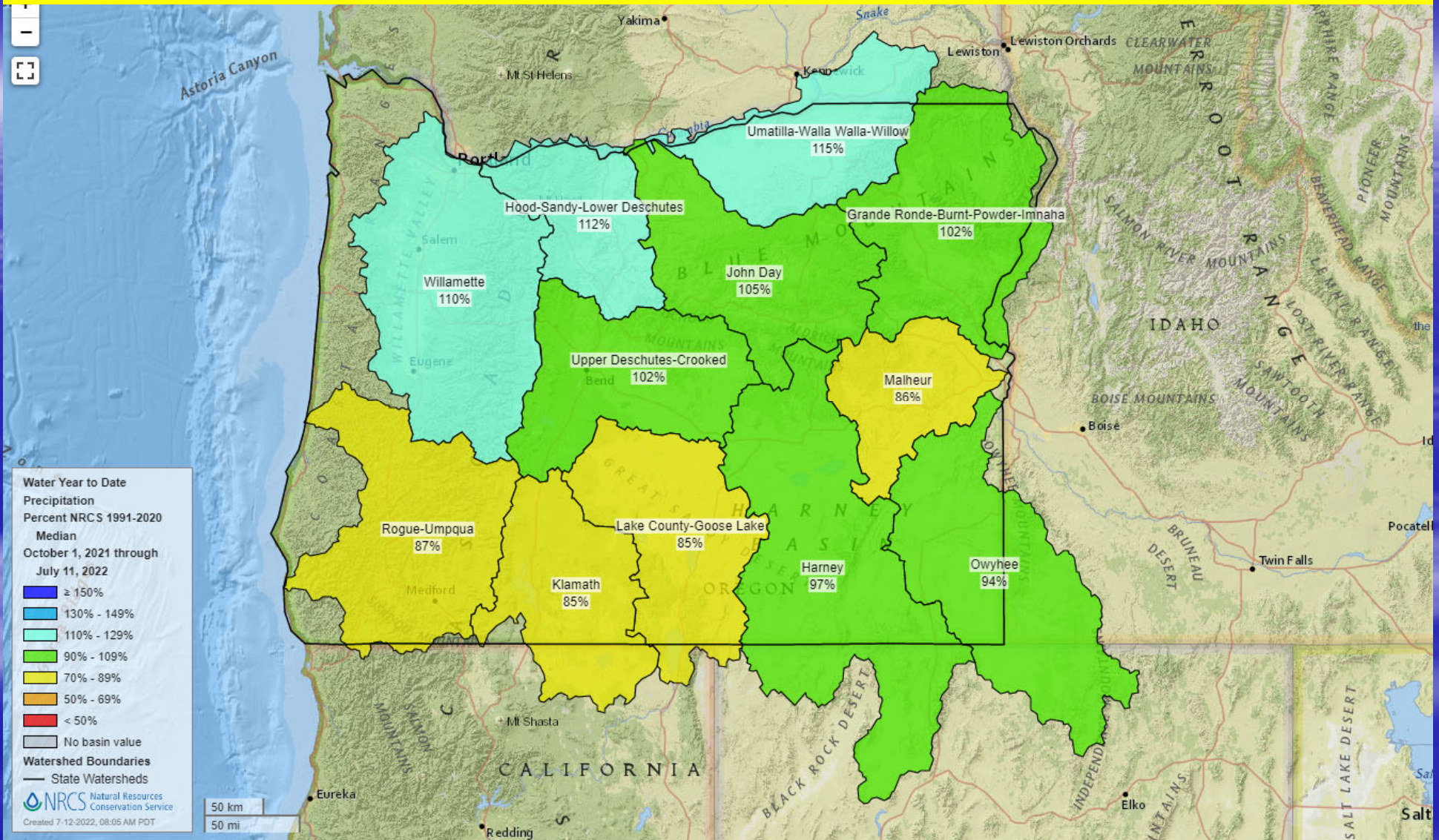


Oregon Water Supply Availability Committee July 13, 2022

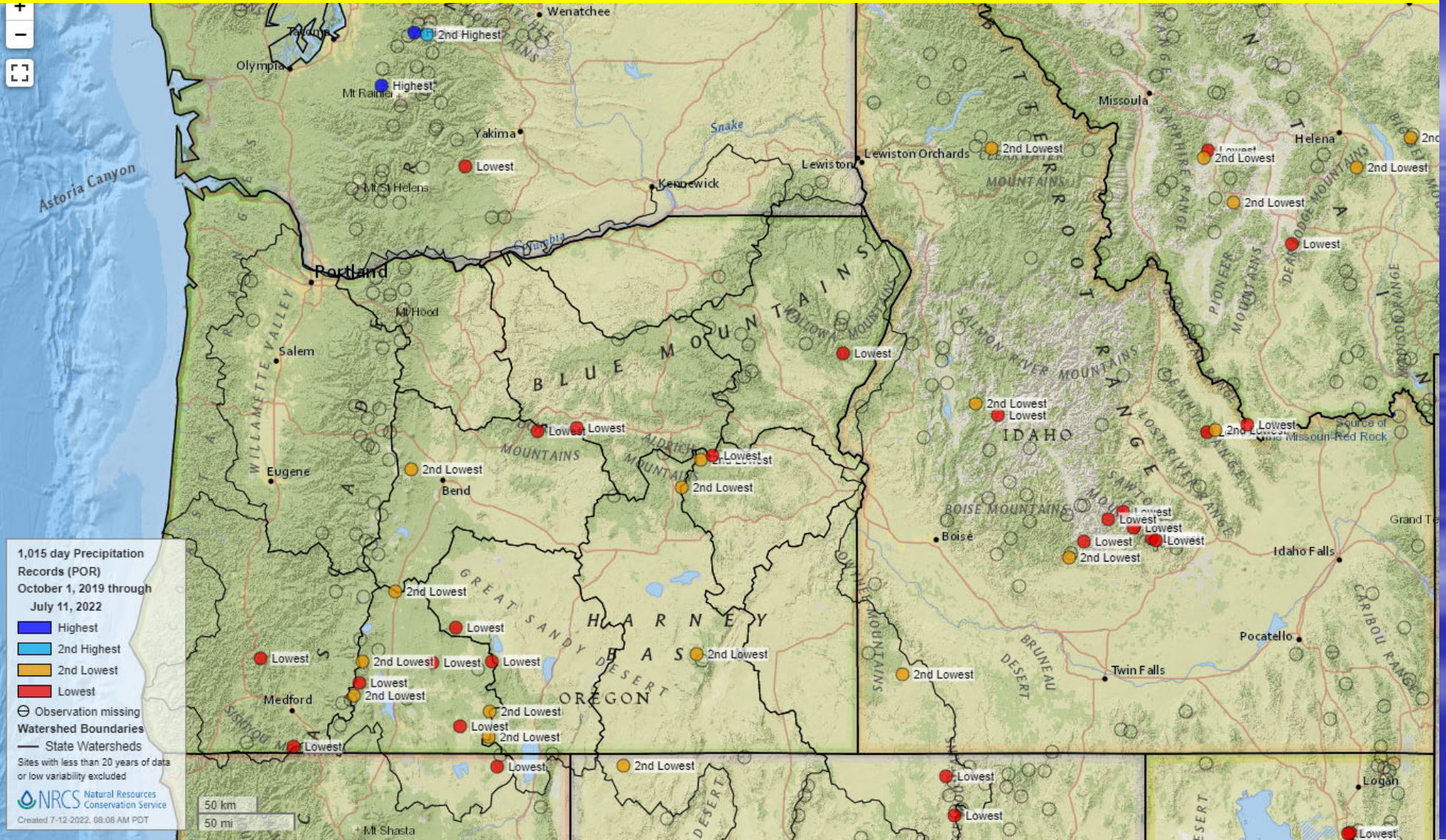


H. Scott Oviatt
USDA – Natural Resources Conservation Service
scott.oviatt@usda.gov
541-429-2359

July 11, 2022, SNOTEL Water Year Precipitation is 103% of 1991-2020 median

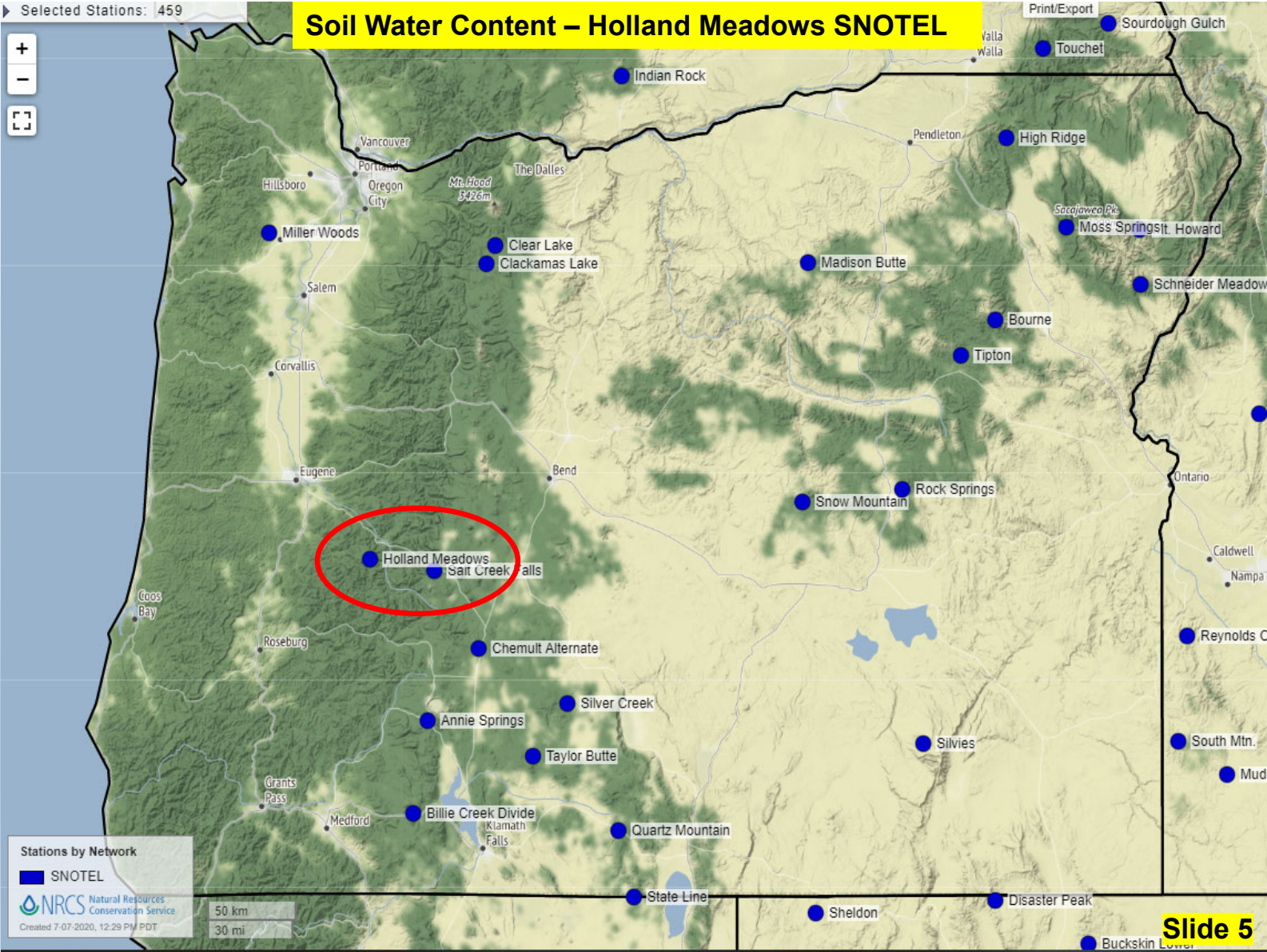


SNOTEL 1015-Day Precipitation Records – October 1, 2019, through July 11, 2022



Selected Stations: 459

Soil Water Content – Holland Meadows SNOTEL



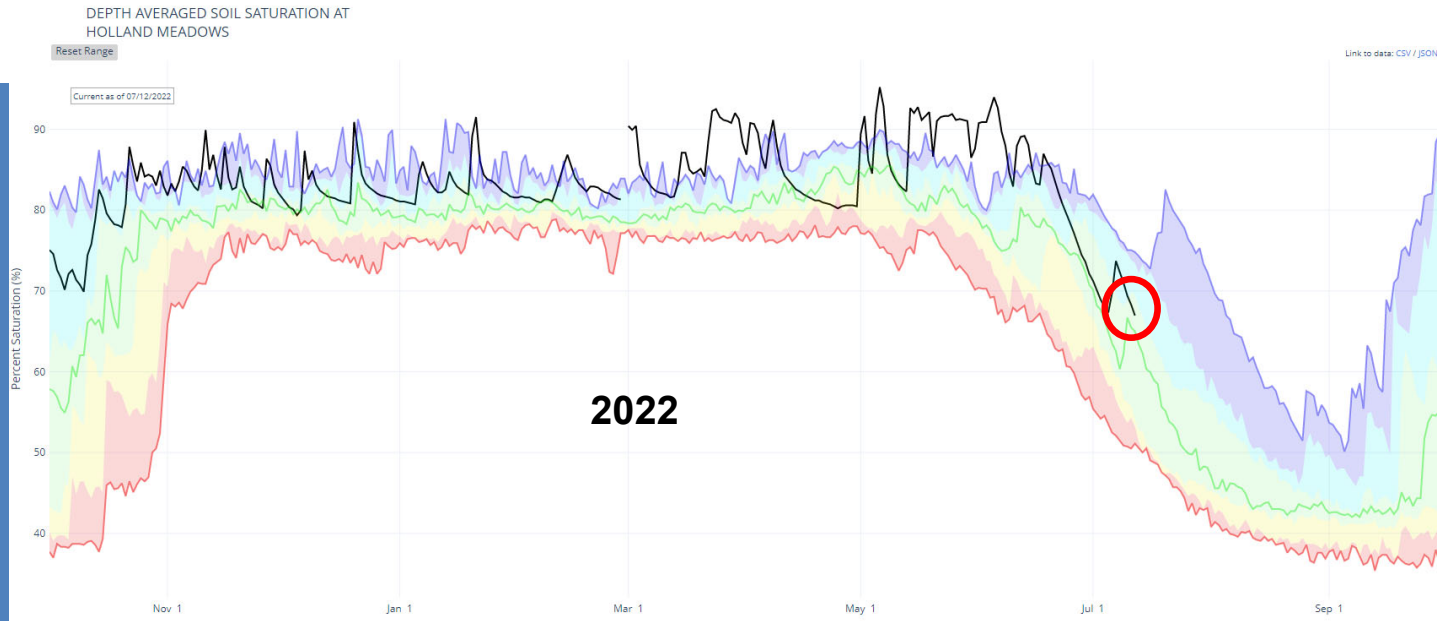
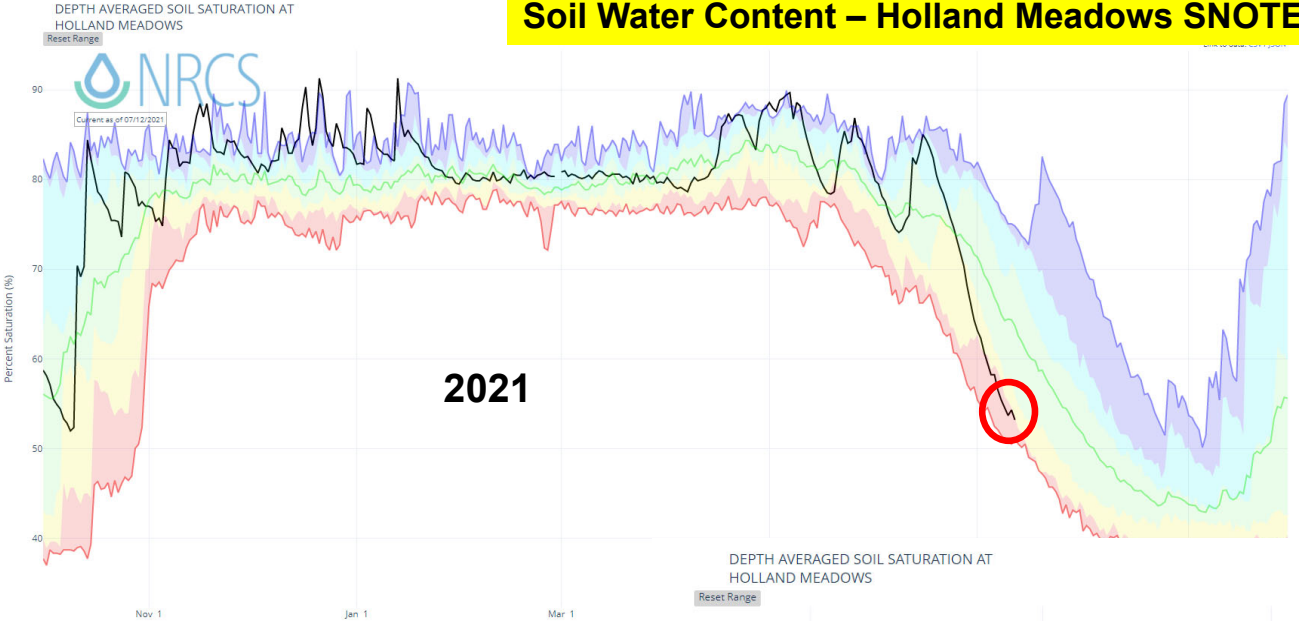
Stations by Network

- SNOTEL

NRCS Natural Resources Conservation Service
Created 7-07-2020, 12:29 PM PDT

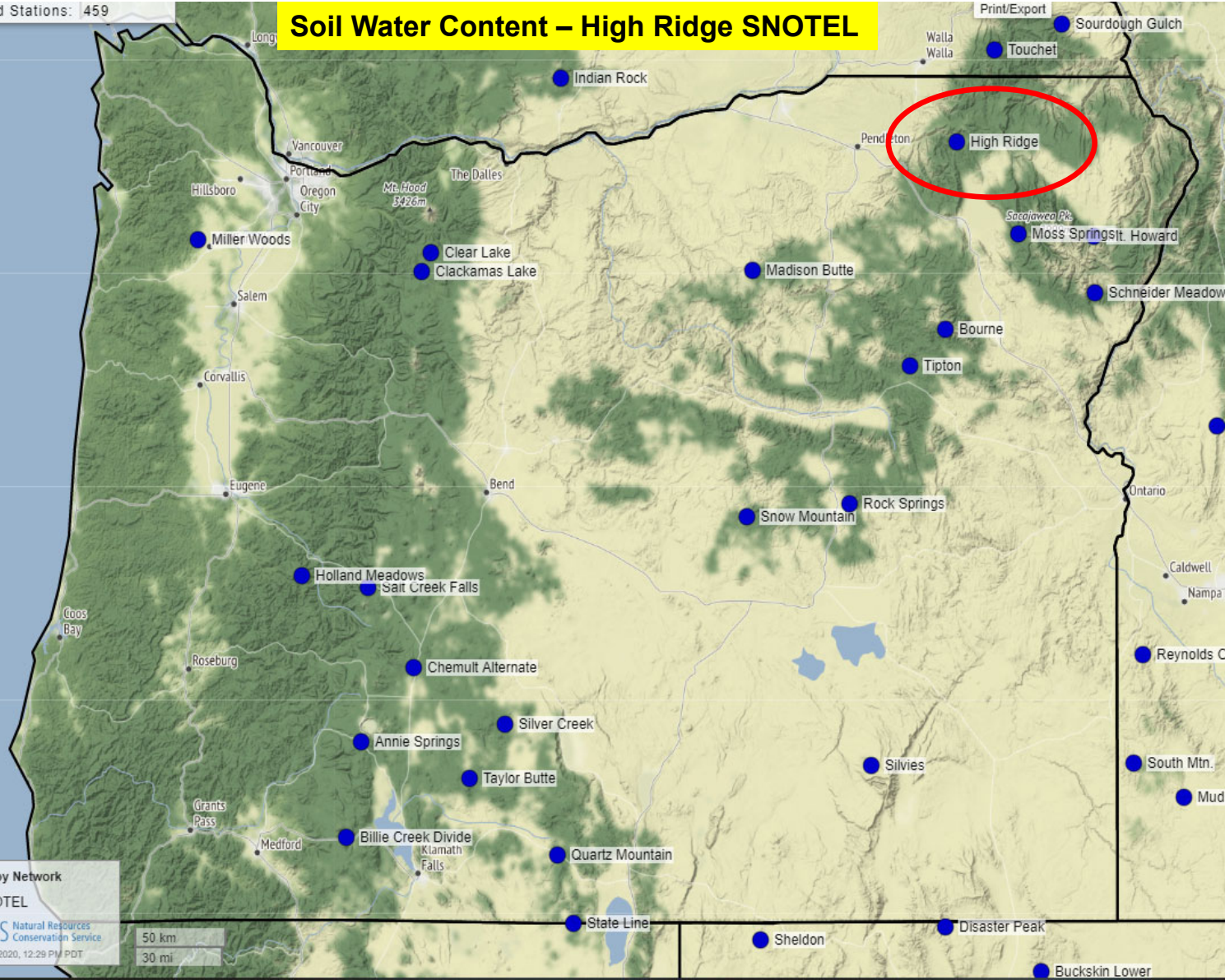
50 km
30 mi

Soil Water Content – Holland Meadows SNOTEL (POR 2011-2022)



Selected Stations: 459

Soil Water Content – High Ridge SNOTEL



Stations by Network

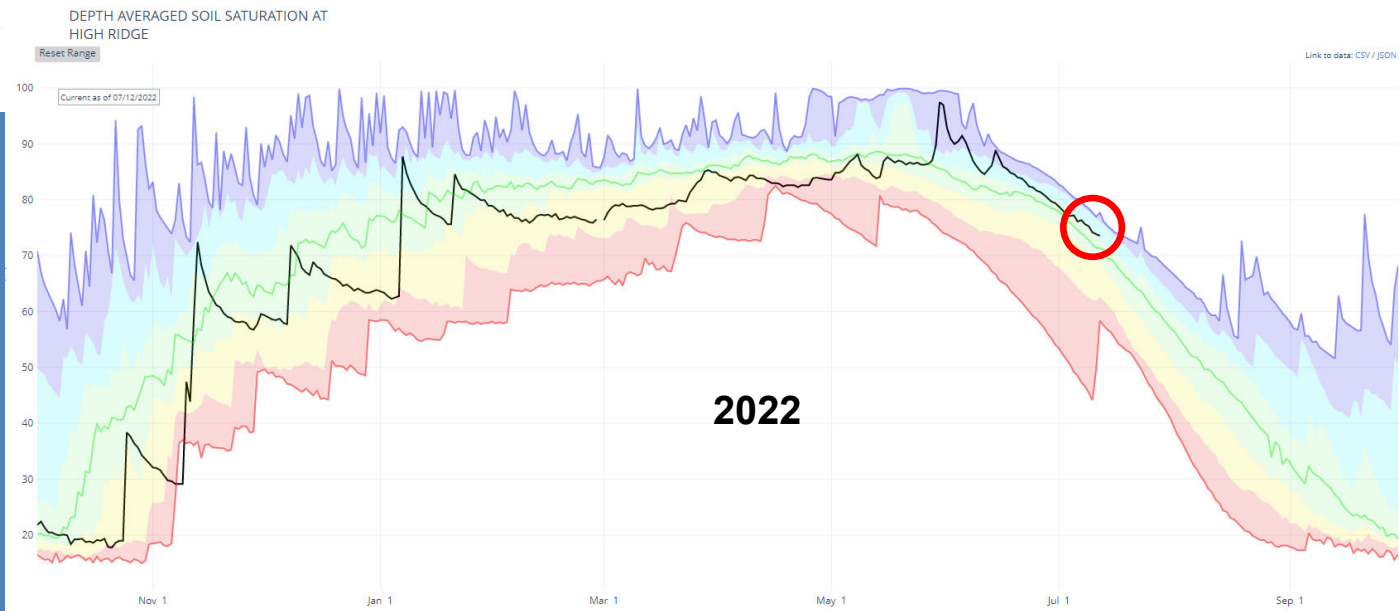
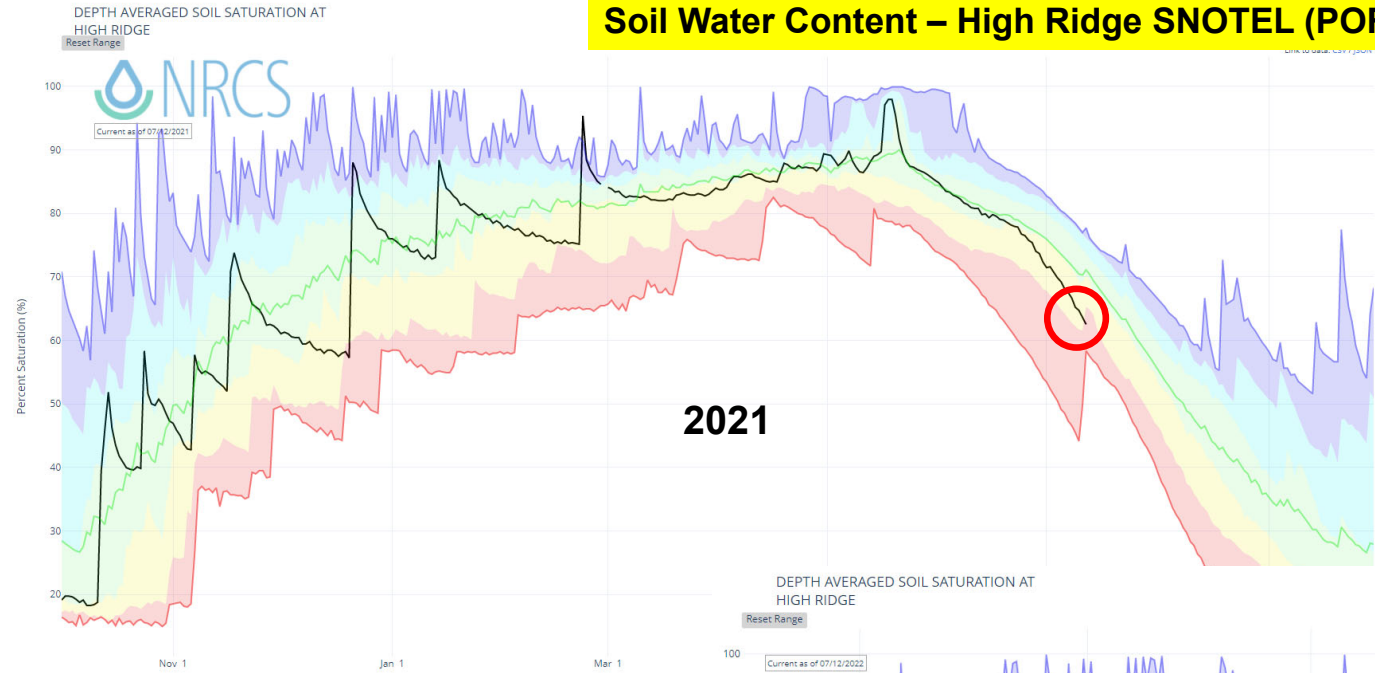
- SNOTEL

NRCS Natural Resources Conservation Service
Created 7-07-2020, 12:29 PM PDT

50 km
30 mi

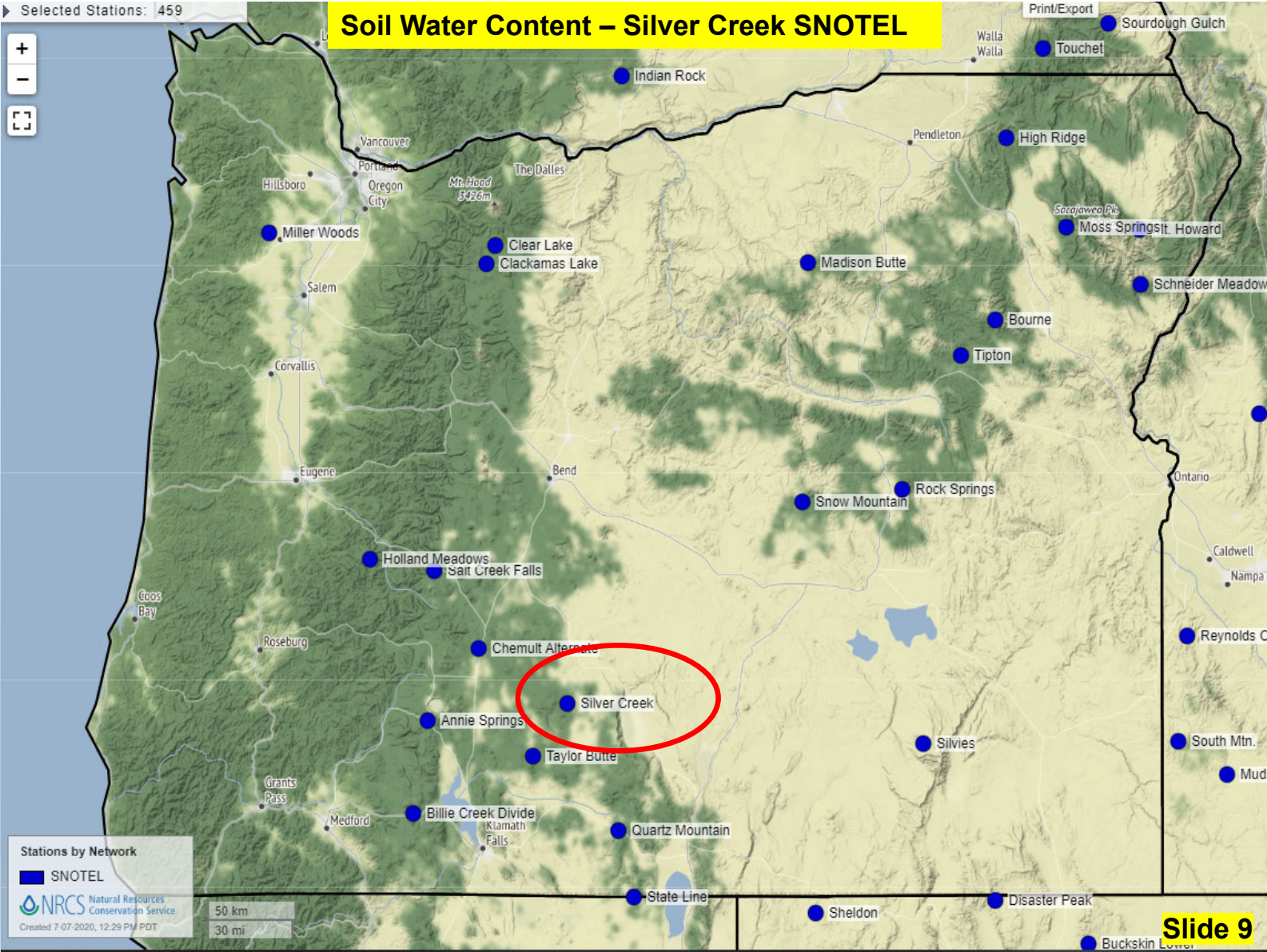
Print/Export

Soil Water Content – High Ridge SNOTEL (POR 2004-2022)



