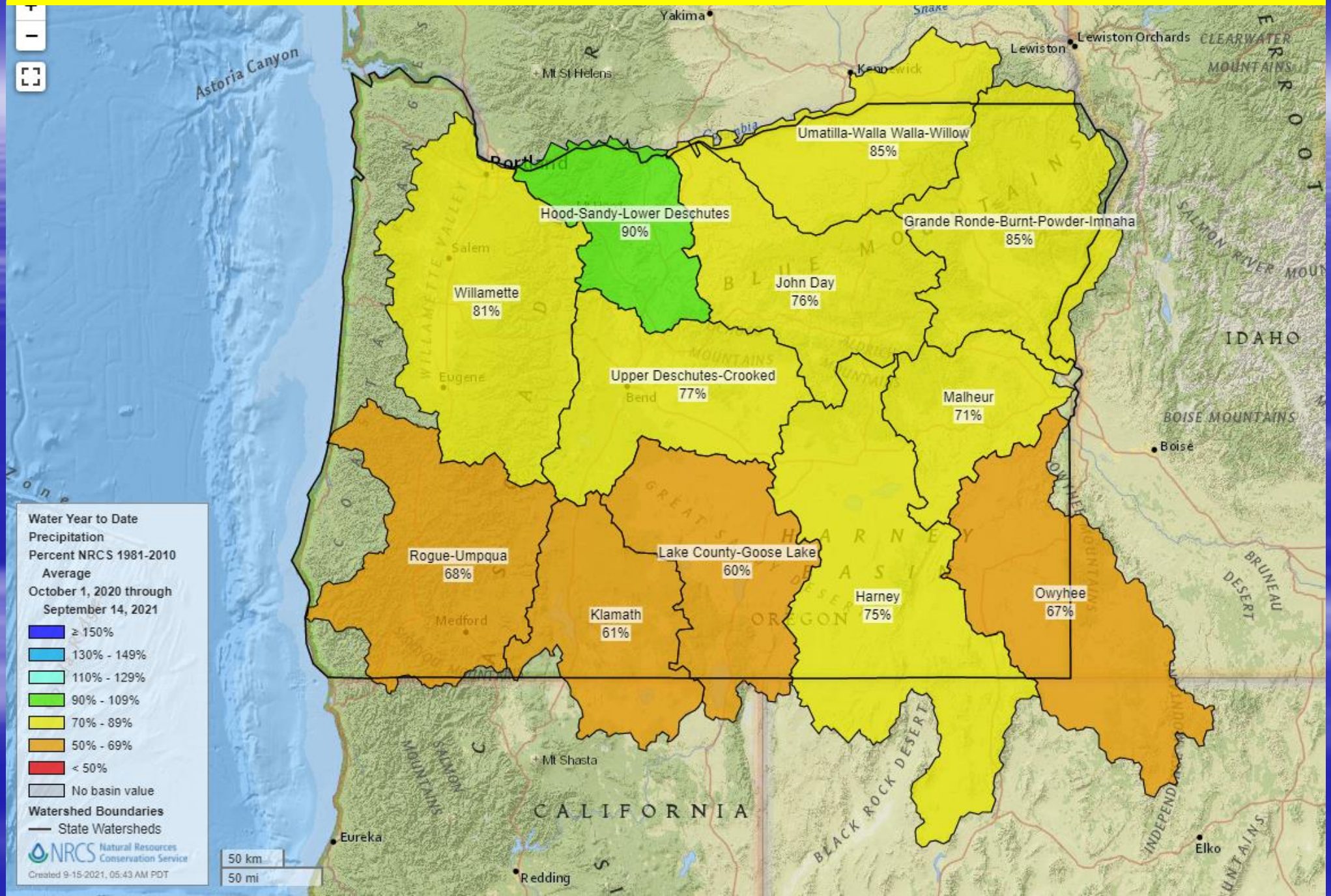
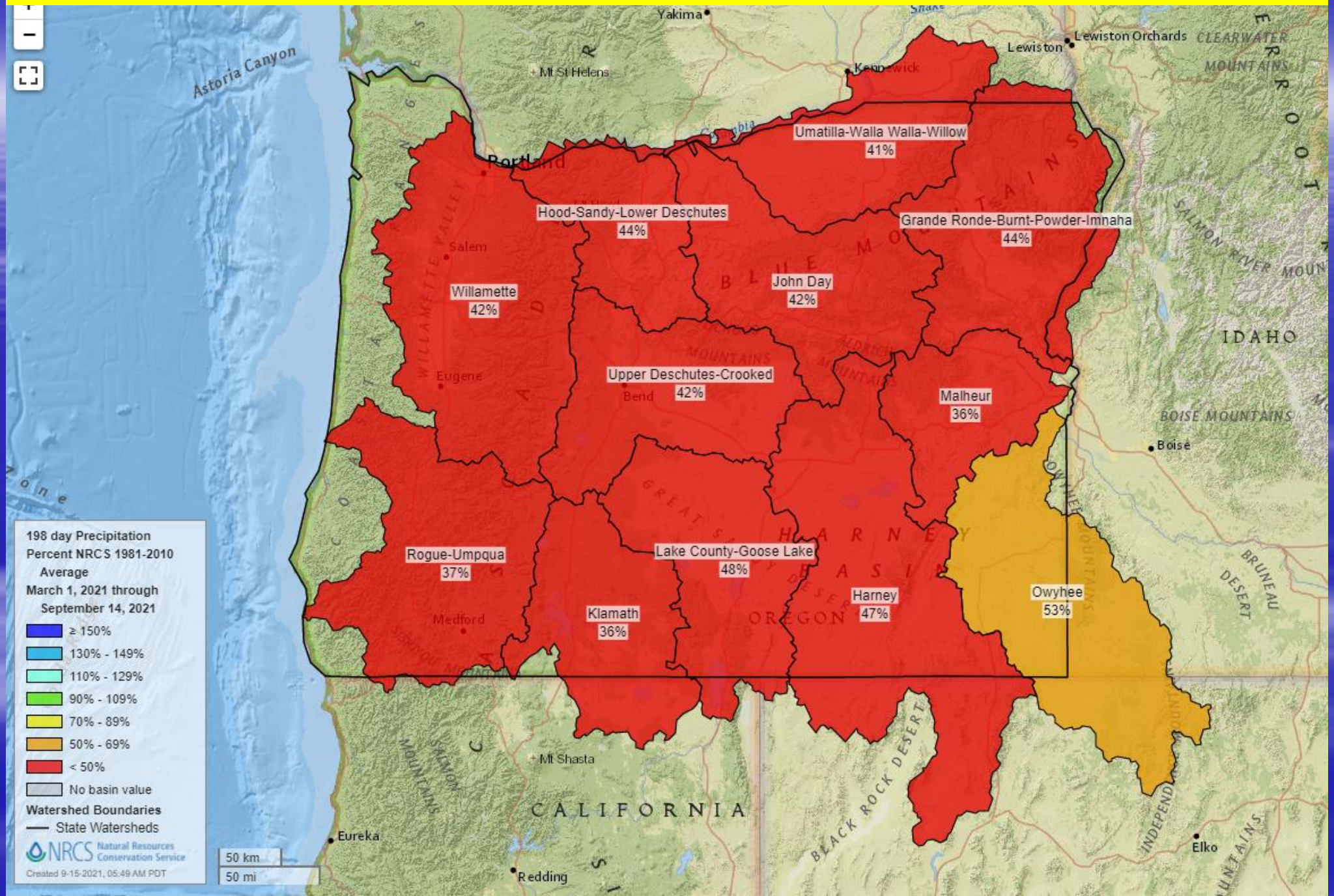
Oregon Water Supply Availability Committee – September 15, 2021

H. Scott Oviatt
Snow Survey Supervisory Hydrologist
USDA Natural Resources Conservation Service
Oregon State Office
Scott.Oviatt@usda.gov
503-414-3271

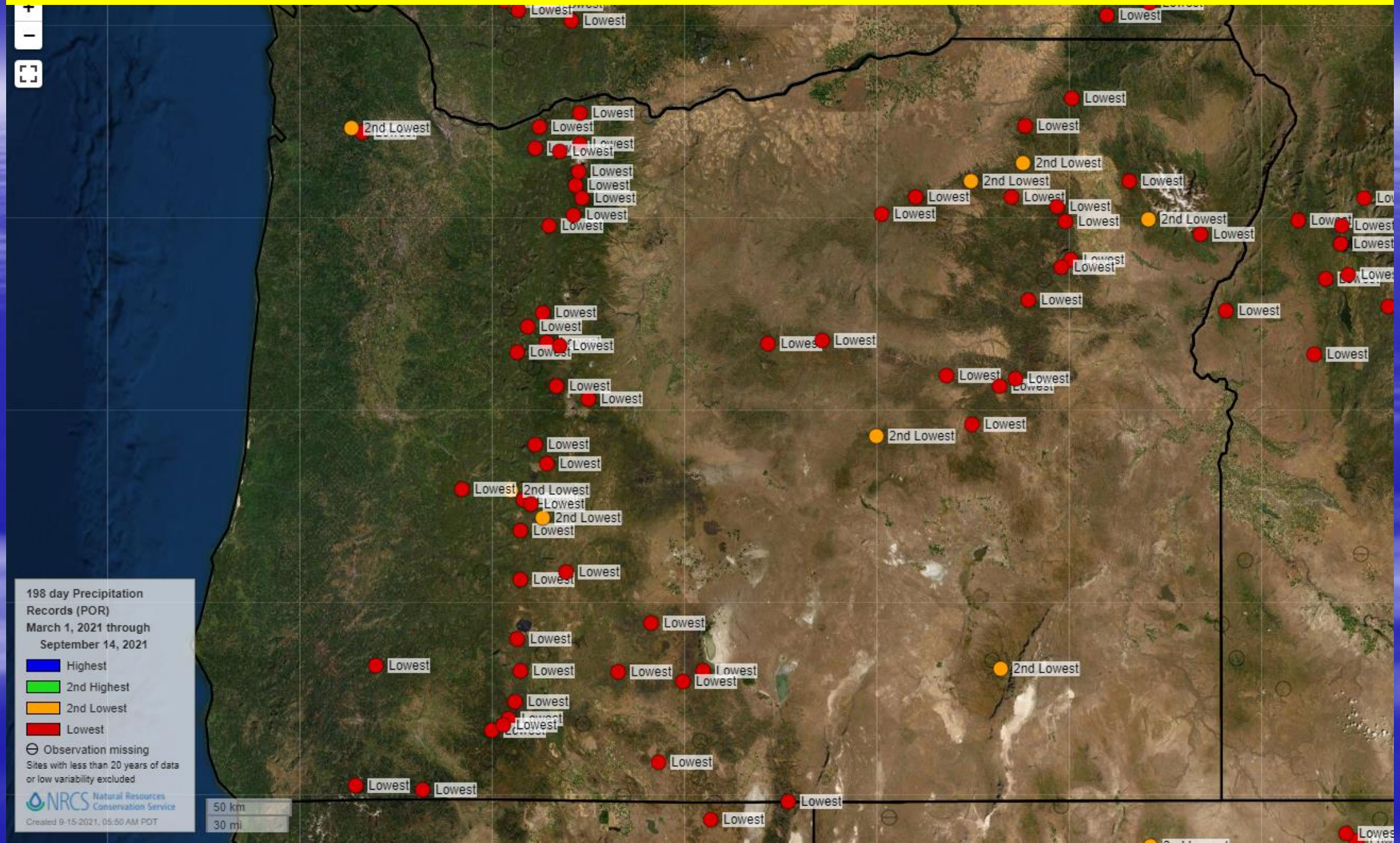
September 15th Statewide SNOTEL Water Year Precipitation is 79% of average



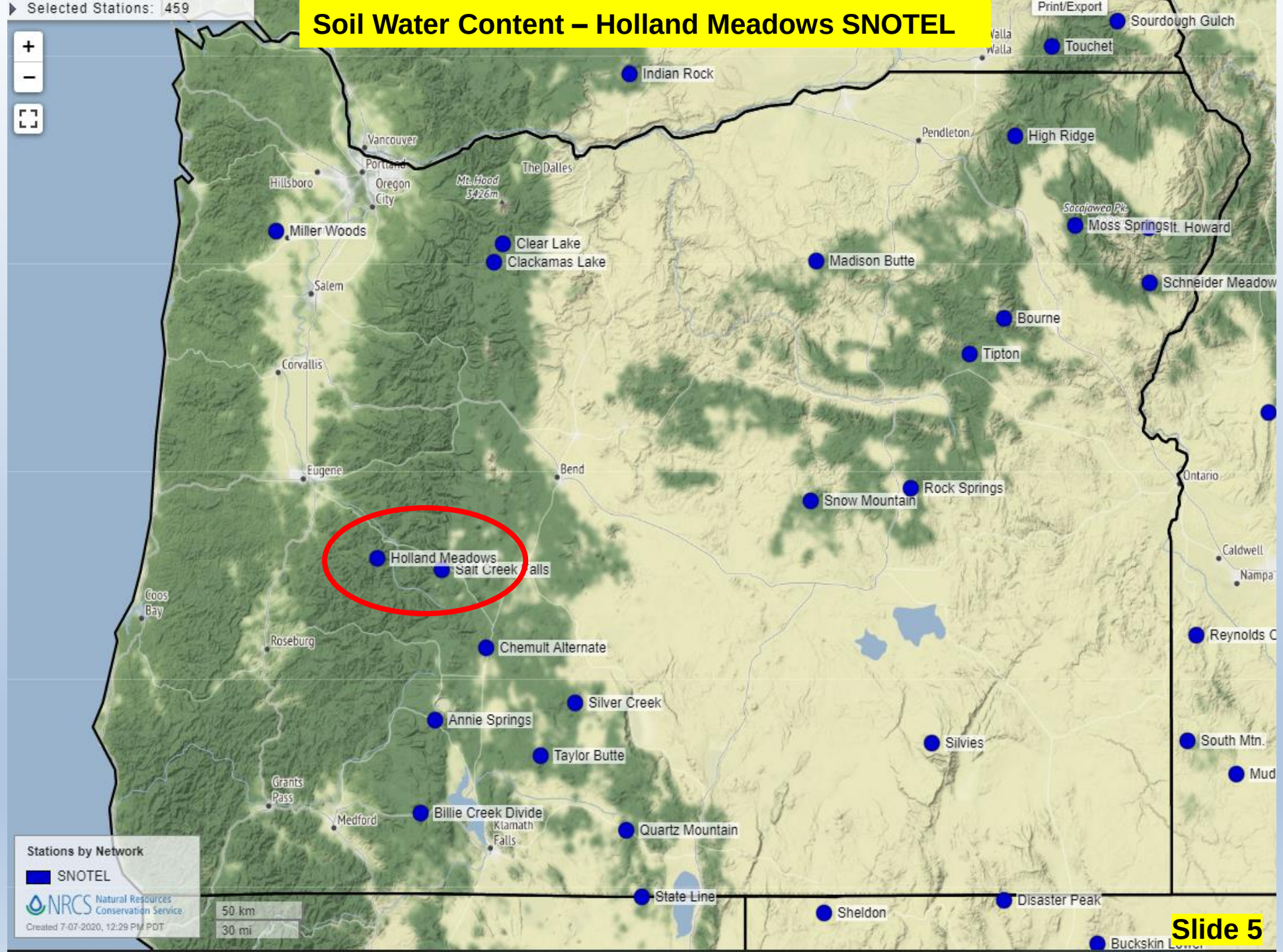
SNOTEL 198-Day Precipitation % of Average – March 1, 2021 – September 14, 2021



