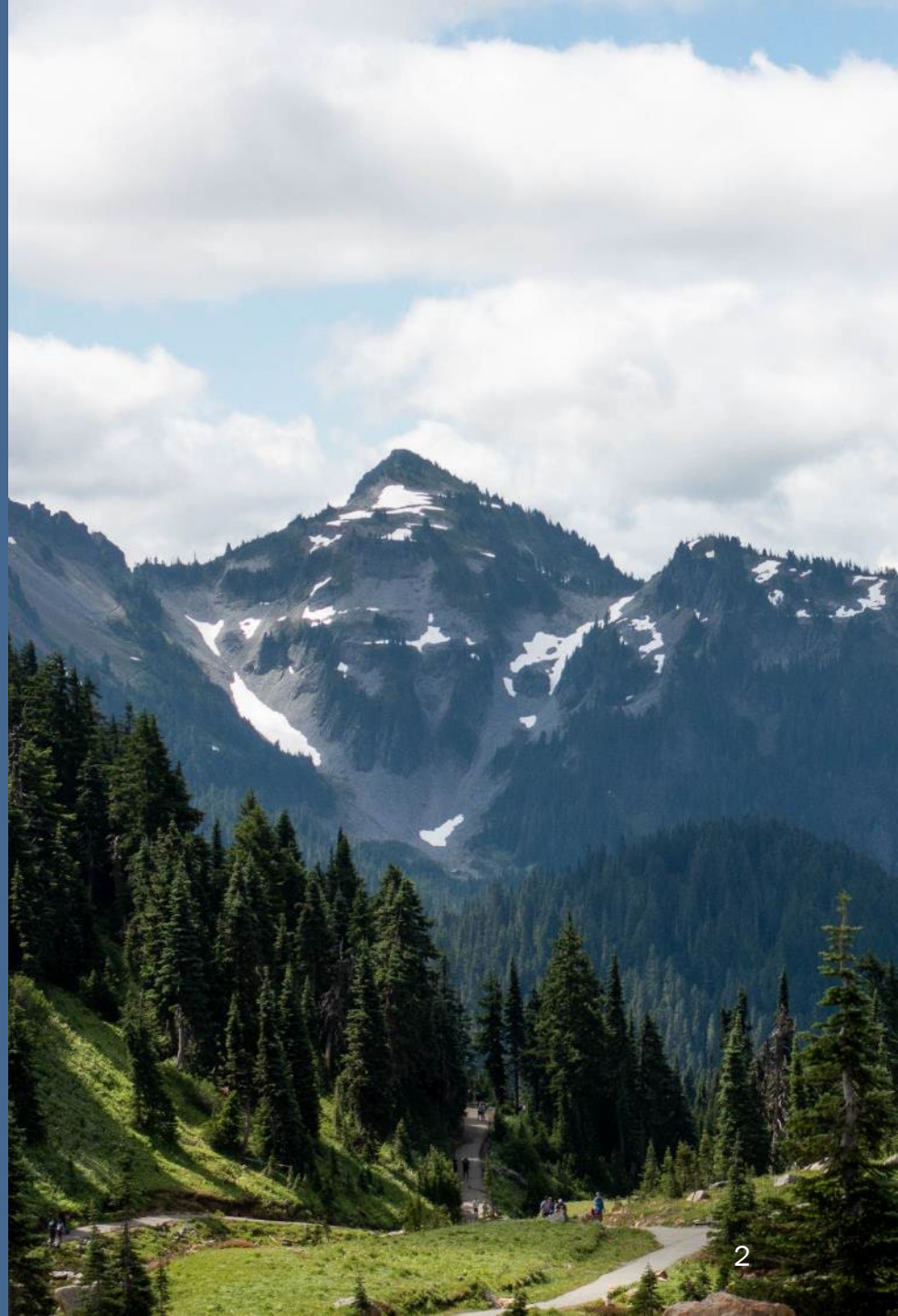
DEPARTMENT OF ECOLOGY
State of Washington

Water Supply Availability Committee

September 11, 2024

Recording!



Agenda

Time	Agenda item	Responsible
10:00 a.m.	Welcome and agenda Recap: Drought declaration and implications	Caroline Mellor, Ecology
10:10 a.m.	Regional Climate Setting / ENSO	Karin Bumbaco, OWSC
10:25 a.m.	Mountain Conditions	Matt Warbritton, NRCS
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	Robin Fox, NWRFC
11:15 a.m.	Discussion: What conditions and concerns do folks see on the ground?	All participants
11:25 a.m.	Wrap-up and next steps	Caroline Mellor, Ecology

Committee Role

WSAC provides an important consultative and advisory role to Ecology related to:

- Current and forecasted water supply conditions;
- Whether the hydrologic drought threshold has been met or is likely to be met.

Meeting Objectives

- Share pertinent info and assess water supply conditions in Washington as we near fall.

Drought Emergency Declaration

On April 16, 2024, Ecology declared a Statewide drought due to low snowpack and warm and dry forecast.

Limited exceptions for Puget Sound metro areas with healthy water storage.

See: https://ecology.wa.gov/water-shorelines/water-supply/water-availability/statewide-conditions/drought-response

Drought Conditions

Drought conditions - two requirements:

1. **Hydrologic threshold** – An area is receiving, or is projected to receive, less than seventy-five percent of normal water supply.
2. **Hardship threshold** – Water users and the environment are or are expected to experience undue hardship.

This Committee advises on the hydrologic threshold.

See: RCW 43.83B.405 and WAC 173-166-050.

Drought Conditions: Water Supply Factors

Factors for water supply:

- Water Year to Date:
  - Snowpack
  - Precipitation
  - Temperature
  - Soil moisture
- Forecasts
  - Streamflow
  - Precipitation
  - Temperature
  - Soil moisture

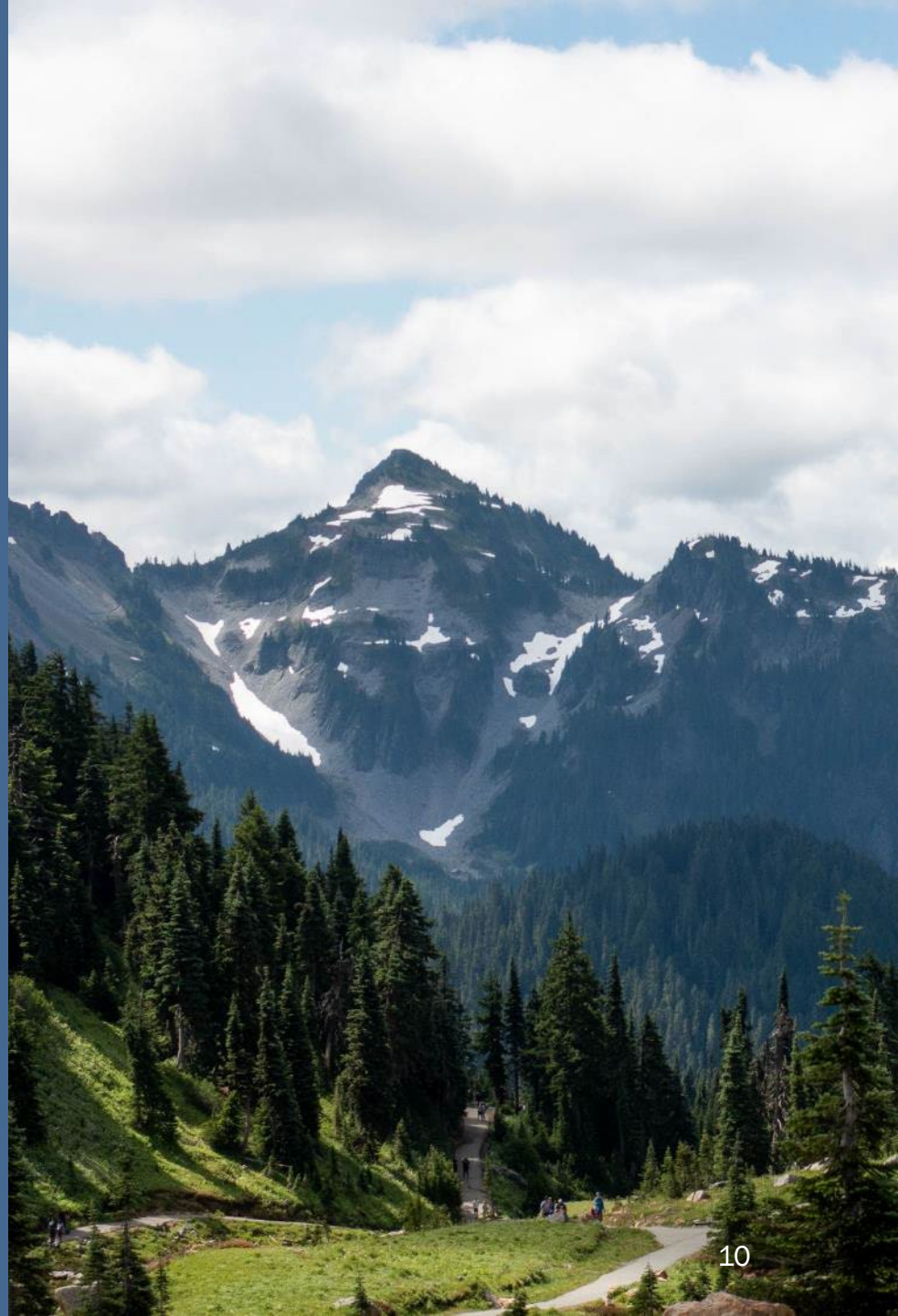
With all factors combined, the hydrologic threshold for drought is met.

Hurricane Ridge Webcam, National Park Service Olympic National Park

Anticipated Hardships

- Instream flows, fish and wildlife
- Agricultural and livestock
- Public water systems and domestic uses

Implications of a Drought Declaration



What Does a Declaration Do?

Provides Ecology with the authority to:

1. Expedite emergency water transfer applications.

2. Establish a grant program to mitigate hardships to water users and the environment.

Emergency response funding

Grants to governmental entities:

- Federally recognized tribes.
- Counties, cities, and towns.
- Water and sewer districts formed under chapter 57.02 RCW.
- Public utility districts formed under chapter 54.04 RCW.
- Port districts formed under chapter 53.04 RCW.
- Conservation districts formed under chapter 89.08 RCW.
- Irrigation districts formed under chapter 87.03 RCW.
- Watershed management partnerships formed under RCW 39.34.200.

Interagency agreements to state agencies

Drought response grants - Washington State Department of Ecology

Water resources drought response grants

This funding opportunity opens April 17, 2024.

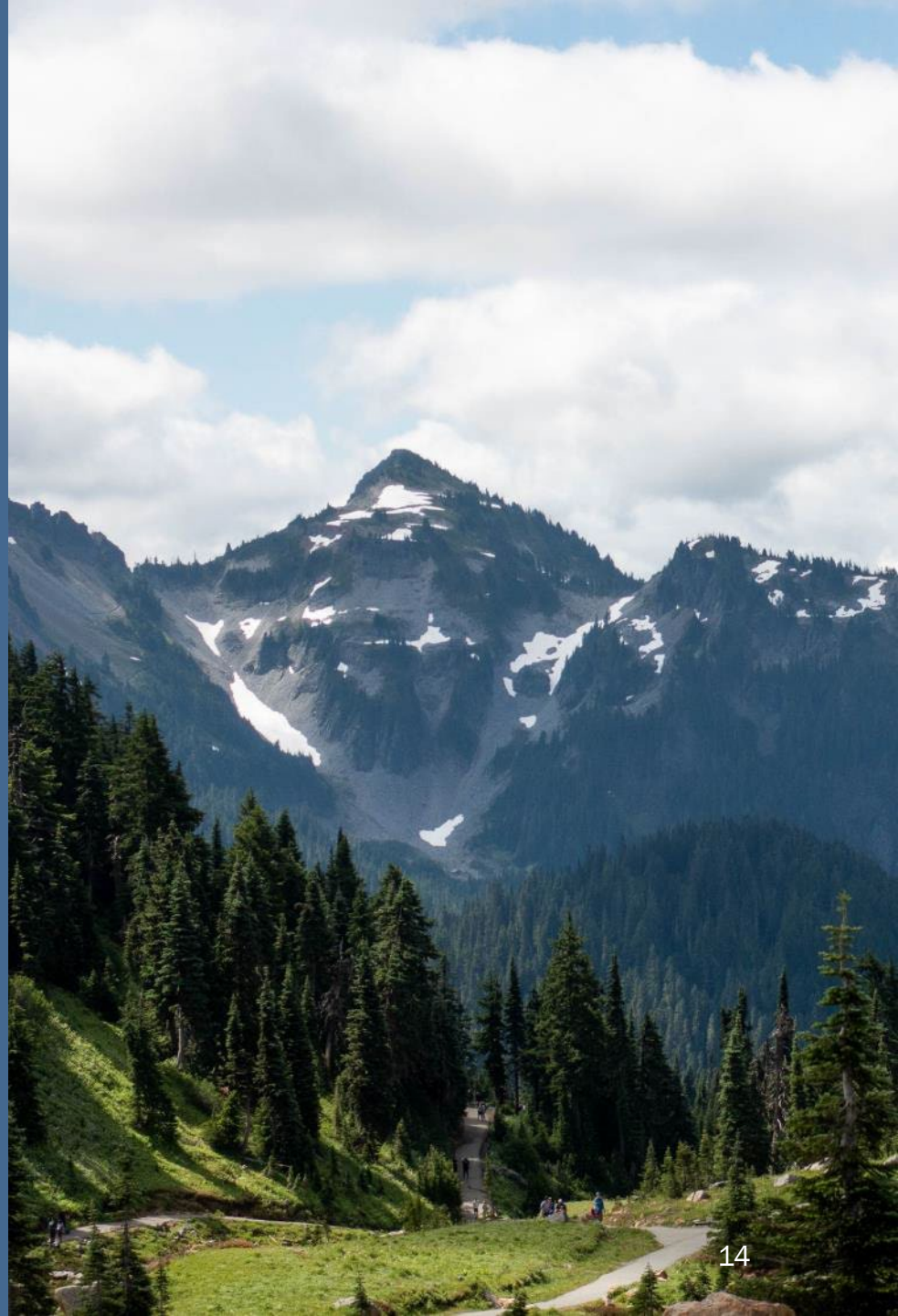
We issued a Drought Emergency Declaration on April 16, 2024. On April 10, 2024, the state Executive Water Emergency Committee determined that specific areas in Washington meet the statutory criteria for drought conditions described in Chapter 43.83B RCW, "water supply is less than 75 percent of normal, resulting in undue hardships to water users and the environment." Under SHB 1138, Emergency Drought Response, funding became available to alleviate immediate conditions from this drought. The adopted emergency drought funding rule, Chapter 173-167 WAC, remains effective until Aug. 14, 2024.

Ecology may extend the emergency rule based on evolving drought conditions. If the emergency rule is extended, these guidelines will be updated to reflect the extended date to which applications may be submitted.

I want to...

- Apply for or manage a grant or loan
- Get guidance for managing a grant or loan
- Learn more about the 2024 drought

Presenters



Discussion Question

For all meeting attendees:

What conditions and water supply concerns are folks seeing on the ground?

Example Drought Response Grant Projects

Agriculture or livestock

- Purchasing or leasing water or water rights to be used during the drought period for instream or out-of-stream beneficial uses.
- Developing alternate source(s) of water supply, or mitigating use of existing emergency sources, to supplement an insufficient source.
- Replacing intakes, pumps, and related accessories.

See: 2024 Drought Response Grant Funding Guidance (wa.gov)

Example Drought Response Grant Projects

Public water supply

- Developing alternate source(s) of water supply, or mitigating use of existing emergency sources, to supplement an insufficient source.
- Transportation of emergency water supplies for public health and sanitation.
- Implementing water conservation strategies.

See: 2024 Drought Response Grant Funding Guidance (wa.gov)

Example Drought Response Grant Projects

Fisheries and wildlife

- Projects that eliminate migration barriers, such as temporary structures to increase flow velocity or depth.
- Modifying stream channels adjacent to a hatchery to ensure passage to the facility.
- Stream channel modification such as trenching, sandbagging, or creating berms to protect spawning gravels or to provide migratory channels for fish passage.

See: 2024 Drought Response Grant Funding Guidance (wa.gov)

Drought info

Communications

- WSAC website updated with meeting materials and presentation recording.
  - Will be updated within a week of this meeting.
  - Next meeting tentatively July 24.
- April 16, 2024, Press release: Apr. 16 - Drought Declaration - Washington State Department of Ecology
- Updated drought website: Drought Response - Washington State Department of Ecology

Thank you

Contact: Committee Chair
Caroline Mellor
Statewide Drought Lead
Caroline.Mellor@ecy.wa.gov

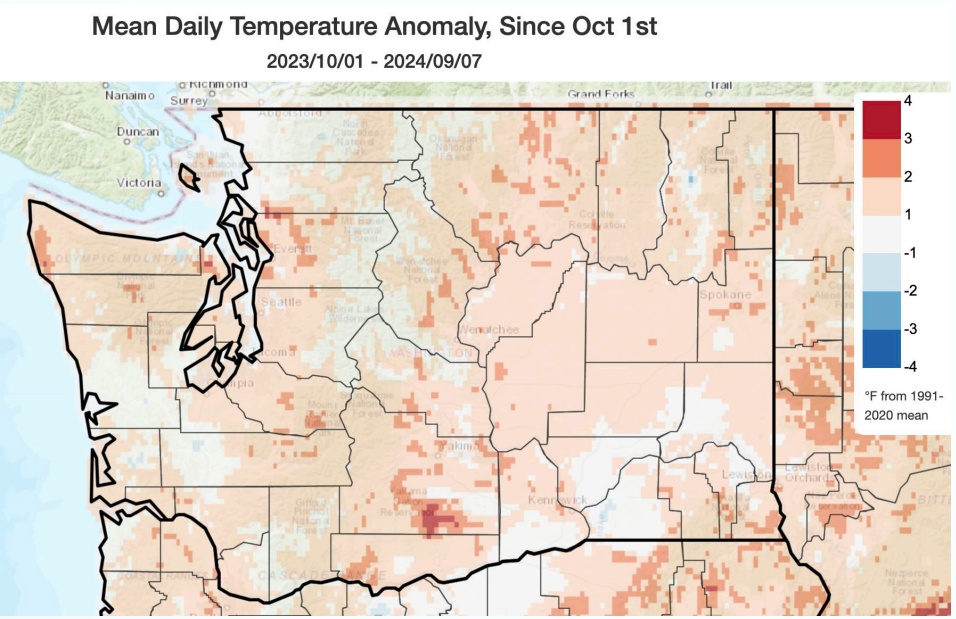
Office of the Washington State Climatologist

Current Conditions and Seasonal Outlook

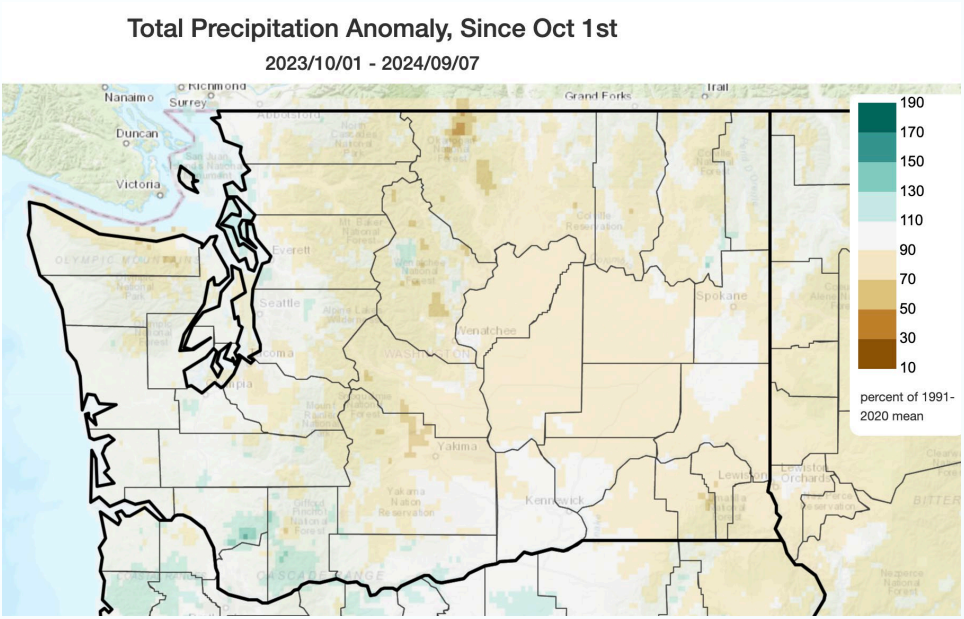
Karin Bumbaco
Office of the Washington State Climatologist
Climate Impacts Group
University of Washington
September 11, 2024

Water Year to Date

Temperature



Precipitation



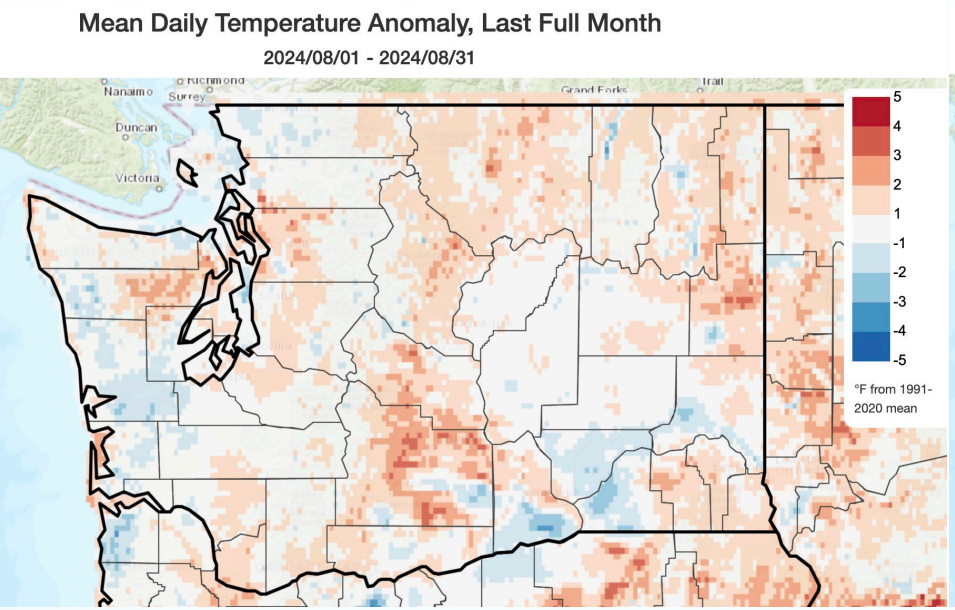
Climate Toolbox

- Averaged statewide, Oct-Aug ranks as the 11th warmest on record (+1.1°F above normal)*
- Averaged statewide, Oct-Aug precipitation was slightly below normal (91% of normal; -3.84”), ranking as the 47th driest out of 130 years

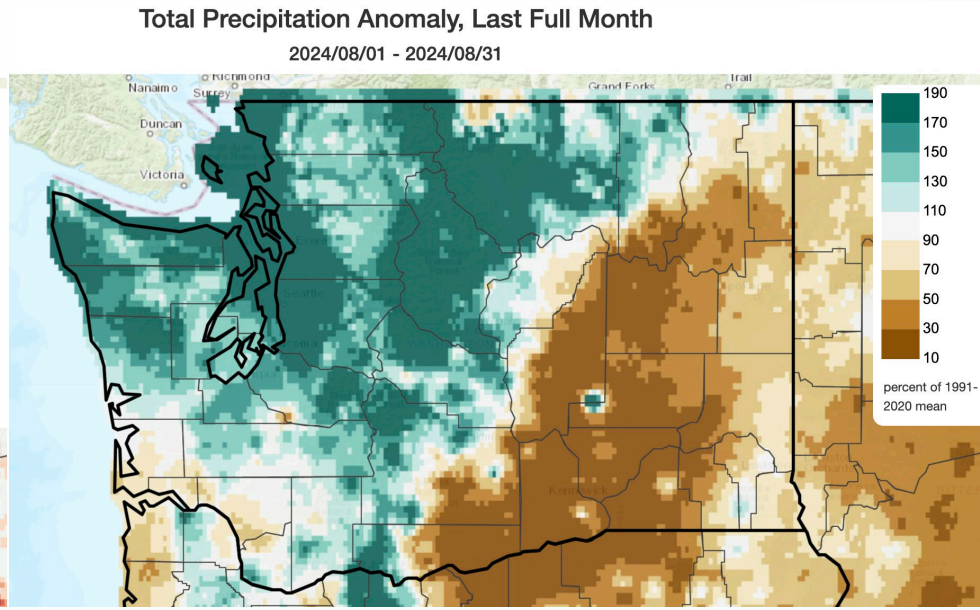
*Records since 1895; Normal is 1991-2020

August 2024

Temperature



Precipitation

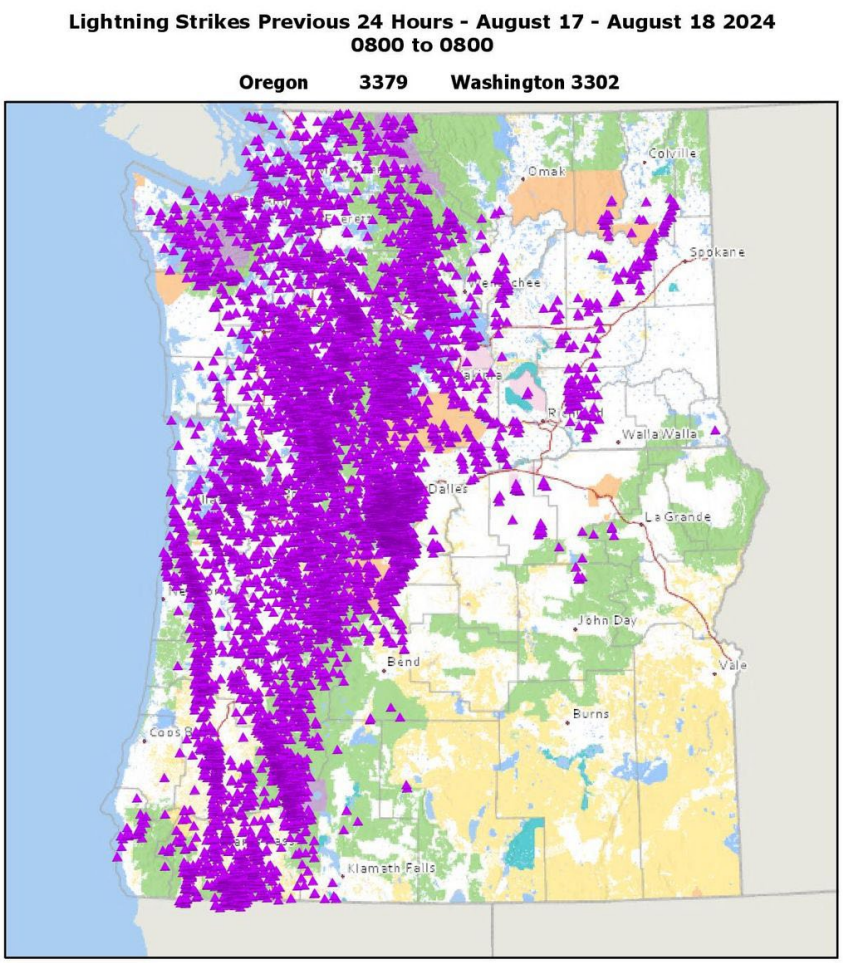


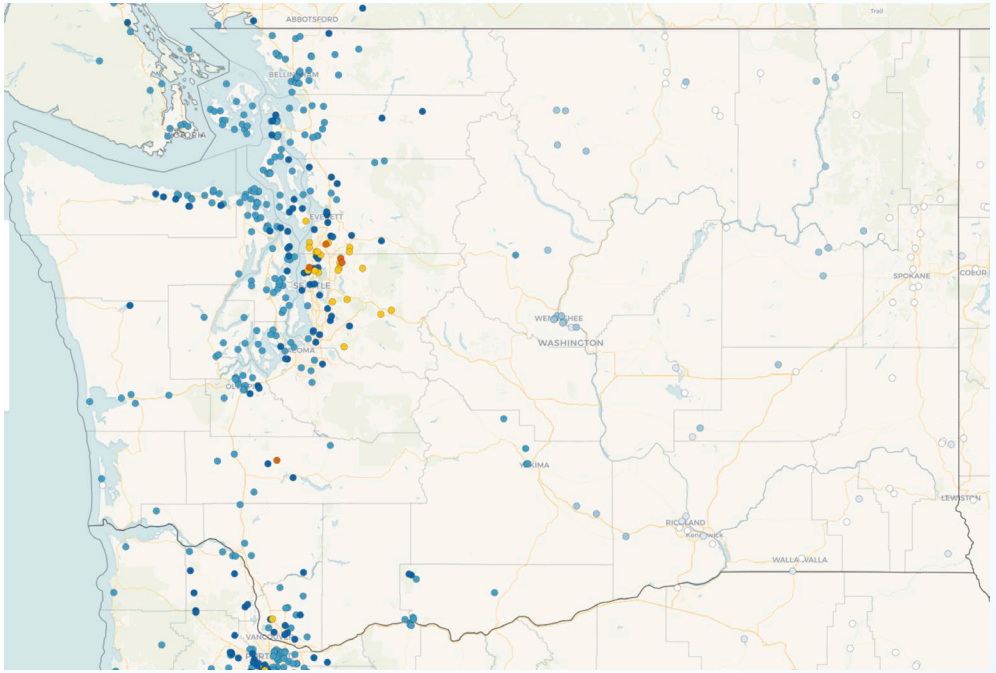
Climate Toolbox

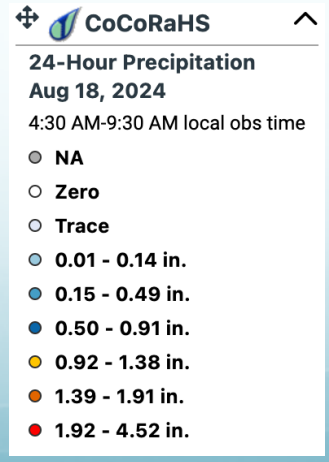
- Averaged statewide, August temperatures were near-normal (+0.1°F), ranking as the 34th warmest
- Averaged statewide, August precipitation was 156% of normal (+0.49”), ranking as the 34th wettest

*Records since 1895; Normal is 1991-2020

August Thunderstorms



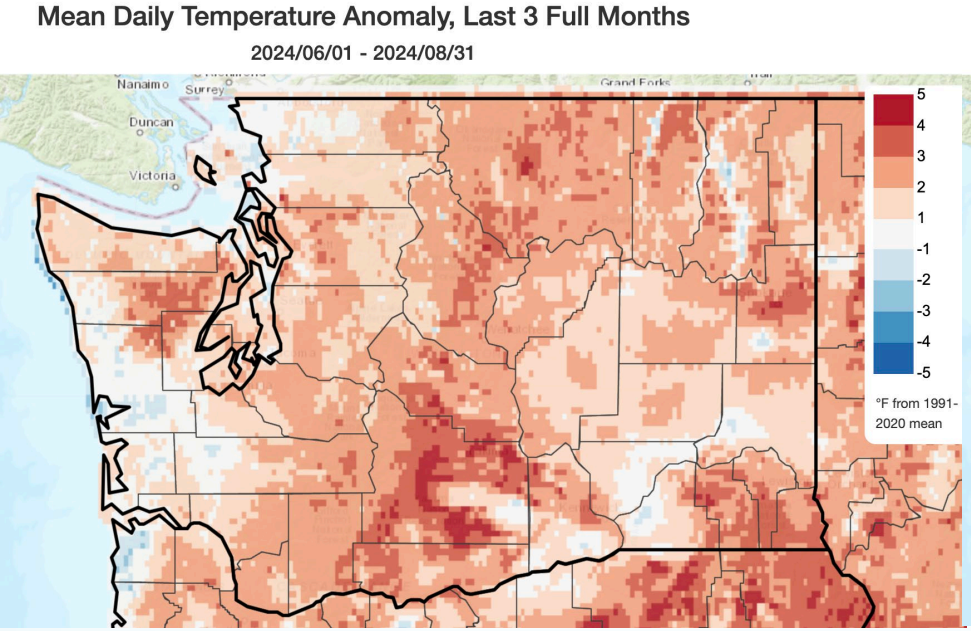




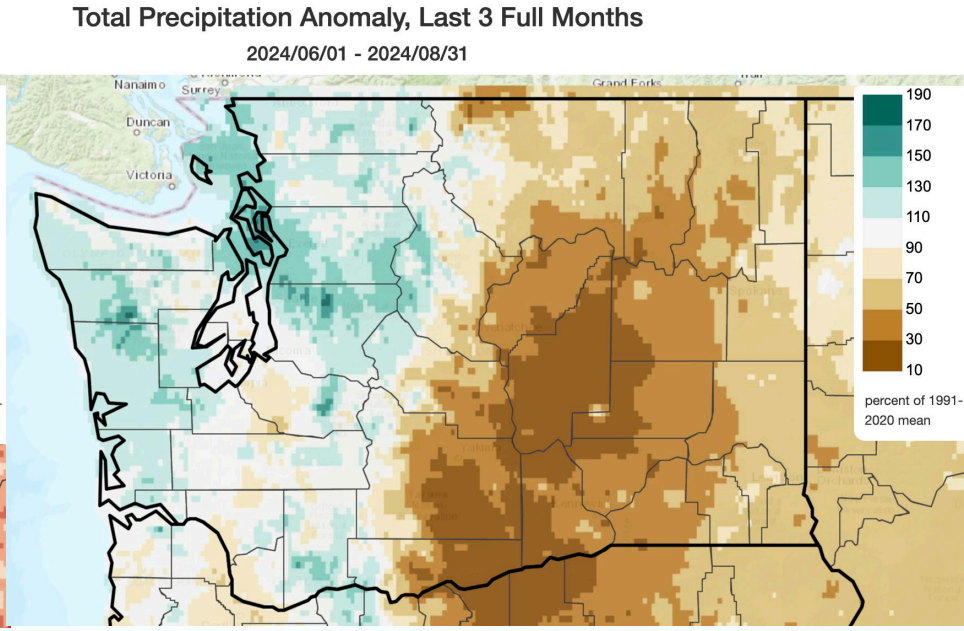
24-hr precipitation totals on the morning of August 18