Selected Stations: 459

Soil Water Content – Silver Creek SNOTEL



Stations by Network

- SNOTEL

NRCS Natural Resources Conservation Service
Created 7-07-2020, 12:29 PM PDT

50 km
30 mi

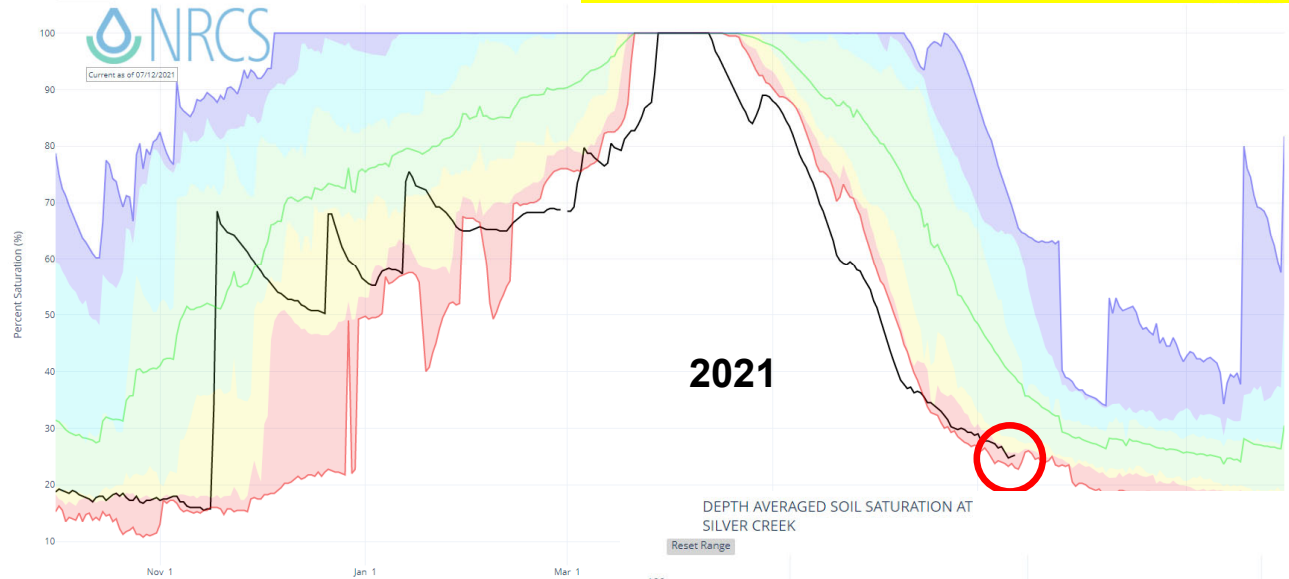
Soil Water Content – Silver Creek SNOTEL (2004-2022)

DEPTH AVERAGED SOIL SATURATION AT SILVER CREEK

Reset Range



Current as of 07/12/2021



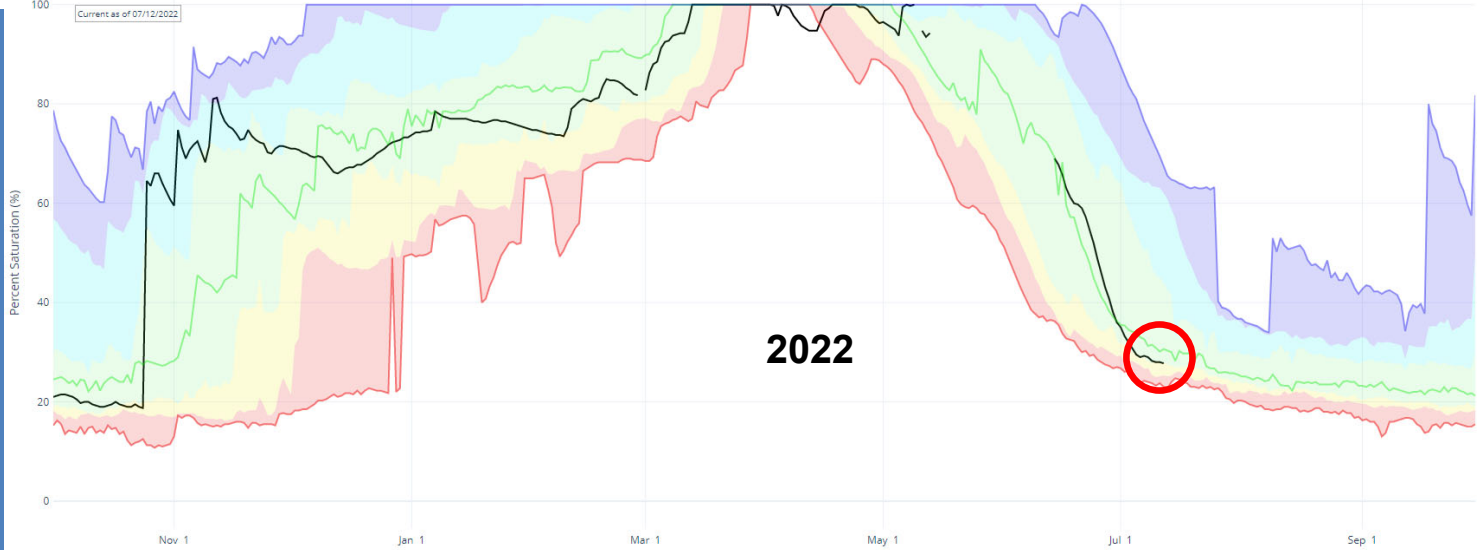
2021

DEPTH AVERAGED SOIL SATURATION AT SILVER CREEK

Reset Range

Current as of 07/12/2022

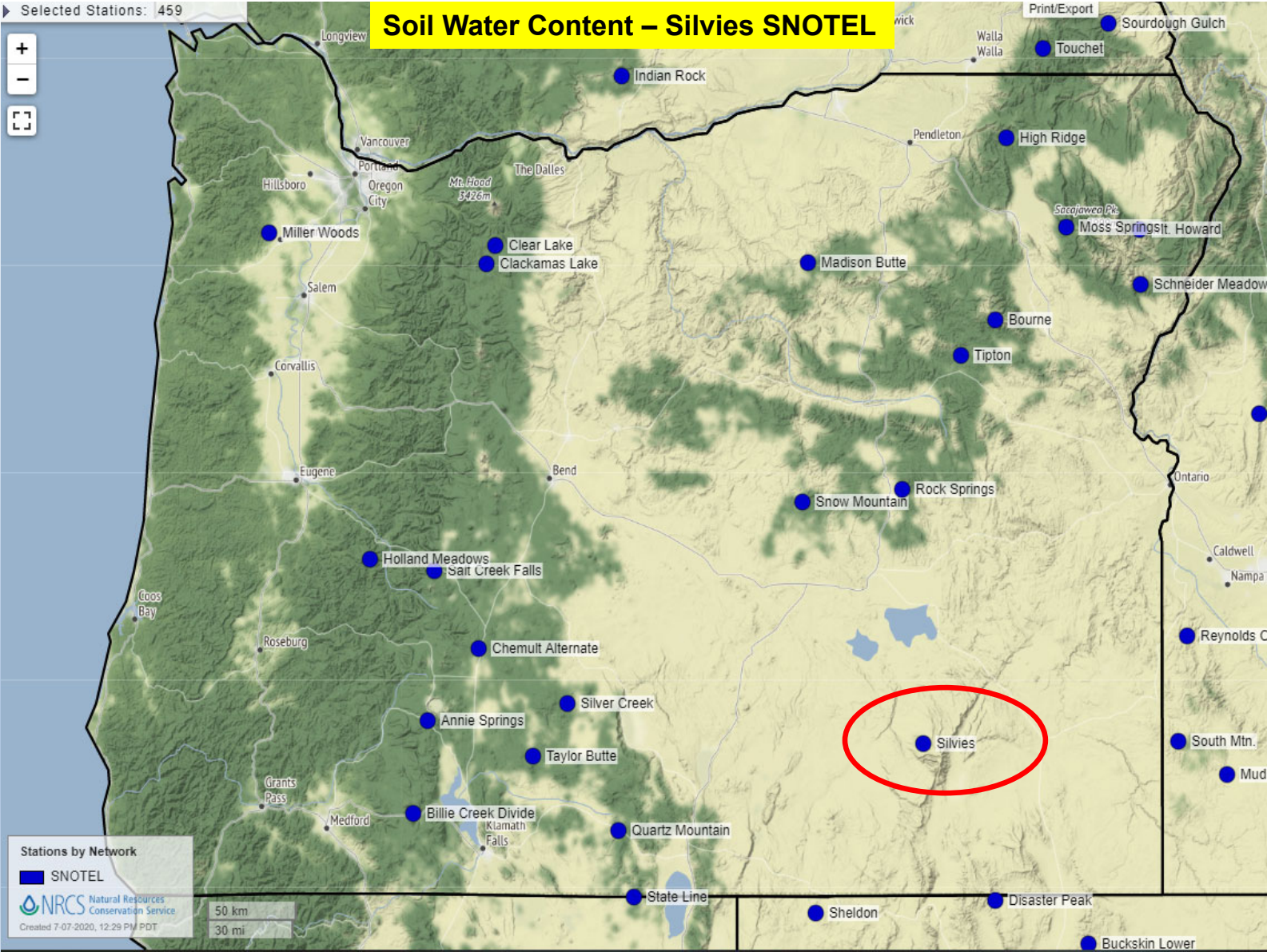
[Link to data: CSV / JSON](#)



2022

Selected Stations: 459

Soil Water Content – Silvies SNOTEL



Stations by Network

- SNOTEL

NRCS Natural Resources Conservation Service
Created 7-07-2020, 12:29 PM PDT

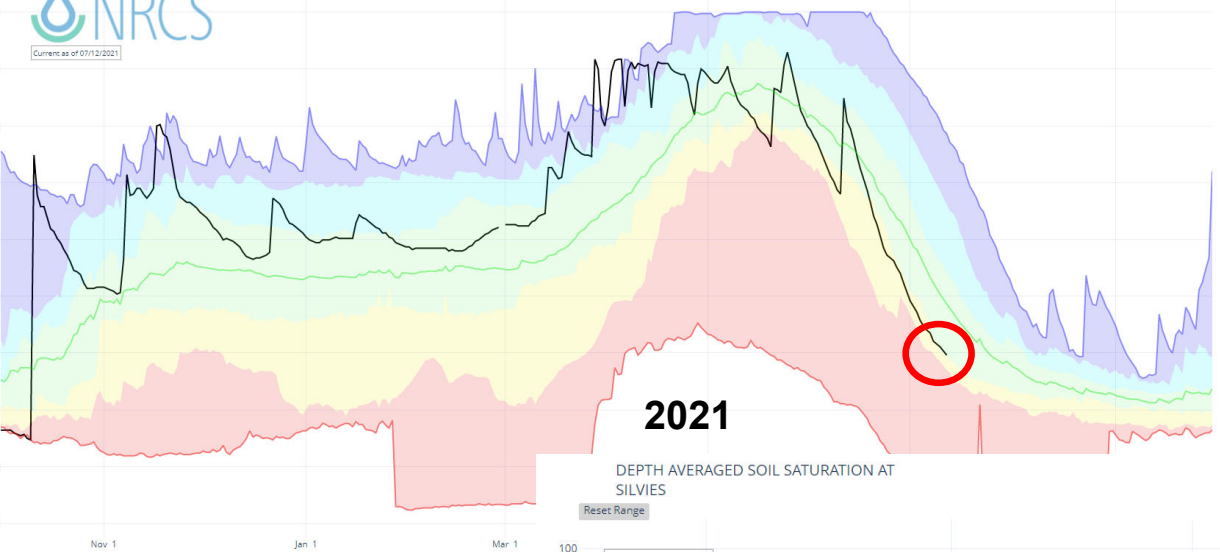
50 km
30 mi

Soil Water Content – Silvies SNOTEL (1997-2022)

DEPTH AVERAGED SOIL SATURATION AT SILVIES



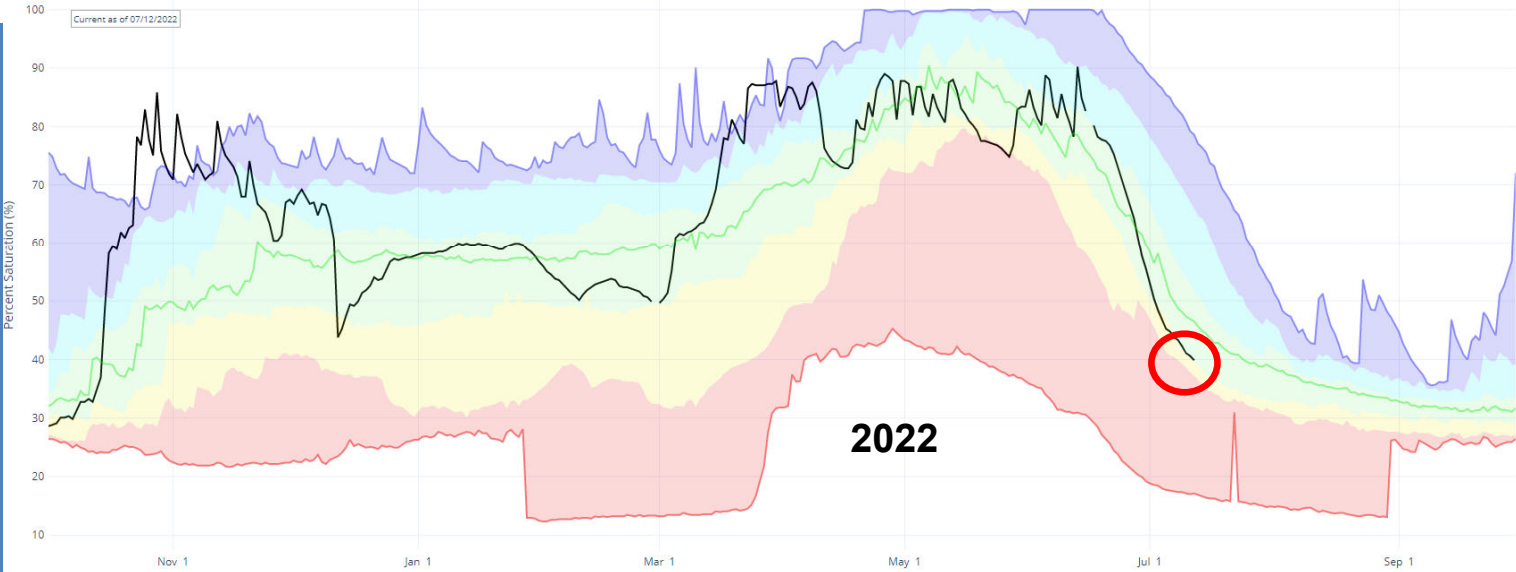
Current as of 07/12/2021



DEPTH AVERAGED SOIL SATURATION AT SILVIES

Reset Range

Current as of 07/12/2022



Link to data: CSV / JSON

Thank you

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To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

Oregon Water Supply Availability Committee July 13, 2022



H. Scott Oviatt
USDA – Natural Resources Conservation Service
scott.oviatt@usda.gov
541-429-2359



July 2022 Update for Precipitation & Temperatures

Henry Pai (Andy Bryant)

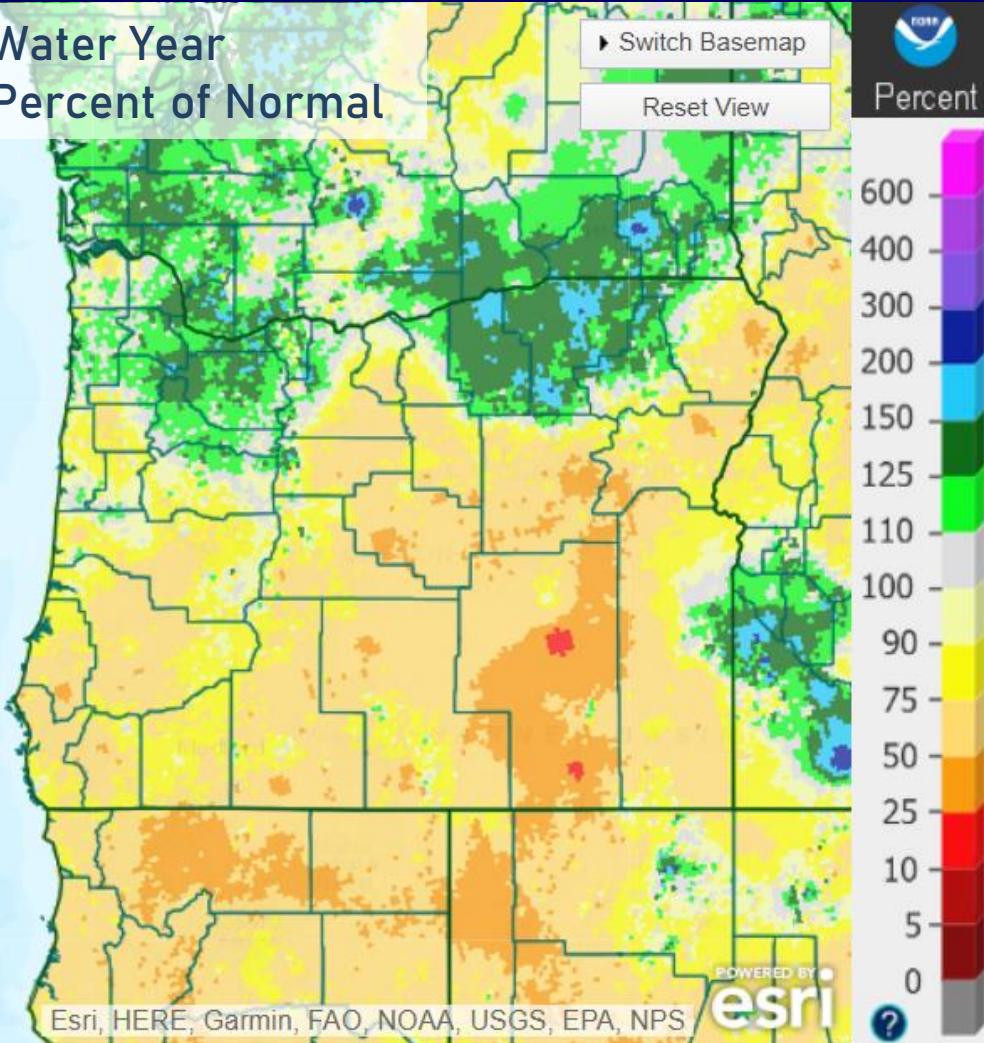
NOAA/NWS Portland

Northwest River Forecast Center

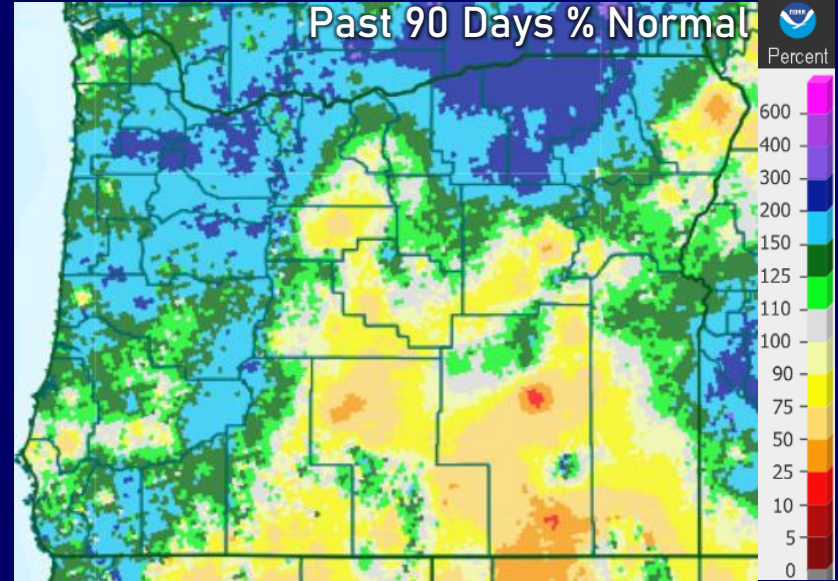


Precipitation

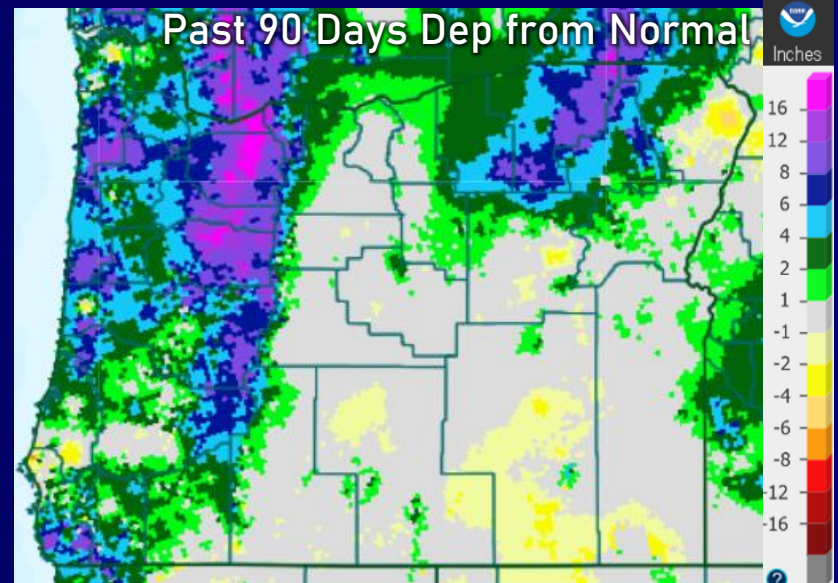
Water Year
Percent of Normal



Past 90 Days % Normal



Past 90 Days Dep from Normal



Precipitation Data as of July 12, 2022

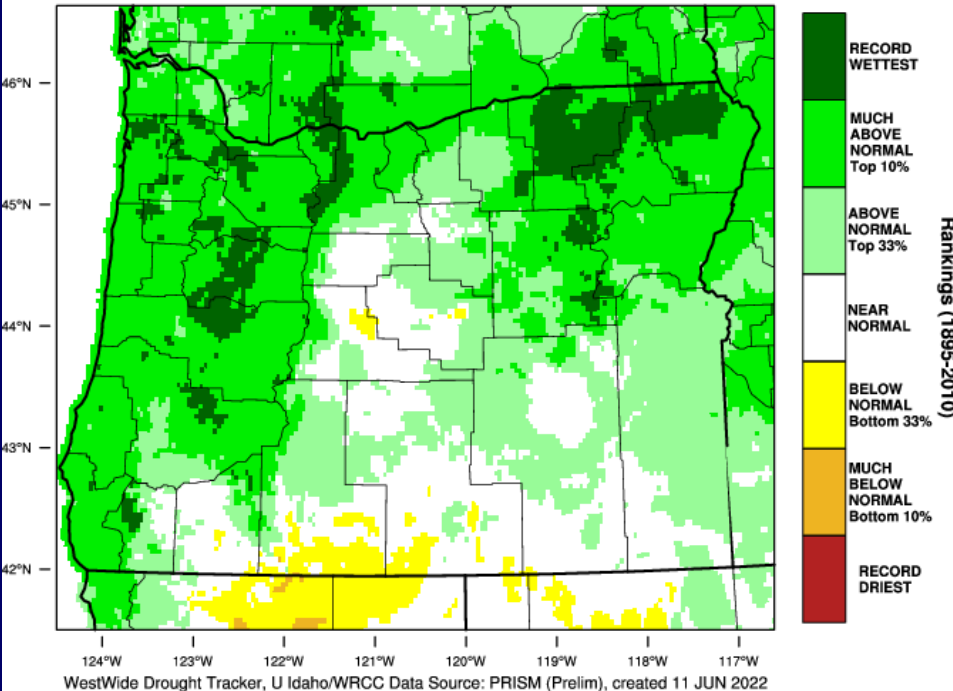
water.weather.gov/precip/index.php



Precipitation - Percentile / Ranking

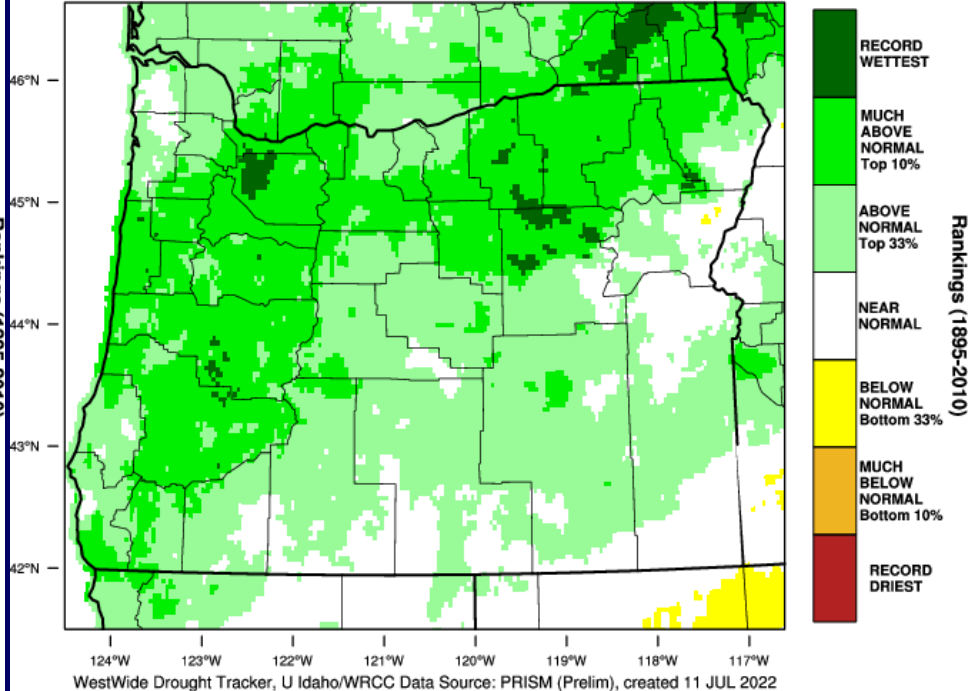
May

Oregon - Precipitation May 2022 Percentile



June

Oregon - Precipitation June 2022 Percentile



water.weather.gov/precip/index.php

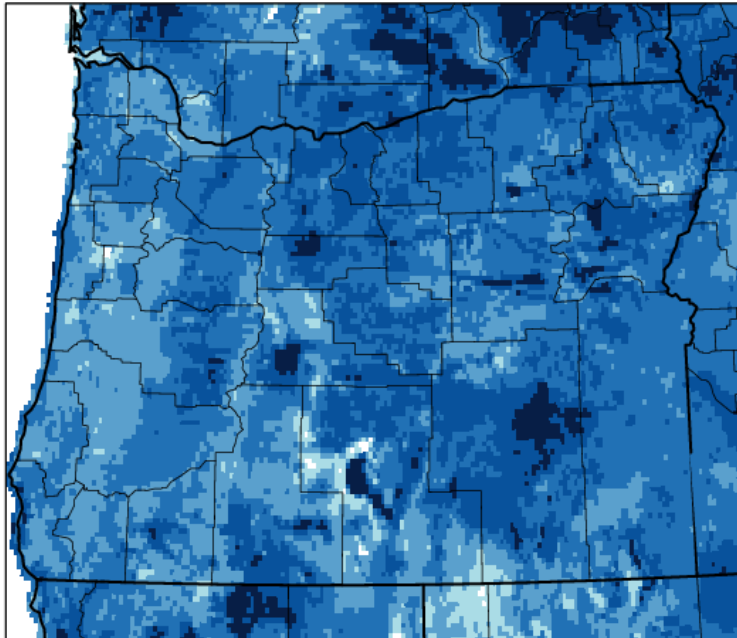


Recent Temperatures

May

Oregon - Mean Temperature

May 2022 Departure from 1981-2010 Normal



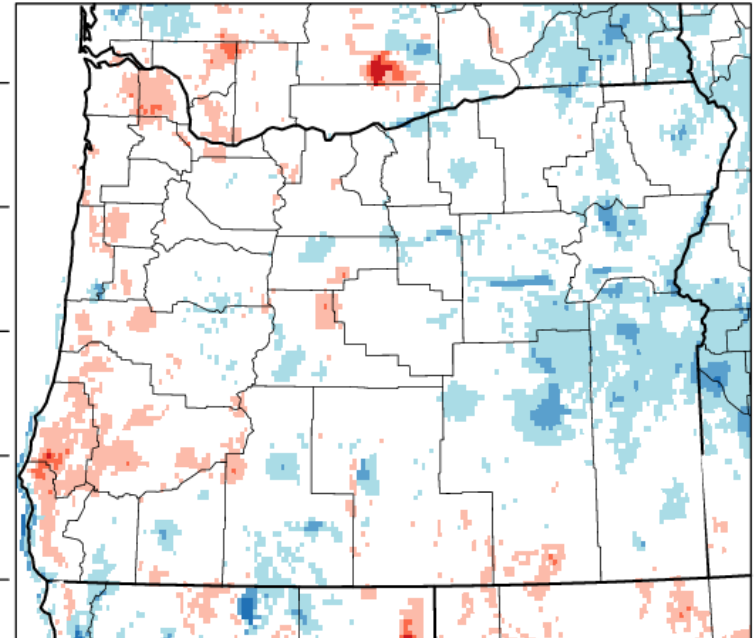
124°W 123°W 122°W 121°W 120°W 119°W 118°W 117°W

WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 11 JUN 2022

June

Oregon - Mean Temperature

June 2022 Departure from 1981-2010 Normal



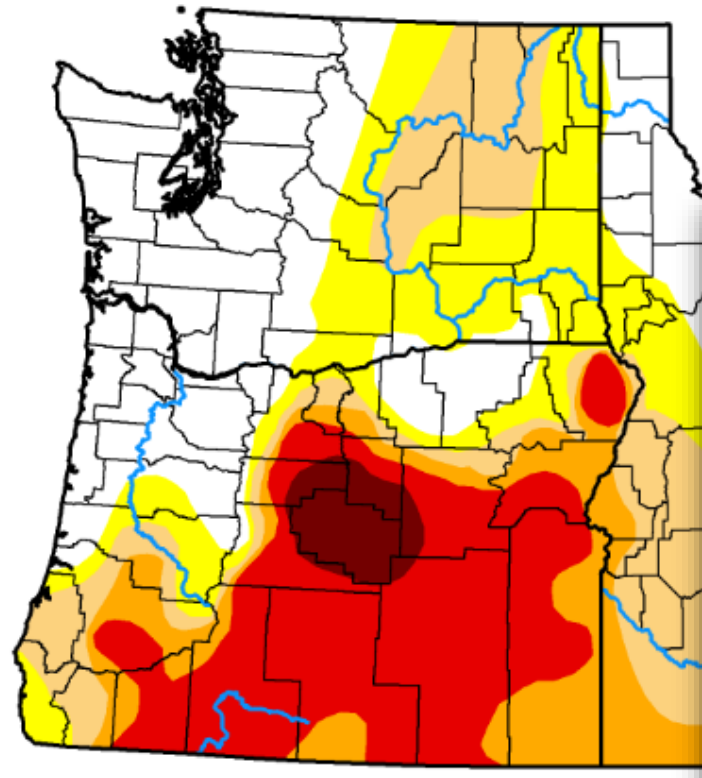
124°W 123°W 122°W 121°W 120°W 119°W 118°W 117°W

WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 11 JUL 2022

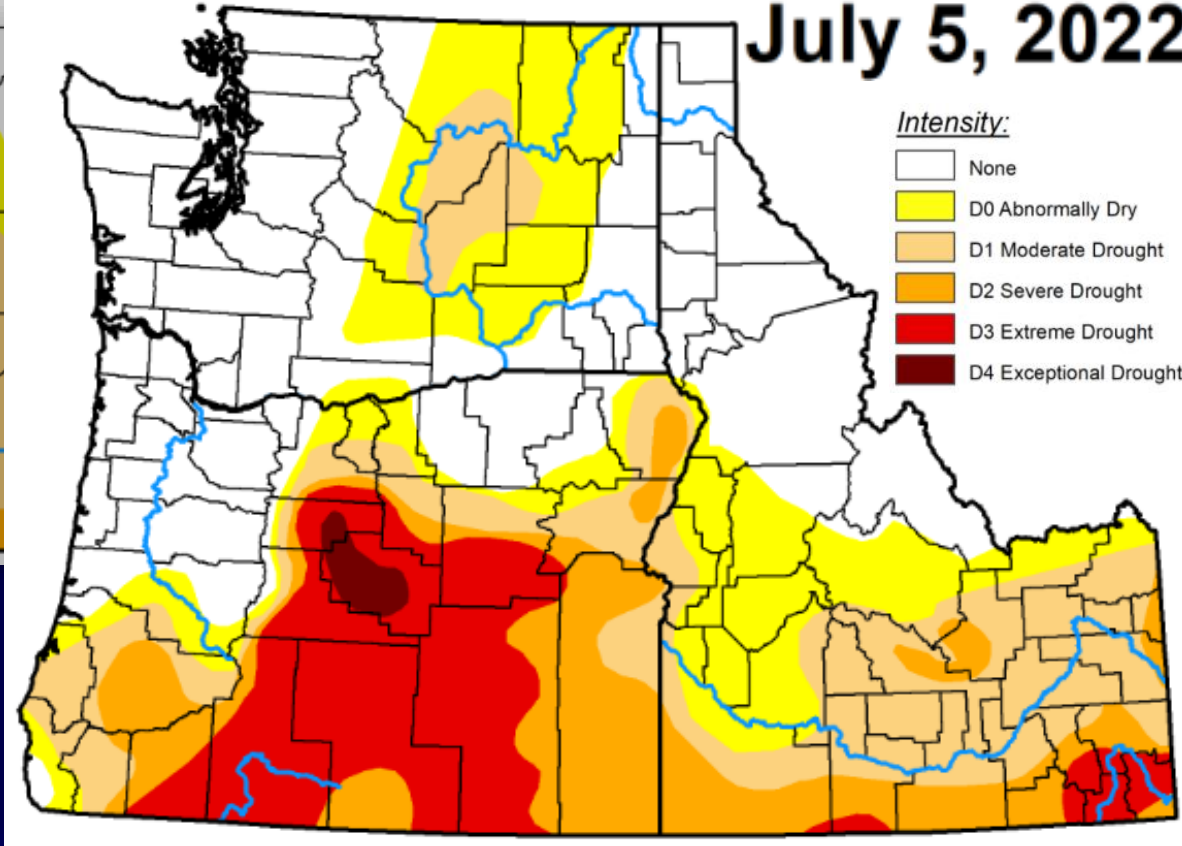
<https://wrcc.dri.edu/wwdt/index.php?region=pnw>

Drought Monitor

June 7, 2022



July 5, 2022



- Intensity:*
- None
 - D0 Abnormally Dry
 - D1 Moderate Drought
 - D2 Severe Drought
 - D3 Extreme Drought
 - D4 Exceptional Drought

<https://droughtmonitor.unl.edu>



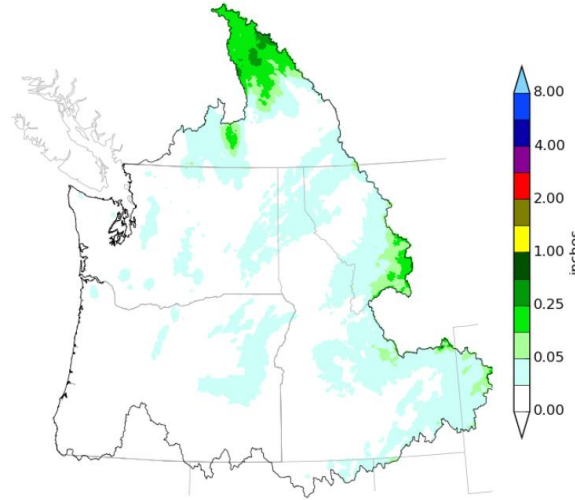
Mid July Outlook

NWRFC 10-DAY PRECIPITATION FORECAST

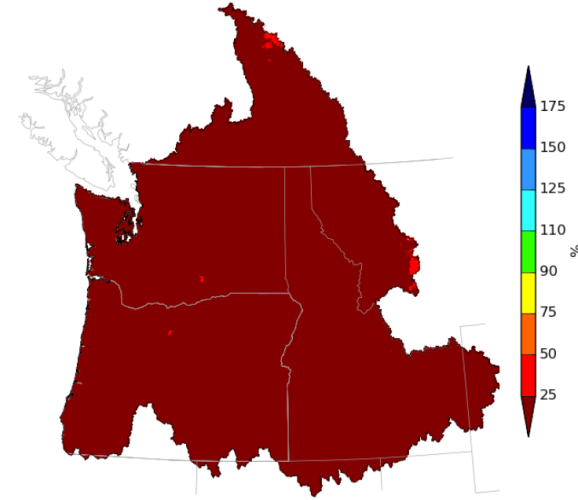
www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php



Northwest River Forecast Center
10 Day QPF, Ending 12Z, 07/22/22



Northwest River Forecast Center
10 Day QPF (Percent of Climatology), Ending 12Z, 07/22/22



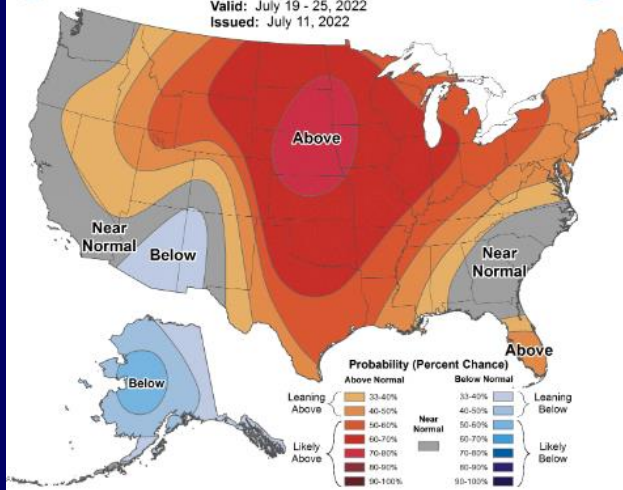
CPC 8 - 14 DAY OUTLOOK

www.cpc.ncep.noaa.gov



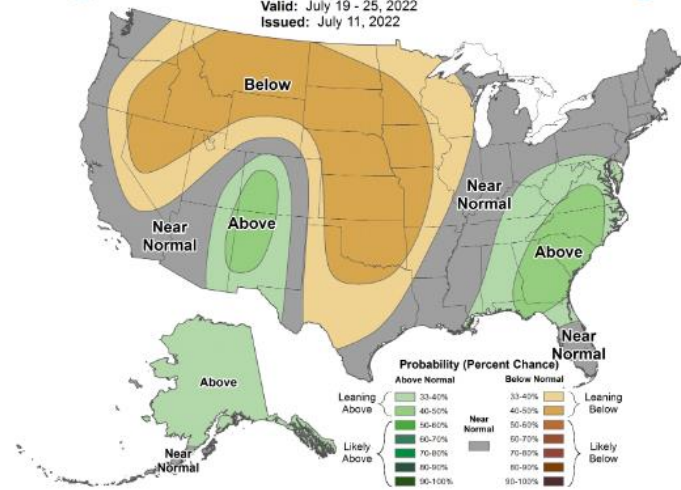
8-14 Day Temperature Outlook

Valid: July 19 - 25, 2022
Issued: July 11, 2022



8-14 Day Precipitation Outlook

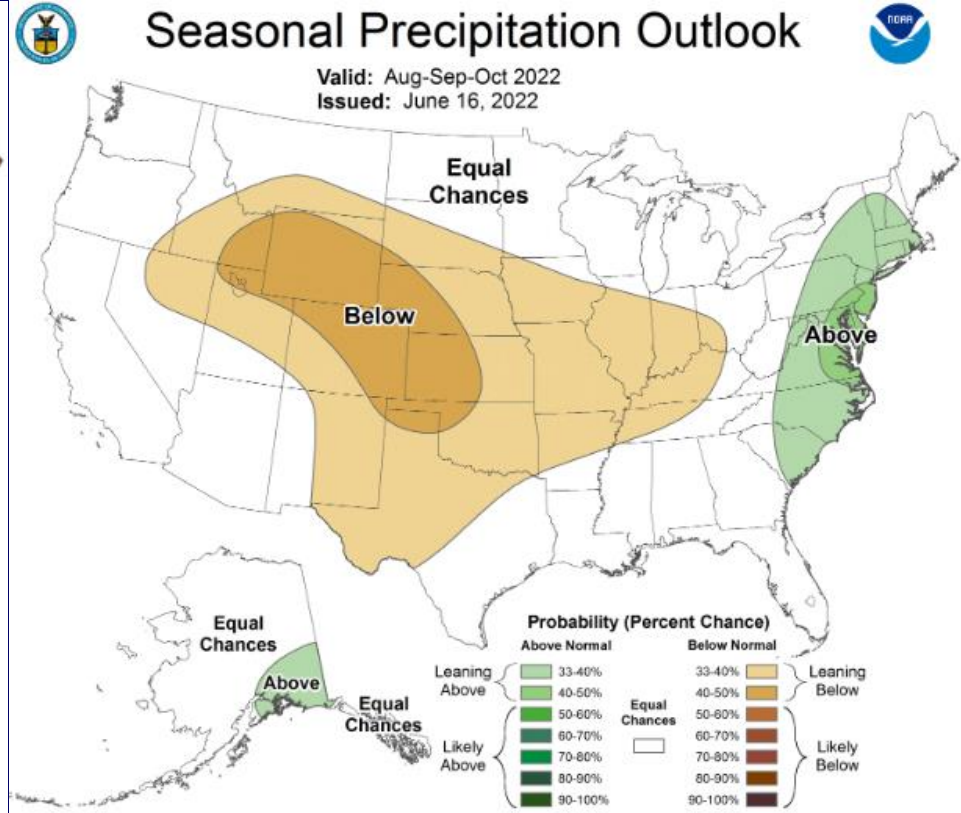
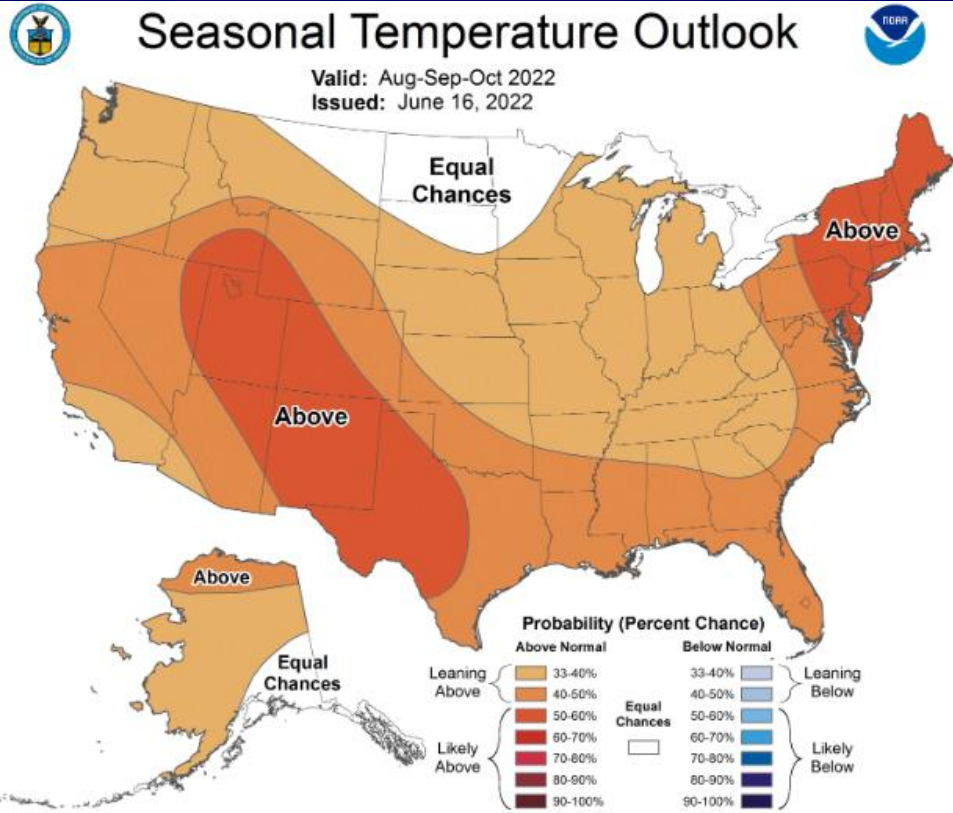
Valid: July 19 - 25, 2022
Issued: July 11, 2022





Climate Prediction Center Outlook

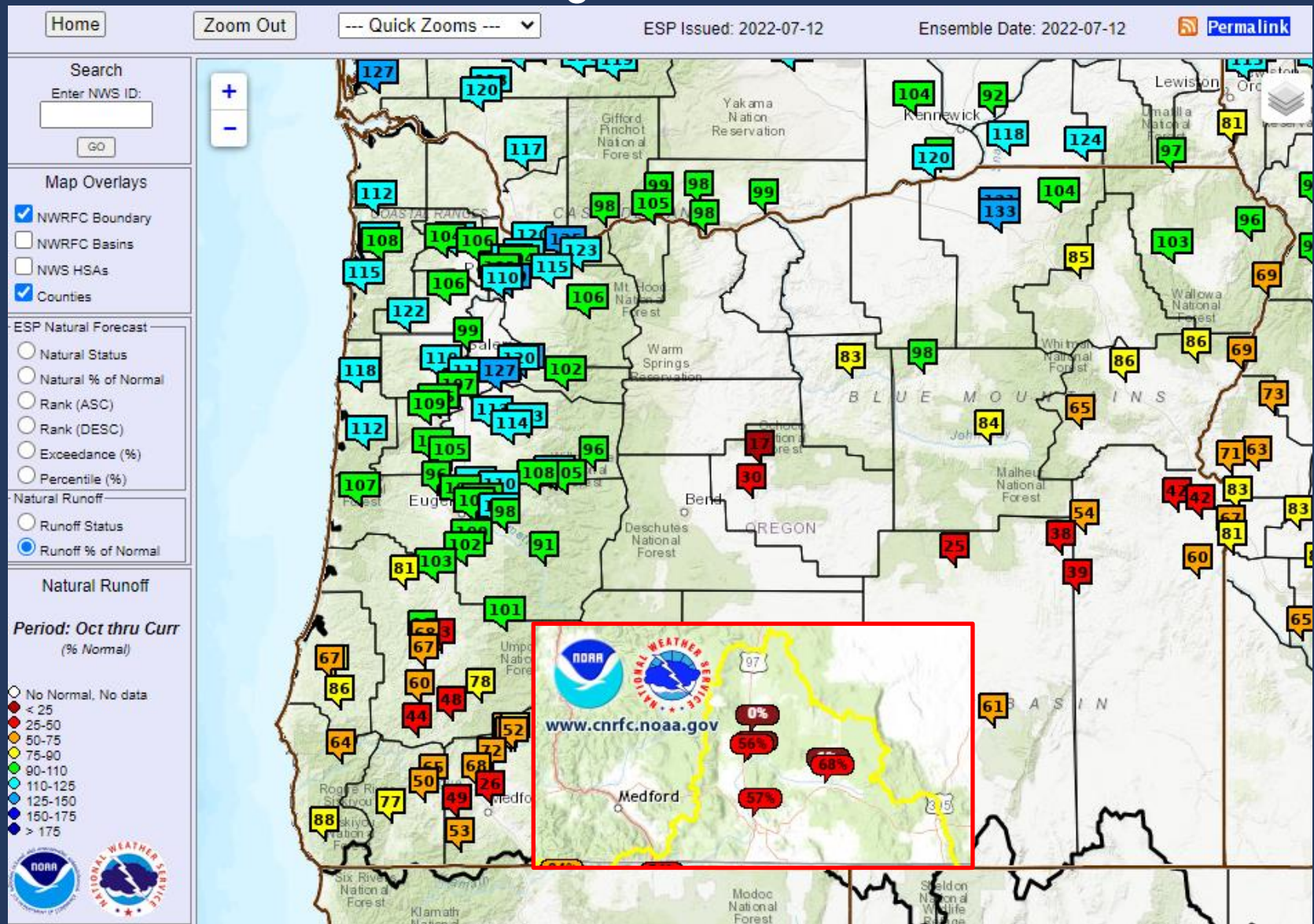
August-September-October 2022



www.cpc.ncep.noaa.gov



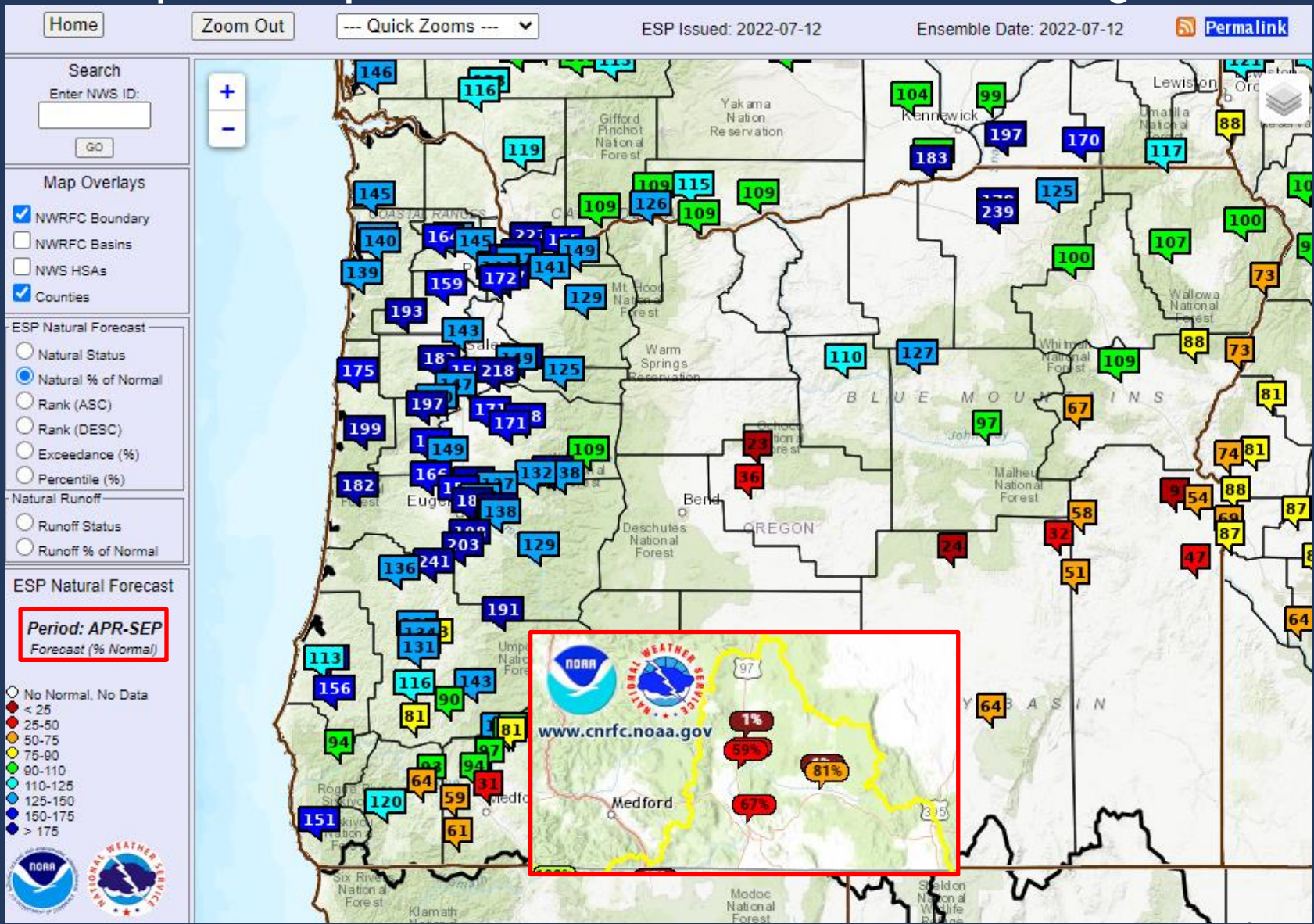
Current WY Runoff % of Average from Oct 1 - Jul 12





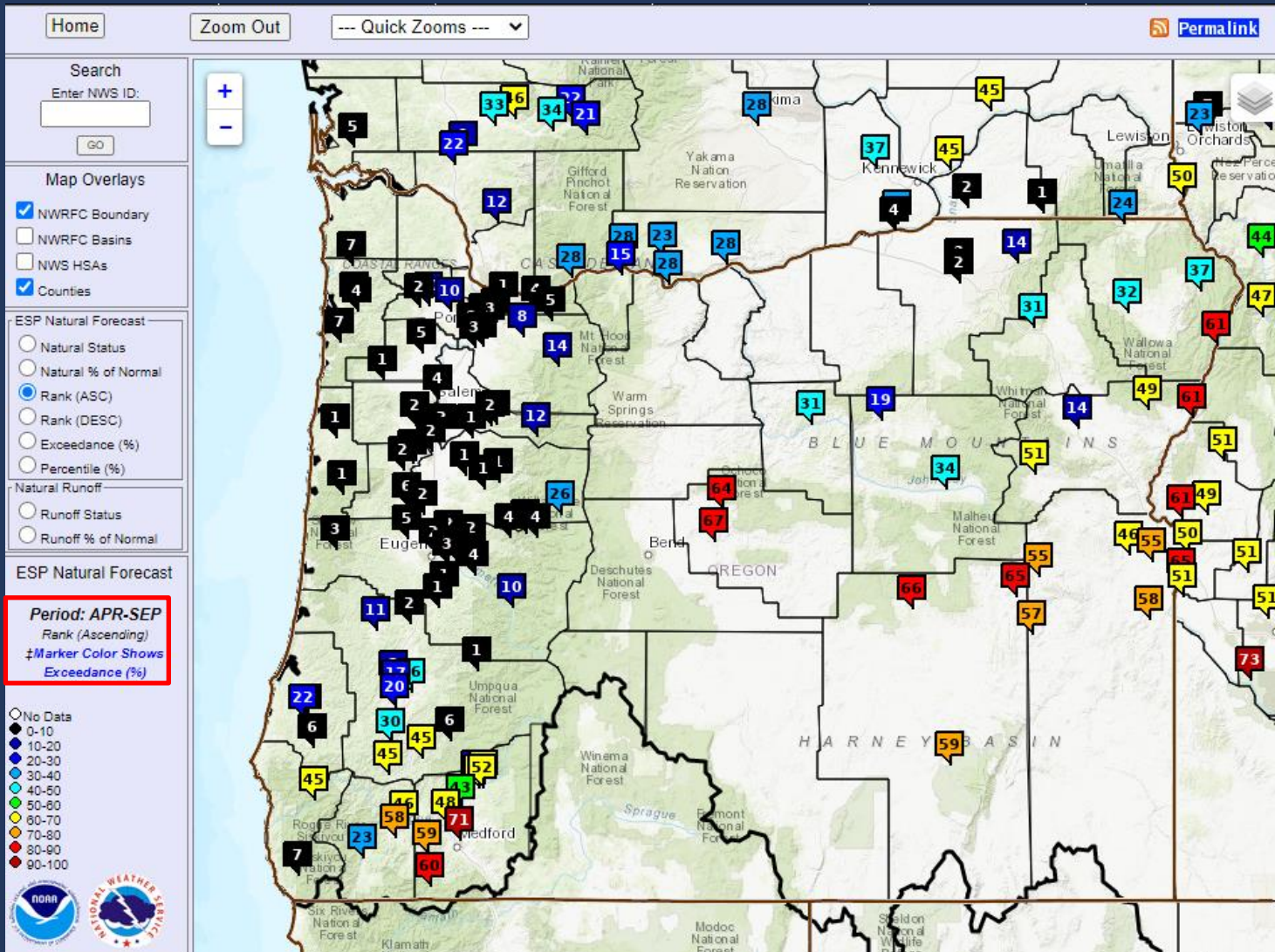
Seasonal Volume Forecast

April - September ESP Natural - % of Average





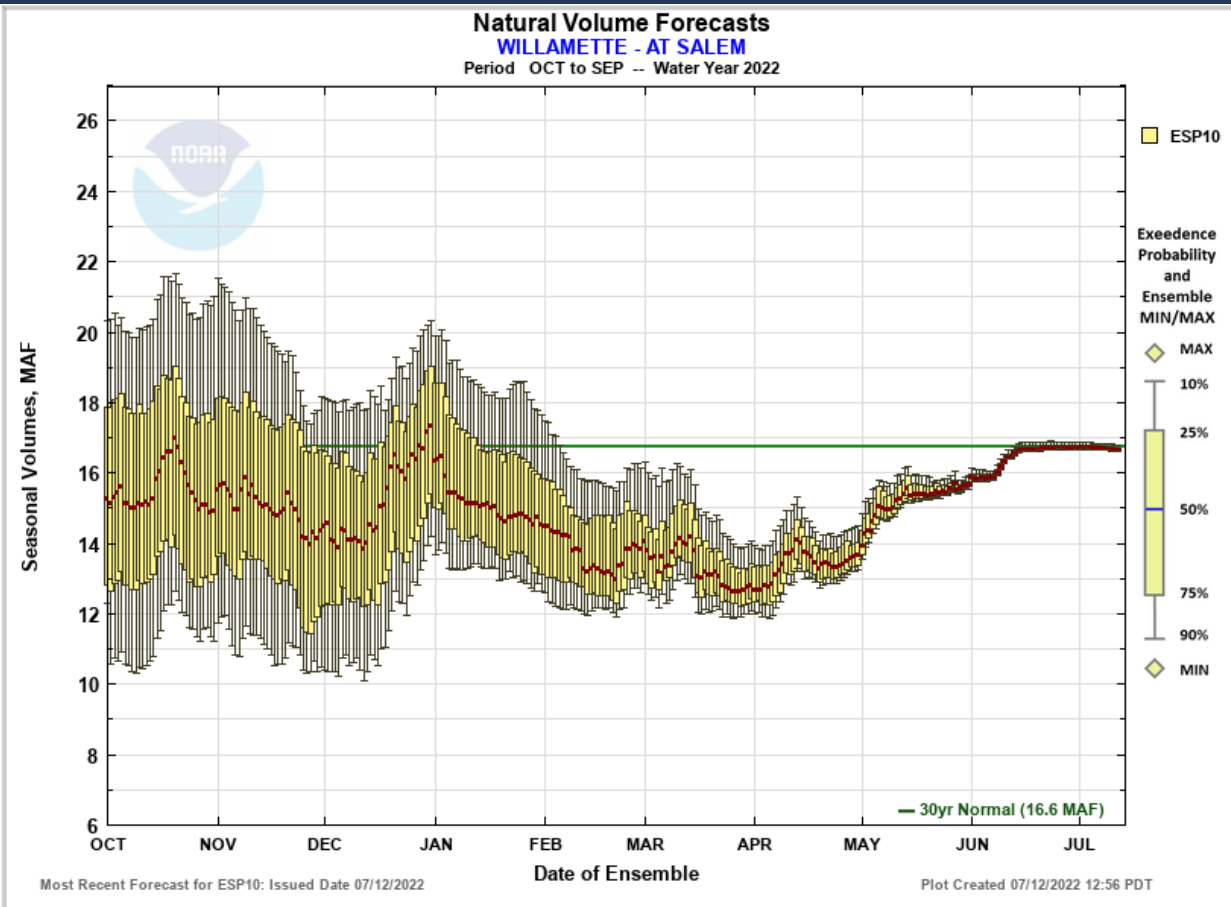
Seasonal Volume Rankings April - September (record 1949 on)