SNOTEL 198-Day Precipitation (POR) Records – March 1, 2021 – September14, 2021

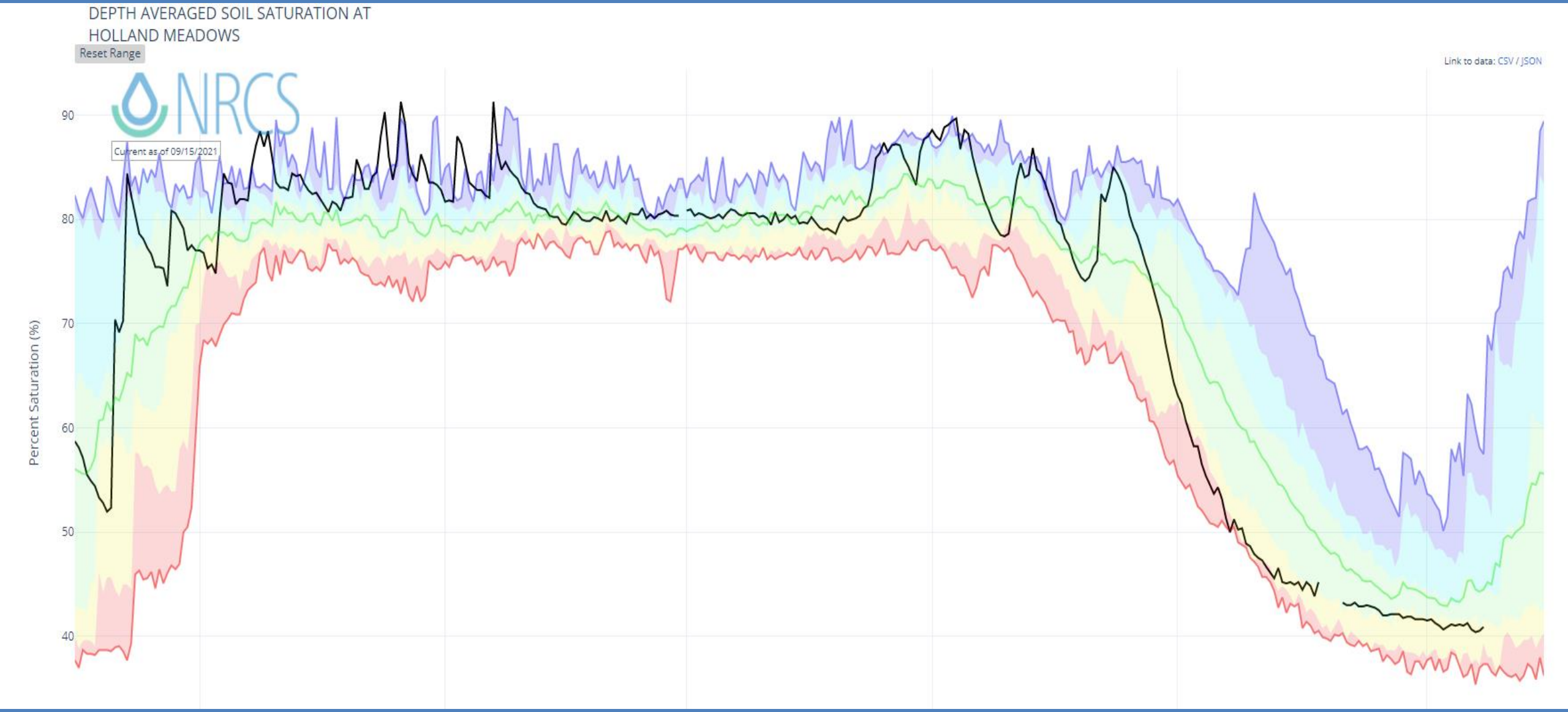


Soil Water Content – Holland Meadows SNOTEL

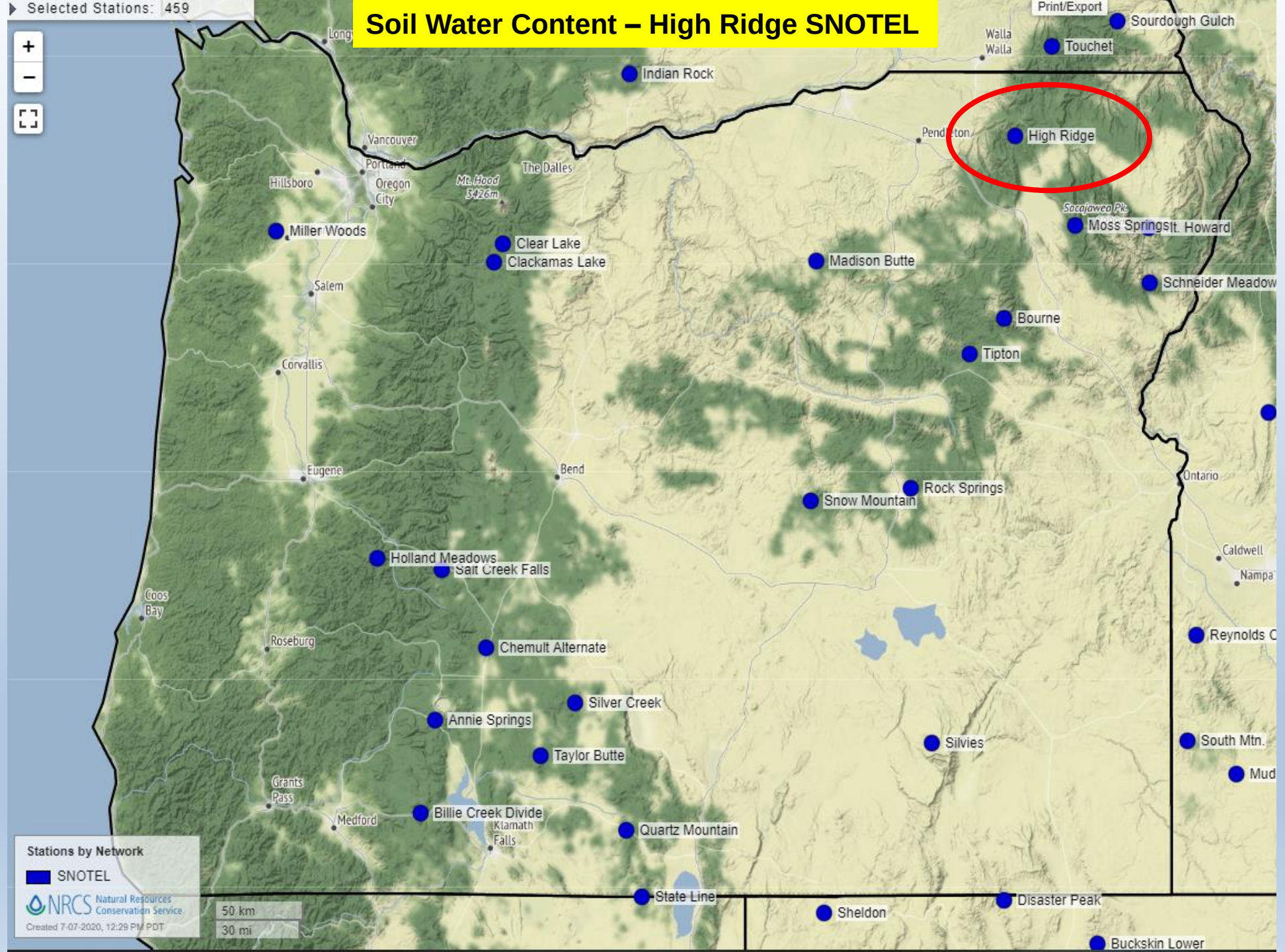


Slide 5

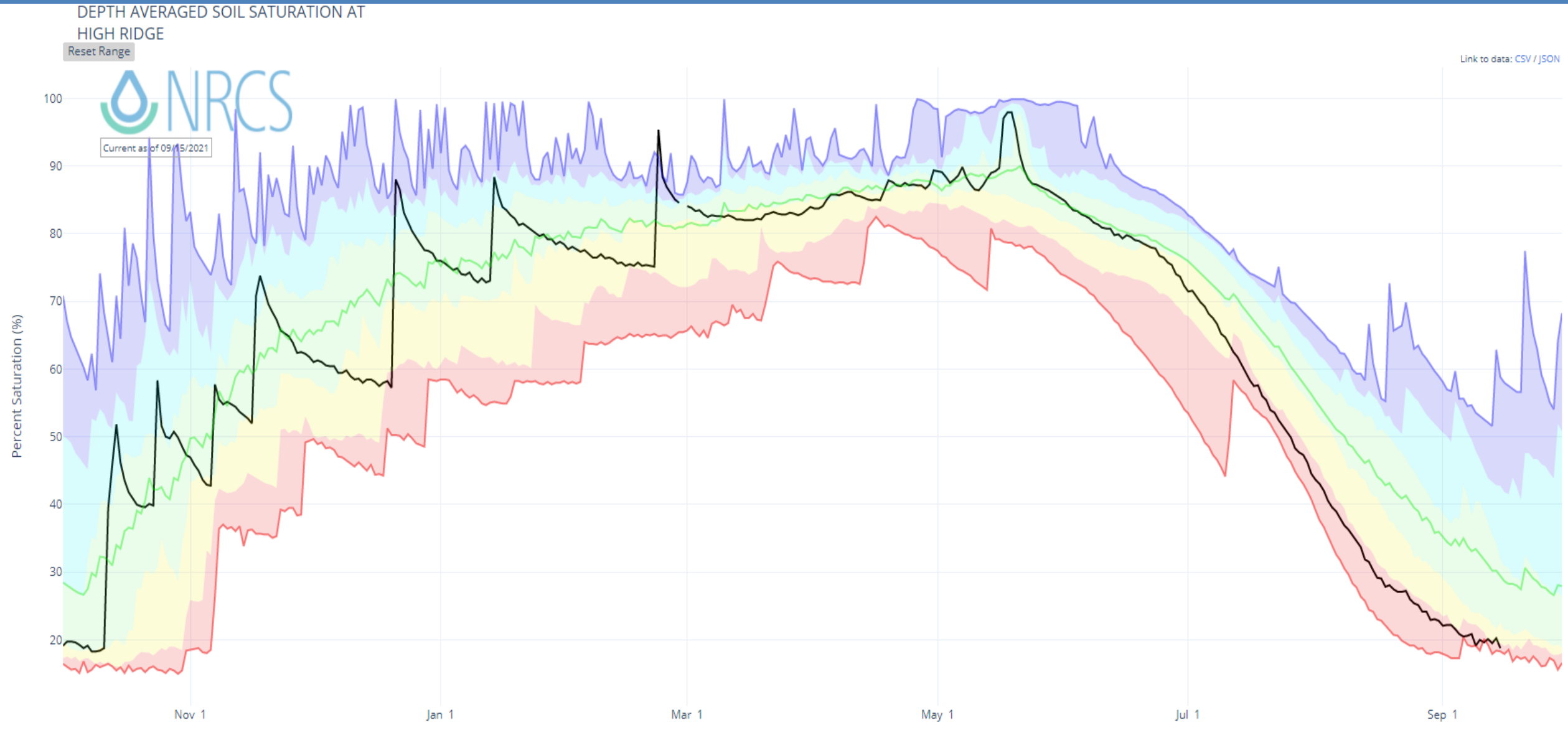
Soil Water Content – Holland Meadows SNOTEL (2011-2021)



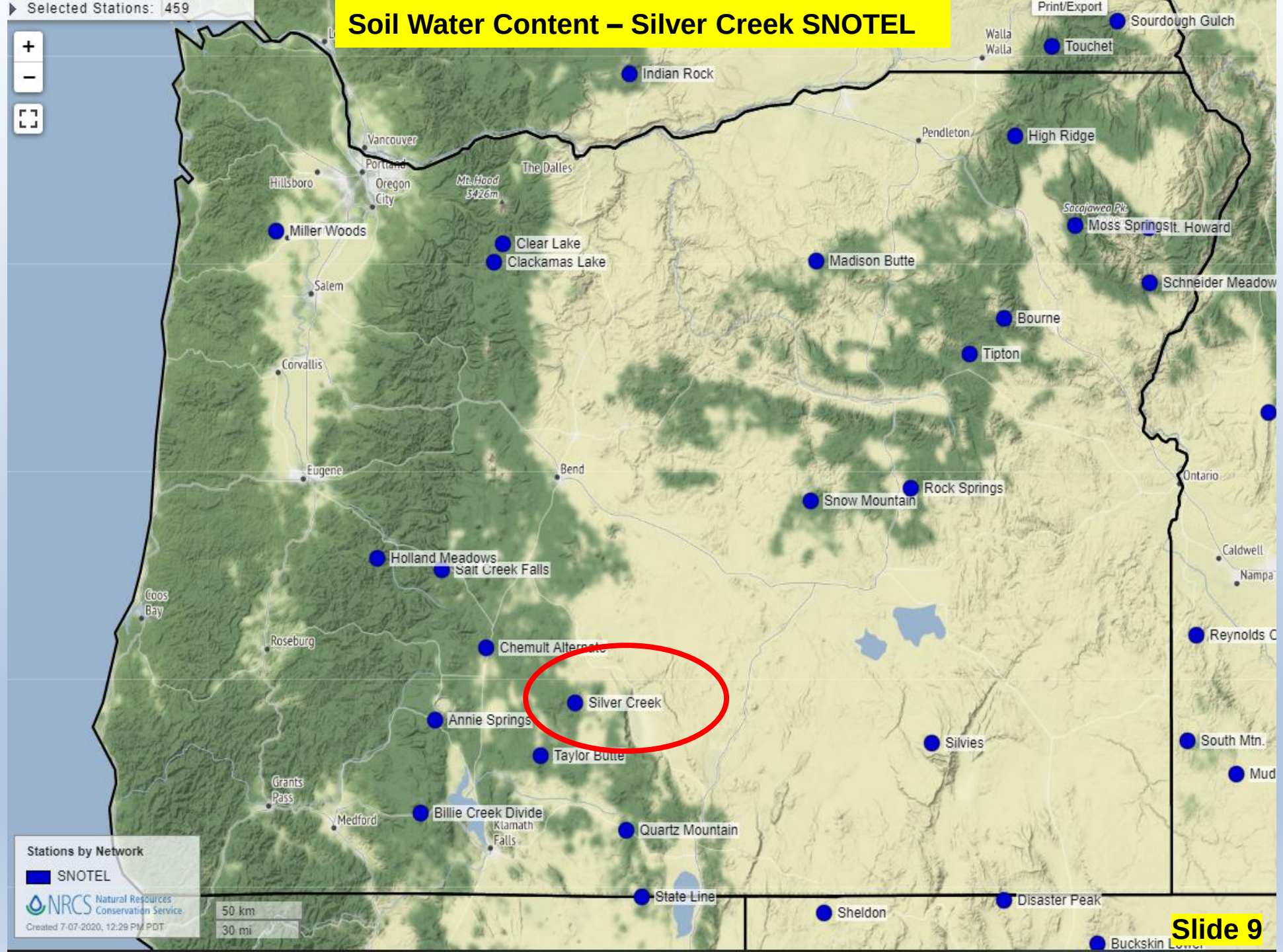
Soil Water Content – High Ridge SNOTEL



Soil Water Content – High Ridge SNOTEL (2004-2021)



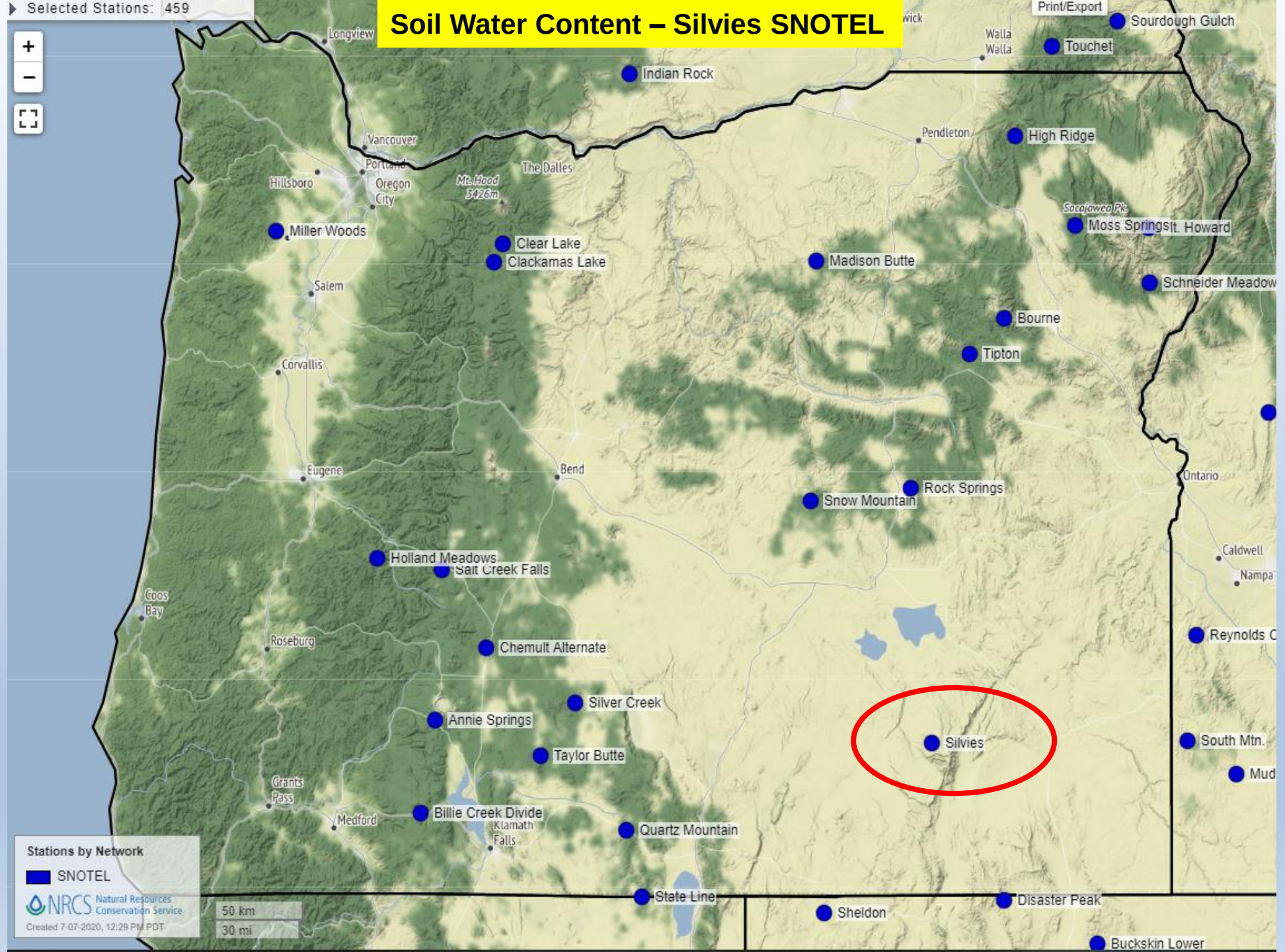
Soil Water Content – Silver Creek SNOTEL



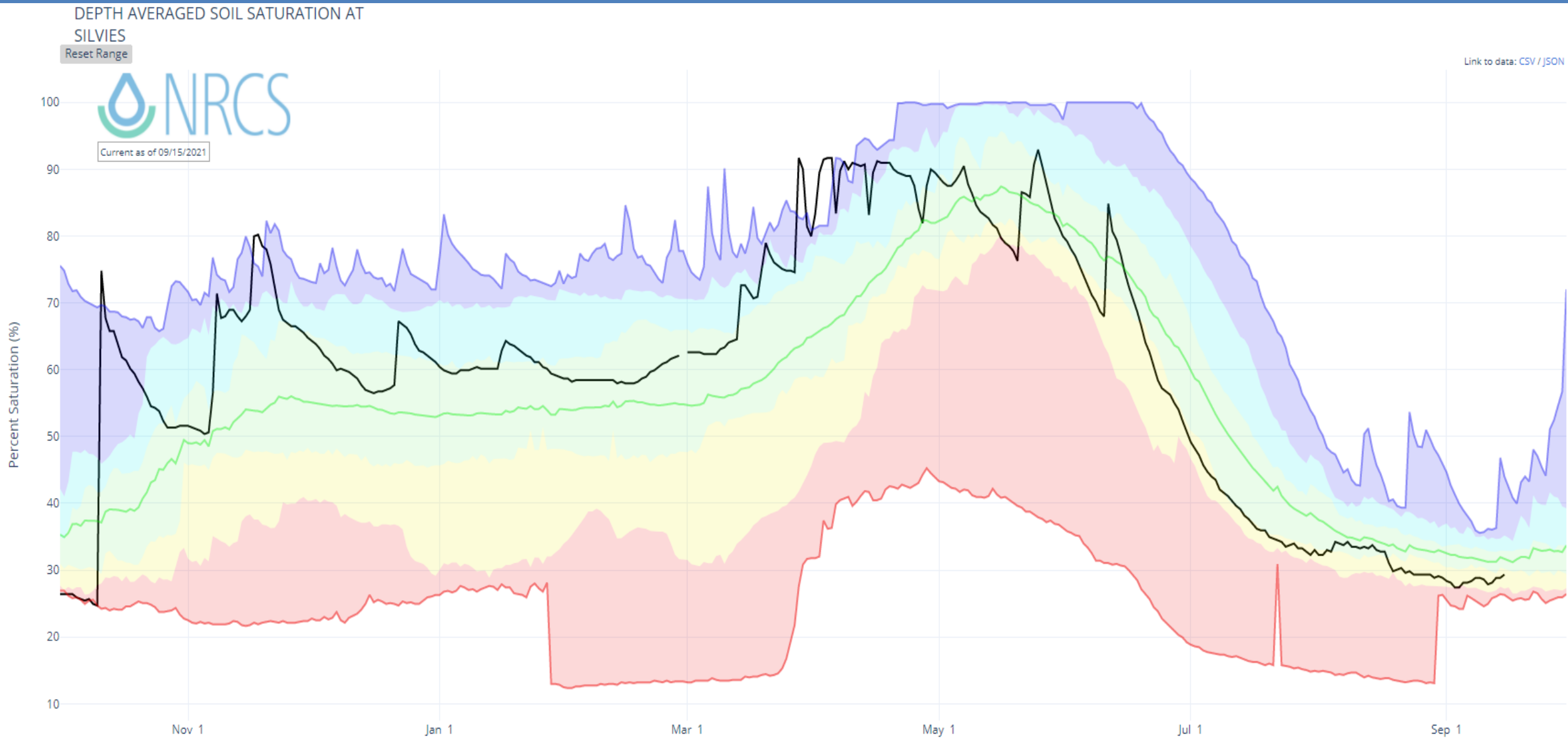
Slide 9

Soil Water Content – Silver Creek SNOTEL (2004-2021)

Soil Water Content – Silvies SNOTEL



Soil Water Content – Silvies SNOTEL (1997-2021)



