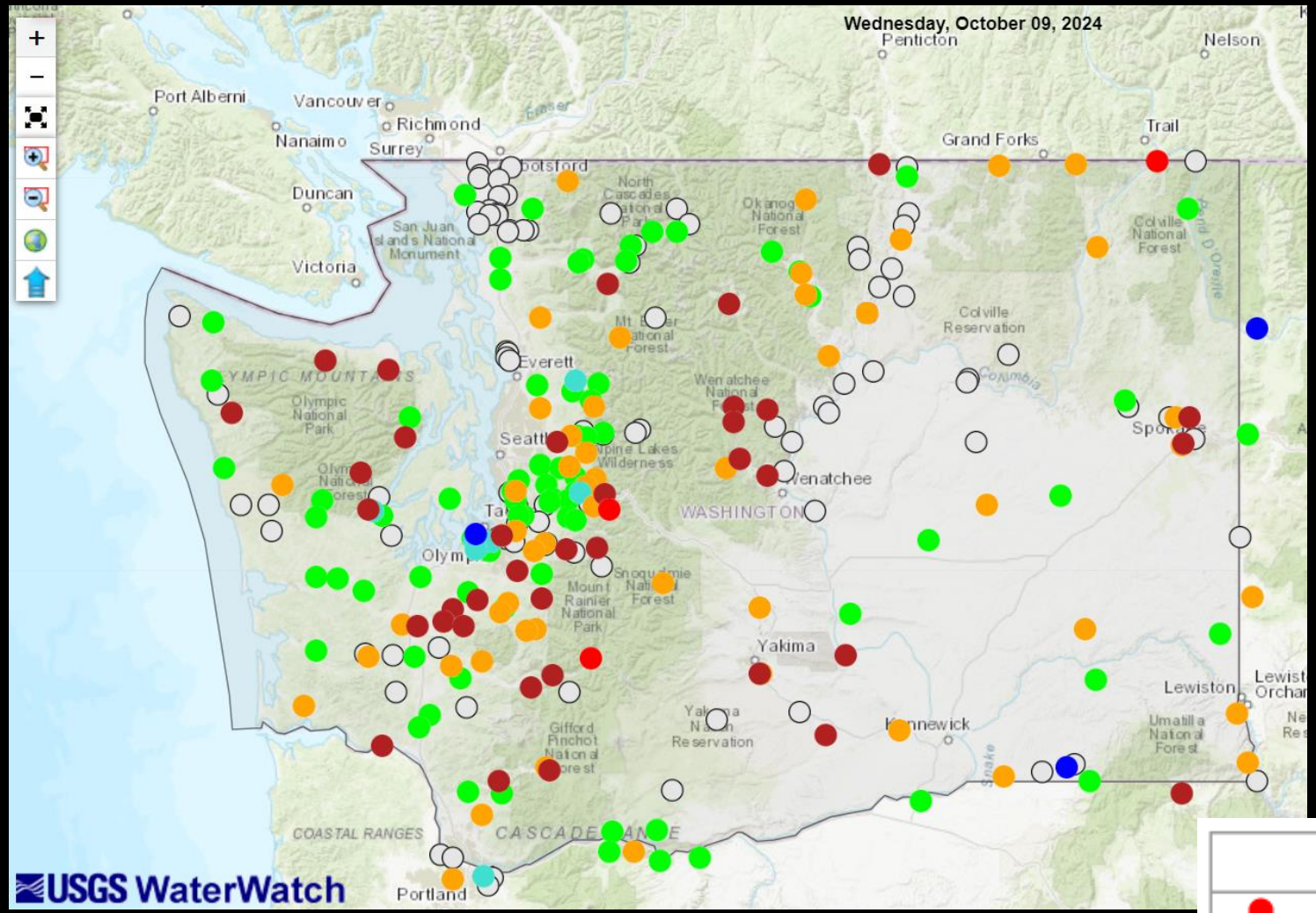
Streamflow & Groundwater Conditions in Washington State as of 10 October 2024

Presented on 10 October 2024
to the Washington Water Supply Availability Committee

by Nicholas Sutfin, nsutfin@usgs.gov
USGS Washington Water Science Center

7-day Average Streamflow

Conditions as of 10 October 2024



Preliminary Information- Subject to Revision. Not for Citation or Distribution.

WaterWatch is scheduled to be discontinued in 2026

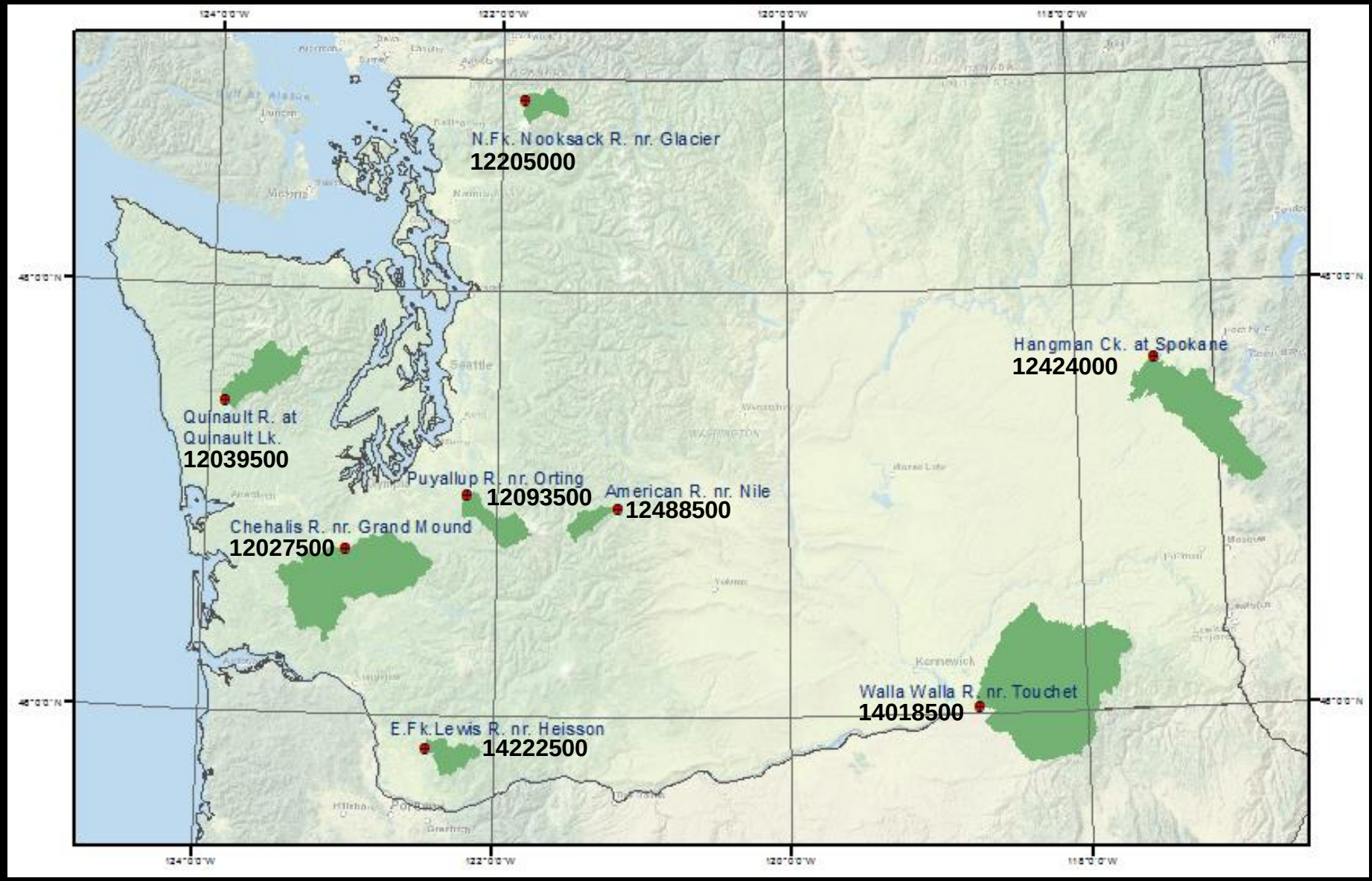
Explanation - Percentile classes							
Record Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	Record High	Not-ranked

https://dashboard.waterdata.usgs.gov/app/nwd/en/?aoi=state-wa

USGS
science for a changing world

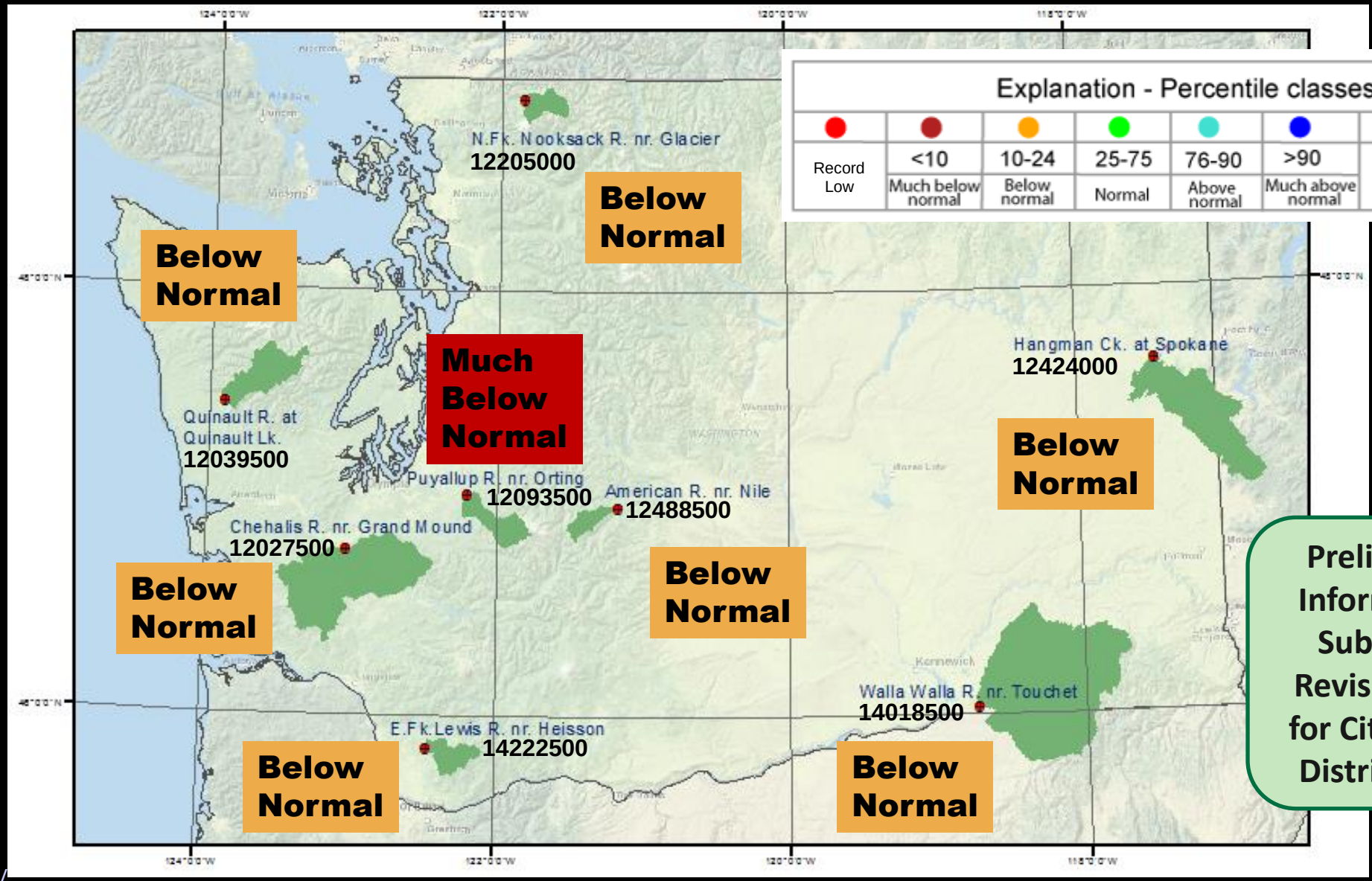
Index Gaging Stations

(Stations that measure natural or near-natural streamflow)



Index Gaging Stations

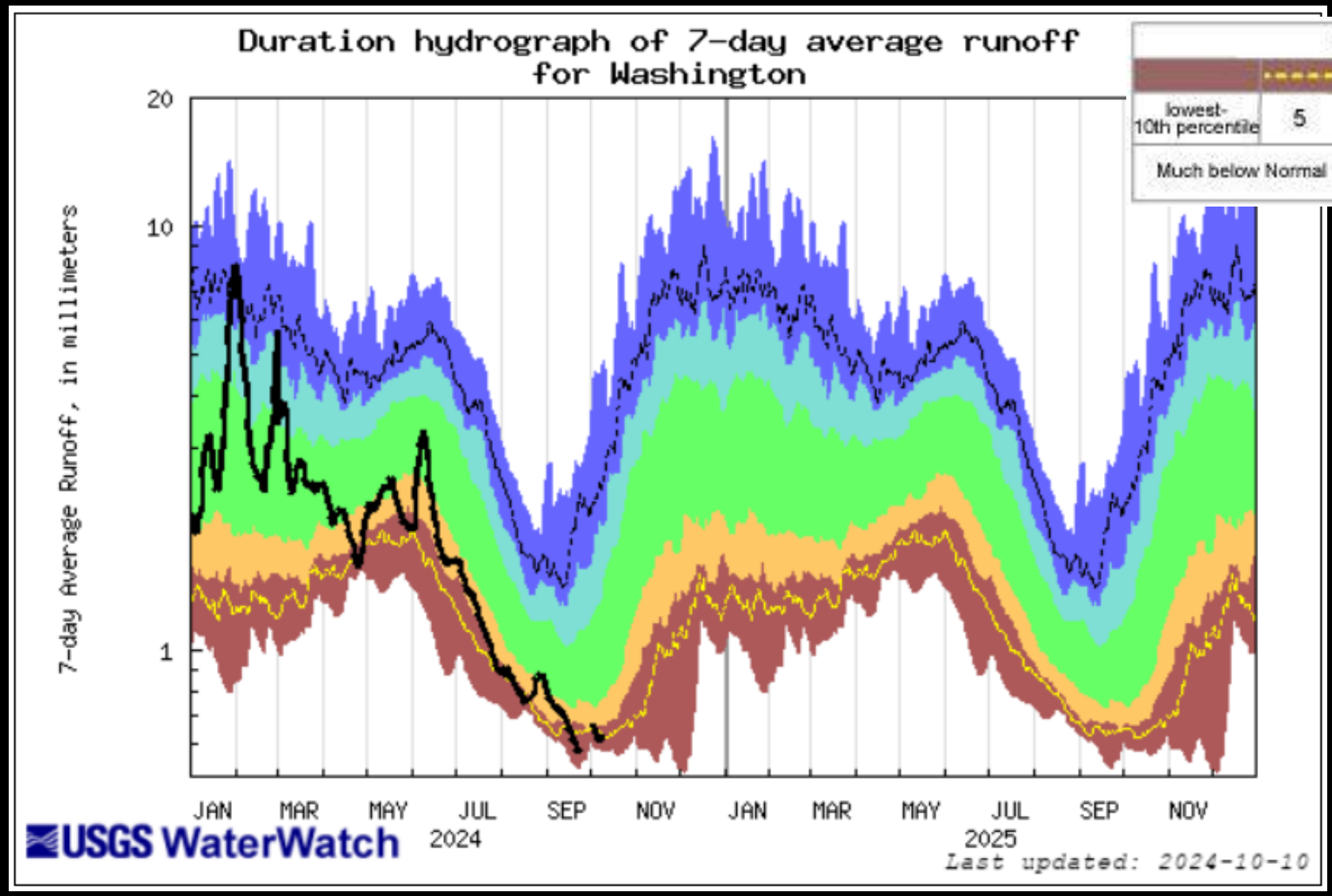
7-day average streamflow as of 10 October 2024

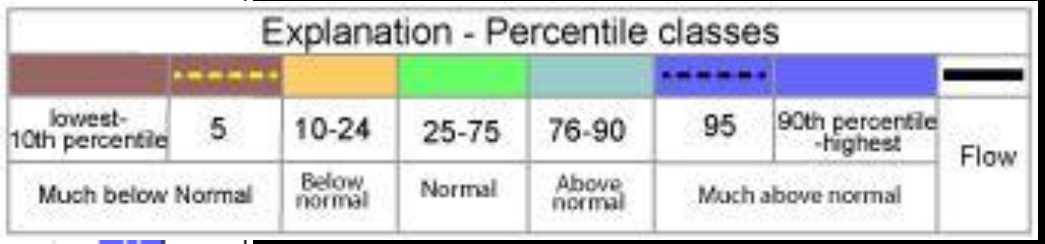


https://waterwatch.usgs.gov/

Area-Based Runoff Duration Hydrograph

7-day average streamflow as of 10 Oct. 2024 is ~much below normal





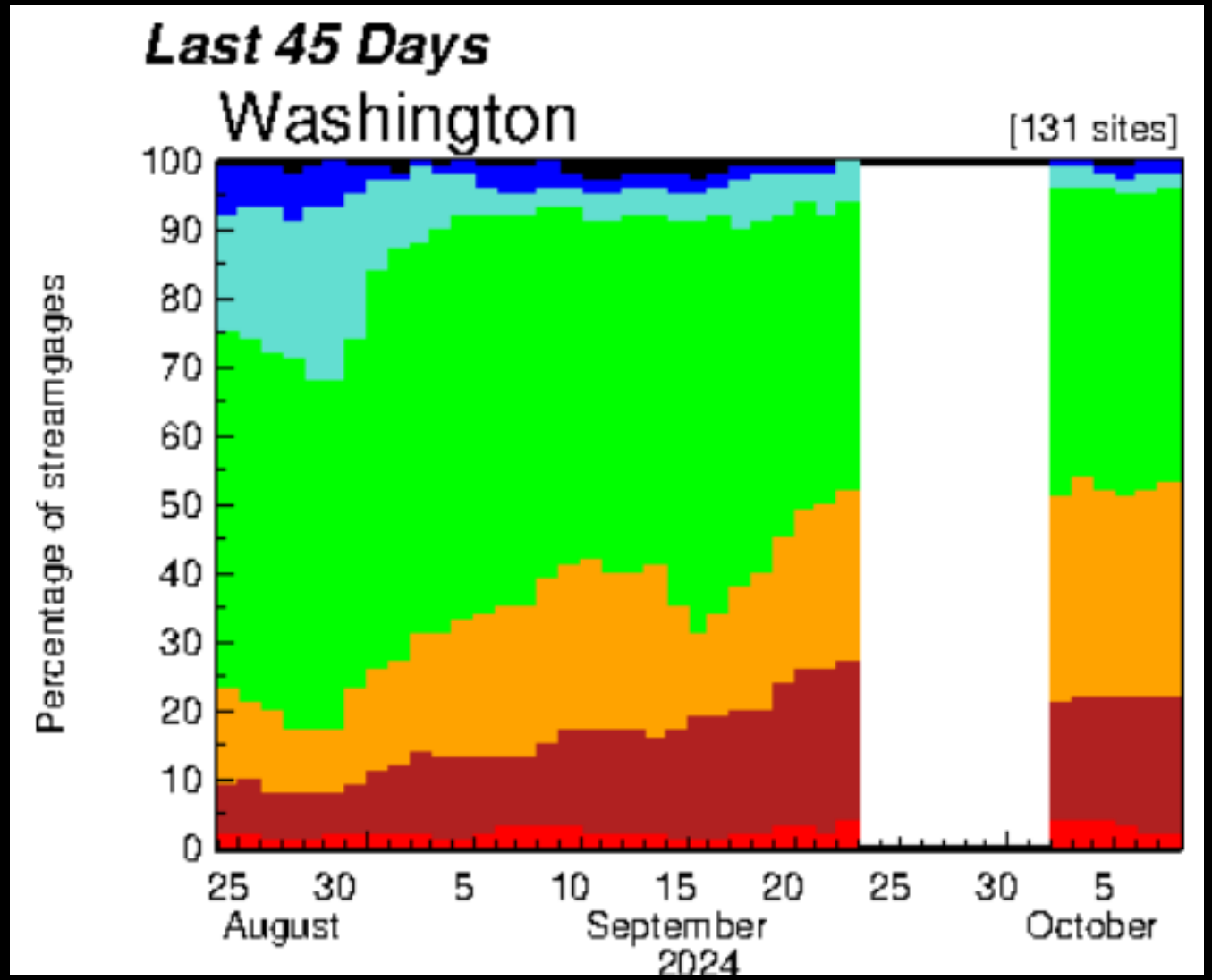
Preliminary Information-Subject to Revision. Not for Citation or Distribution.

For some streams, flow statistics may have been computed from mixed regulated and unregulated flows; this can affect depictions of flow conditions.

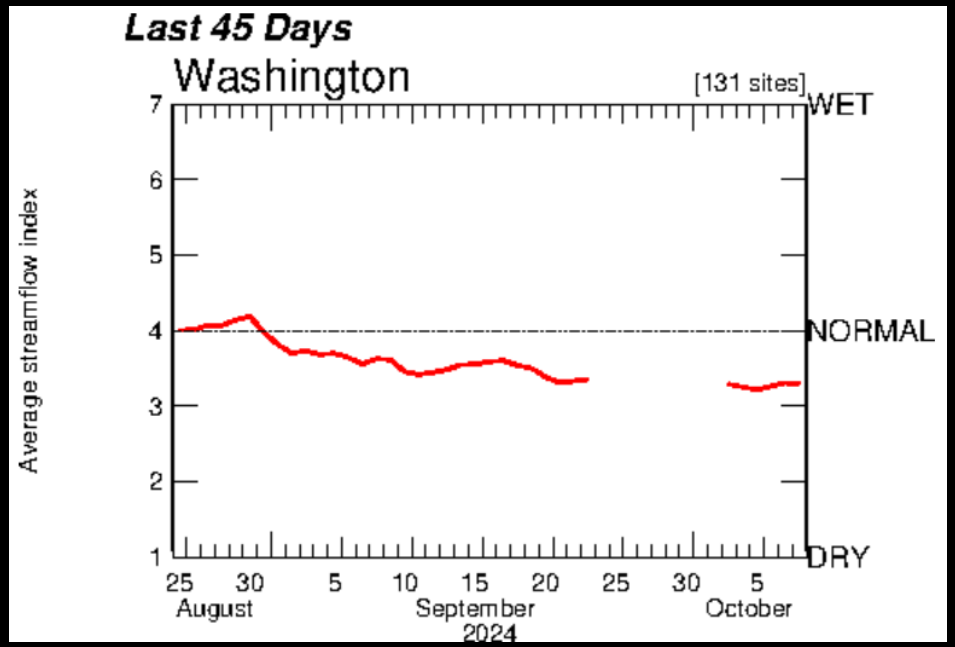
https://waterwatch.usgs.gov/

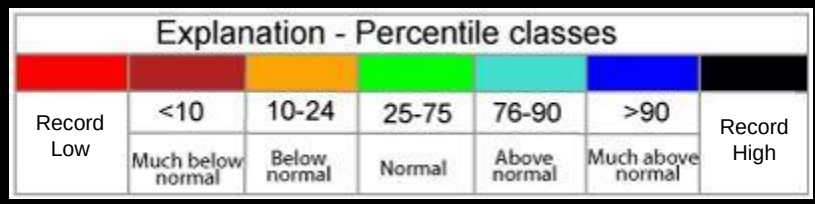
7-day average streamflow

Most USGS stream gages below normal as of 10 Oct. 2024



Preliminary Information-Subject to Revision.
Not for Citation or Distribution.