Streamflow WY Volume Forecast Willamette at Salem

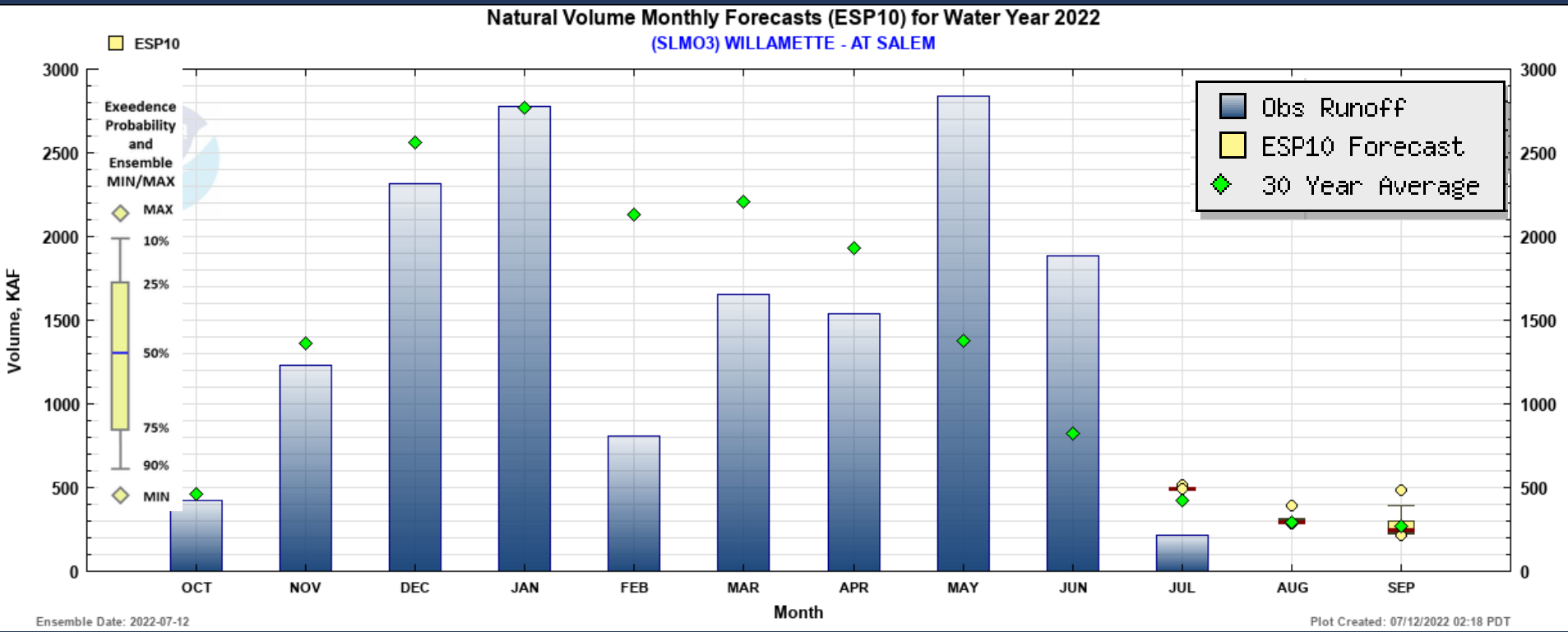
WILLAMETTE - AT SALEM (SLMO3) Forecasts for Water Year 2022					
Official Water Supply					
ESP with 10 Days QPF Ensemble: 2022-07-12 Issued: 2022-07-12					
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	7252	7298	143	7433	5119
APR-JUL	6741	6743	148	6745	4554
JAN-SEP	12487	12533	103	12668	12224
JAN-JUL	11976	11978	103	11980	11659
OCT-SEP	16470	16517	99	16651	16605
Experimental Water Supply					
HEFS with 15 days EQPF Ensemble: 2022-07-12 Issued: 2022-07-12					
APR-SEP	7257	7291	142	7430	5119
APR-JUL	6738	6742	148	6745	4554
JAN-SEP	12492	12526	102	12666	12224
JAN-JUL	11973	11977	103	11981	11659
OCT-SEP	16476	16509	99	16649	16605
Reference					
ESP with 0 Days QPF Ensemble: 2022-07-12 Issued: 2022-07-12					
APR-SEP	7267	7310	143	7454	5119
APR-JUL	6747	6752	148	6794	4554
JAN-SEP	12502	12545	103	12689	12224
JAN-JUL	11982	11987	103	12029	11659
OCT-SEP	16486	16528	100	16672	16605
Move the mouse over the desired "Forecast Period" to display a graph.					



Max Scale
 Scale To Data
 Scale To Last 45 Days
 Show Min/Max Ensemble Volume
 Show Tooltips Help



Streamflow WY Monthly Volume Forecast Willamette R at Salem



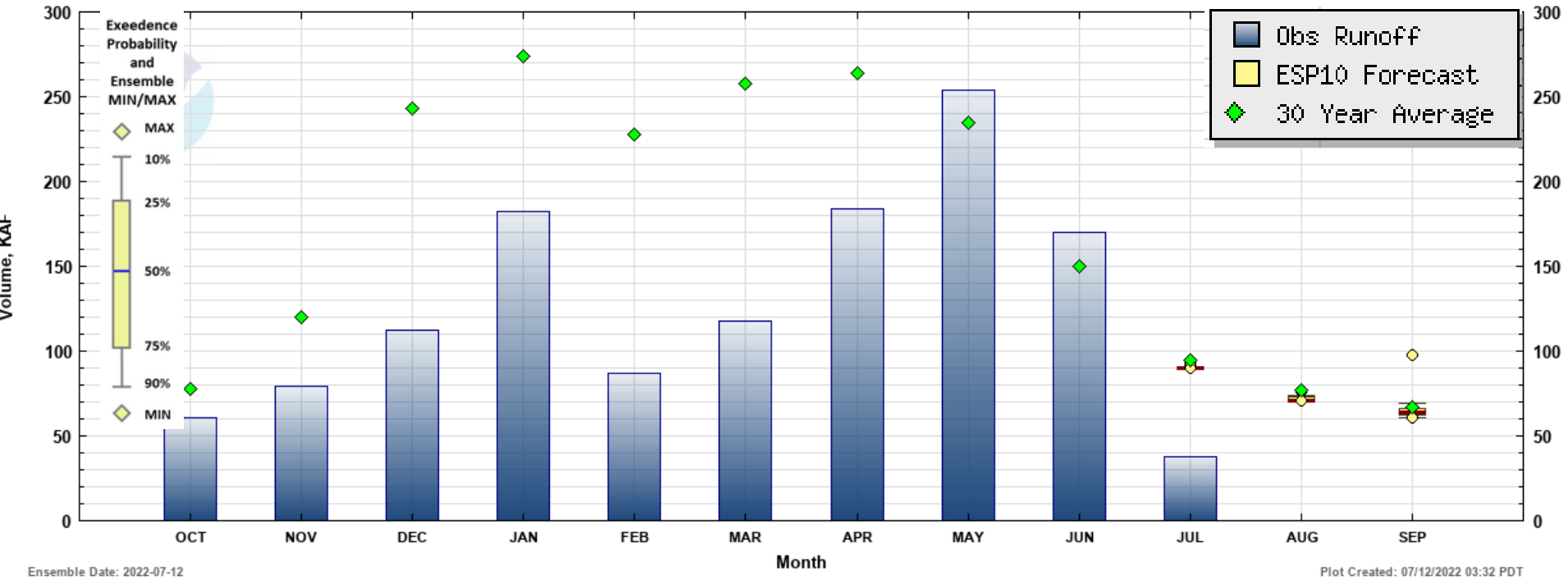


Streamflow WY Monthly Volume Forecast

Rogue R near Raygold

ESP10

Natural Volume Monthly Forecasts (ESP10) for Water Year 2022
(RYG03) ROGUE - AT RAYGOLD



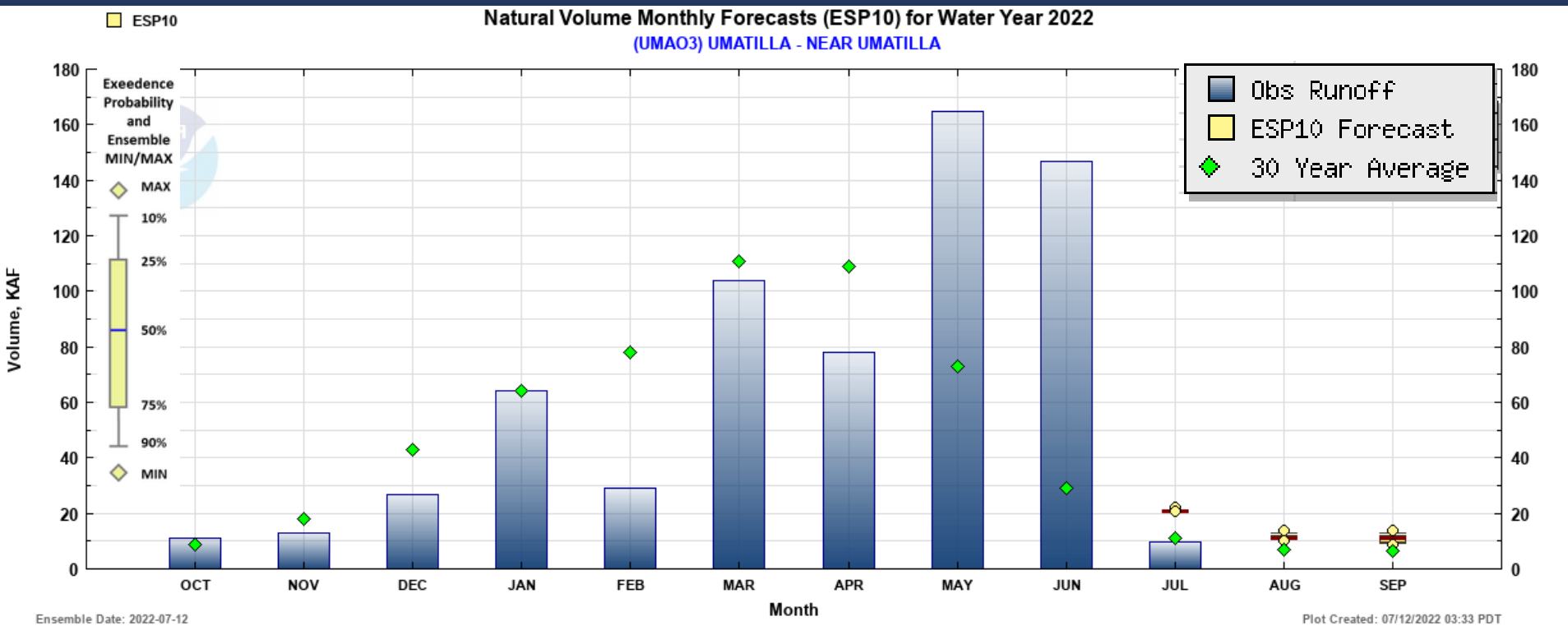
Ensemble Date: 2022-07-12

Plot Created: 07/12/2022 03:32 PDT



Streamflow WY Monthly Volume Forecast

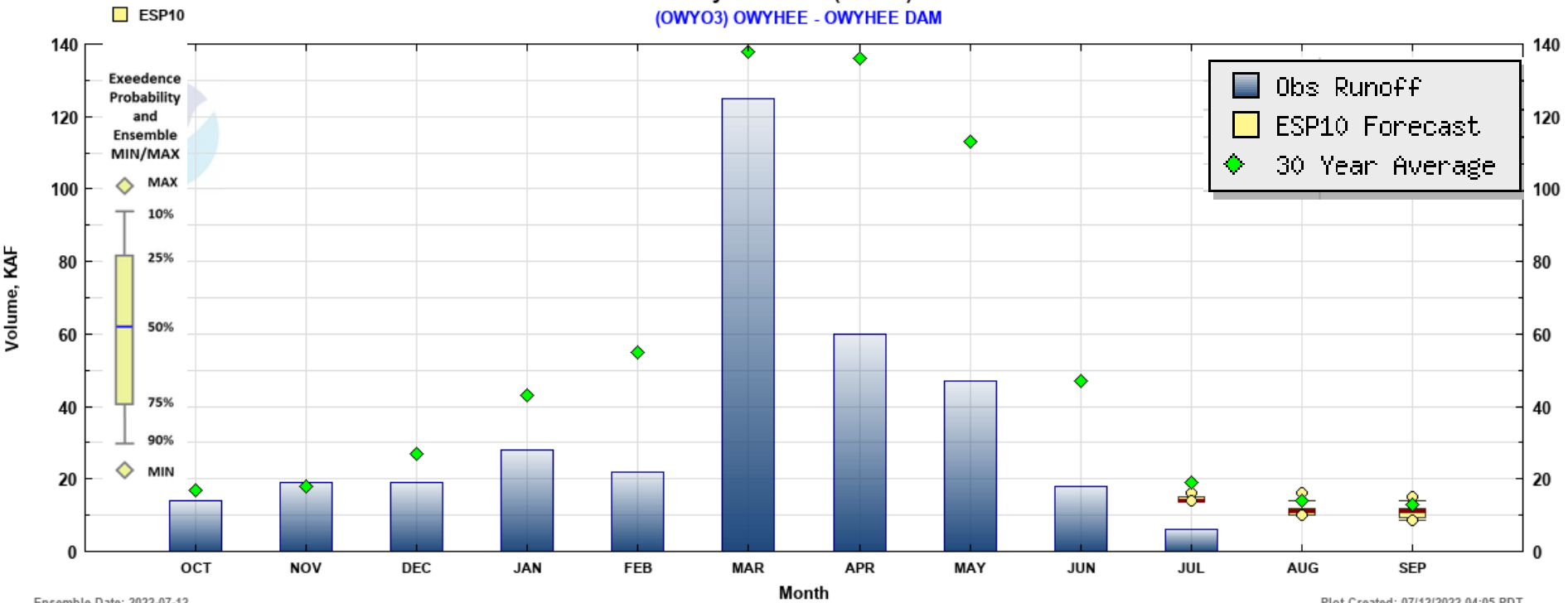
Umatilla R nr Umatilla





Streamflow WY Monthly Volume Forecast Owyhee Dam

Natural Volume Monthly Forecasts (ESP10) for Water Year 2022
(OWY03) OWYHEE - OWYHEE DAM



Ensemble Date: 2022-07-12

Plot Created: 07/12/2022 04:05 PDT



Oregon Water Supply Availability Meeting

July 2022



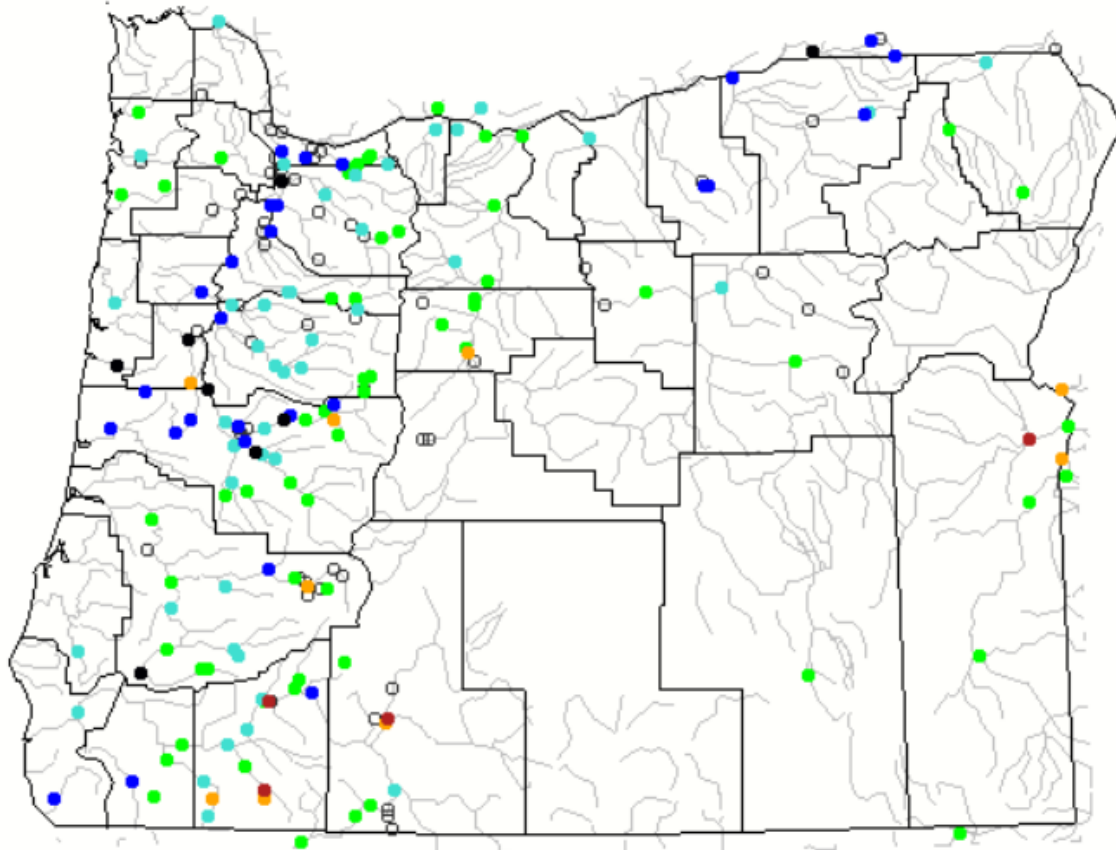
U.S. Department of the Interior
U.S. Geological Survey

USGS Update on Surface Water Conditions
Carrie Boudreau & Marc Stewart
Oregon Water Science Center
Photo: Lisa Hoaks, 14152000 Jasper, OR

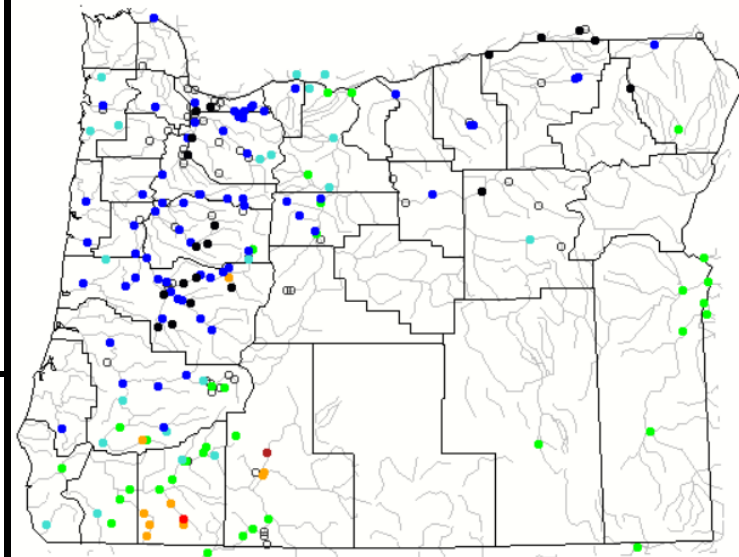
Streamflow Conditions

7-day Average Streamflow (as compared to Historical Record)

Monday, July 11, 2022



Monday, June 13, 2022



Explanation - Percentile classes

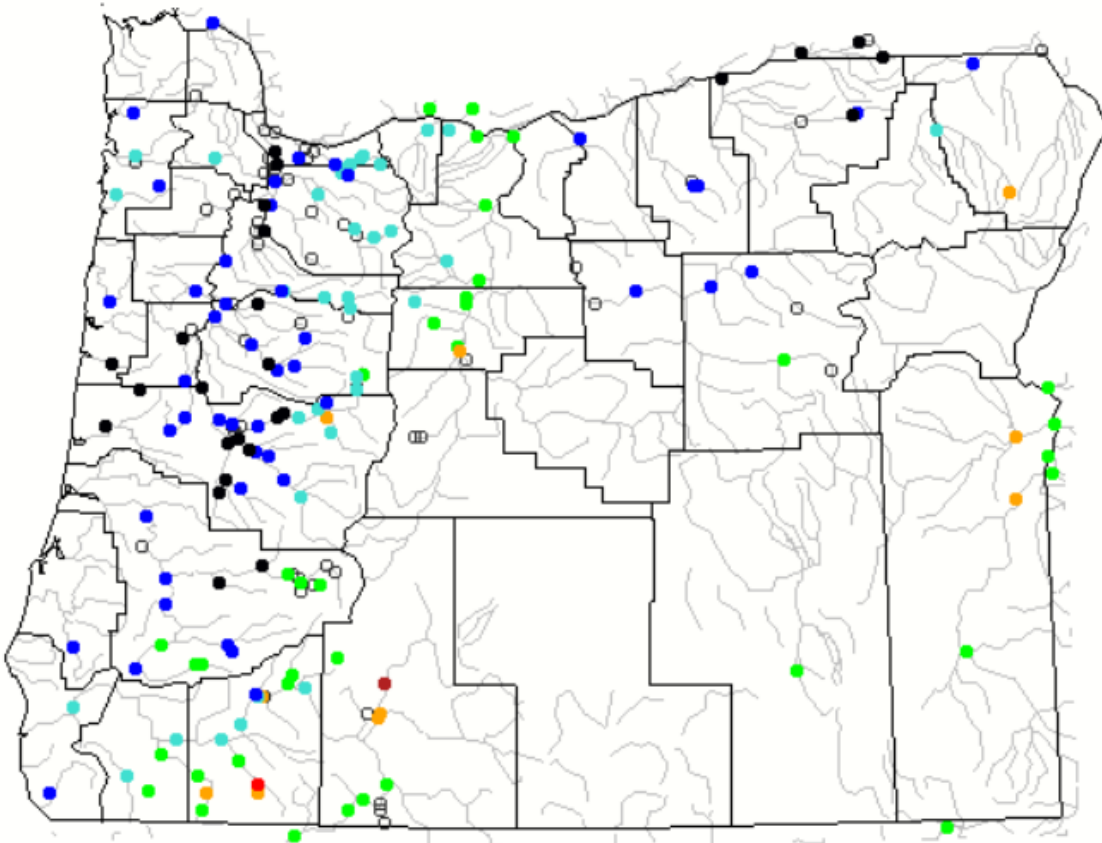
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		



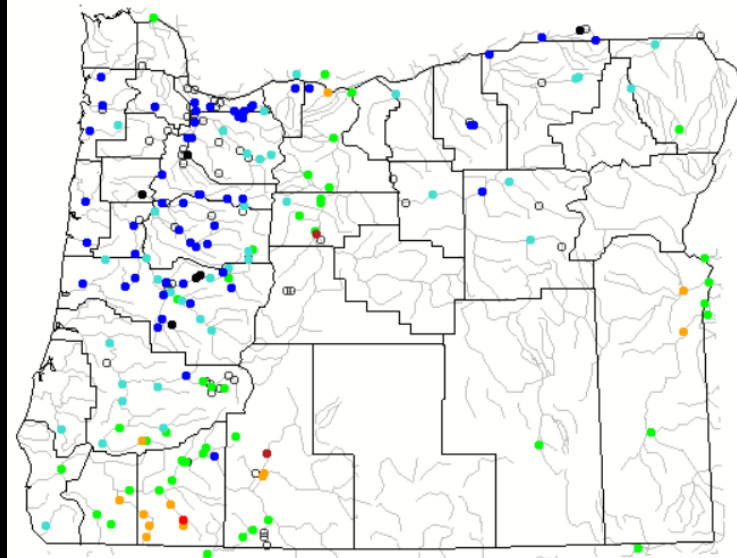
Streamflow Conditions

28-day Average Streamflow (as compared to Historical Record)