Thank you

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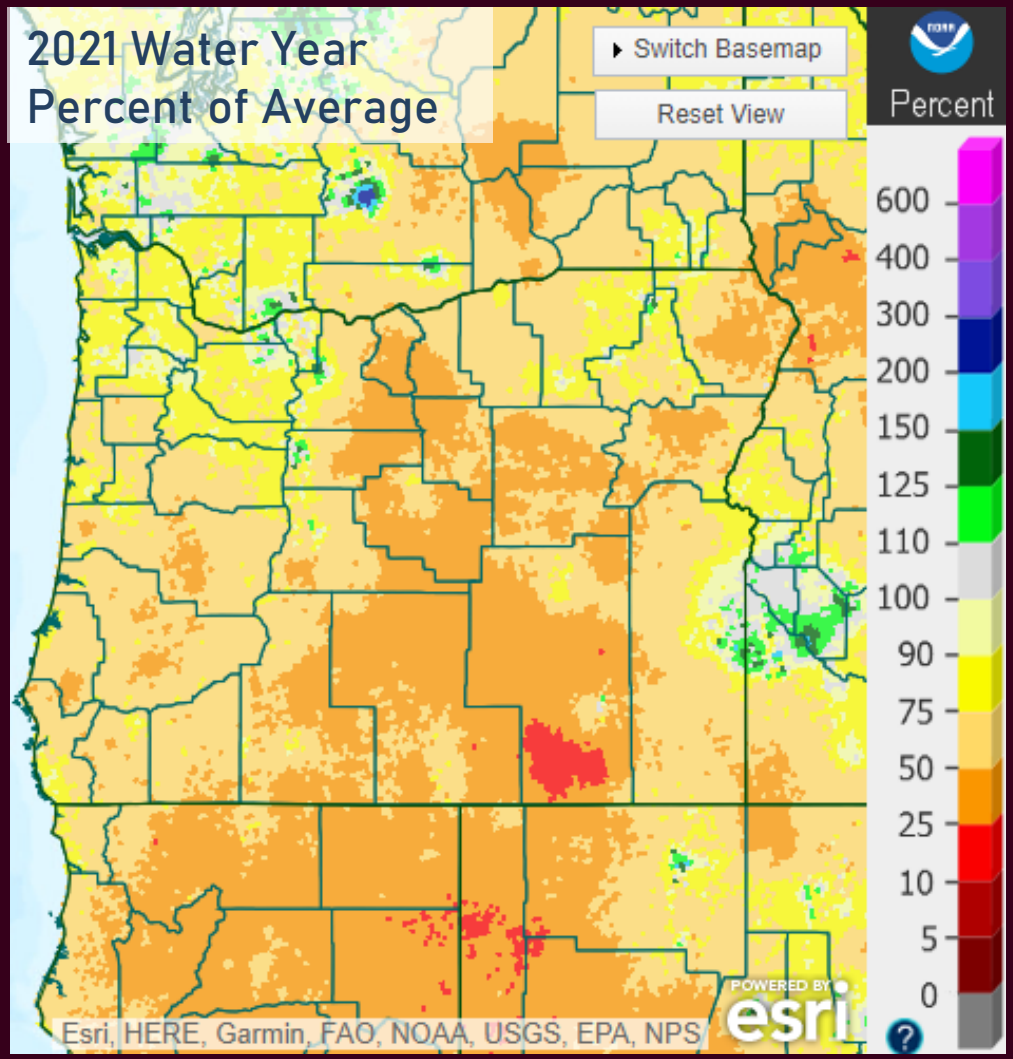
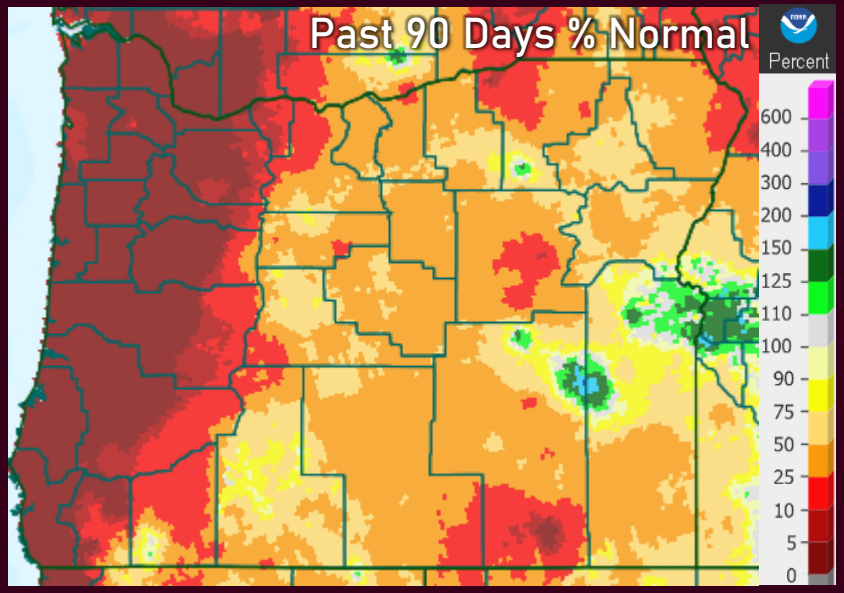
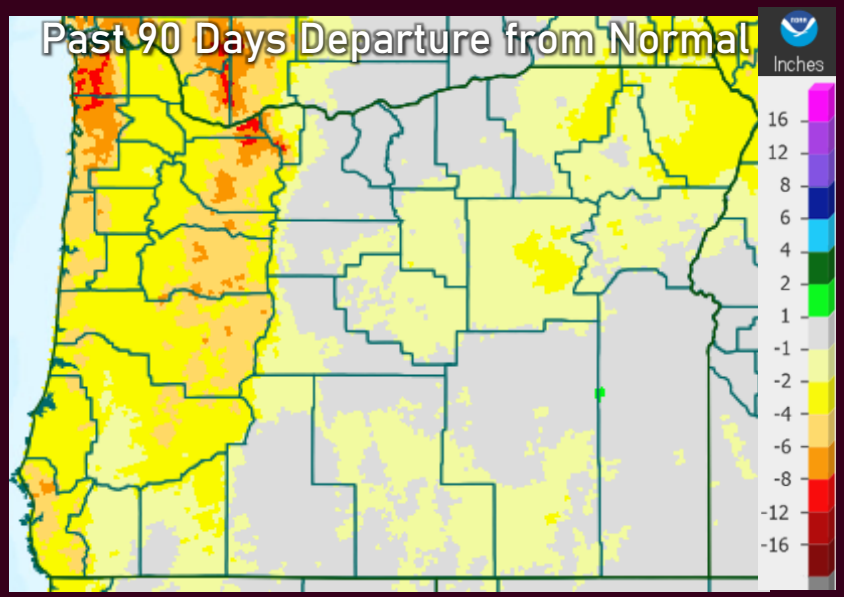
September 2021 Update for Precipitation, Temperatures, and Seasonal Conditions

Andy Bryant
Service Hydrologist
NOAA/NWS Portland
Weather Forecast Office

Precipitation



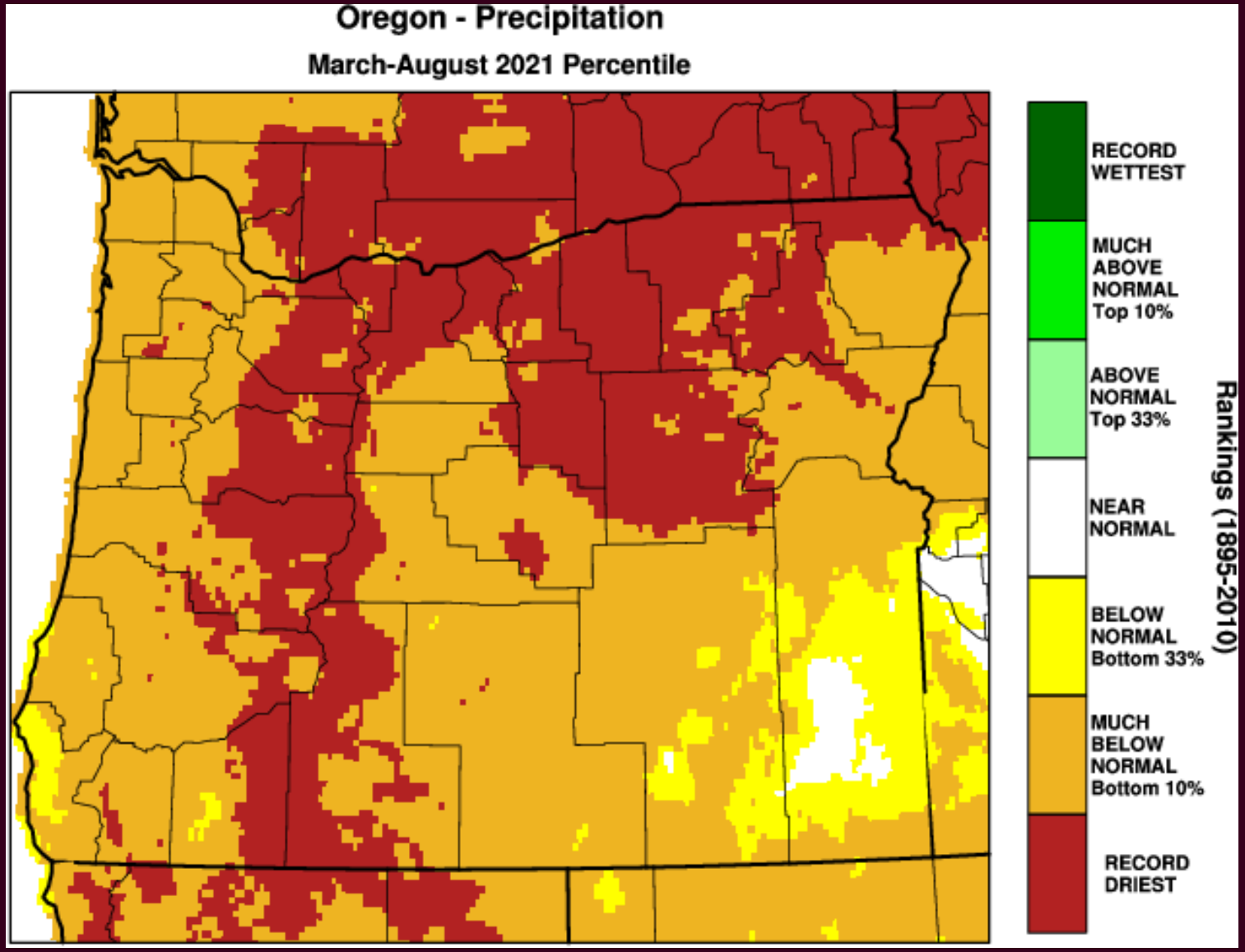




Precipitation Data as of Sep 14, 2021

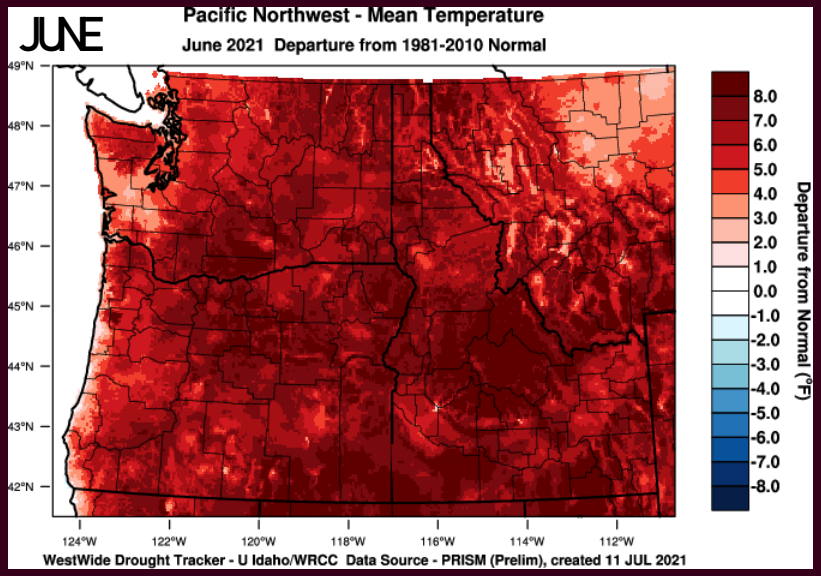
water.weather.gov/precip/index.php

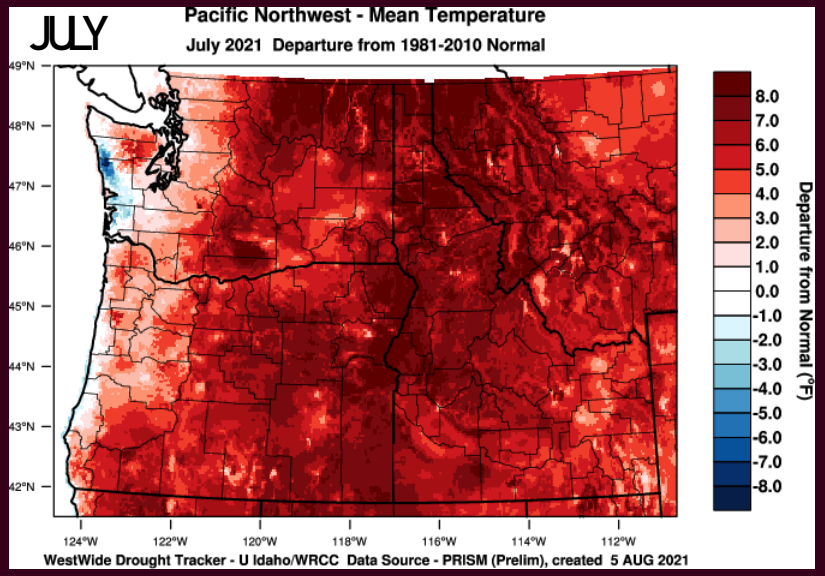
Precipitation – March through August

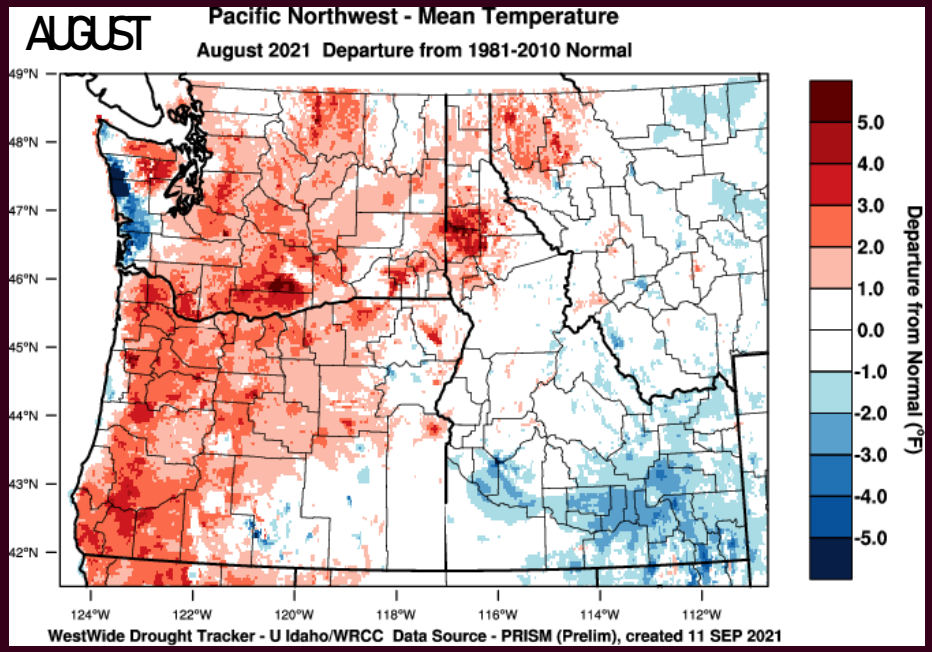


https://wrcc.dri.edu/wwdt/index.php?region=pnw

Recent Temperatures



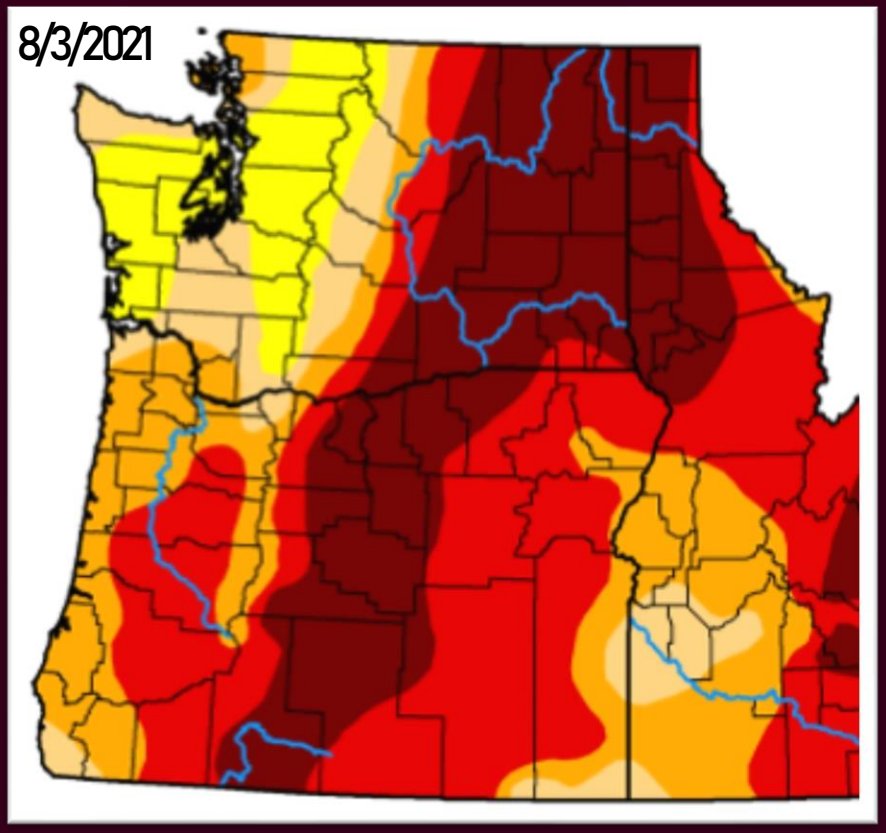




https://wrcc.dri.edu/wwdt/index.php?region=pnw

Drought Monitor

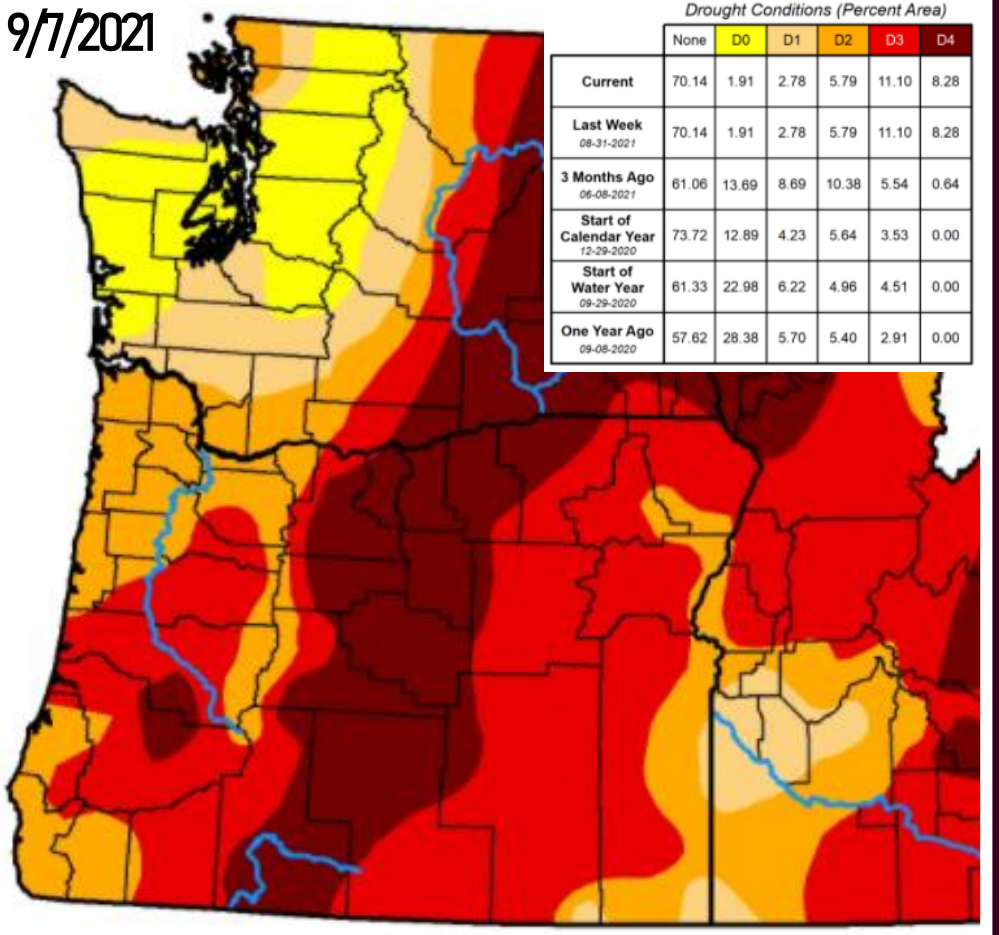
8/3/2021



Intensity:

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

9/7/2021



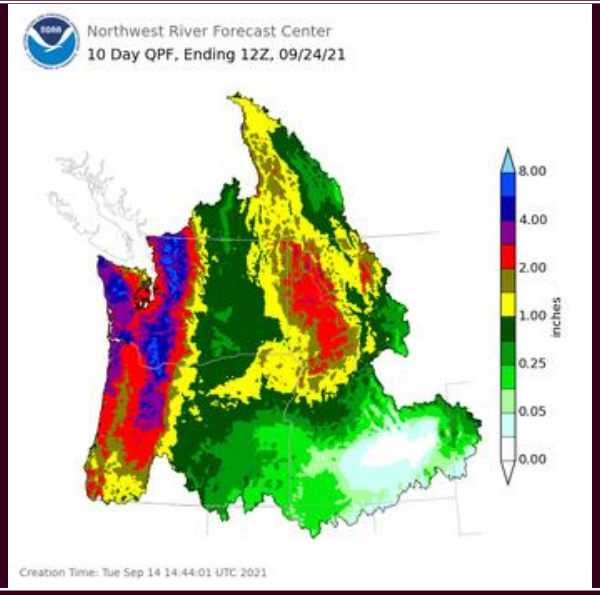
Drought Conditions (Percent Area)

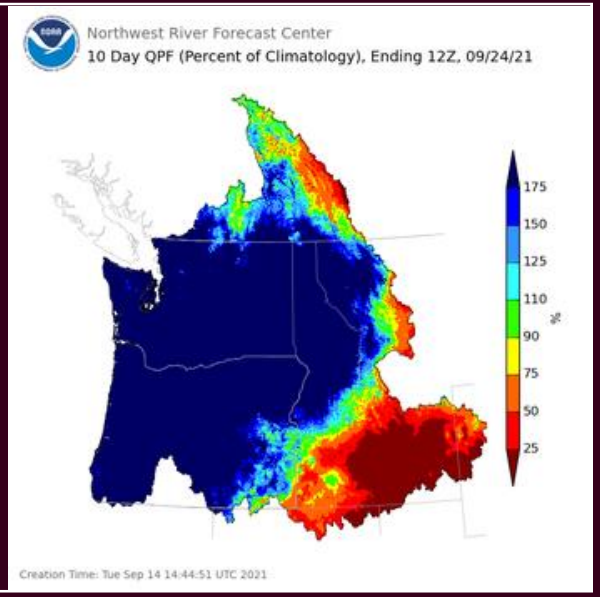
	None	D0	D1	D2	D3	D4
Current	70.14	1.91	2.78	5.79	11.10	8.28
Last Week *08-31-2021*	70.14	1.91	2.78	5.79	11.10	8.28
3 Months Ago *06-08-2021*	61.06	13.69	8.69	10.38	5.54	0.64
Start of Calendar Year *12-29-2020*	73.72	12.89	4.23	5.64	3.53	0.00
Start of Water Year *09-29-2020*	61.33	22.98	6.22	4.96	4.51	0.00
One Year Ago *09-08-2020*	57.62	28.38	5.70	5.40	2.91	0.00