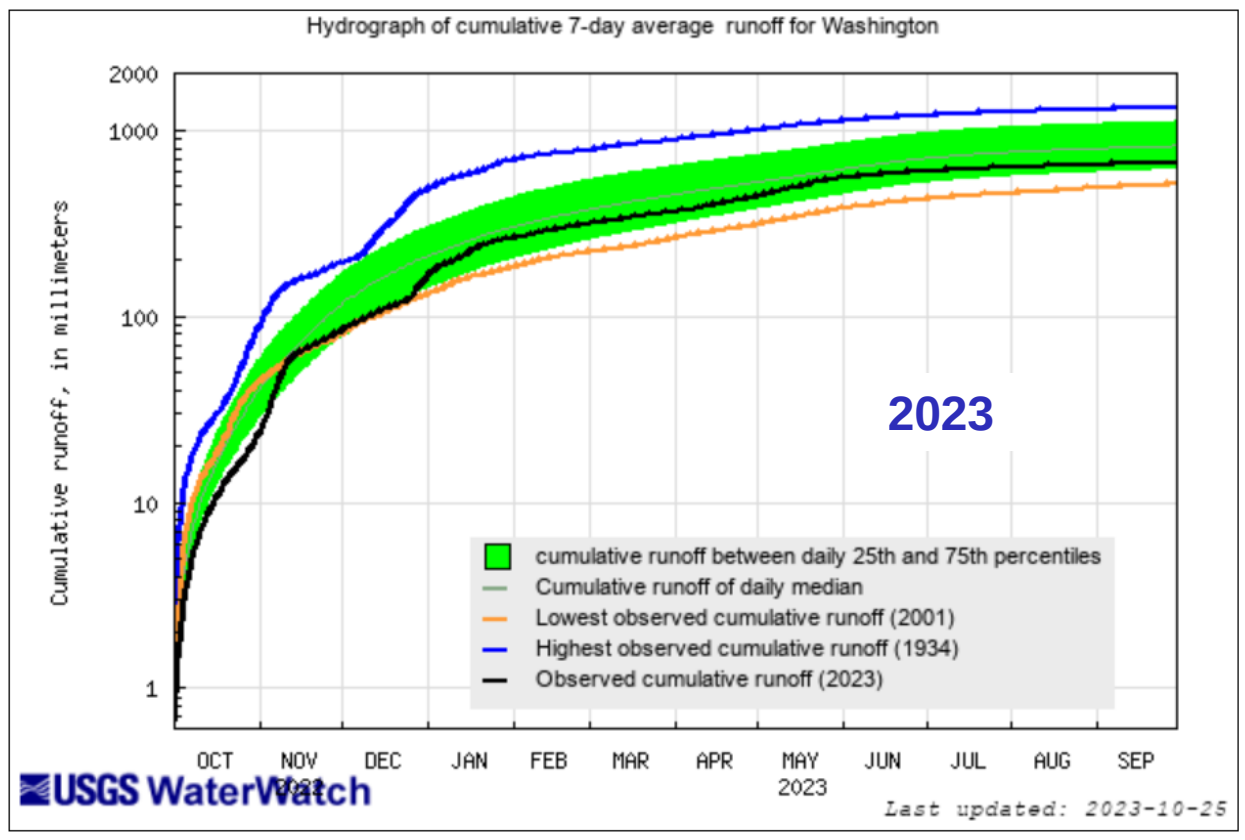


https://waterwatch.usgs.gov/

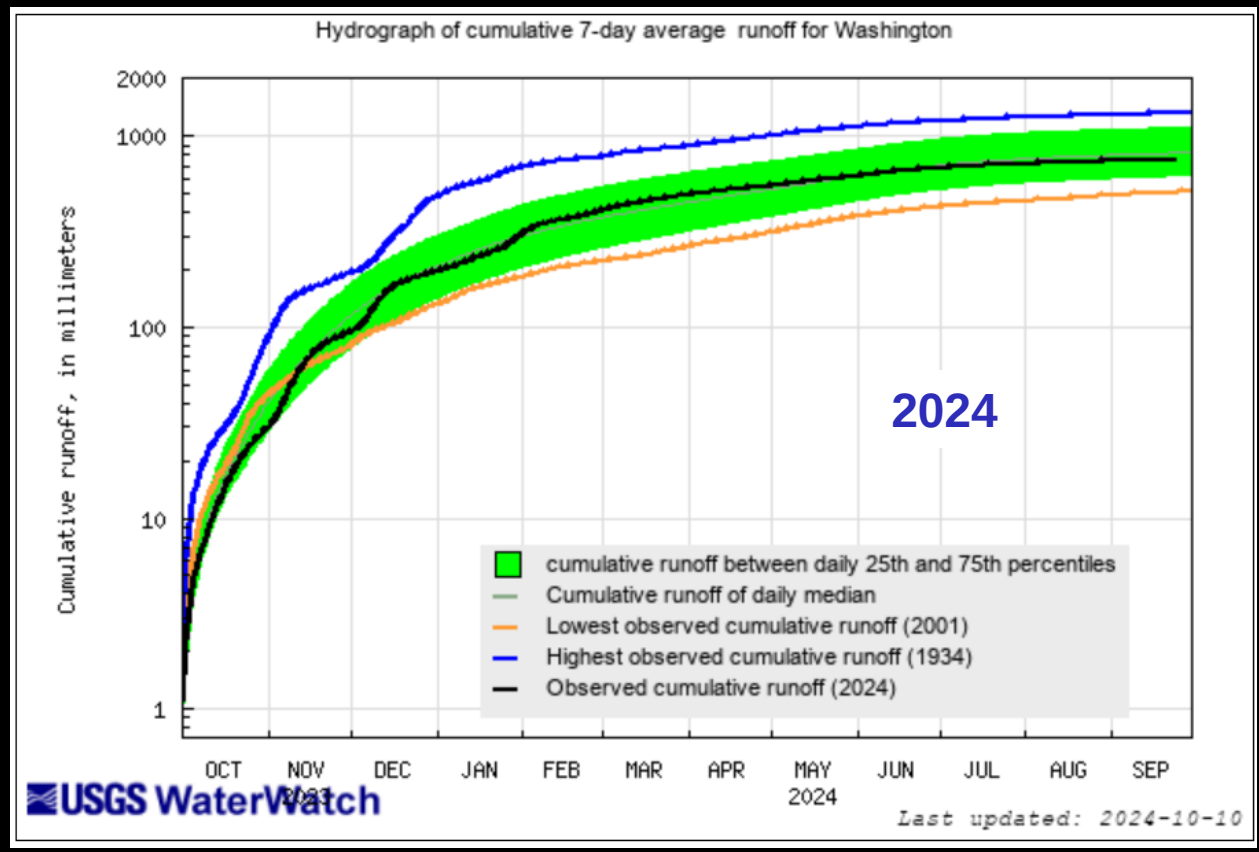
Cumulative runoff hydrograph

Area-based runoff based on 7-day average

Normal in 2024 as of 9 October



2023 water year



2024 water year

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

https://waterwatch.usgs.gov/

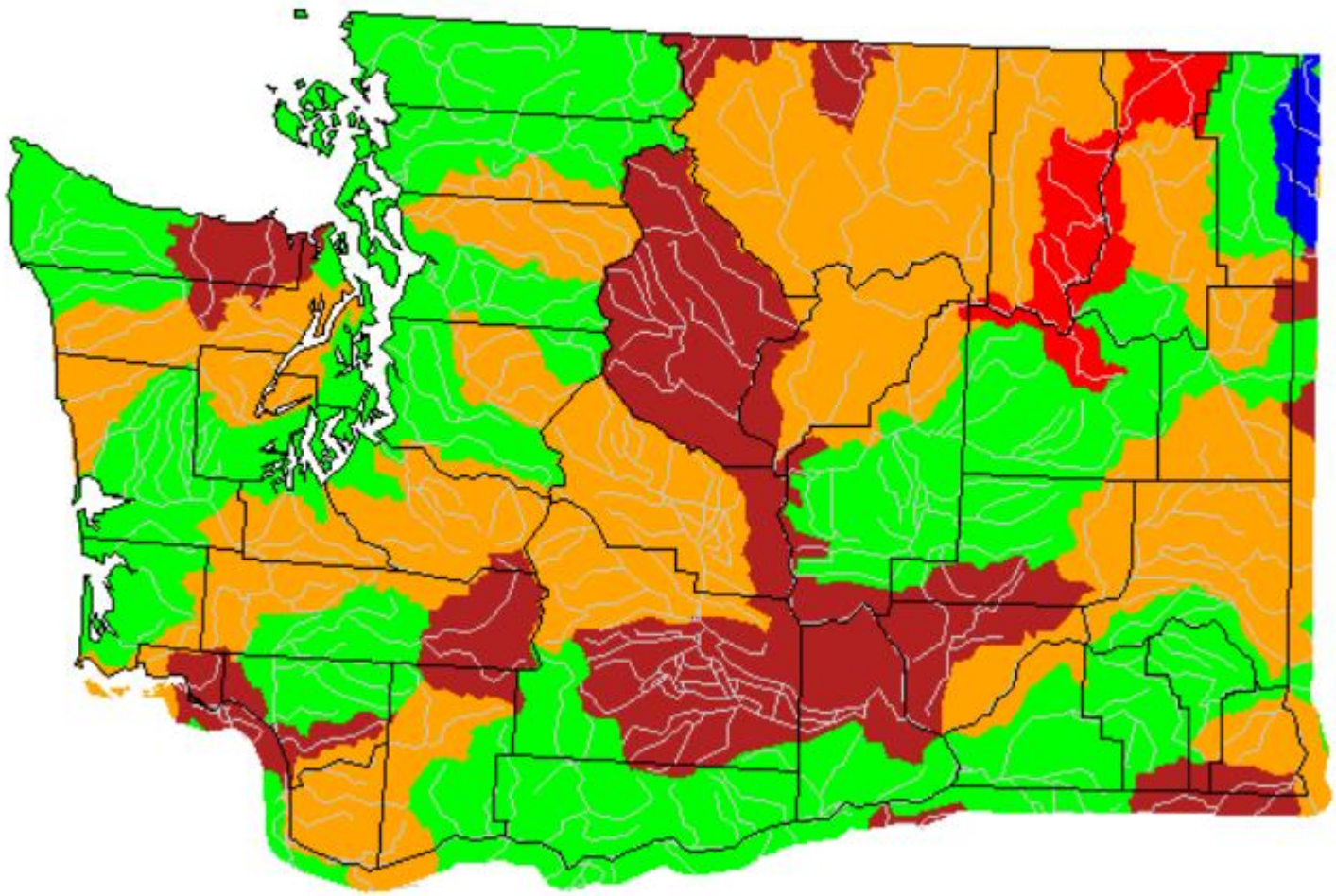
Preliminary Information-Subject to Revision.
Not for Citation or Distribution.

USGS
science for a changing world

Average streamflow

compared to historical streamflow

7-day average as of 9 Oct 2024



Explanation - Percentile classes						
Record Low	<10	10-24	25-75	76-90	>90	Record High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

Preliminary Information- Subject to Revision. Not for Citation or Distribution.

https://waterwatch.usgs.gov/

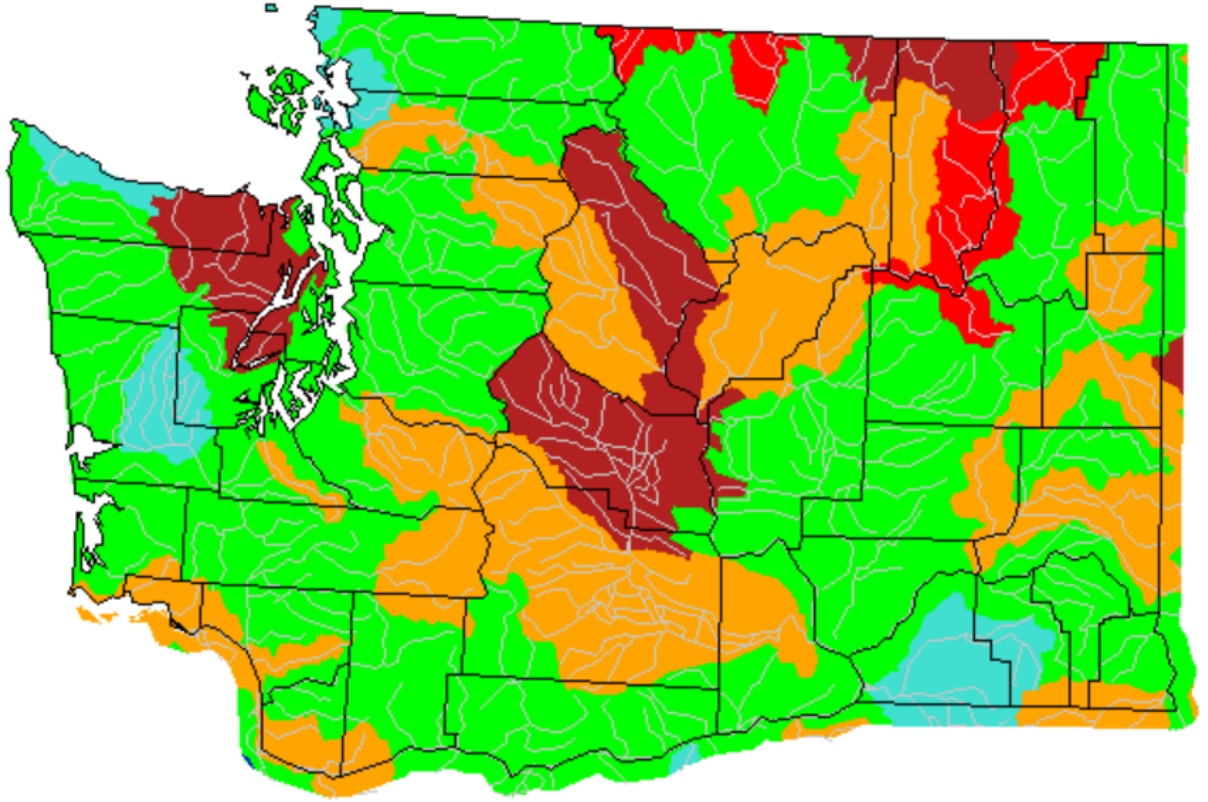
USGS
science for a changing world

Monthly average streamflow

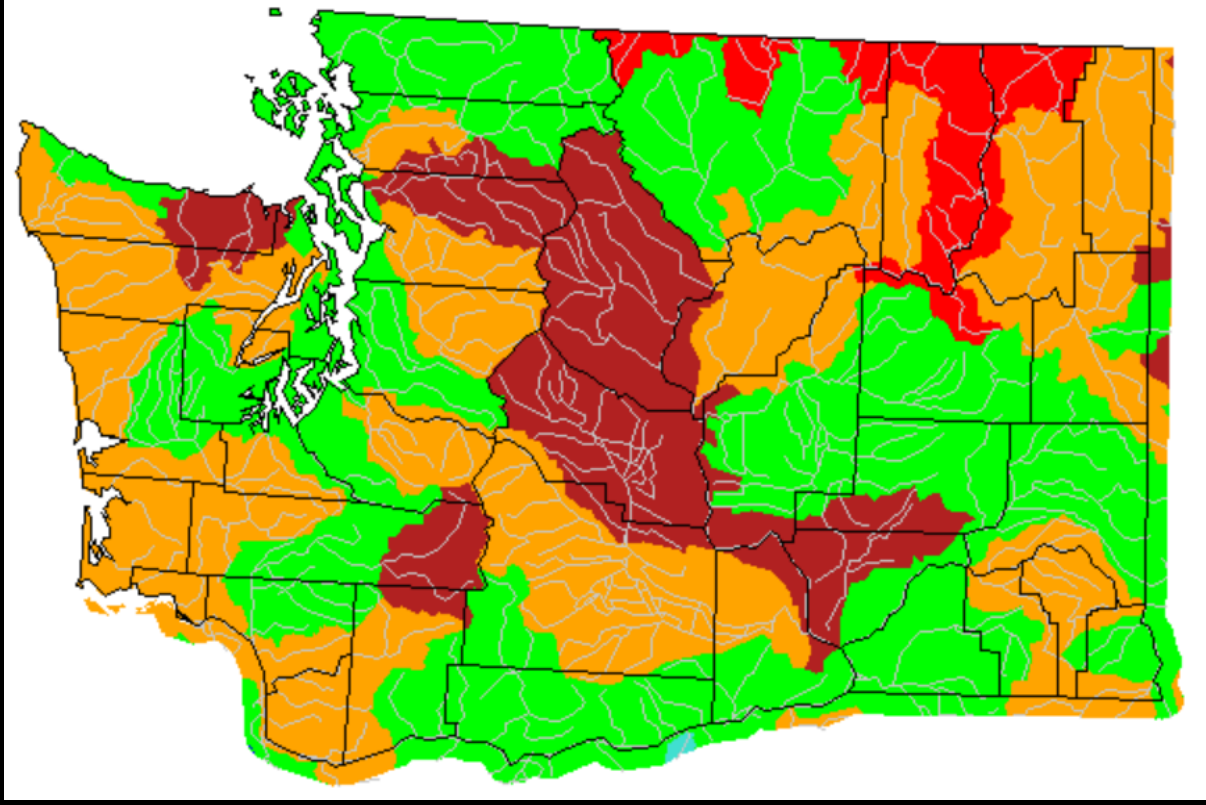
compared to historical streamflow

Explanation - Percentile classes						
Record Low	<10	10-24	25-75	76-90	>90	Record High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

August 2024



September 2024



Preliminary Information-Subject to Revision. Not for Citation or Distribution.

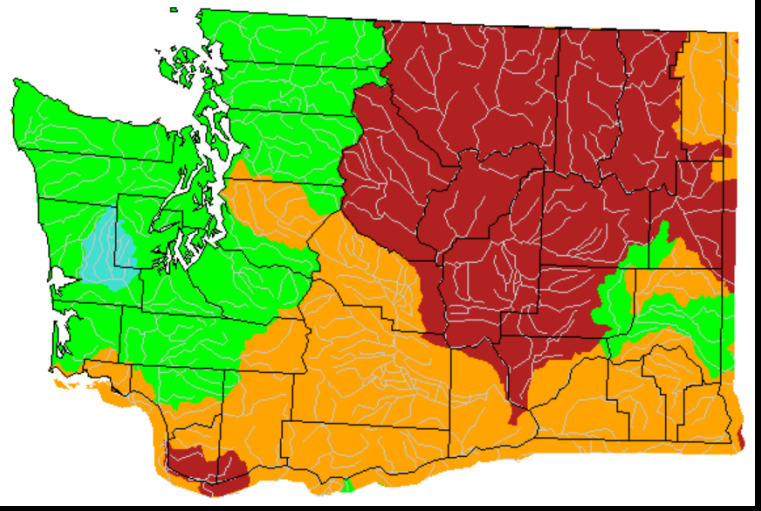
https://waterwatch.usgs.gov/

September monthly average streamflow

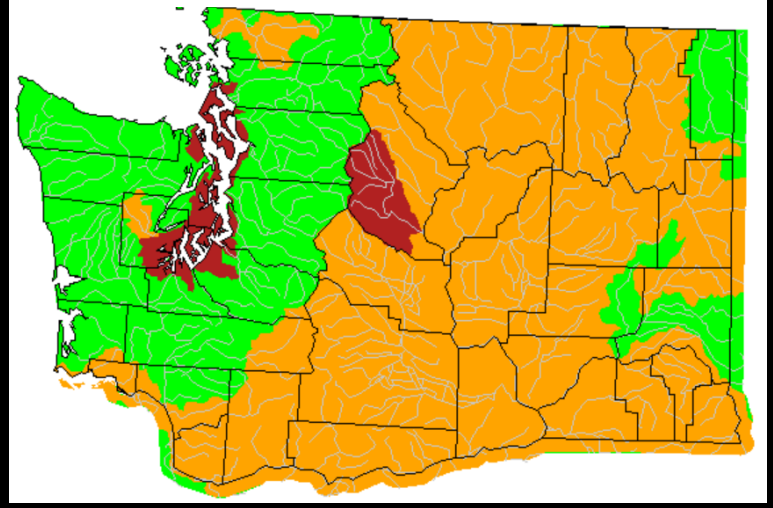
compared to historical streamflow

USGS science for a changing world

September 2001



September 2005



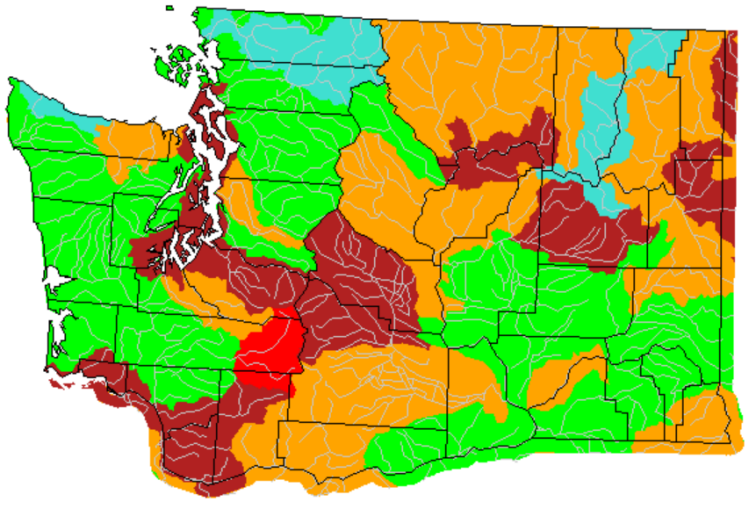
Explanation - Percentile classes

Record Low	<10	10-24	25-75	76-90	>90	Record High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

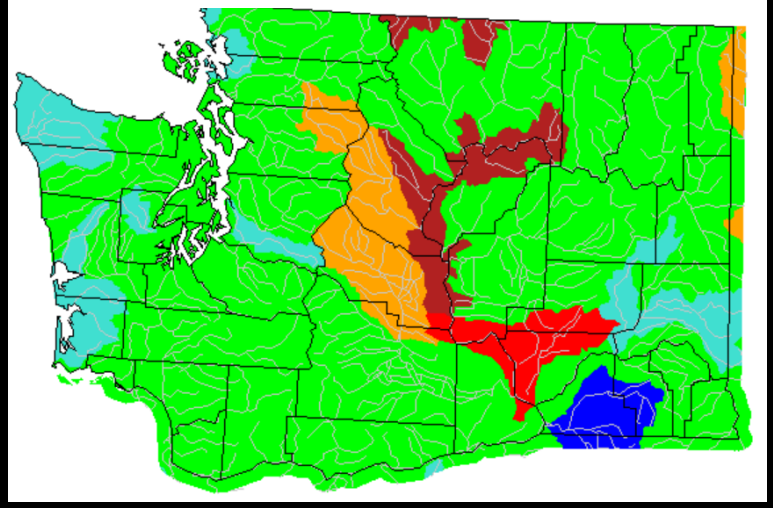
https://waterwatch.usgs.gov/

Preliminary Information- Subject to Revision. Not for Citation or Distribution.

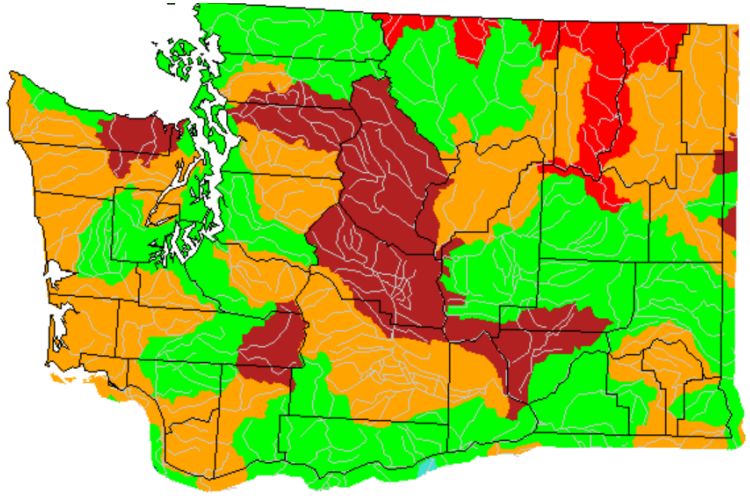
September 2015



September 2019



September 2024

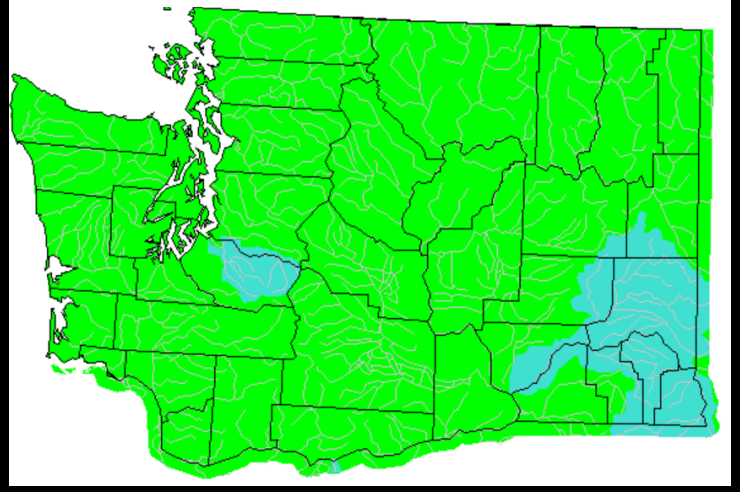


September monthly average streamflow

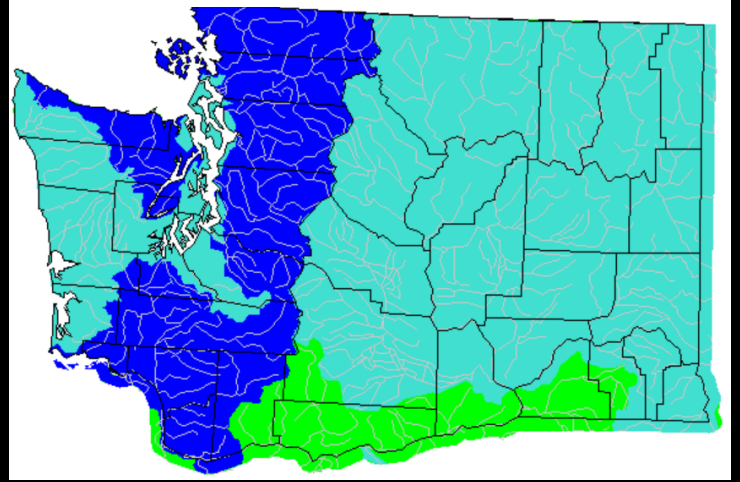
compared to historical streamflow

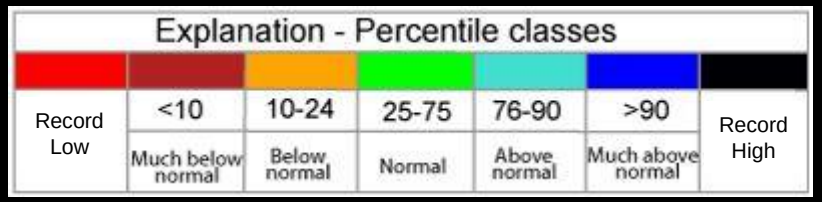
USGS science for a changing world

September 2000



September 2004

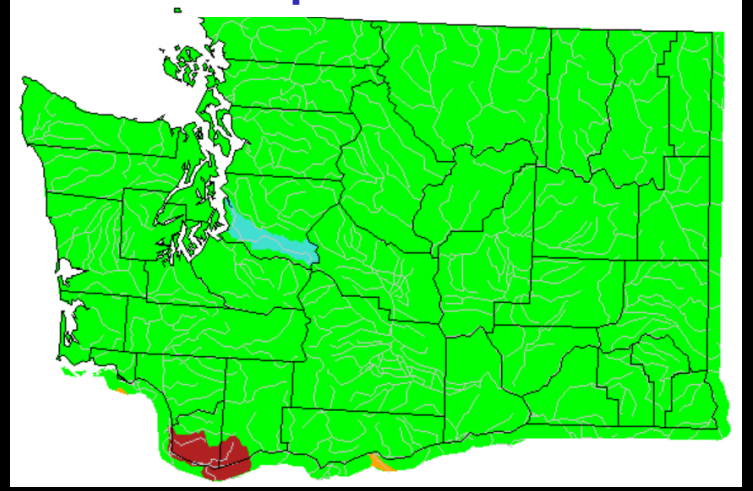




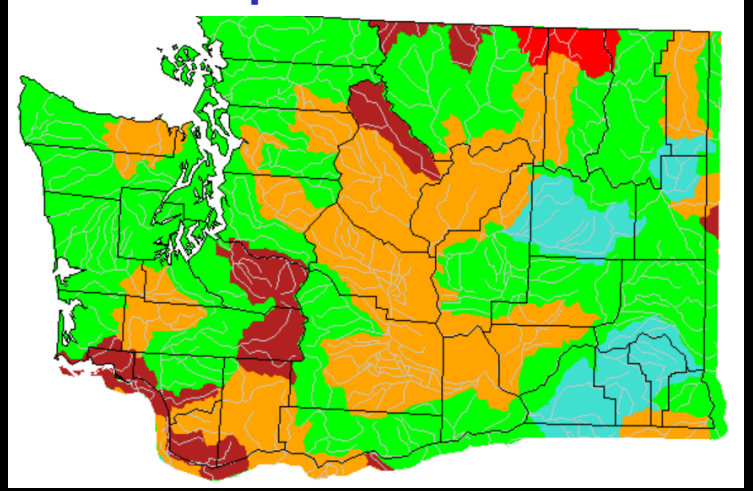
https://waterwatch.usgs.gov/

Preliminary Information- Subject to Revision. Not for Citation or Distribution.