Jun-Jul-Aug 2024

Temperature



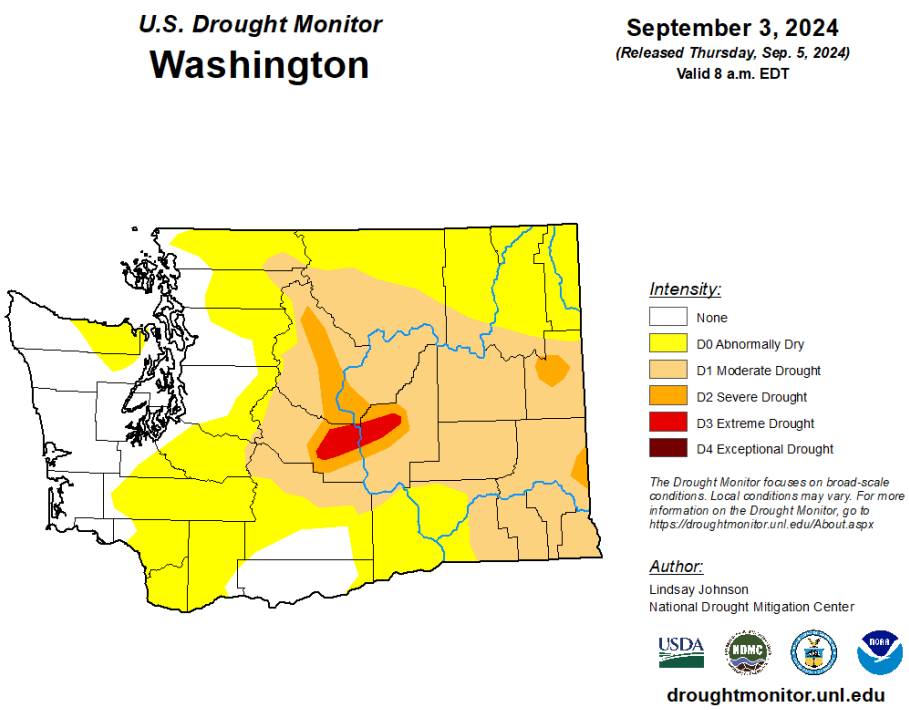
Precipitation

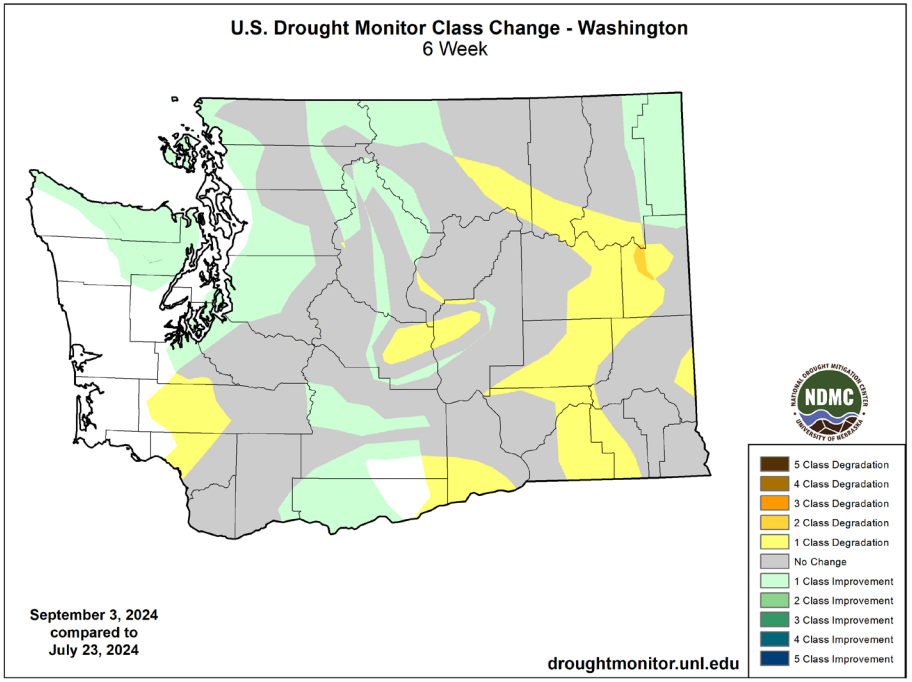


Climate Toolbox

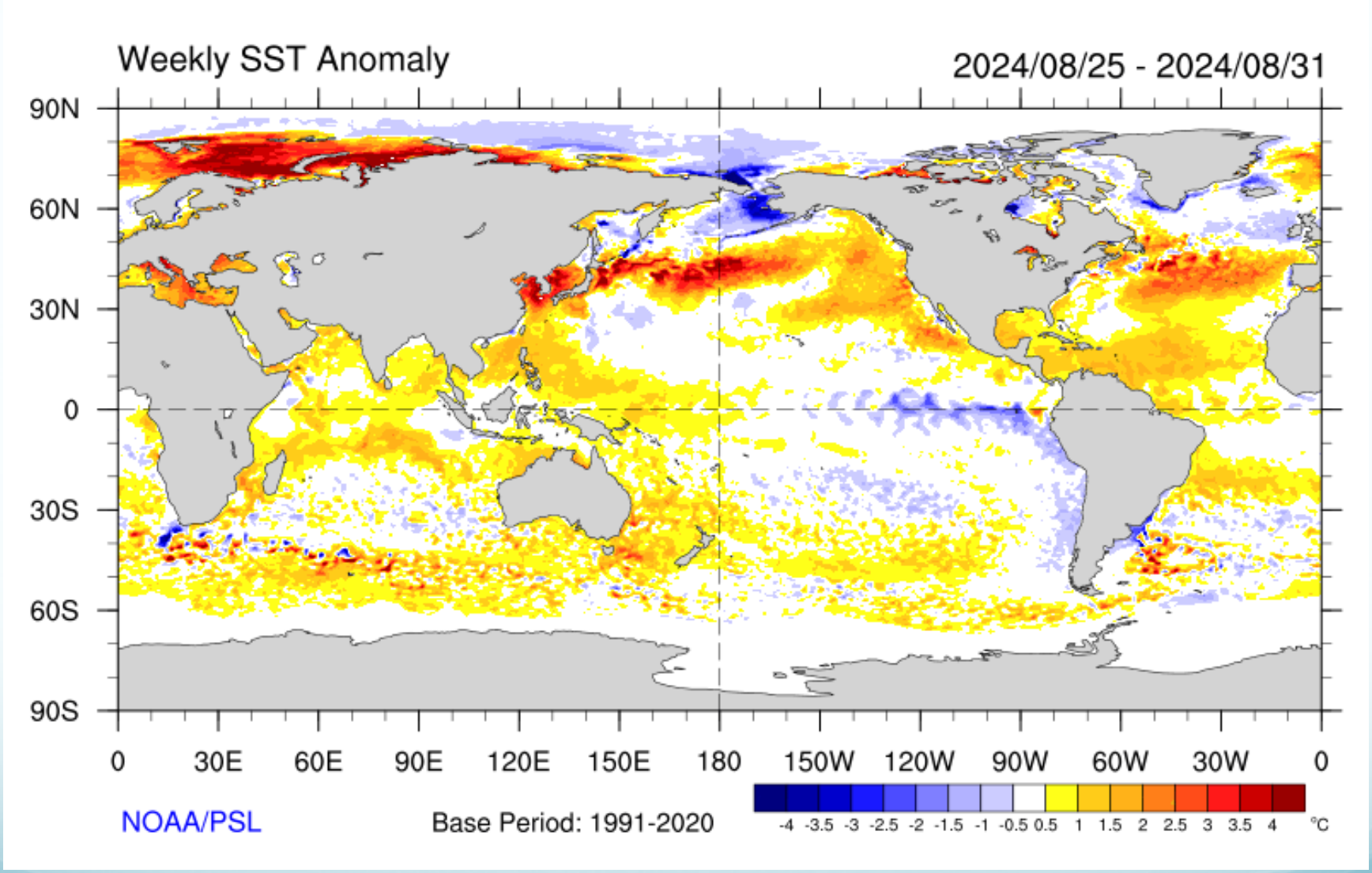
- Averaged statewide, Jun-Aug ranks as 13th warmest summer (+1.4°F above normal)
- Averaged statewide, near-normal summer precipitation (102% of normal)

U.S. Drought Monitor



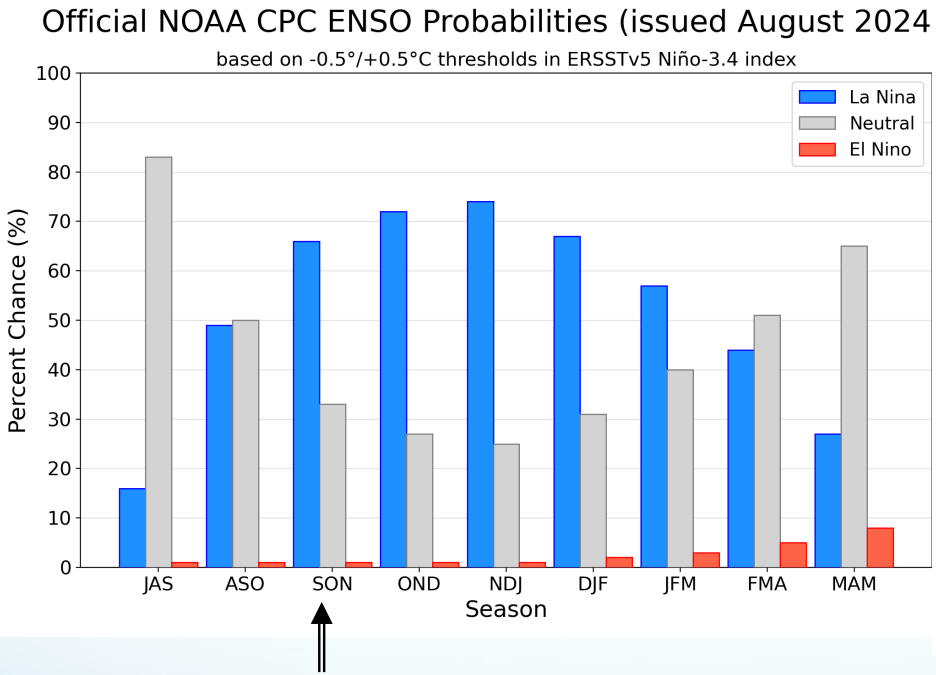


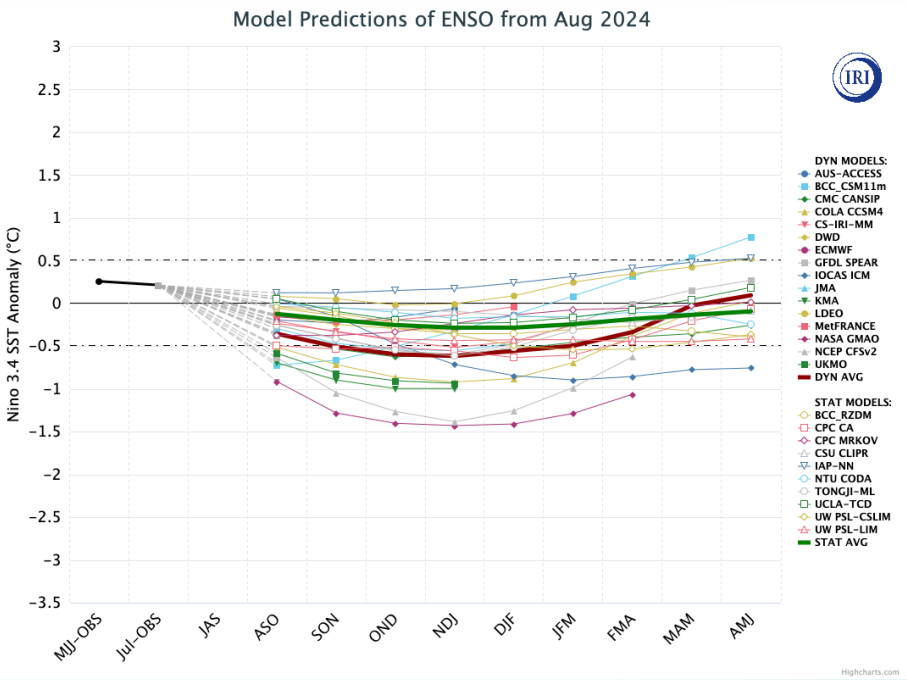
Sea Surface Temperature Anomalies: Aug 25-31, 2024



Current Status: Neutral Conditions

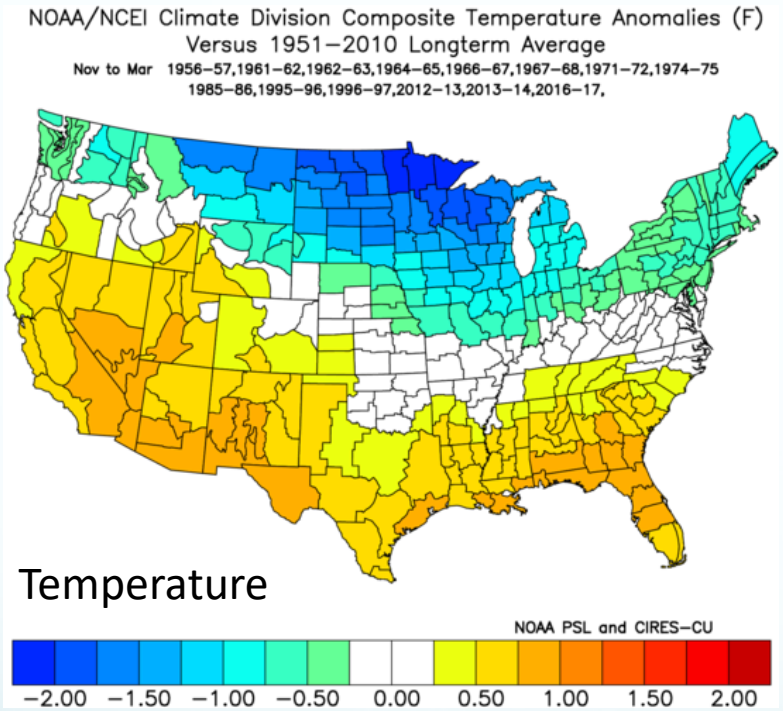
La Niña Watch

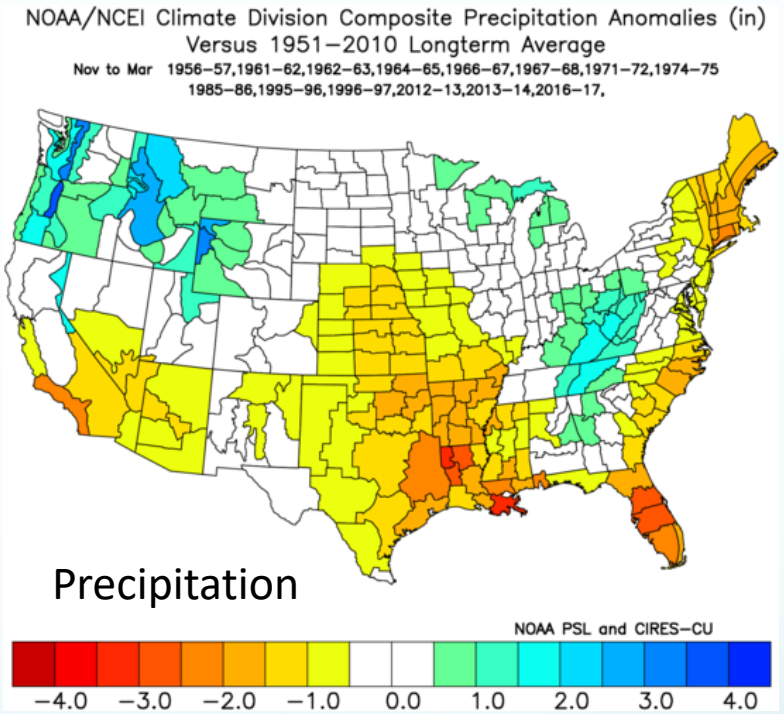




- Probabilities of La Niña have decreased slightly
  - For example, 74% chance of La Niña during Nov-Jan vs. 79% last meeting

Average anomalies for weak La Niña events

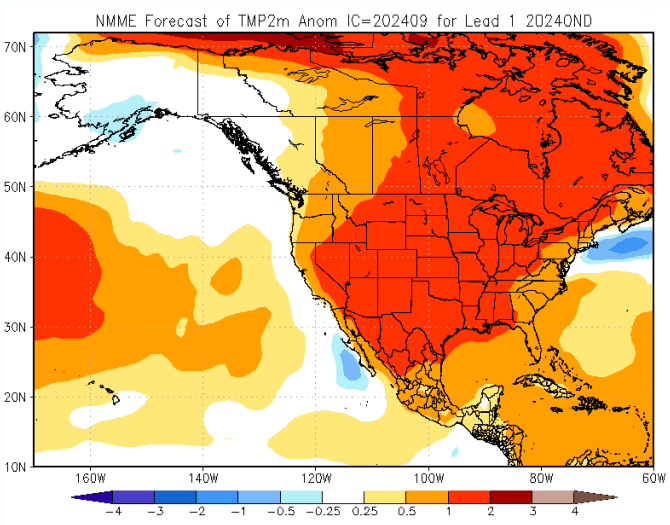




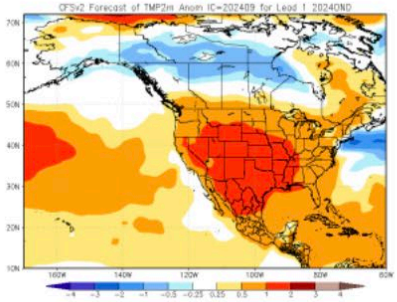
Historical weak La Niña events (Niño 3.4 between -0.25 and -0.75):
1956-1957, 1961-1962, 1962-1963, 1964-1965, 1966-1967, 1967-1968, 1971-1972, 1974-1975, 1985-1986, 1995-1996, 1996-1997, 2012-2013, 2013-2014, 2016-2017

Source: https://psl.noaa.gov/data/usclimdivs/

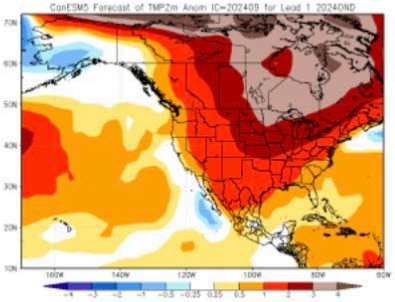
NMME: Oct-Dec Temperatures



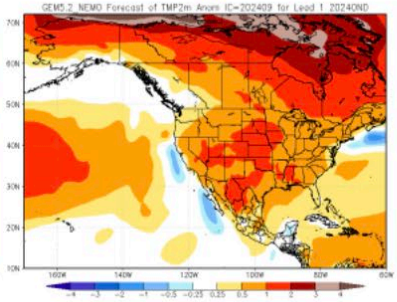
NCEP_CFSv2



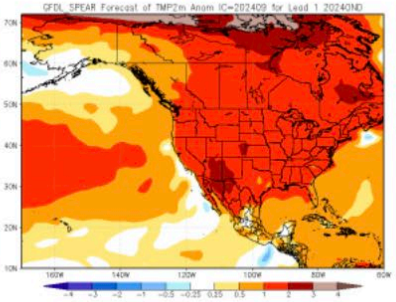
CanESM5



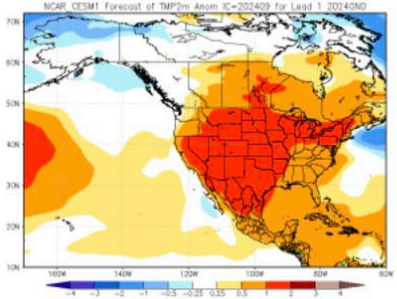
GEM5.2_NEMO



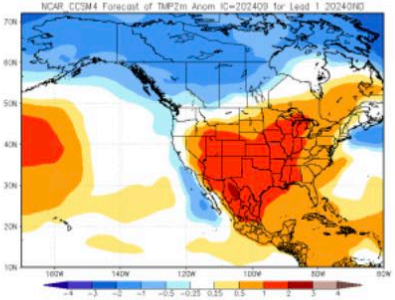
GFDL_SPEAR



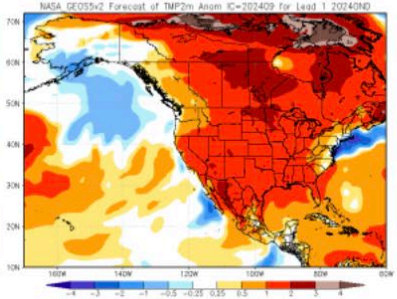
NCAR_CESM1



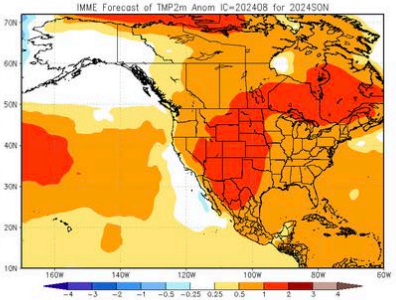
NCAR_CCSM4



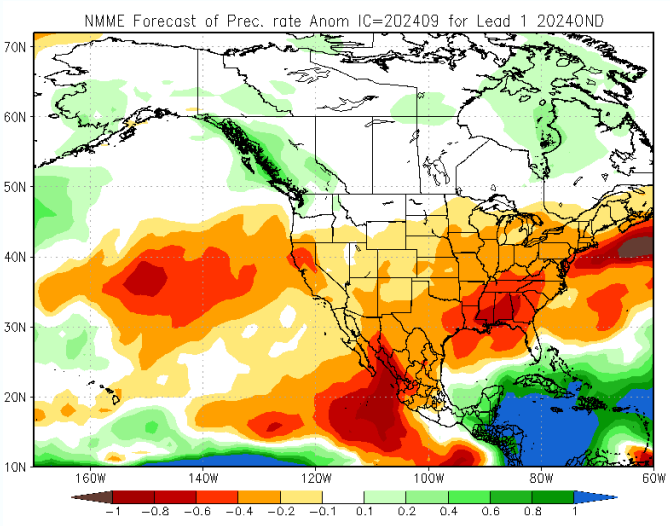
NASA_GEOS5v2



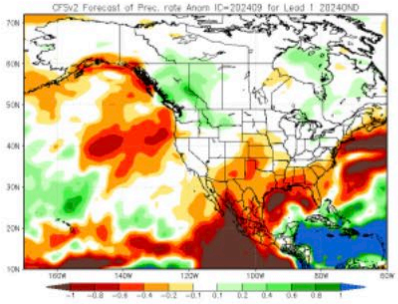
IMME



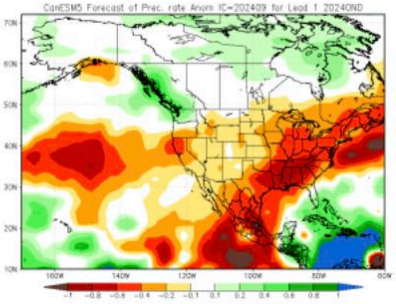
NMME: Oct-Dec Precipitation



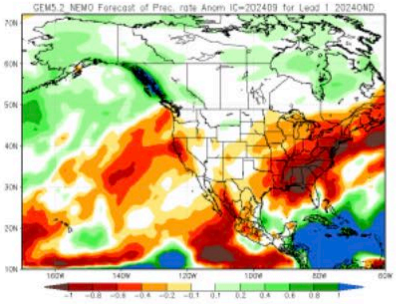
NCEP_CFSv2



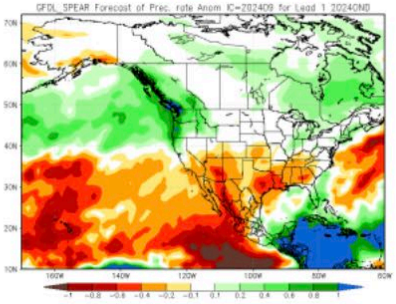
CanESM5



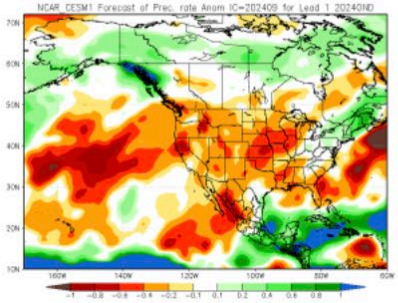
GEM5.2_NEMO



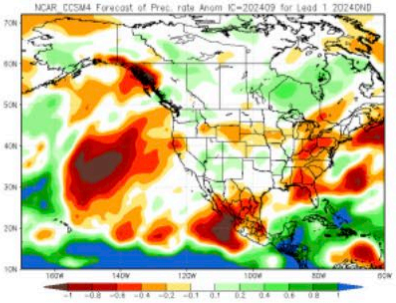
GFDL_SPEAR



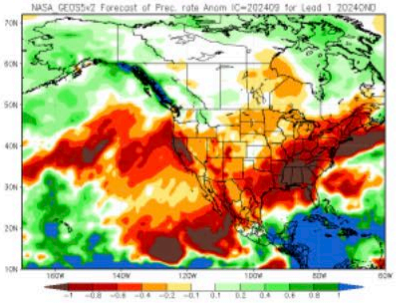
NCAR_CESM1



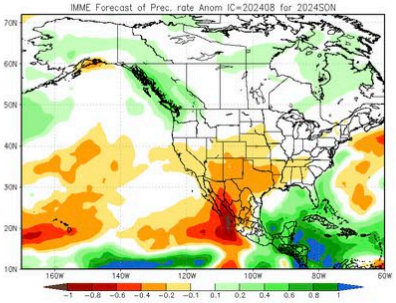
NCAR_CCSM4



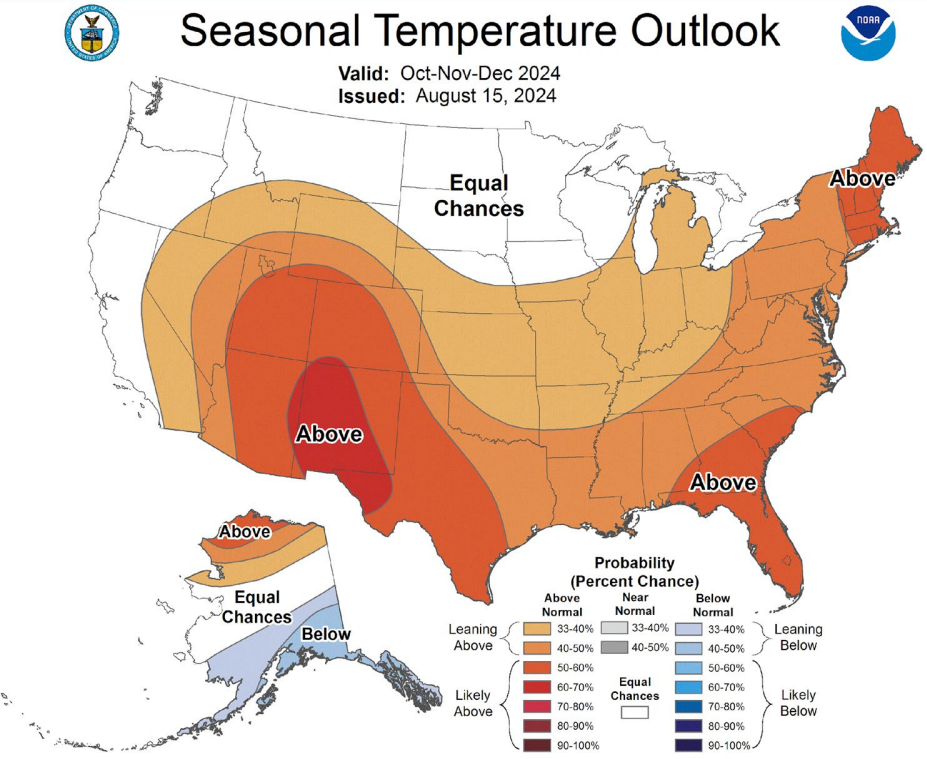
NASA_GEOS5v2

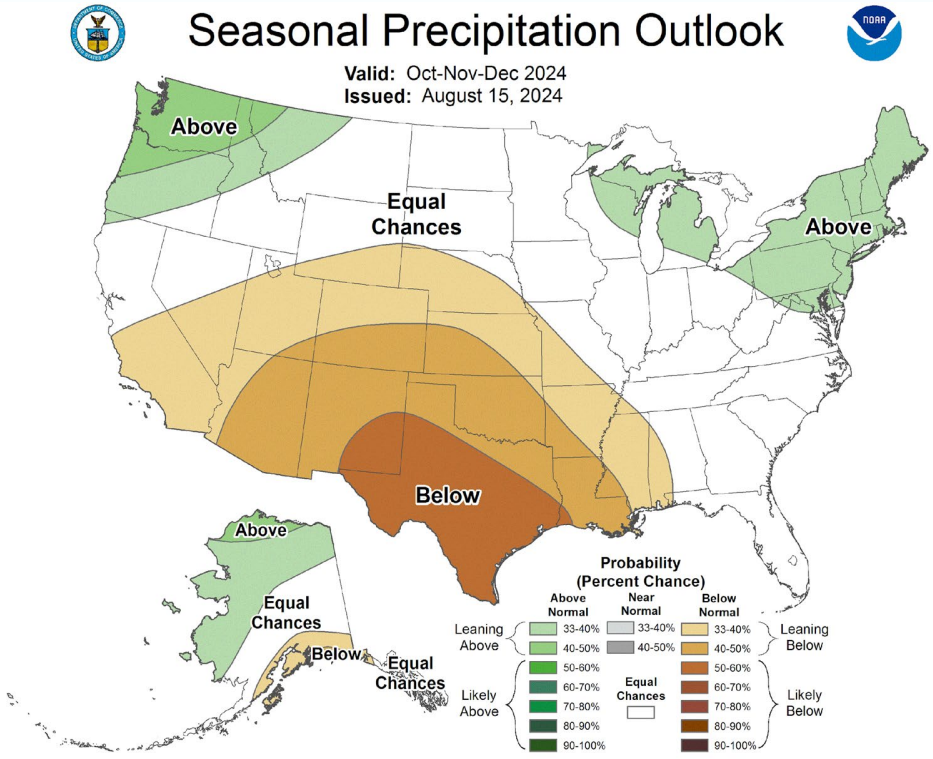


IMME

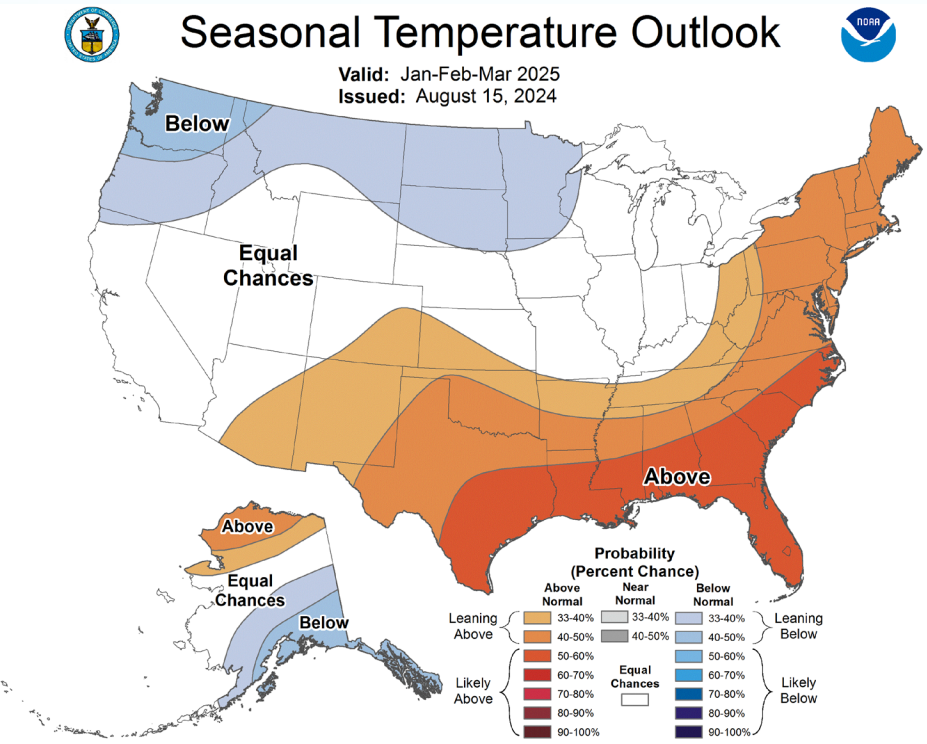


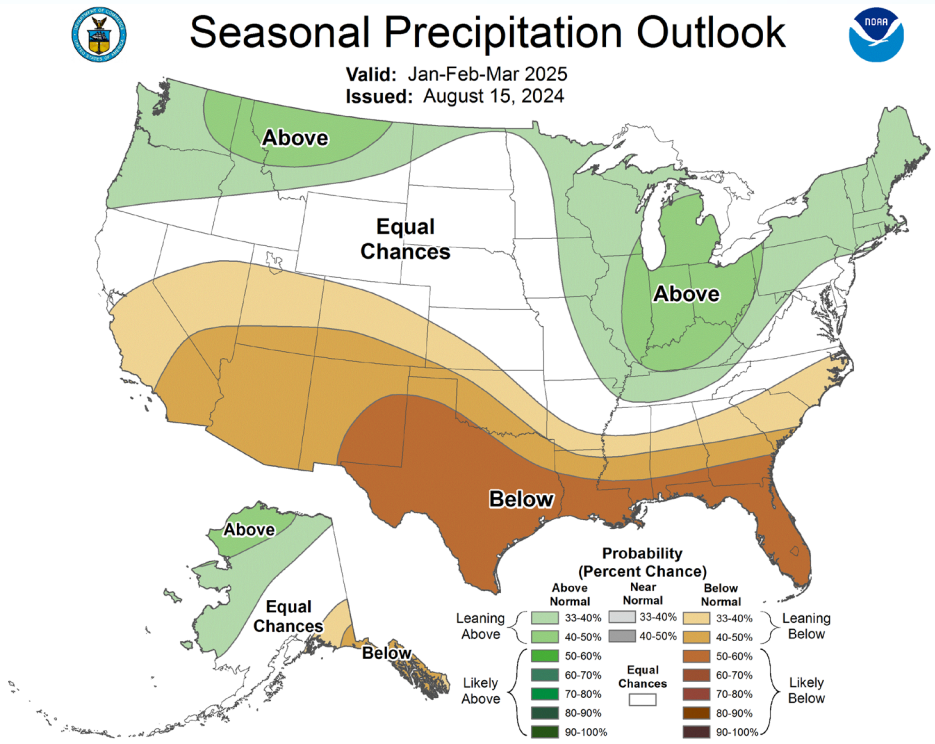
Climate Prediction Center Outlook: Oct-Dec





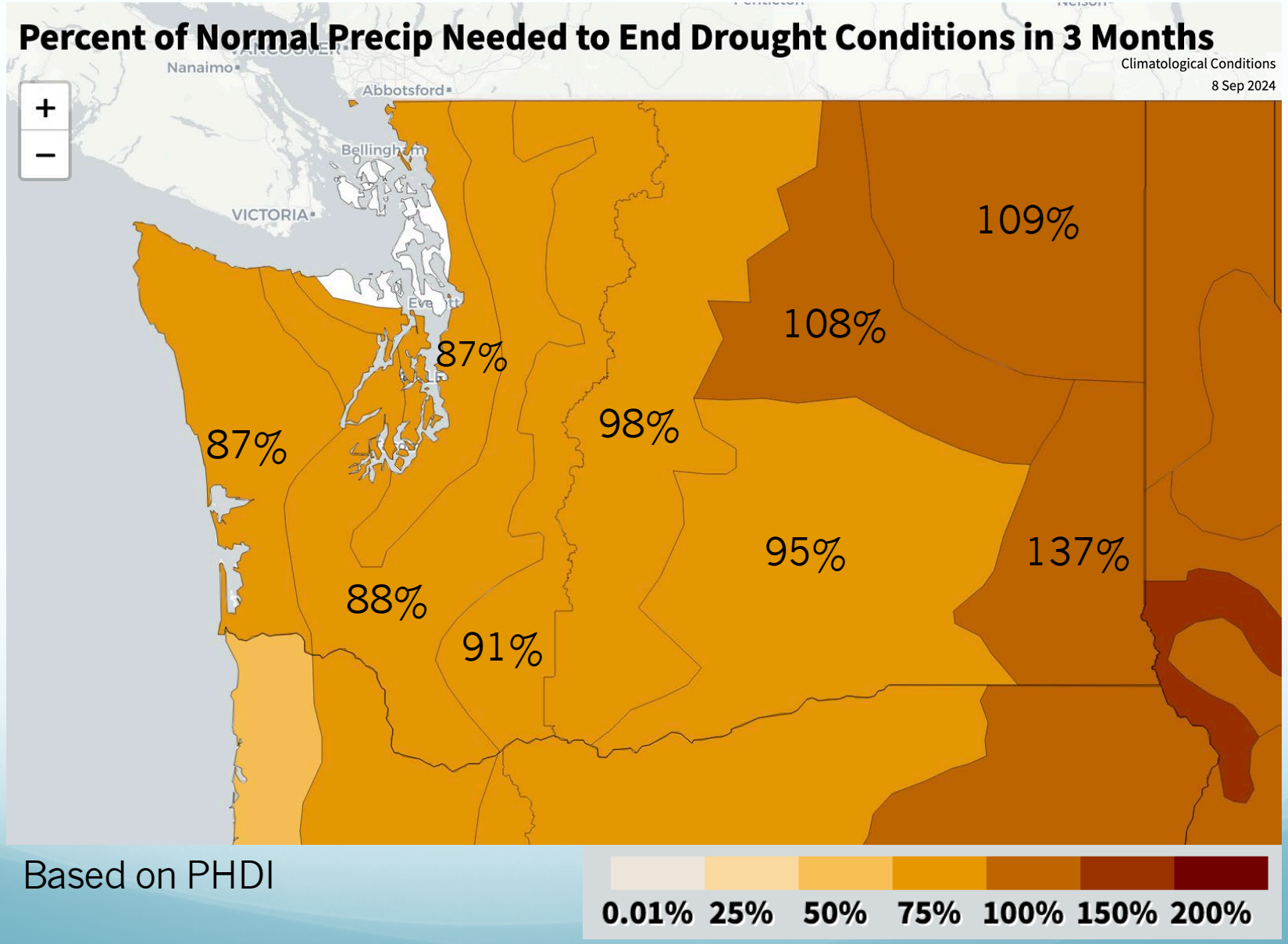
Climate Prediction Center Outlook: Jan-Mar





NMME shows near-normal temperatures during January-March

Drought Recovery



Based on PHDI

Source: https://www.ncei.noaa.gov/access/monitoring/drought-recovery/

Summary

- The water year through August has been warmer than normal with near-normal to slightly below normal precipitation
- Summer was warmer than normal but cooler than the last 3 summers
- Summer precipitation deficits range between 1 and 3” in eastern WA while precipitation was near-normal to above in western WA
- 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