Mid September Outlook

NWRFC
10-DAY
PRECIPITATION

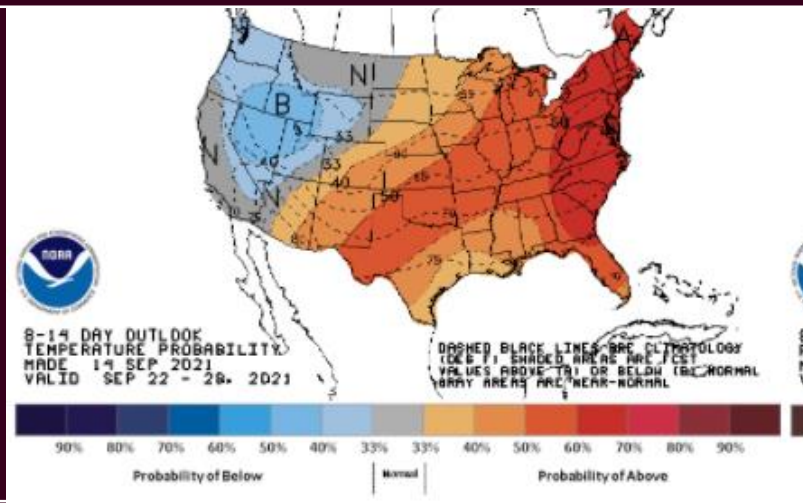
www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php

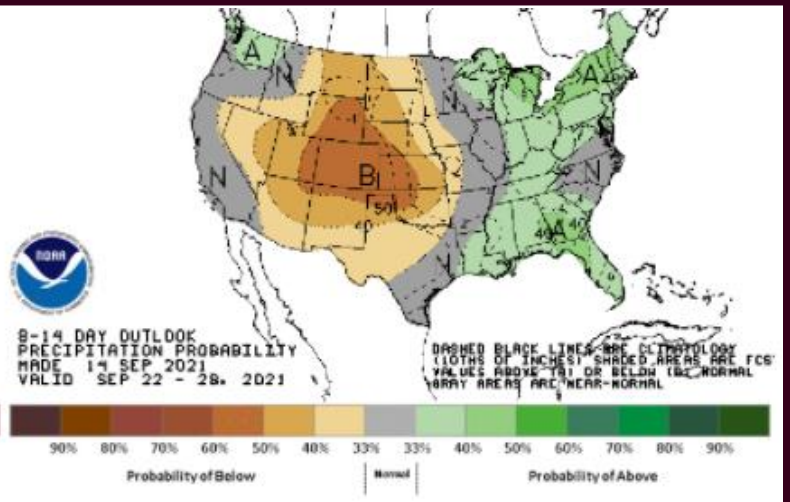




CPC
8 – 14 DAY
OUTLOOK

www.cpc.ncep.noaa.gov



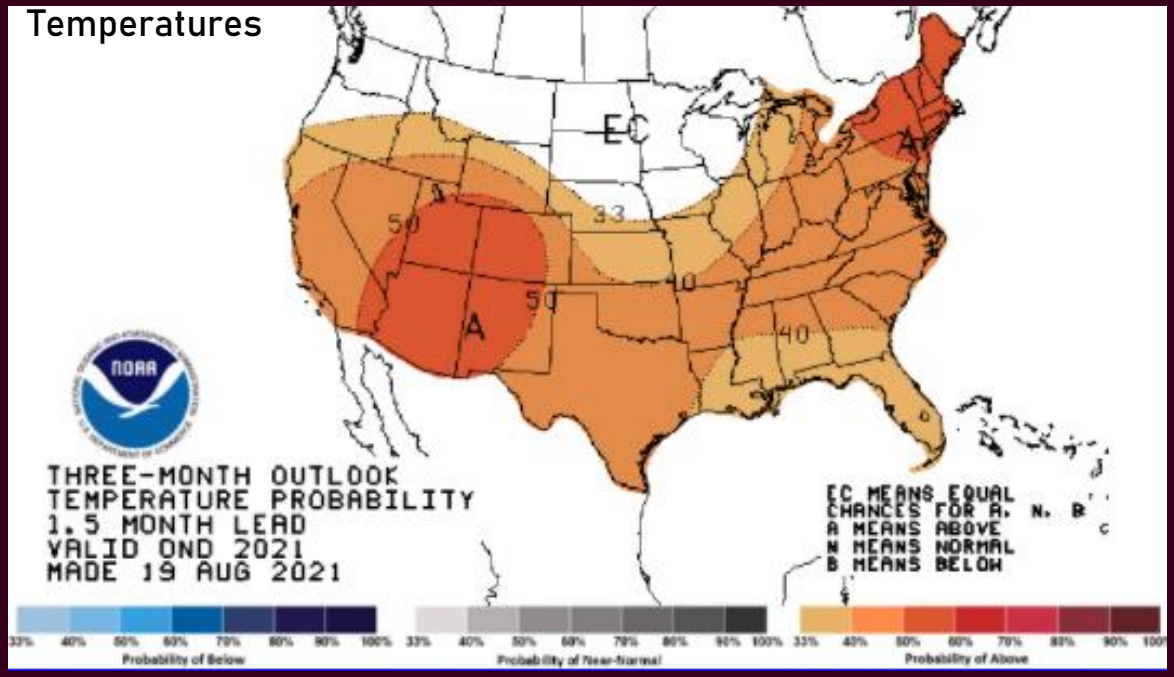


Climate Prediction Center Outlook

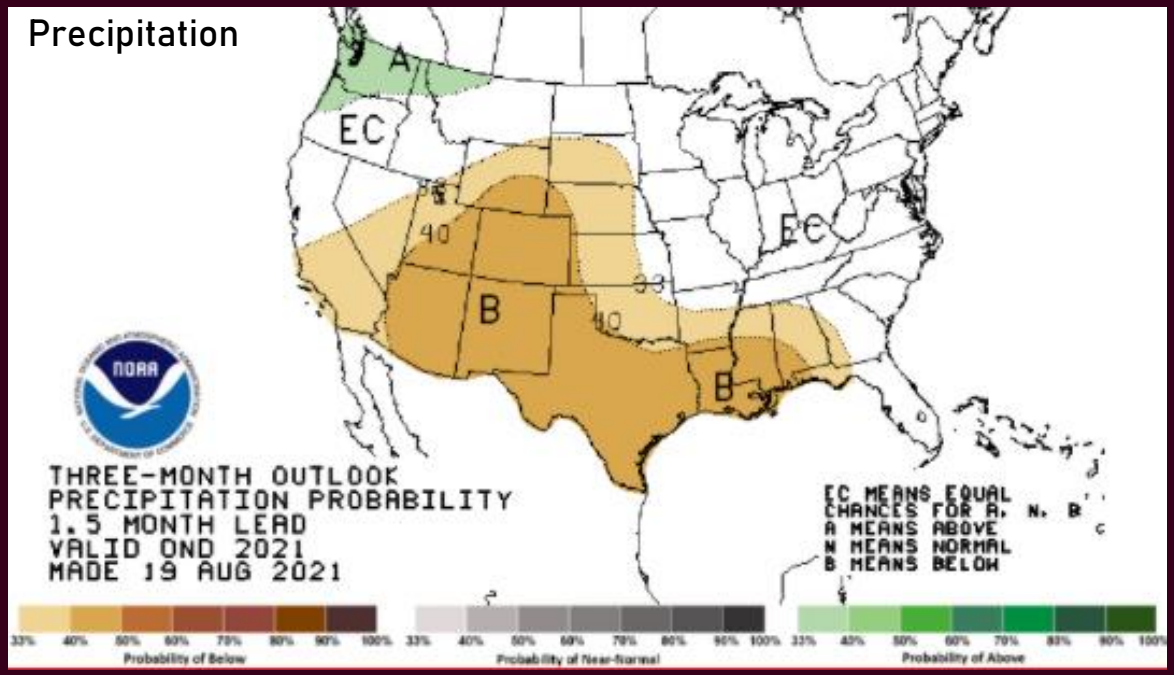
Oct-Nov-Dec 2021

www.cpc.ncep.noaa.gov

Temperatures

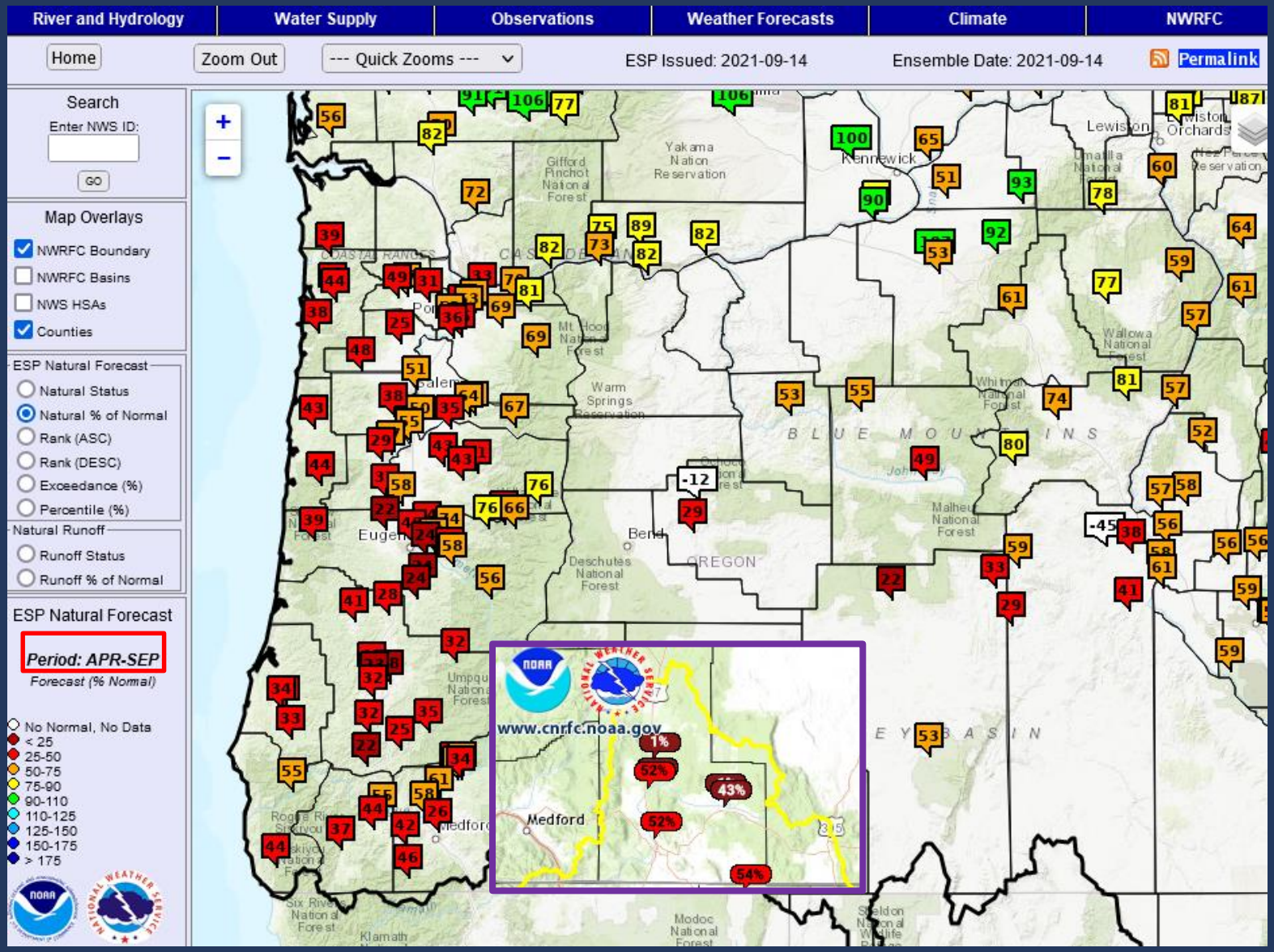


Precipitation



Streamflow Volume "Forecast"

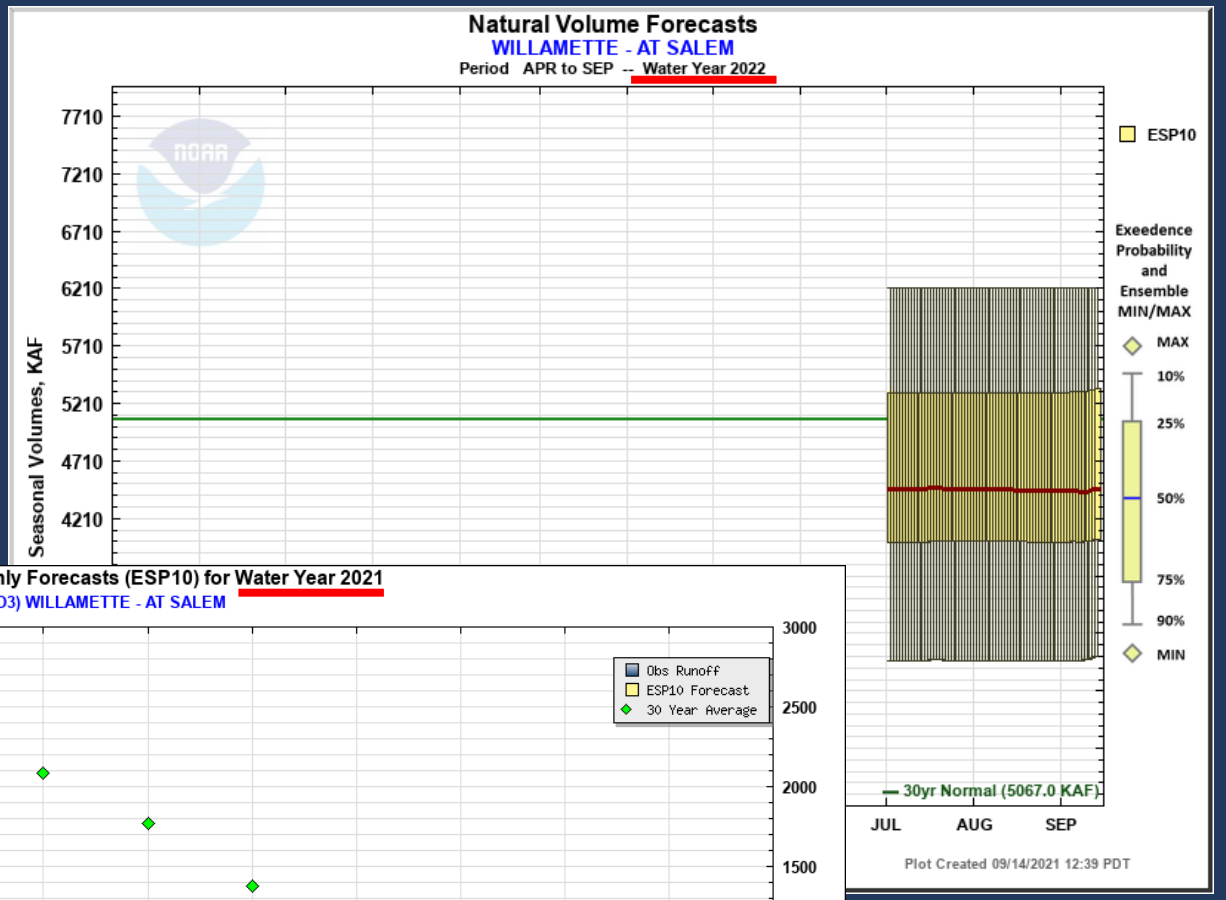
April – September ESP Natural - % of Average