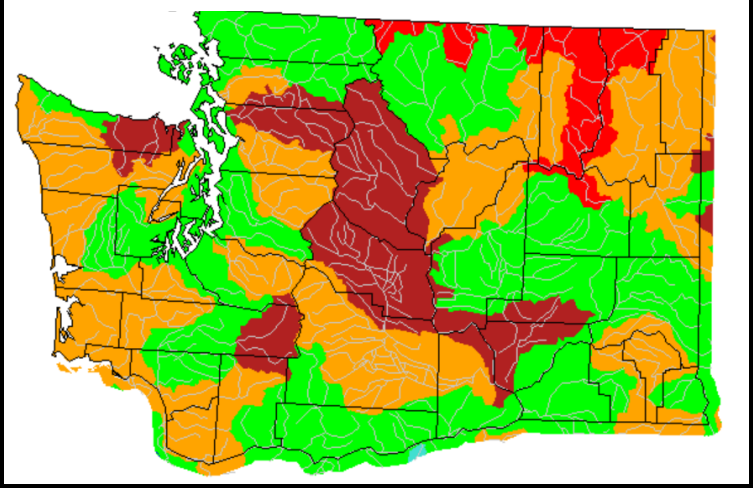
September 2014



September 2018



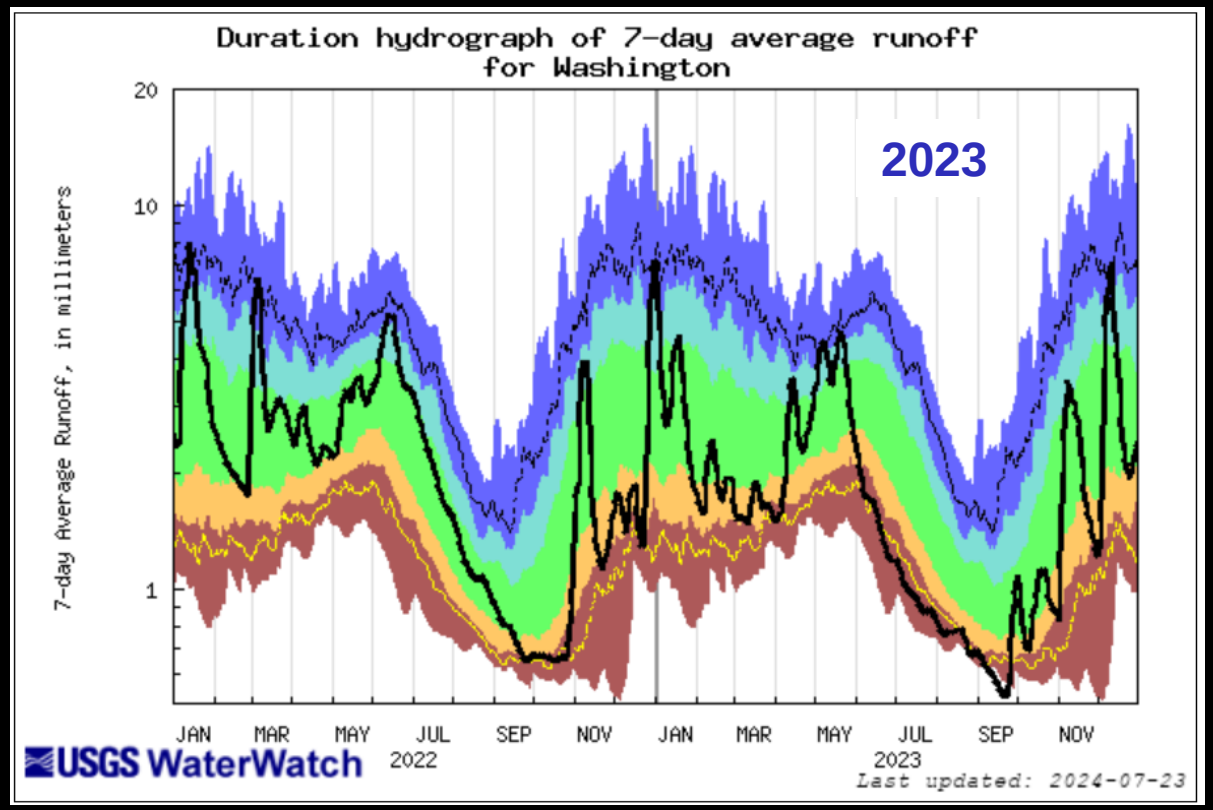
September 2024

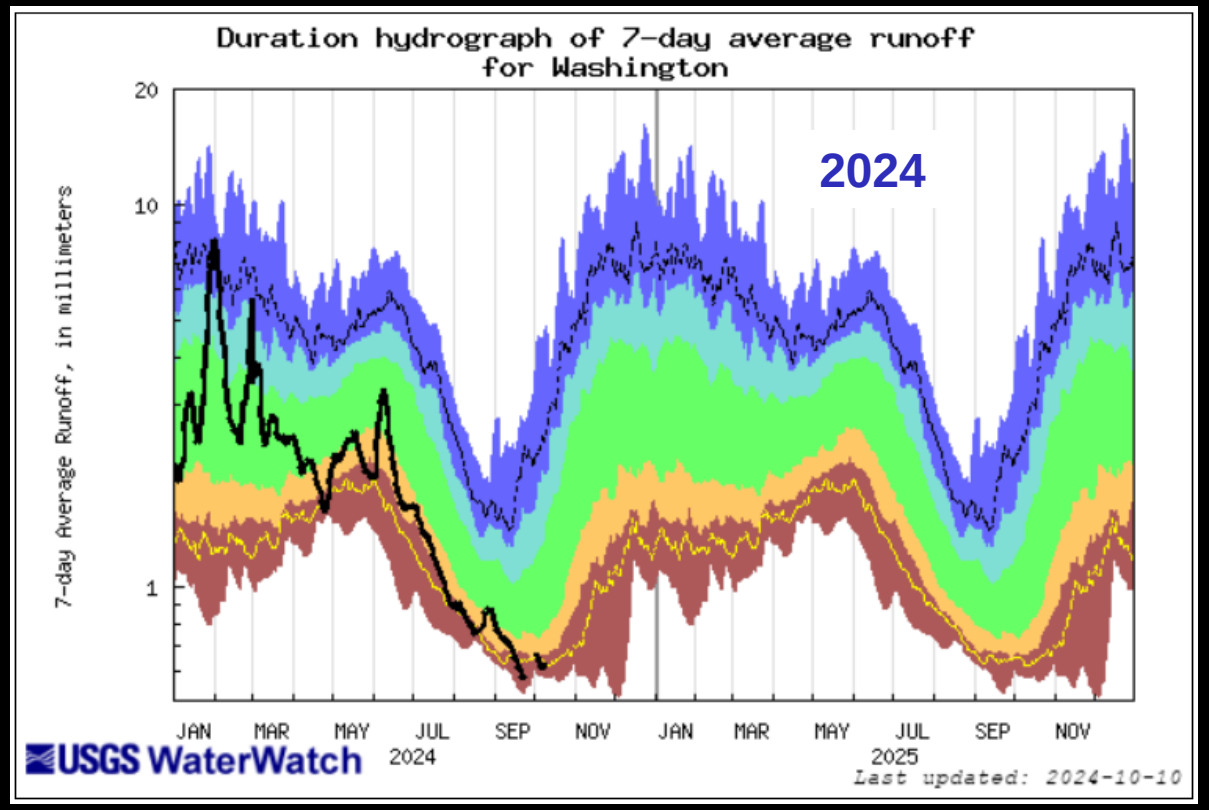


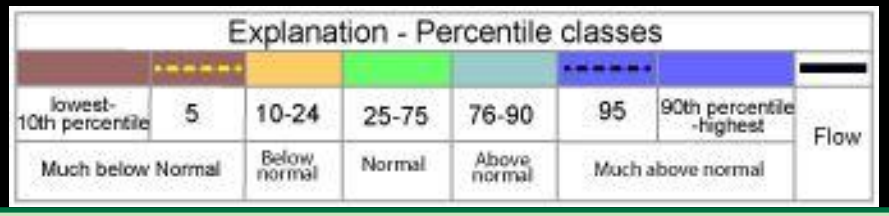
Area-Based Runoff Duration Hydrograph

7-day average streamflow

Duration hydrograph for the year compared to recent years of drought





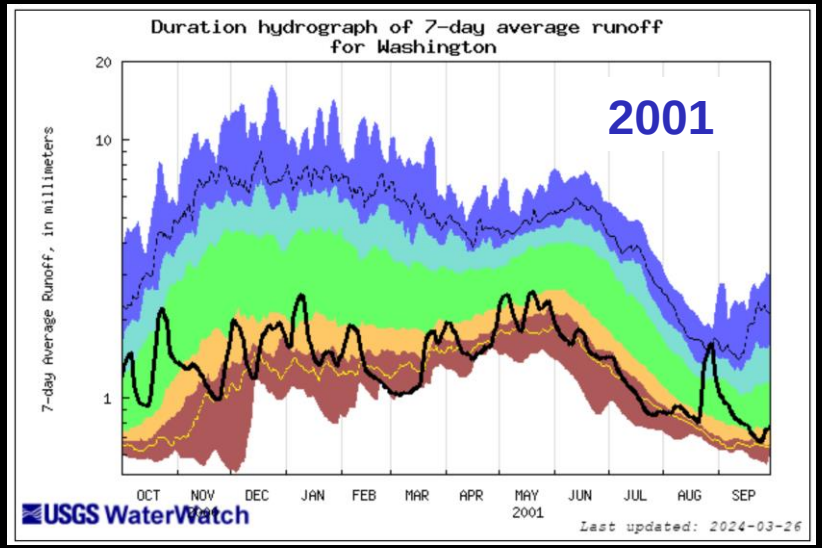


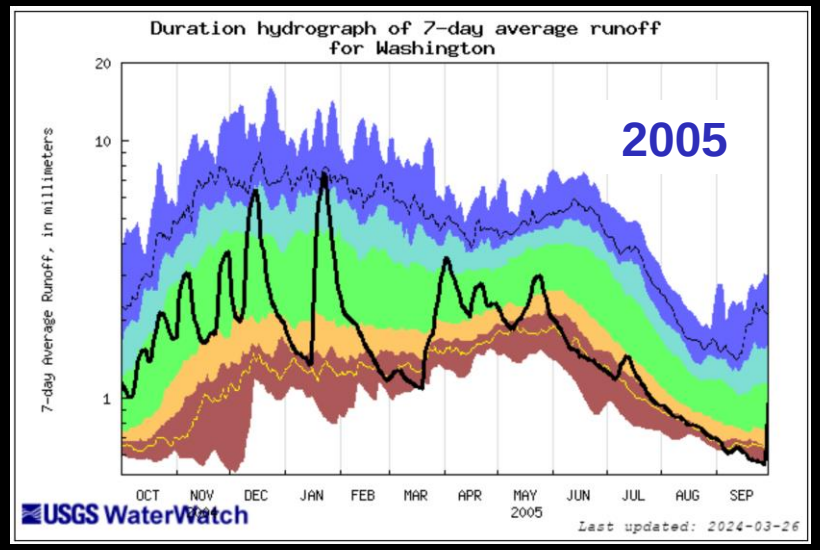
Preliminary Information-Subject to Revision. Not for Citation or Distribution.

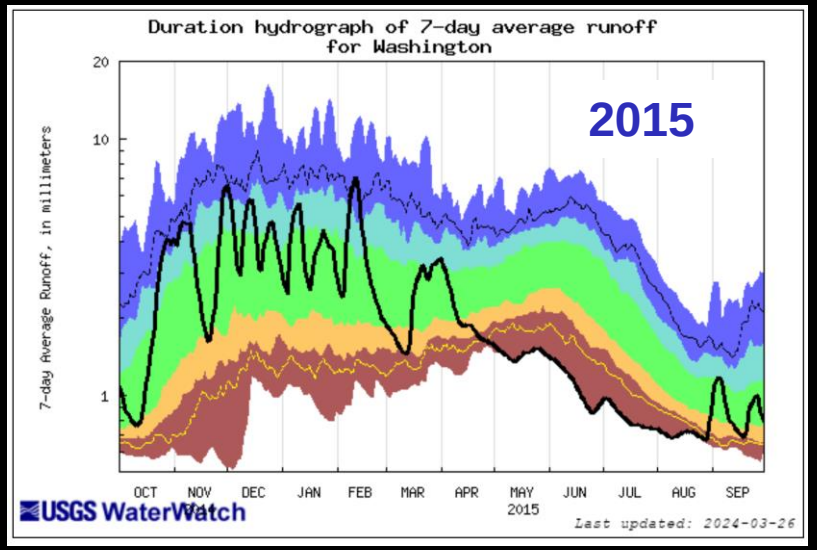
https://waterwatch.usgs.gov/

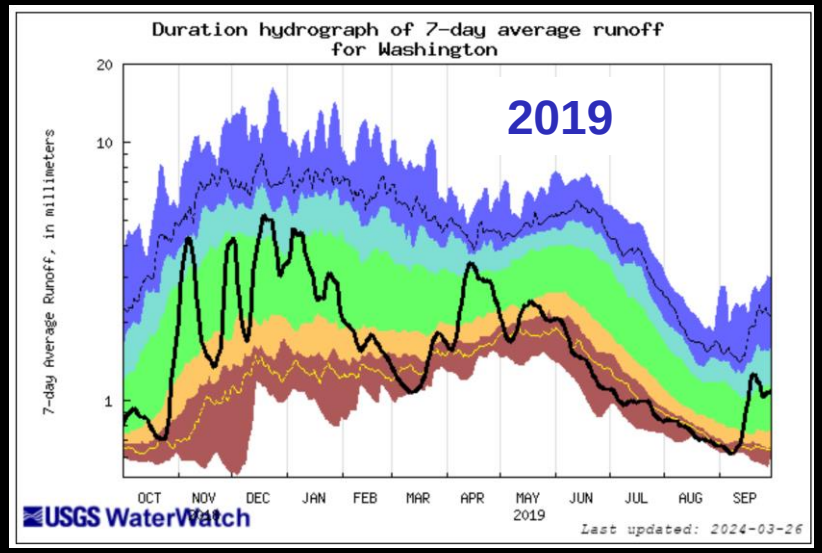
Area-Based Runoff Duration Hydrograph

7-day average streamflow

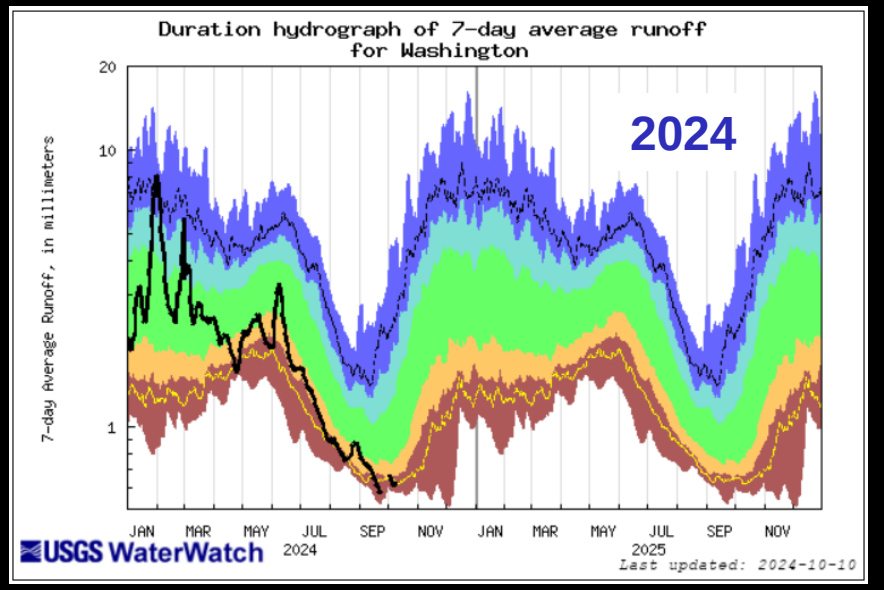


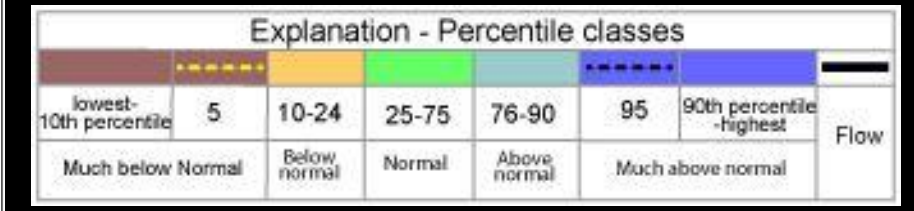






Duration hydrograph for the year compared to recent years of drought



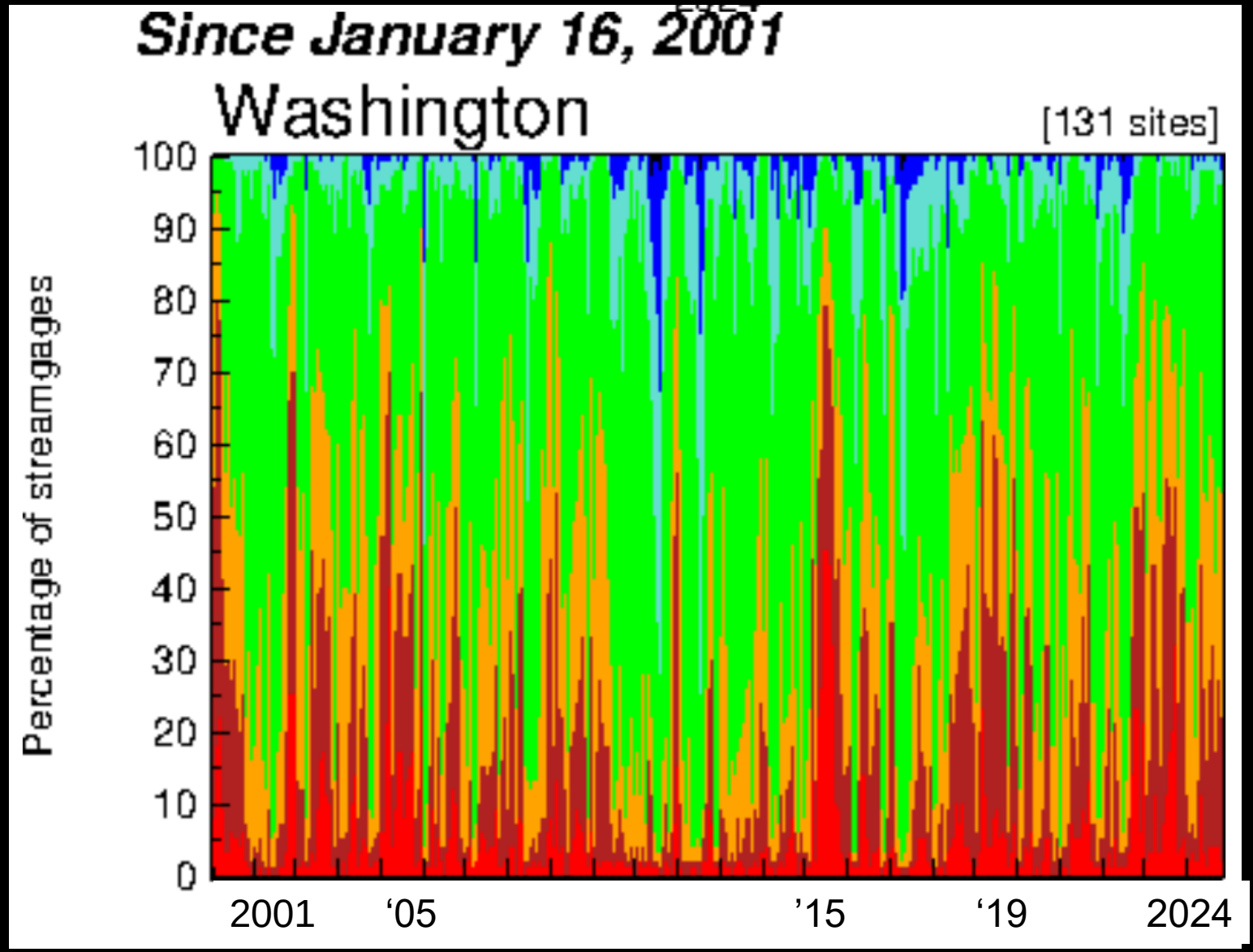


Preliminary Information-Subject to Revision. Not for Citation or Distribution.