USDA United States Department of Agriculture

Natural Resources Conservation Service

USDA Natural Resources Conservation Service

Snow Survey and Water Supply Forecasting Program

Picket Range
North Cascades, WA

Washington

Water Supply Availability Committee

September 10, 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

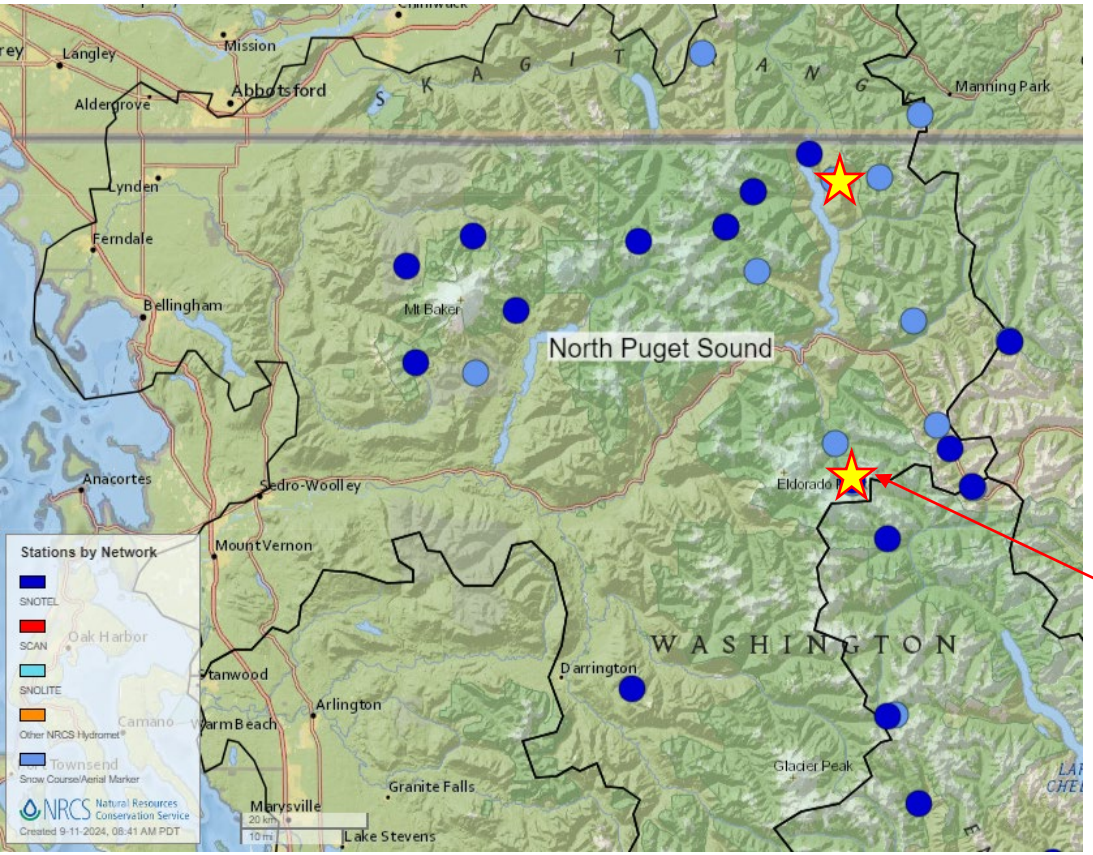
Natural Resources Conservation Service

Observations from the Field

USDA United States Department of Agriculture

Natural Resources Conservation Service

New Lake Hozomeen Snow Course



Thunder Basin SNOTEL

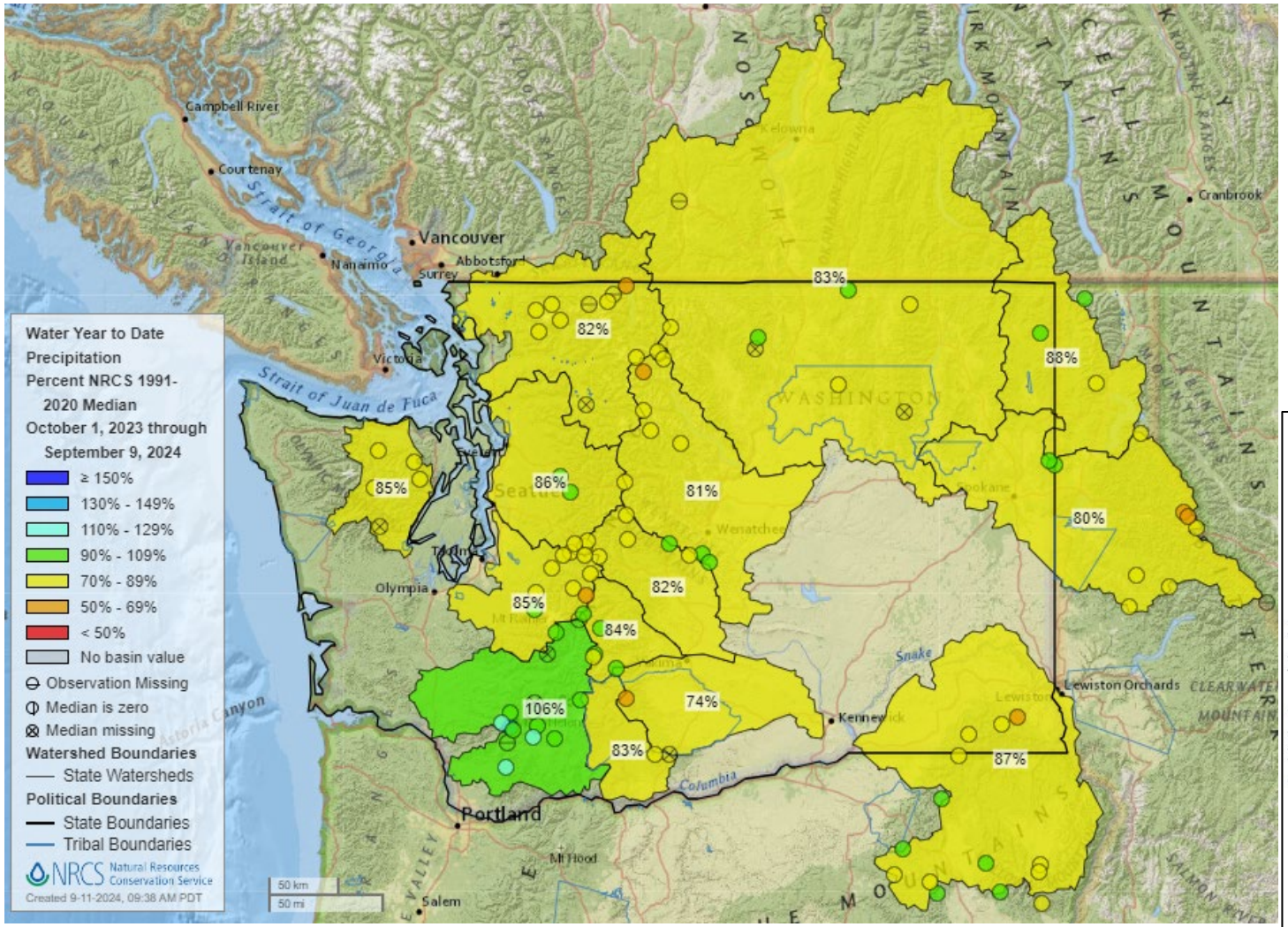
USDA United States Department of Agriculture

Natural Resources Conservation Service

Precipitation Conditions

WYTD Precipitation – Basin Map

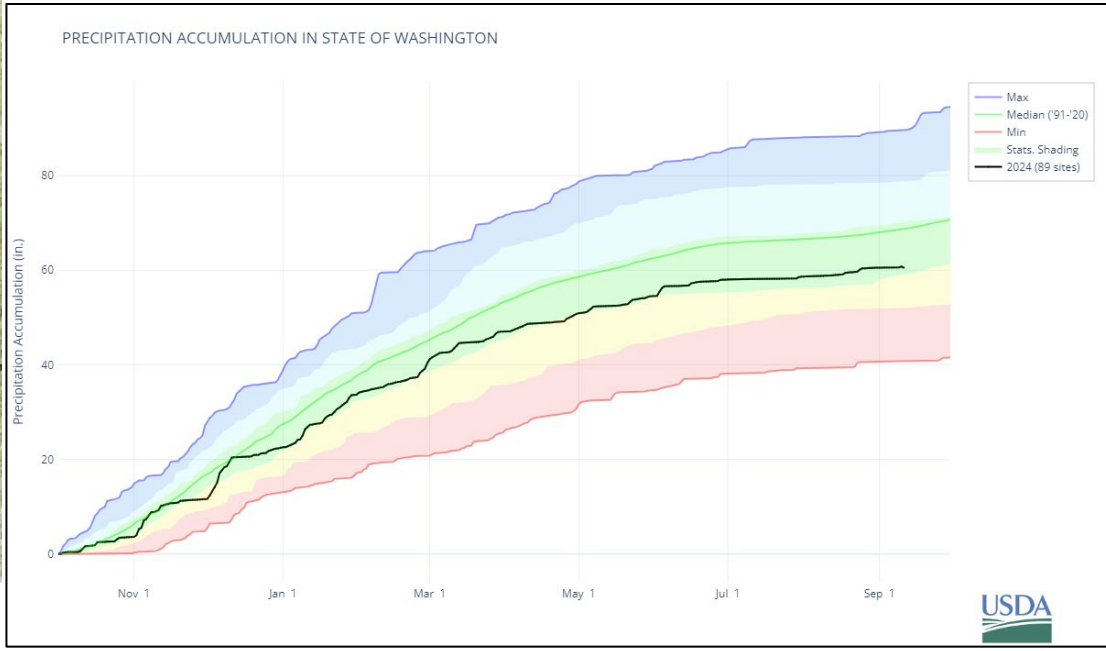
United States Department of Agriculture
Natural Resources Conservation Service



Statewide WYTD Precipitation:

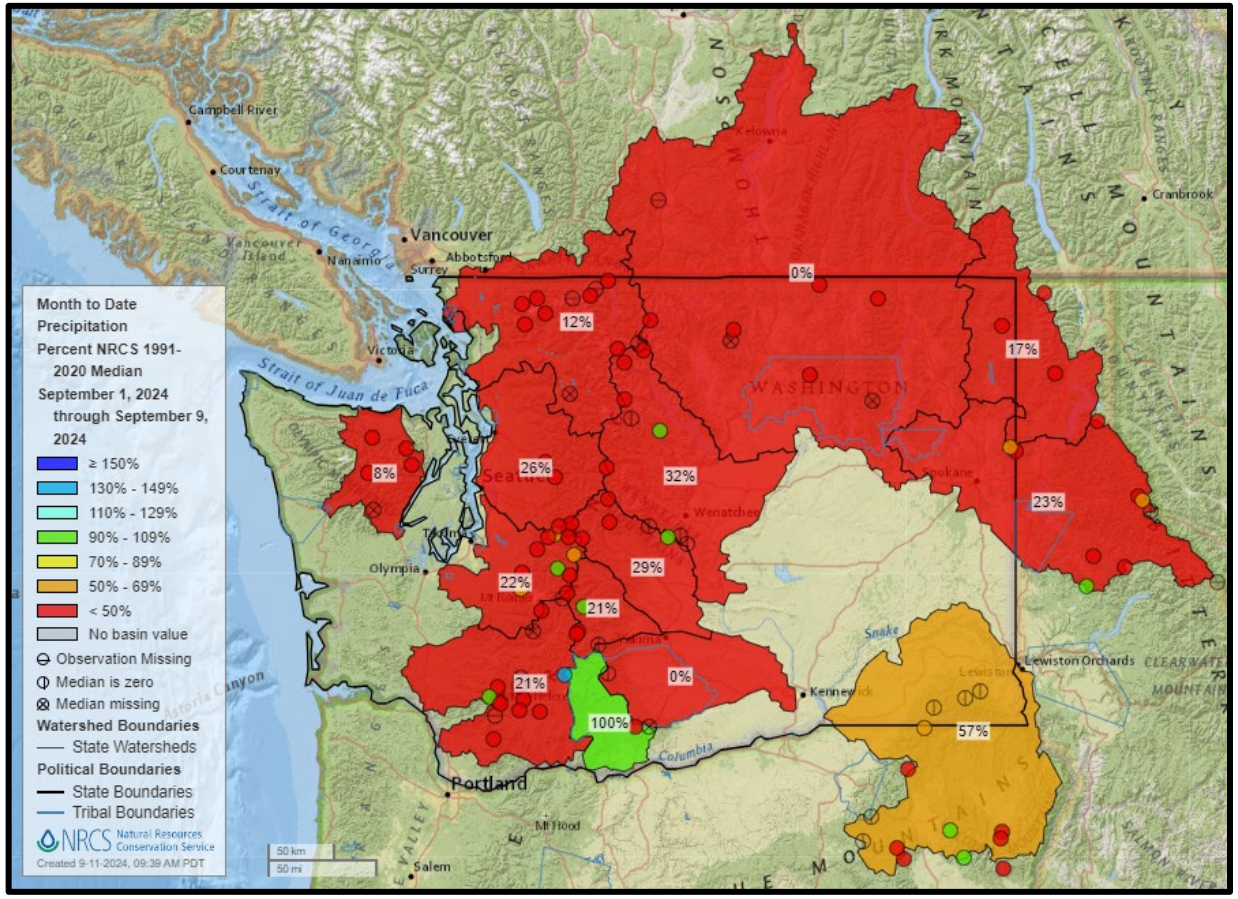
88% of normal
89% of normal last meeting

35 – percentile (normal period)



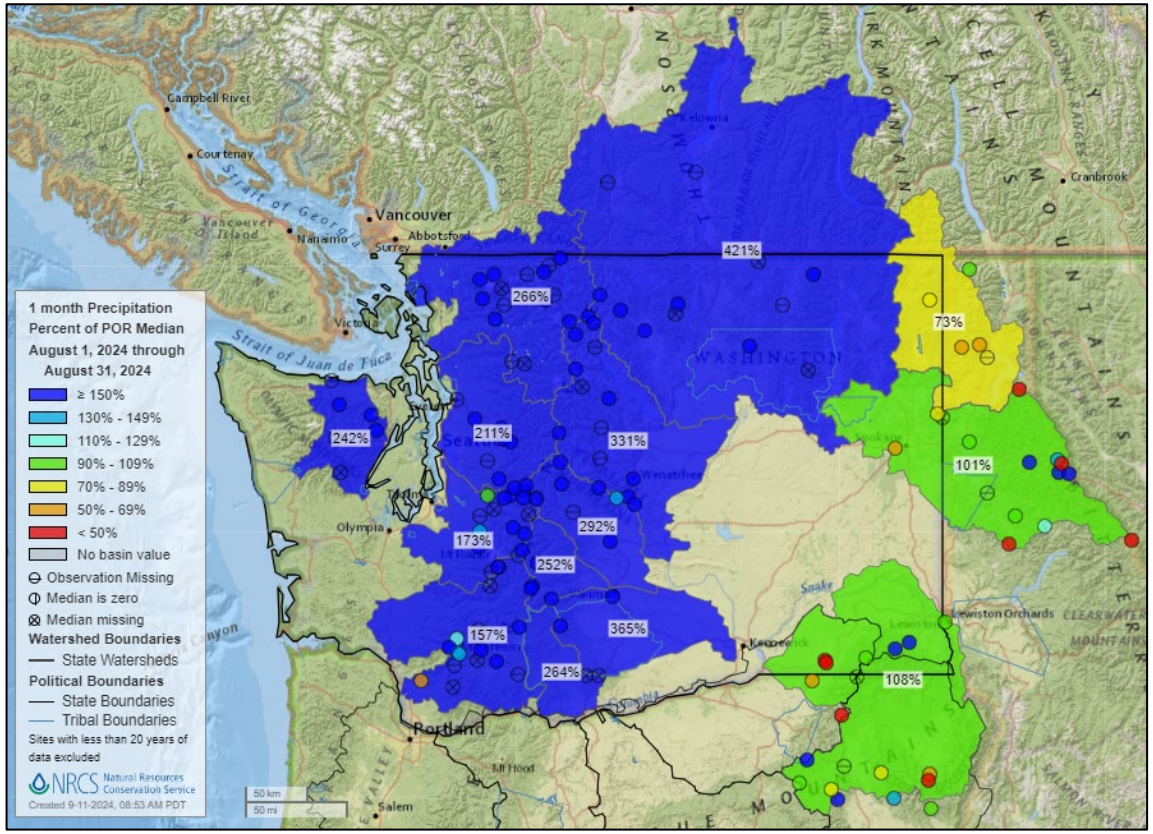
Month-to-Date Precipitation

United States Department of Agriculture
Natural Resources Conservation Service



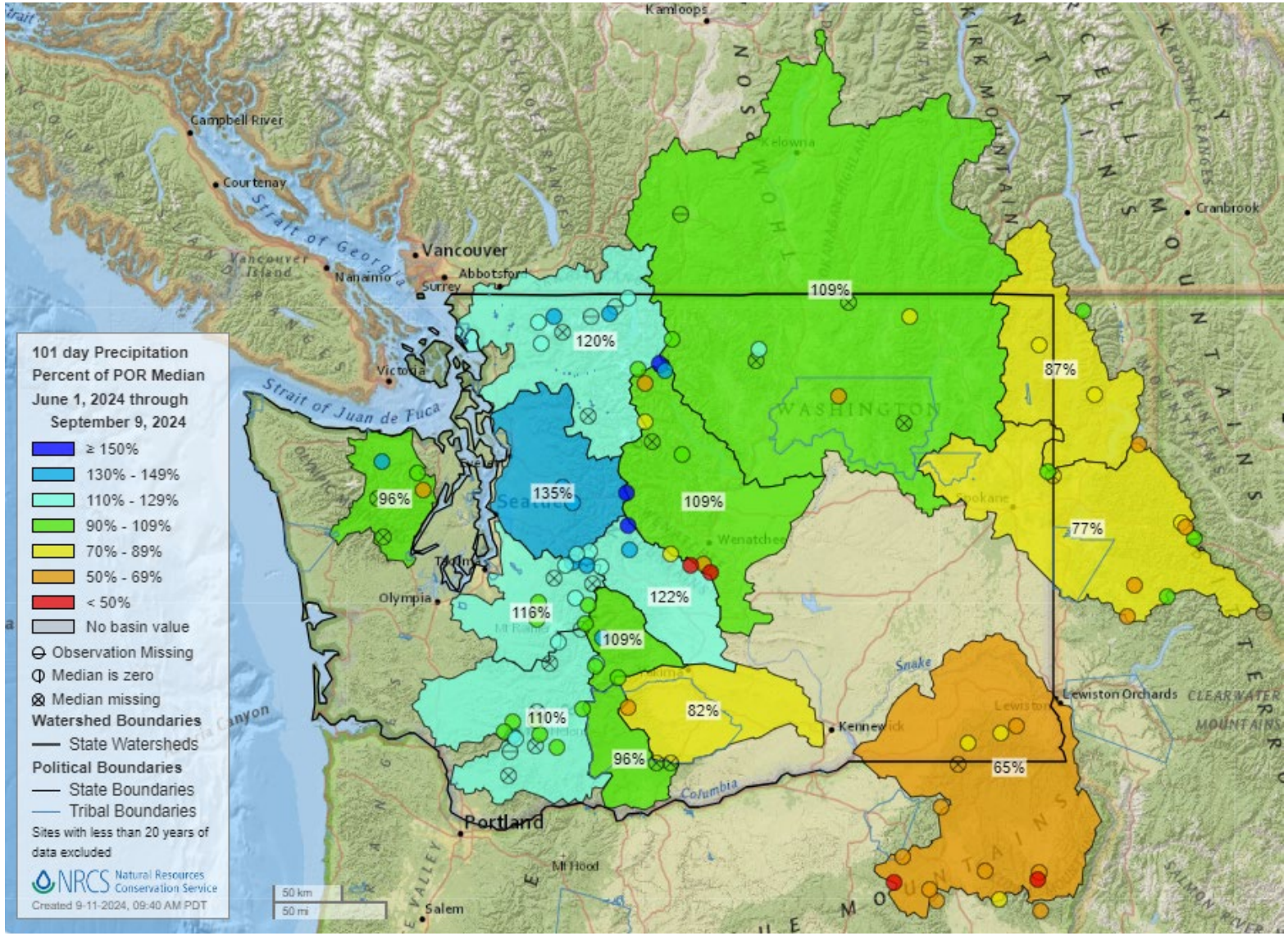
Month-to-date

August



June 1 – September 9 Precipitation

United States Department of Agriculture
Natural Resources Conservation Service



USDA United States Department of Agriculture

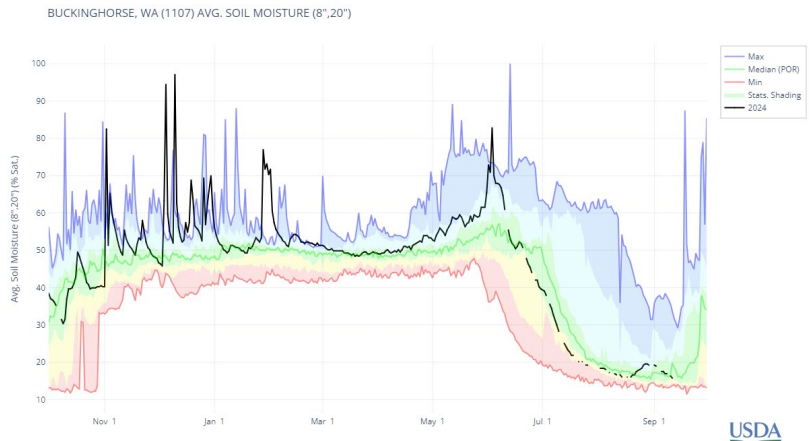
Natural Resources Conservation Service

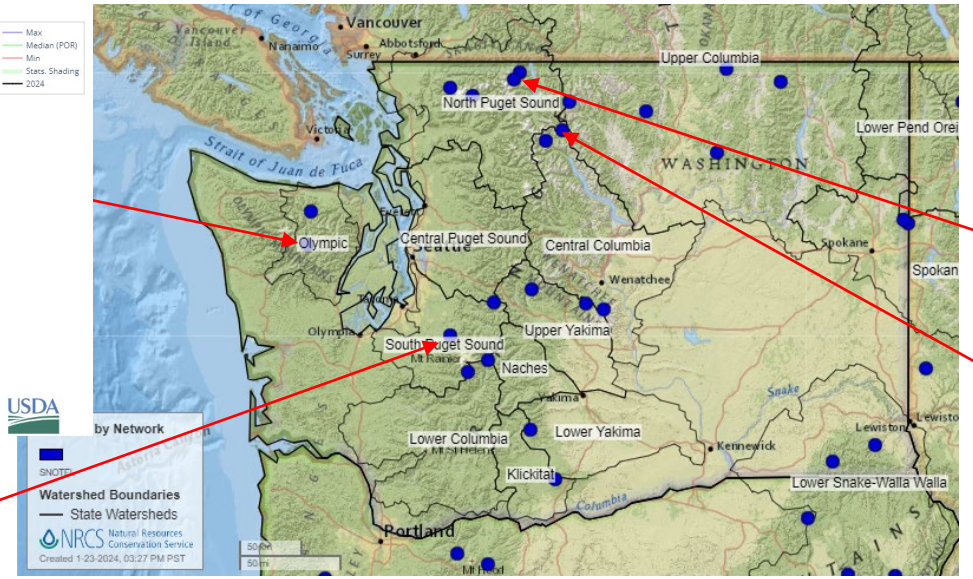
Soil Moisture

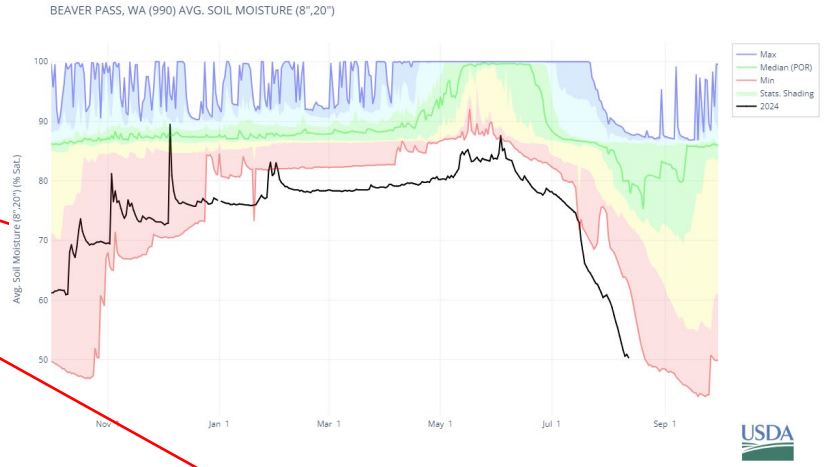
Soil Moisture

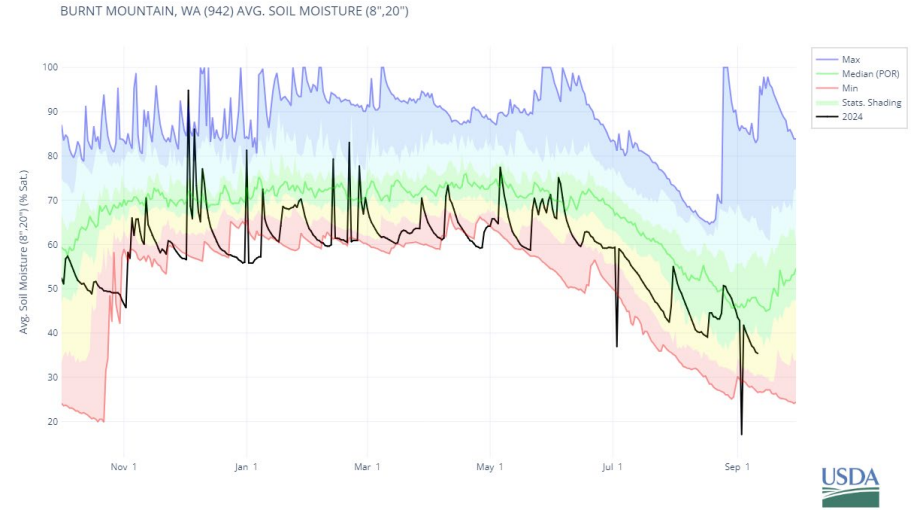
WY 2024 – Select Site Charts

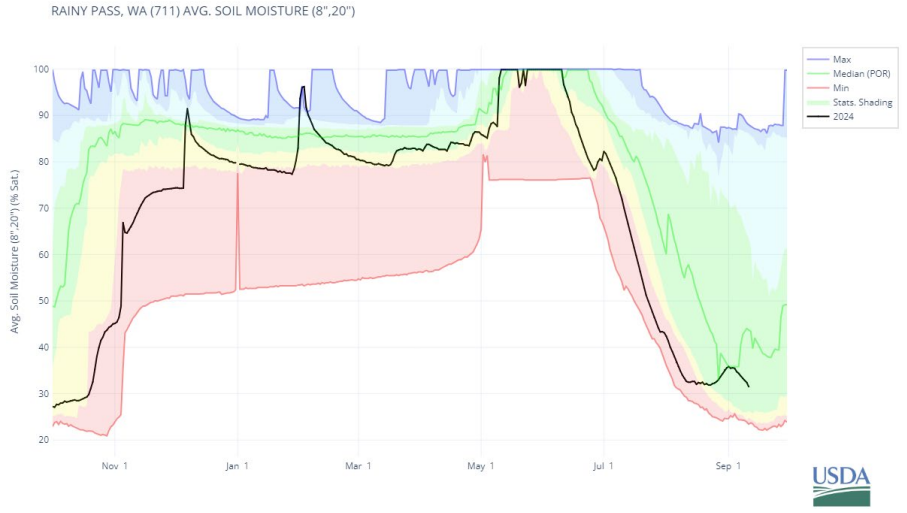
United States Department of Agriculture
Natural Resources Conservation Service







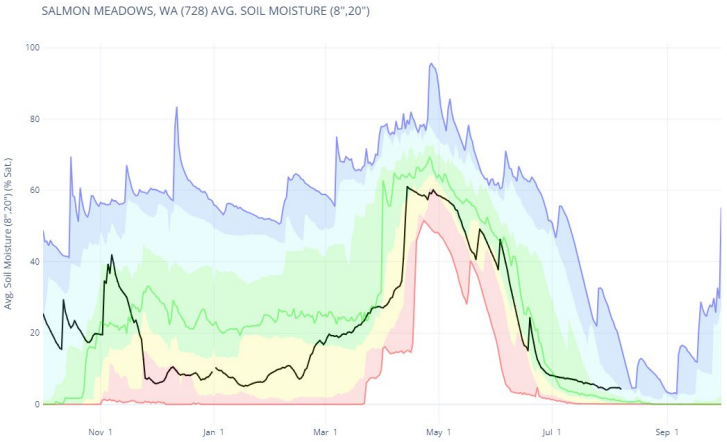


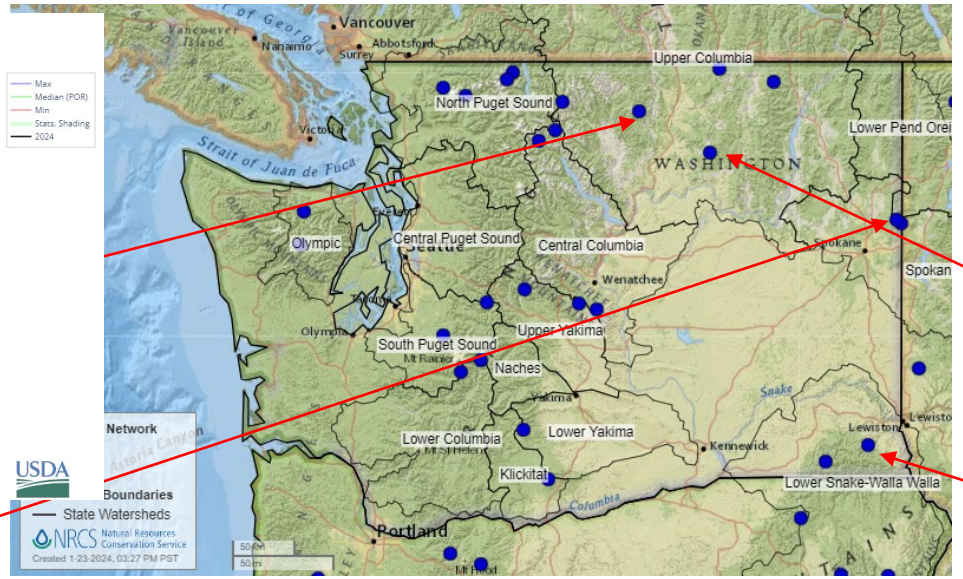


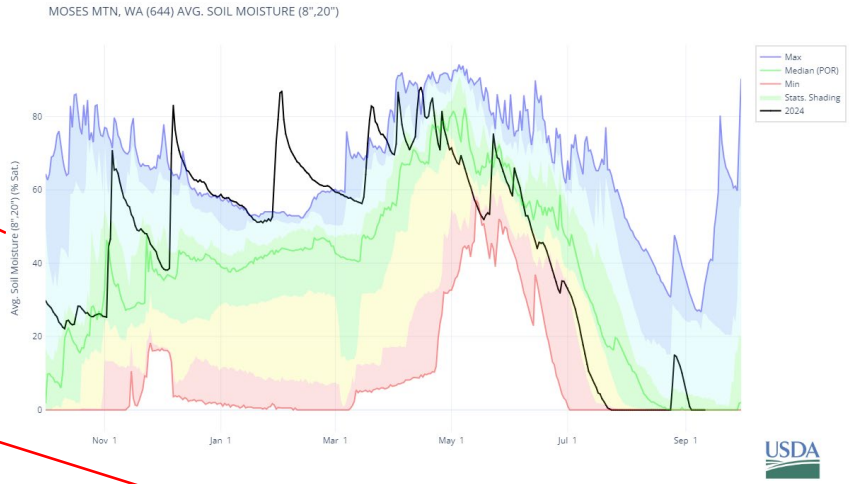
Soil Moisture

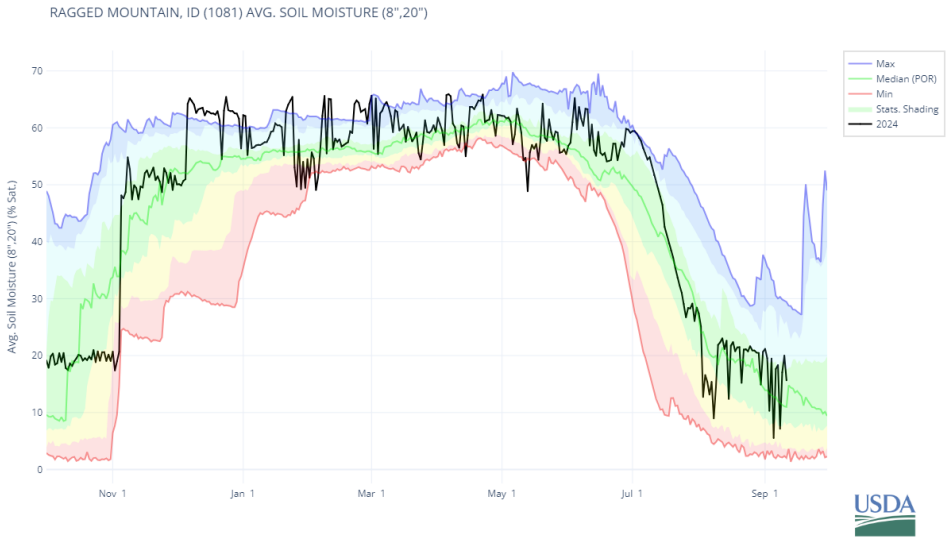
WY 2024 – Select Site Charts

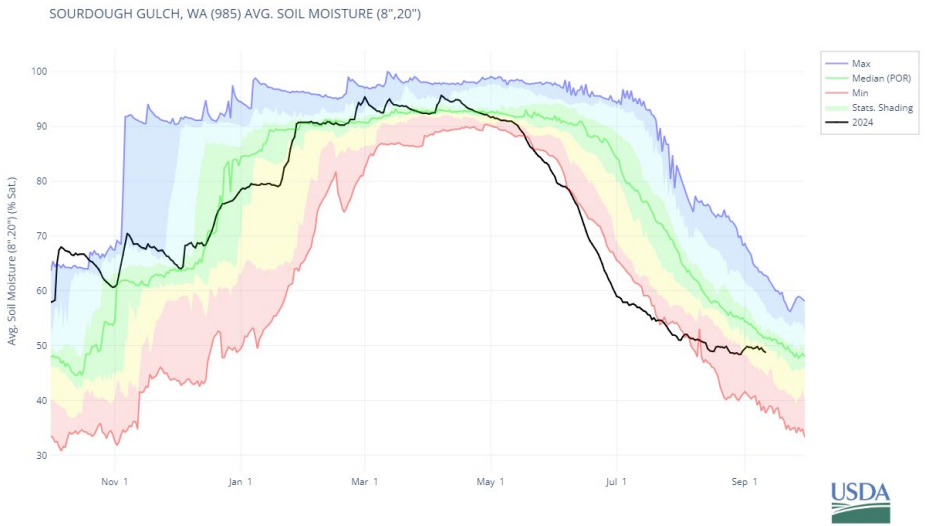
United States Department of Agriculture
Natural Resources Conservation Service