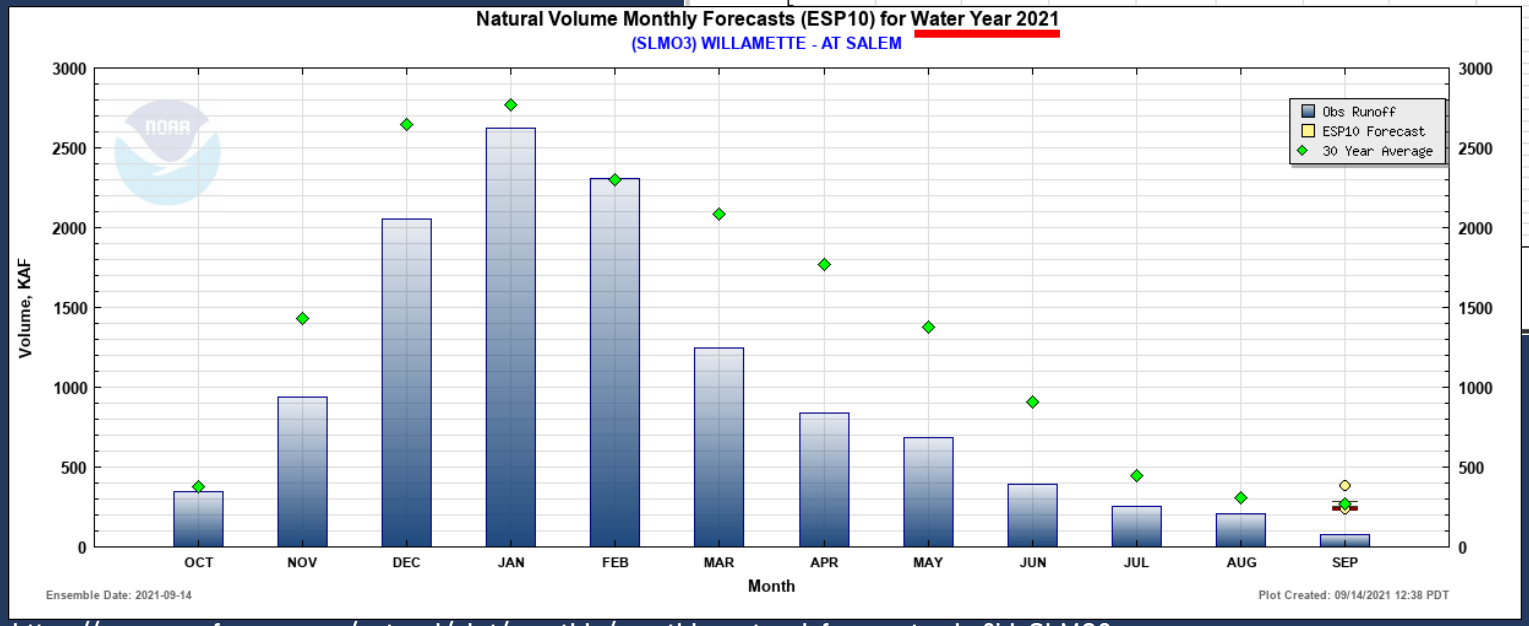


https://www.nwrfc.noaa.gov/natural/index.html

Streamflow Volume Forecast

Willamette River at Salem

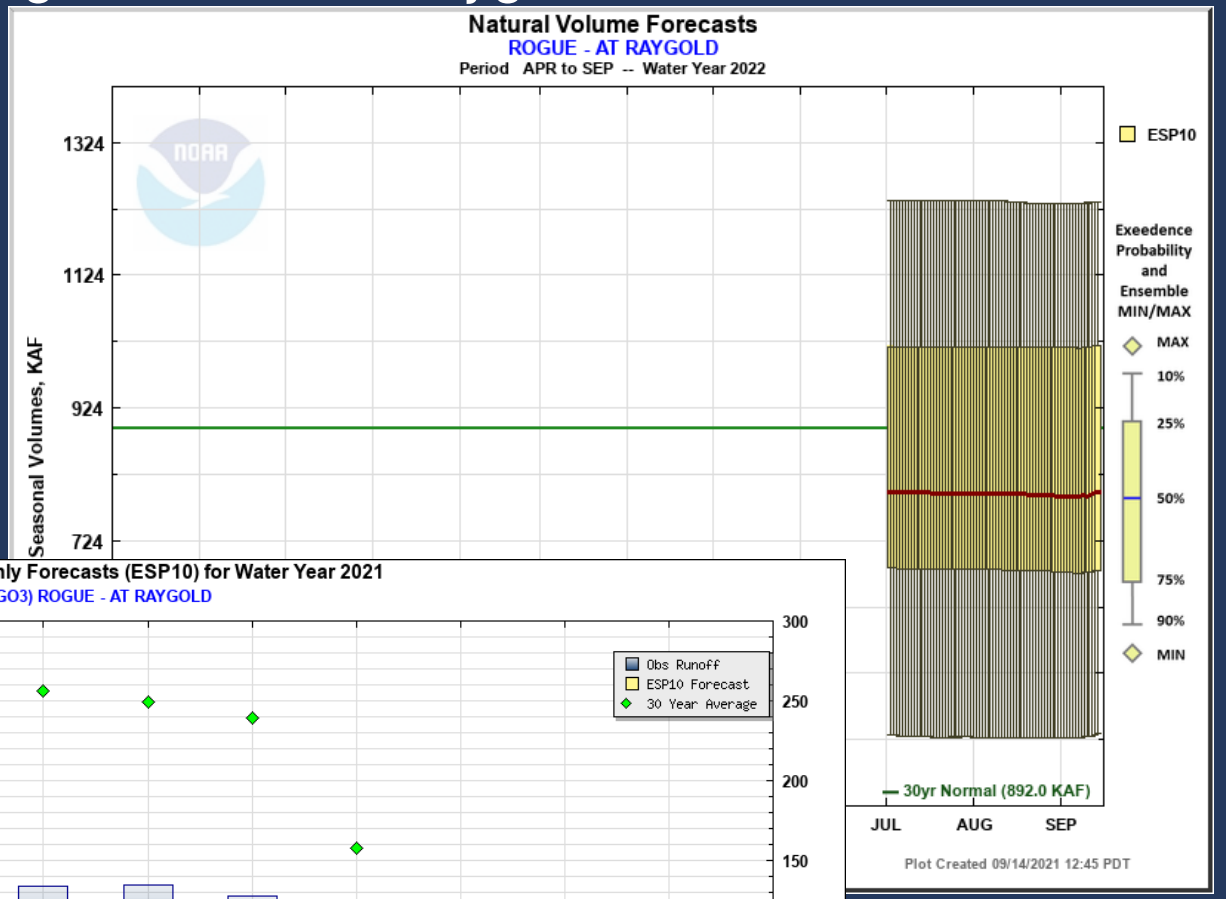


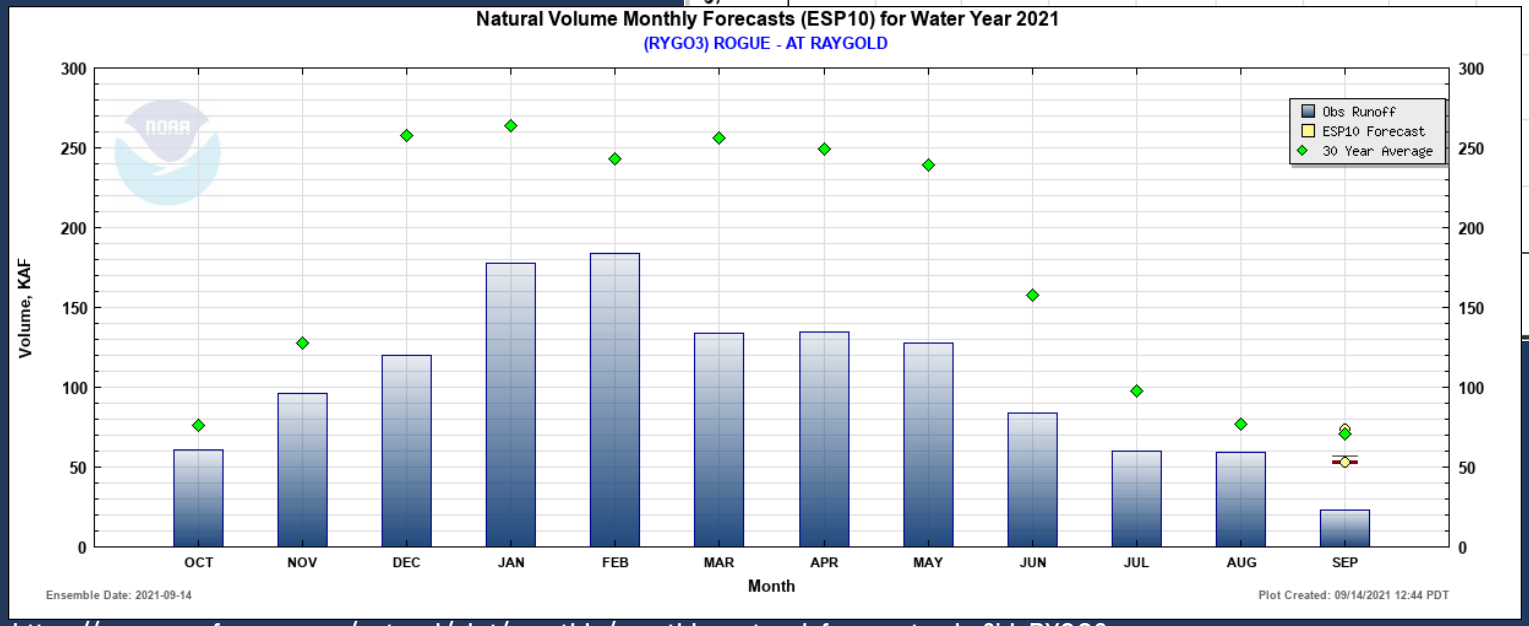


https://www.nwrfc.noaa.gov/natural/plot/monthly/monthly_natural_forecasts.php?id=SLMO3
https://www.nwrfc.noaa.gov/natural/plot/nat_forecasts.php?id=SLMO3

Streamflow Volume Forecast

Rogue River at Raygold

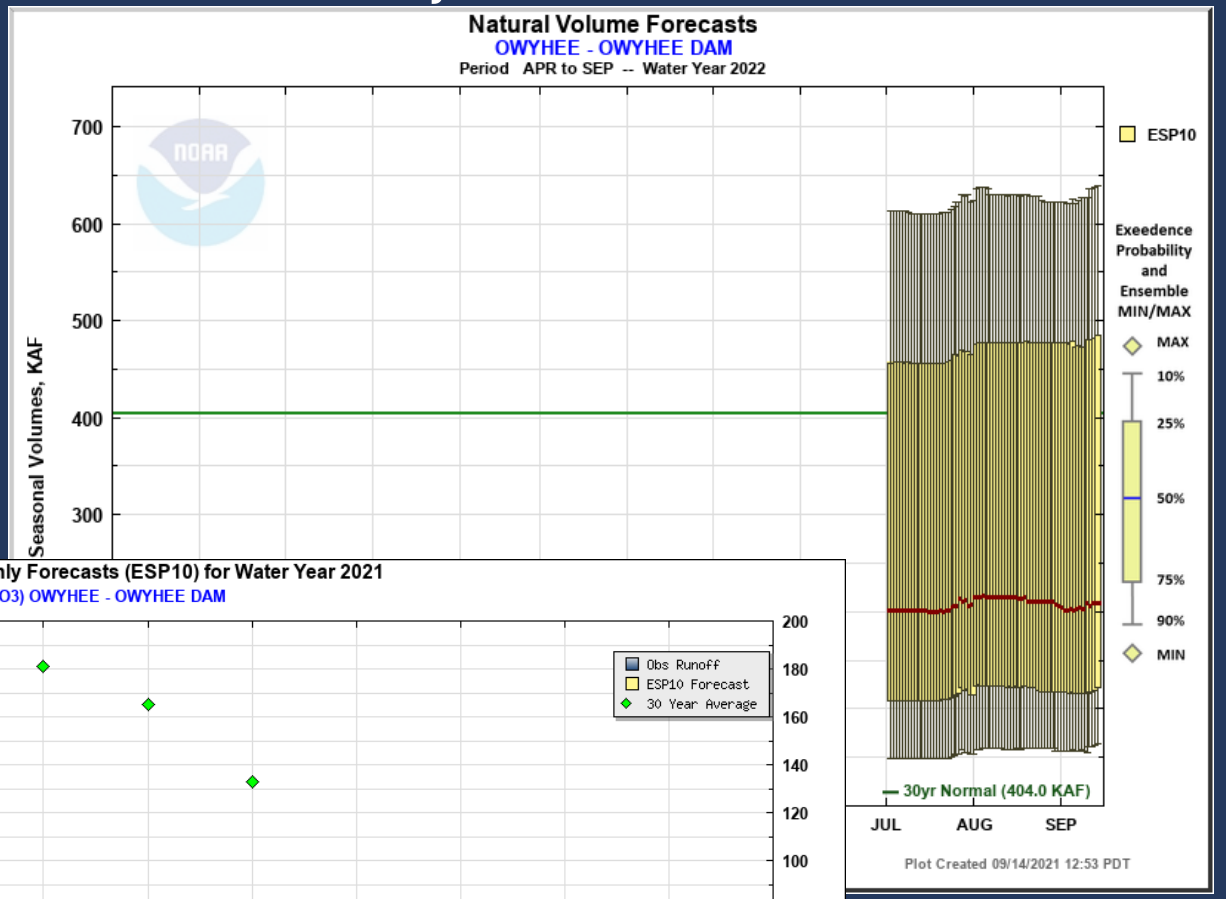


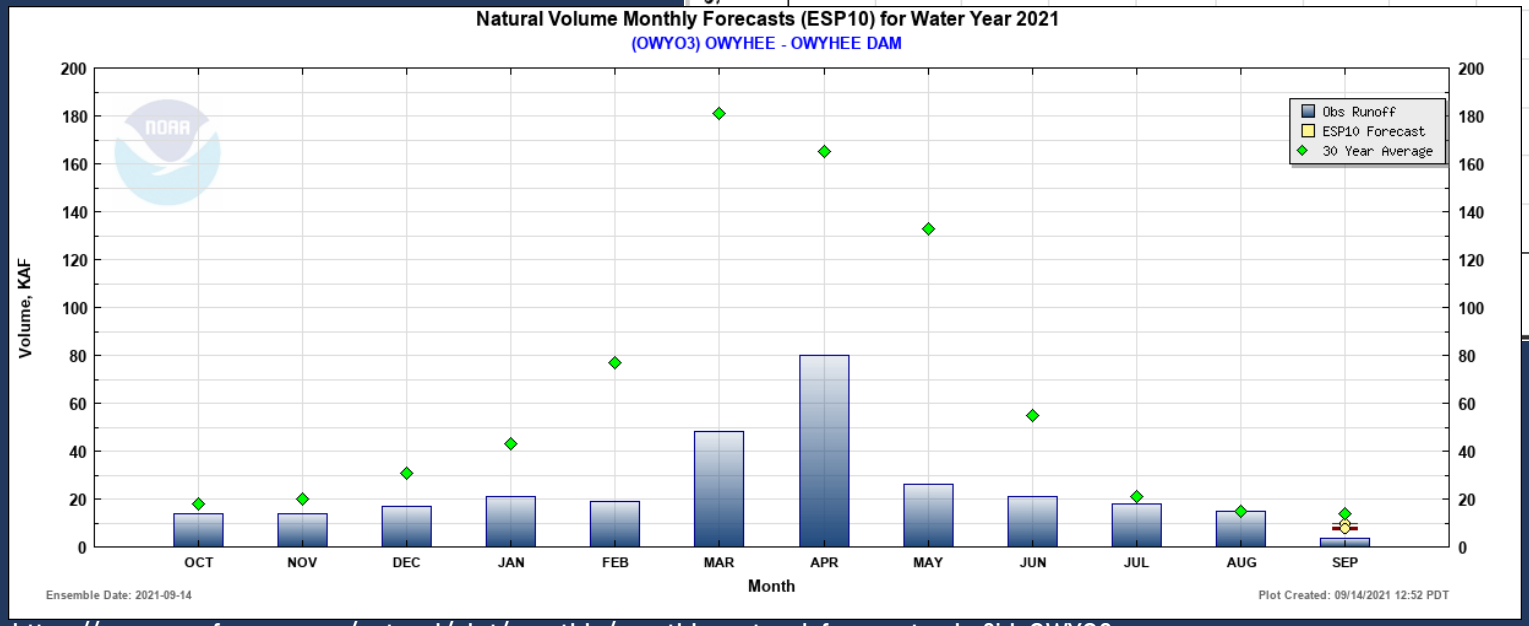


https://www.nwrfc.noaa.gov/natural/plot/monthly/monthly_natural_forecasts.php?id=RYGO3
https://www.nwrfc.noaa.gov/natural/plot/nat_forecasts.php?id=RYGO3

Streamflow Volume Forecast

Owyhee River at Owyhee Dam

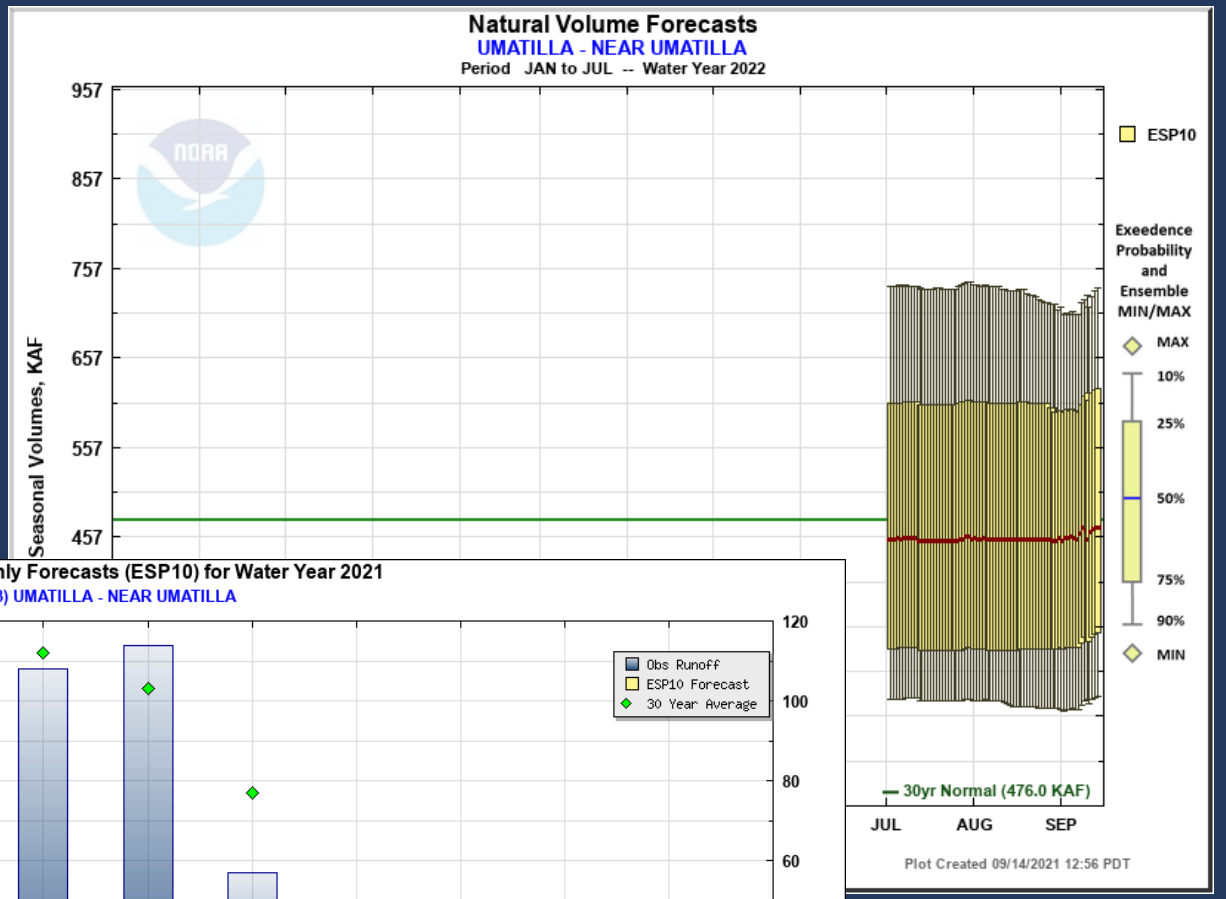


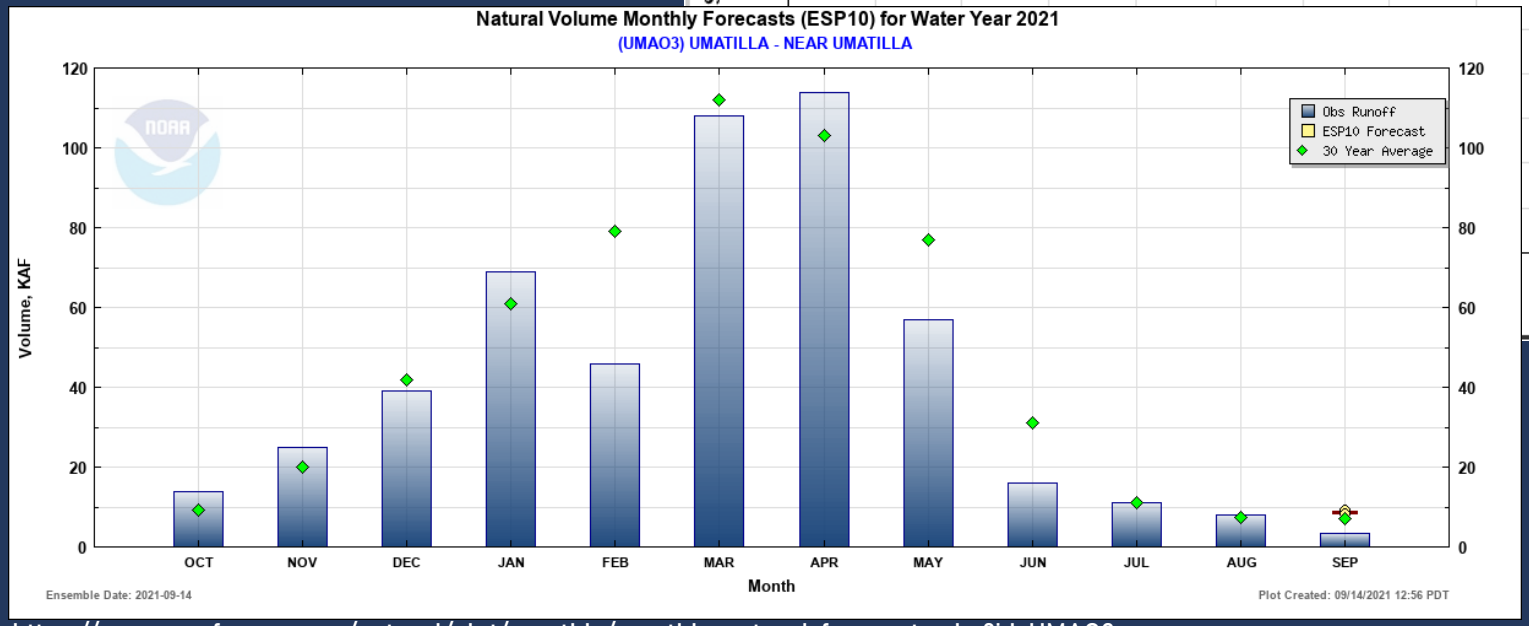


https://www.nwrfc.noaa.gov/natural/plot/monthly/monthly_natural_forecasts.php?id=OWYO3
https://www.nwrfc.noaa.gov/natural/plot/nat_forecasts.php?id=OWYO3

Streamflow Volume Forecast

Umatilla River near Umatilla





https://www.nwrfc.noaa.gov/natural/plot/monthly/monthly_natural_forecasts.php?id=UMAO3
https://www.nwrfc.noaa.gov/natural/plot/nat_forecasts.php?id=UMAO3

Oregon WSAC/DRC
Drought Status and Climate Updates
September 2021

Larry O'Neill
CEOAS Oregon State University
Oregon Climate Services
State Climatologist of Oregon

Key points:

(1) Although ongoing, the 2020-2021 Oregon drought ranks among the 3 worst in state recorded history alongside 1924 and 1977

(2) Key drivers of the severity of the drought include record high temperatures which fueled high evaporative demand, a mildly dry fall, a record dry spring and summer, and early meltout of the mountain snowpack

Wickiup Reservoir, August 19, 2021
Image Courtesy of Bend Bulletin

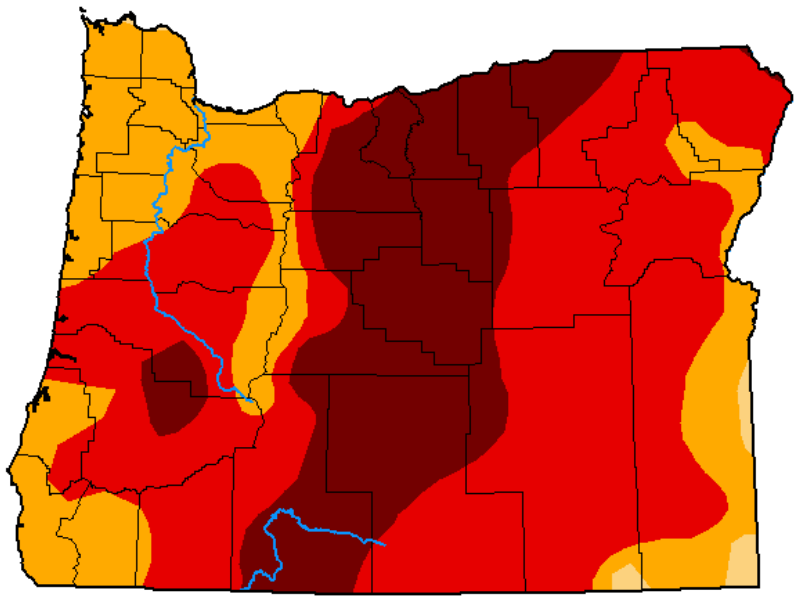
Oregon State University
College of Earth, Ocean, and Atmospheric Sciences