Monday, July 11, 2022



Monday, June 13, 2022

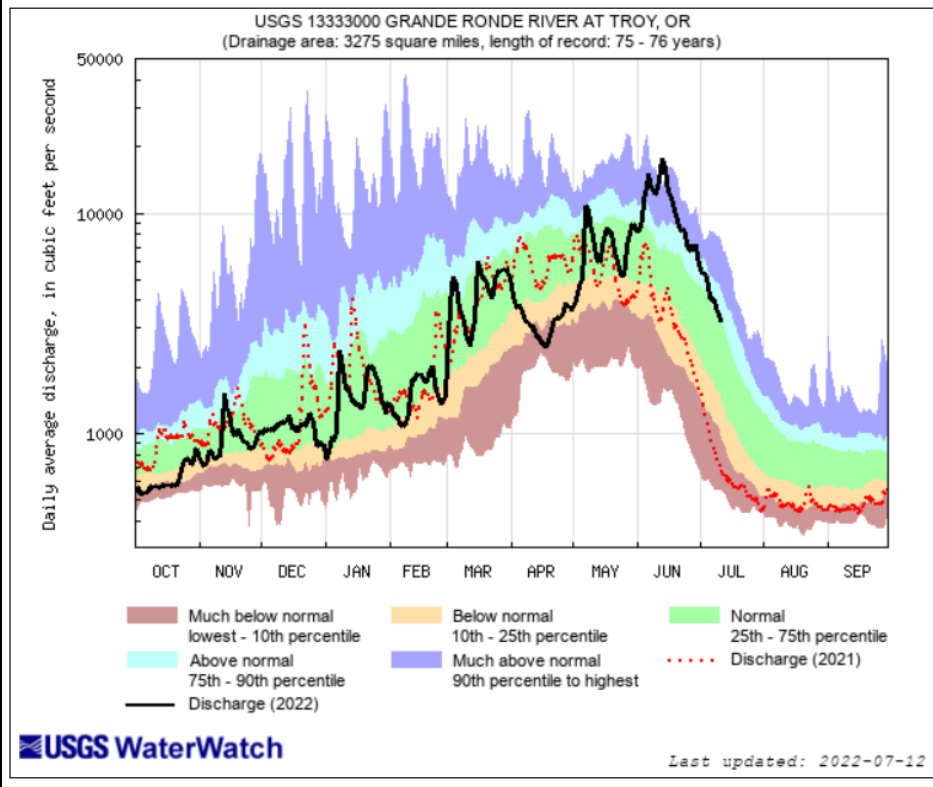
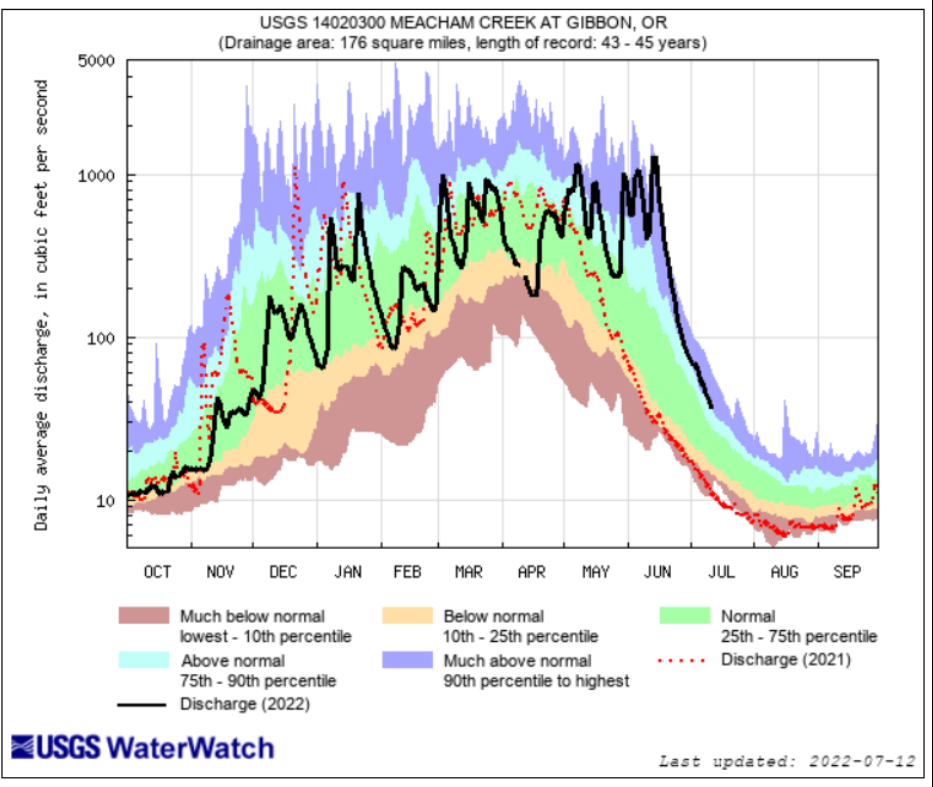


Explanation - Percentile classes

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



Northeastern OR

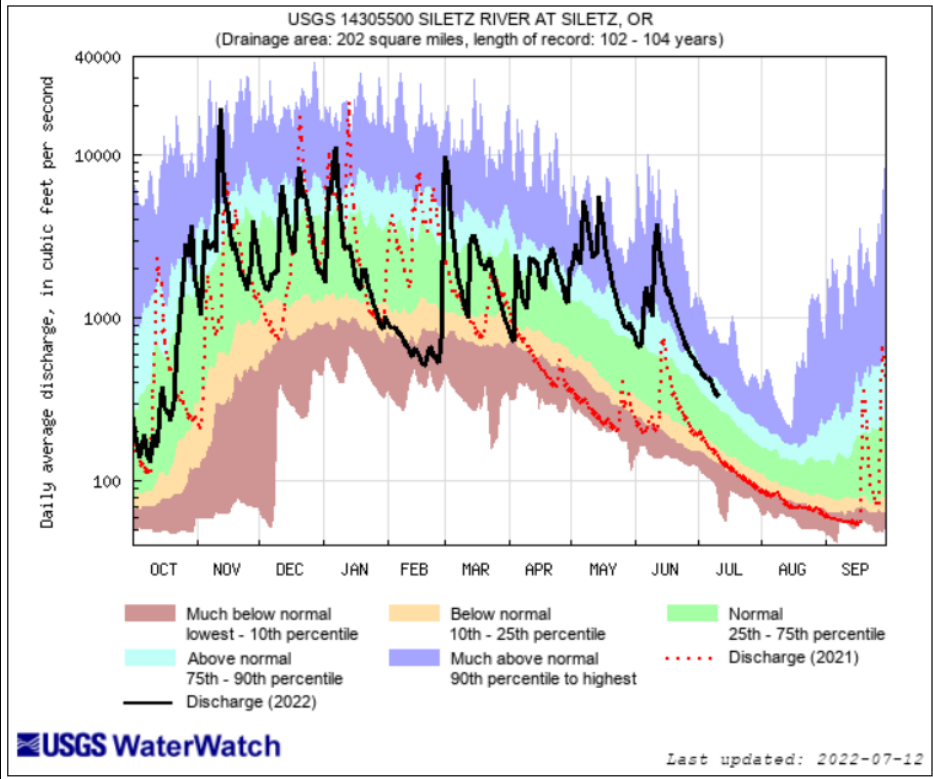
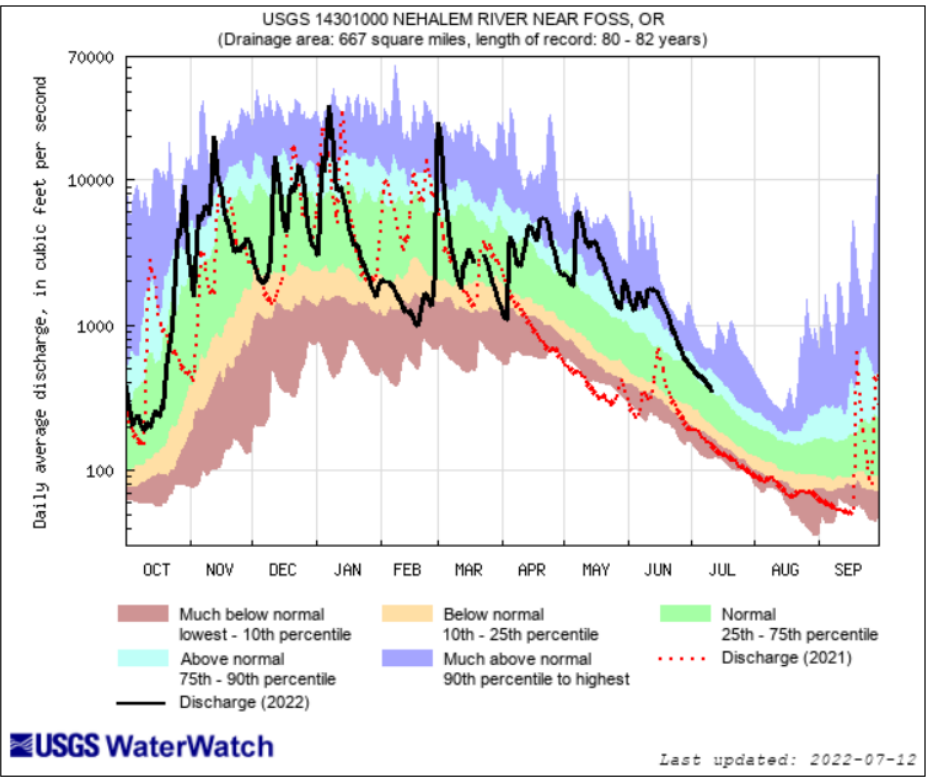


Explanation - Percentile classes

lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	



Northwestern OR

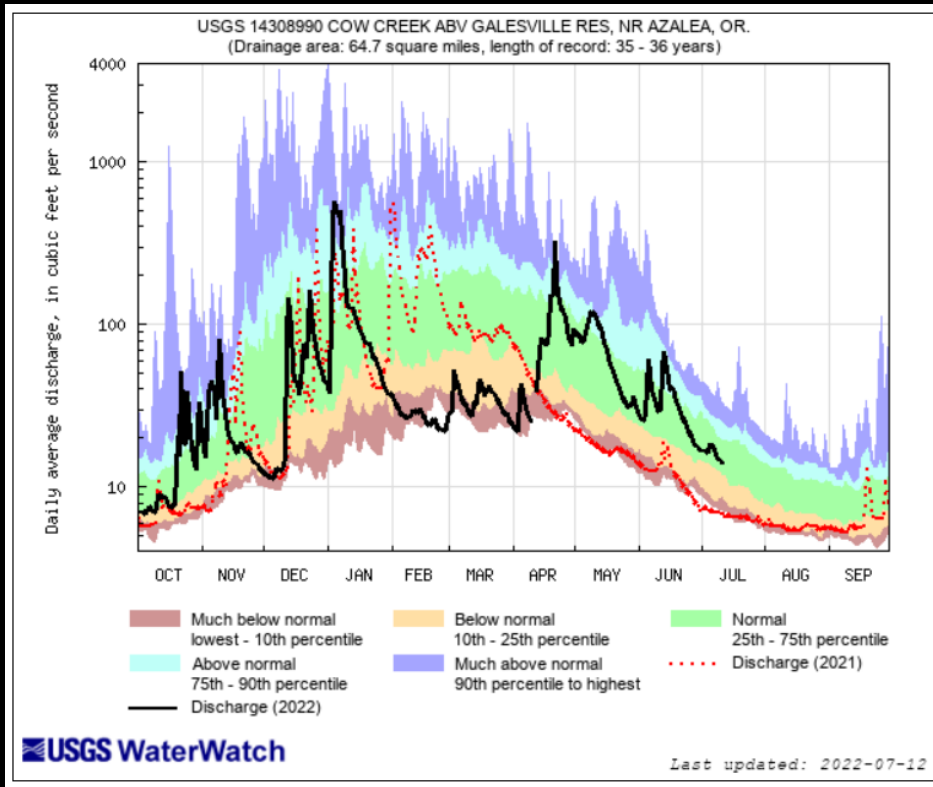
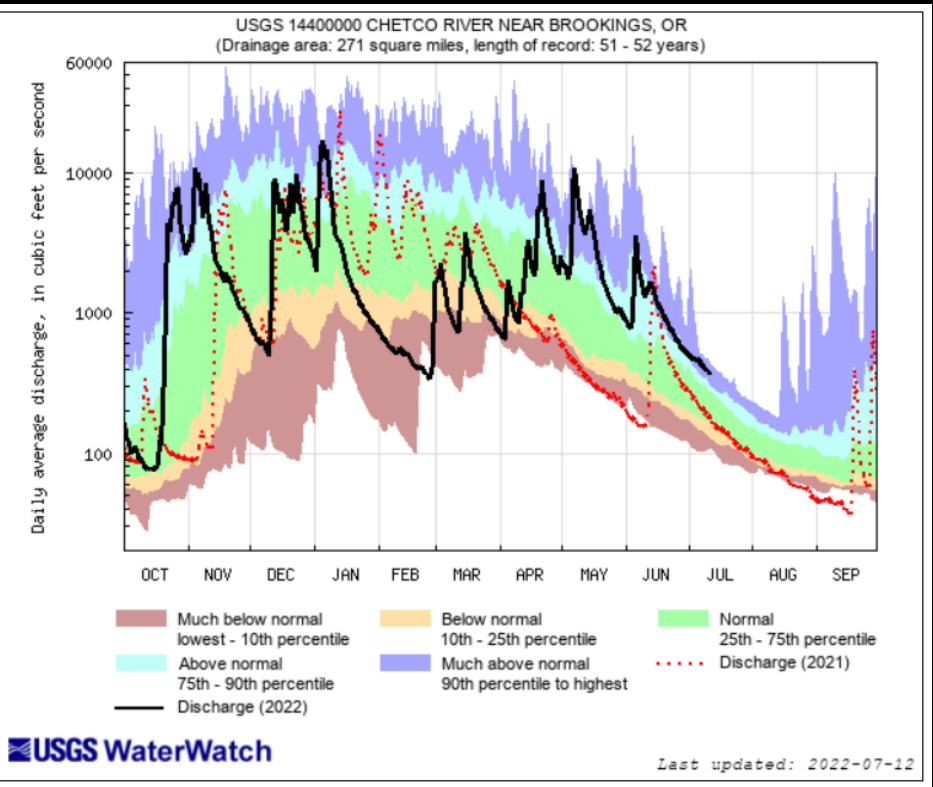


Explanation - Percentile classes

lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	—
Much below normal	Below normal	Normal	Above normal	Much above normal	Flow



Southwestern OR



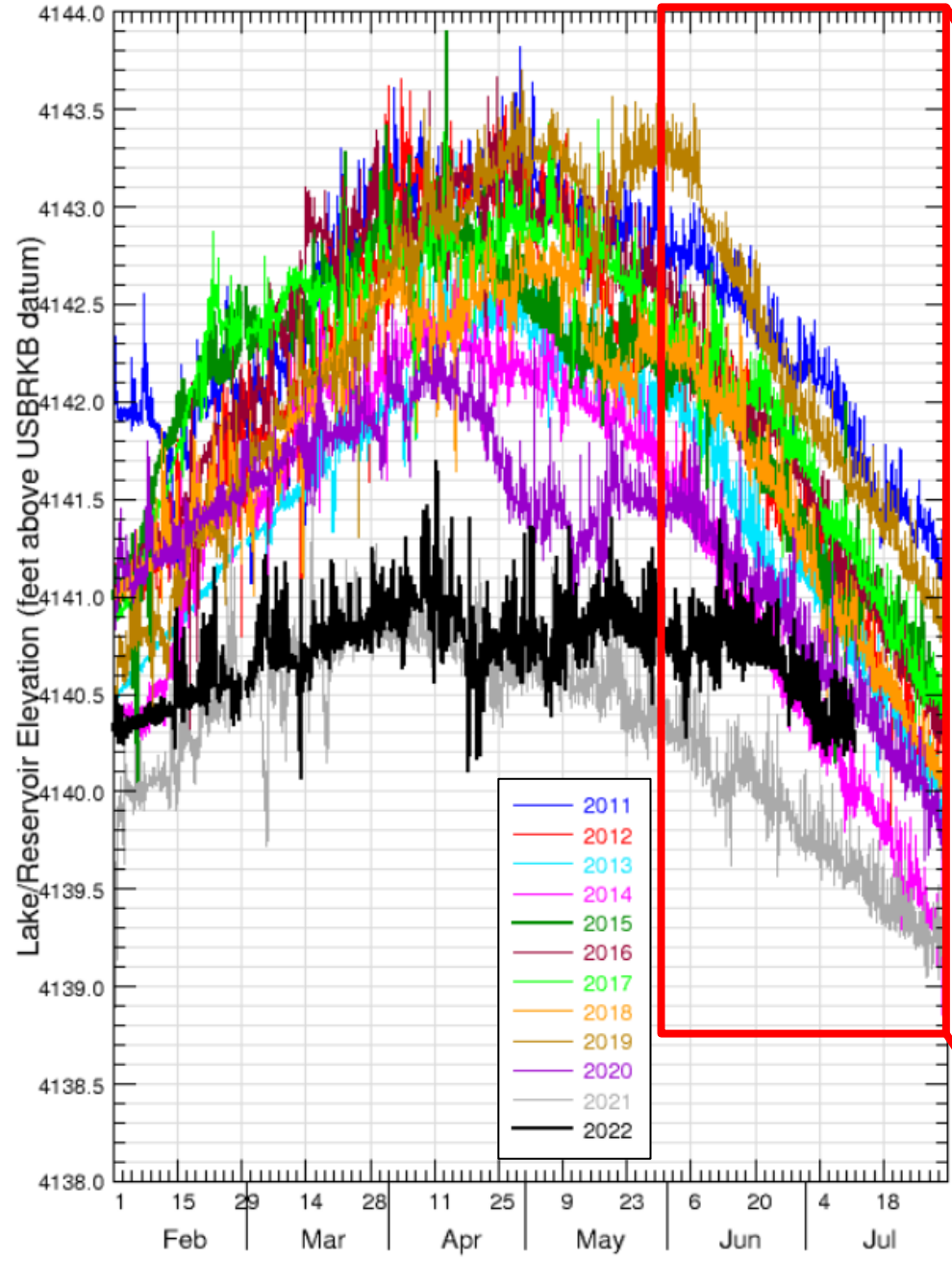
Explanation - Percentile classes

lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

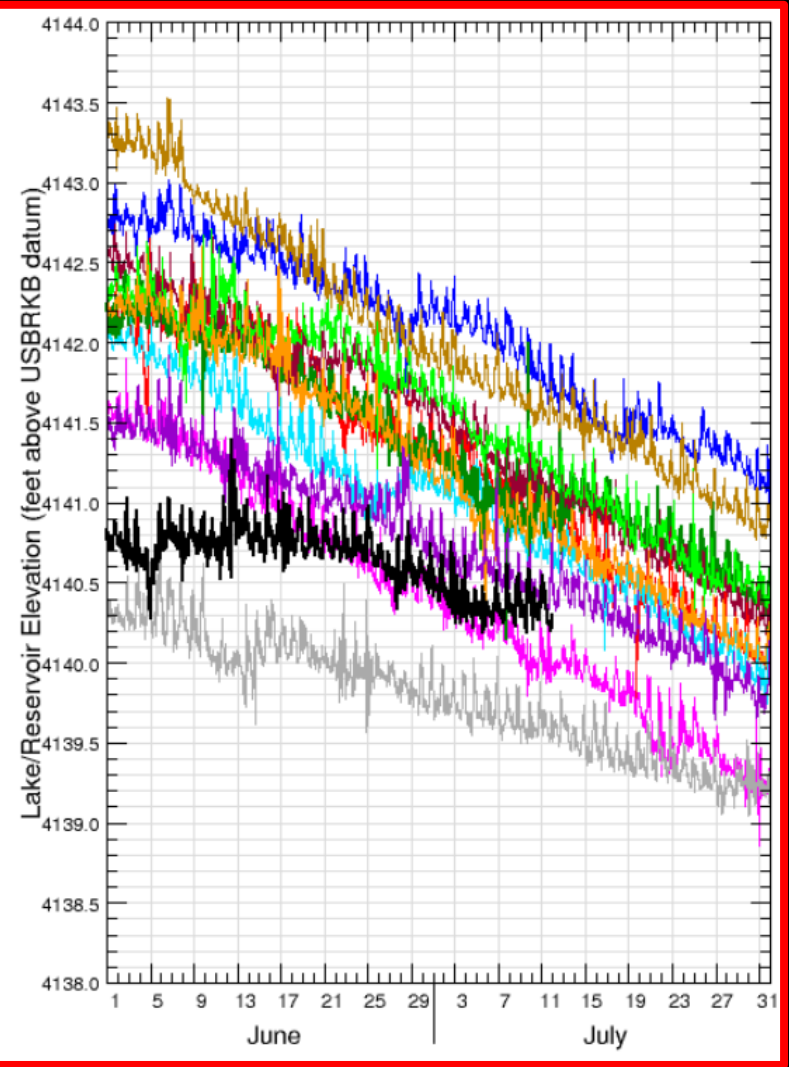


Upper Klamath Lake near Klamath Falls, OR (11507000)

Data from U.S. Geological Survey

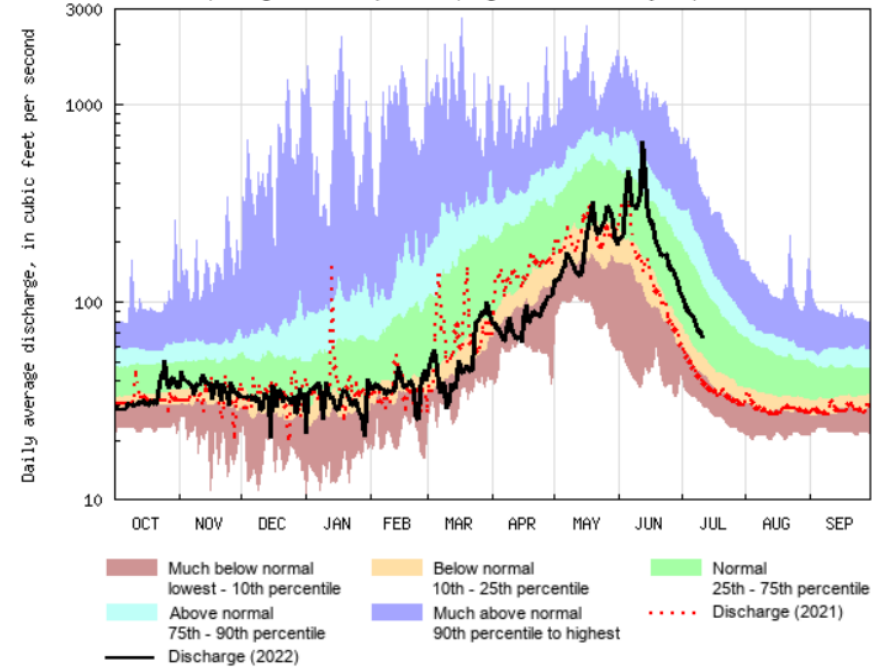


Klamath Lake



Southeastern OR

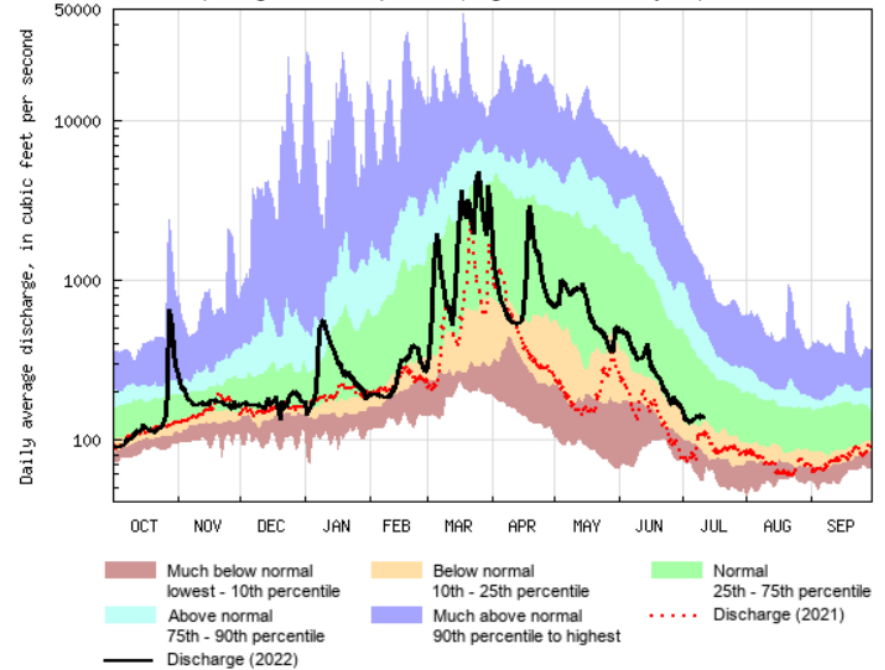
USGS 10396000 DONNER UND BLITZEN RIVER NR FRENCHGLEN OR
(Drainage area: 200 square miles, length of record: 91 - 93 years)



USGS WaterWatch

Last updated: 2022-07-12

USGS 13181000 OWYHEE RIVER NR ROME OR
(Drainage area: 8000 square miles, length of record: 71 - 72 years)



USGS WaterWatch

Last updated: 2022-07-12

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



US GEOLOGICAL SURVEY, OREGON WATER SCIENCE CENTER
WATER AVAILABILITY REPORT FOR JUNE 2022

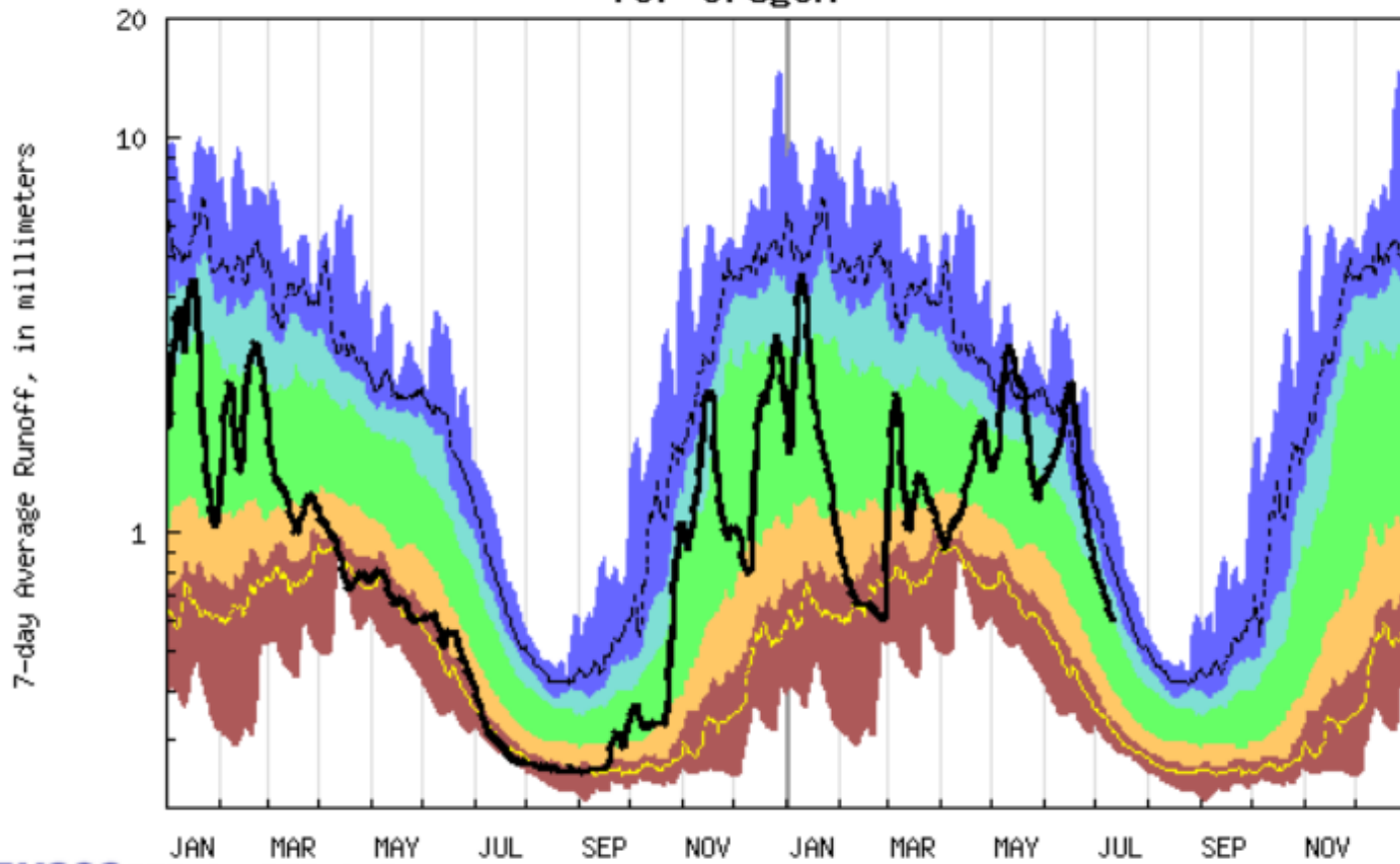
Station	NRCS SWSI Basin	----- Monthly mean discharge -----		Change in dis- charge from previous month (percent)	----- Accumulated Runoff For the Period Oct. to June ----- Percent of average
		Cubic feet per second	Percent of average		
Donner Und Blitzen nr Frenchglen	Harney	261	96	29	60
(*)Deep Creek above Adel	Lake County	105	58	-57	50
(*)Chewaucan River near Paisley	Lake County	93	41	-65	61
Williamson River near Chiloquin	Klamath	588	70	-26	60
Owyhee River near Rome	Owyhee	299	44	-55	59
(*)NF Malheur River near Beulah	Malheur	141	93	-28	56
Grande Ronde R at Troy	Grande Ronde Powder/Burnt	10,800	206	55	95
Umatilla River nr Gibbon	Umatilla Lower John Day	568	330	-22	107
John Day River at Service Crk	Upper John Day	5,720	250	5	81
(*)Little Deschutes River nr LaPine	Upper Deschutes	211	99	6	50
Hood River nr Hood River	Lower Deschutes Mt.Hood	1,520	189	-13	104
Willamette River at Salem	Willamette	30,500	216	-29	106
Wilson River near Tillamook	North Coast	619	175	-55	118
Umpqua River near Elkton	Rogue/Umpqua	7,270	209	-37	81
Rogue River near Agness	Rogue/Umpqua	4,260	109	2	59
SF Coquille River at Powers	South Coast	326	187	-70	86
Chetco River near Brookings	South Coast	1,170	190	-64	86

All data should be considered provisional and subject to revision.
Percent of average computed using 30-year base period, water years 1991-2020.
(*) provided by Oregon Water Resources Department