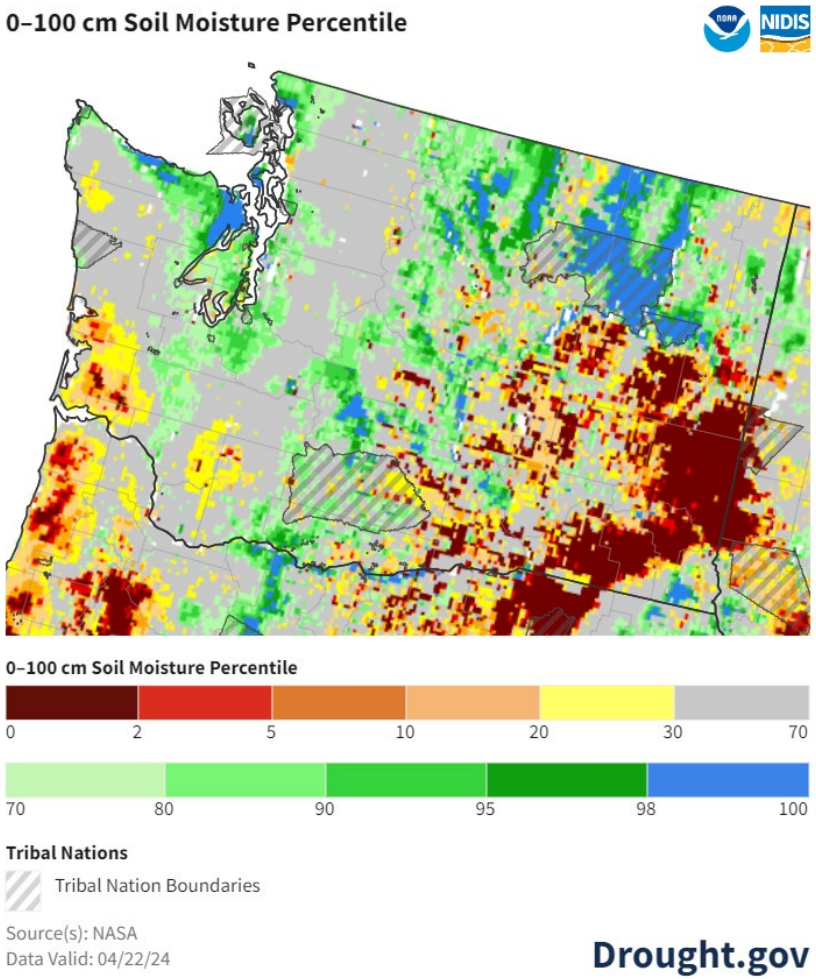
Soil Moisture

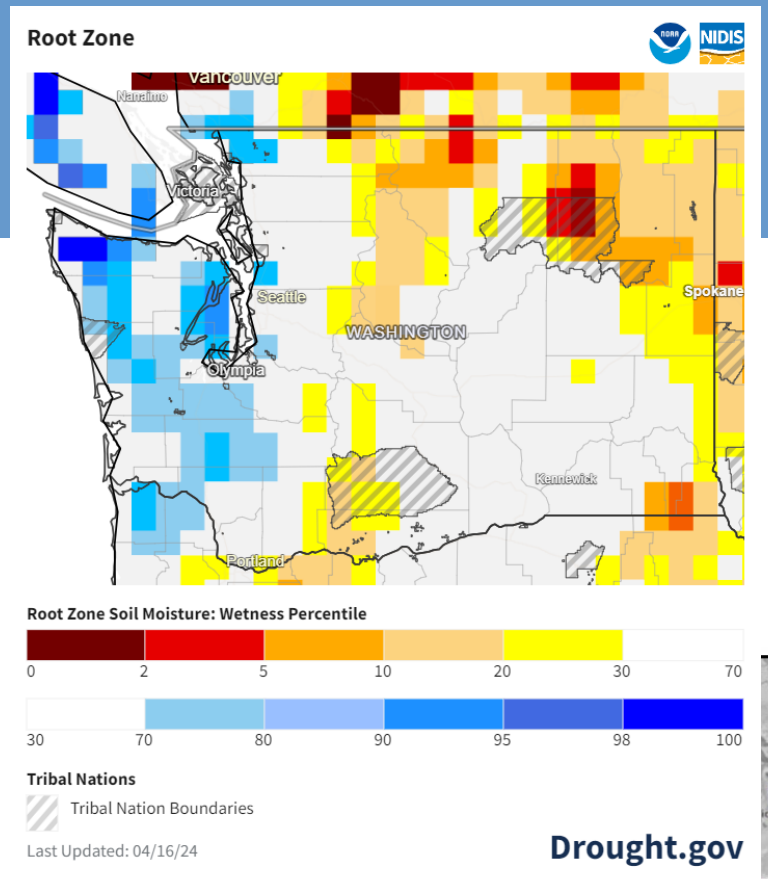
NASA GRACE and SPoRT-LiS

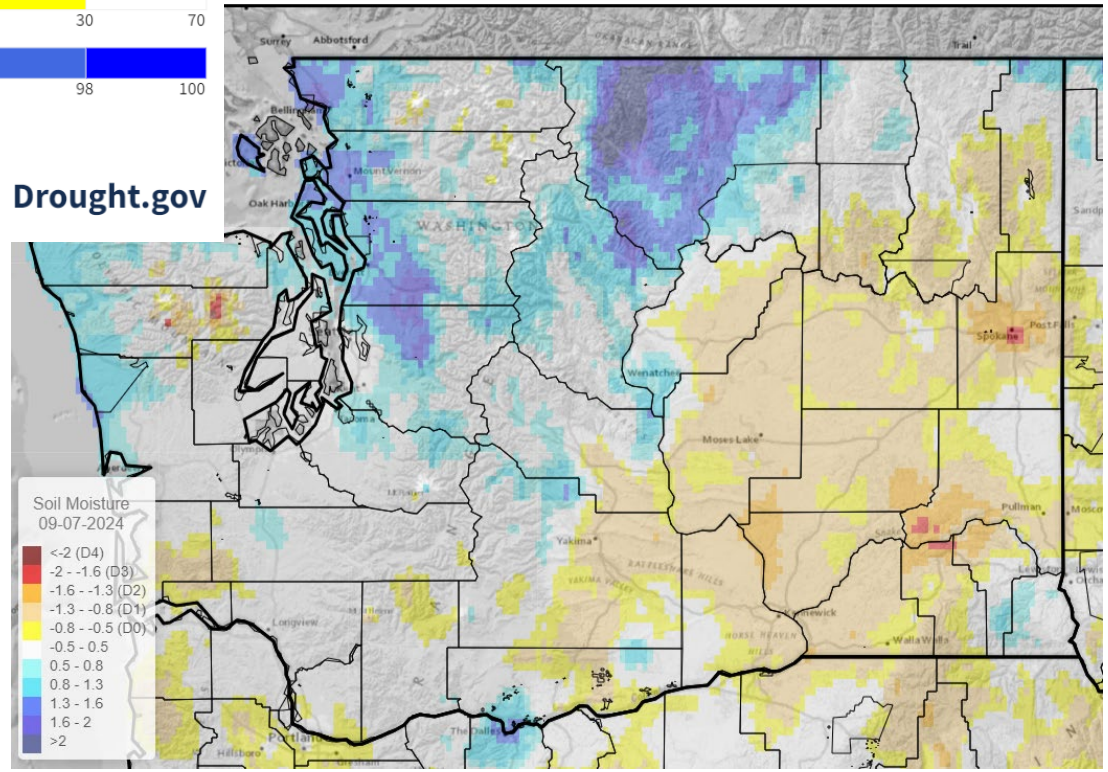
United States Department of Agriculture

Natural Resources Conservation Service

SPoRT-LIS



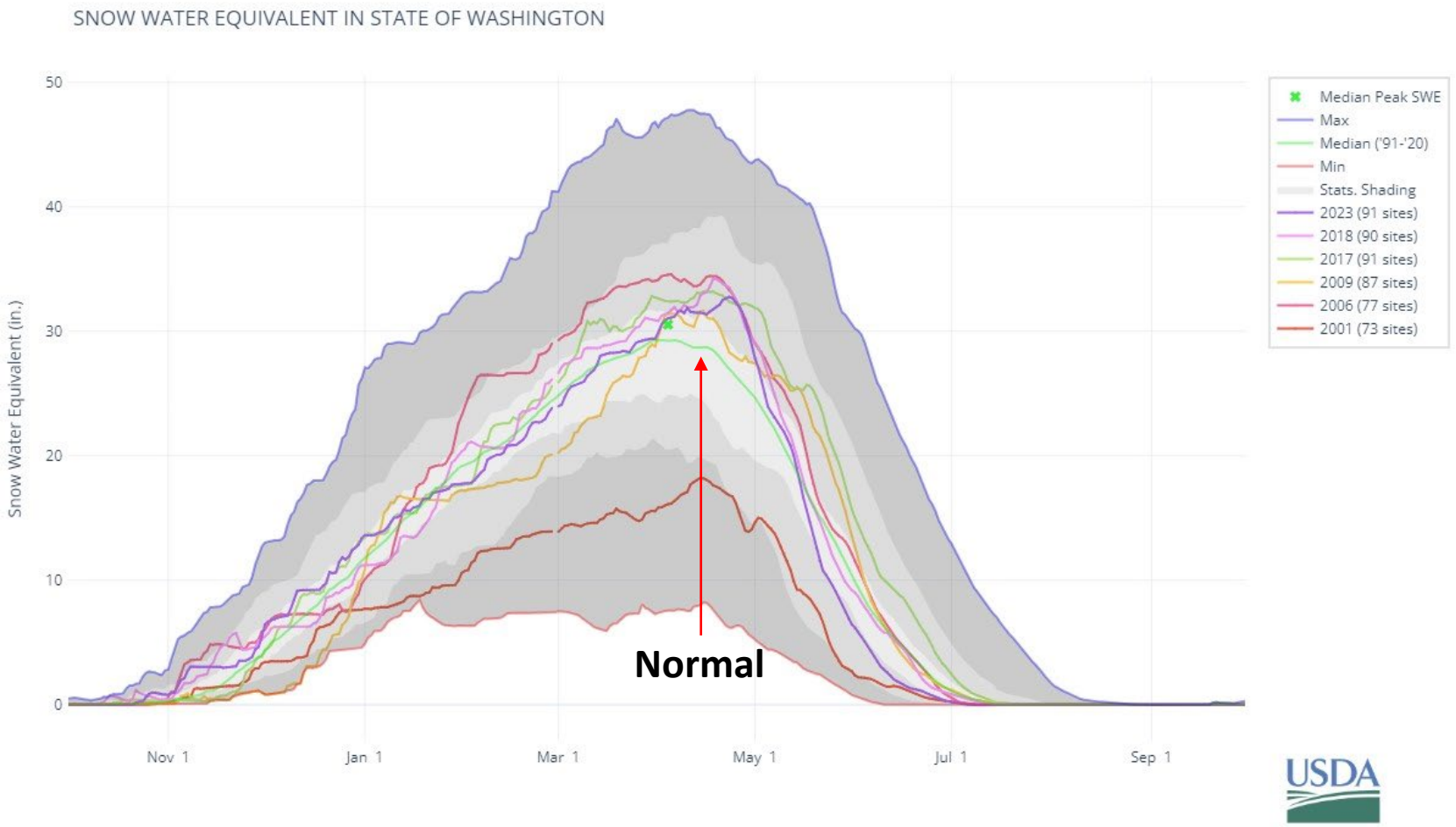


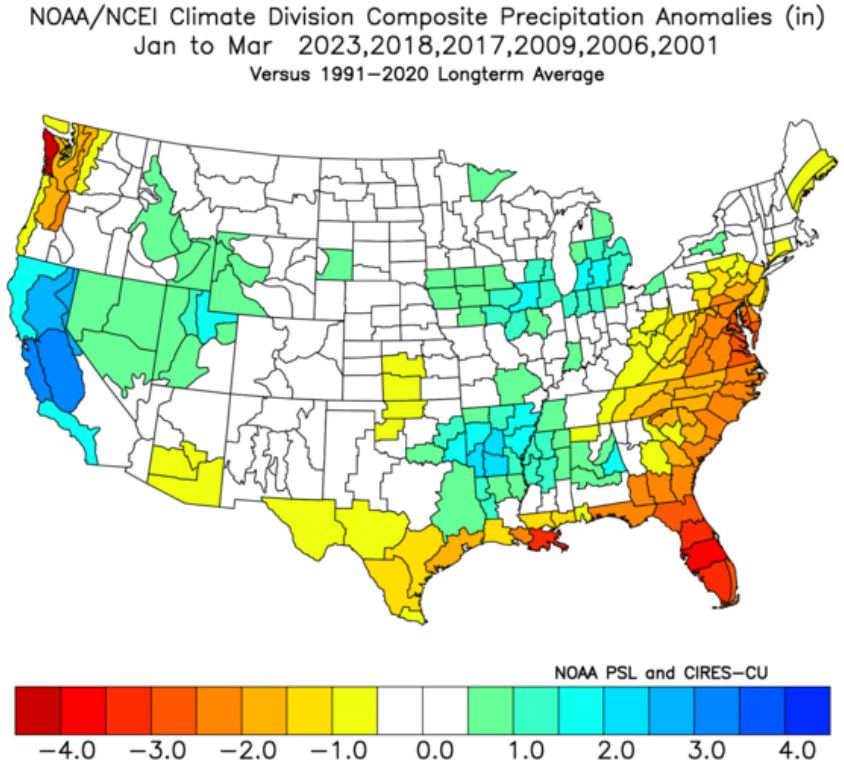


Winter 24/25 Outlook

Recent History: Weak La Nina and Precipitation

USDA United States Department of Agriculture
Natural Resources Conservation Service





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

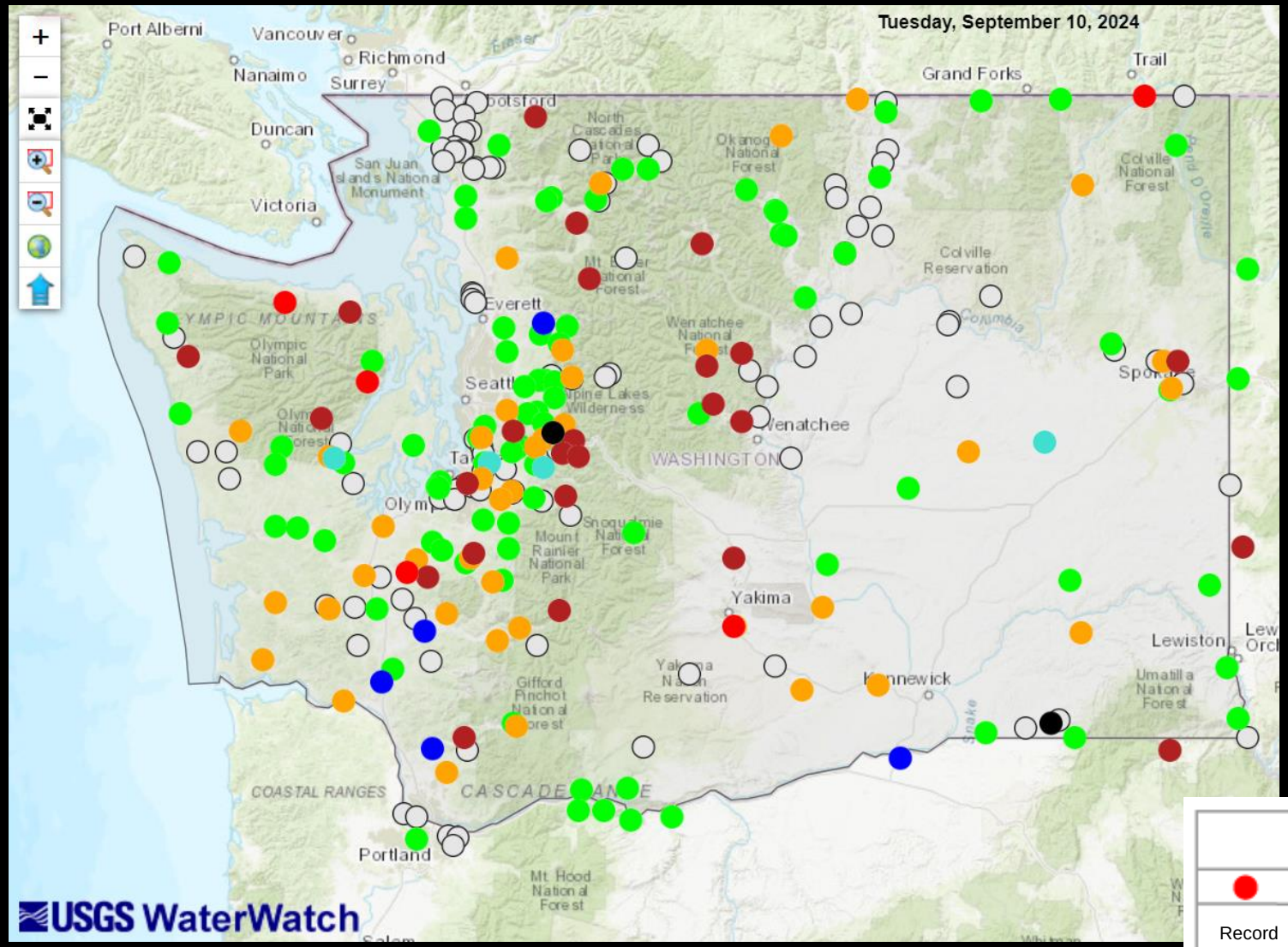
Streamflow & Groundwater Conditions in Washington State as of 11 September 2024

Presented on 11 September 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 11 September 2024



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

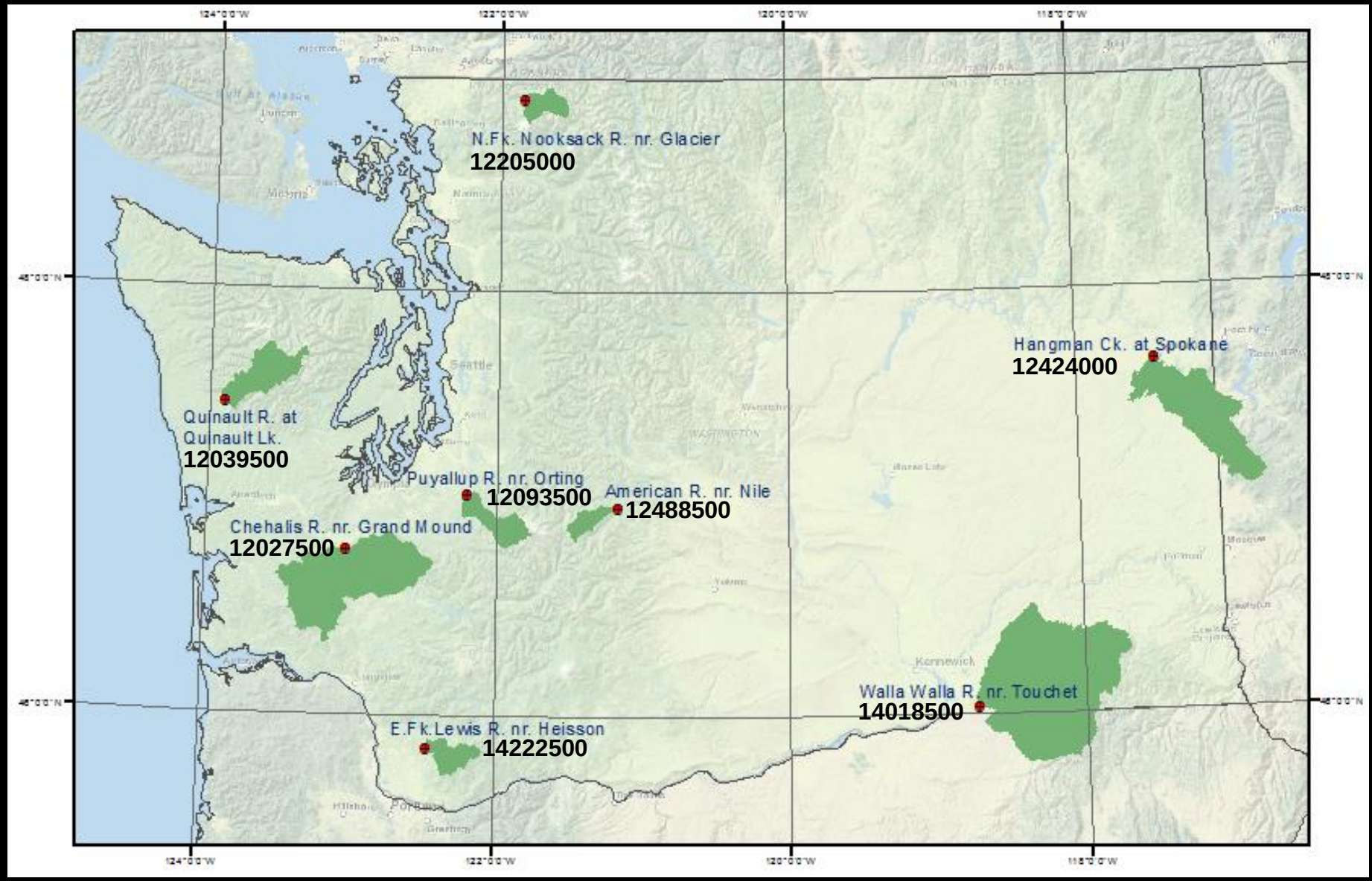
WaterWatch is scheduled to be discontinued in 2026

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

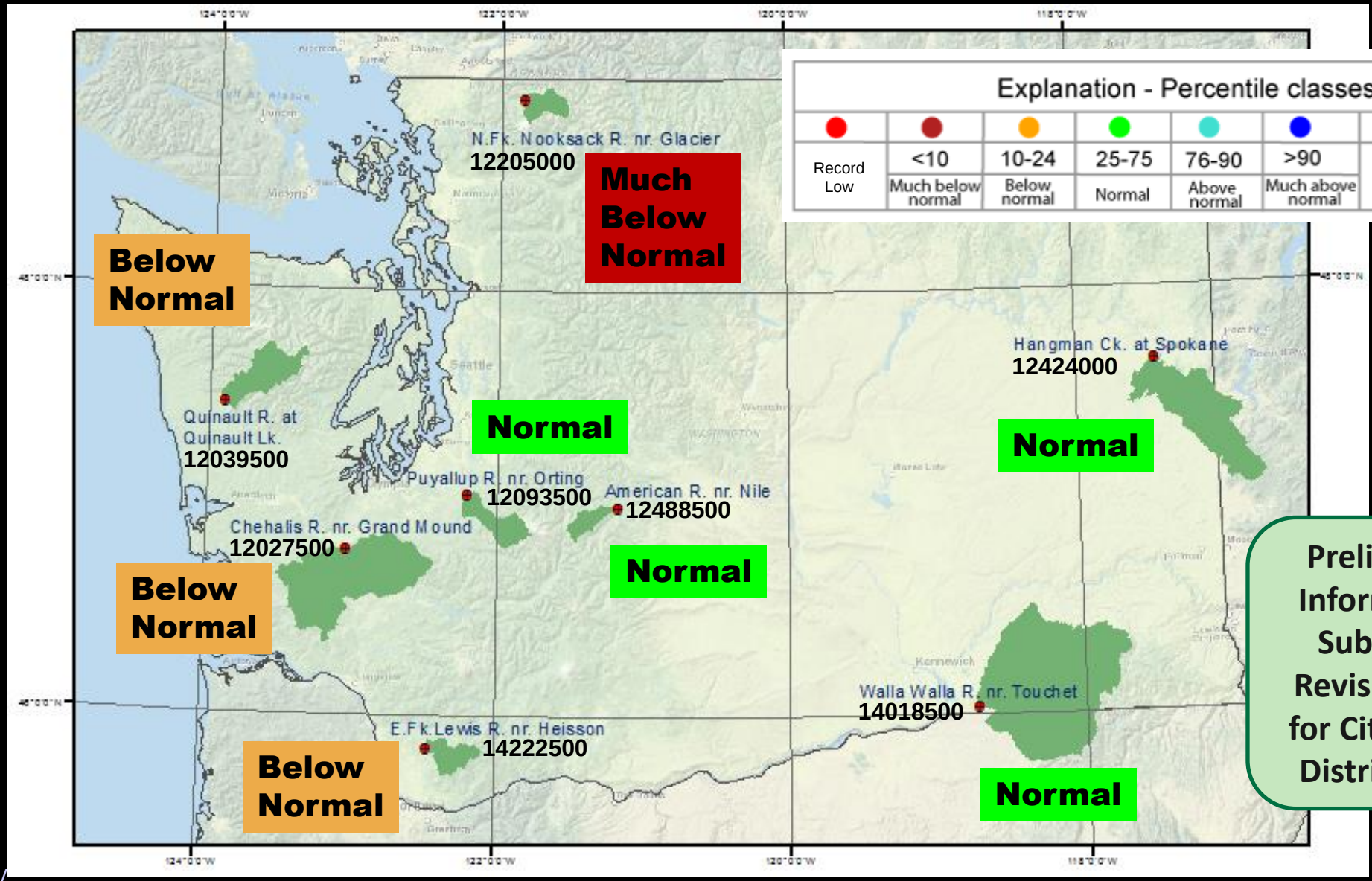
Index Gaging Stations

(Stations that measure natural or near-natural streamflow)



Index Gaging Stations

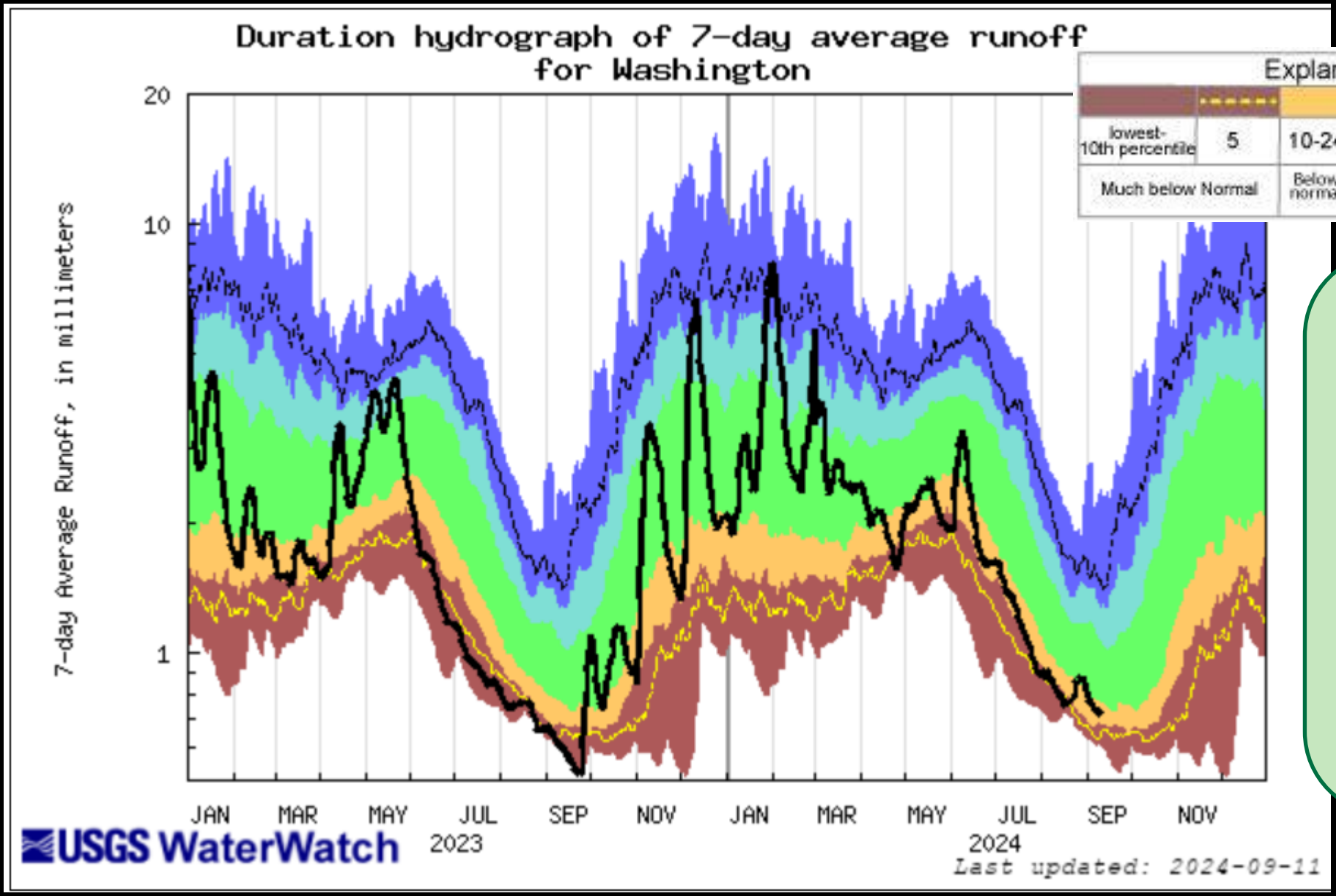
7-day average streamflow as of 11 Sept. 2024

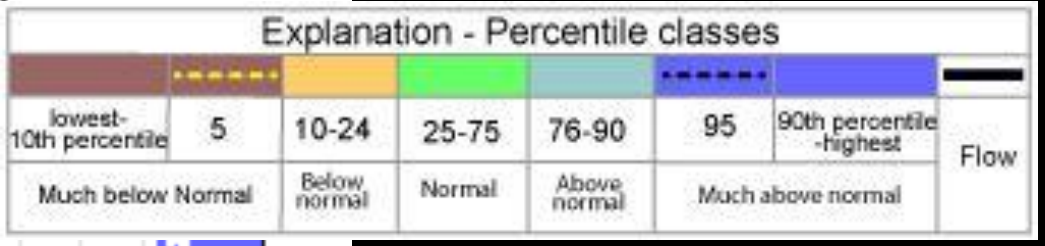


https://waterwatch.usgs.gov/

Area-Based Runoff Duration Hydrograph

7-day average streamflow as of 11 Sept. 2024 is ~below normal





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

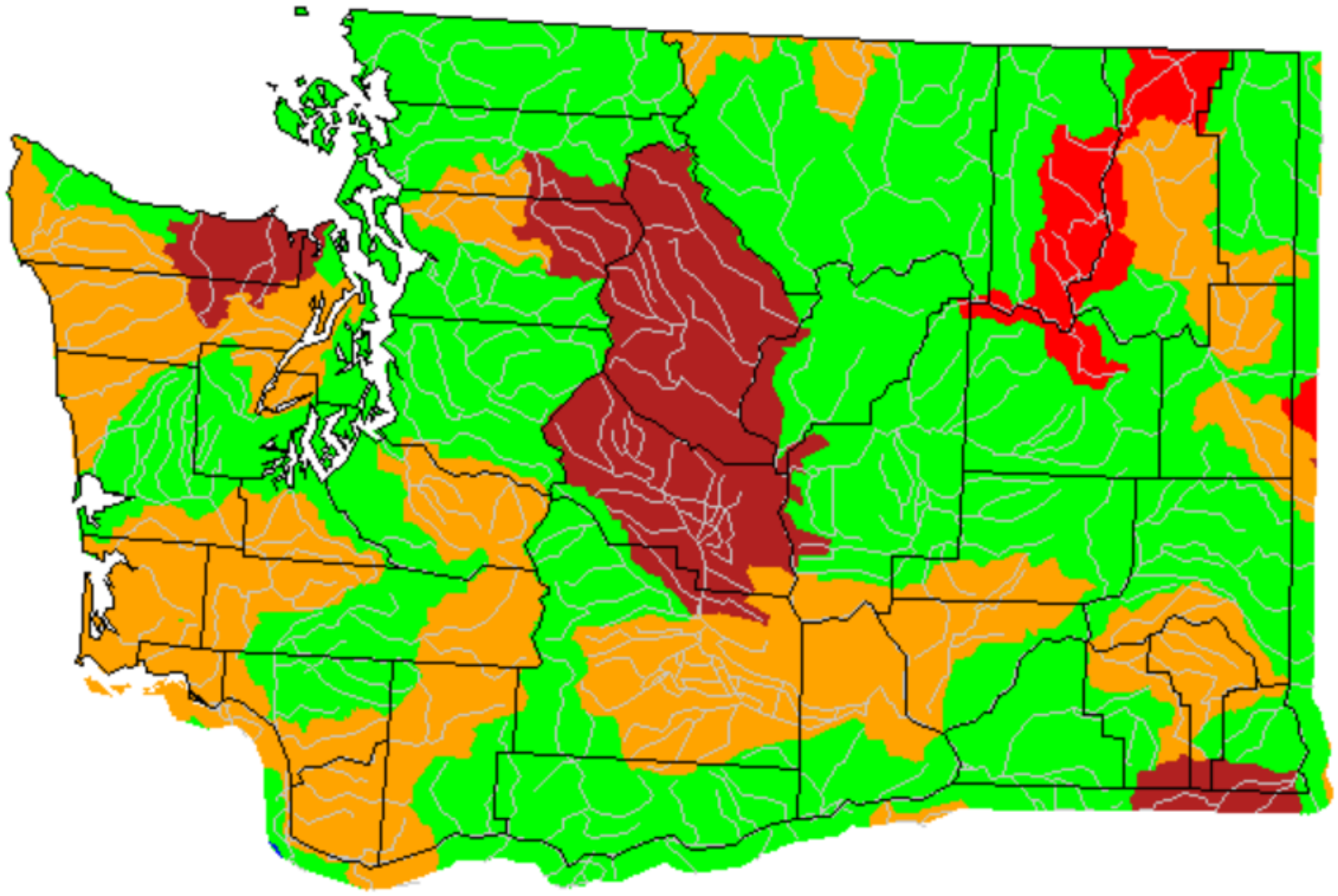
For some streams, flow statistics may have been computed from mixed regulated and unregulated flows; this can affect depictions of flow conditions.

https://waterwatch.usgs.gov/

USGS
science for a changing world

Average streamflow
compared to historical streamflow

7-day average as of 10 Sept. 2024



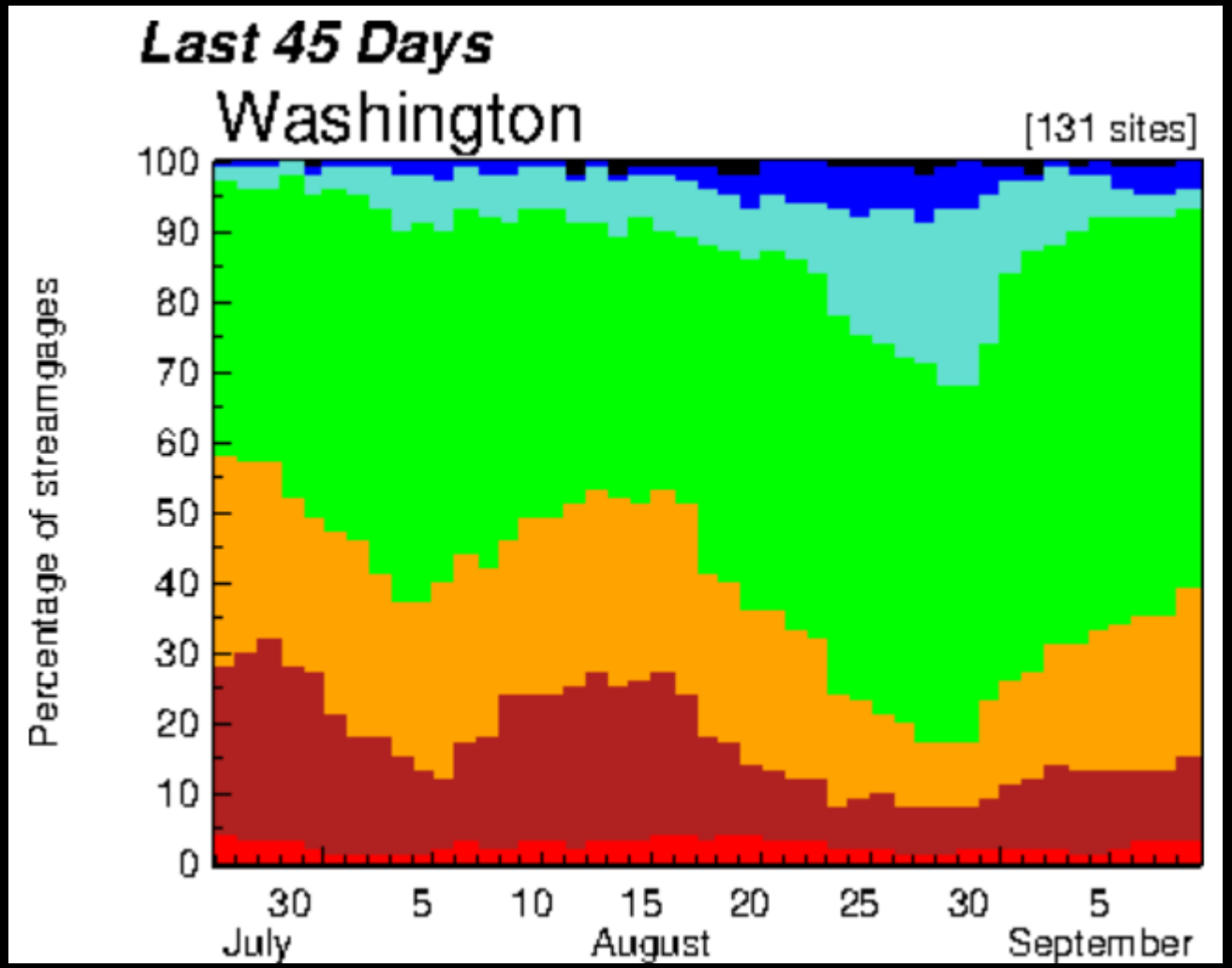
Explanation - Percentile classes						
Record Low	<10	10-24	25-75	76-90	>90	Record High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