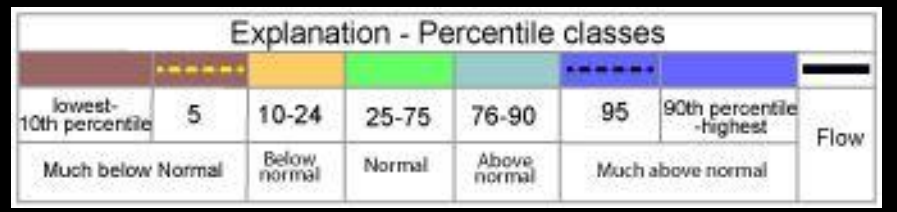
https://waterwatch.usgs.gov/

Area-Based Runoff Duration Hydrograph

7-day average streamflow



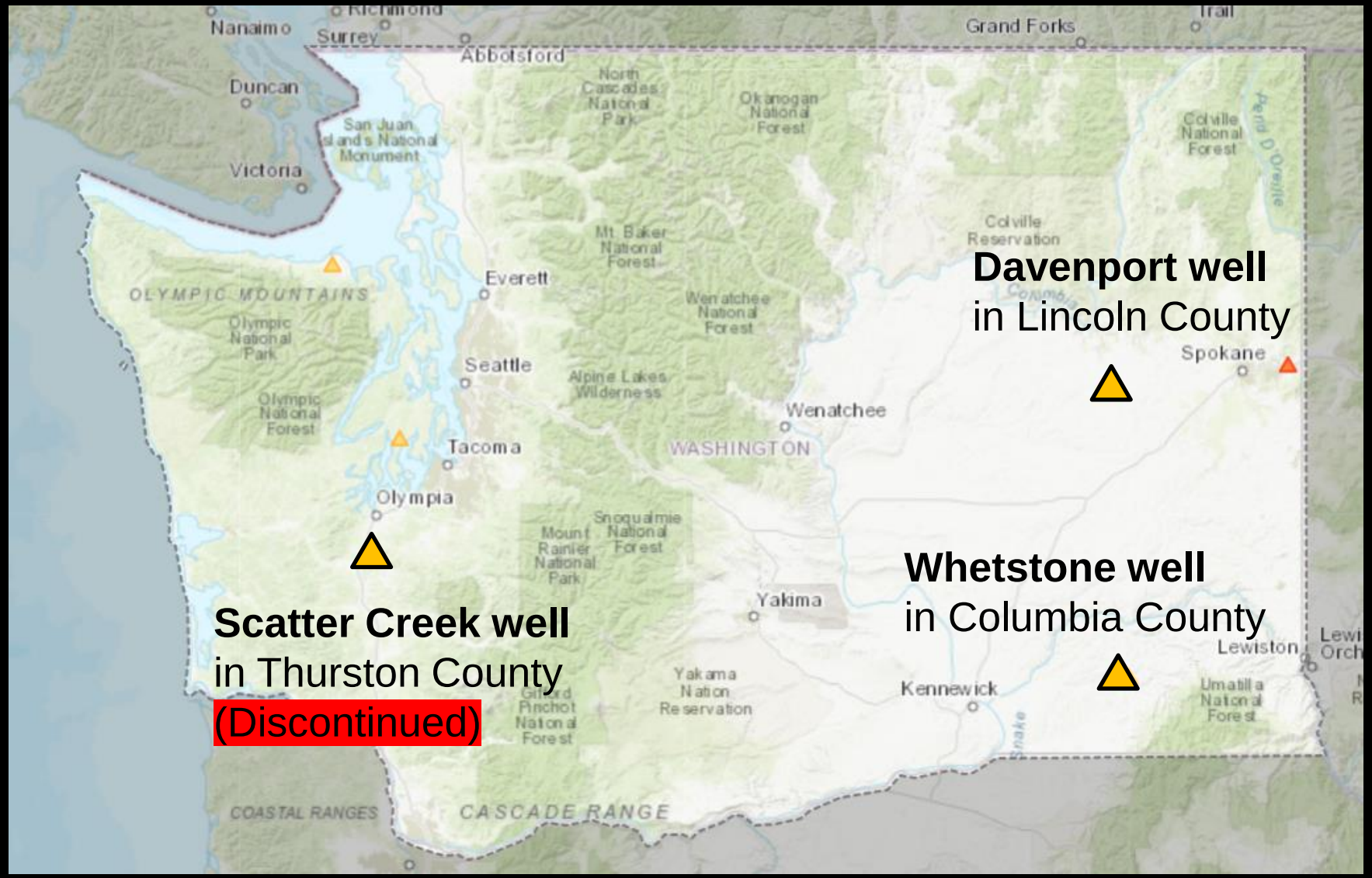
7-day average streamflow compared to historical conditions for 131 streamgages in Washington state.



Preliminary Information-Subject to Revision. Not for Citation or Distribution.

https://waterwatch.usgs.gov/

Two reference groundwater wells

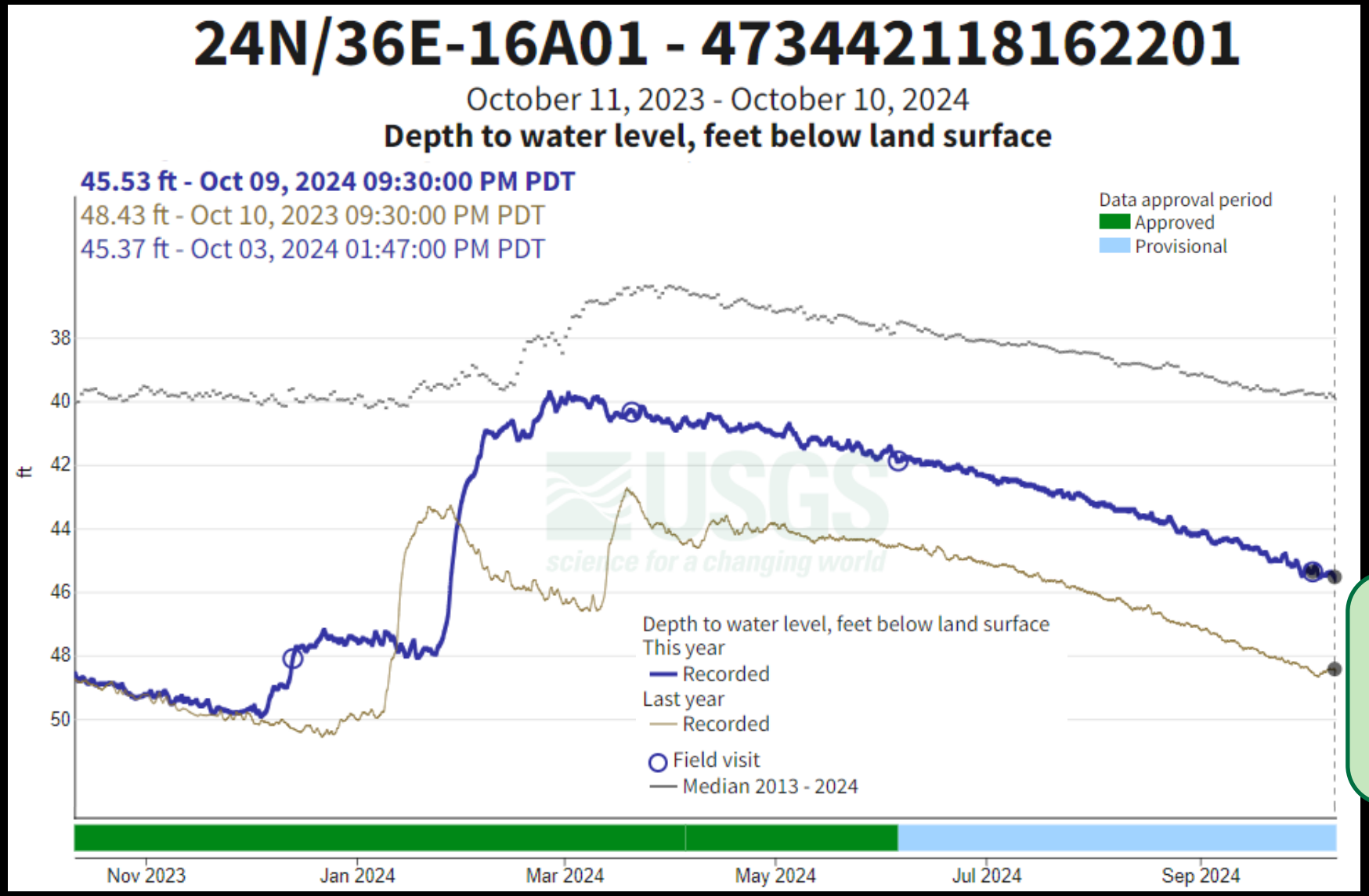


- All three groundwater Monitoring Network wells on the west side of the state are discontinued due to a lack of funding, including Scatter Creek well.
- Equipment has been removed or will be removed by Oct. 1.
- Three wells remain on the east side of the state.

Preliminary Information-Subject to Revision. Not for Citation or Distribution.

https://dashboard.waterdata.usgs.gov/app/nwd/en/?aoi=state-wa

Davenport Well Groundwater Conditions



Davenport well

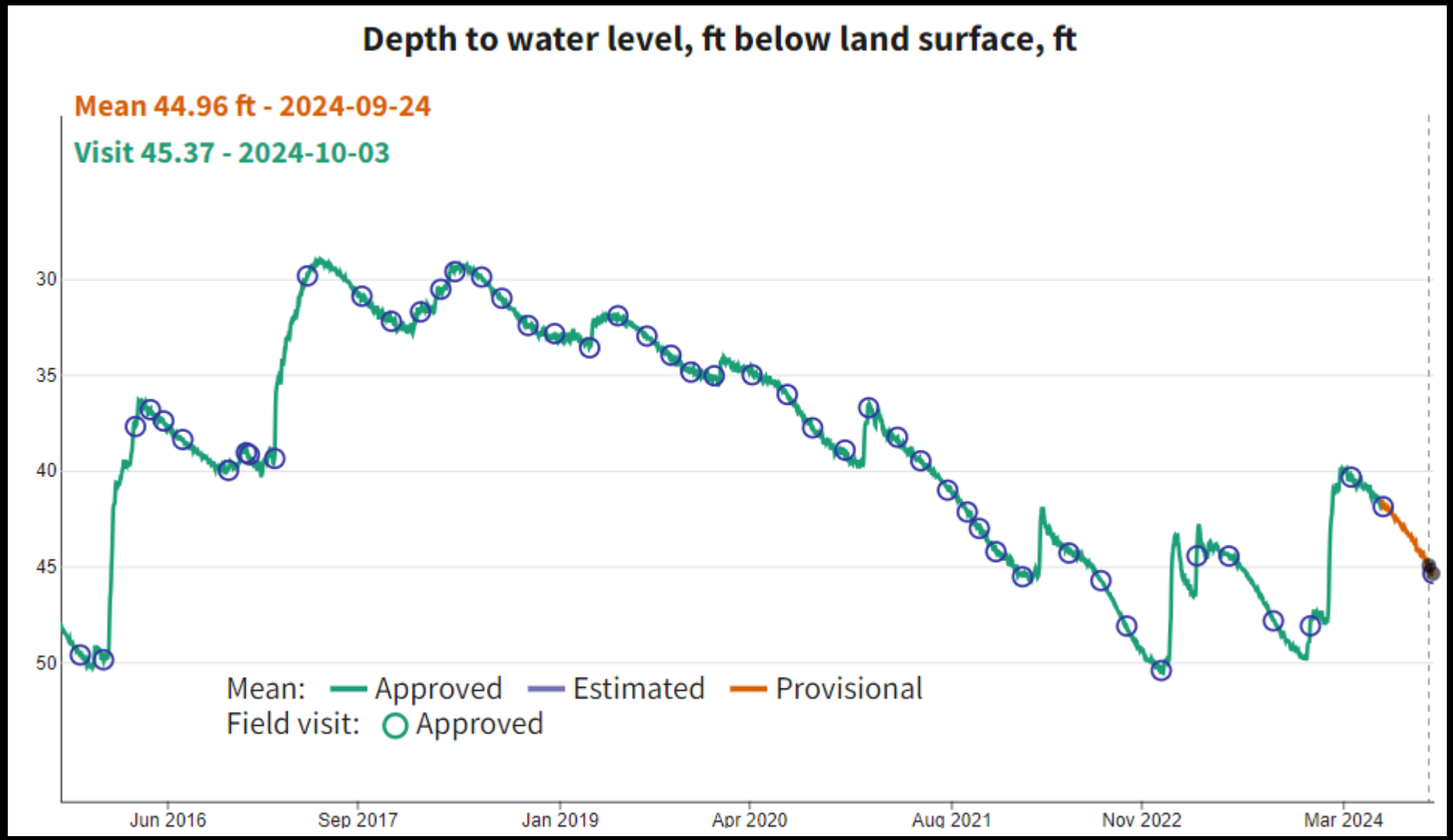
Well Details

- Lincoln County
- 117-ft deep
- Wanapum Basalt

Preliminary Information-Subject to Revision. Not for Citation or Distribution.

Davenport Well Groundwater Conditions

Well ID: 24N/36E-16A01 - 473442118162201



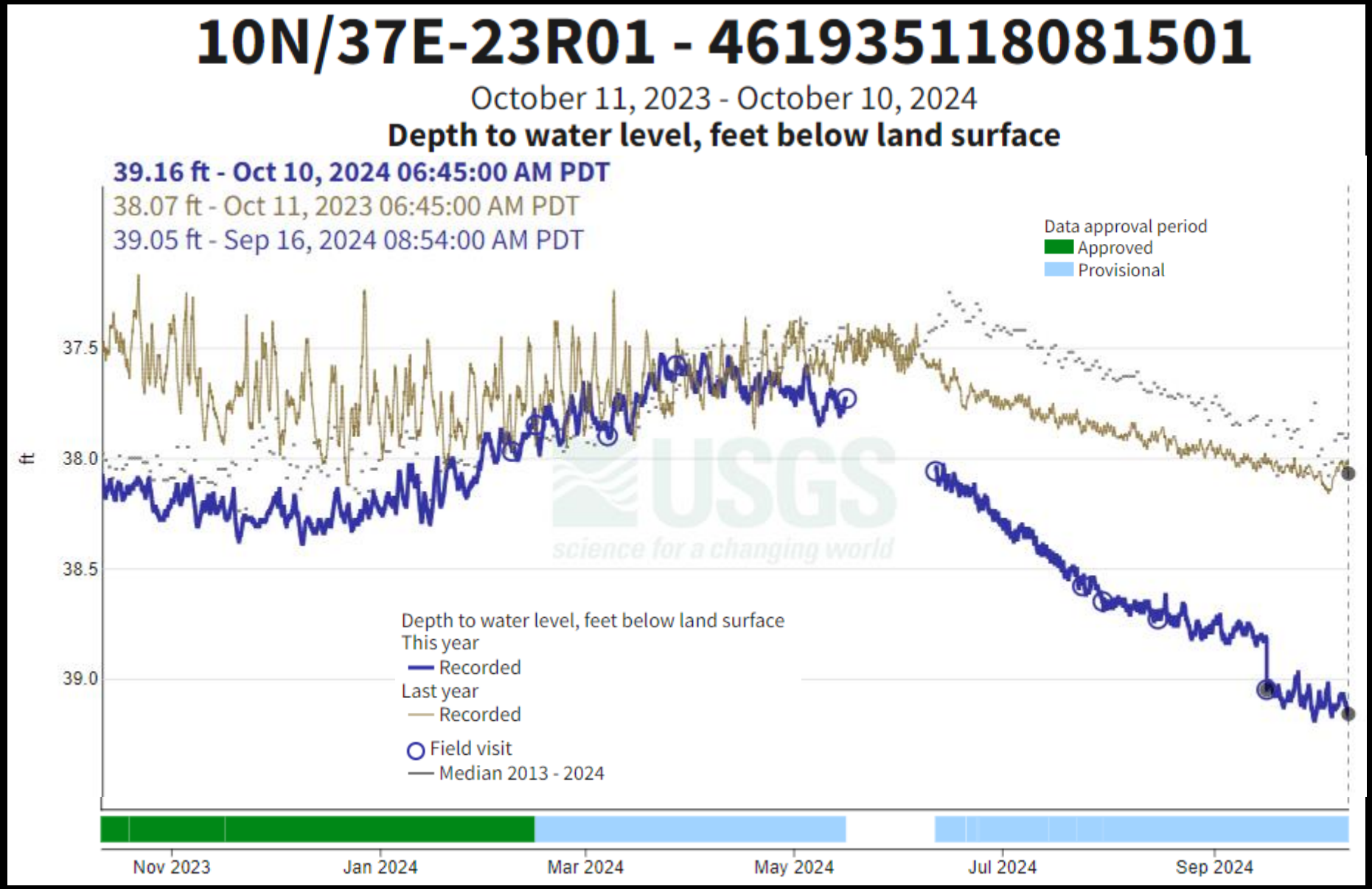
https://dashboard.waterdata.usgs.gov/app/nwd/en/?aoi=state-wa

Well Details

- Lincoln County
- 117-ft deep
- Wanapum Basalt

Preliminary Information- Subject to Revision. Not for Citation or Distribution.

Whetstone Well Groundwater Conditions



Whetstone well

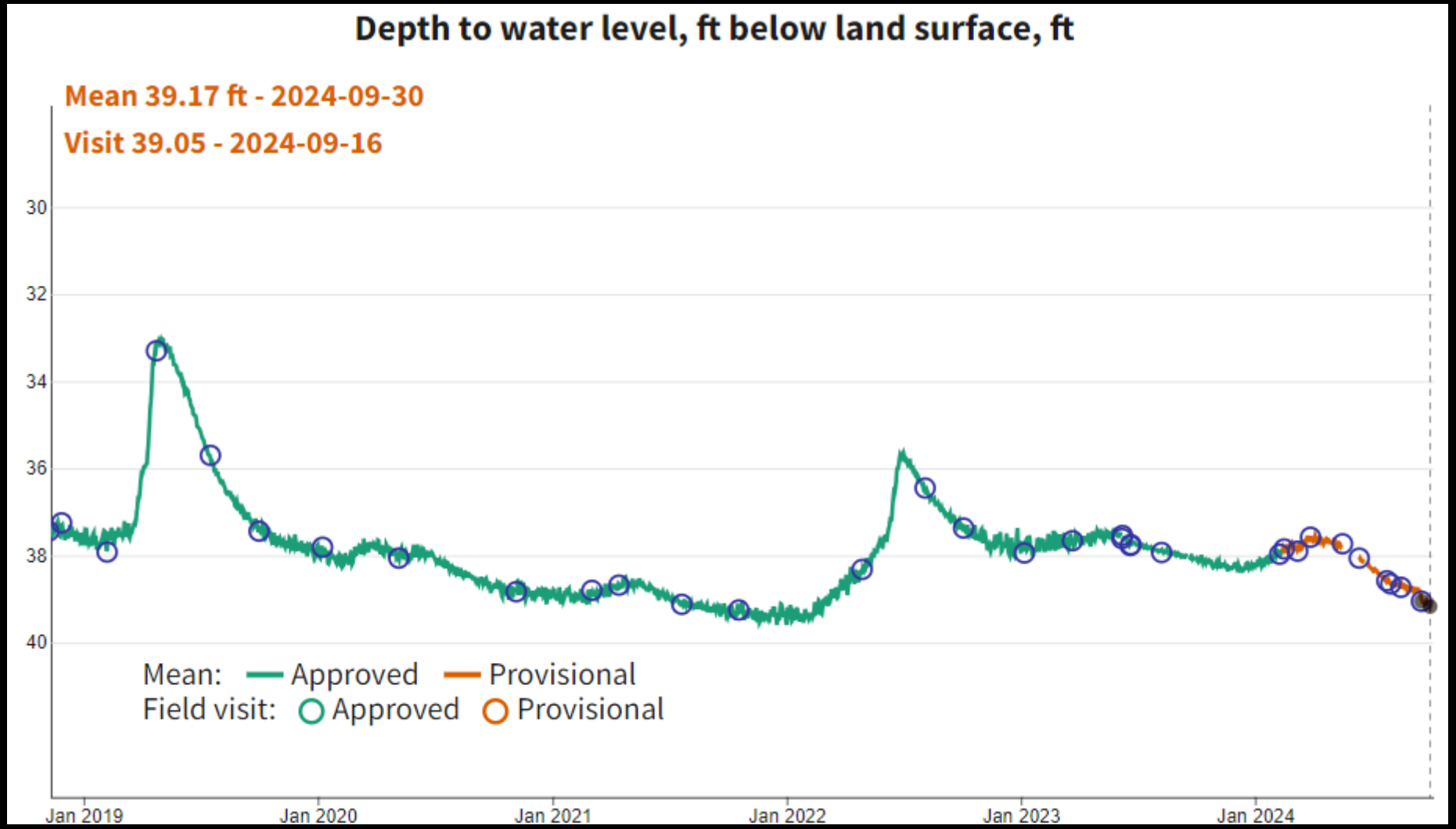
Well Details:

- Columbia County near Waitsburg
- 172.5-ft deep
- Grande Ronde Basalt Formation

Preliminary Information-Subject to Revision. Not for Citation or Distribution.

Whetstone Well Groundwater Conditions

Well ID: 10N/37E-23R01 - 461935118081501



https://dashboard.waterdata.usgs.gov/app/nwd/en/?aoi=state-wa

Well Details:

- Columbia County near Waitsburg
- 172.5-ft deep
- Grande Ronde Basalt Formation

Preliminary Information- Subject to Revision. Not for Citation or Distribution.

Summary of Washington Streamflow and Groundwater Conditions as of 10 Oct. 2024

USGS science for a changing world

7-day average streamflow at eight index gaging stations:

Below Normal

- Quinault River
- Chehalis River nr. Grand Mound
- EF Lewis RiverNF Nooksack River
- Hangman Creek
- Walla Walla River
- American River

Much Below Normal

- Puyallup River nr. Orting

Cumulative Runoff Hydrograph

Much Below Normal

Monthly average groundwater conditions:

- Davenport well –
  - below median
  - above 2023
- Whetstone well
  - below median
  - below 2023

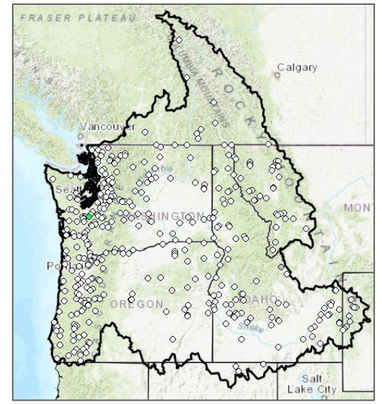
Preliminary Information- Subject to Revision. Not for Citation or Distribution.

NWS

October 2024 Washington Water Supply

Amy Burke, Sr Hydrologist - Northwest River Forecast Center
NWRFC.watersupply@noaa.gov

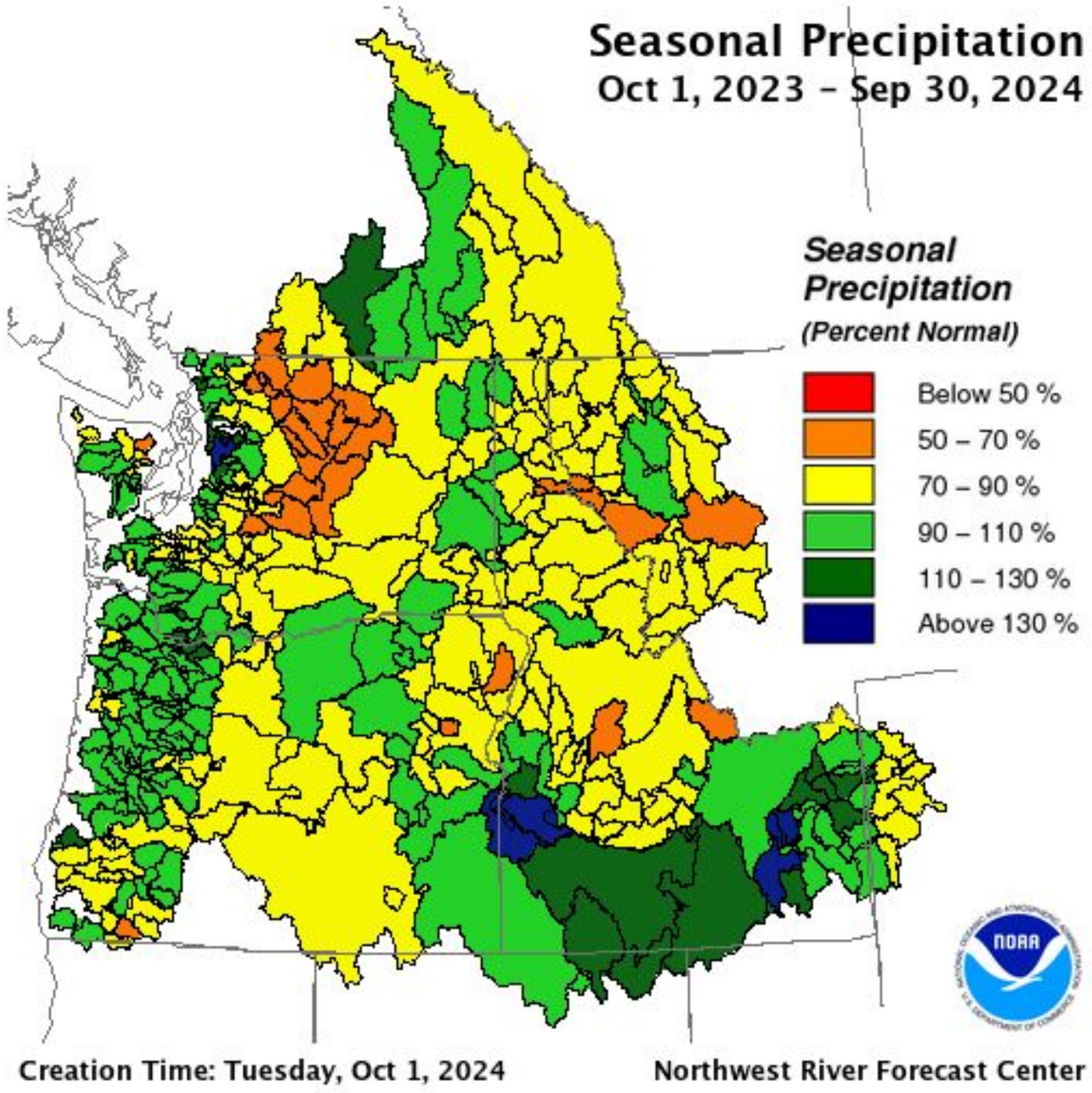
Brent Bower, Sr Service Hydrologist Seattle
Andy Bryant, Sr Service Hydrologist Portland
Robin Fox, Service Hydrologist Spokane
George Perry, Service Hydrologist Pendleton