CCCRI

OCS Oregon Climate Service

U.S. Drought Monitor

Oregon



September 7, 2021

(Released Thursday, Sep. 9, 2021)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	99.08	76.69	26.59
Last Week *08-31-2021*	0.00	100.00	100.00	99.07	76.69	26.59
3 Months Ago *06-08-2021*	0.00	100.00	100.00	80.37	34.37	4.78
Start of Calendar Year *12-29-2020*	8.57	91.43	83.53	68.71	27.74	0.00
Start of Water Year *09-29-2020*	6.50	93.50	84.77	65.53	33.59	0.00
One Year Ago *09-08-2020*	6.38	93.62	81.80	59.05	24.90	0.00

Intensity:

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

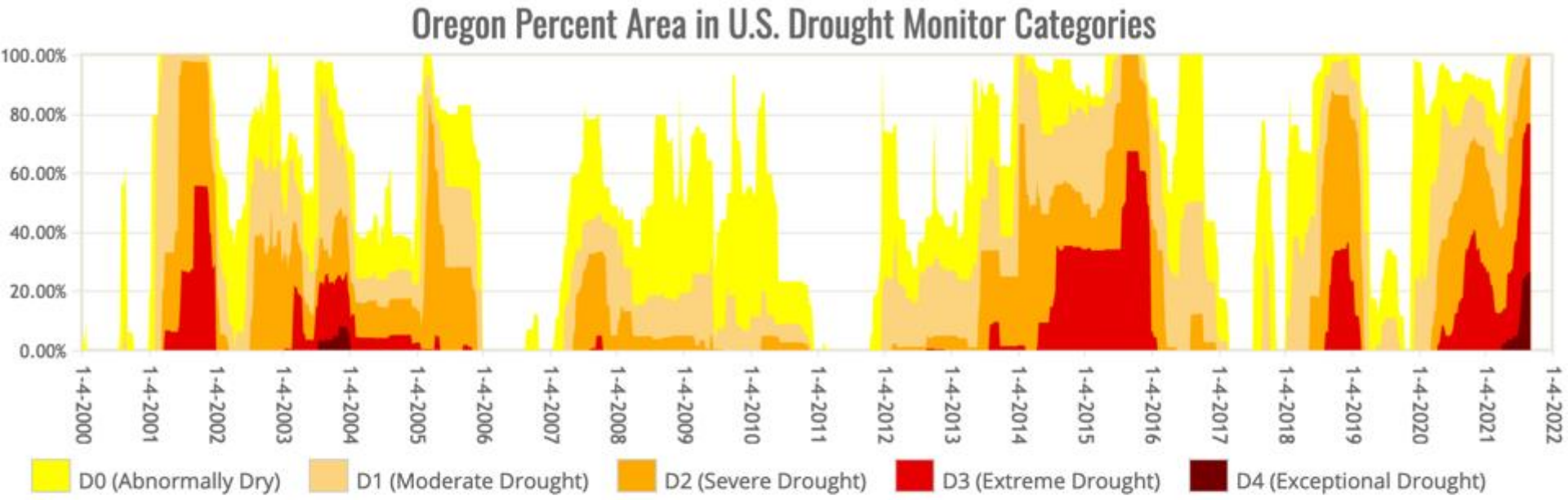
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:

David Simeral
Western Regional Climate Center

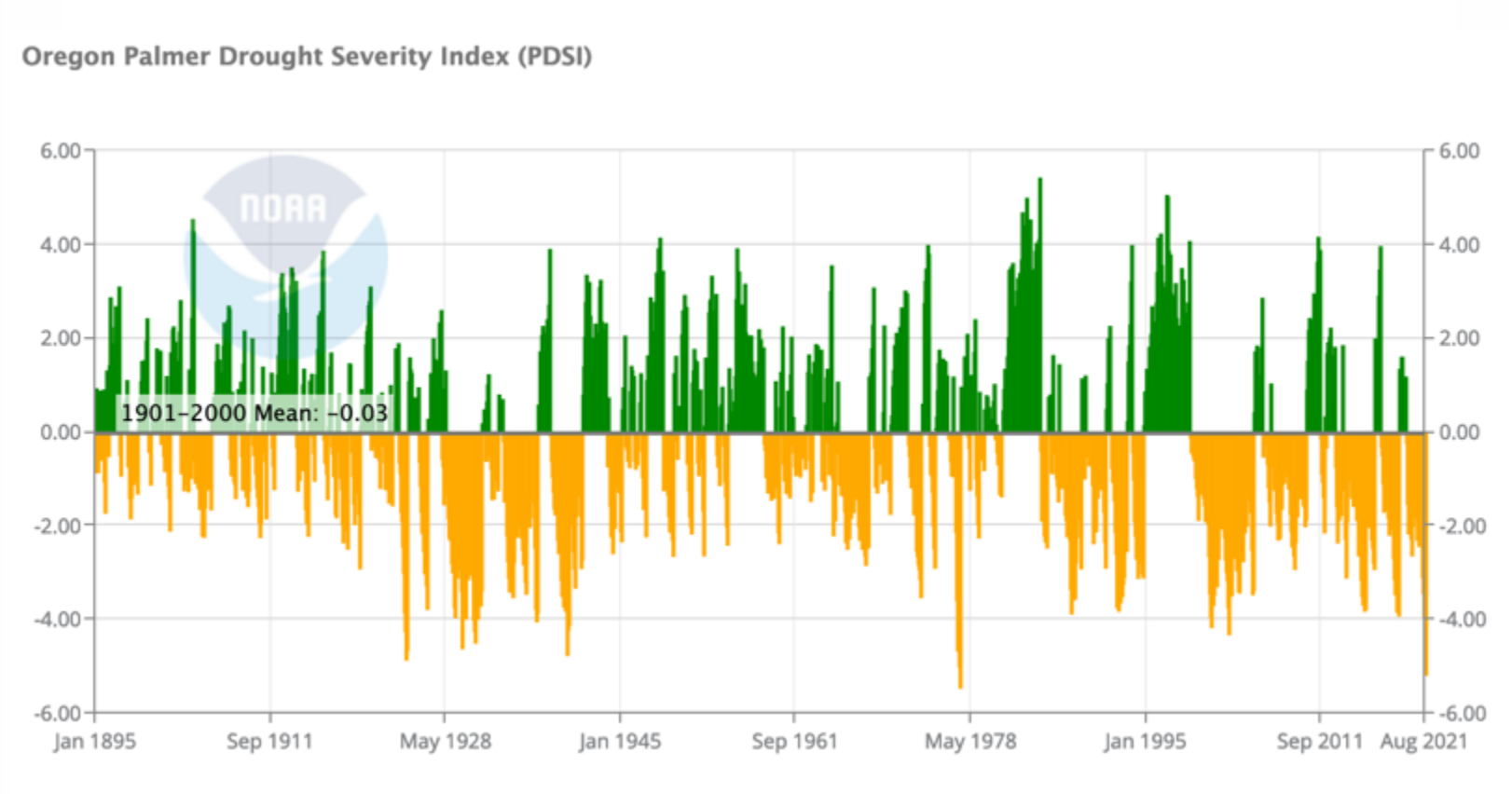
droughtmonitor.unl.edu

76.7% of Oregon is either in extreme or exceptional drought



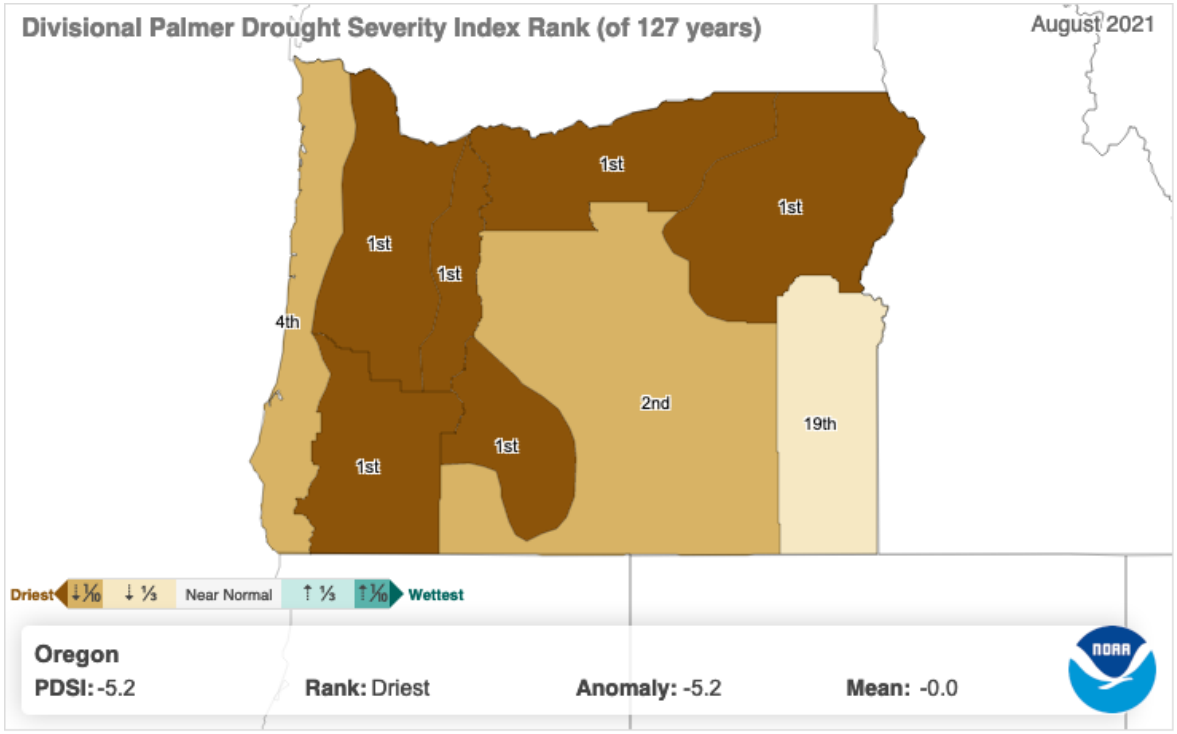
Most extensive coverage of D3 and D4 in USDM record (going back to 2000)

Assessing the 2020/21 drought's severity



- Oregon statewide PDSI for August 2021: -5.2 (second lowest ranking in the 127-year record)
- The lowest occurred during April 1977

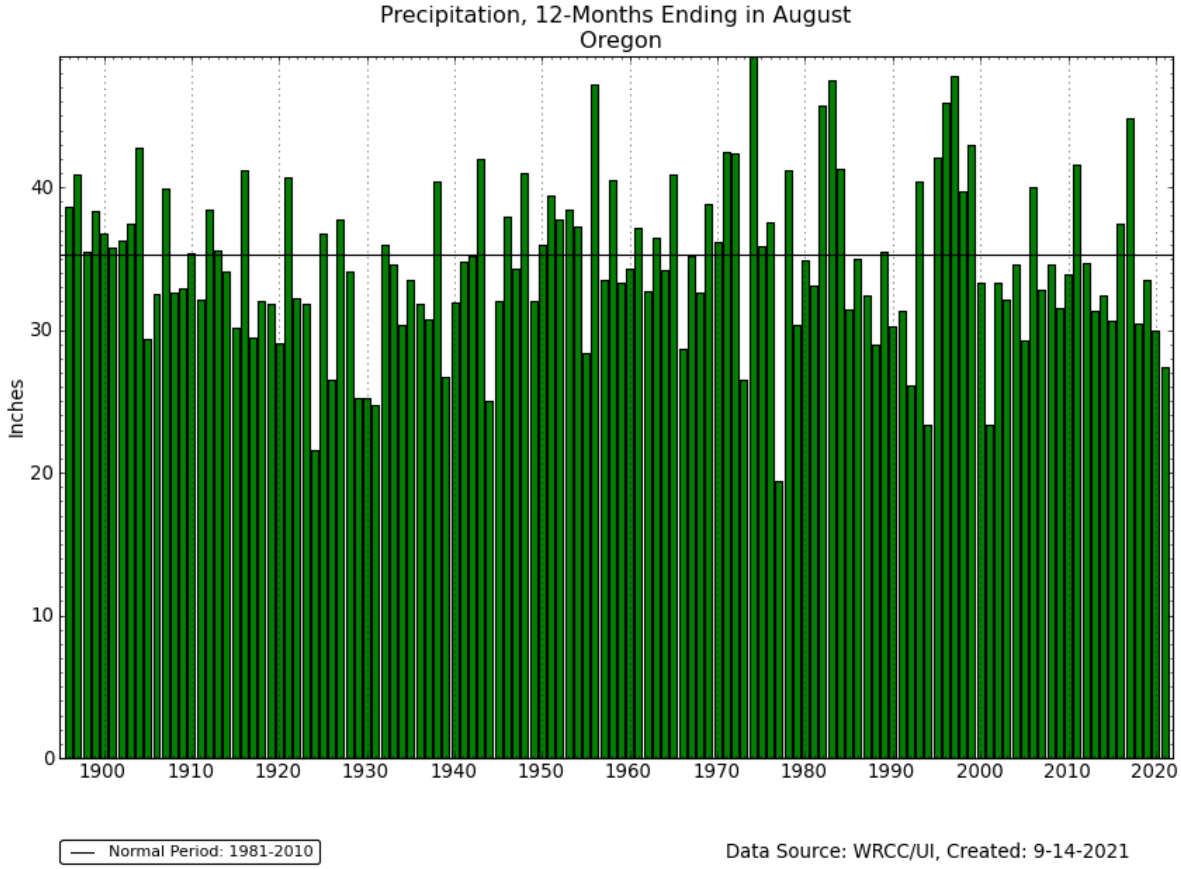
Assessing the 2020/21 drought's severity



For many climate divisions, 2020/21 ranked as the lowest PDSI on record

asfd

Oregon 12-month precipitation September-August



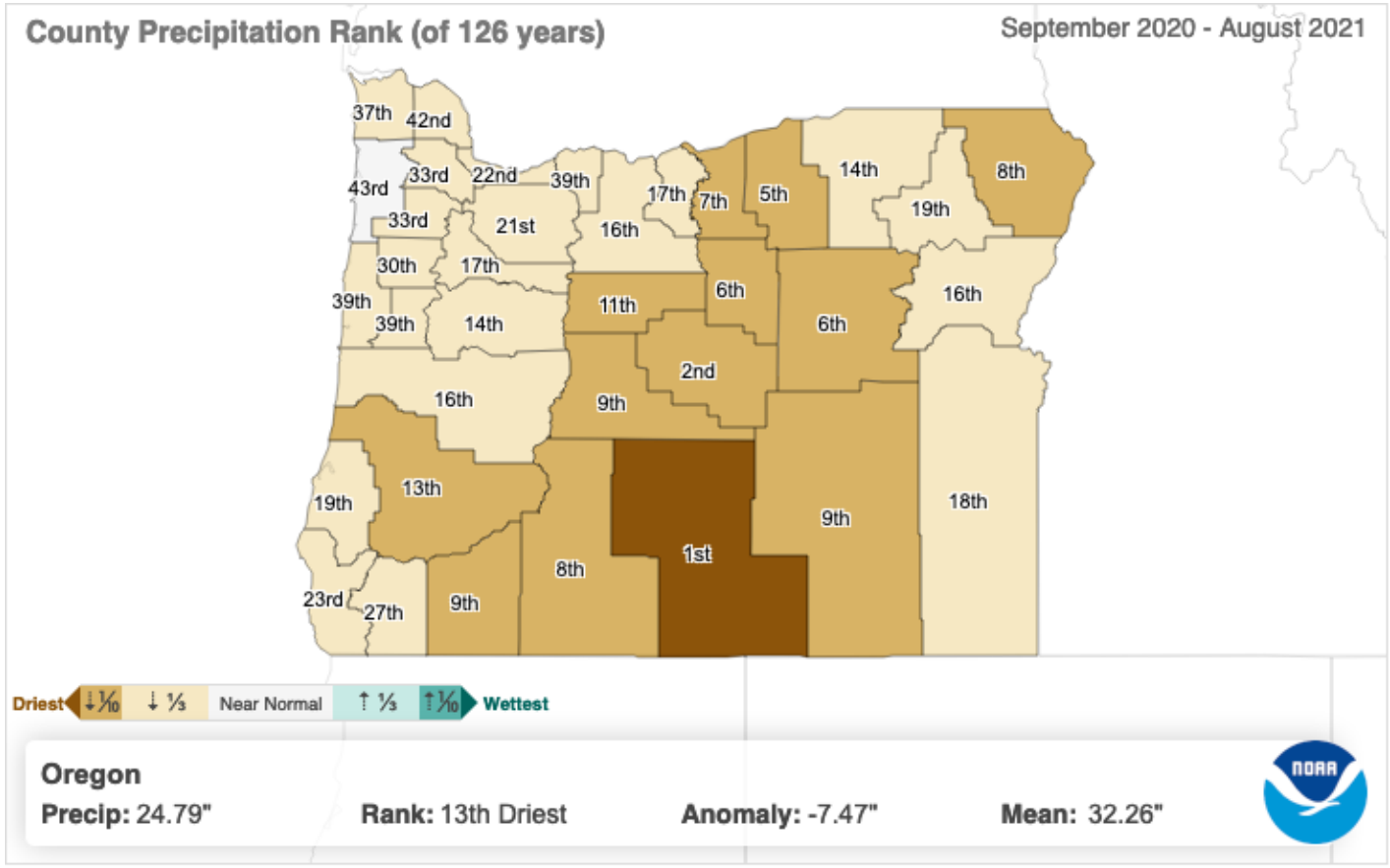
Statewide 12-month precipitation for Sept 2020-Aug 2021 is 77.7% of the 1981-2010 base average period

Oregon 12-month precipitation September-August ranking

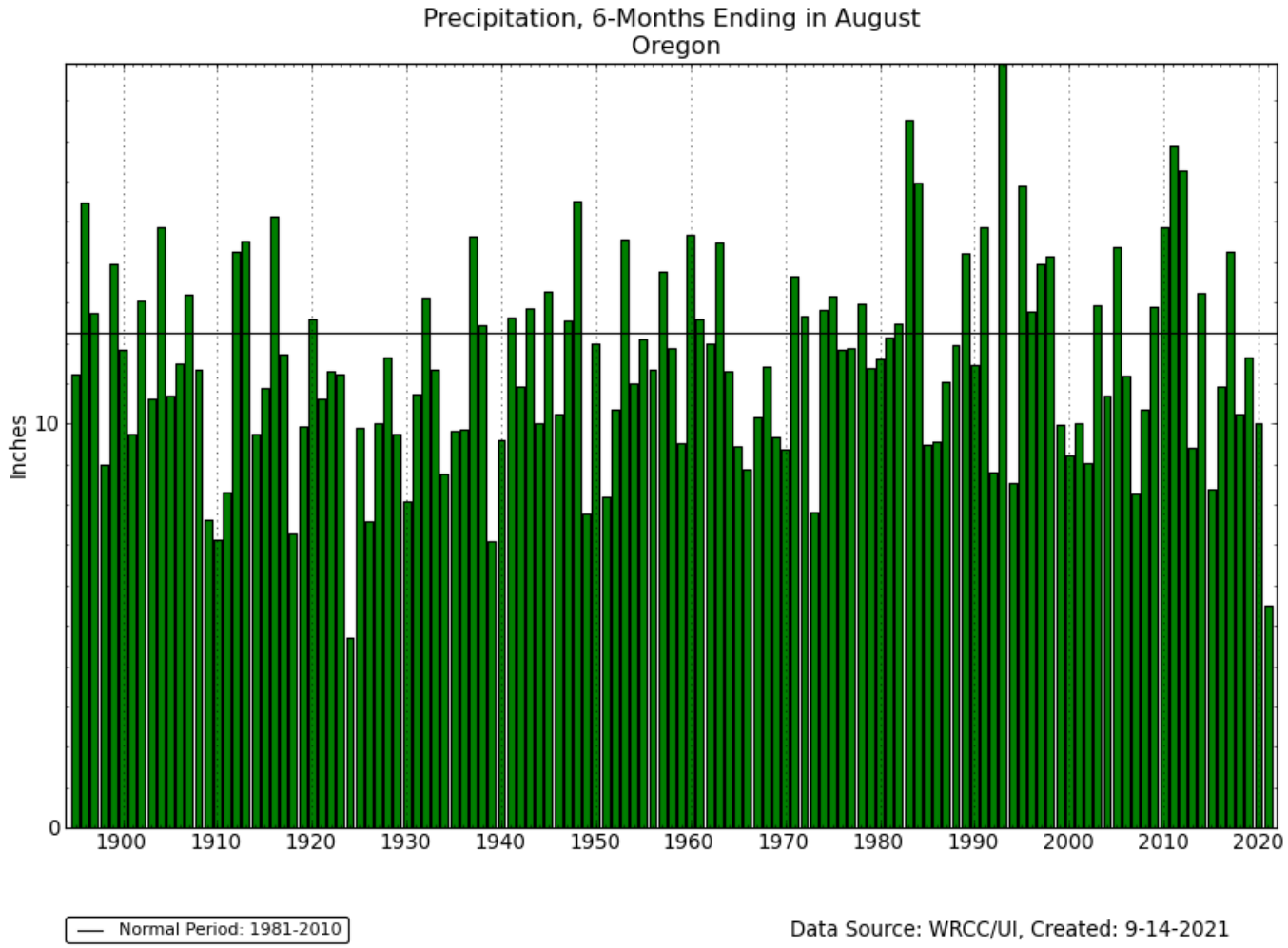
While Sep 2020-Aug 2021 has ranked 13th in its historic data record, this water is not going as far as it used to due to much higher evaporative losses, as I'll cover later