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

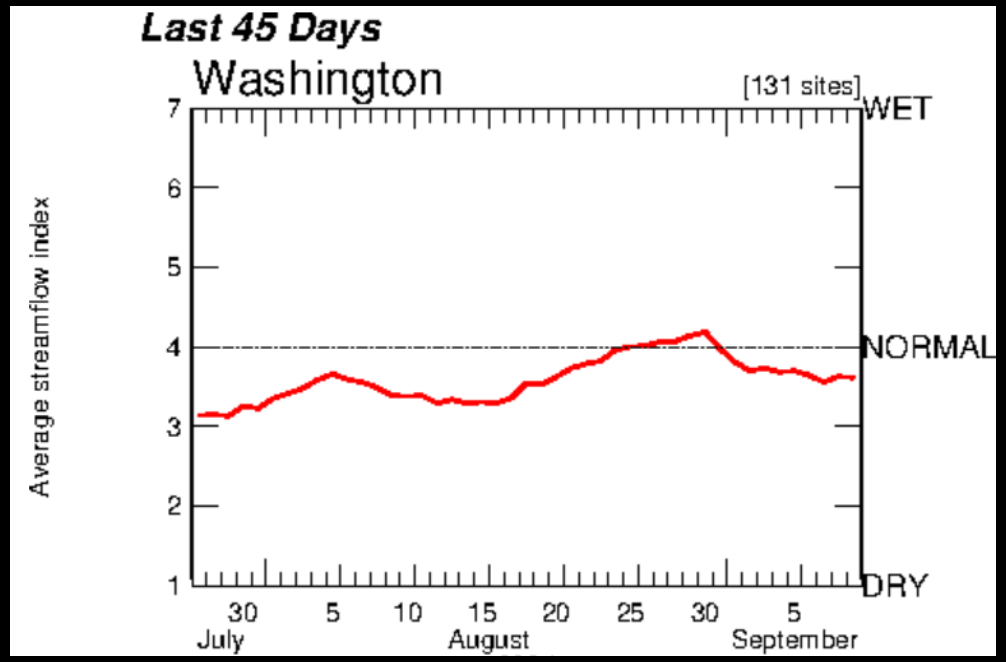
https://waterwatch.usgs.gov/

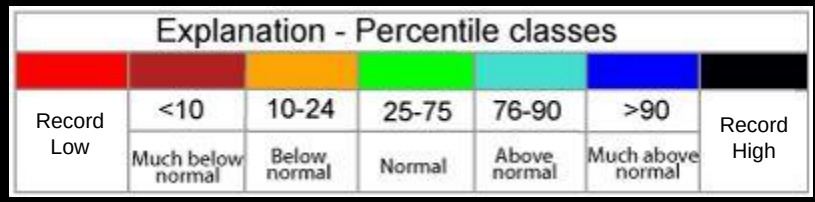
7-day average streamflow

Most of USGS stream gages at normal conditions as of 11 Sept. 2024



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



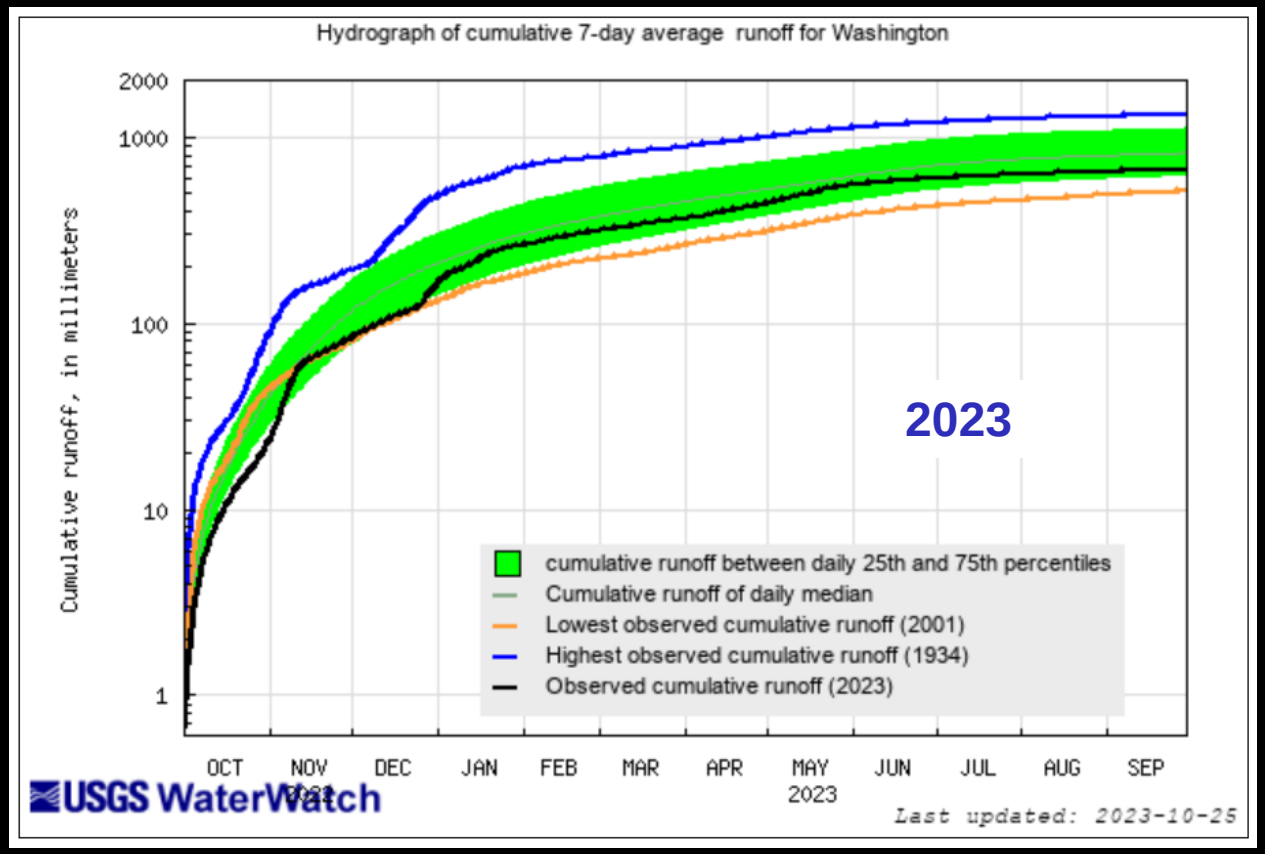


https://waterwatch.usgs.gov/

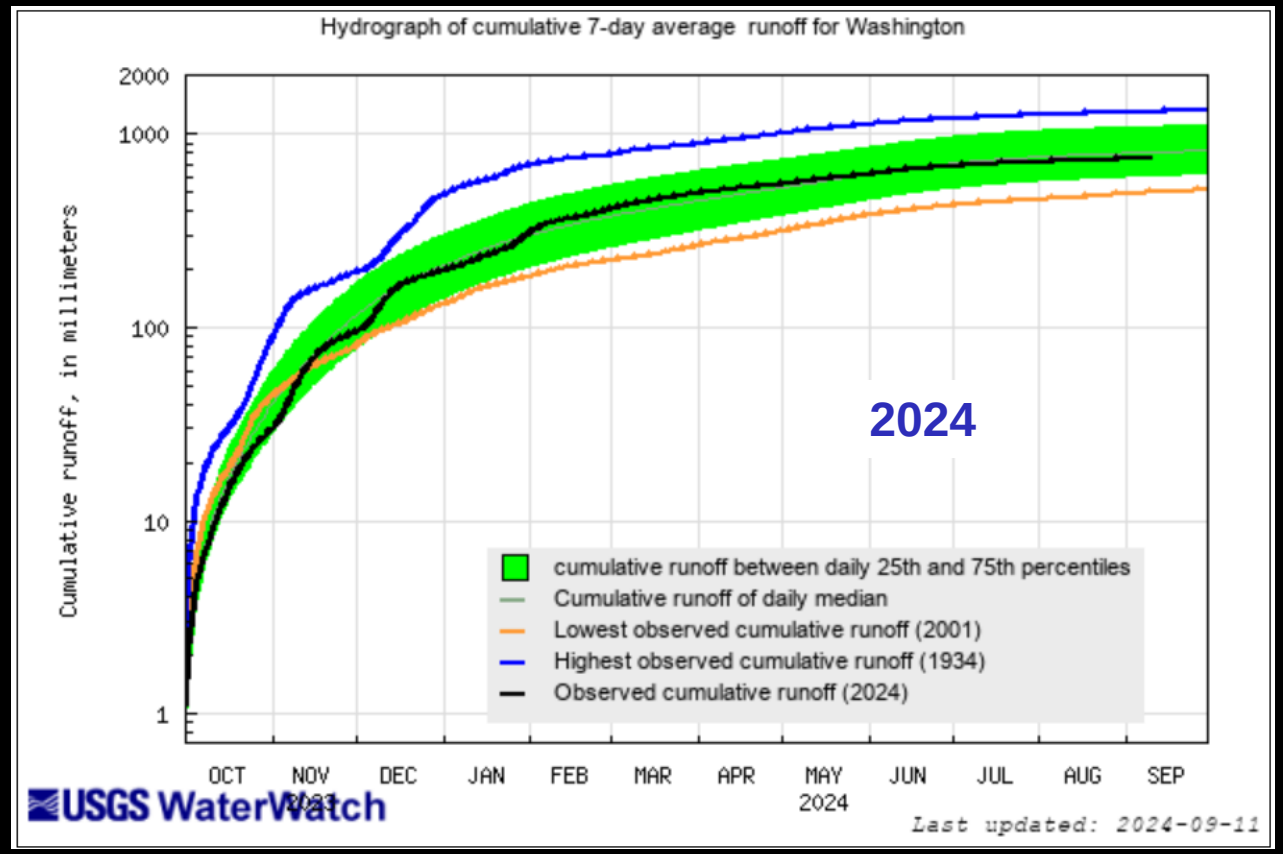
Cumulative runoff hydrograph

Area-based runoff based on 7-day average

Normal in 2024 as of 11 September



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.

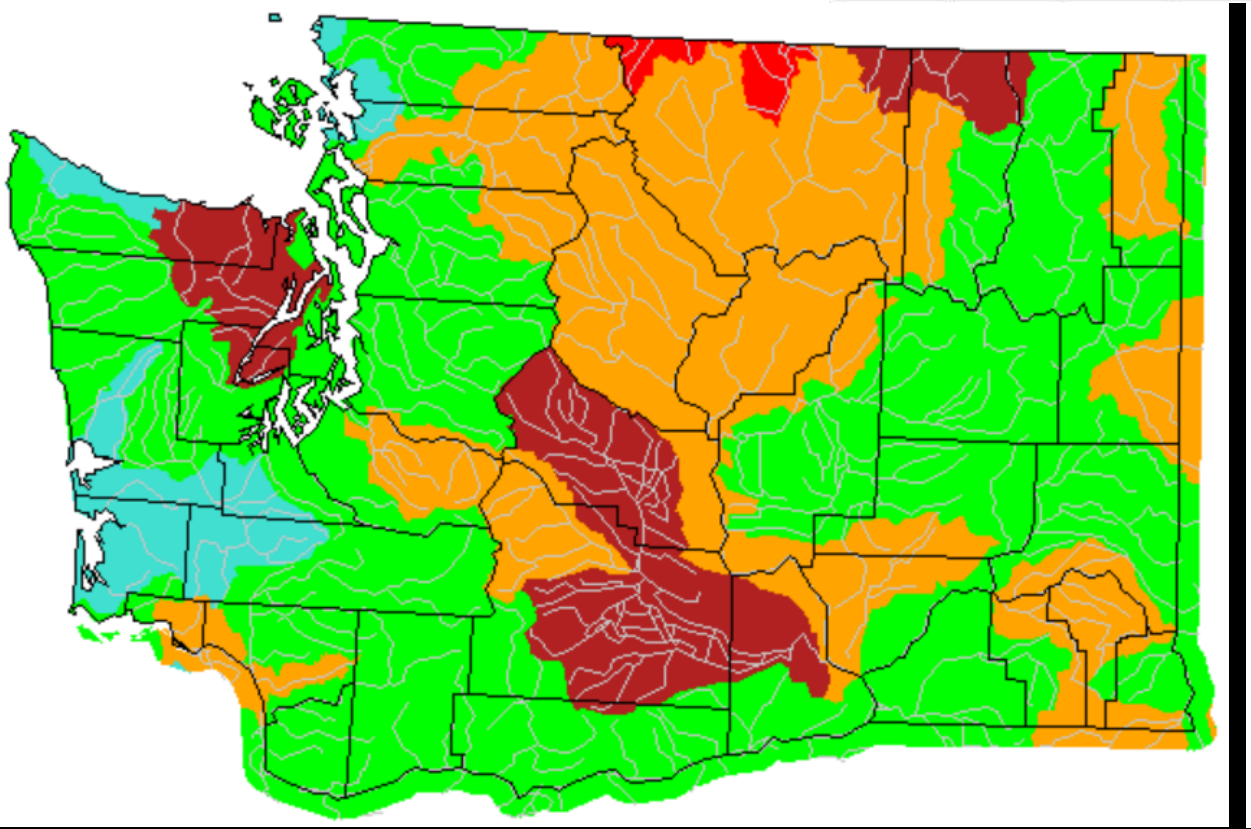
USGS
science for a changing world

Monthly average streamflow

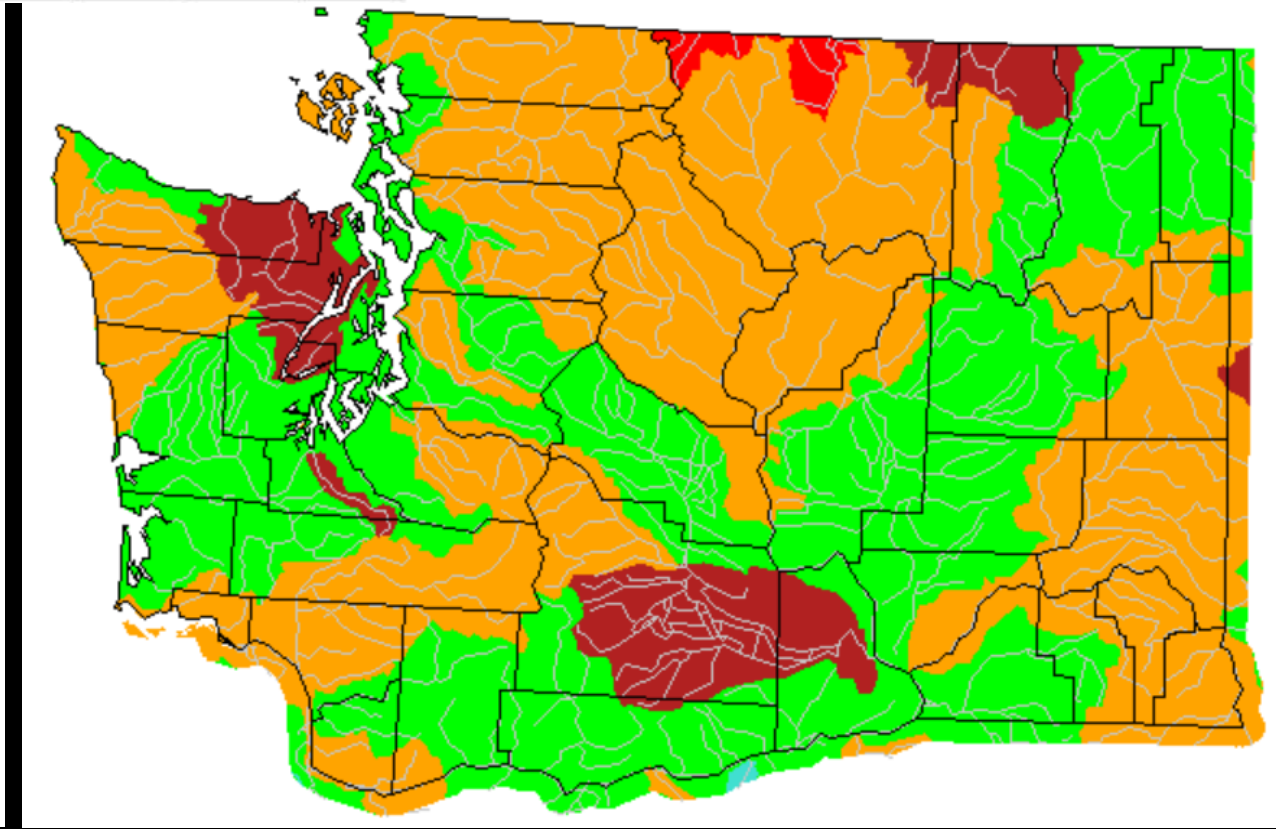
compared to historical streamflow

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	

June 2024



July 2024



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

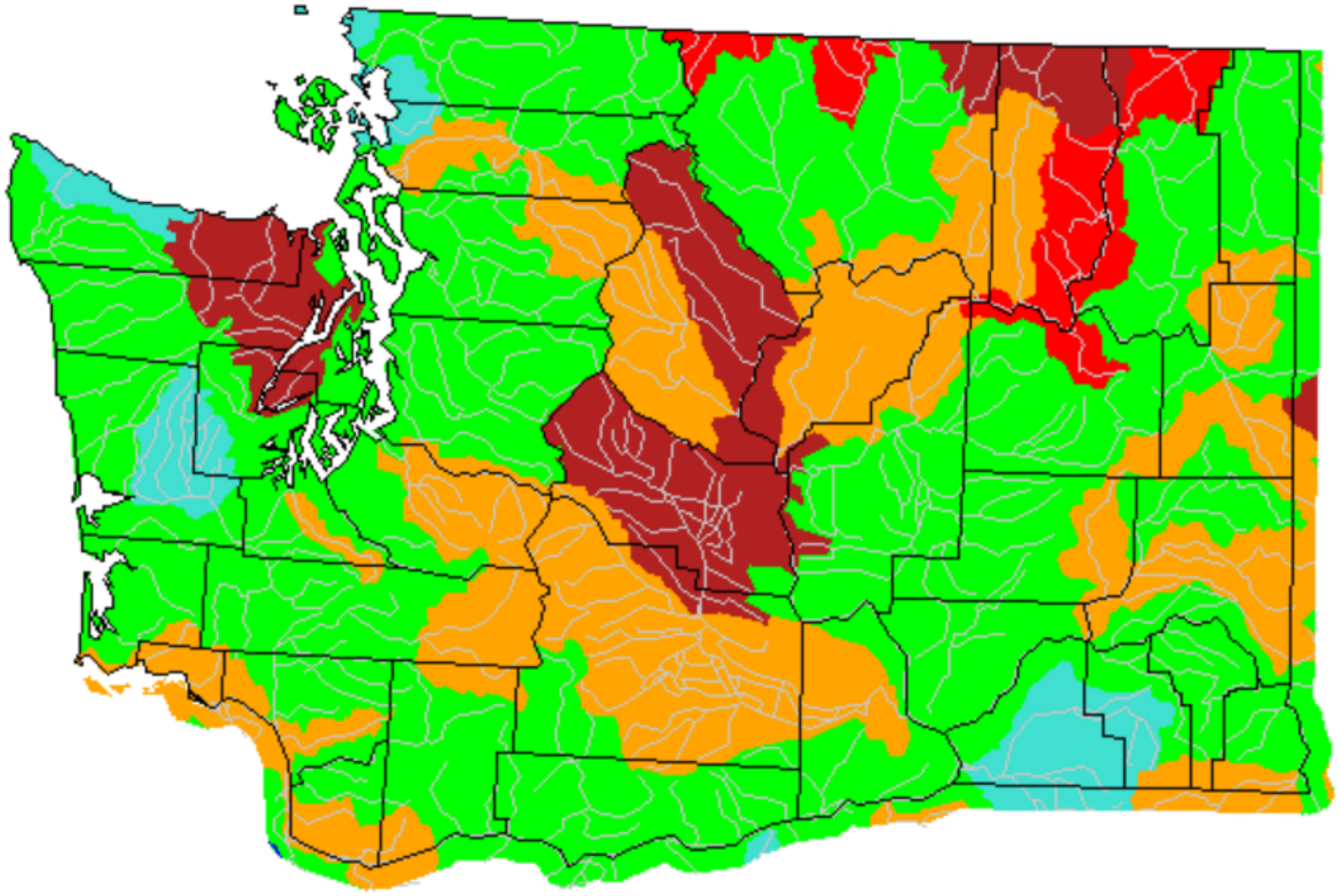
https://waterwatch.usgs.gov/

Monthly average streamflow

compared to historical streamflow

USGS science for a changing world

August 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.

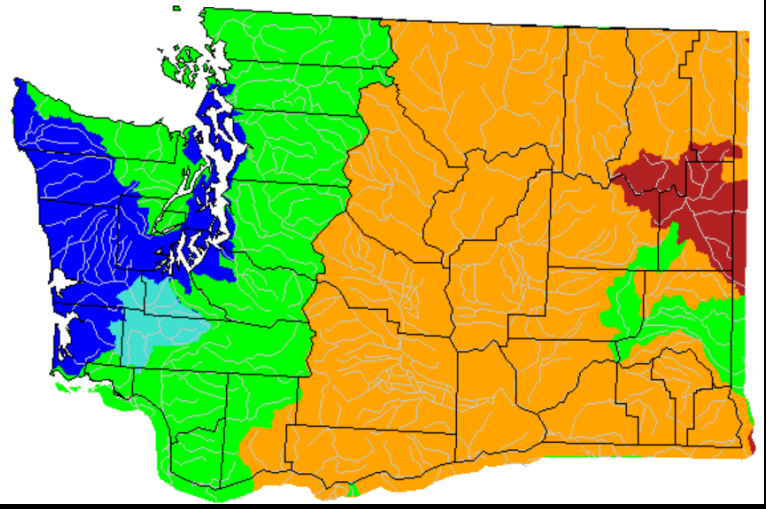
https://waterwatch.usgs.gov/

USGS
science for a changing world

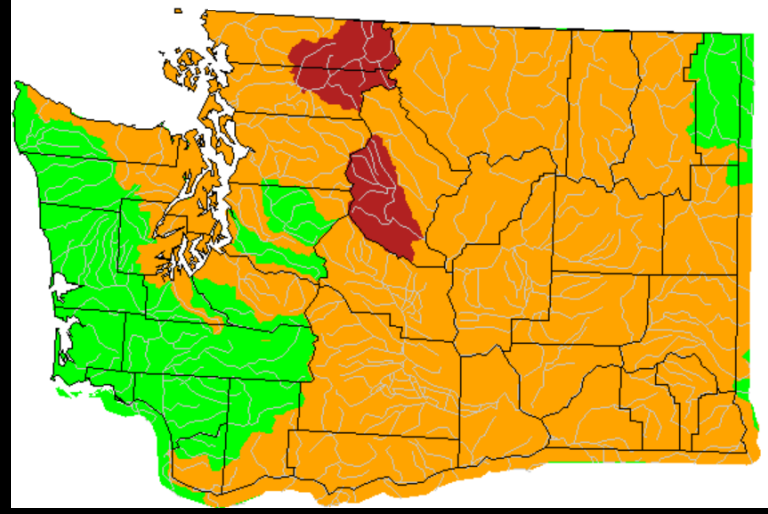
April monthly average streamflow

compared to historical streamflow

August 2001



August 2005

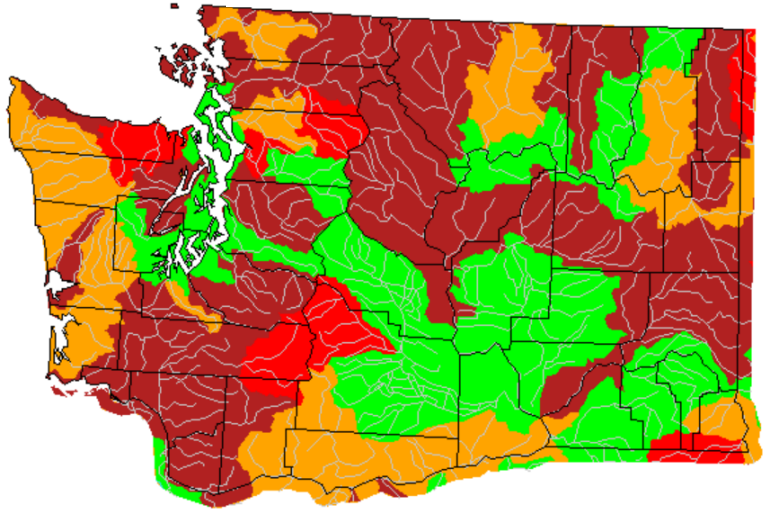


Explanation - Percentile classes						
Record Low	<10	10-24	25-75	76-90	>90	Record High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

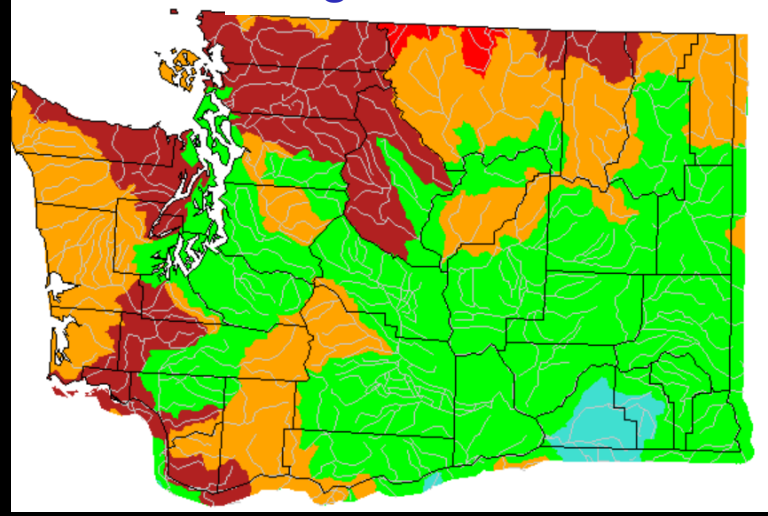
https://waterwatch.usgs.gov/

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

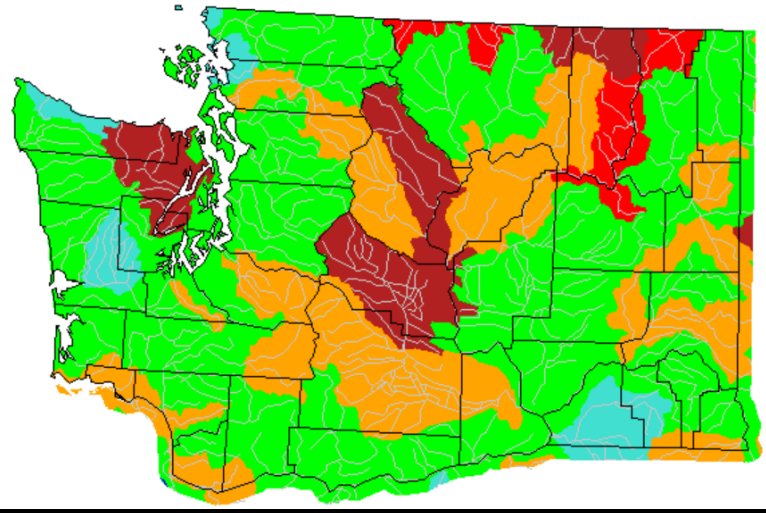
August 2015



August 2019



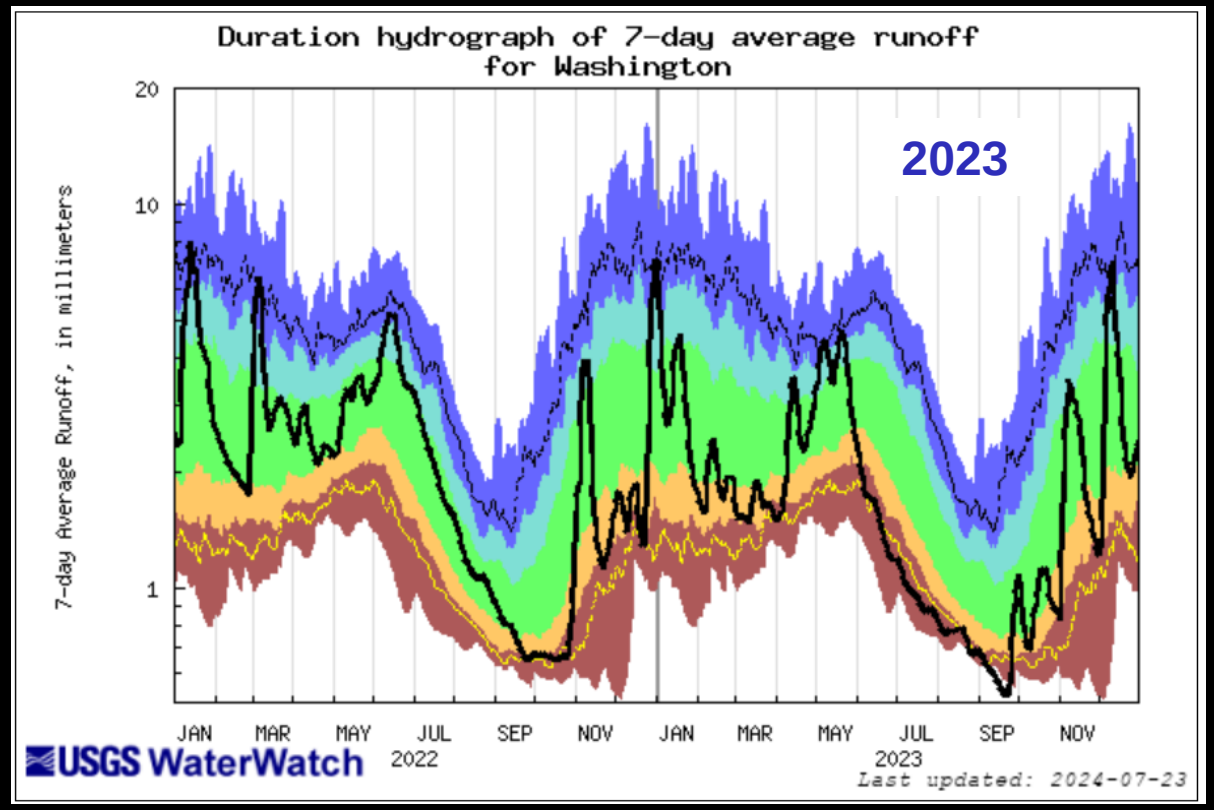
August 2024

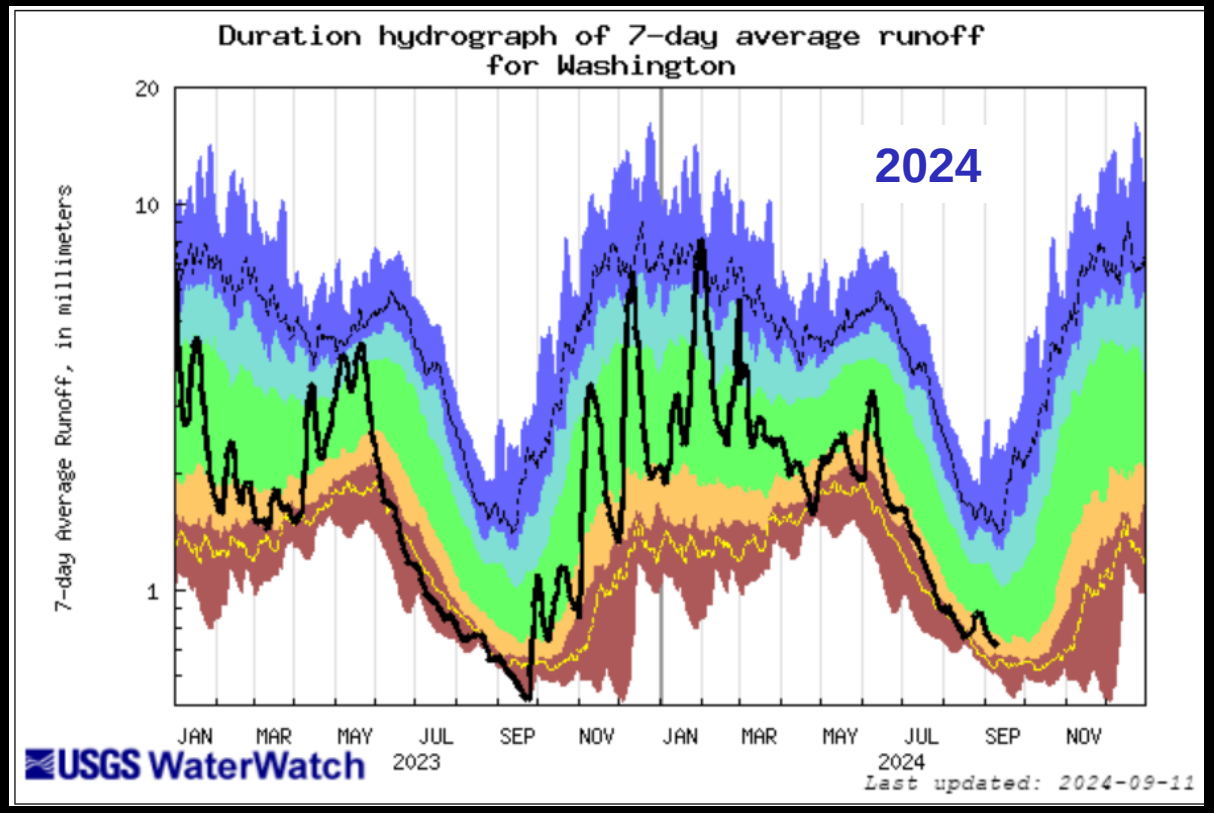


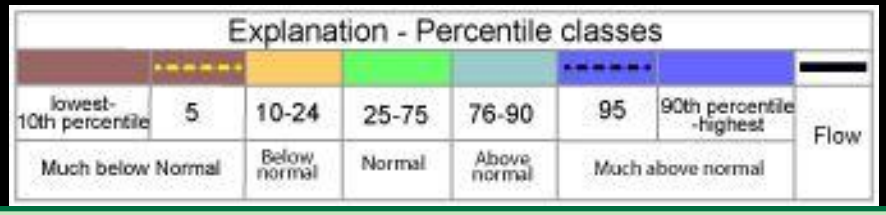
Area-Based Runoff Duration Hydrograph

7-day average streamflow

Duration hydrograph for the year compared to recent years of drought





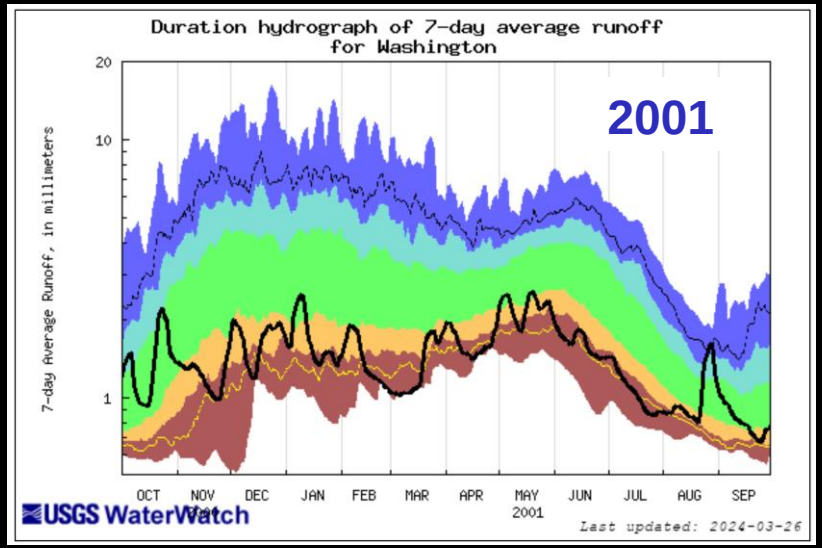


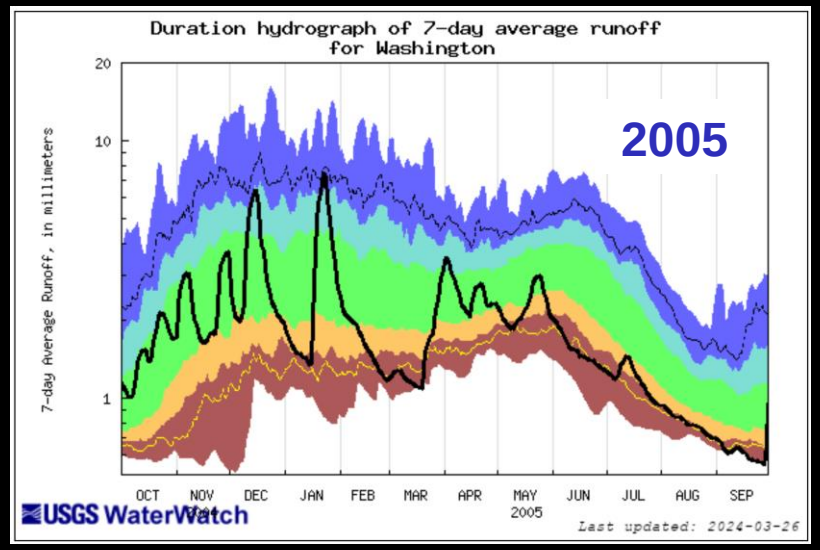
Preliminary Information-Subject to Revision. Not for Citation or Distribution.