07/05/2022



Duration hydrograph of 7-day average runoff for Oregon



USGS WaterWatch

2021
2022
Last updated: 2022-07-12

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



Water Supply Availability Committee Oregon Water Resources Department

Ryan Andrews

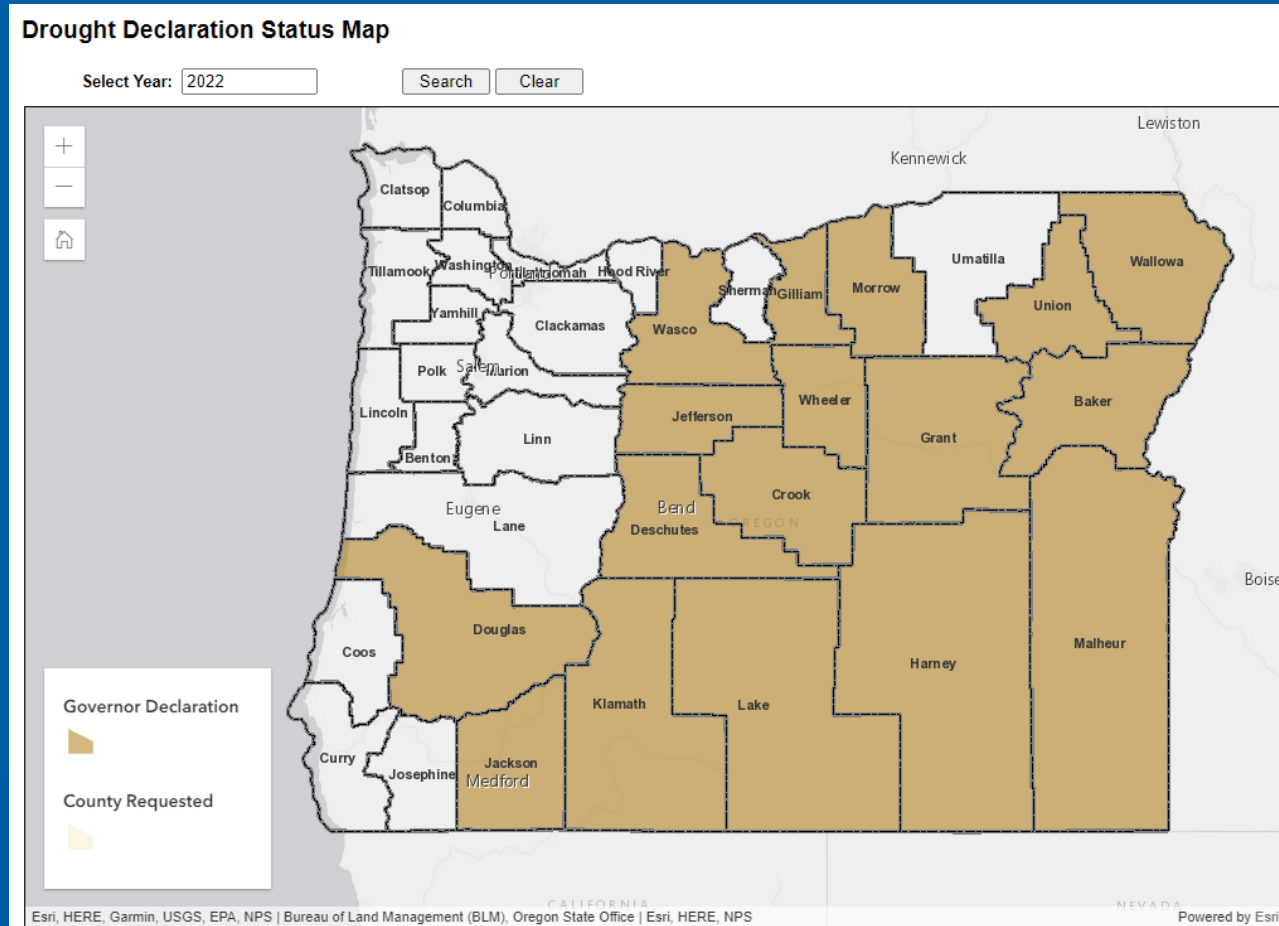
July 13th, 2022



Drought Declarations



- 17 counties with ORS 536 declarations
- 29 counties with USDA crop disaster designations due to drought



June % of Average Streamflow - WY 2022

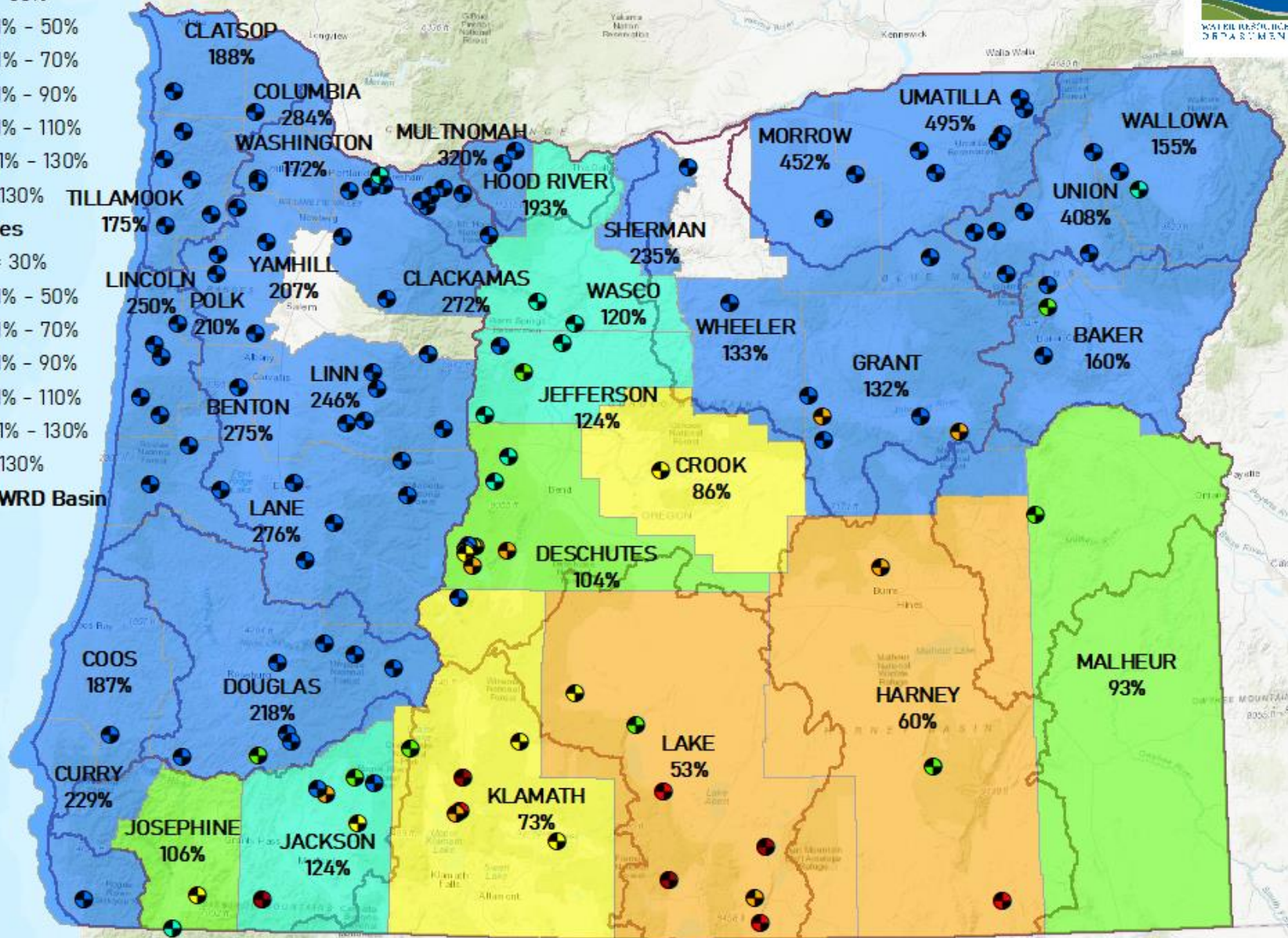


Stream Gage

- <= 30%
- 31% - 50%
- 51% - 70%
- 71% - 90%
- 91% - 110%
- 111% - 130%
- > 130%

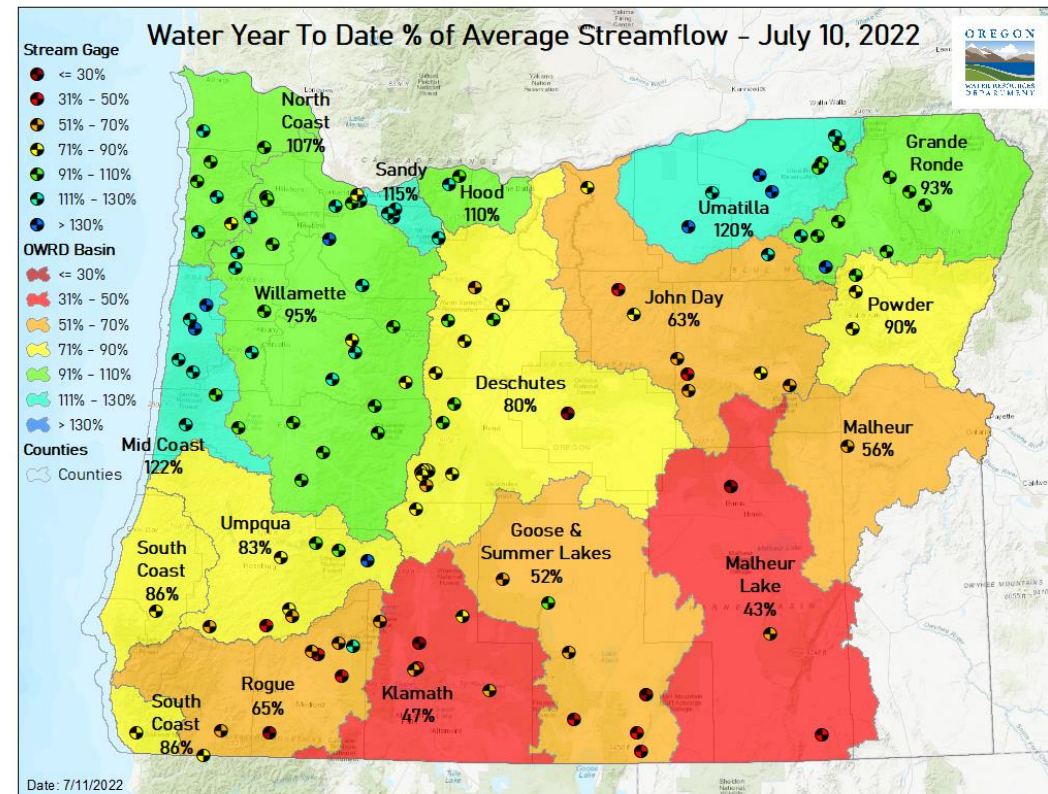
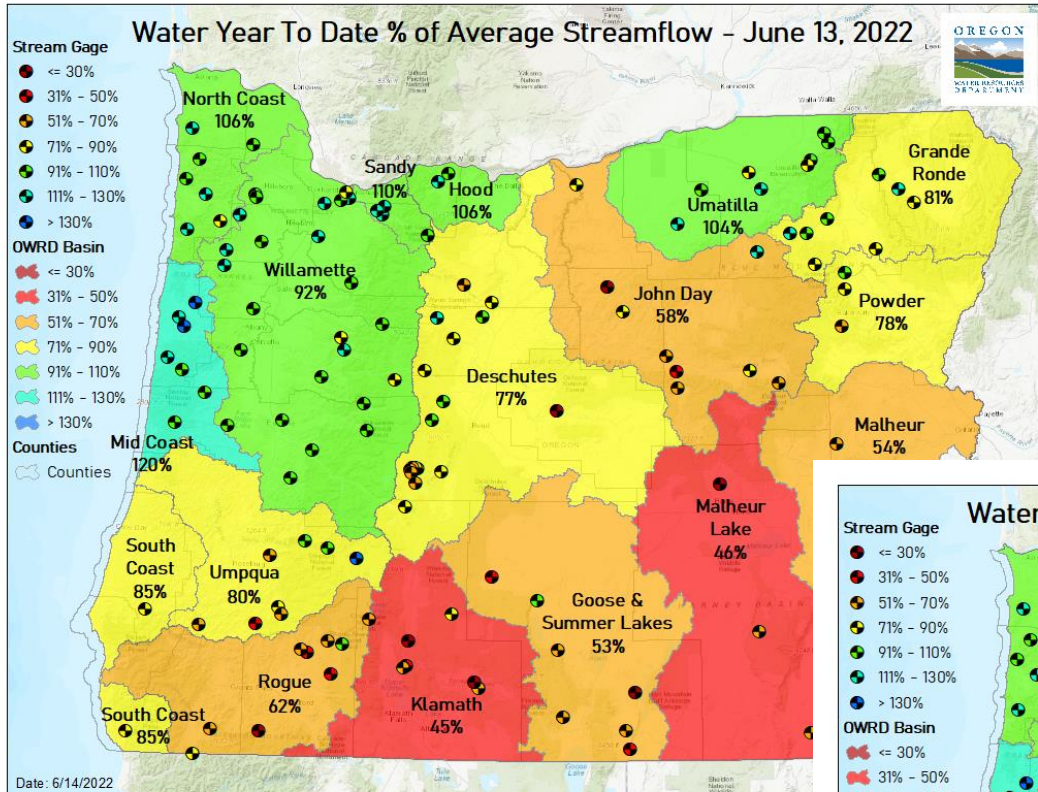
Counties

- 🔗 <= 30%
- 🔗 31% - 50%
- 🔗 51% - 70%
- 🔗 71% - 90%
- 🔗 91% - 110%
- 🔗 111% - 130%
- 🔗 > 130%
- 🔗 OWRD Basin