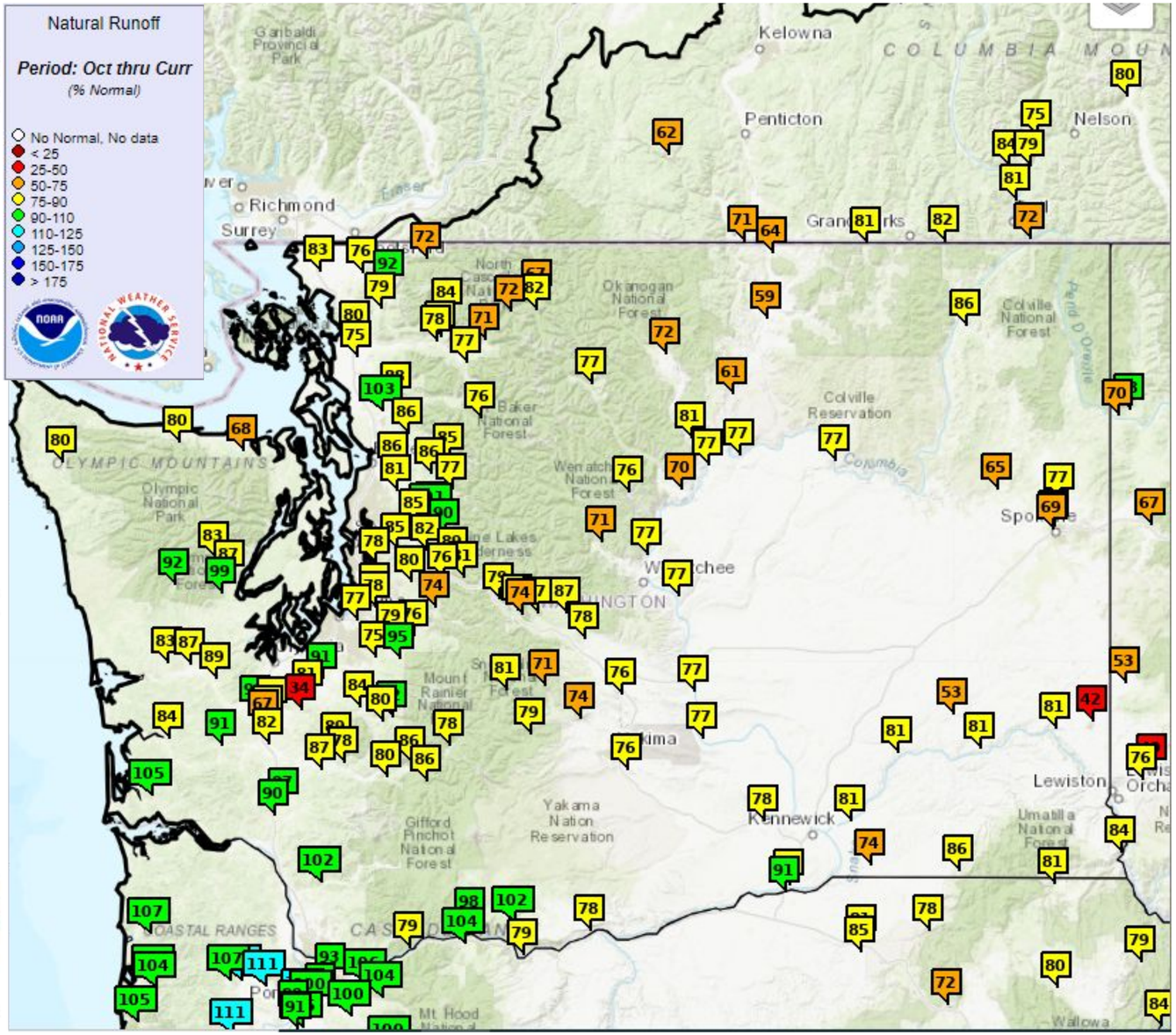


Washington State - Areas of Responsibility

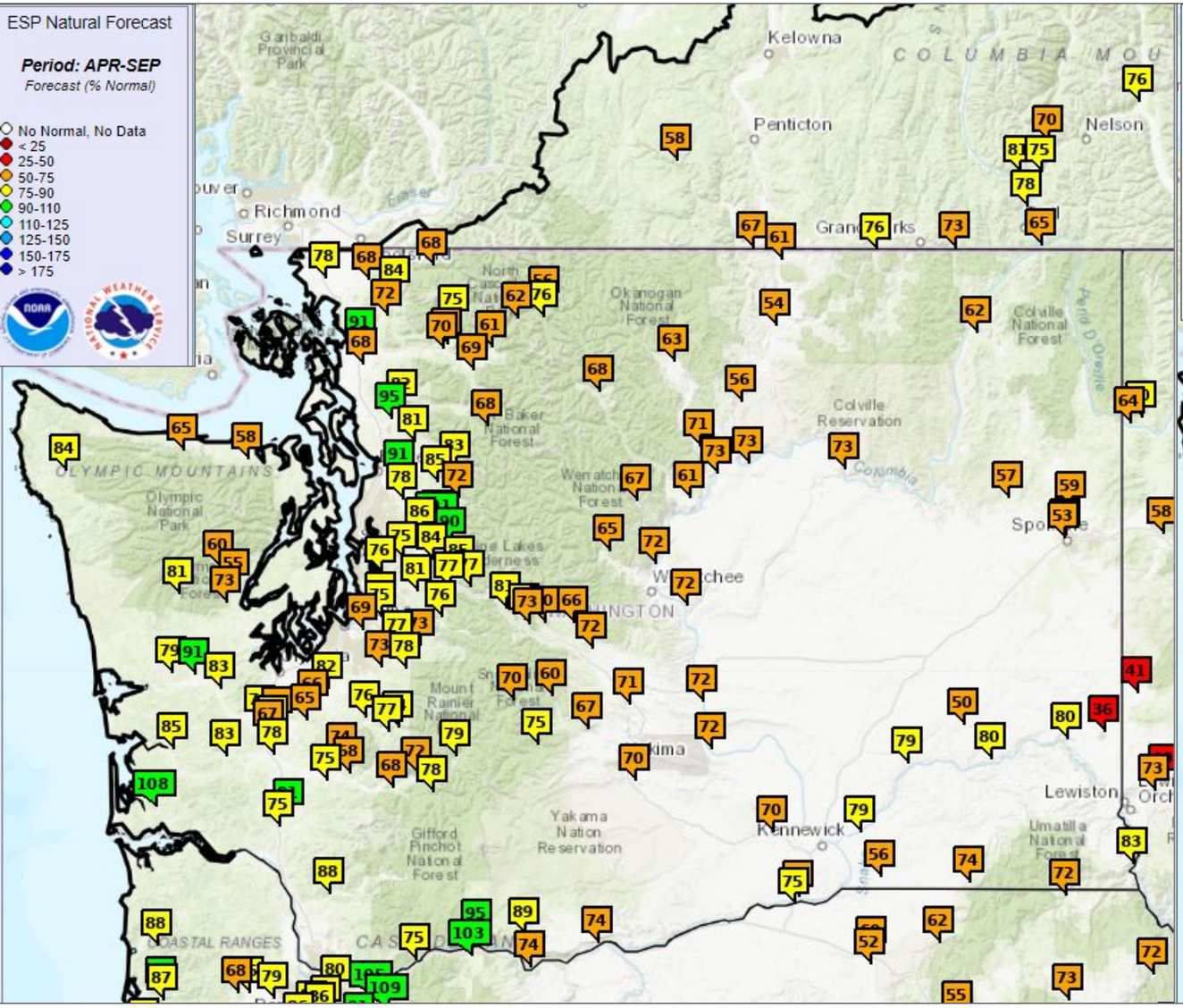
- Northwest Washington - NWS Seattle - nws.seattle@noaa.gov
- Southwest Washington - NWS Portland - nws.portland@noaa.gov
- Northeast Washington - NWS Spokane - nws.spokane@noaa.gov
- Southeast Washington - NWS Pendleton - pdt.operations@noaa.gov

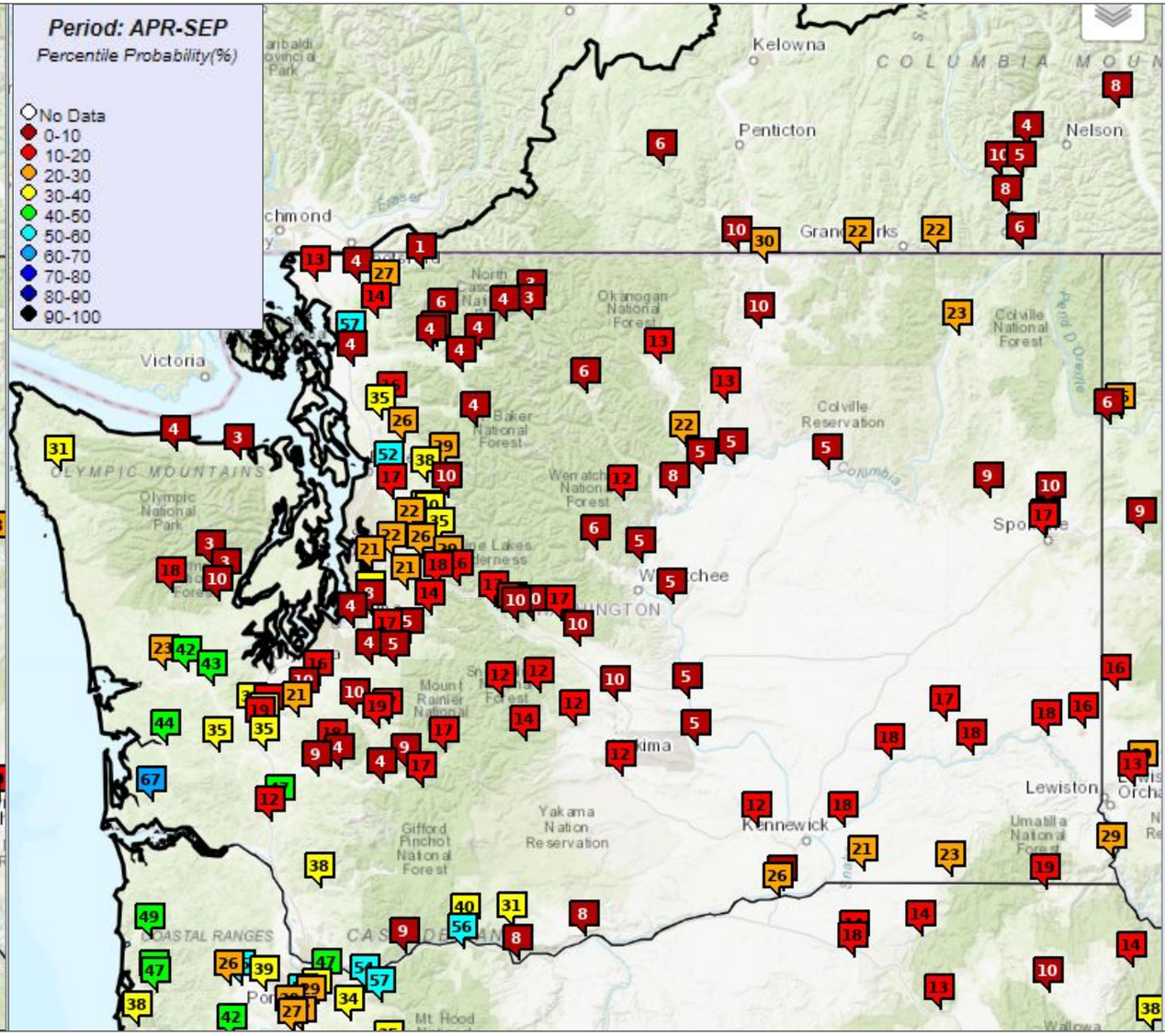
Water Year 2024 Precipitation and Runoff



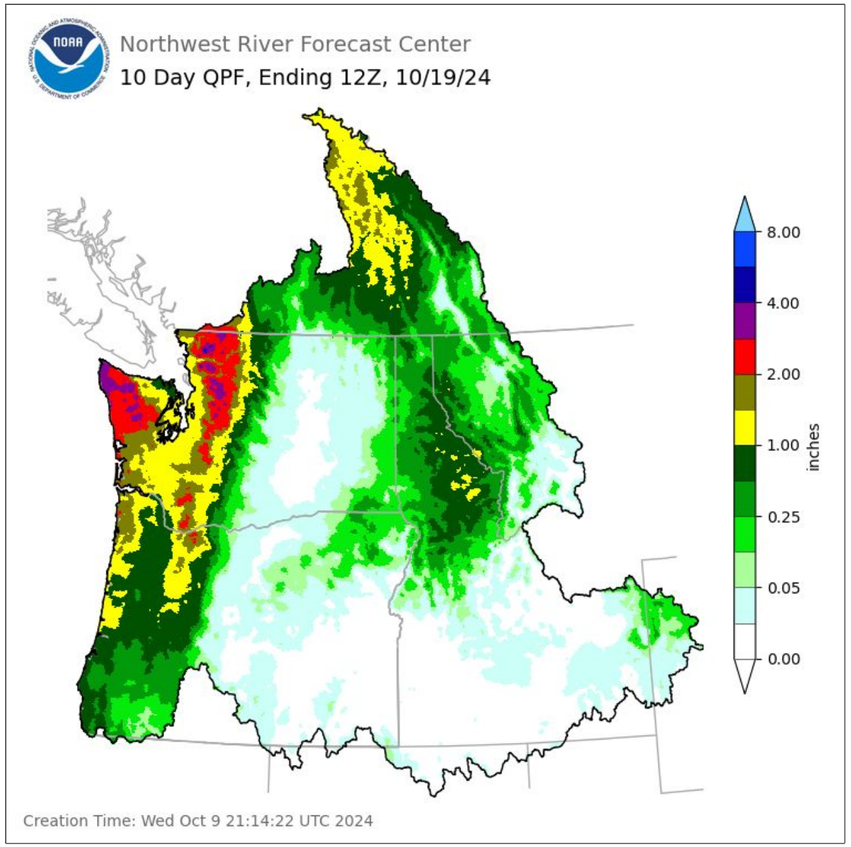


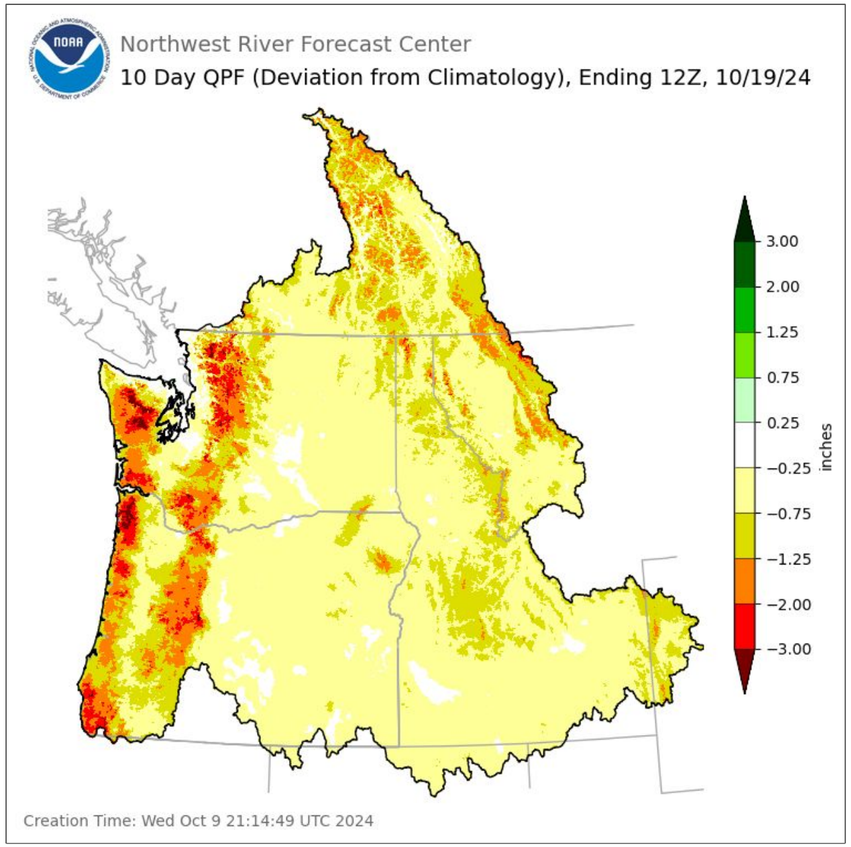
Apr - Sep Volumes 2024

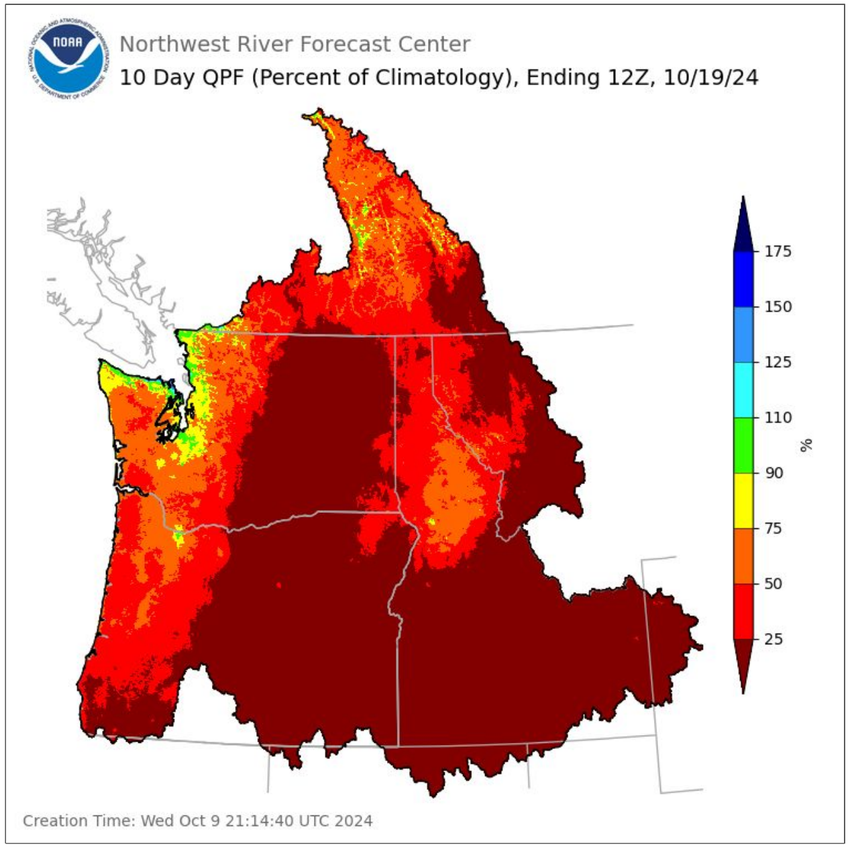




10 Day Precipitation Forecast used in ESP10 Forecasts







Quantitative Precipitation Forecast (QPF) Sources
Days 1 - 2 NWS Weather Forecast Offices (WFO) in the US, WPC in BC
Days 3 - 7 NWS Weather Prediction Center (WPC)
Days 8 - 10 NWS National Blend of Models (NBM)

Takeaways

- Apr - Sep Volumes were lower than normal with very low percentiles

- Water year 2025 forecasts are closer to normal. This early in the water year forecast skill is low and spread is wide.

USDA United States Department of Agriculture

Natural Resources Conservation Service

USDA Natural Resources Conservation Service

Snow Survey and Water Supply Forecasting Program

Thunder Basin SNOTEL
North Cascades, WA

Washington

Water Supply Availability Committee

October 8, 2024

Matt Warbritton
Supervisory Hydrologist
USDA NRCS SSWSF
Portland Data Collection Office
matt.warbritton@usda.gov
503-307-2829

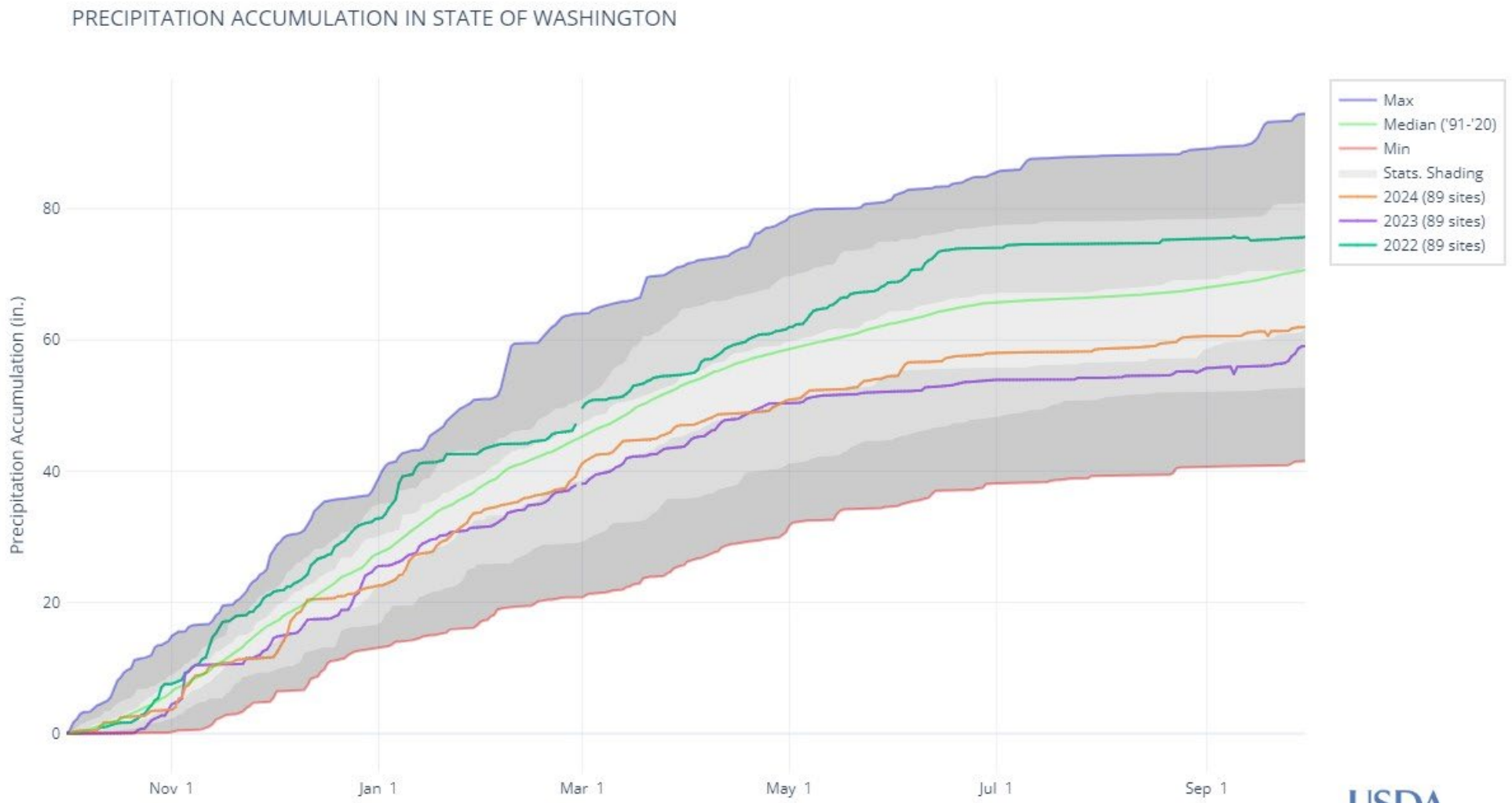
USDA United States Department of Agriculture