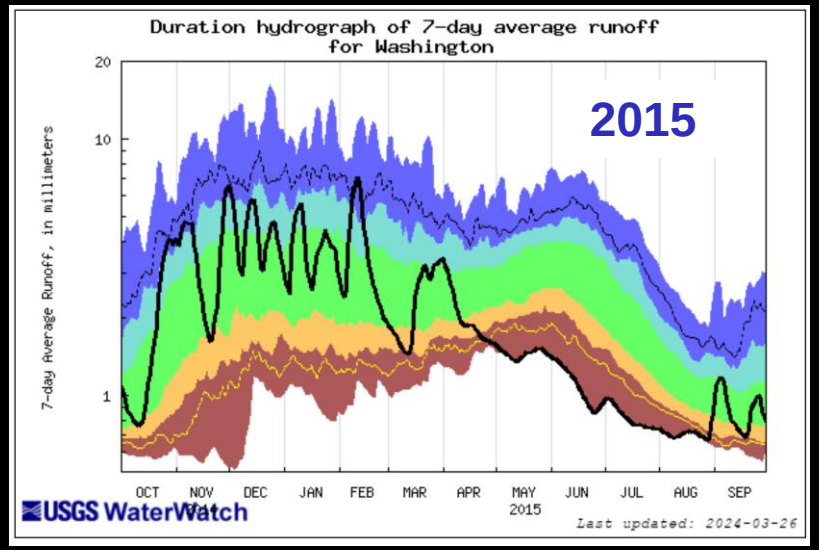
https://waterwatch.usgs.gov/

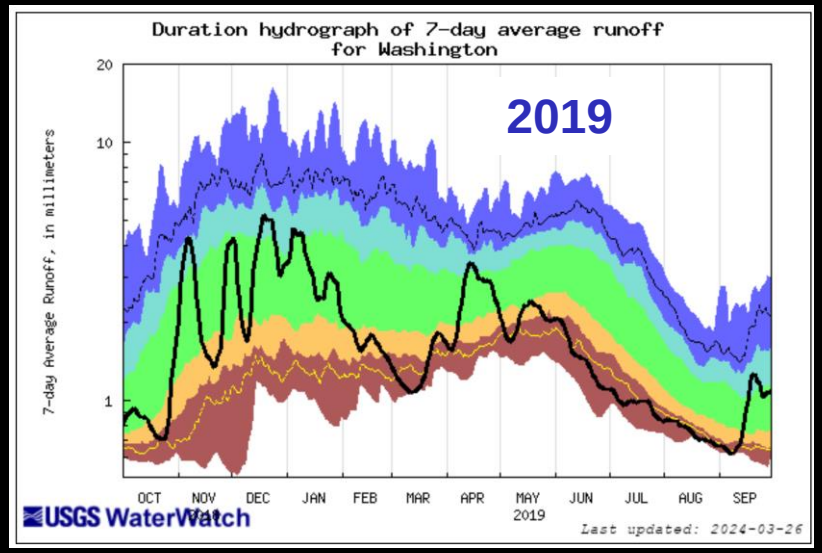
Area-Based Runoff Duration Hydrograph

7-day average streamflow

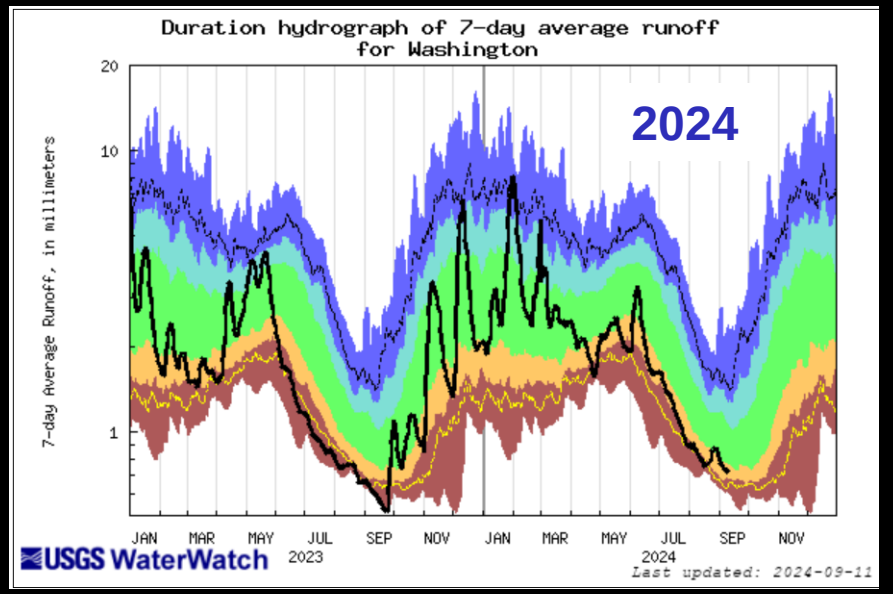


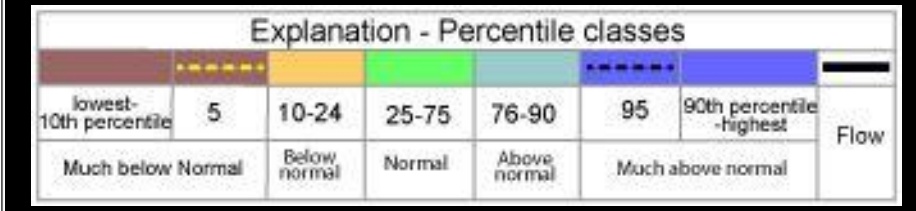






Duration hydrograph for the year compared to recent years of drought

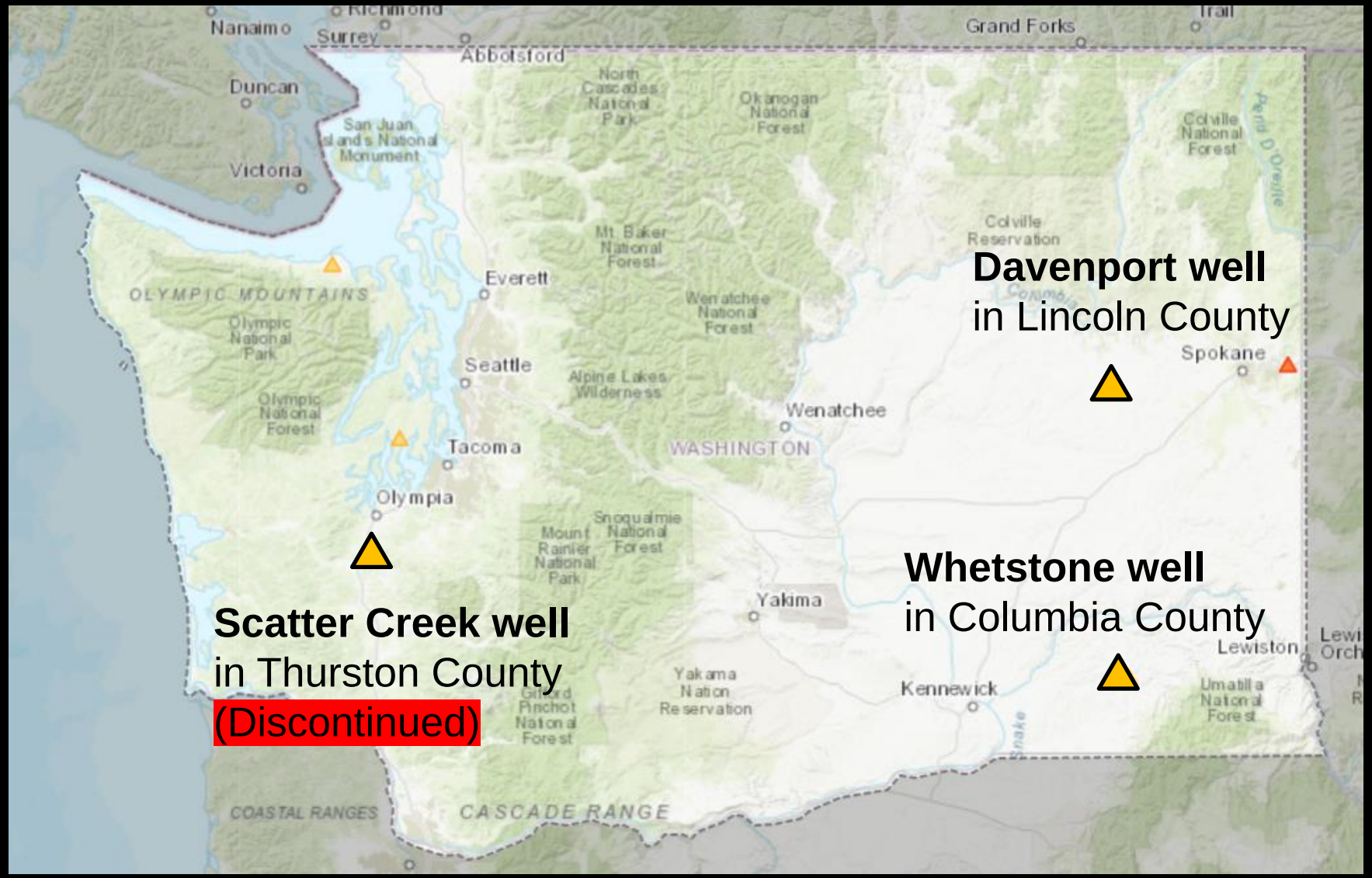




Preliminary Information-Subject to Revision. Not for Citation or Distribution.

https://waterwatch.usgs.gov/

Three reference groundwater wells

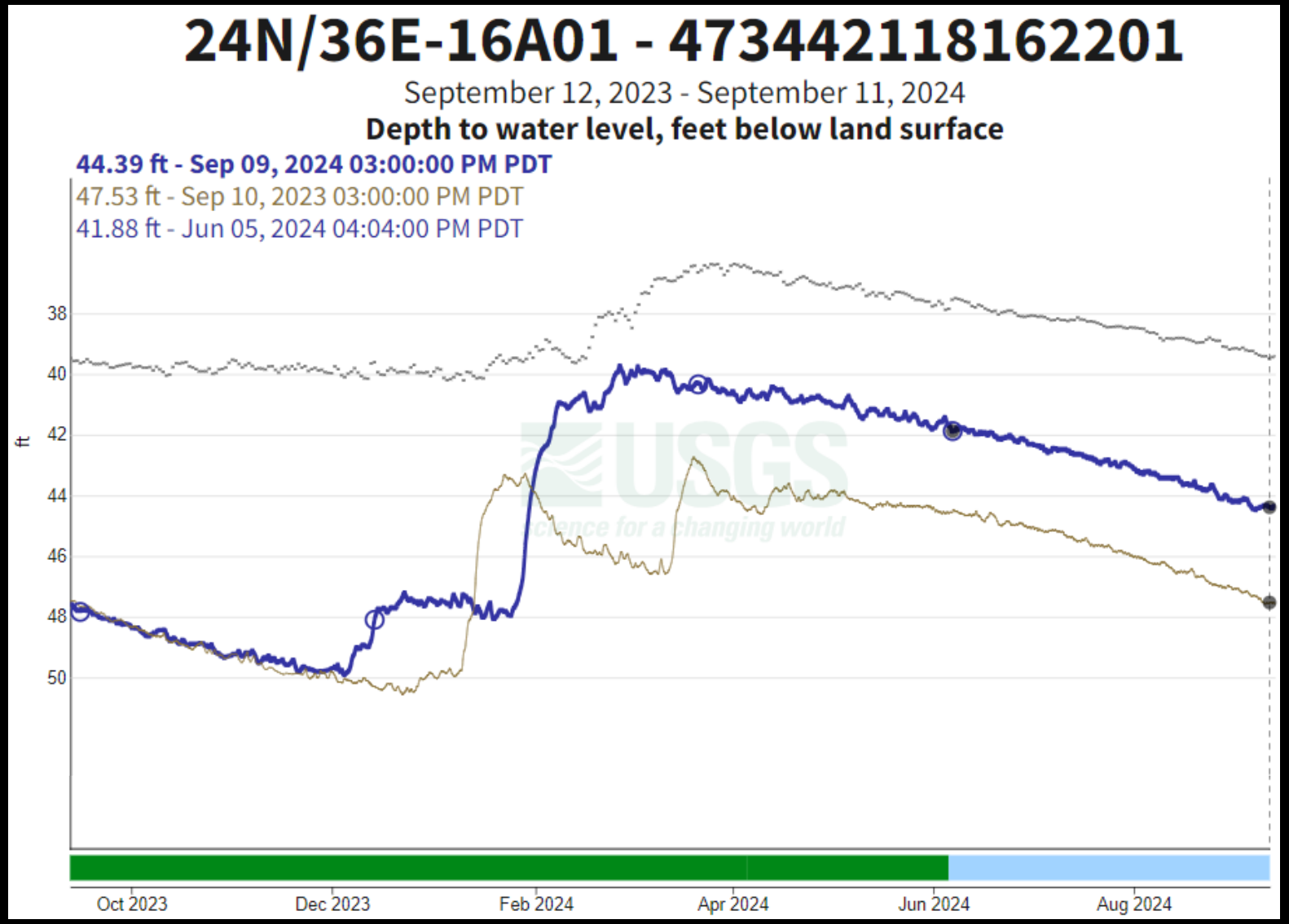


- All three groundwater Monitoring Network wells on the west side of the state are discontinued due to a lack of funding, including Scatter Creek well.
- Equipment has been removed or will be removed by Oct. 1.
- Three wells remain on the east side of the state.

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

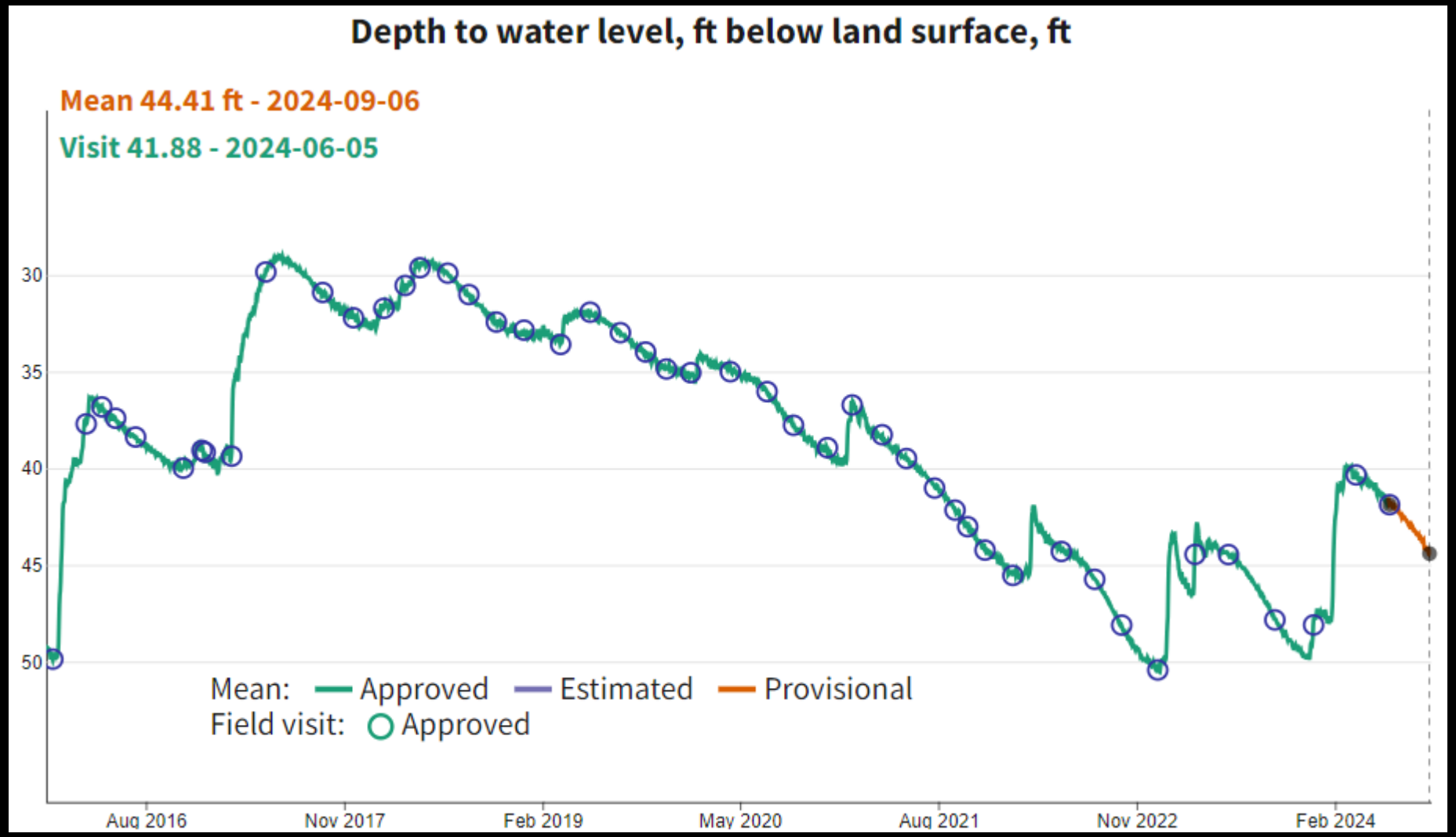
Well Details

- 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



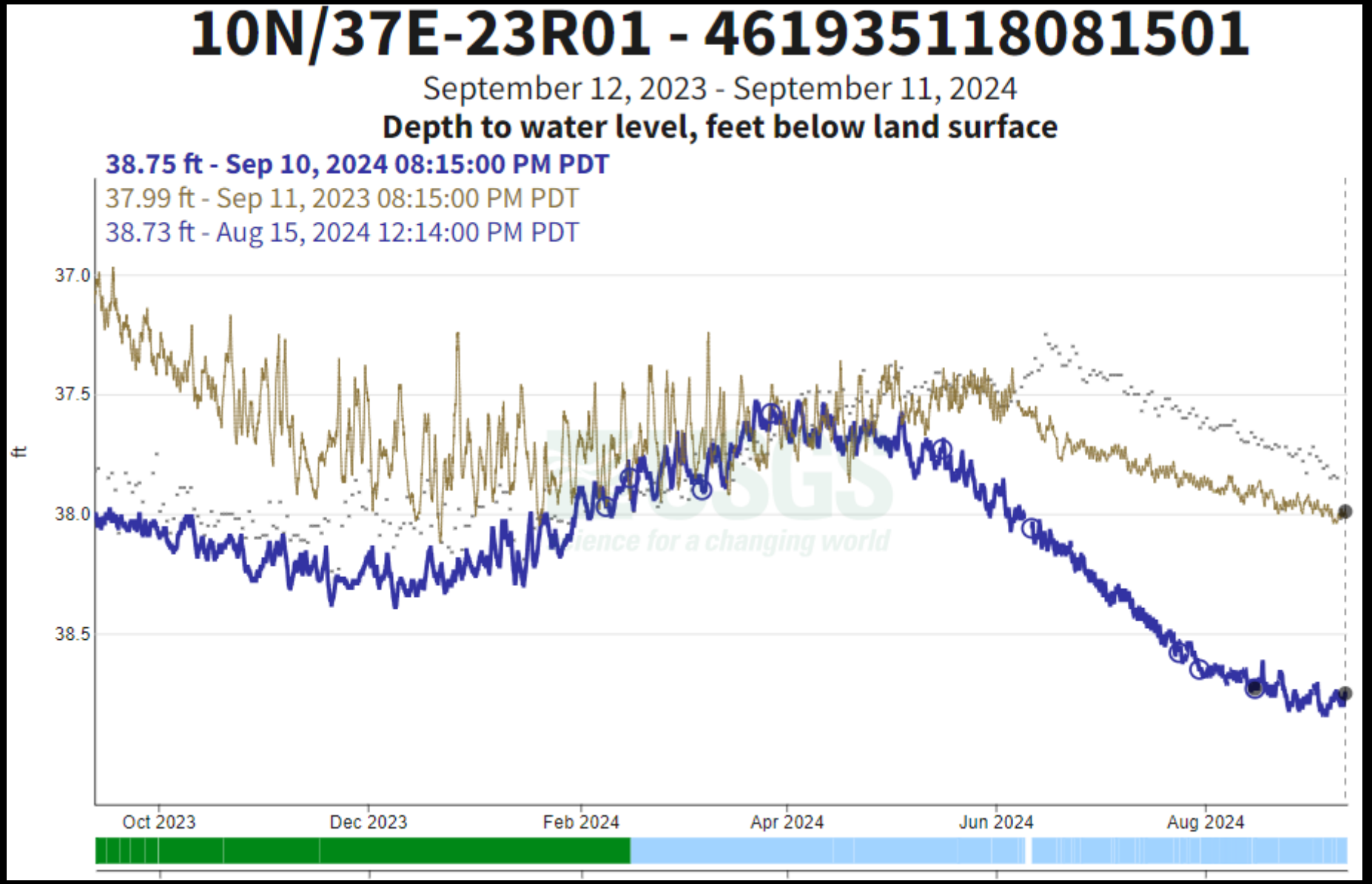
https://dashboard.waterdata.usgs.gov/app/nwd/en/?aoi=state-wa

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

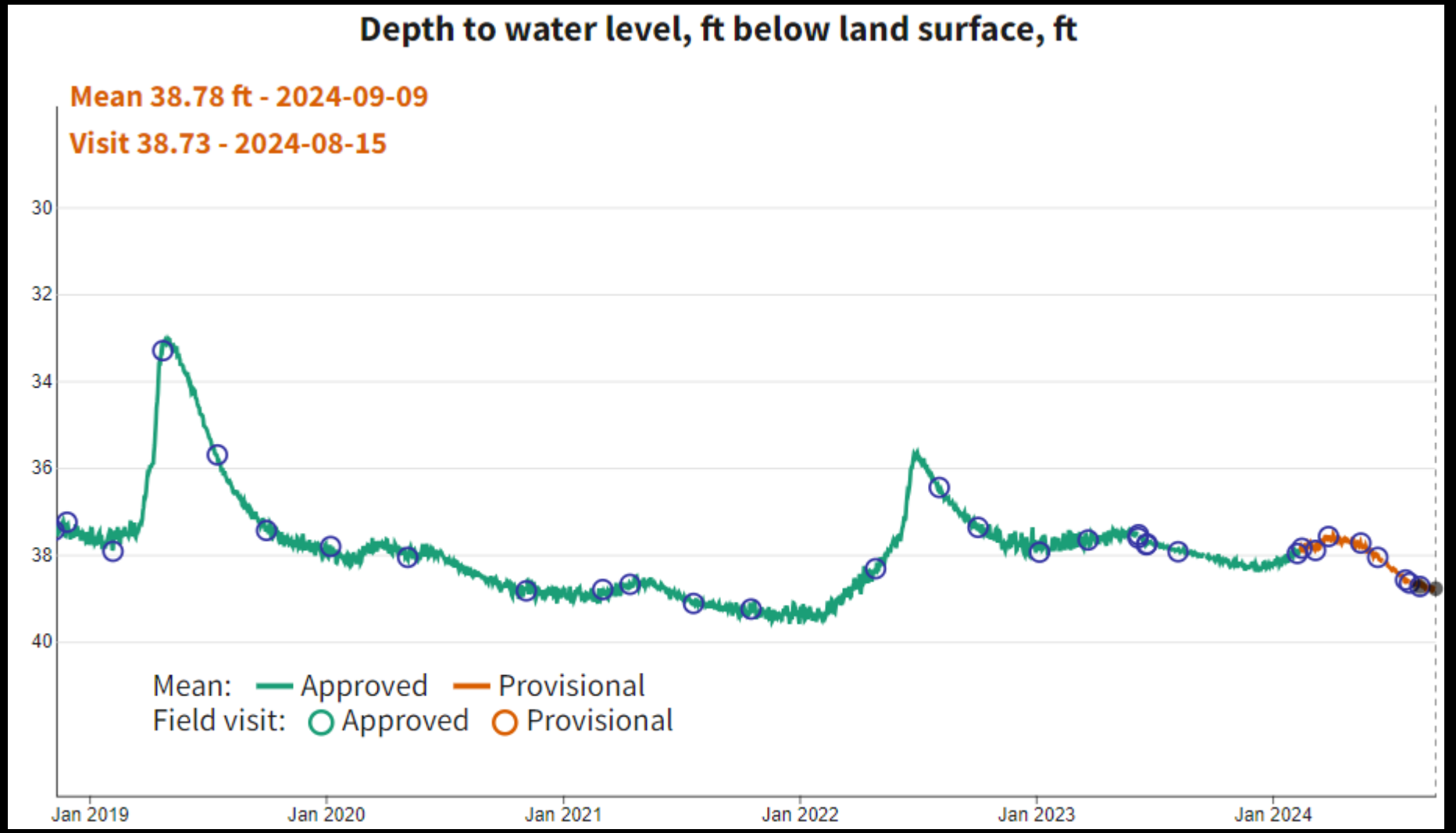
Well Details:

- 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



Well Details:

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

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

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

Summary of Washington Streamflow and Groundwater Conditions as of 22 July 2024

USGS science for a changing world

7-day average streamflow at eight index gaging stations:

Normal

- Hangman Creek
- Walla Walla River
- American River
- Puyallup River nr. Orting

Below Normal

- Quinault River
- Chehalis River nr. Grand Mound
- EF Lewis River

Much Below Normal

- NF Nooksack River

Cumulative Runoff Hydrograph

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.

BUREAU OF RECLAMATIO

Yakima River Basin Water Supply & Operation Outlook

BUREAU OF RECLAMATION

Yakima River Basin Water Supply & Operations Outlook

For WSAC

September 11, 2024

— BUREAU OF —
RECLAMATION

NEWS RELEASE

For Release: September 5, 2024
Media Contact: Marc Ayalin, 208-378-6203, mayalin@usbr.gov

Reclamation announces Yakima basin September water supply forecast.

YAKIMA, Wash. – The Bureau of Reclamation's September 2024 forecast of total water supply available for the Yakima basin indicates the water supply will not fully meet irrigation demands this season. The total water supply available for the May 21-September 30 period indicates senior water rights will receive 100% of full entitlements, but junior water rights will receive 52% of their full entitlements.

Storage in the Yakima basin reservoirs on September 1 was 272 thousand acre-feet, 26% full, and 56% of average. Precipitation for August was 194% of average and for October-August was 85% of average.

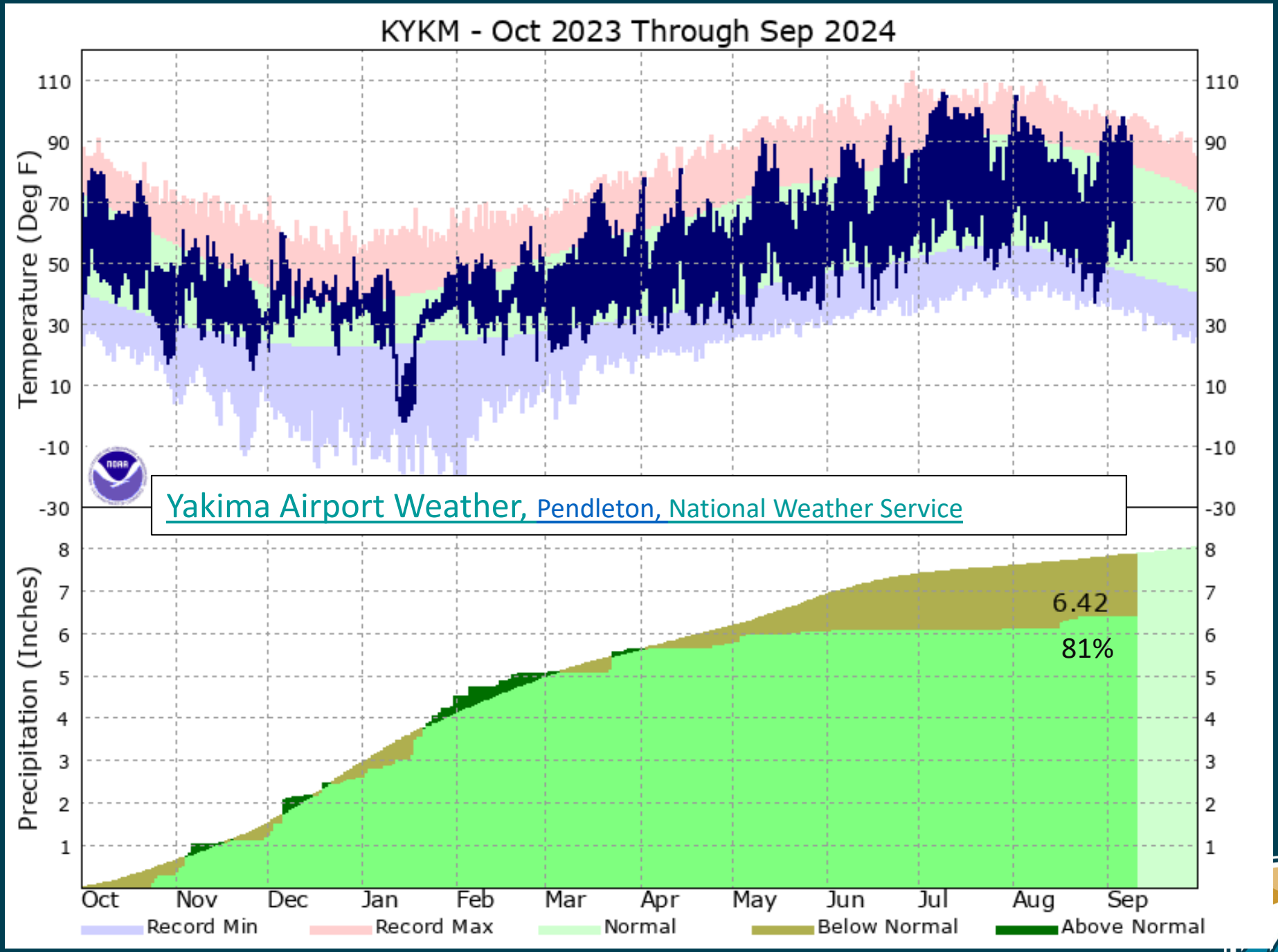
Reclamation manages the water in the five Yakima Project storage reservoirs, along with the basin's unregulated inflows to fulfill water rights, water contracts and instream flow obligations. Water shortages in the basin are shared equally by the junior water rights, which represent over half of the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

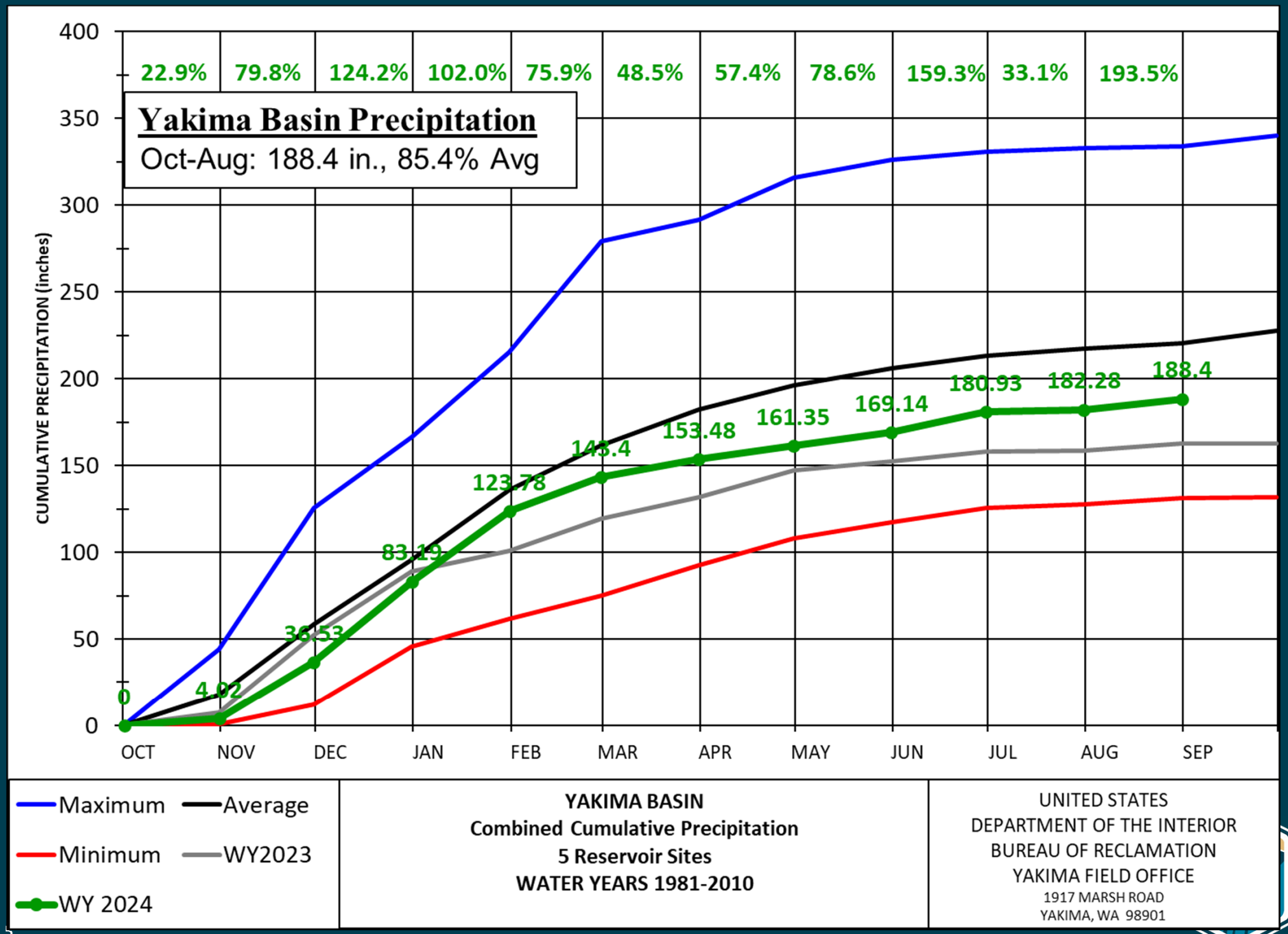
Reclamation provides updated water supply forecasts monthly—typically through July of each year—using the latest data each month to reflect changing conditions as they develop. In a water short year, Reclamation will add mid-month forecasts and forecasts after July as necessary to adjust for prevailing conditions."

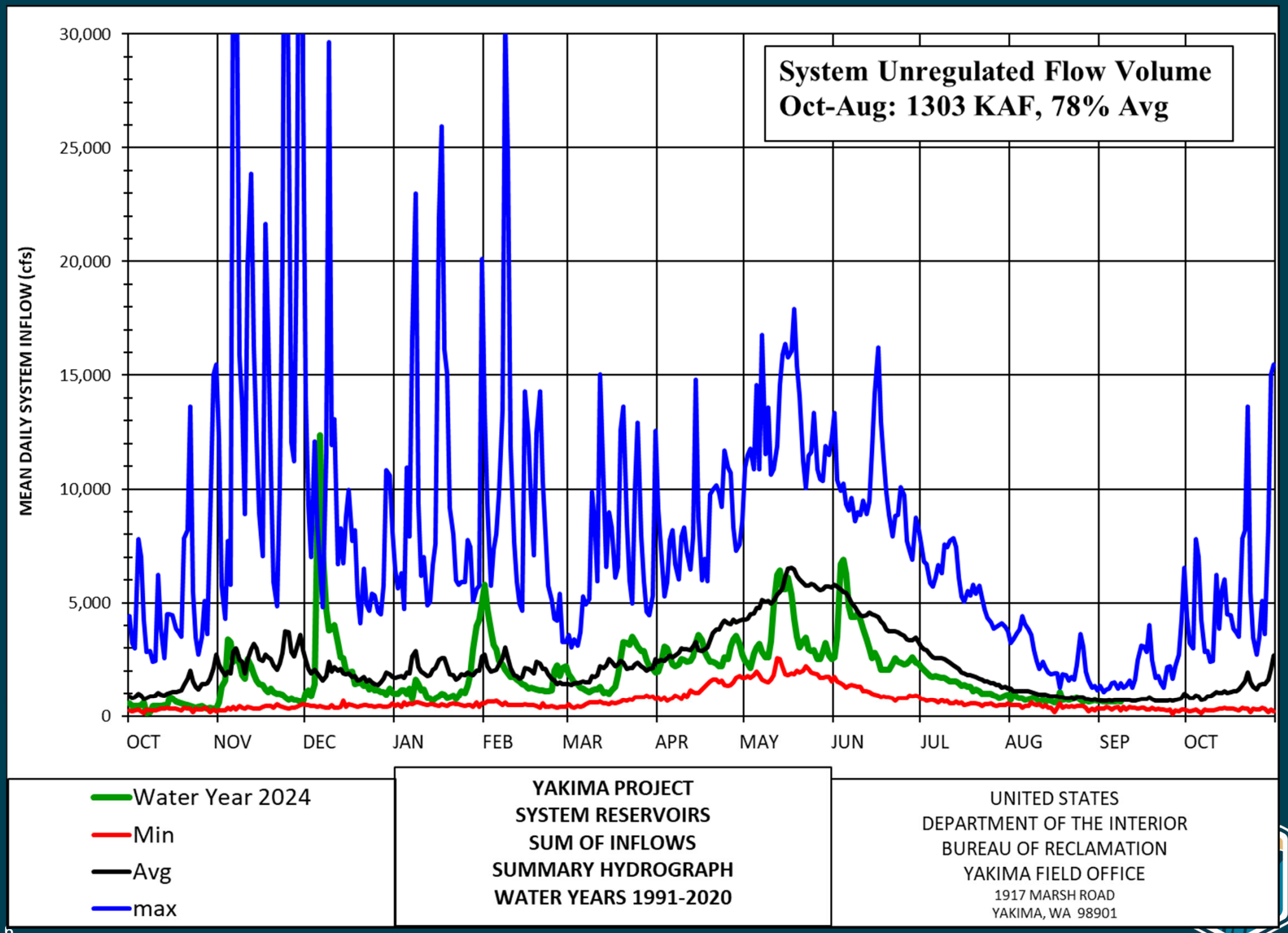
The monthly forecast is based on flows, precipitation, snowpack, and reservoir storage through the 1st day of the month, along with estimates of future river flows. Future weather conditions also are critical in determining stream flows, irrigation demands, and reservoirs storage.