Date: 7/8/2022

Water Year to Date

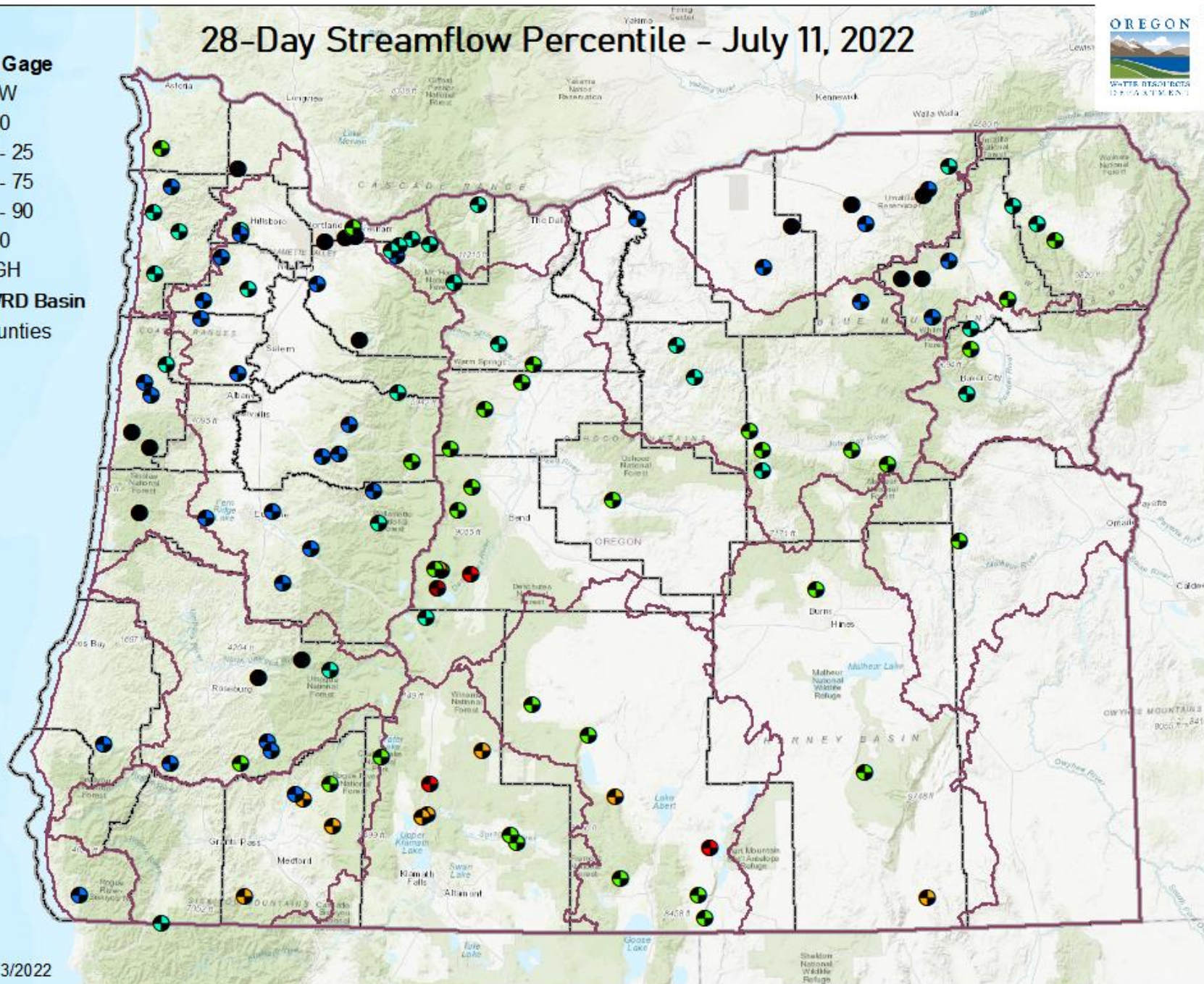


28-Day Streamflow Percentile - July 11, 2022



Stream Gauge

- LOW
- < 10
- 10 - 25
- 25 - 75
- 75 - 90
- > 90
- HIGH
- OWRD Basin
- Counties



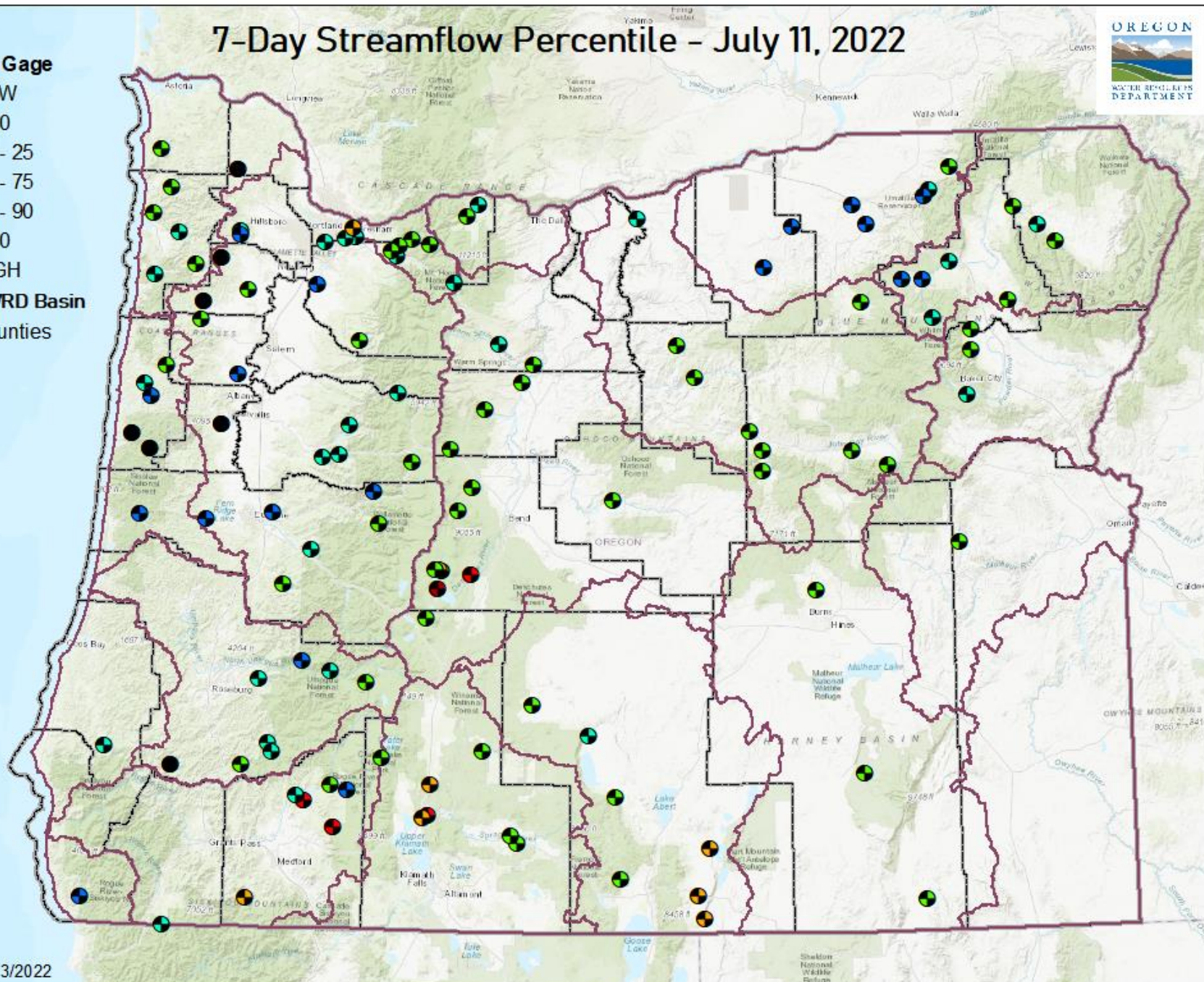
Date: 7/13/2022

7-Day Streamflow Percentile - July 11, 2022



Stream Gage

- LOW
- < 10
- 10 - 25
- 25 - 75
- 75 - 90
- > 90
- HIGH
- OWRD Basin
- Counties



Date: 7/13/2022

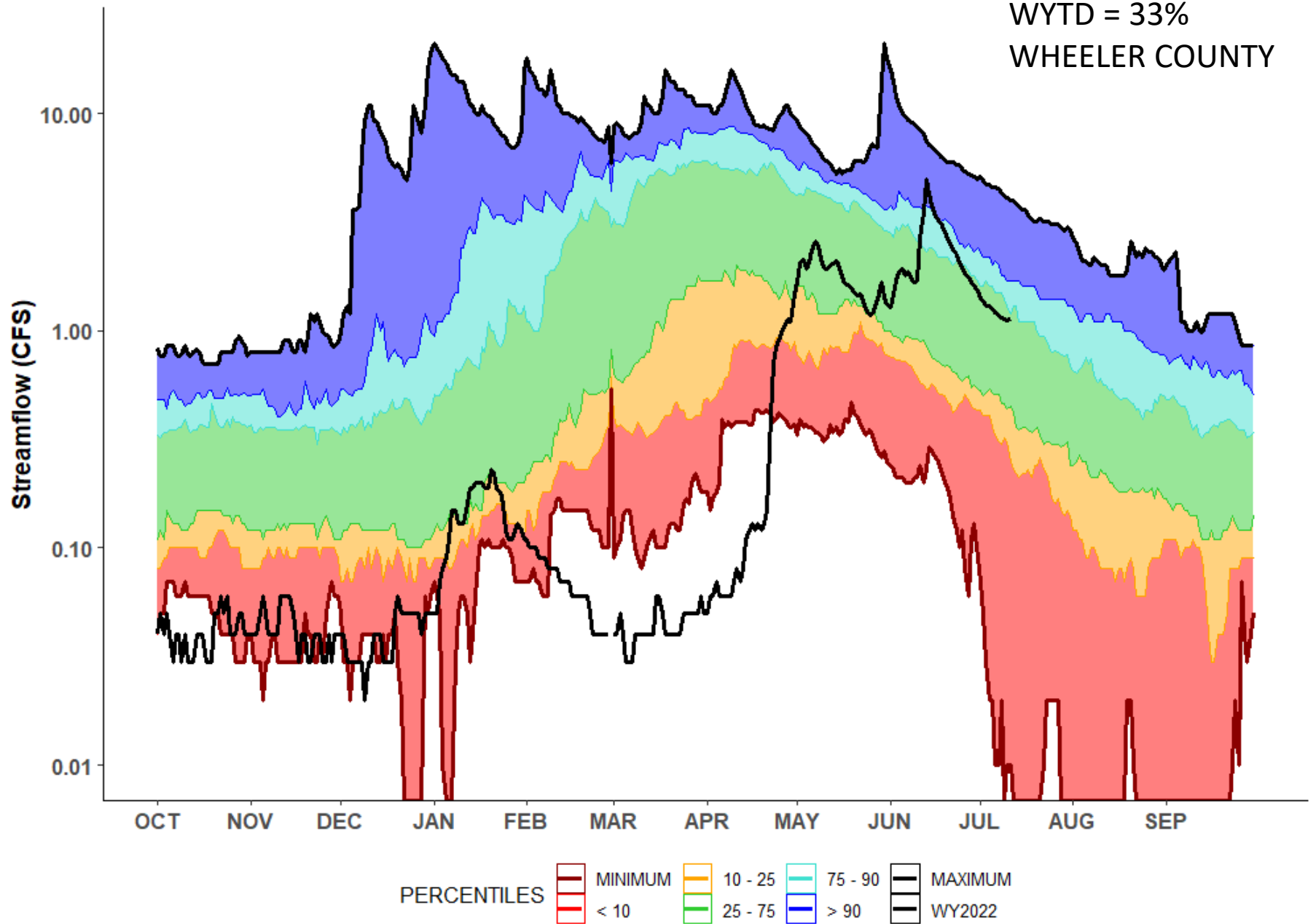
14047100 - BUTTE CR NR FOSSIL, OR

JOHN DAY BASIN

POR: 1991-2020

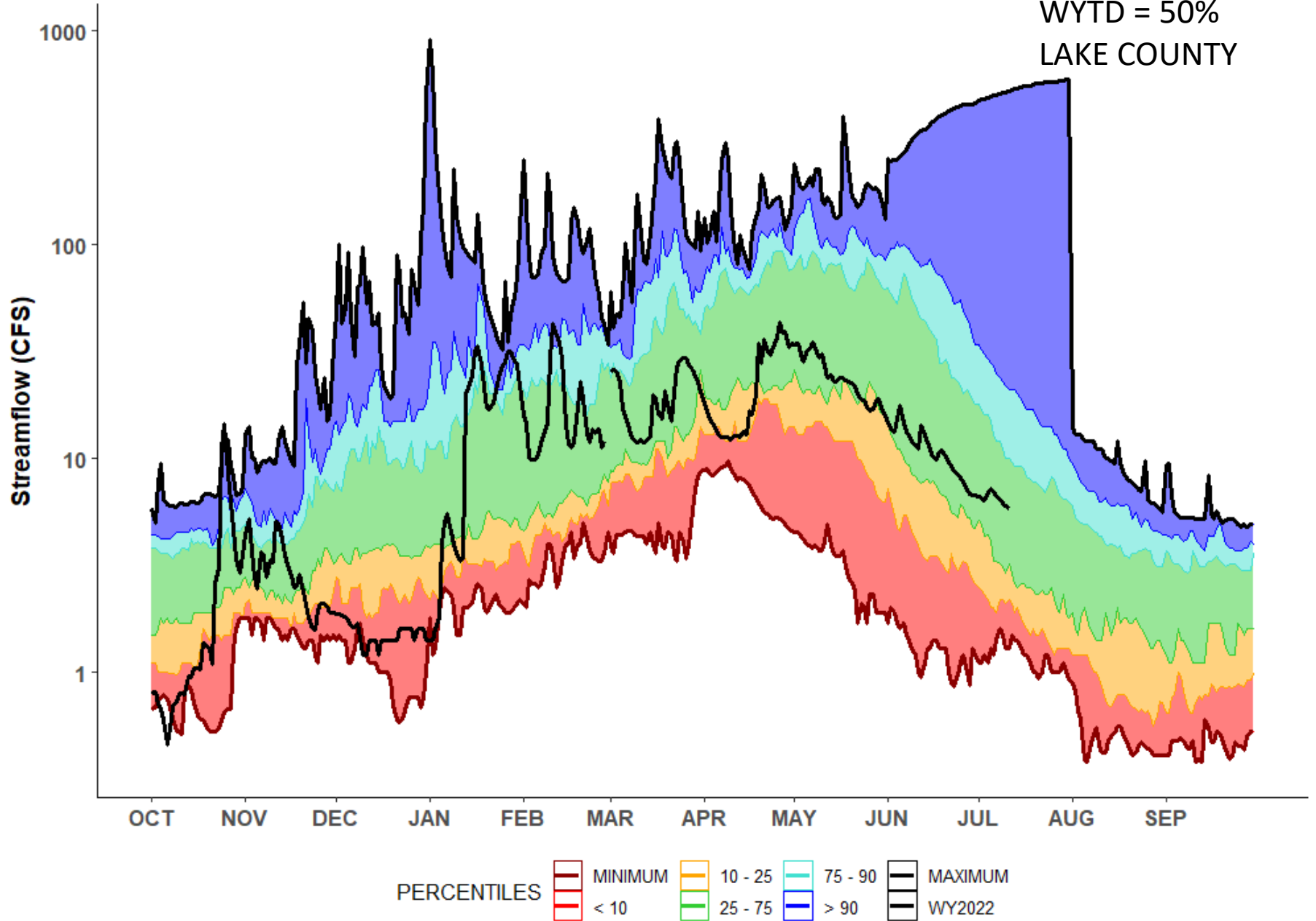
WYTD = 33%

WHEELER COUNTY



11339995 - COTTONWOOD CR AB COTTONWOOD RES NR LAKEVIEW, OR
GOOSE AND SUMMER LAKES BASIN
POR: 1991-2020

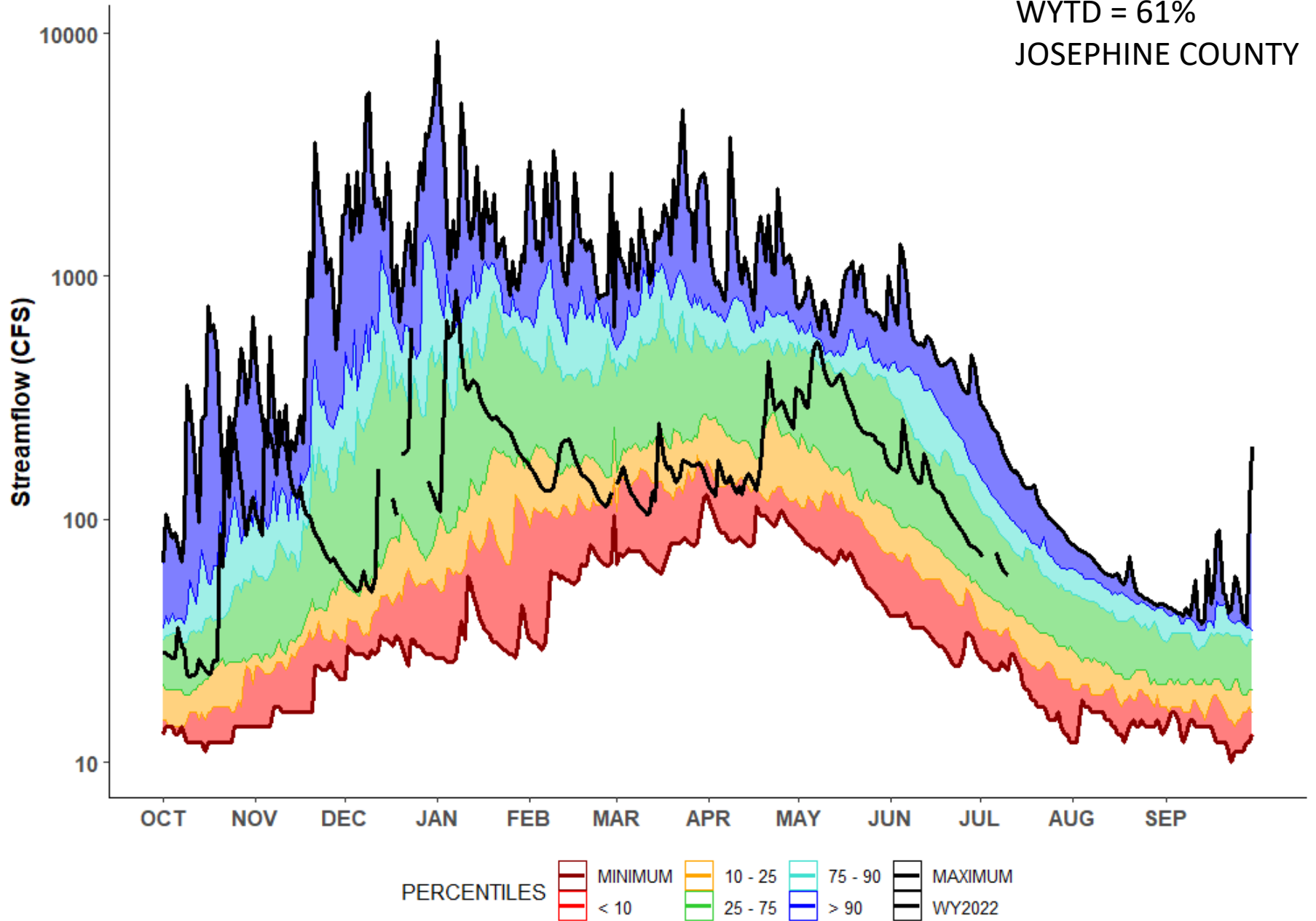
WYTD = 50%
LAKE COUNTY



14375100 - SUCKER CR BL L GRAYBACK CR NR HOLLAND, OR

ROGUE BASIN
POR: 1991-2020

WYTD = 61%
JOSEPHINE COUNTY



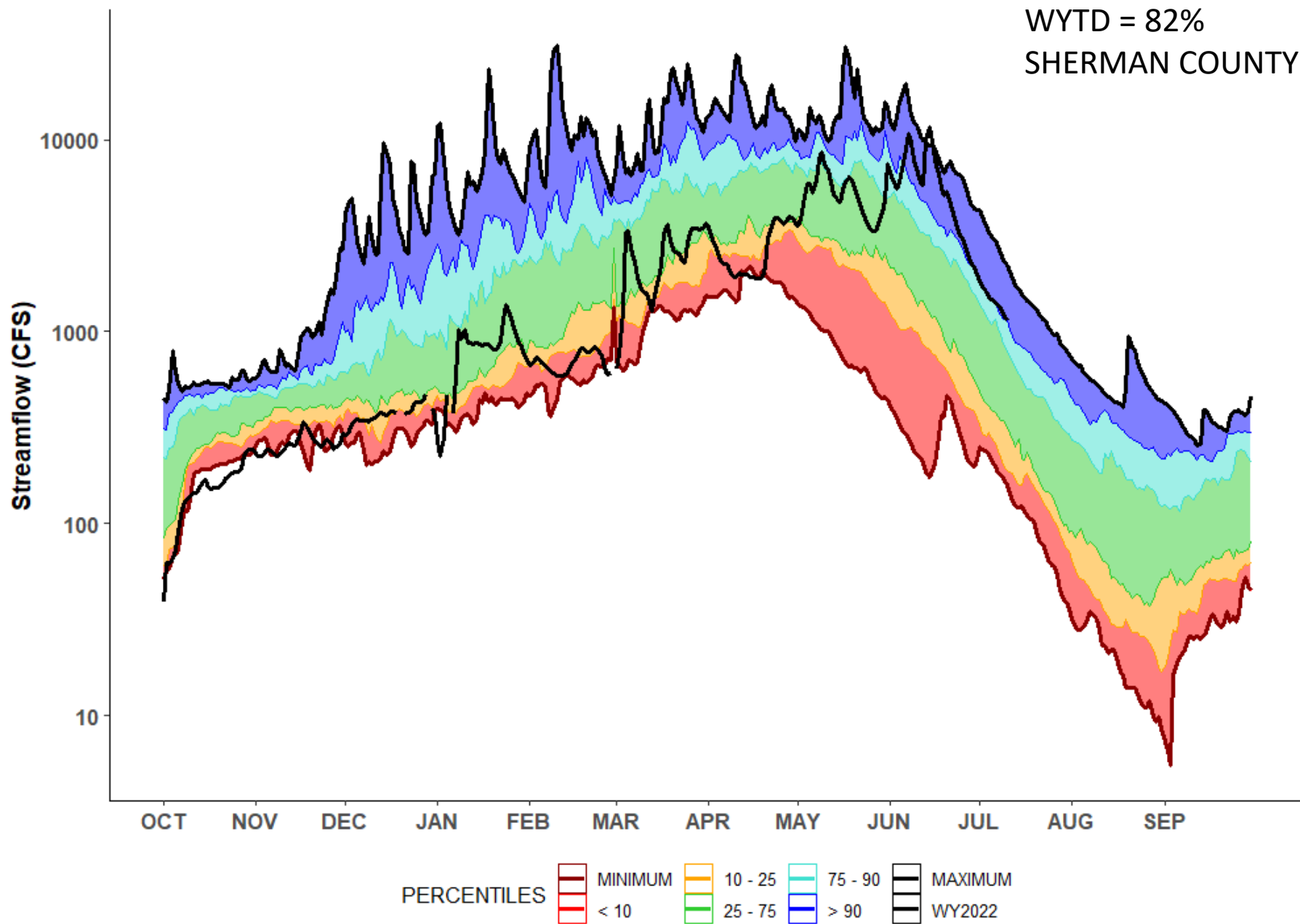
14048000 - JOHN DAY R AT MCDONALD FERRY, OR

JOHN DAY BASIN

POR: 1991-2020

WYTD = 82%

SHERMAN COUNTY



Summary



- No new drought declarations
- Early June precipitation sustained average to above average streamflows into mid-July
- Keep eye on recession of streamflows heading into dry period

OREGON



WATER RESOURCES
DEPARTMENT

QUESTIONS?



Oregon State University
College of Earth, Ocean,
and Atmospheric Sciences

Oregon WSAC/DRC Monthly Update and Drought Status

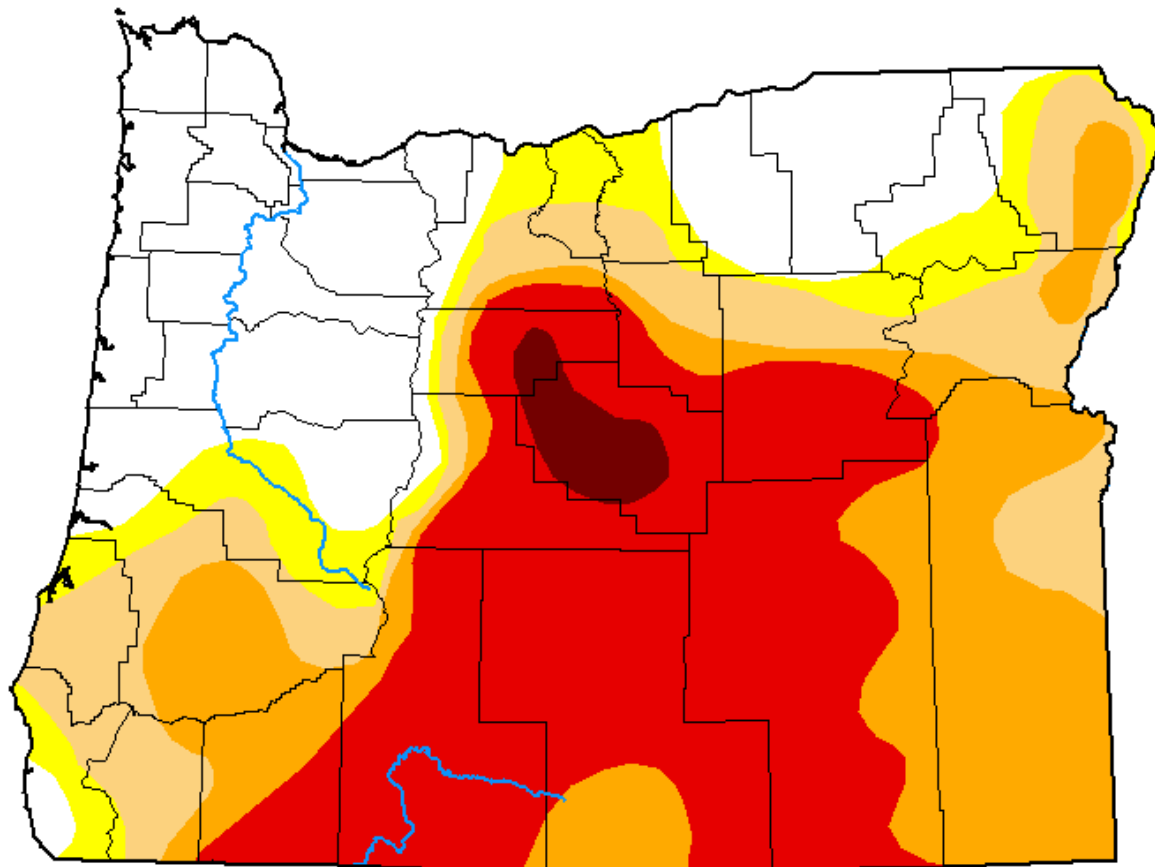
Larry O'Neill
CEOAS/Oregon State University
Oregon Climate Service/Oregon Climate
Change Research Institute
larry.oneill@oregonstate.edu









Wednesday, July 13, 2022

U.S. Drought Monitor Oregon

July 5, 2022
(Released Thursday, Jul. 7, 2022)
Valid 8 a.m. EDT



Intensity:

-  None
-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

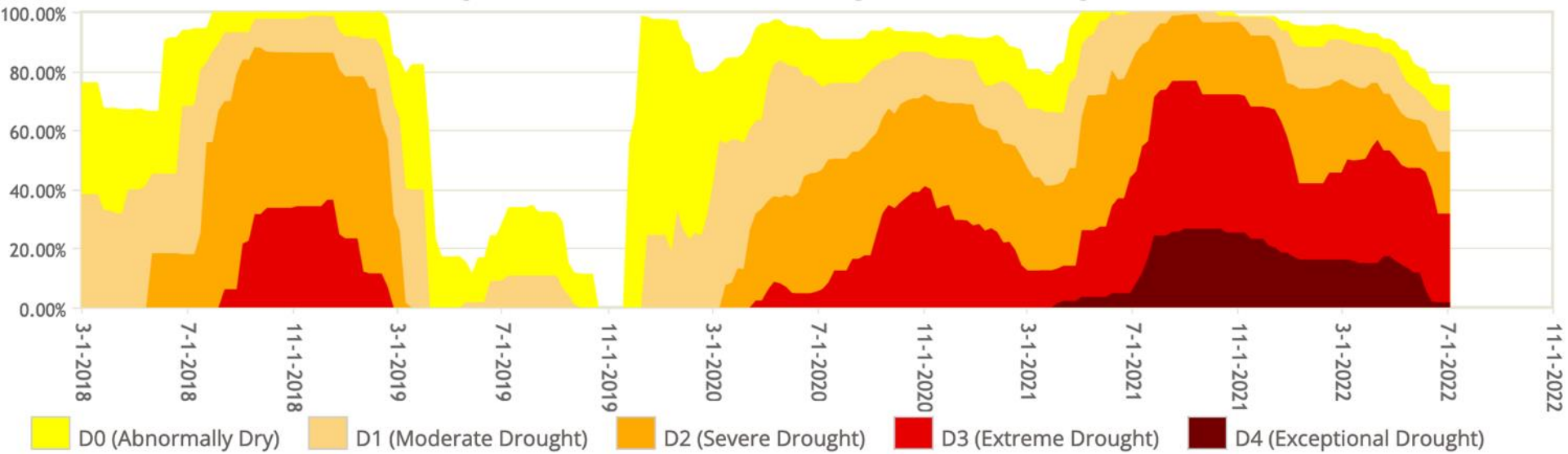
Author:

Brad Pugh
CPC/NOAA



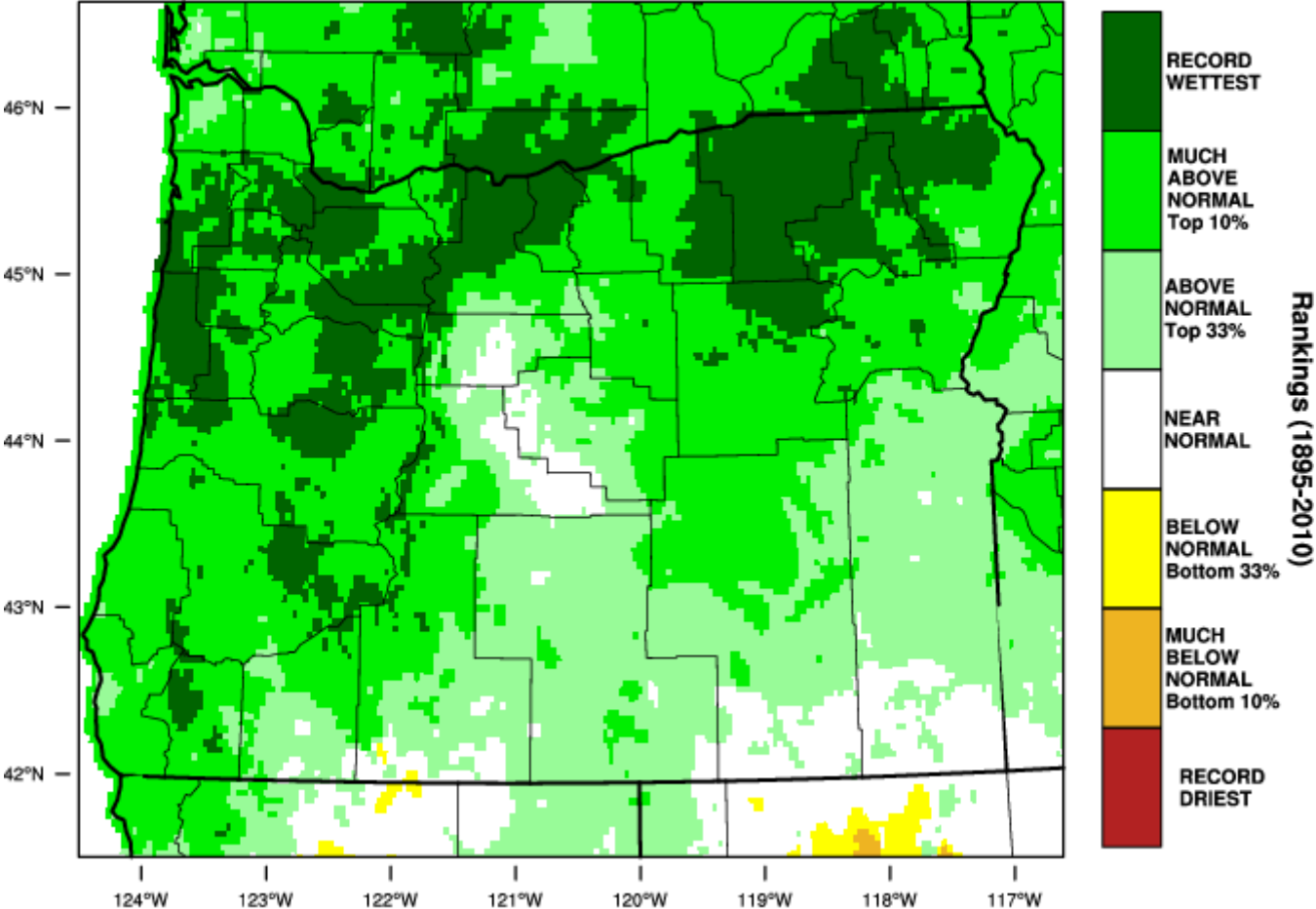
droughtmonitor.unl.edu

Oregon Percent Area in U.S. Drought Monitor Categories



Exceptionally wet April-June 2022

Oregon - Precipitation
April-June 2022 Percentile

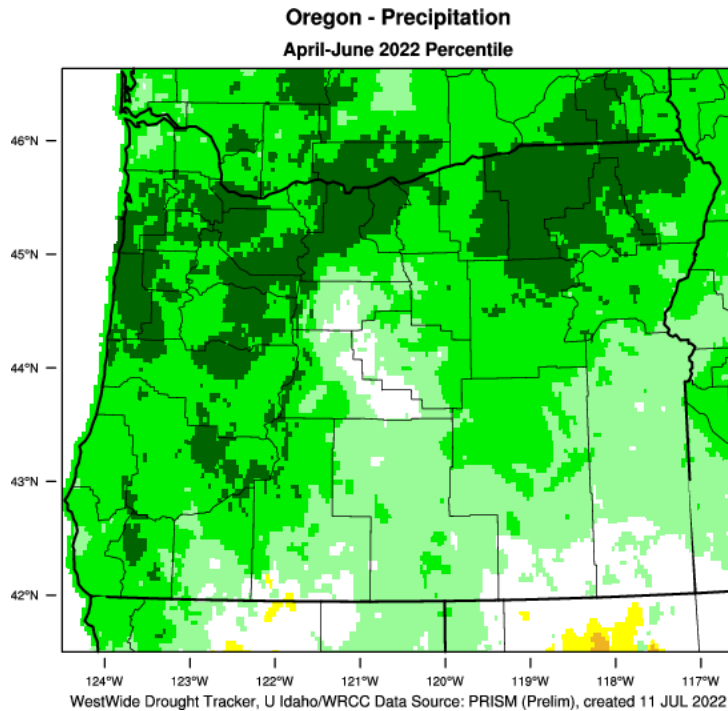


WestWide Drought Tracker, U Idaho/WRCC Data Source: PRISM (Prelim), created 11 JUL 2022

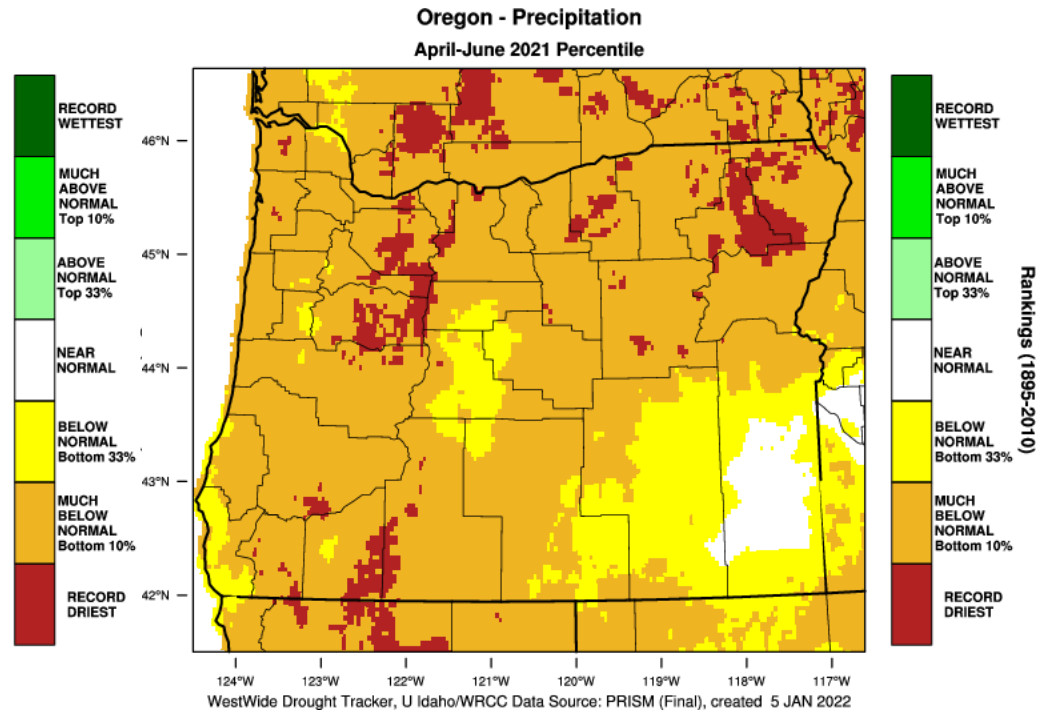
Select station precipitation and historical rankings

	Apr 1-Jun 30 2022 Precipitation	Ranking for Period of Record (POR)	Notes
Astoria (KAST)	16.82"	4 th wettest / 70 years	Wettest: 1993 at 17.45"
Portland (KPDX)	12.60"	Wettest / 85 years	Previous wettest: 2010 at 11.87"
Salem (KSLE)	12.19"	5 th wettest / 129 years	Wettest: 1937 at 13.89"
Eugene (KEUG)	10.56"	7 th wettest / 83 years	Wettest: 1993 at 18.47"
Roseburg (Winchester)	11.33"	3 rd wettest / 71 years	Wettest: 1993 at 13.38"
Grants Pass	7.20"	11 th wettest / 130 years	Wettest: 1963 at 10.40"
Medford (KMFR)	4.85"	22 nd wettest / 112 years	Wettest: 1912 at 9.04"
Pendleton (KDPT)	7.22"	Wettest / 95 years	Previous wettest: 2010 at 7.06"
Heppner	7.84"	3 rd wettest / 119 years	Wettest: 1912 at 8.84"
Moro	6.30"	Wettest / 107 years	Previous wettest: 2006 at 5.12"

The tale of two springs: 2022 vs. 2021



Exceptionally wet 2022

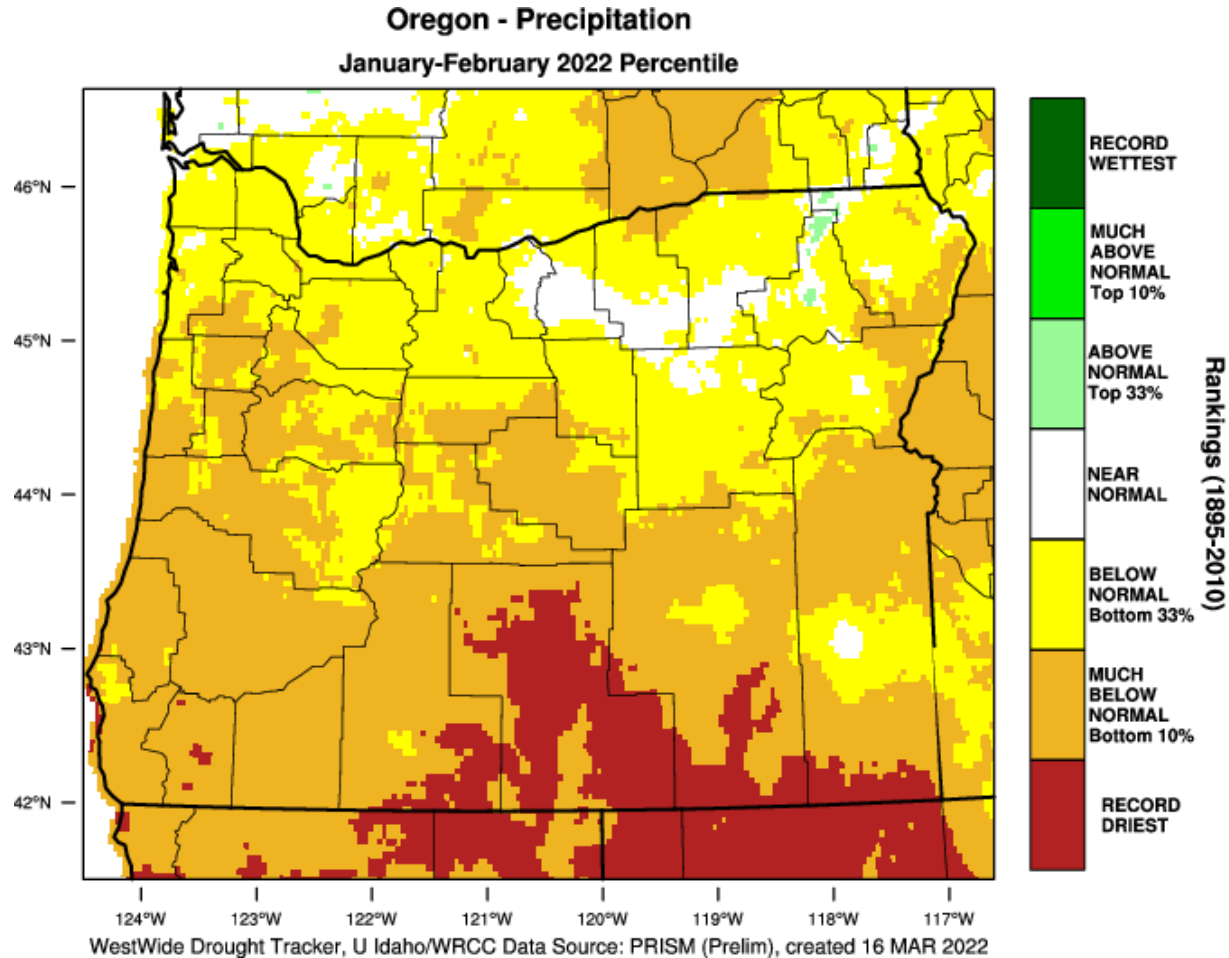


Exceptionally dry 2021

Comparison of historical rankings of Apr-Jun 2022 and 2021

	Apr 1-Jun 30 2022	Apr 1-Jun 30 2021
Astoria	4 th wettest	Driest
Portland	Wettest	Driest
Salem	5 th wettest	22 nd driest
Eugene	7 th wettest	6 th driest
Roseburg	3 rd wettest	4 th driest
Grants Pass	11 th wettest	11 th driest
Medford	22 nd wettest	12 th driest
Pendleton	Wettest	2 nd driest
Heppner	3 rd wettest	3 rd driest
Moro	Wettest	2 nd driest