Rank	Year	Total precipitation in inches	% of average (relative to 1981-2010)
1	1977	19.41	55.0
2	1924	21.57	61.1
3	1994	23.34	66.1
4	2001	23.36	66.2
5	1931	24.78	70.2
6	1944	25.08	71.0
7	1930	25.19	71.3
8	1929	25.24	71.5
9	1992	26.11	73.9
10	1926	26.48	75.0
11	1973	26.55	75.2
12	1939	26.67	75.5
13	*2021*	*27.45*	*77.7*

County 12-month precipitation ranking

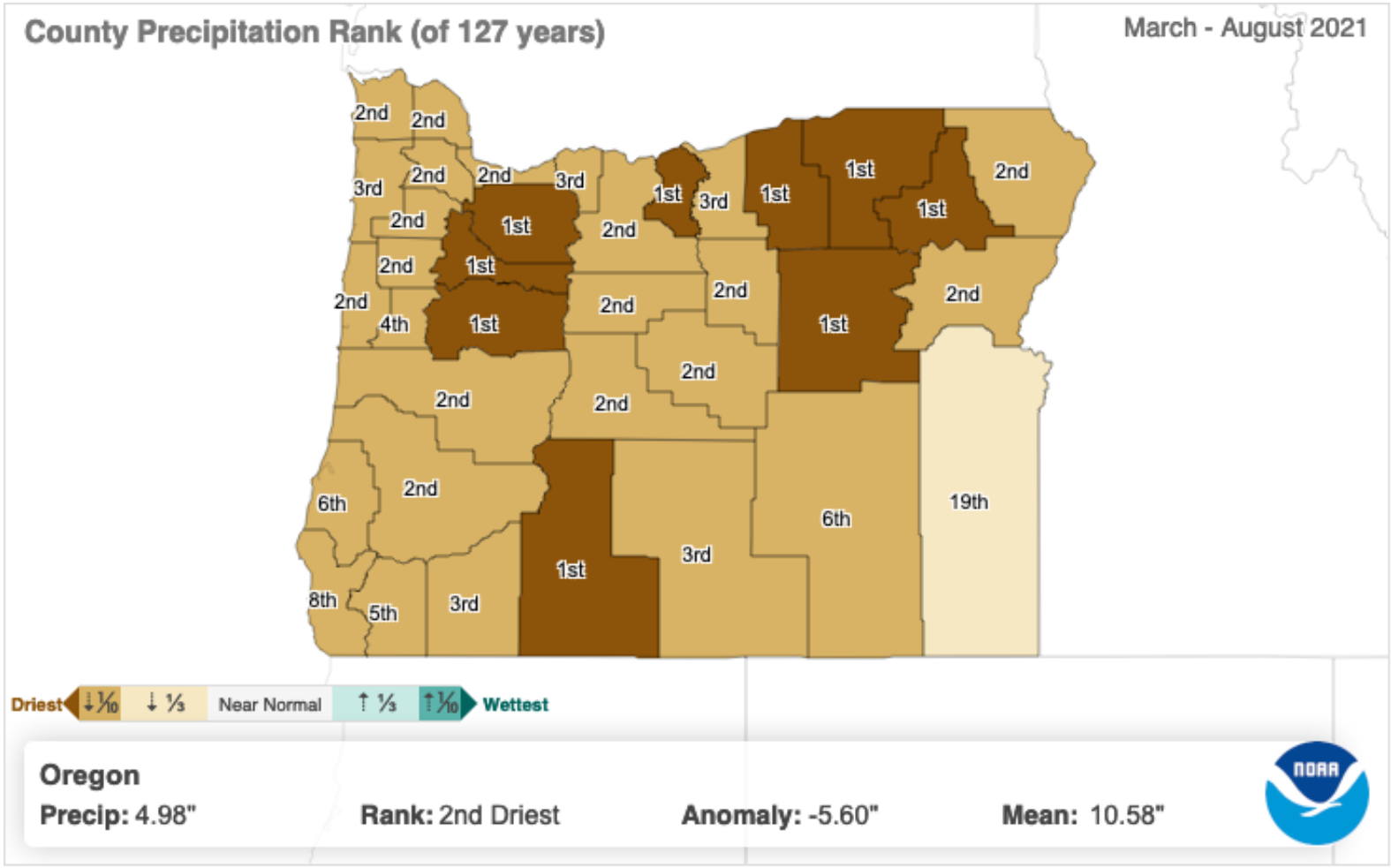


2021 Spring & Summer Precipitation



During spring & summer 2021, Oregon received the 2nd lowest accumulated precipitation on record (1924 is the lowest; 1939 is now the 3rd lowest)

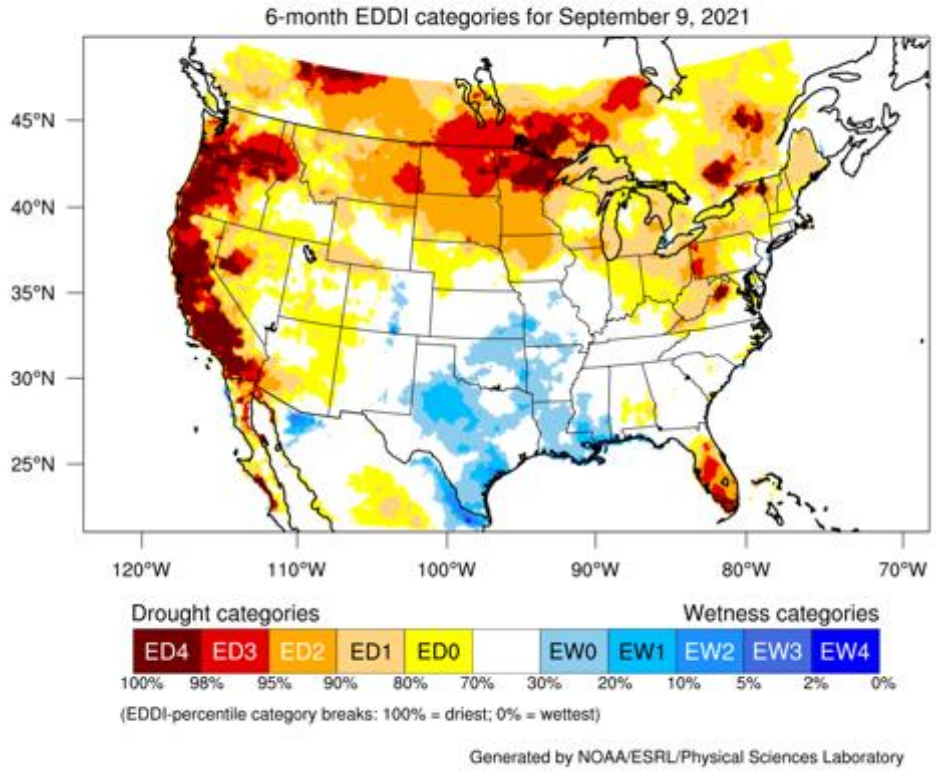
2021 Spring & Summer Precipitation County Rankings

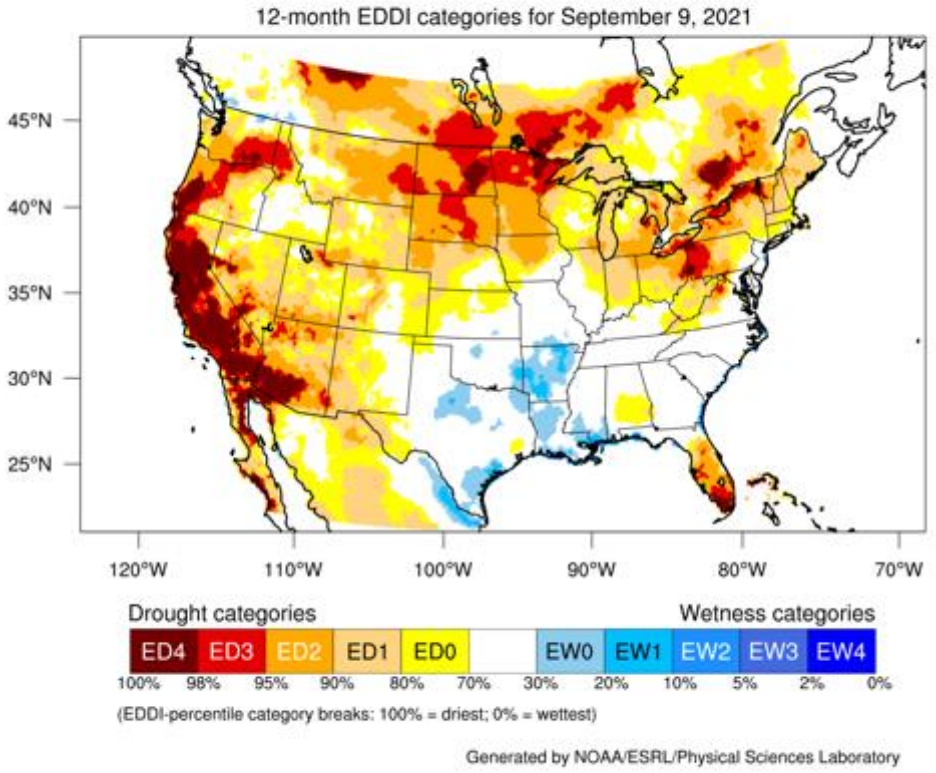


Evaporative demand loss

The Evaporative Demand Drought Index (EDDI) provides an estimate of evaporative losses of surface water compared to historical conditions

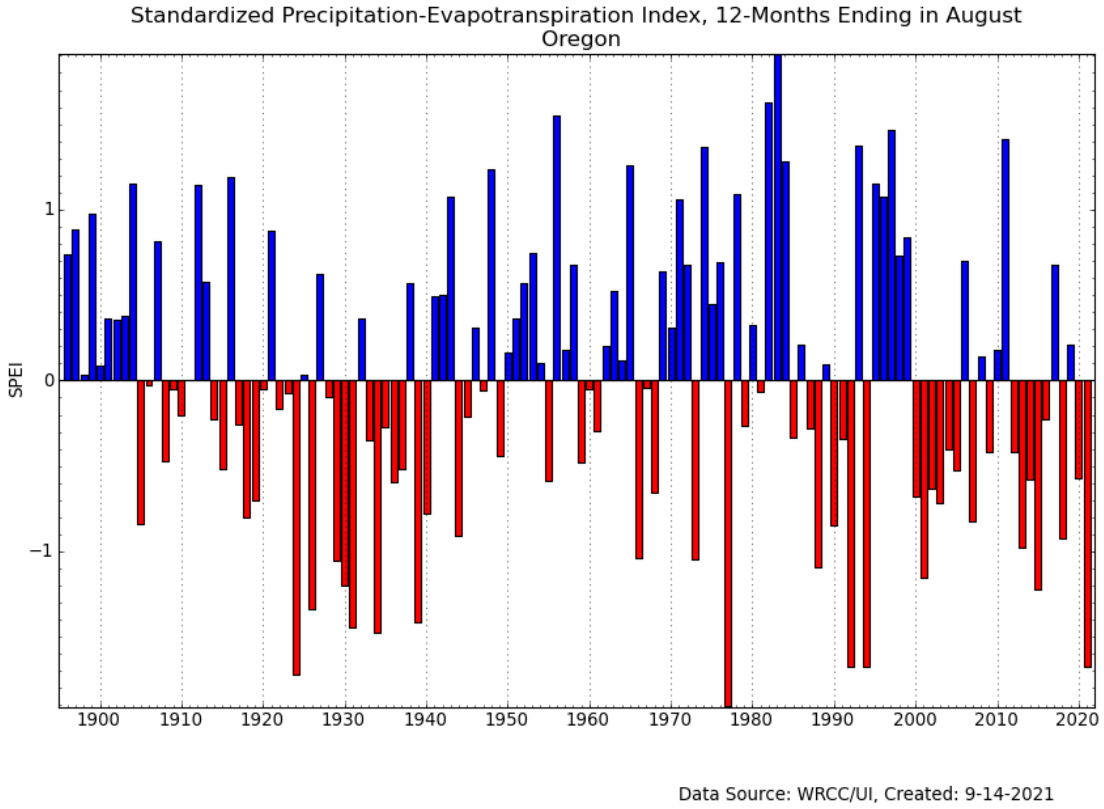
Dependent on mainly temperature, but also wind speed, radiation, and atmospheric moisture





EDDI indicates in the last 6-12 months, Oregon has experienced much more evaporative water loss compared to historical conditions

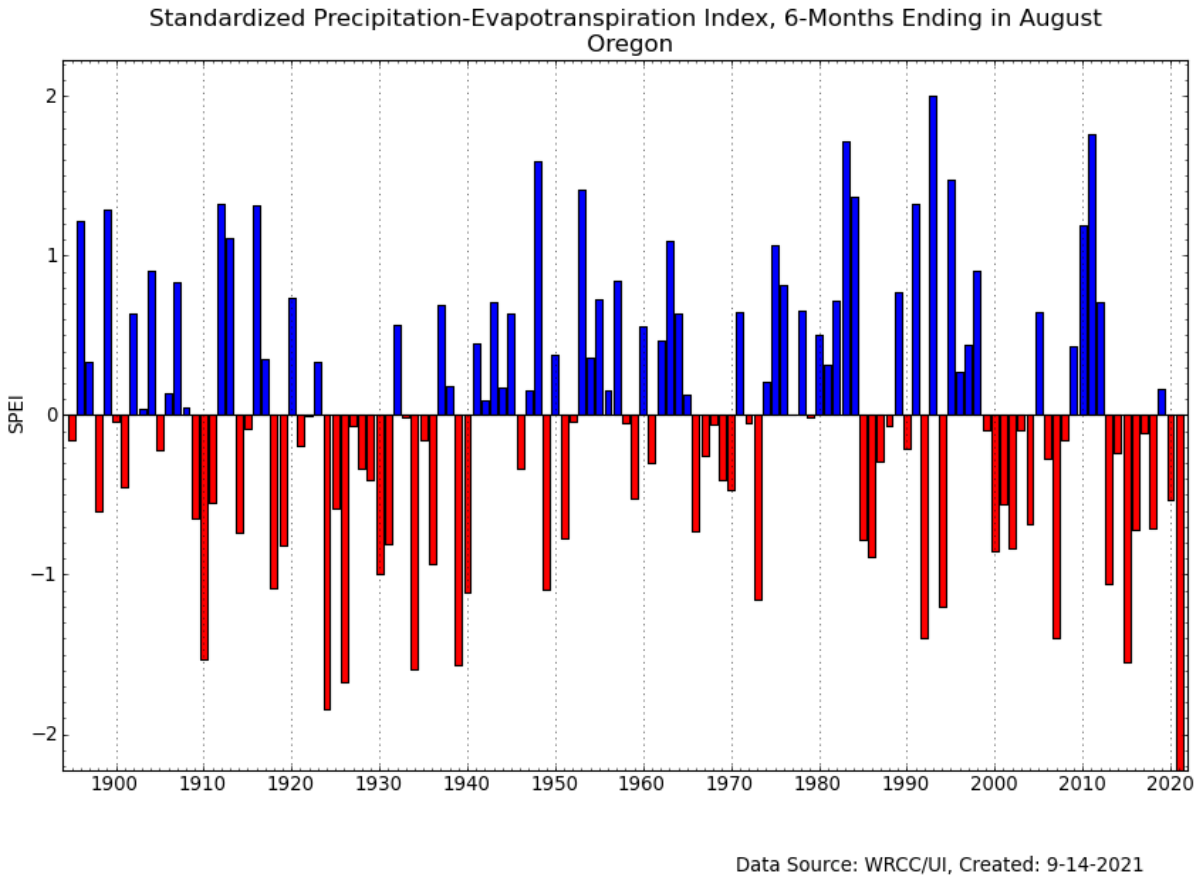
Ranking of net water balance 12-month SPEI



Third lowest 12-month SPEI on record

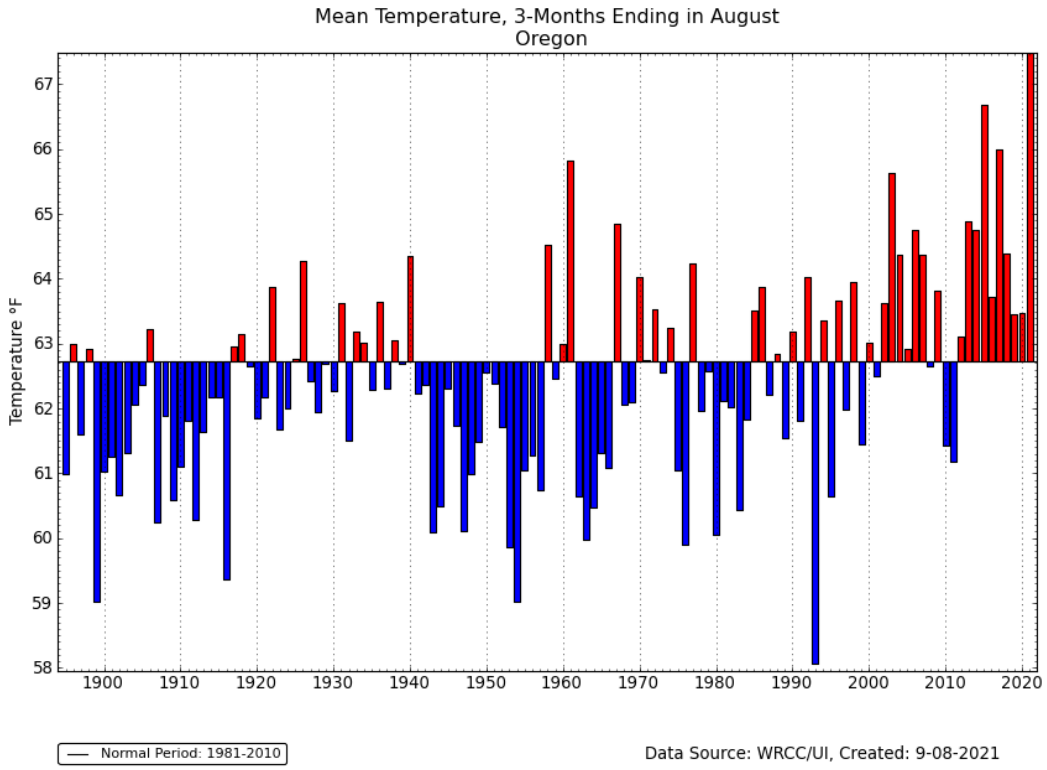
First place: 1977
Second place: 1924

Ranking of net water balance 6-month SPEI



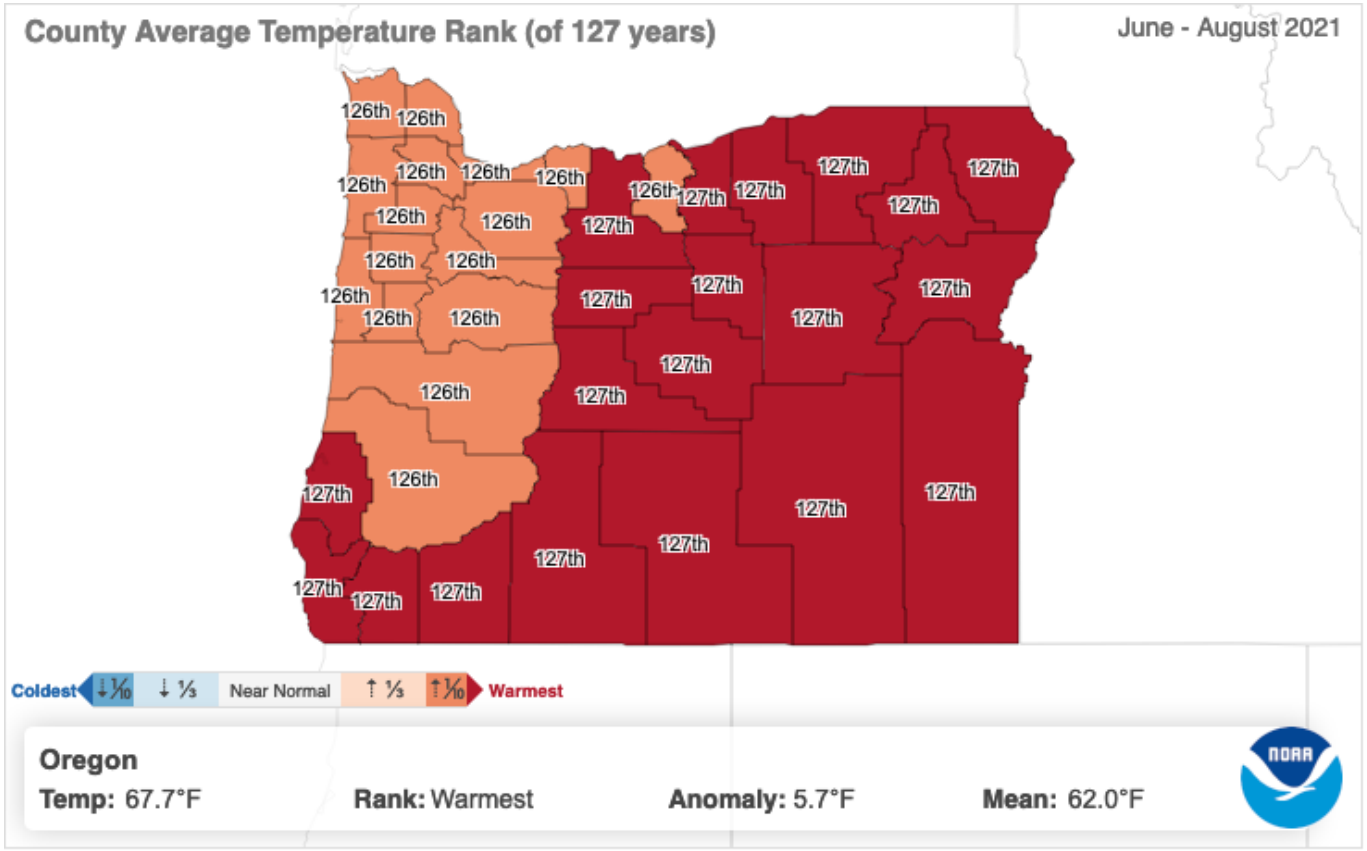
Mar-Aug 2021 had the lowest 6-month SPEI on record

Summer mean temperature Averaged statewide for Oregon



This summer, the Oregon statewide averaged temperature was 67.5°F (for June-July-Aug), which was 4.8°F above normal and the warmest on record back to 1895. A distant second place is now 2015, which recorded 66.7°F.