Natural Resources Conservation Service

Precipitation Conditions

Precipitation Profile

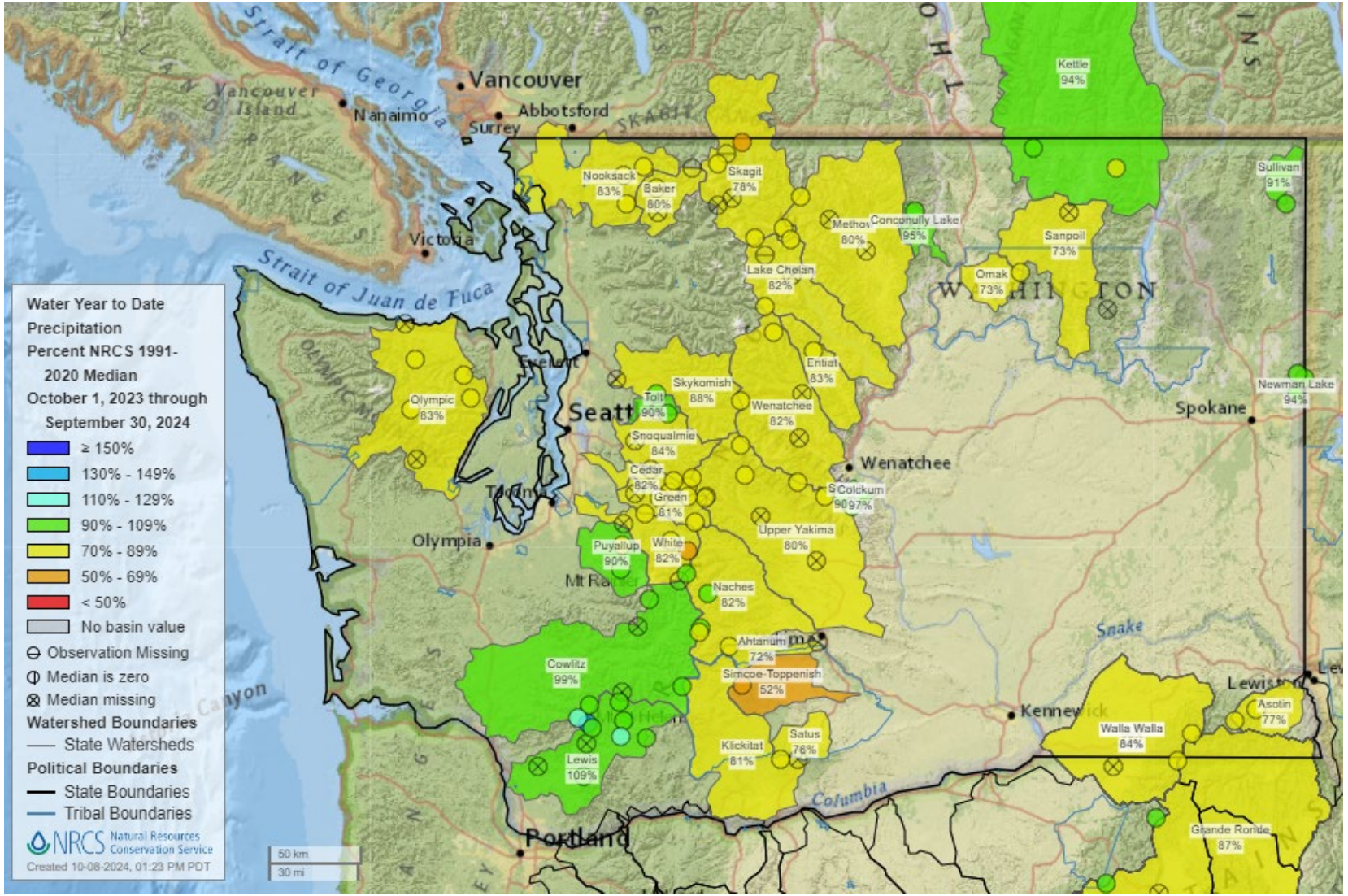
United States Department of Agriculture
Natural Resources Conservation Service



WY 24 Precipitation

Basin and Site Map

United States Department of Agriculture
Natural Resources Conservation Service

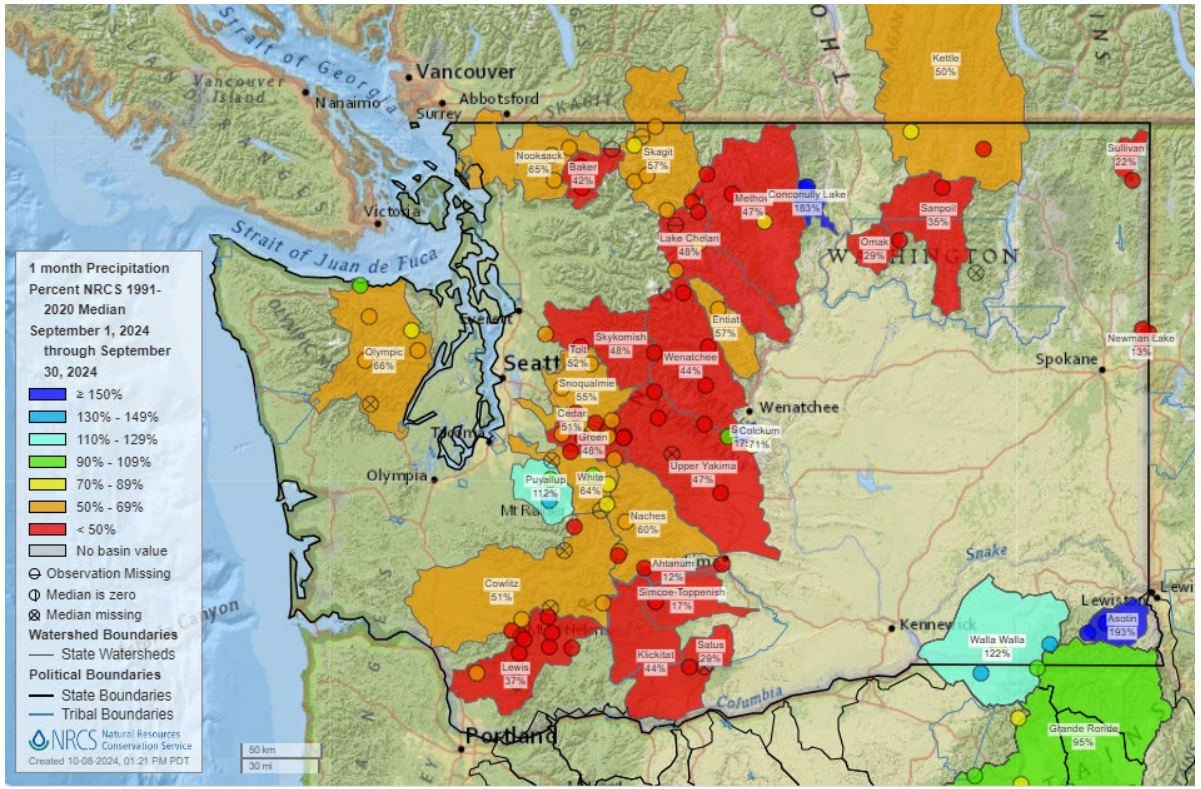


Monthly/Month-to-Date Precipitation

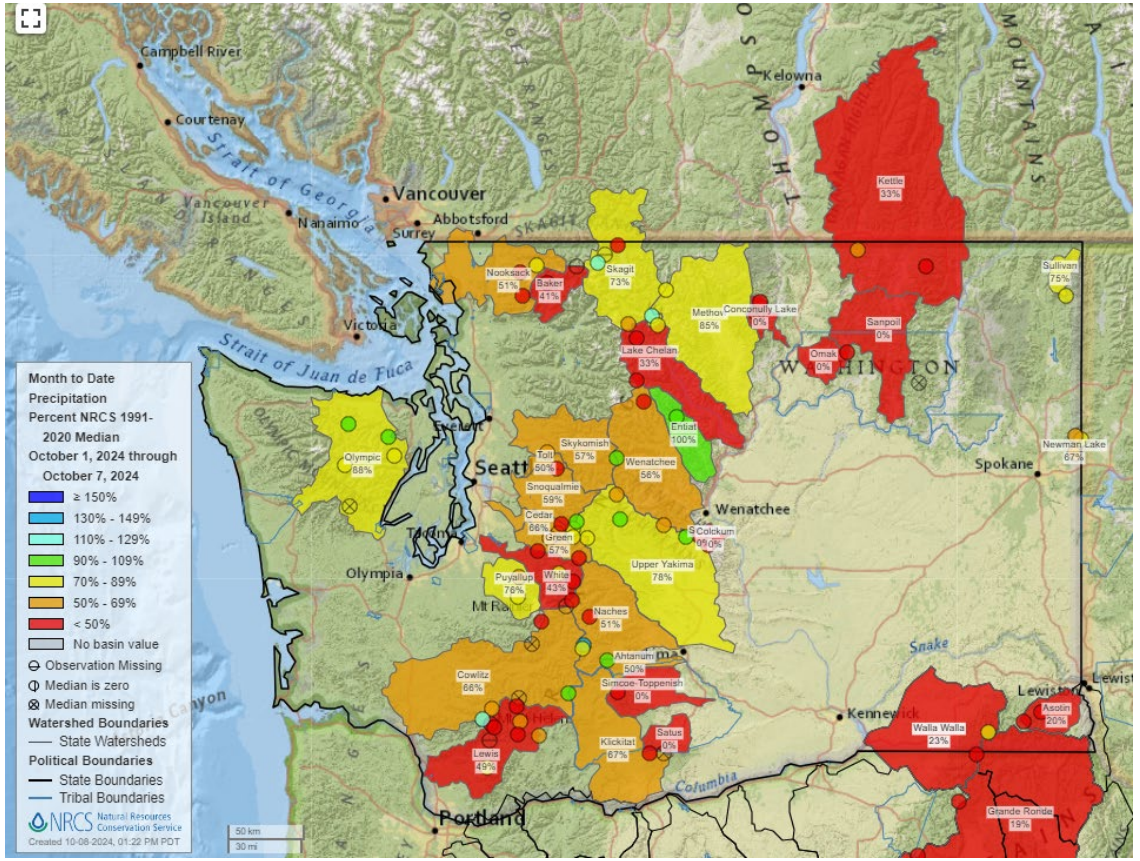
Basin and Site Map

United States Department of Agriculture
Natural Resources Conservation Service

September



October



USDA United States Department of Agriculture

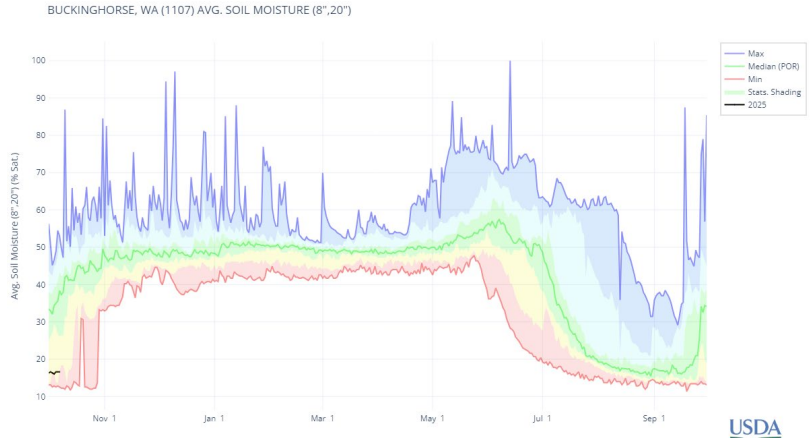
Natural Resources Conservation Service

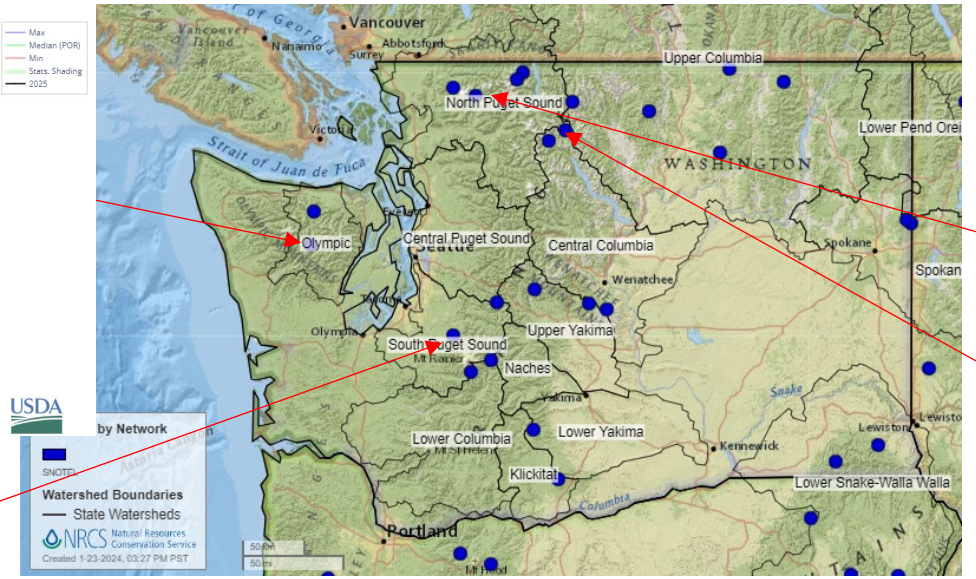
Soil Moisture

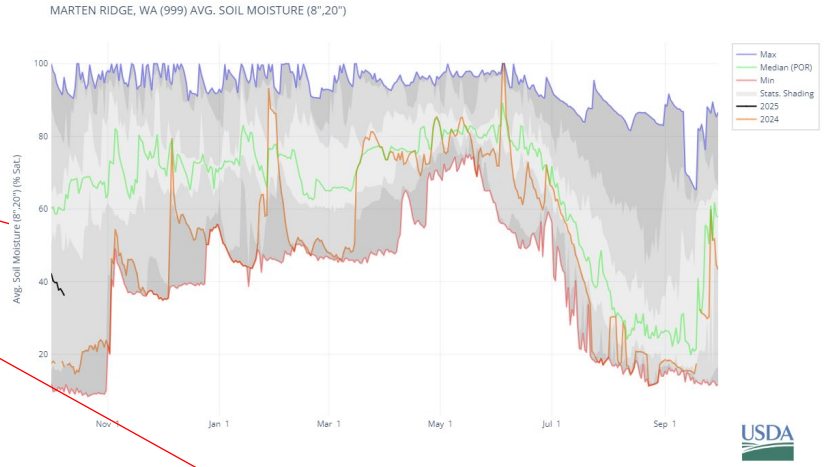
Soil Moisture

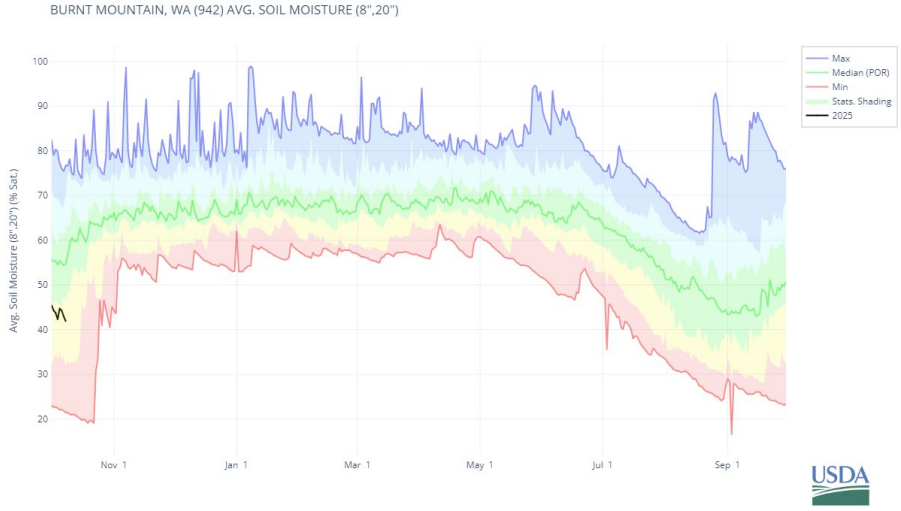
WY 2024 – Select Site Charts

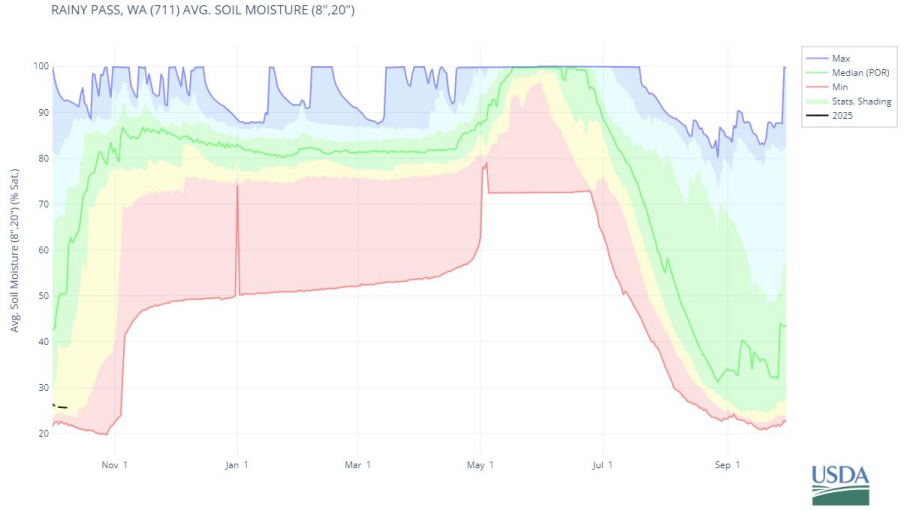
United States Department of Agriculture
Natural Resources Conservation Service







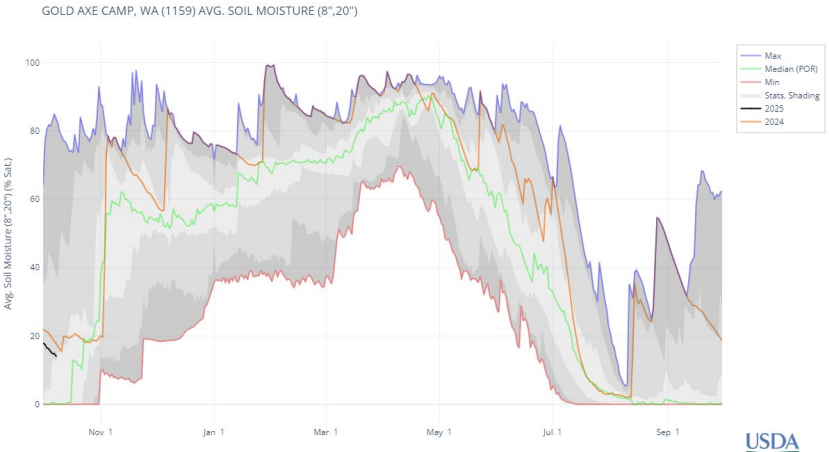


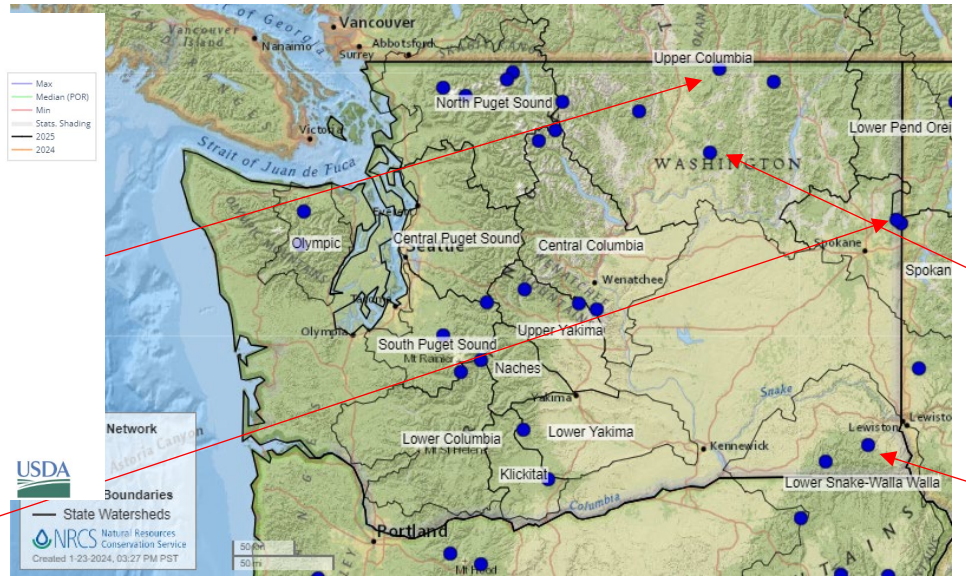


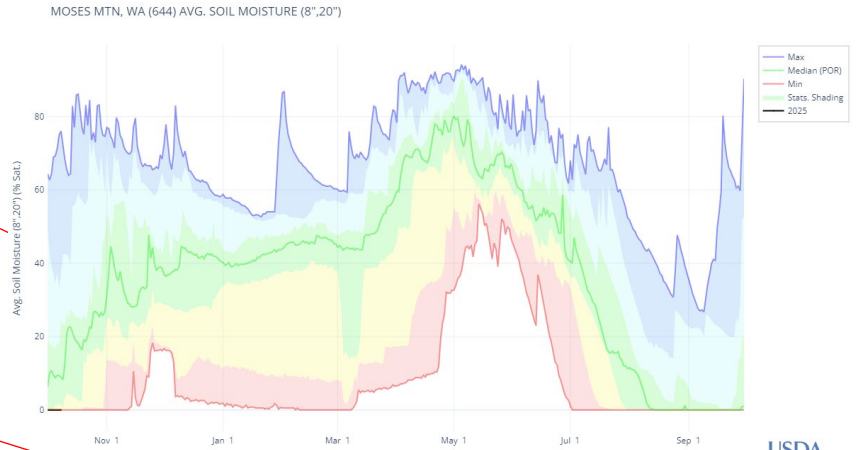
Soil Moisture

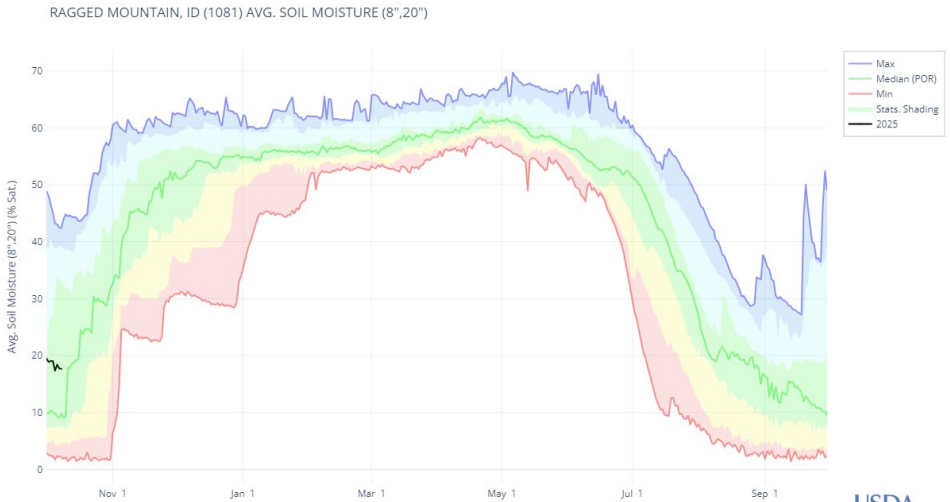
WY 2024 – Select Site Charts

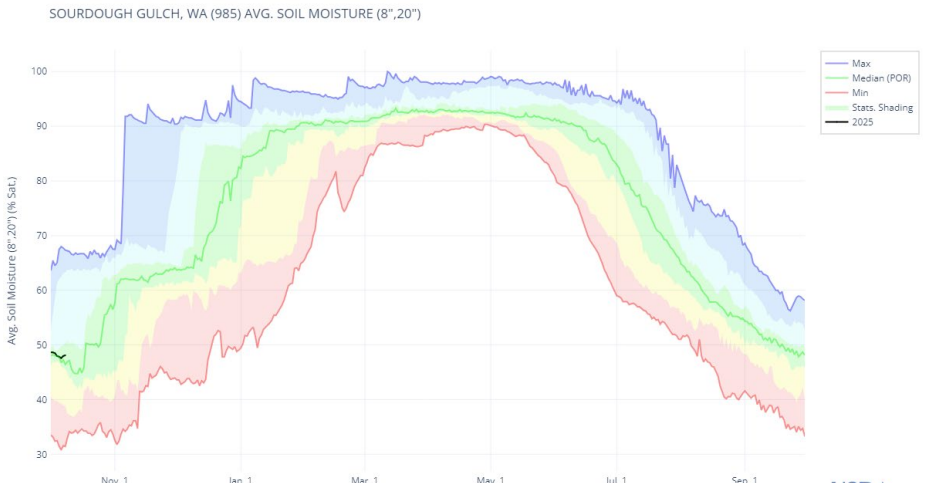
United States Department of Agriculture
Natural Resources Conservation Service