Jan-Feb 2022 was extremely dry across the Pacific Northwest

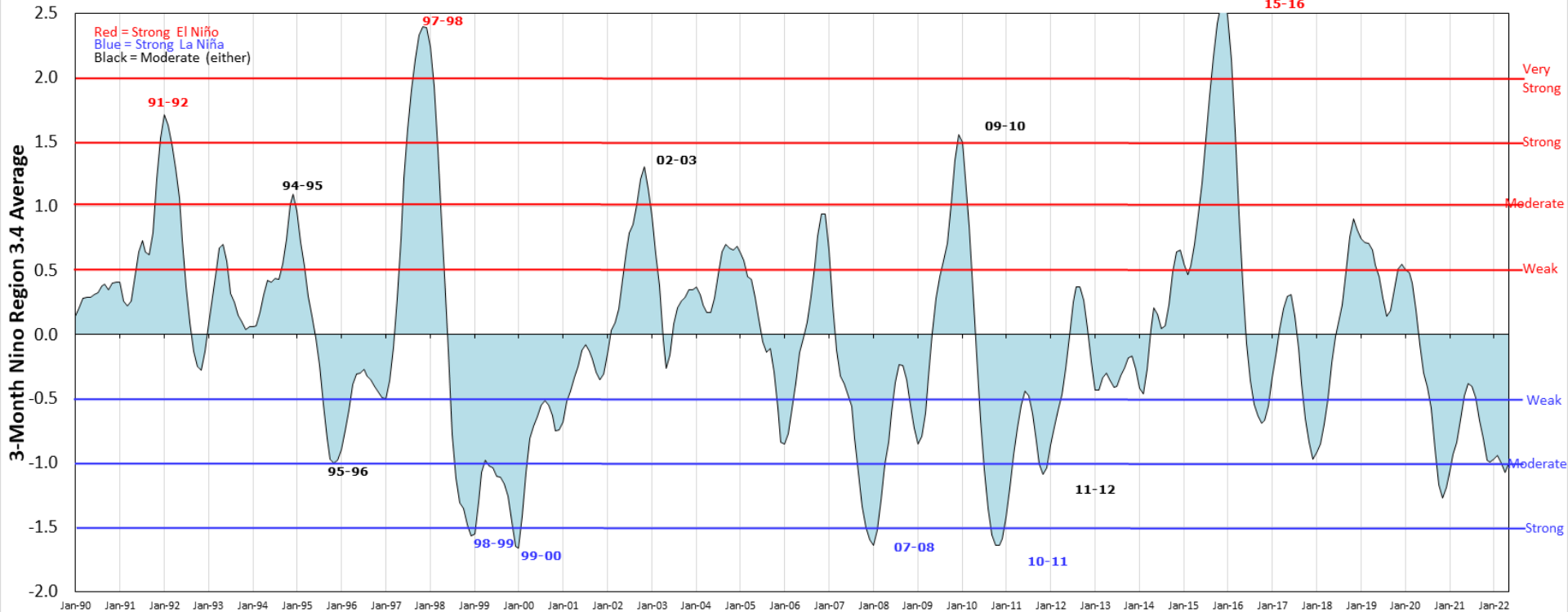


Select station precipitation and historical rankings

	Jan 5-Feb 25 2022 Precipitation	Ranking for Period of Record (POR)	Notes
Astoria (KAST)	11.75"	17 th driest / 70 years	Driest: 1985 at 4.73"
Portland (KPDX)	2.60"	4 th driest / 85 years	Driest: 1985 at 1.85"
Salem (KSLE)	1.67"	Driest / 129 years	Previous driest: 2005 at 1.75"
Eugene (KEUG)	1.06"	Driest / 83 years	Previous driest: 2005 at 2.73"
Roseburg (Winchester)	1.08"	Driest / 71 years	Previous driest: 1977 at 2.31"
Grants Pass	0.64"	2 nd driest / 130 years	Driest: 1920 at 0.50"
Medford (KMFR)	0.15"	Driest / 112 years	Previous driest: 1920 at 0.42"
Pendleton (KDPT)	1.17"	10 th driest / 95 years	Driest: 1977 at 0.40"
Heppner	1.04"	10 th driest / 119 years	Driest: 2013 at 0.22"
Moro	0.88"	9 th driest / 107 years	Driest: 2013 at 0.14"

Oceanic Niño Index (ONI) - 1990-present

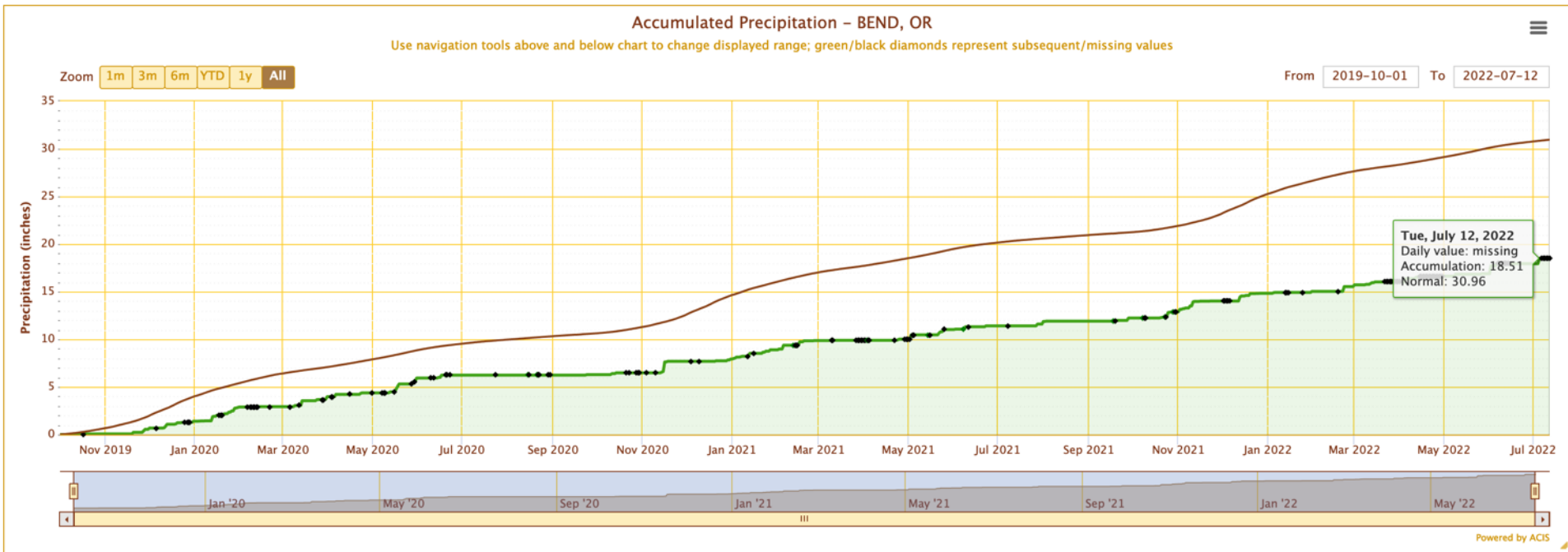
https://origin.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/ONI_v5.php



Spring 2021 (the dry spring) had ENSO neutral conditions following a fall/winter with moderate La Nina

No obvious historical relationship between ENSO phase and springtime precipitation in Oregon

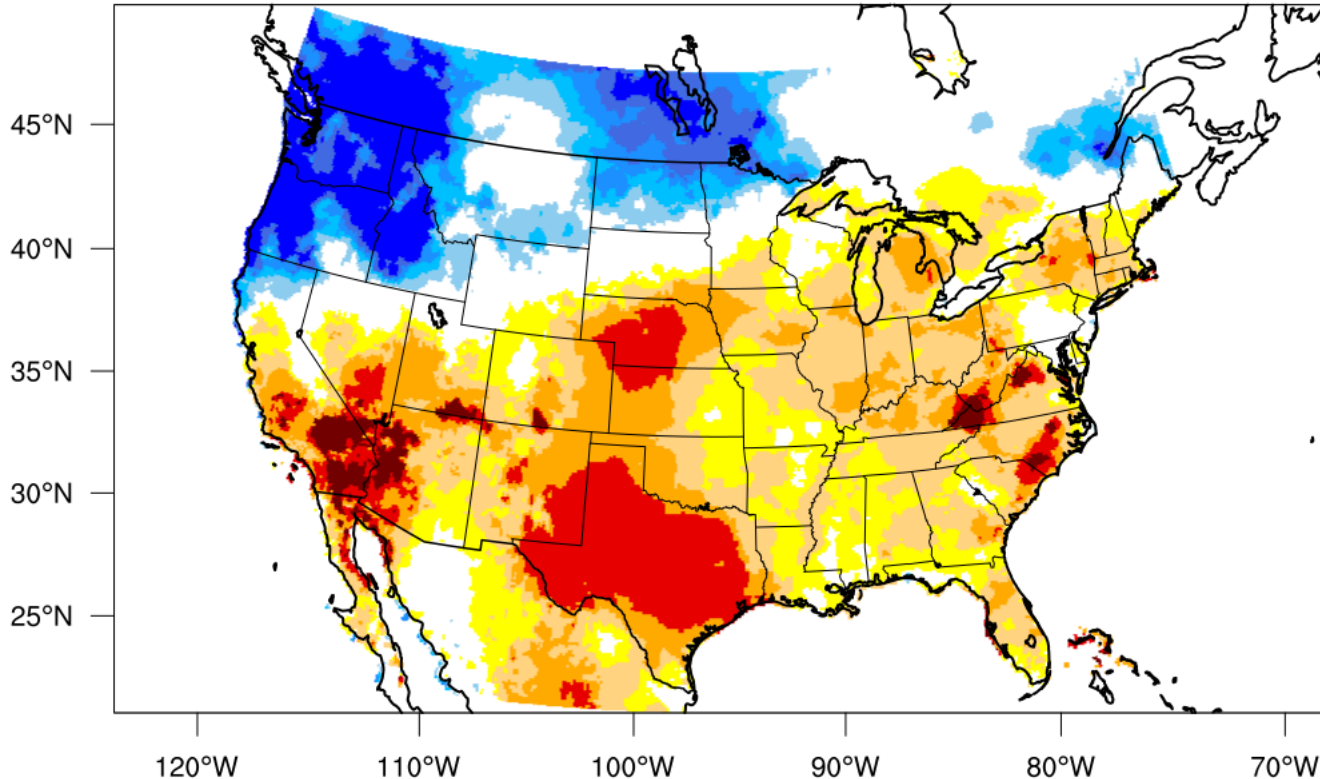
Bend accumulated precipitation since start of WY2020



Bend gets 10.6” rain annually on average. Since Oct 1, 2019, it’s down over a whole year of rain.

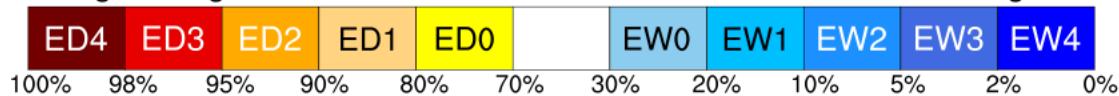
Evaporative Demand Drought Index (EDDI) for the last 3 months

3-month EDDI categories for July 6, 2022



Drought categories

Wetness categories



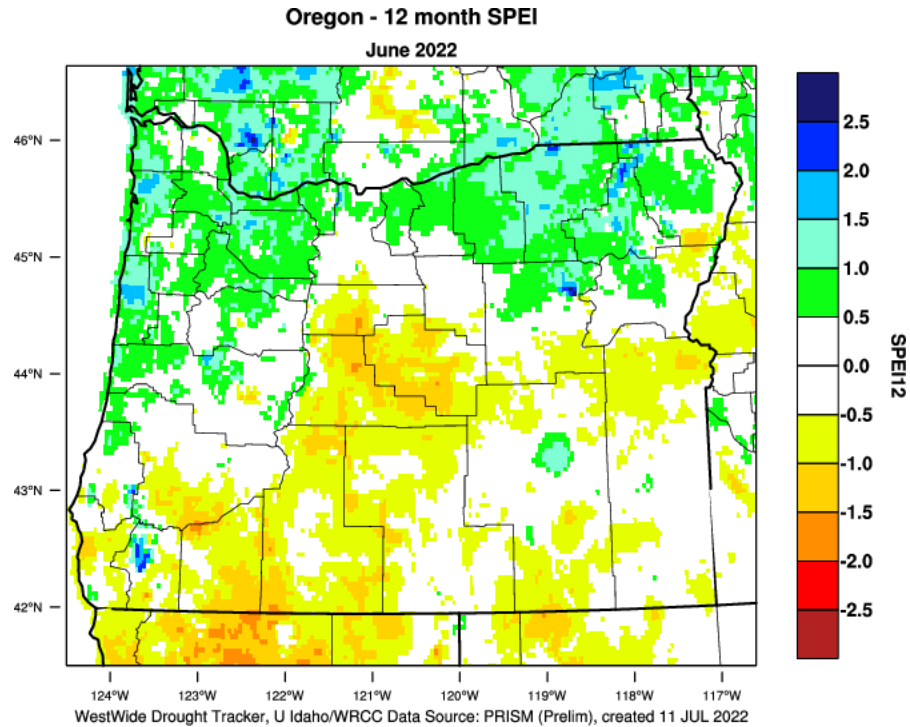
(EDDI-percentile category breaks: 100% = driest; 0% = wettest)

EDDI suggests exceptionally low (potential) evaporation over the spring driven by cooler than normal temperatures and lower than normal solar insolation

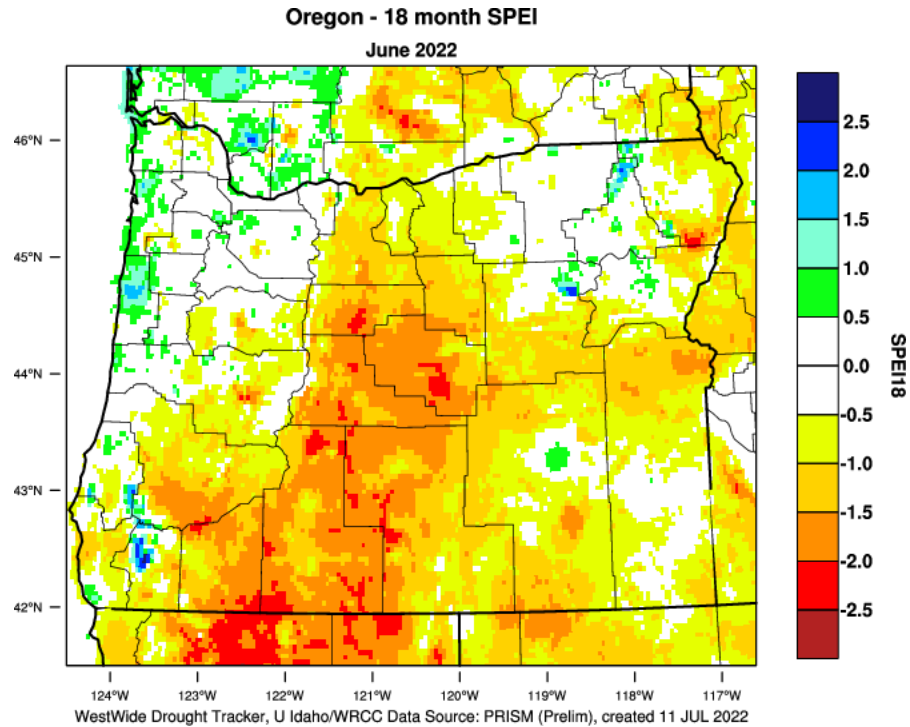
Low evaporation, coupled with high precipitation, has helped improve hydrological drought conditions

=> *precipitation went further in meeting our water supply needs*

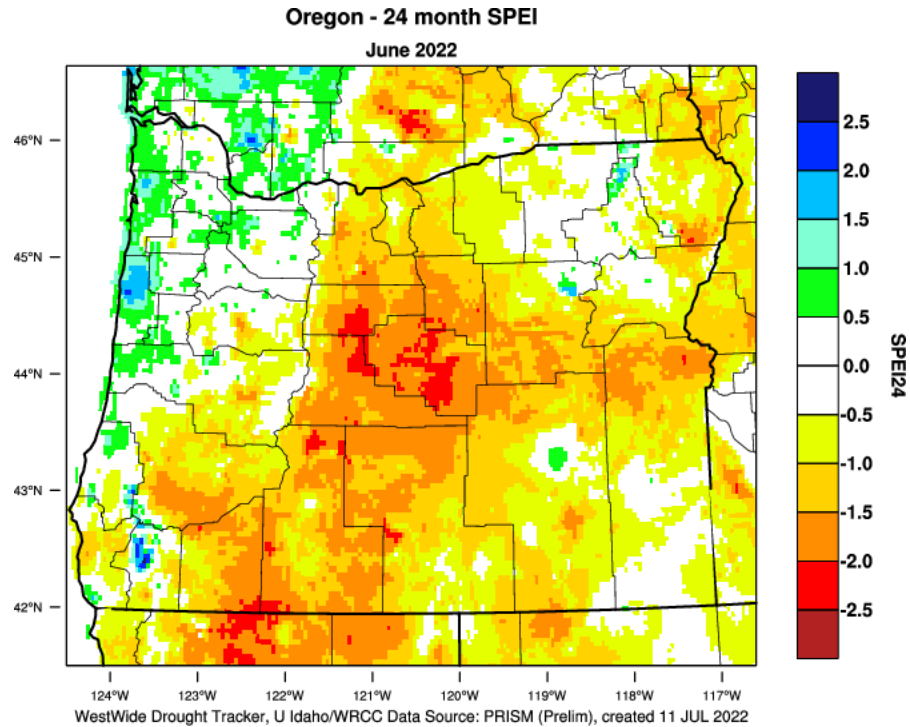
12-month SPEI



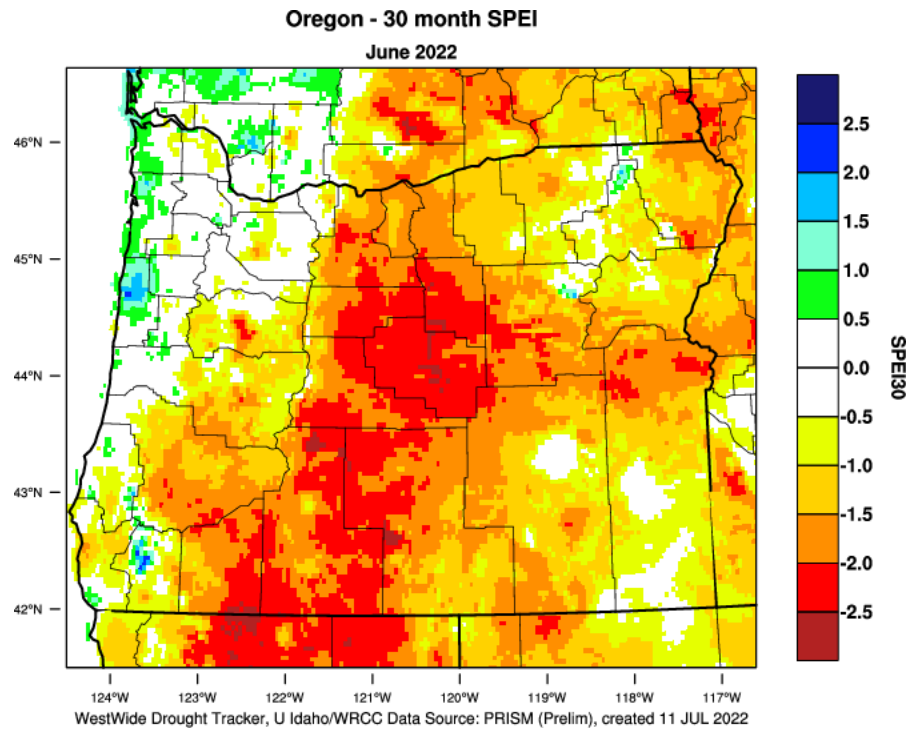
18-month SPEI



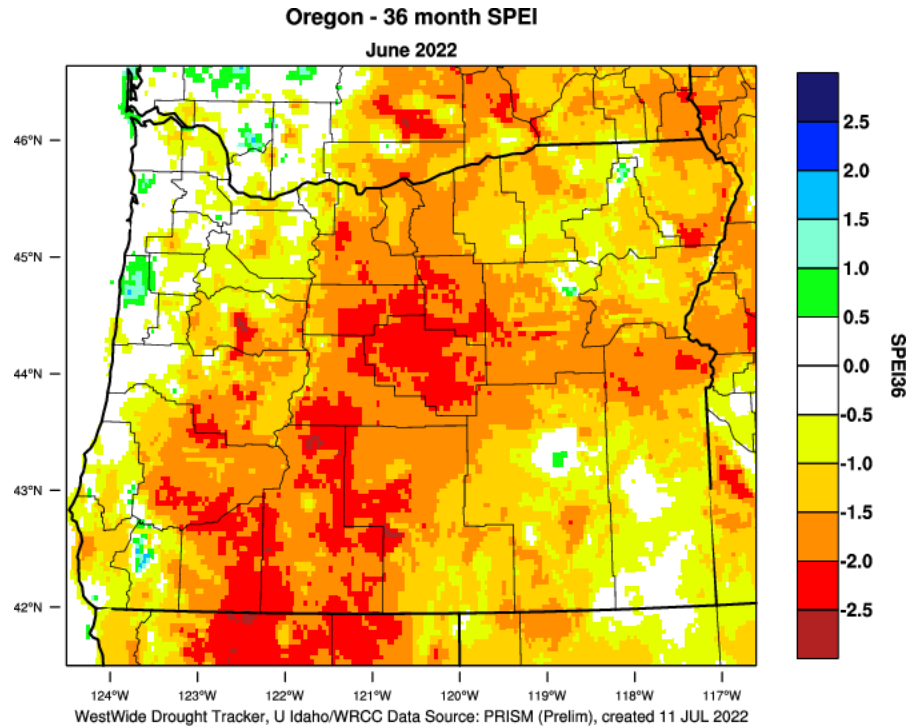
24-month SPEI



30-month SPEI



36-month SPEI



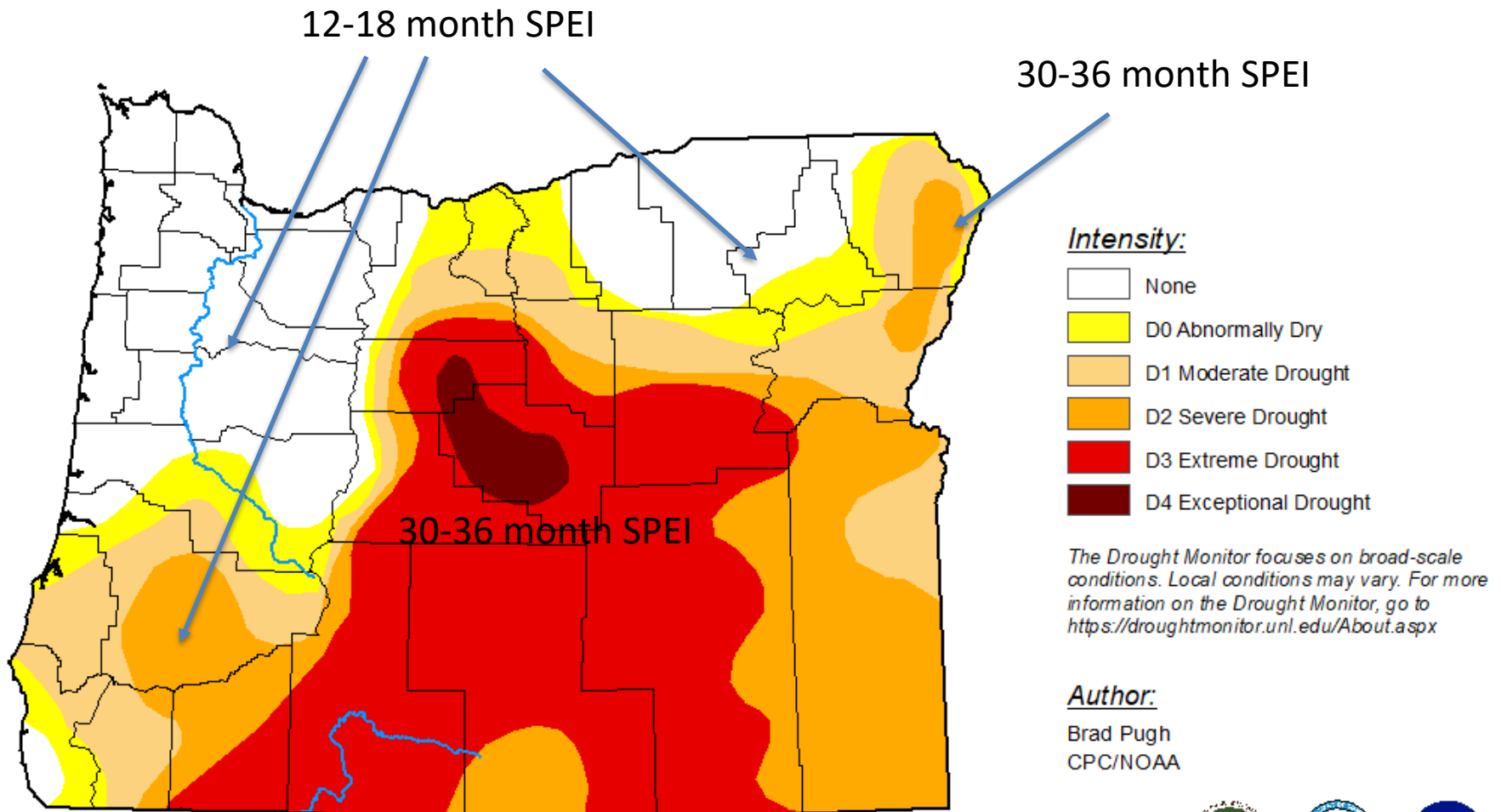
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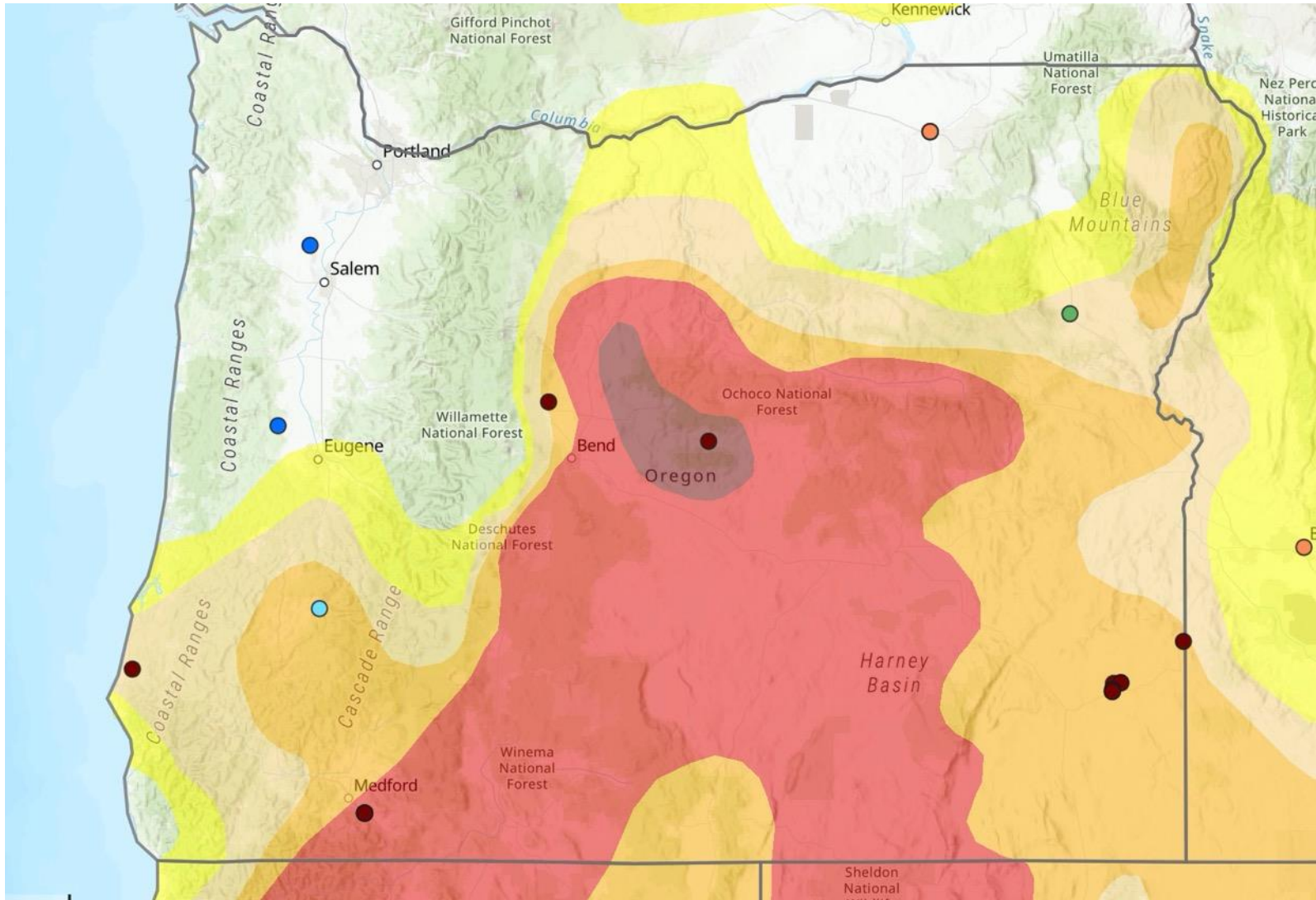
Author:

Brad Pugh
CPC/NOAA



droughtmonitor.unl.edu

CMOR reports for calendar 2022



Baker County report June 6, 2022

- Baker County: “...We had a delayed spring for native range forage and most livestock producers chose to delay livestock turnout to federal lands by a week or so. Current forage production is higher than normal and livestock permittees are requesting temporary nonrenewable forage. It is hard for me to comprehend that we are in a drought when livestock operators are asking for permission to graze longer on federal lands citing the above average forage production. ...”

Jackson County on June 30, 2022

- “Hay field. Normally this time of year it would be 8-12 inches tall well on the way to a second cutting. After nearly 3 years of drought the clover and most of the grass has died. The only green is weeds. For this year irrigation has not started and is still 7-10 day out. Irrigation will only last around 4 weeks. Very low chance that a second cutting can be produced and if cut it will be less 1/4 of normal.”