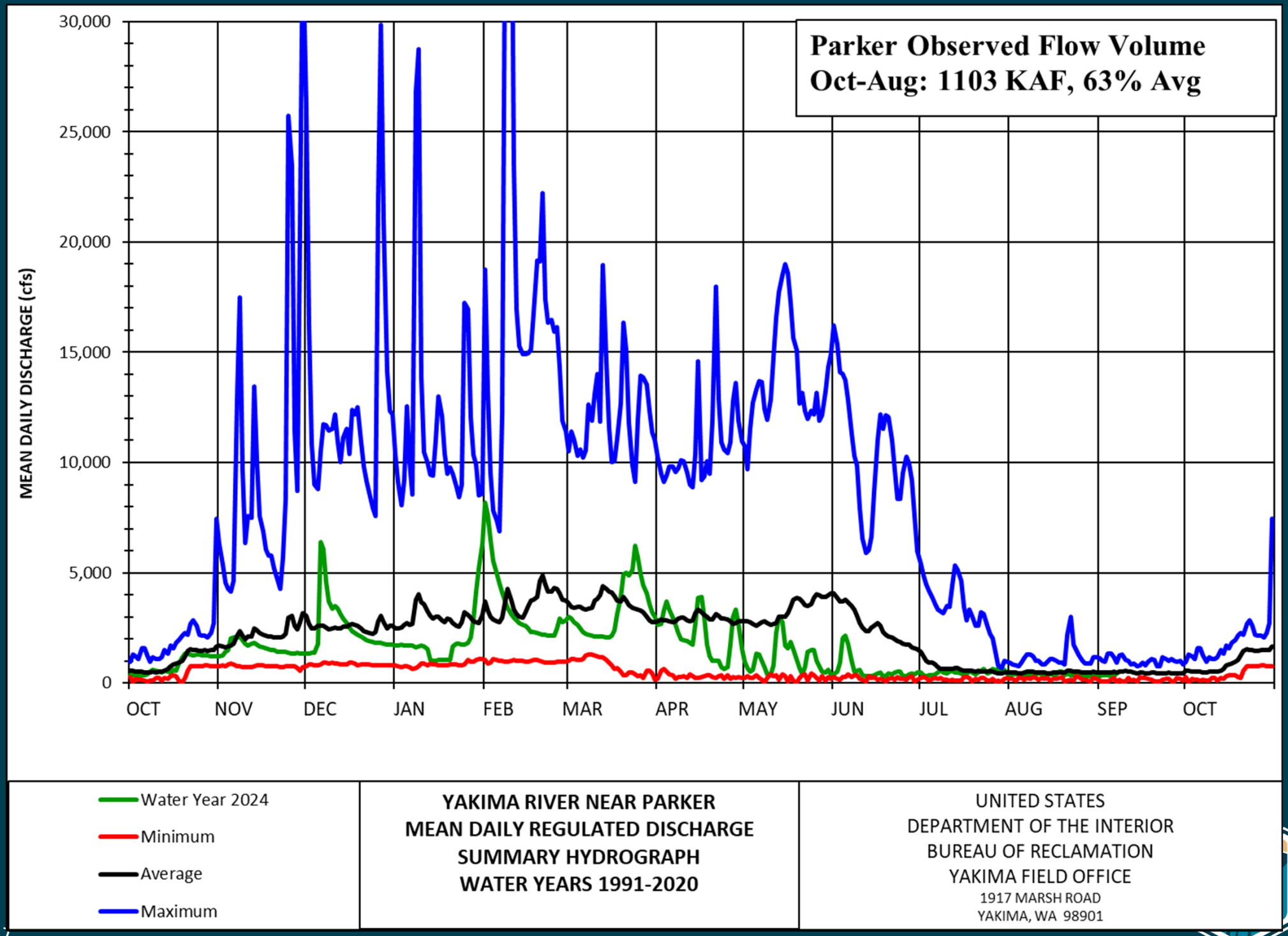
For more information, visit Reclamation's website at https://www.usbr.gov/pn/hydromet/yakima/.

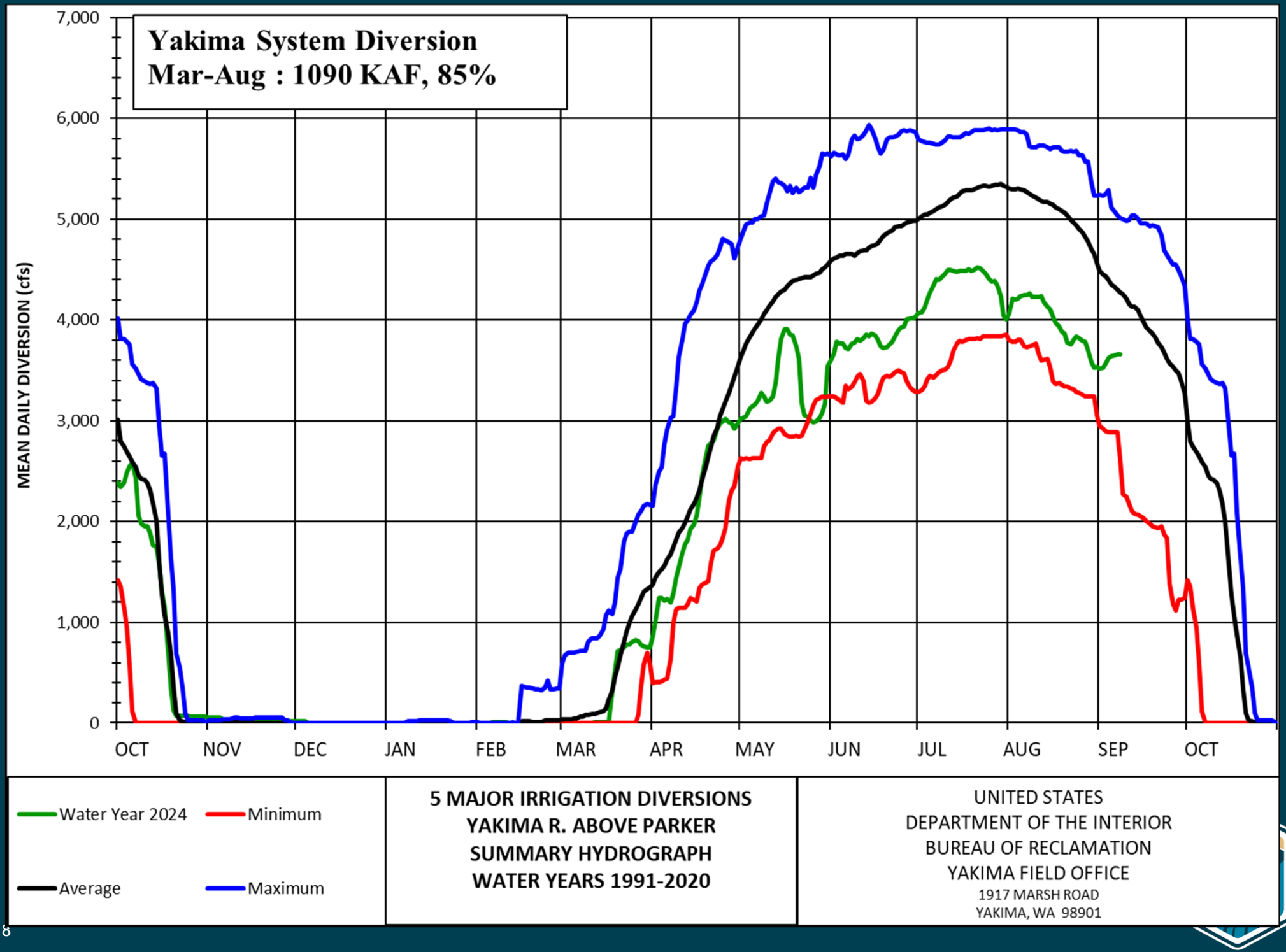
# # #

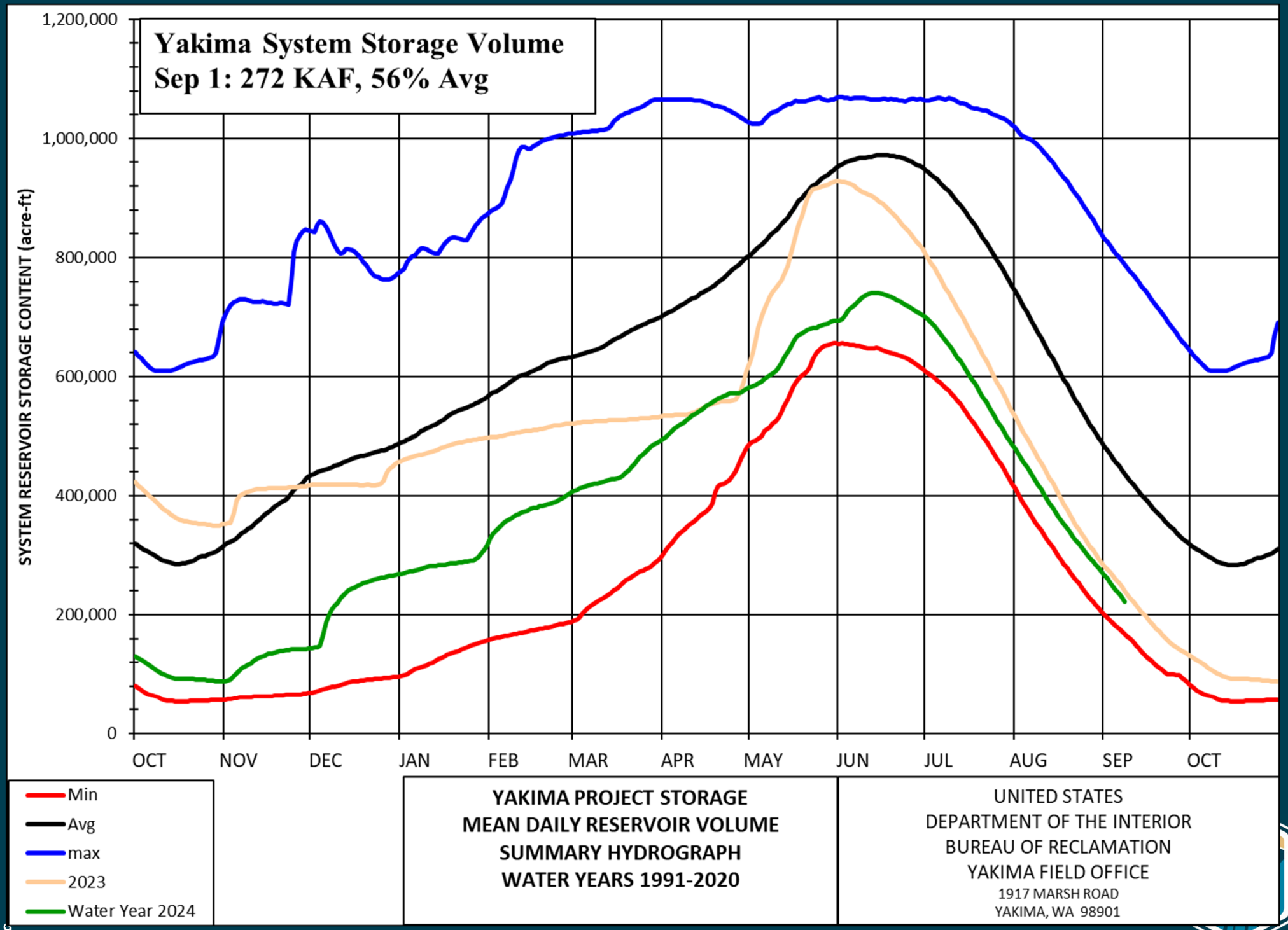

KYKM - Oct 2023 Through Sep 2024
Temperature (Deg F)
110
90
70
50
30
10
-10
-30
Yakima Airport Weather, Pendleton, National Weather Service
Precipitation (Inches)
8
7
6
5
4
3
2
1
6.42
81%
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Record Min
Record Max
Normal
Below Normal
Above Normal


Yakima Basin Precipitation
Oct-Aug: 188.4 in., 85.4% Avg
22.9%
79.8%
124.2%
102.0%
75.9%
48.5%
57.4%
78.6%
159.3%
33.1%
193.5%
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
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-Aug: 1303 KAF, 78% Avg
MEAN DAILY SYSTEM INFLOW (cfs)
30,000
25,000
20,000
15,000
10,000
5,000
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


Parker Observed Flow Volume
Oct-Aug: 1103 KAF, 63% Avg
MEAN DAILY DISCHARGE (cfs)
30,000
25,000
20,000
15,000
10,000
5,000
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 REGULATED DISCHARGE
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 Diversion
Mar-Aug : 1090 KAF, 85%
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
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
Sep 1: 272 KAF, 56% 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
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

September 1, 2024 TWSA ESTIMATE

May 21 - September 30

Parameter*	+/-/=	Low	Adopted	High
May 21-Sep 30 Natural Flow at Parker est.	+	554	580	630
Return Flow Estimate	+	245	245	245
May 21, Reservoir Content	+	675	675	675
TWSA	=	**1474**	**1500**	**1550**
SEP 30 EST RESERVOIR CONTENT	-	76	76	76
EST FLOW OVER SUNNYSIDE DAM	-	128	130	140
TWSA FOR IRRIGATION	=	1270	1294	1334
NONPRORATABLE ENTITLEMENT	-	773	773	773
YRPW-KID release	-	4	4	4
REMAINING TWSA	=	493	517	557
PRORATABLE ENTITLEMENT	/	998	998	998
% RATIO= REMAINING TWSA/PRORATABLE ENTITLEMENT		**49%**	**52%**	**56%**
TITLE 12 FLOW REQUIREMENTS, cfs	**September**	**300**	**300**	**300**
Flow available to Title 12, cfs *#*		107	109	111
Non-storeable Portion of added flow, cfs		30	30	30
Storable portion of added flow, cfs		77	79	81

*Values are in 1,000 ac-ft unless otherwise specified.

State & YRBWEP Trust, Acquisition, & Conservation additions to Title XII flow range from 107 to 111 cfs.

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

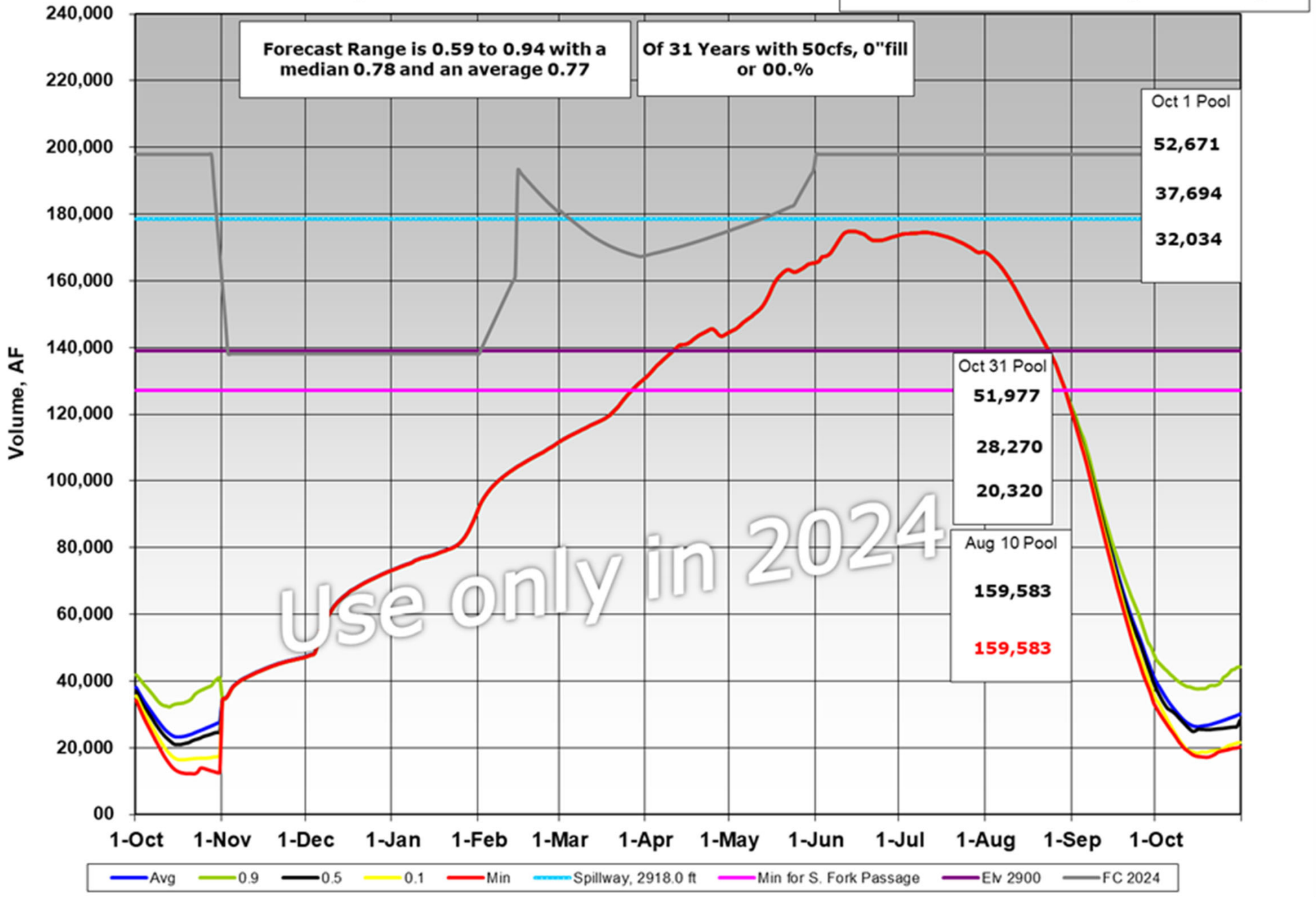
*Values are in 1,000 ac-ft unless otherwise specified. ** May 21-Sep 30 except May 2024 was May1-Sep30.

State & YRBWEP Trust, Acquisition, & Conservation additions to Title XII flow.

9/3/24

Rimrock Operations Outlook

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



Rimrock Reservoir

Rimrock Reservoir

Bumping Reservoir

Keechelus Reservoir

Keechelus Reservoir

Keechelus Reservoir

Kachess Reservoir

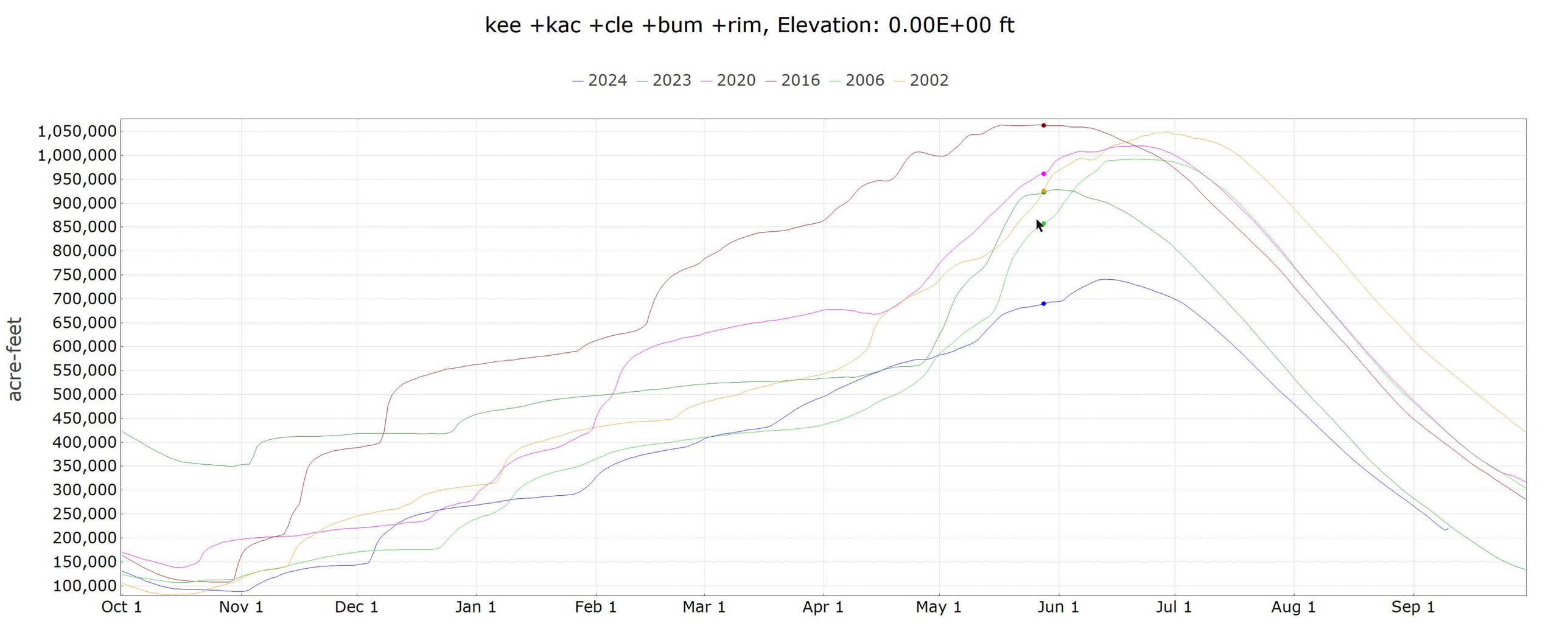
Kachess Reservoir

Cle Elum Reservoir

Cle Elum Reservoir

Hydrologic Summary

- Yakima Reservoir Storage 210 KAF, 20% full, 50% avg.
- 7th lowest AF (1971-2024) (up from 5th) in Aug)
- Above average precip in August
- Prorationing is 52%
- Title XII flow is 300 cfs plus 30 cfs.
- 16,534 AF Movable 2024 conservation water (at 51% prorationing) has a balance of 1,253 AF after May and June pulse flows.
- Latest Rimrock routings show low pool of between 20 and 40 KAF with median between 28 to 30 KAF.


kee +kac +cle +bum +rim, Elevation: 0.00E+00 ft
2024
2023
2020
2016
2006
2002
acre-feet
1,050,000
1,000,000
950,000
900,000
850,000
800,000
750,000
700,000
650,000
600,000
550,000
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1

Upcoming

- Box Canyon Creek flume build Sept. 11
- Bull Trout trap and haul below dams (USFWS)
- Planning for canal fish recovery
- Spring 2024 data review and analysis

NWS

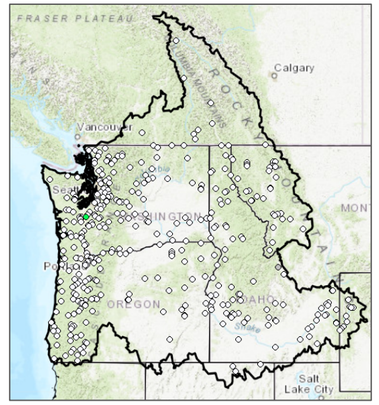
September 2024 Washington Water Supply

Robin Fox, Service Hydrologist - NWS Spokane

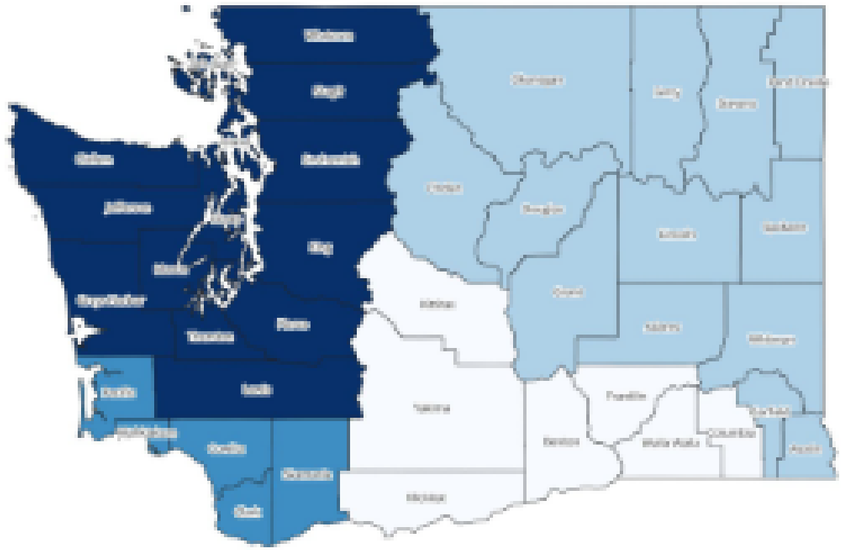
NWS

NWS offices in Washington

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



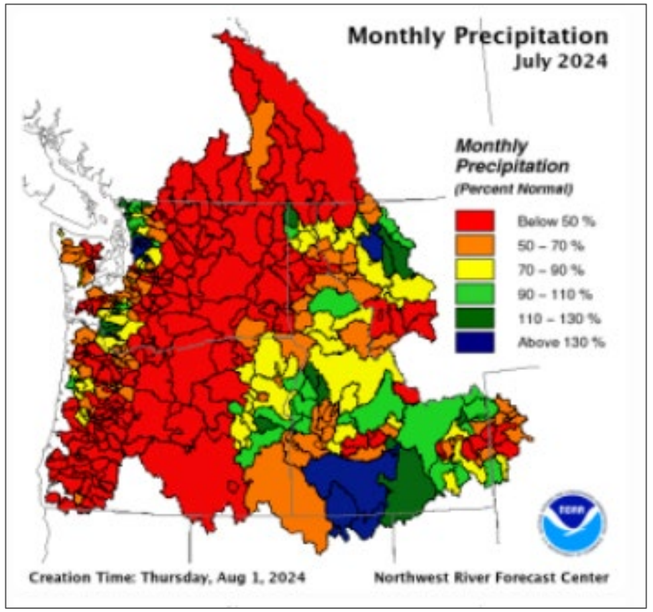
Amy Burke, Sr Hydrologist - NWRFC - NWRFC.watersupply@noaa.gov

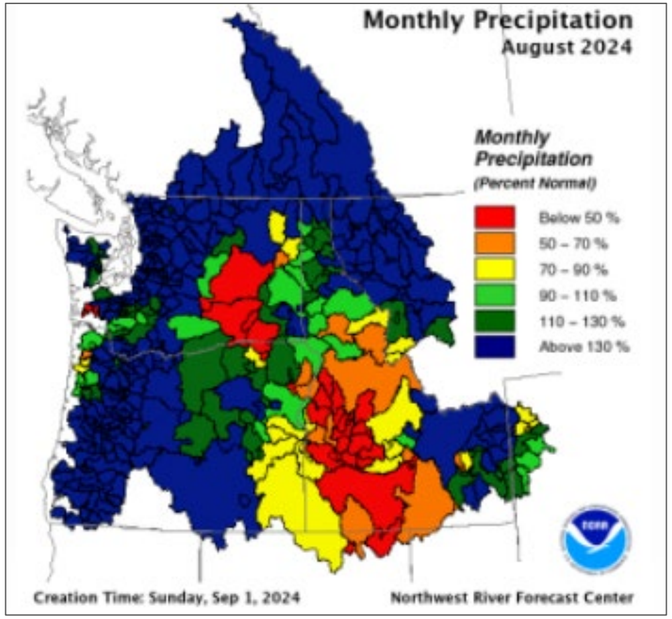


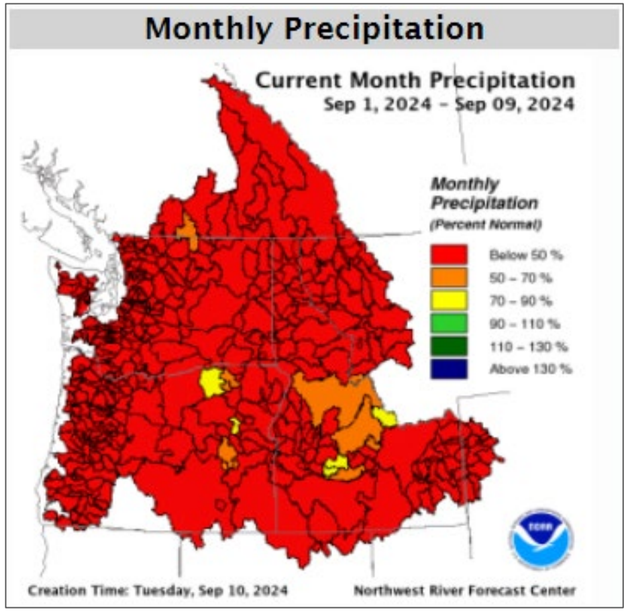
Washington State - Areas of Responsibility

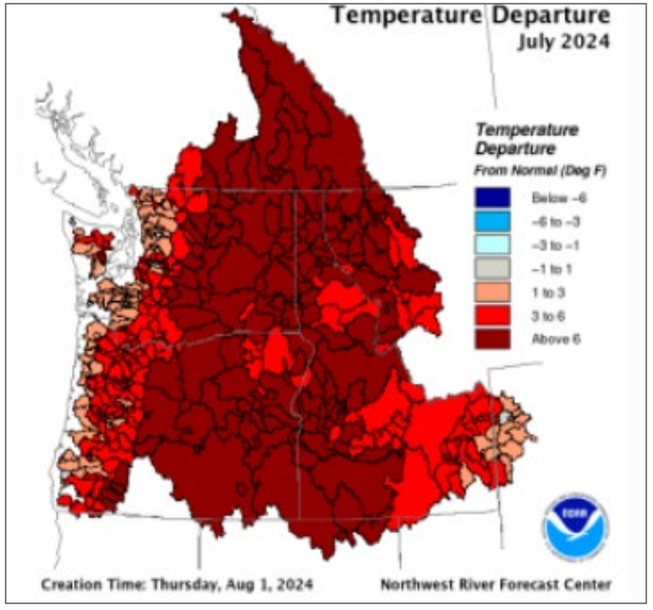
- Northwest Washington - NWS Seattle - nws.seattle@noaa.gov
- Southwest Washington - NWS Portland - nws.portland@noaa.gov
- Northeast Washington - NWS Spokane - nws.spokane@noaa.gov
- Southeast Washington - NWS Pendleton - pdt.operations@noaa.gov