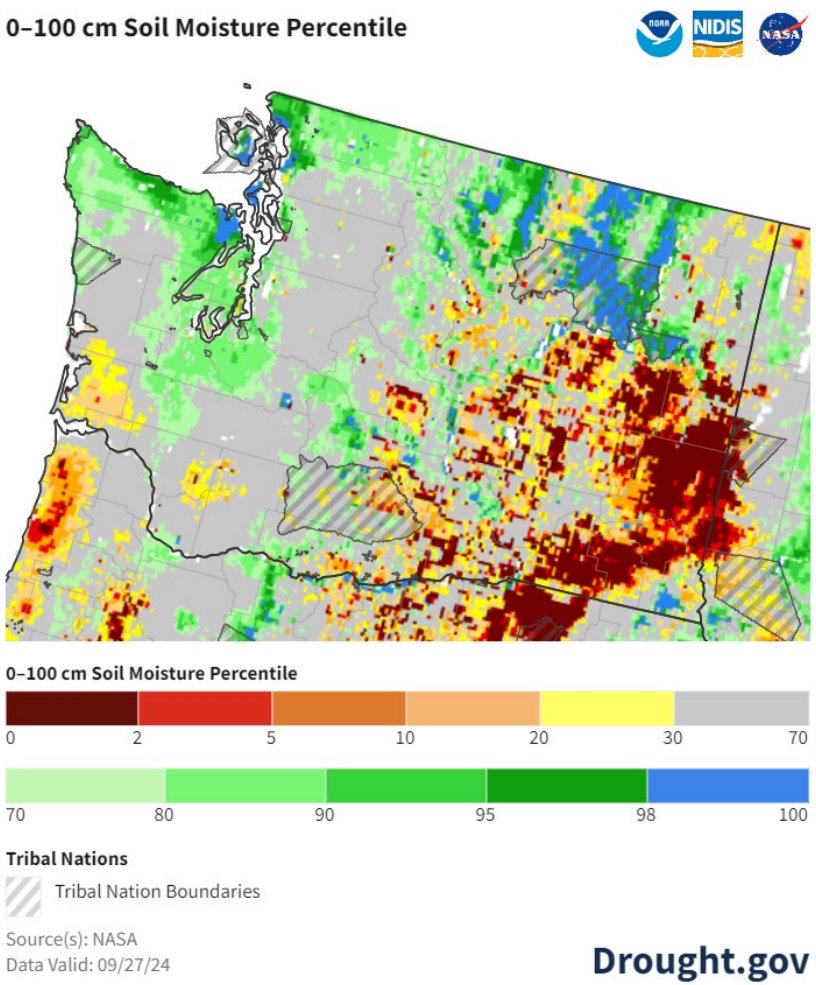
Soil Moisture

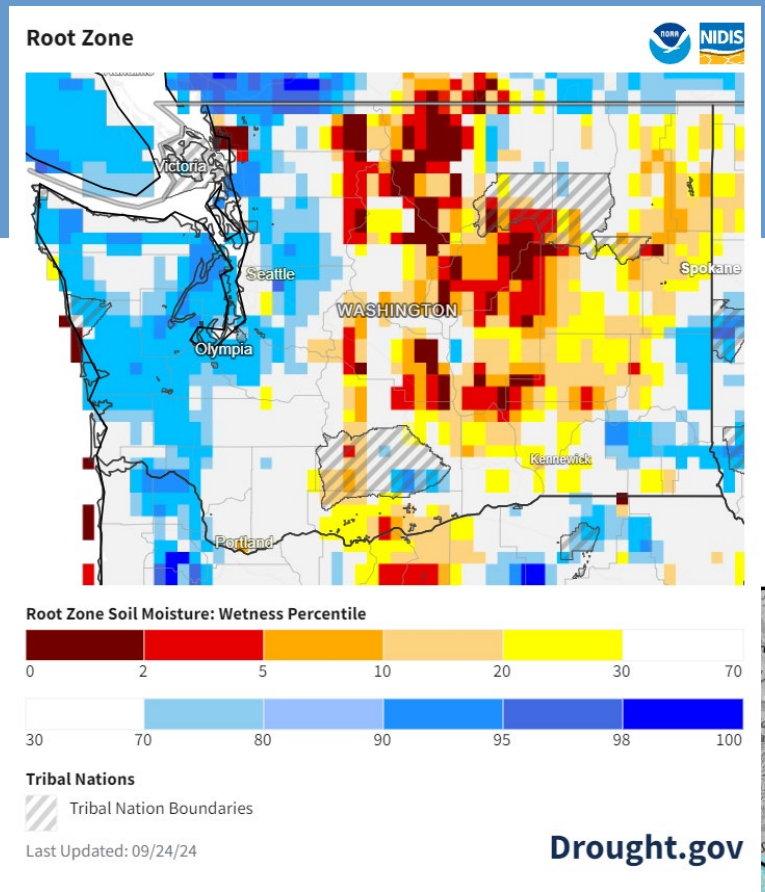
NASA GRACE and SPoRT-LiS

United States Department of Agriculture

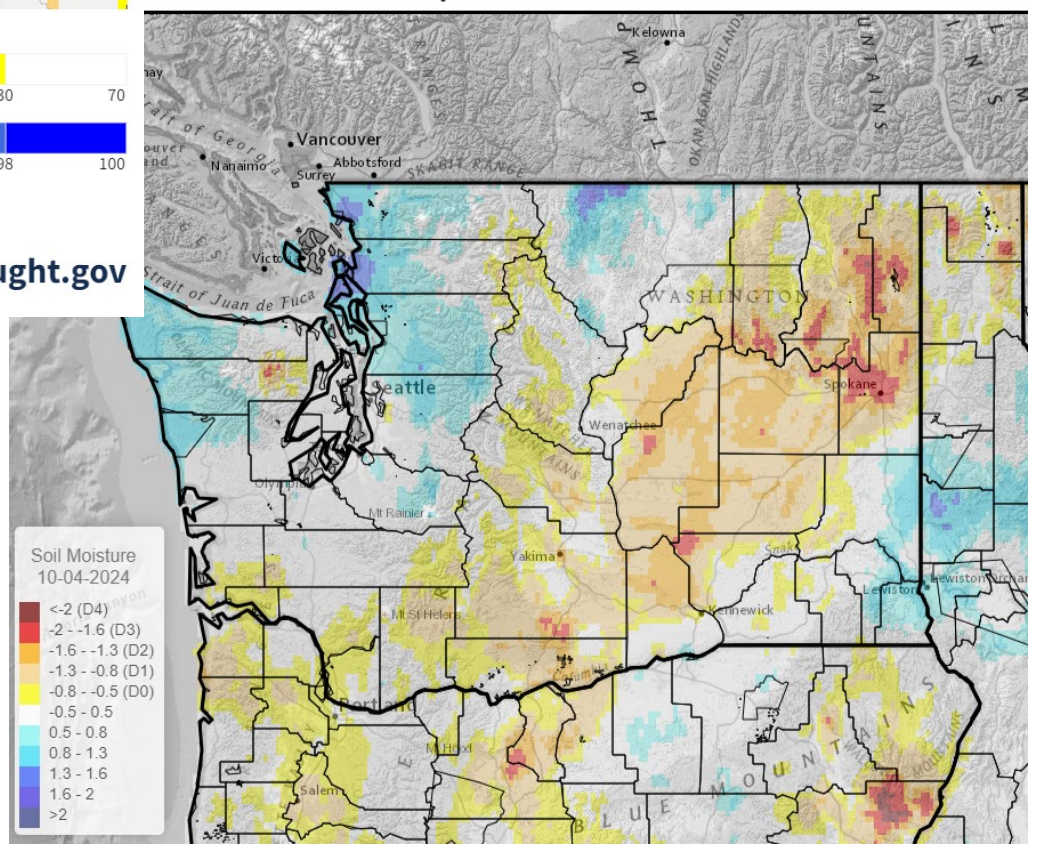
Natural Resources Conservation Service

SPoRT-LIS





Topofire Soil Moisture for 10-04-2024



USDA United States Department of Agriculture

Natural Resources Conservation Service

Thank you!

Matt Warbritton
Supervisory Hydrologist
USDA NRCS SSWSF
Portland Data Collection Office
matt.warbritton@usda.gov
503-307-2829

Washington Snow Survey and Water Supply Program Website

BUREAU OF RECLAMATIO

Yakima River Operations Water Supply conditions for WSAC, Oct 2024

Meeting starts at 10:30 AM

— BUREAU OF —
RECLAMATION

NEWS RELEASE

For Release: October 3, 2024
Media Contact: Marc Ayalin, 208-378-6203, mayalin@usbr.gov

Reclamation announces Yakima basin October water supply forecast

YAKIMA, Wash. – The Bureau of Reclamation's 2024 Total Water Supply Available provided the senior, non-proratable irrigators 100% of their entitlements and the junior, proratable irrigators 52% of their entitlements for the May 21-September 30 period. A separate forecast is made for the water supply in October.

The forecast for the October water supply available for the Yakima basin indicates the senior water rights will receive 100% of their full entitlements, but junior water rights will receive 0.0% of their entitlements for the October 1-20 period, which means no additional water. Any users that have unused water remaining from the May 21-September 30 period may use that water in October.

Storage in the Yakima basin reservoirs on October 1 was 114 thousand acre-feet, 11% full, and 35% of average. Inflows to the 5 Yakima Project reservoirs in September were 80% of average.

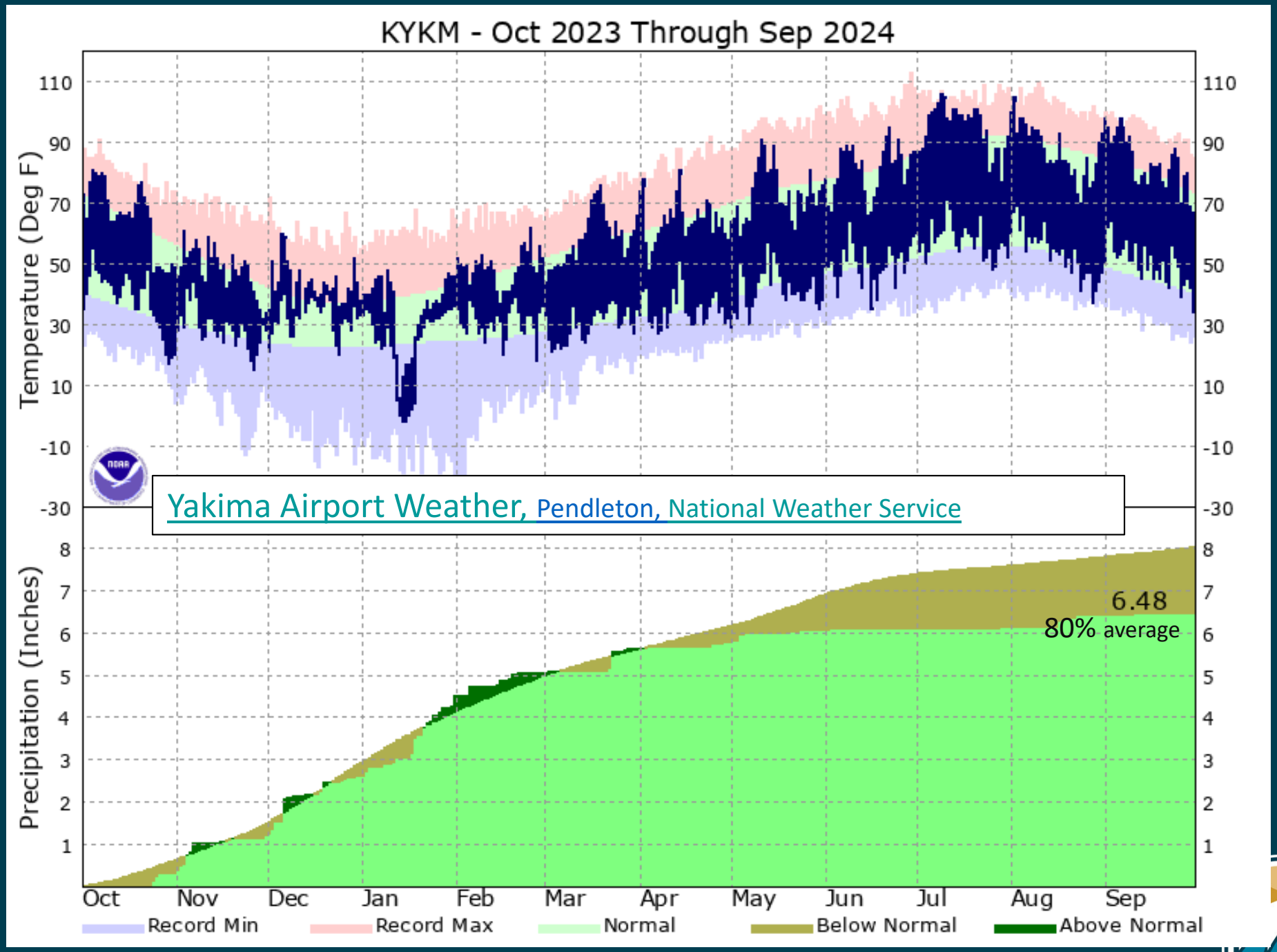
Reclamation manages the water in the five Yakima Project storage reservoirs, along with the basin's unregulated inflows to fulfill water rights, water contracts and instream flow obligations. Water shortages in the basin are shared equally by the junior water rights, which represent over half of the water rights in the basin.

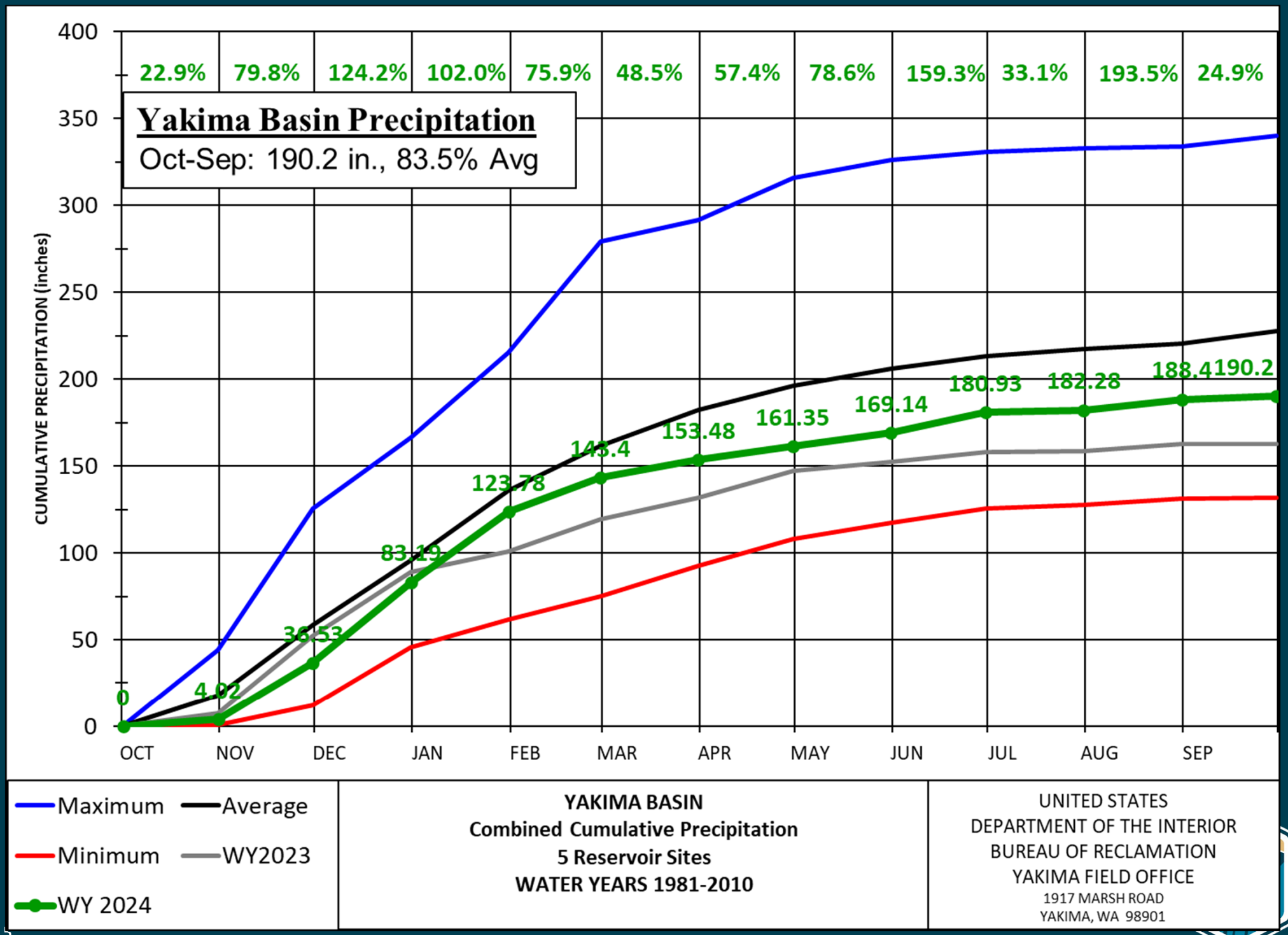
This Water Supply Available forecast is the last forecast for the 2024 irrigation season. The next forecast will be in March 2025. Reclamation provides updated water supply forecasts monthly—typically March through July of each year—using the latest data each month to reflect changing conditions as they develop. In a water short year, Reclamation will add mid-month forecasts and forecasts after July as necessary to adjust for prevailing conditions.

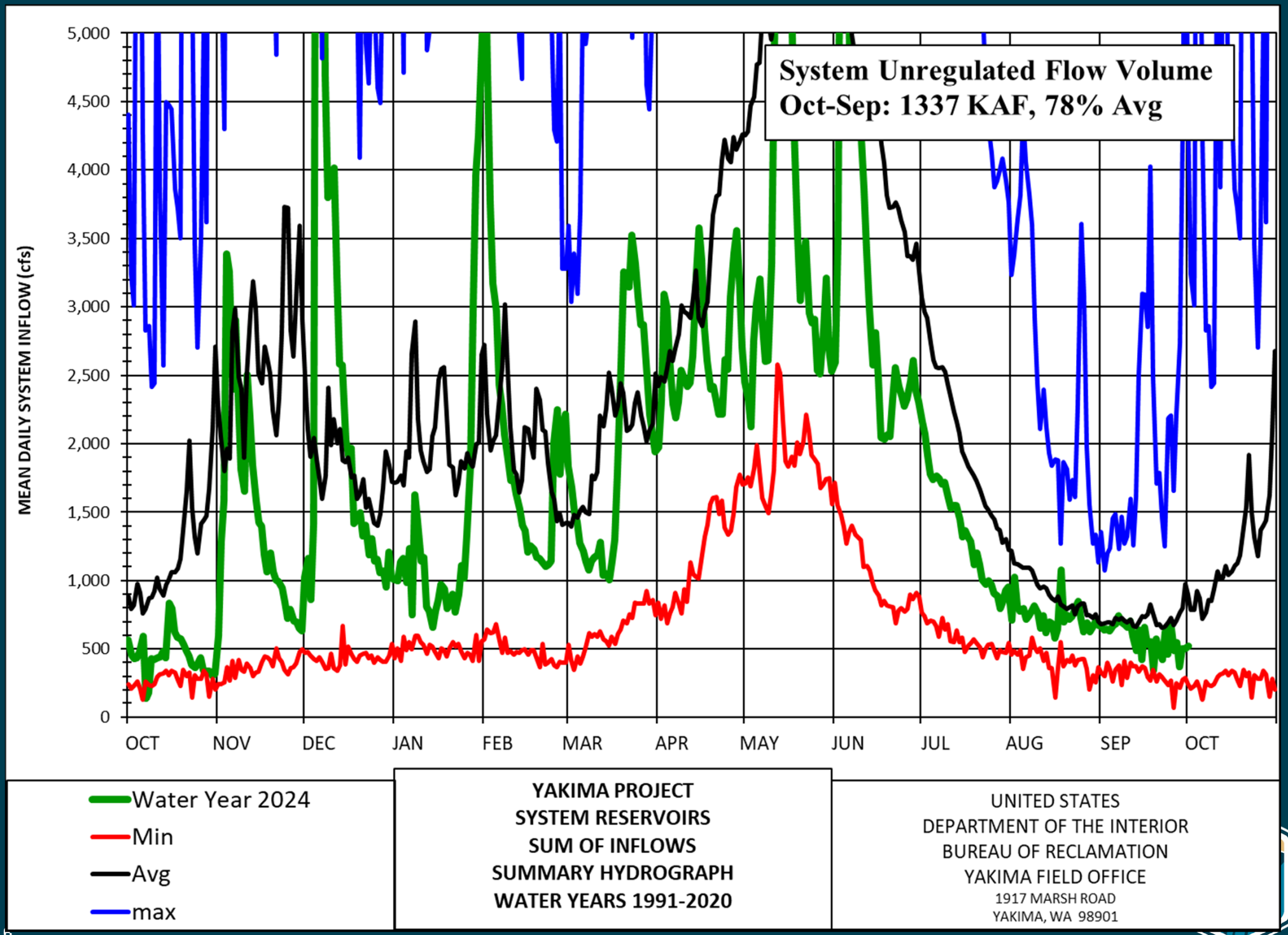
The monthly forecast is based on flows, precipitation, snowpack, and reservoir storage through the 1st day of the month, along with estimates of future river flows. Future weather conditions also are critical in determining stream flows, irrigation demands, and reservoirs storage.

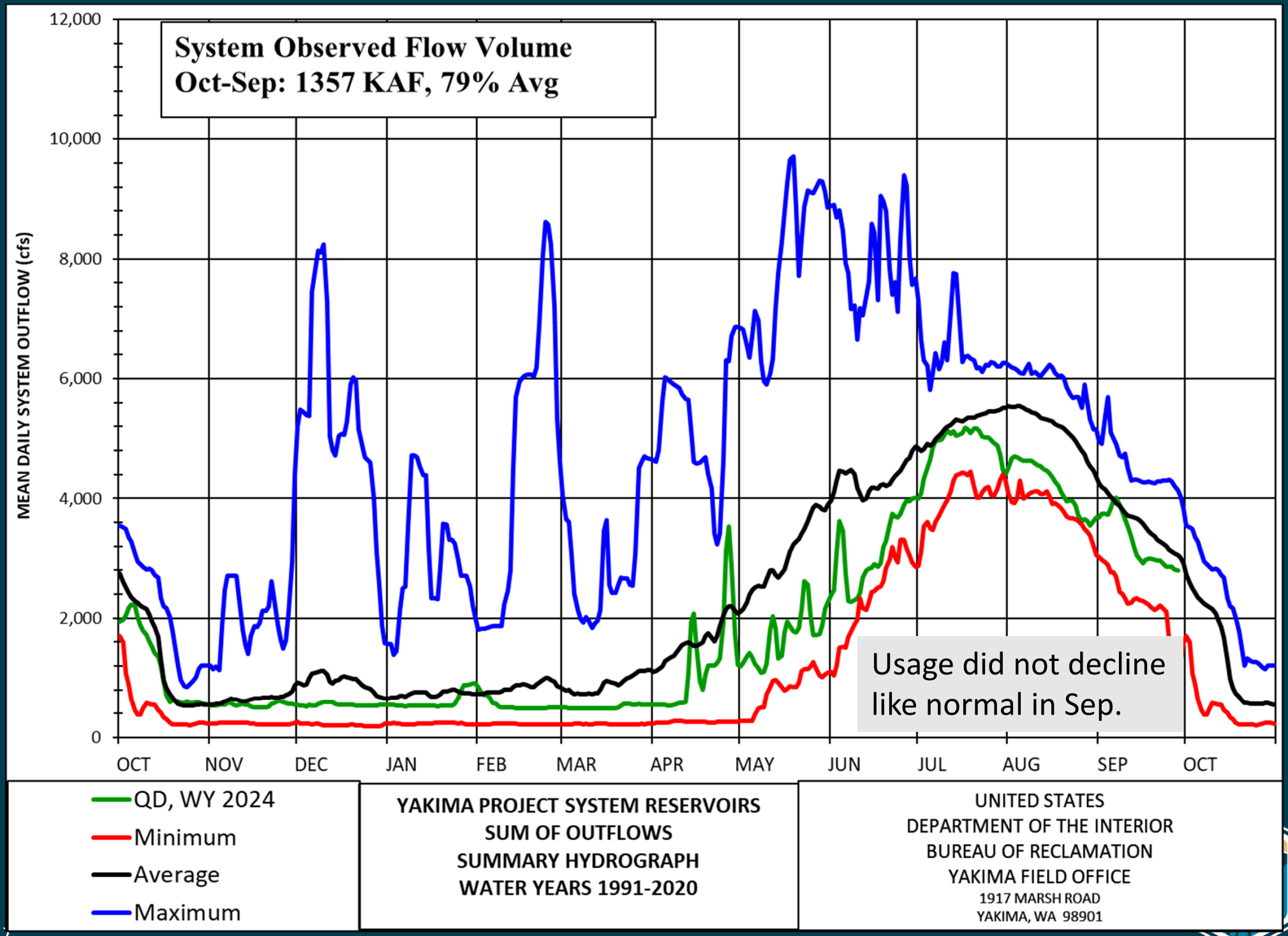
For more information, visit Reclamation's website at https://www.usbr.gov/pn/hydromet/yakima/.

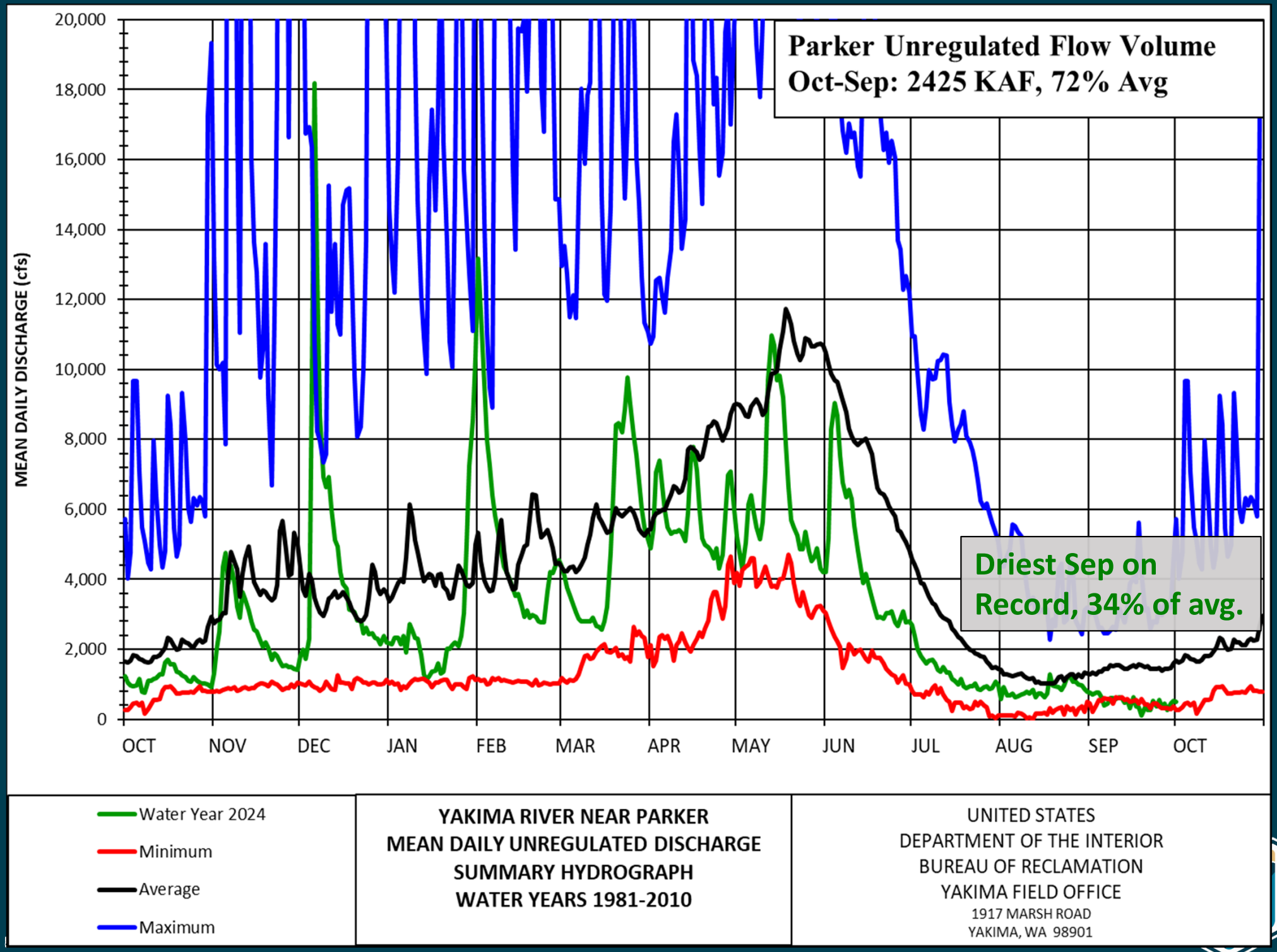
# # #

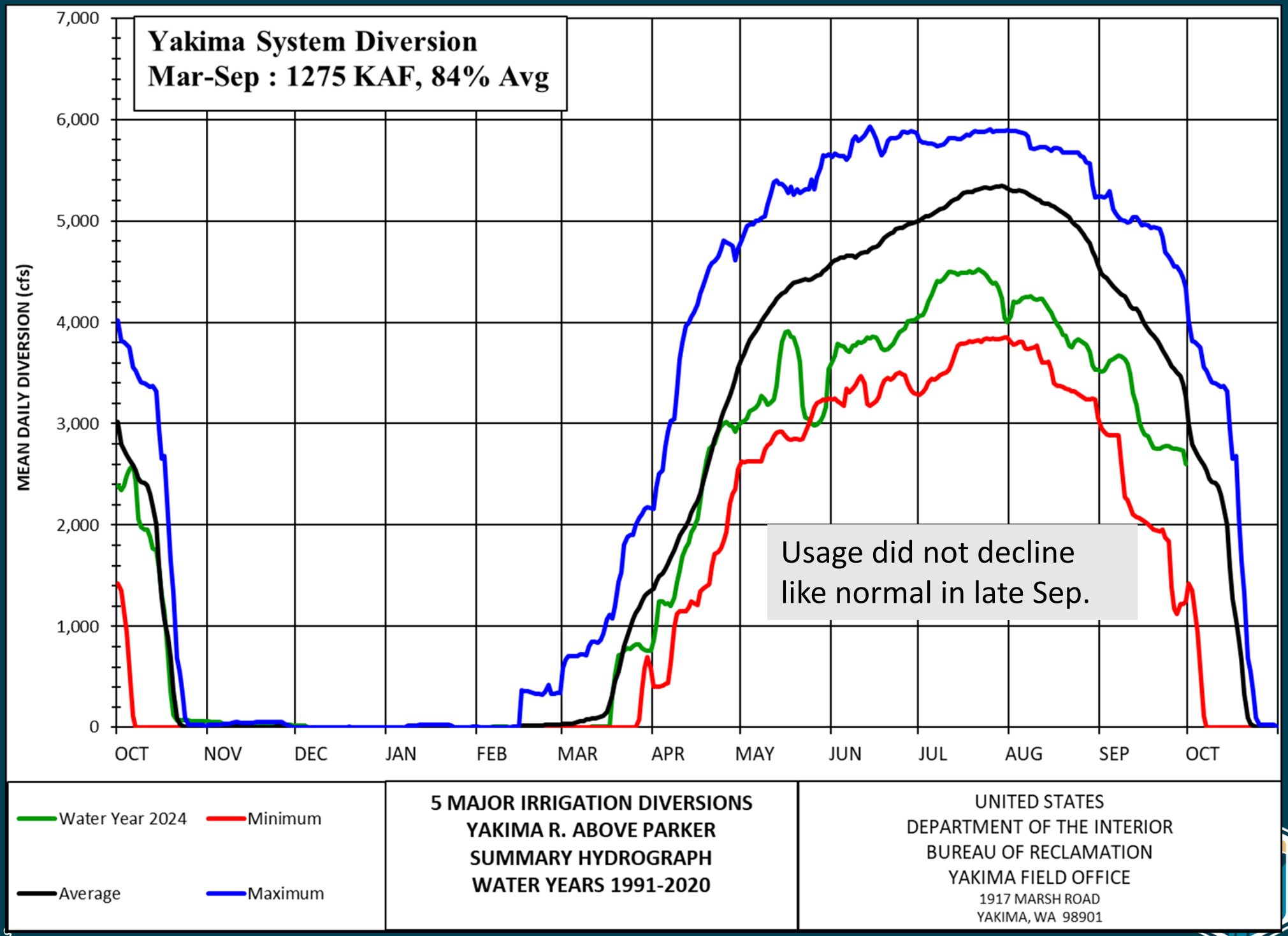

KYKM - Oct 2023 Through Sep 2024
Temperature (Deg F)
110
90
70
50
30
10
-10
-30
Yakima Airport Weather, Pendleton, National Weather Service
Precipitation (Inches)
8
7
6
5
4
3
2
1
6.48
80% average
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Record Min
Record Max
Normal
Below Normal
Above Normal

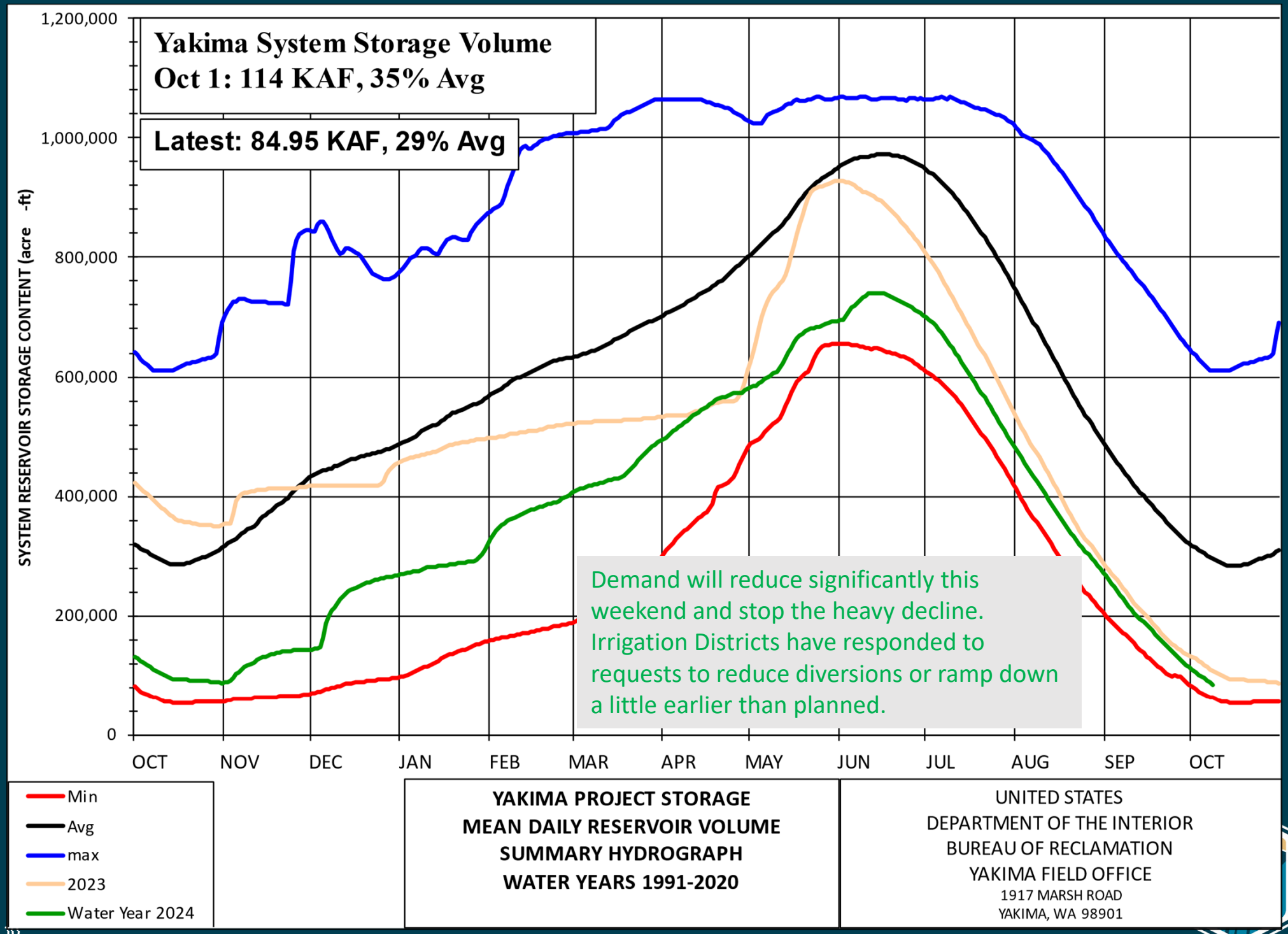

Yakima Basin Precipitation
Oct-Sep: 190.2 in., 83.5% Avg
22.9%
79.8%
124.2%
102.0%
75.9%
48.5%
57.4%
78.6%
159.3%
33.1%
193.5%
24.9%
CUMULATIVE PRECIPITATION (inches)
400
350
300
250
200
150
100
50
0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
0
4.02
36.53
83.19
123.78
143.4
153.48
161.35
169.14
180.93
182.28
188.4
190.2
Maximum
Average
Minimum
WY2023
WY 2024
YAKIMA BASIN
Combined Cumulative Precipitation
5 Reservoir Sites
WATER YEARS 1981-2010
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901


System Unregulated Flow Volume
Oct-Sep: 1337 KAF, 78% Avg
MEAN DAILY SYSTEM INFLOW (cfs)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
Water Year 2024
Min
Avg
max
YAKIMA PROJECT
SYSTEM RESERVOIRS
SUM OF INFLOWS
SUMMARY HYDROGRAPH
WATER YEARS 1991-2020
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901

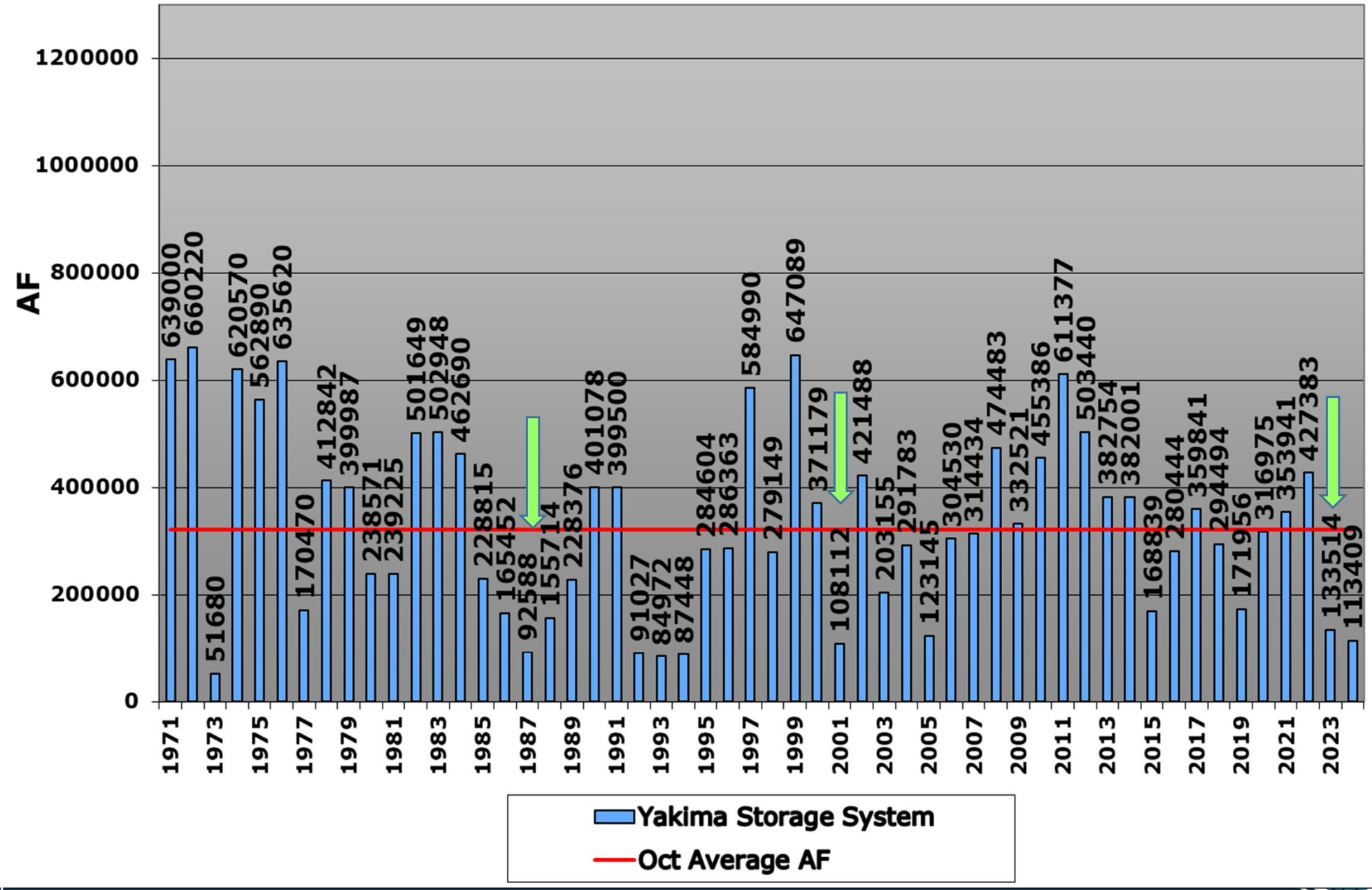

System Observed Flow Volume
Oct-Sep: 1357 KAF, 79% Avg
MEAN DAILY SYSTEM OUTFLOW (cfs)
12,000
10,000
8,000
6,000
4,000
2,000
0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
Usage did not decline like normal in Sep.
QD, WY 2024
Minimum
Average
Maximum
YAKIMA PROJECT SYSTEM RESERVOIRS
SUM OF OUTFLOWS
SUMMARY HYDROGRAPH
WATER YEARS 1991-2020
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901


Parker Unregulated Flow Volume
Oct-Sep: 2425 KAF, 72% Avg
Driest Sep on Record, 34% of avg.
MEAN DAILY DISCHARGE (cfs)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
Water Year 2024
Minimum
Average
Maximum
YAKIMA RIVER NEAR PARKER
MEAN DAILY UNREGULATED DISCHARGE
SUMMARY HYDROGRAPH
WATER YEARS 1981-2010
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901


Yakima System Diversion
Mar-Sep : 1275 KAF, 84% Avg
MEAN DAILY DIVERSION (cfs)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
Usage did not decline like normal in late Sep.
Water Year 2024
Minimum
Average
Maximum
5 MAJOR IRRIGATION DIVERSIONS
YAKIMA R. ABOVE PARKER
SUMMARY HYDROGRAPH
WATER YEARS 1991-2020
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901


Yakima System Storage Volume
Oct 1: 114 KAF, 35% Avg
Latest: 84.95 KAF, 29% Avg
SYSTEM RESERVOIR STORAGE CONTENT (acre -ft)
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
Demand will reduce significantly this weekend and stop the heavy decline. Irrigation Districts have responded to requests to reduce diversions or ramp down a little earlier than planned.
Min
Avg
max
2023
Water Year 2024
YAKIMA PROJECT STORAGE
MEAN DAILY RESERVOIR VOLUME
SUMMARY HYDROGRAPH
WATER YEARS 1991-2020
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
YAKIMA FIELD OFFICE
1917 MARSH ROAD
YAKIMA, WA 98901

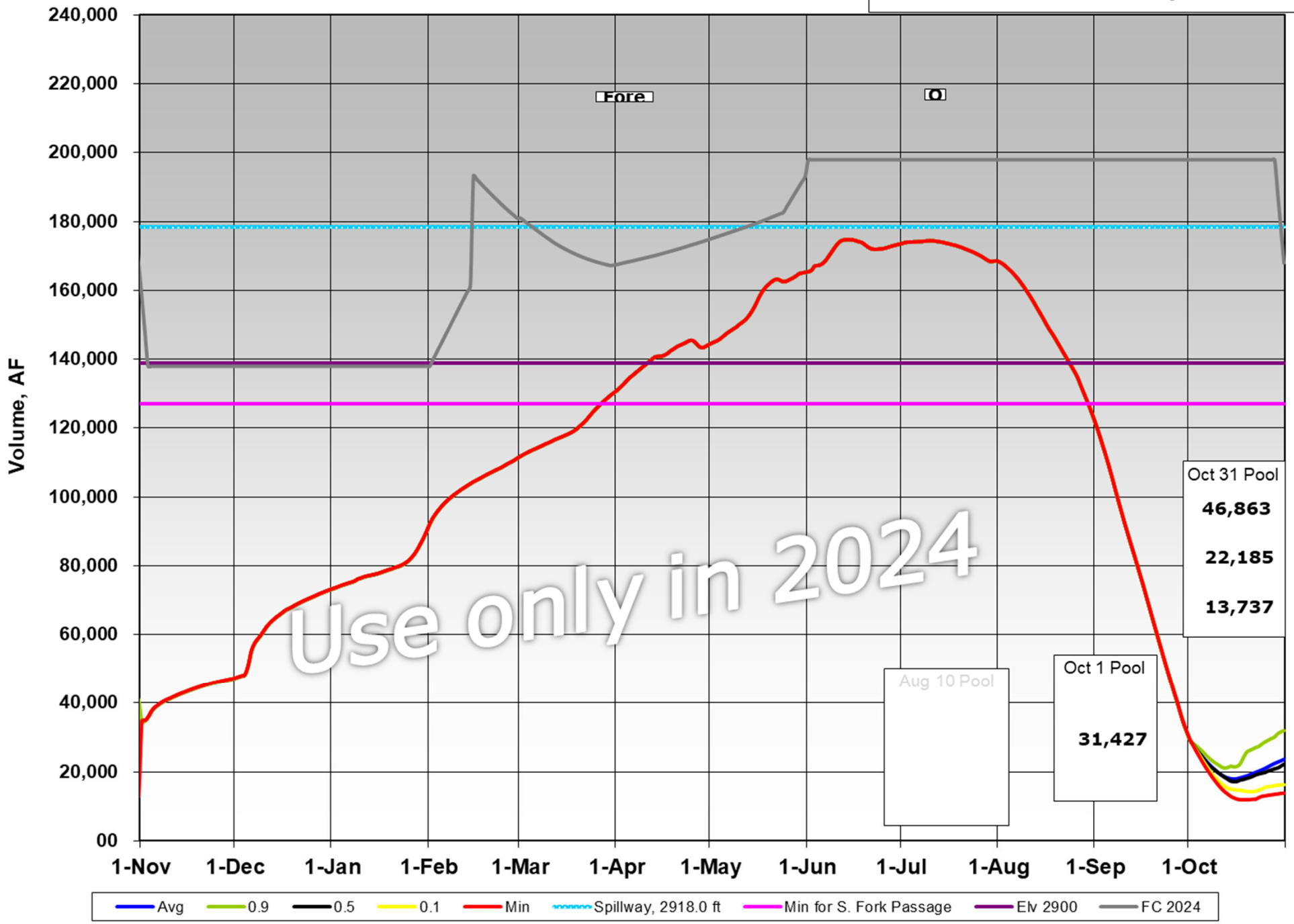
Yakima Basin Storage, Historical Comparison



10/01/2024

Rimrock Operations Outlook

FOR USE IN WY 2024 ONLY. Based on current forecasts and subject to change.



October 2024, Water Supply Available Estimate Oct 1 - Oct 20				
Parameter	**"+/-/="**	**Low**	**Mid**	**High**
Oct 1 - Oct 20 Natural Flow at Parker est.	+	25	36	55
Return Flow Estimate	+	25	25	25
1st of Month Reservoir Content	+	114	114	114
OWSA	=	164	175	194
Conservation water in Storage	+	2.7	2.7	2.7
OWSA Adjusted	=	161	172	191
Oct 20 Minimum Reservoir Content	-	54	54	54
FLOW OVER SUNNYSIDE DAM	-	14	14	14
TWSA FOR IRRIGATION	=	93	104	123
NONPRORATABLE ENTITLEMENT	-	115	115	115
REMAINING TWSA	=	0	0	8
PRORATABLE ENTITLEMENT		44	44	44
% RATIO= REMAINING TWSA/PRORATABLE ENTITLEMENT		0%	0%	19%
TITLE 12 FLOW REQUIREMENTS	**October**	300	300	300
Flow available to Title 12, cfs *#*		77	77	82
Non-storeable Portion of added flow, cfs		22	22	22
Storable portion of added flow, cfs		56	56	60
**All values in units of 1,000 acre-ft unless otherwise specified				

September 1, 2024 TWSA ESTIMATE Comparison Proration period**						
Parameter	**"+/-/="**	**May 2024**	**Jun 2024**	**Jul 2024**	**Aug 2024**	**Sep 2024**
Apr 1-Sep 30 Natural Flow at Parker est.	+	948	539	591	585	580
Return Flow Estimate	+	285	245	245	245	245
April 1, Reservoir Content	+	580	675	675	675	675
TWSA	=	1813	1460	1512	1505	1500
SEP 30 EST RESERVOIR CONTENT*	-	76	76	76	76	76
FLOW OVER SUNNYSIDE DAM	-	200	120	128	128	130
TWSA FOR IRRIGATION	=	1537	1264	1308	1301	1294
NONPRORATABLE ENTITLEMENT	-	909	789	789	789	773
YRPW-KID release	=	15	10	10	6	4
REMAINING TWSA		628	465	509	507	517
PRORATABLE ENTITLEMENT		1145	998	998	998	998
% RATIO= REMAINING TWSA/PRORATABLE ENTITLEMENT		54%	47%	51%	51%	52%
TITLE XII FLOW REQUIREMENTS, cfs	**July**	300	300	300	300	300
TOTAL FLOW AVAILABLE AT PARKER, cfs *#*		405	330	332	341	330
*Values are in 1,000 ac-ft unless otherwise specified. ** May 21-Sep 30 except May 2024 was May1-Sep30.						
# State & YRBWEP Trust, Acquisition, & Conservation additions to Title XII flow.						

Yakima Basin Minimum Flows

Table 3-3. Minimum winter instream flow targets (cfs).

	Minimum Flow (cfs) by Water Year Type		
Location	**Dry**	**Average**	**Wet**
KEE	Inflow - 80	100	120
KAC	Inflow - 30	30	30
EASW	190	250	300
CLE	Inflow - 180	220	250
BUM	Inflow - 130	Inflow - 130	Inflow - 130
RIM	Inflow - 50	75	90
TICW	75	100	120

Hydrologic Summary

- Flip-flop had no use of SW1146
- 6th lowest storage since 1971, 84 KAF, 8% full, 29% avg.
- September precip forecasts did not materialize.
- Very low September precip, 25% avg.
- Record Low Sept Parker unregulated flow, 34% avg
- Diversion and reservoir demand has been high.
- OWSA's Prorationing is 0%. TWSA's ended at 52%.
- Title XII flow is 300 cfs plus 22 cfs.
- Conservation water (at 52% prorationing) has a balance of 2,675 AF plus Oct water of 1.6 to 2.0 KAF.
- Latest Rimrock routings show low pool of 10 to 11 KAF.