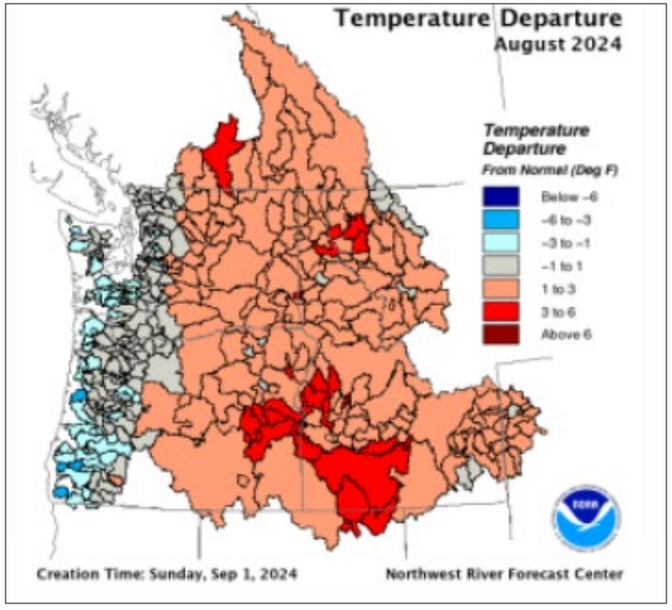
Precipitation & Temperature

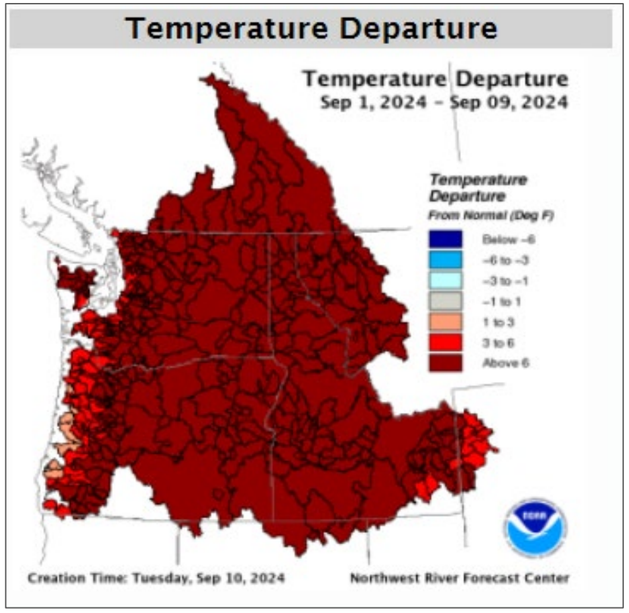




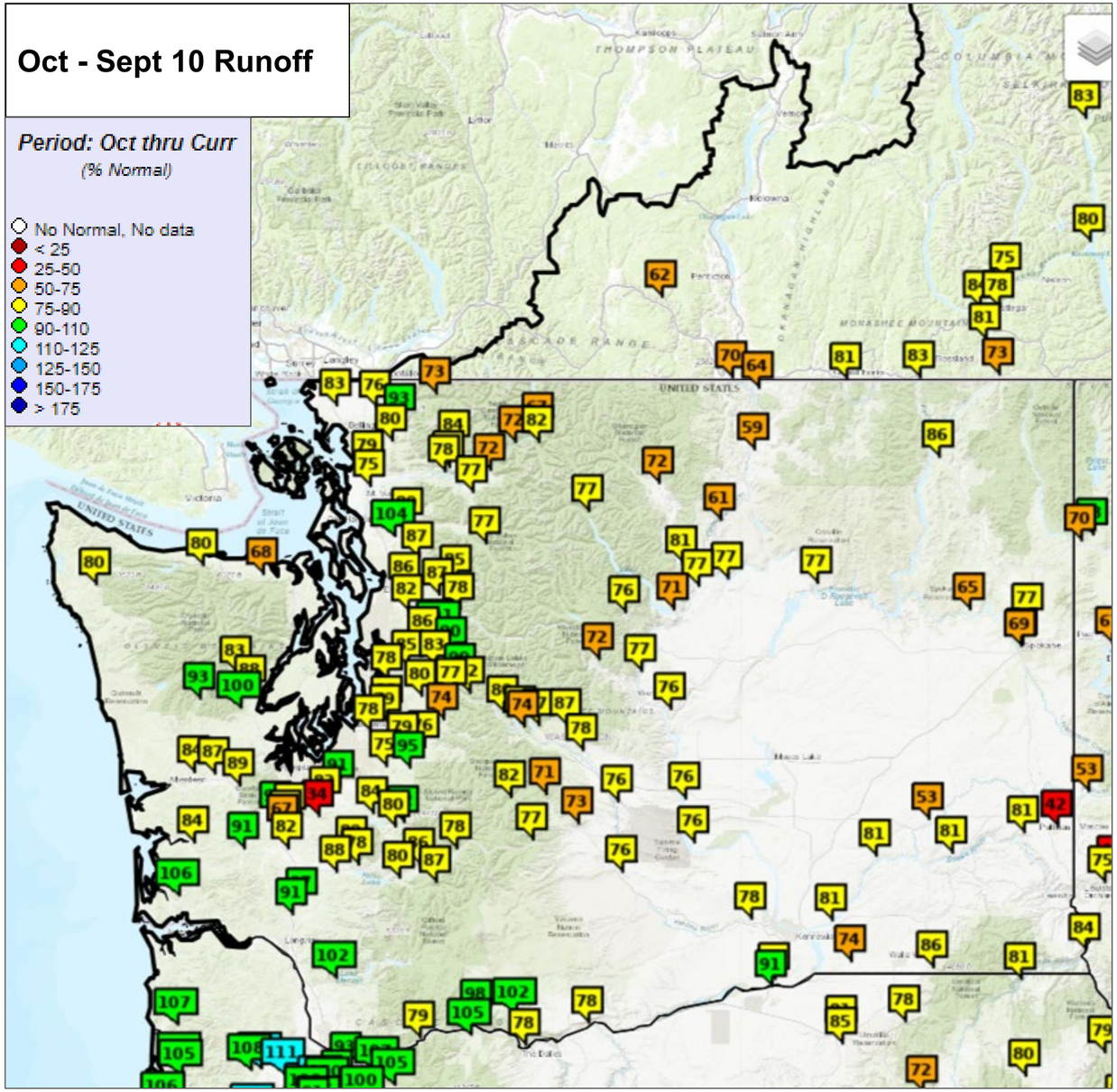


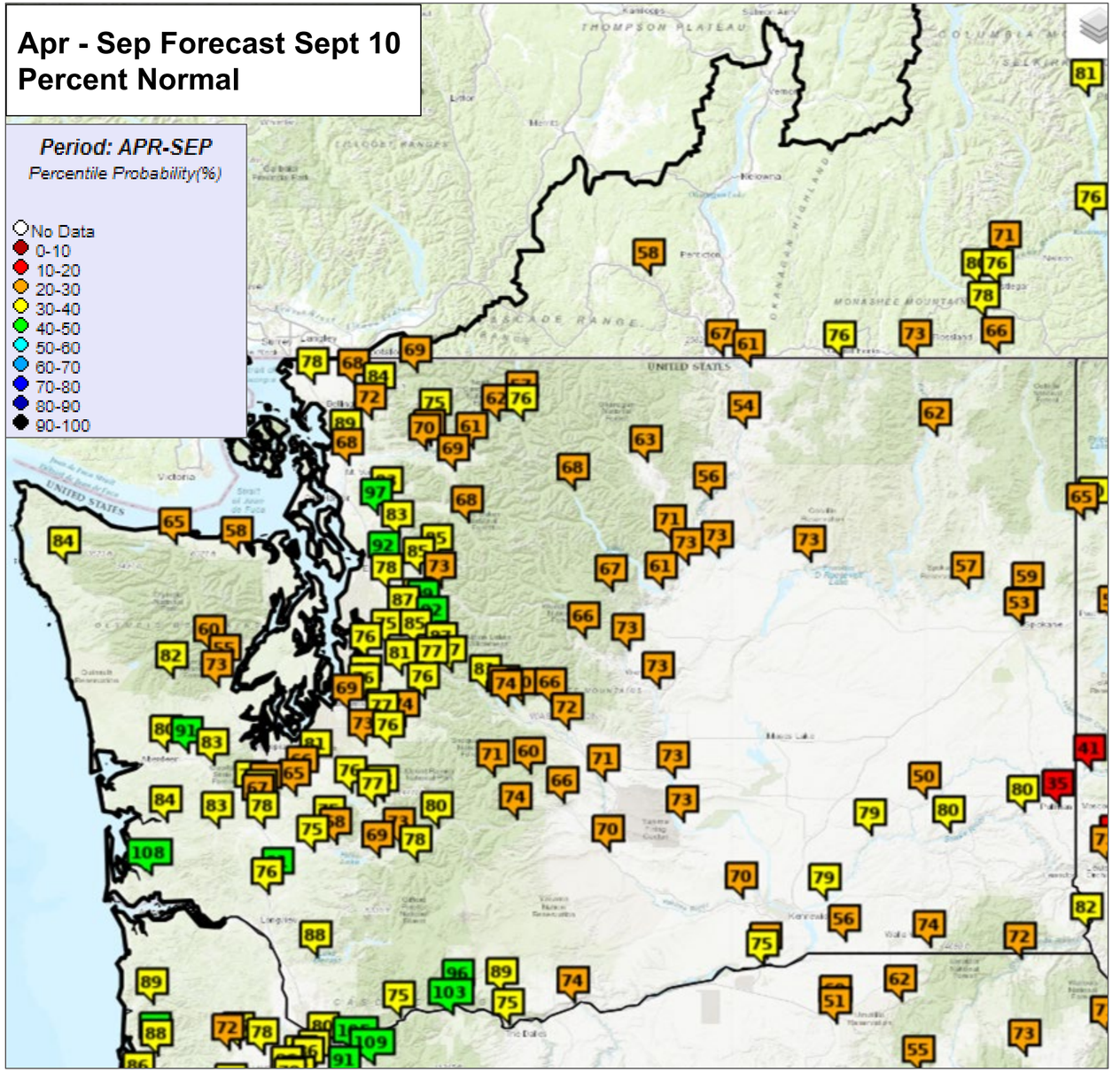






Runoff vs. Forecast



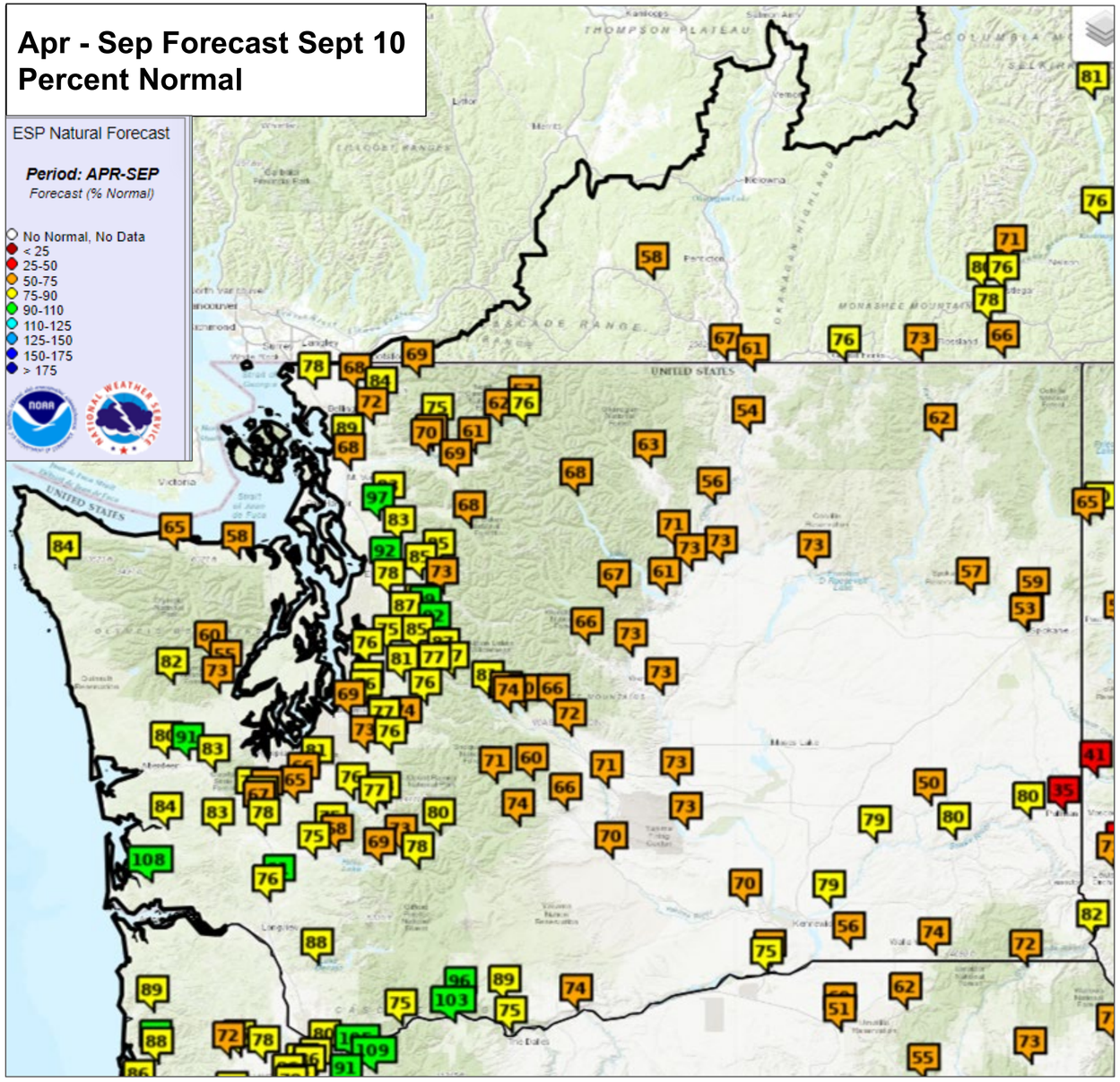


Forecast Percent Normal & Percentiles

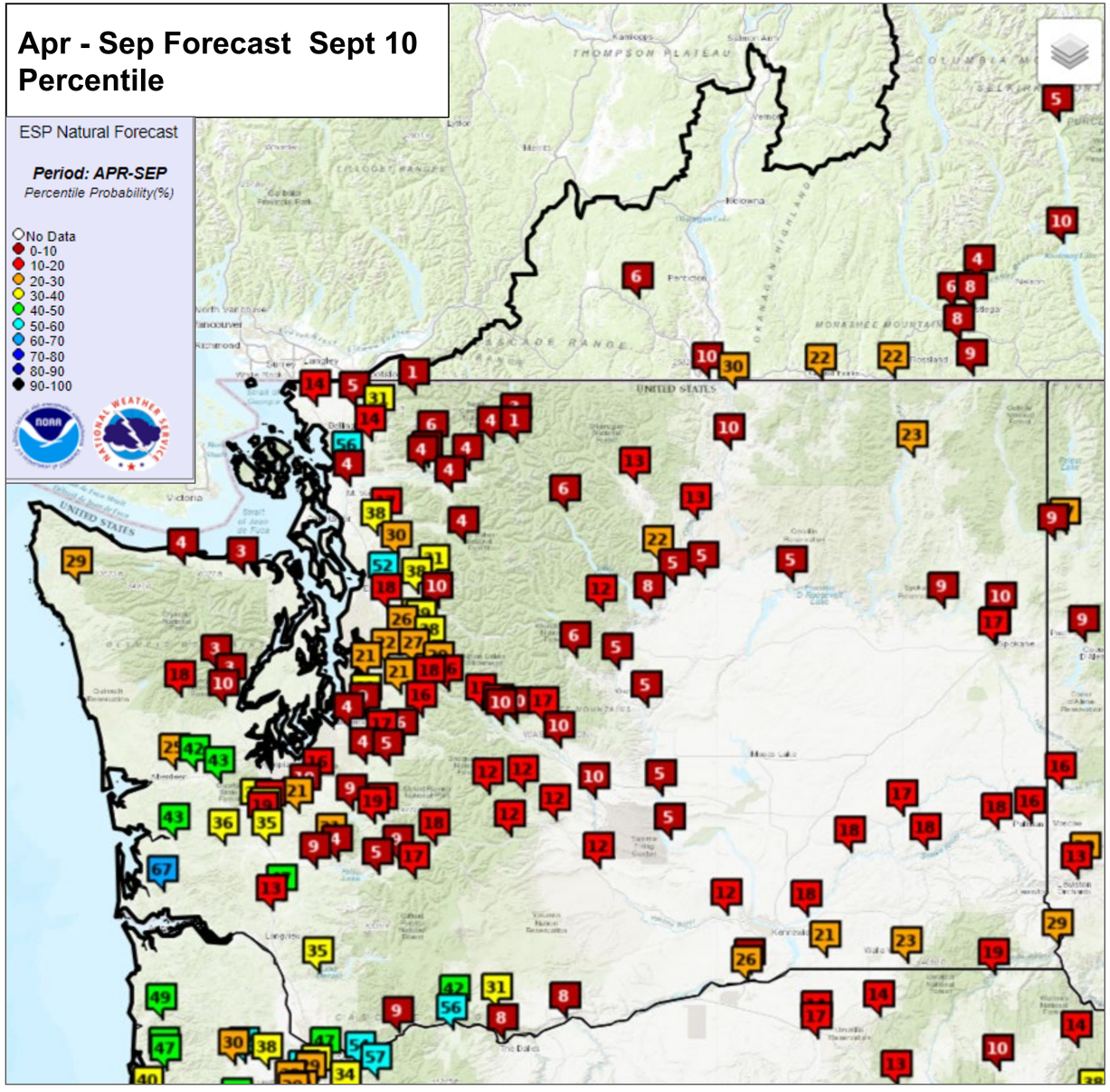
NWS

September 2024

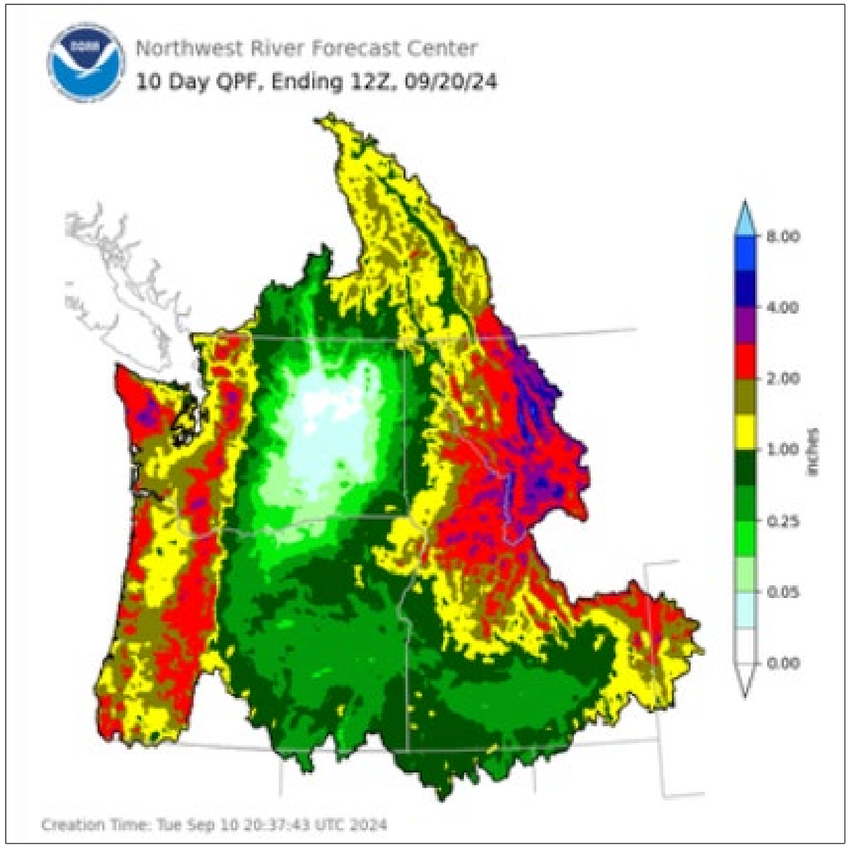
Apr - Sep Forecast Sept 10
Percent Normal

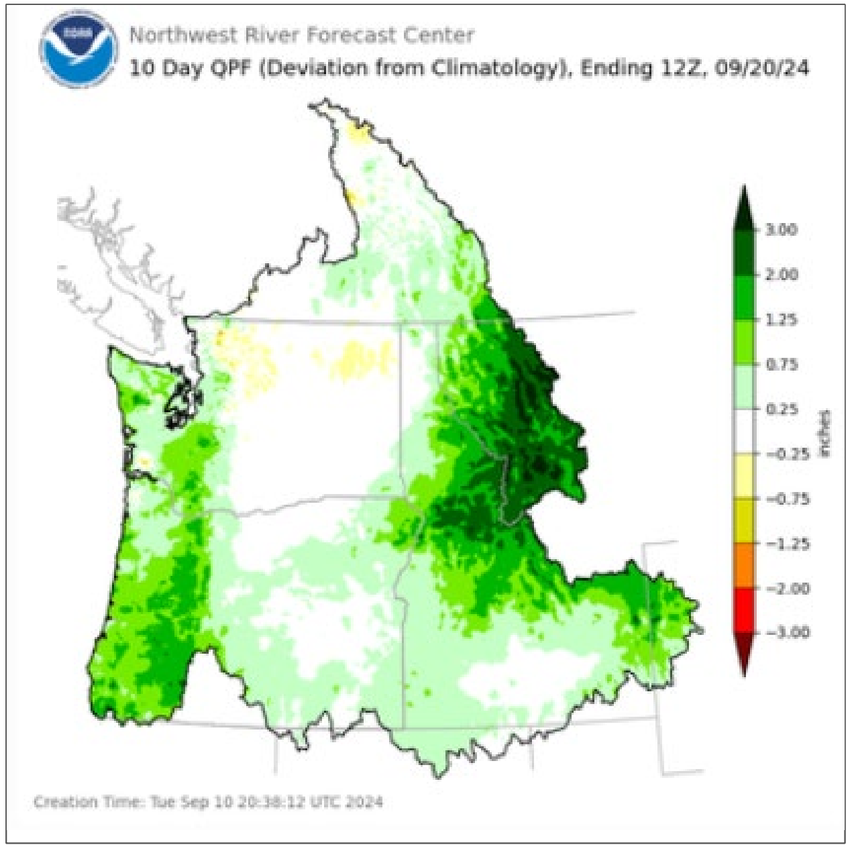


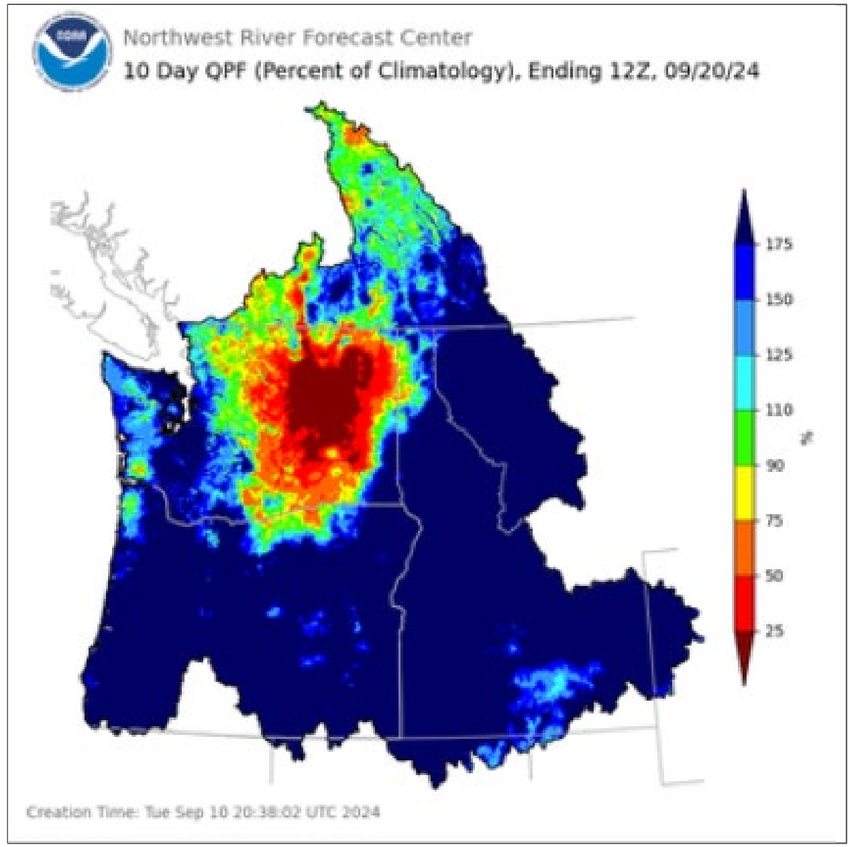
Apr - Sep Forecast Sept 10
Percentile



10 Day Precipitation Forecast used in ESP10



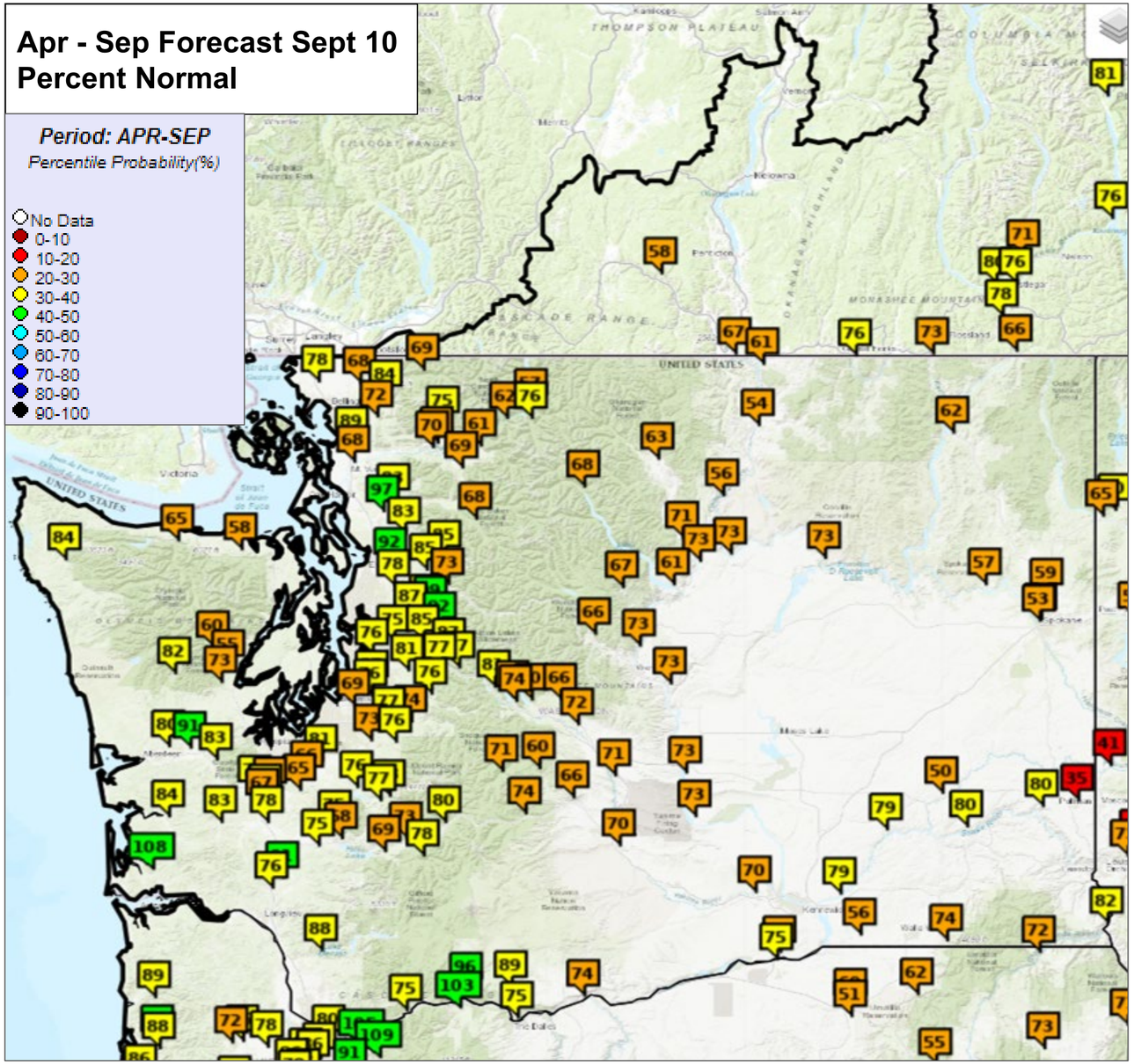




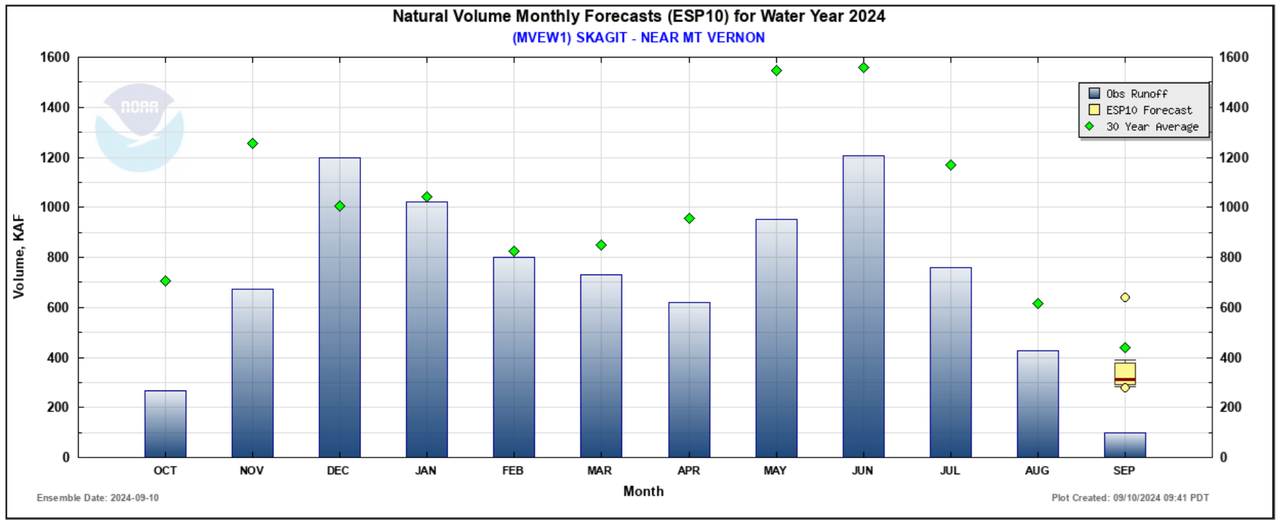
Quantitative Precipitation Forecast (QPF) Sources
Days 1 - 2 NWS Weather Forecast Offices (WFO) in the US, WPC in BC
Days 3 - 7 NWS Weather Prediction Center (WPC)
Days 8 - 10 NWS National Blend of Models (NBM)

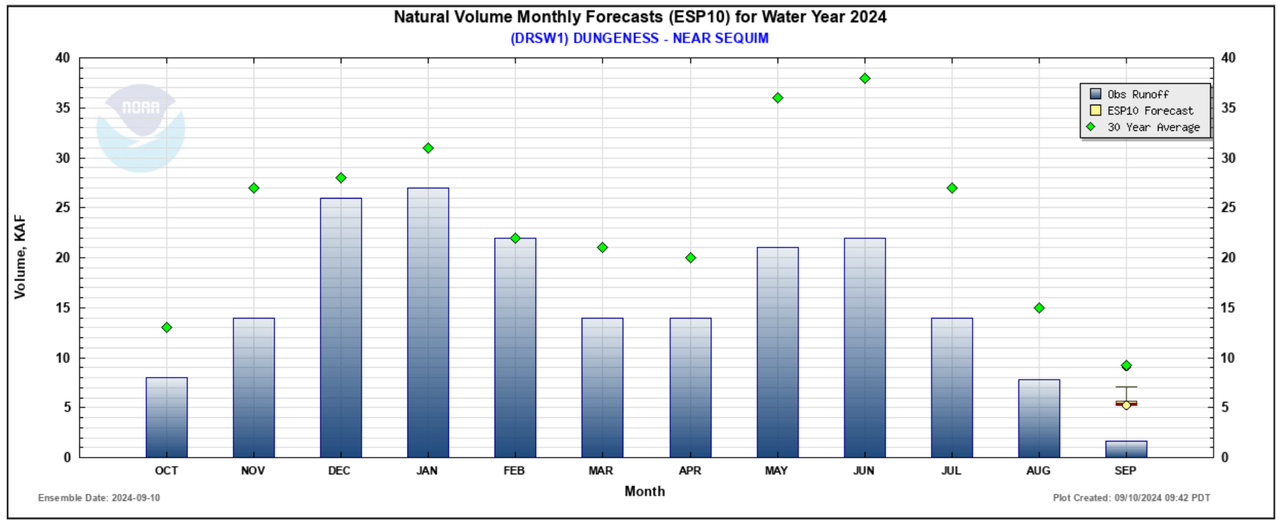
Natural Water Supply Forecasts

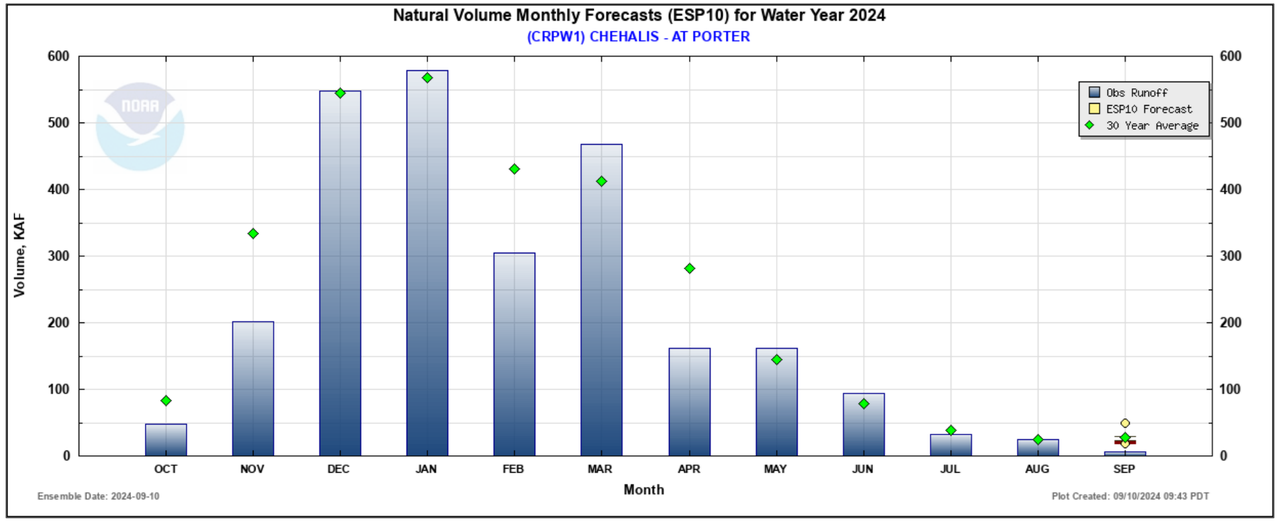
Forecast Point	% Normal Apr - Sep	Δ Since June 23
Skagit nr Mt Vernon	68	-1
Dungeness nr Sequim	58	1
Chehalis at Porter	83	0
Okanogan at Malott	56	2
Methow nr Pateros	71	0
Yakima at Parker	70	-5
Walla Walla nr Touchet	56	2



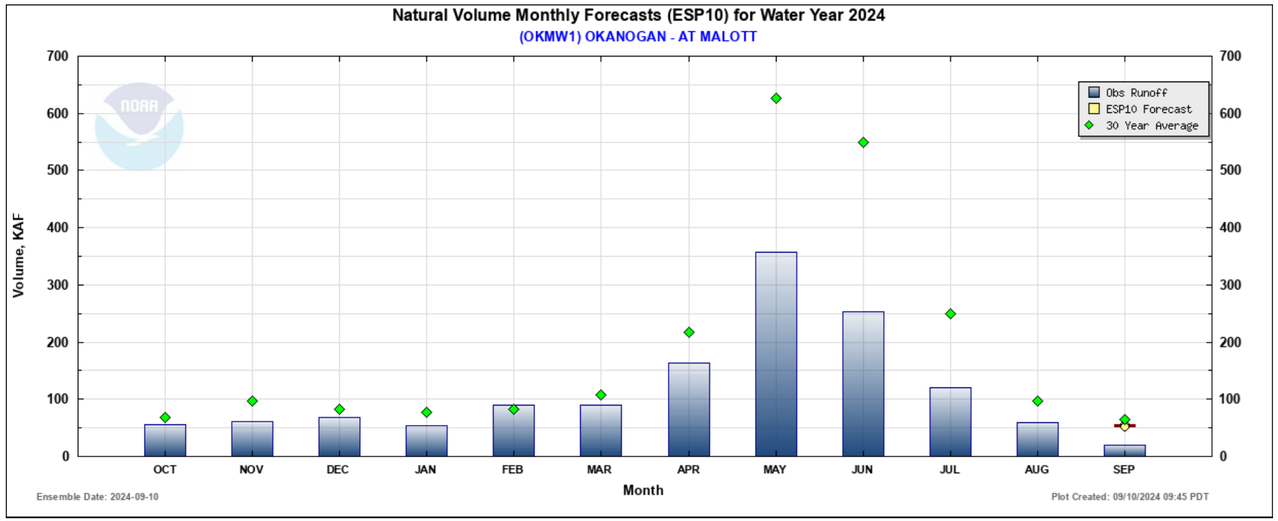
Natural Water Supply Forecasts

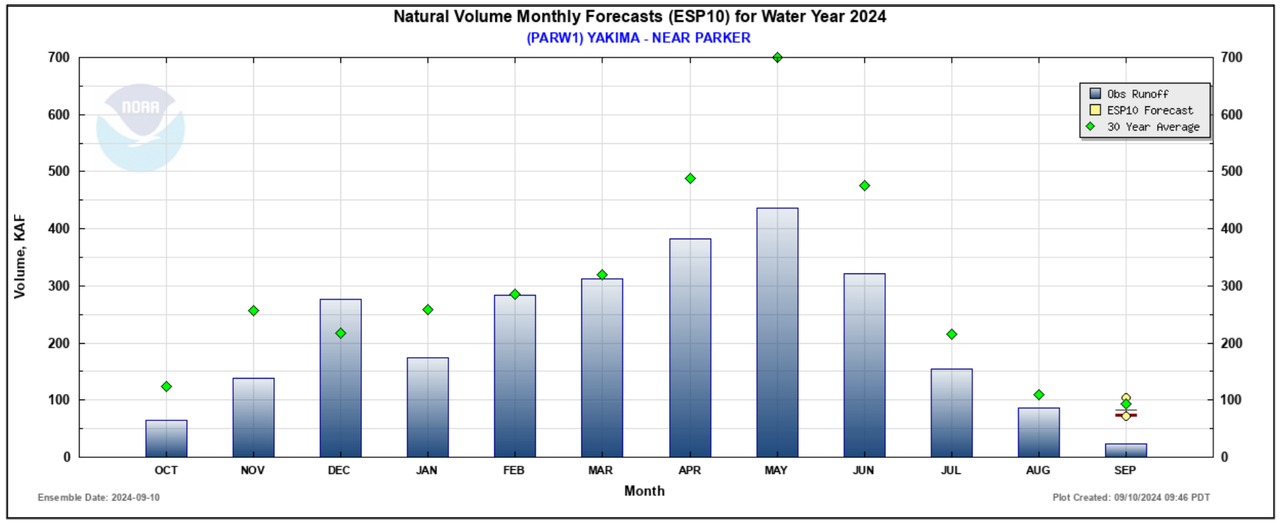


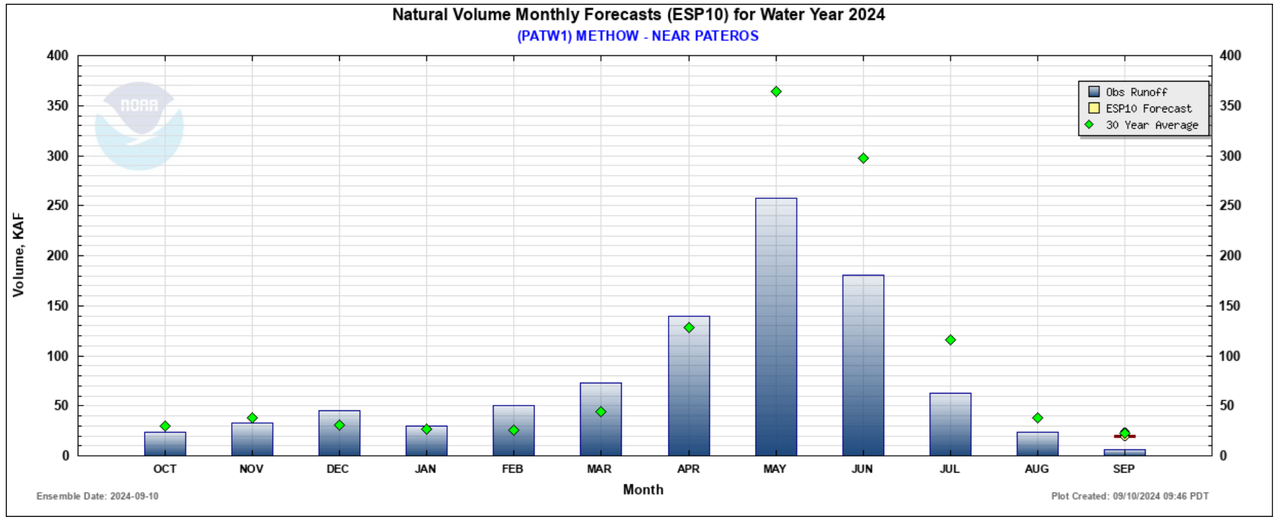


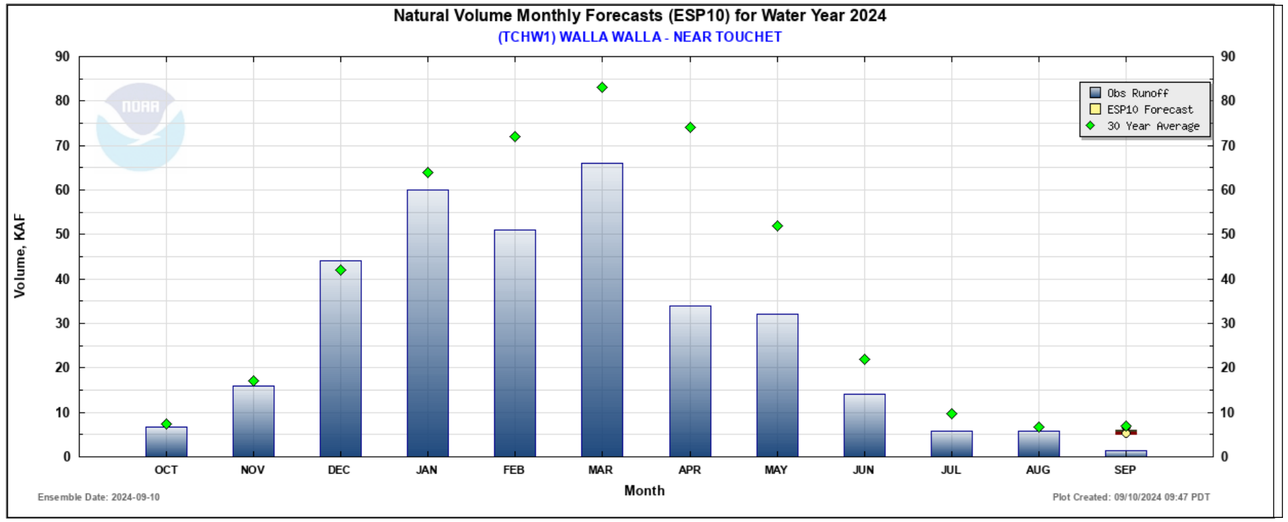


Natural Water Supply Forecasts









Takeaways

- Despite the summer precipitation, runoff and water supply forecasts remain lower than normal and have changed little since the start of summer.

- Apr - Sep Water Supply Forecasts remain near record low in many places.

- Wetter weather arriving for mid September, especially for the west side.