County average JJA temperature rankings relative to the 127-year data record



All Oregon counties experienced either their warmest or second warmest summer on record

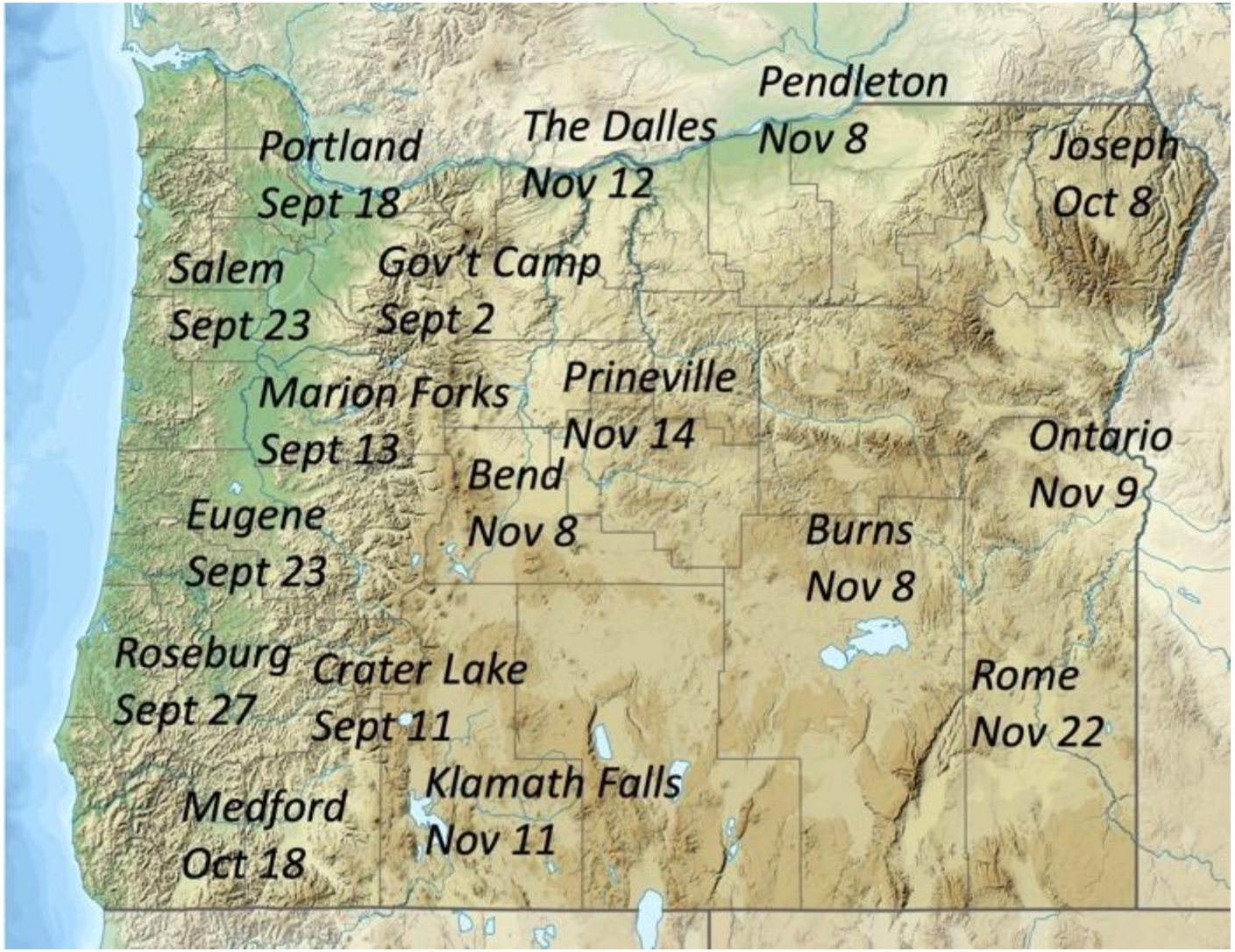
Days above 90°F

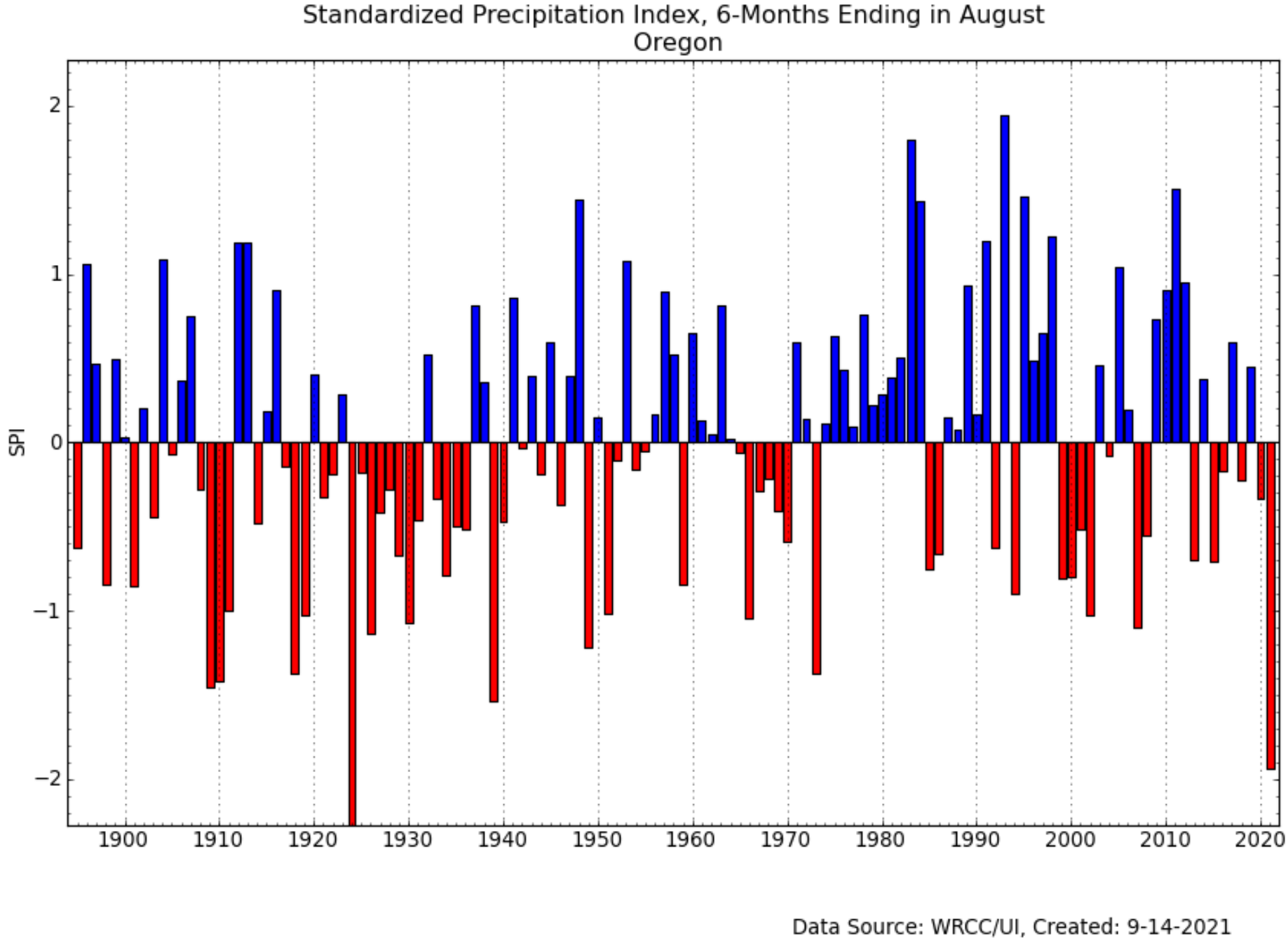
- The record warm summer was not just a product of the June heatwave, but also of prolonged stretches of well above average temperatures

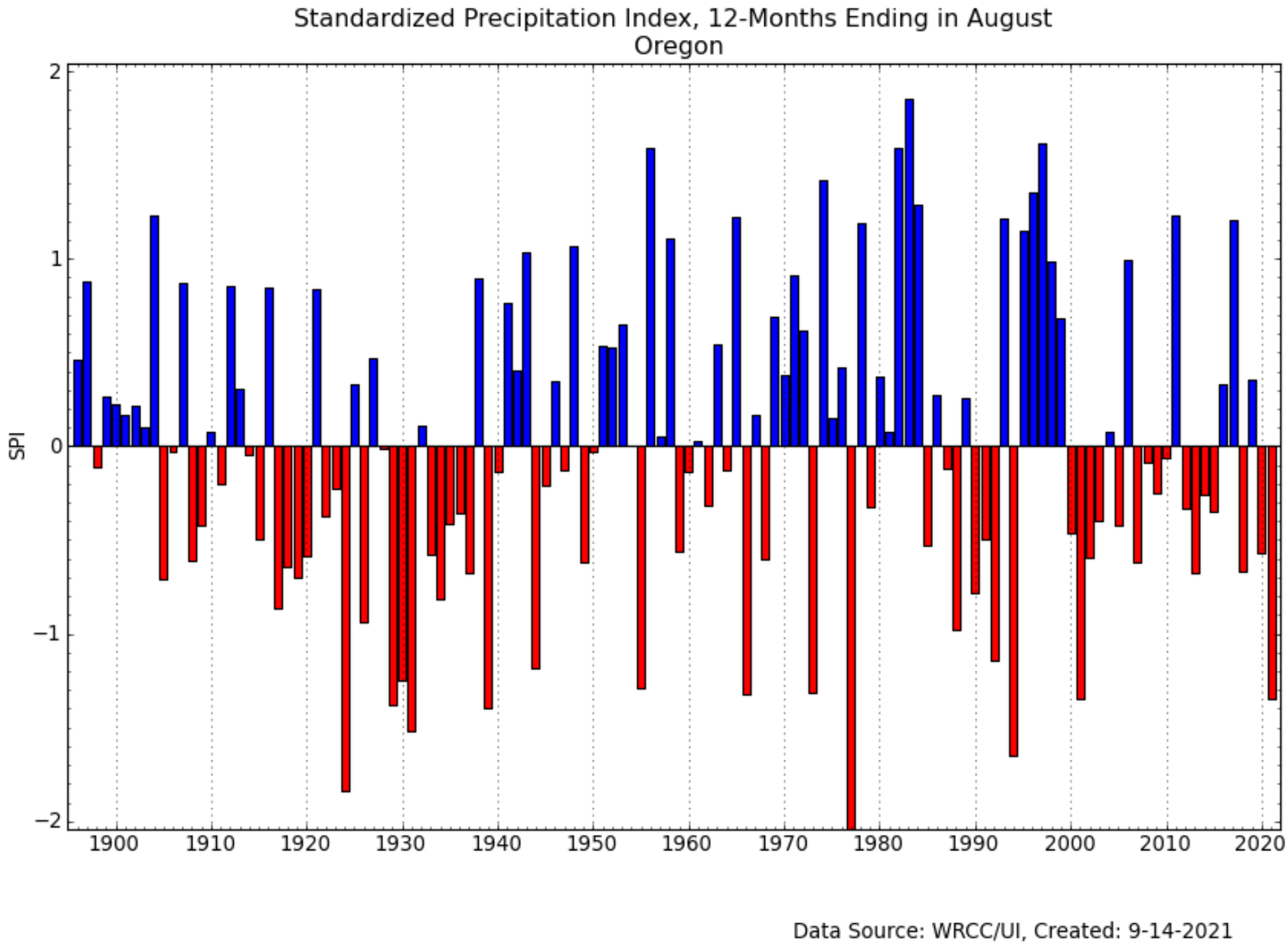
	# of days >=90°F	Rank
Portland	24	Tied-3
Salem	40	1
Eugene	42	1
Roseburg (Riddle)	60	2
Medford	70	14
Klamath Falls	53	1
Redmond	57	2
Bend	37	2
Burns	61	1

Data courtesy of NCEI, accessed through xmACIS on Sept 14, 2021

Average date for fall's first >=0.5" 24-hour rain event




Standardized Precipitation Index, 6-Months Ending in August
Oregon
SPI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Data Source: WRCC/UI, Created: 9-14-2021


Standardized Precipitation Index, 12-Months Ending in August
Oregon
SPI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Data Source: WRCC/UI, Created: 9-14-2021

USGS
science for a changing world

Oregon Water Supply Availability Meeting

September 2021

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

USGS Update on Surface Water Conditions

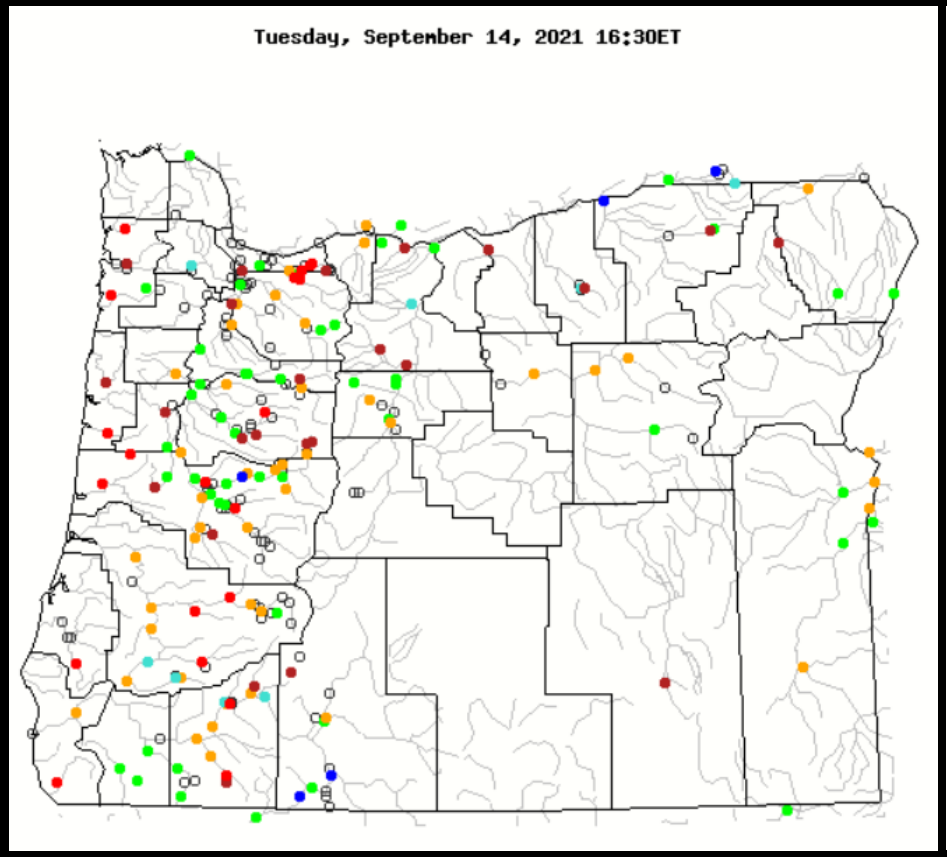
Carrie Boudreau & Marc Stewart
Oregon Water Science Center

Photo: 14333500, by Sara Blocker

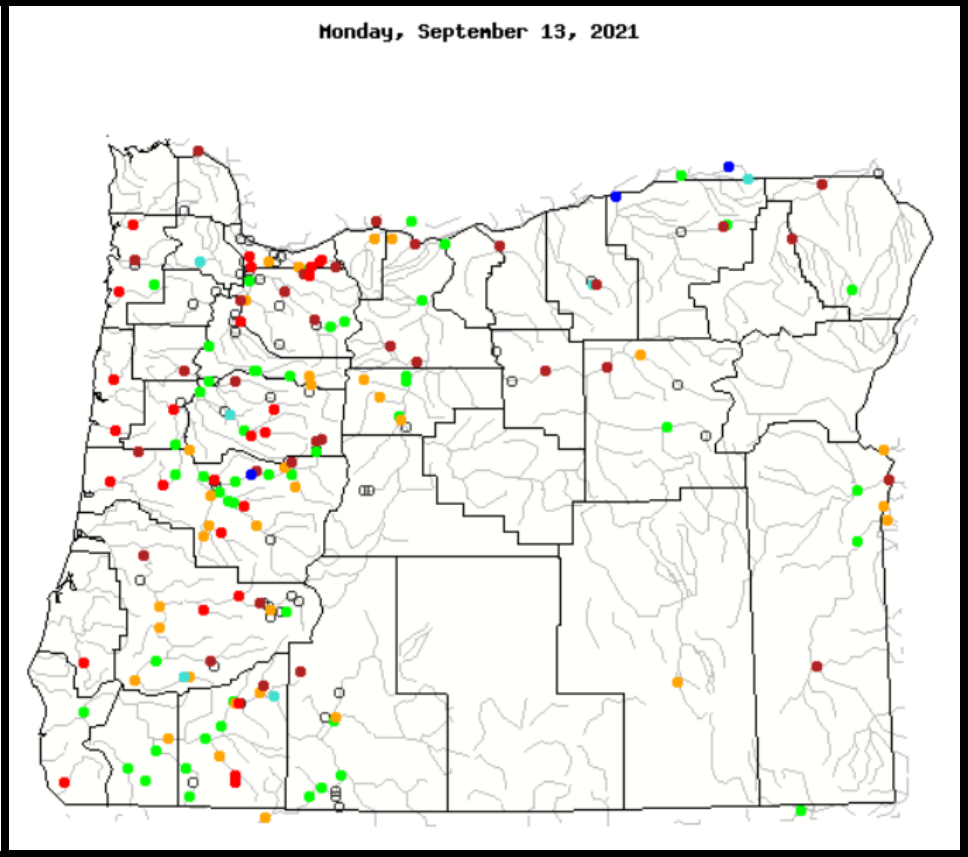
Streamflow Conditions

Oregon Streamflow Maps (as compared to Historical Record)

Daily



7-day Average

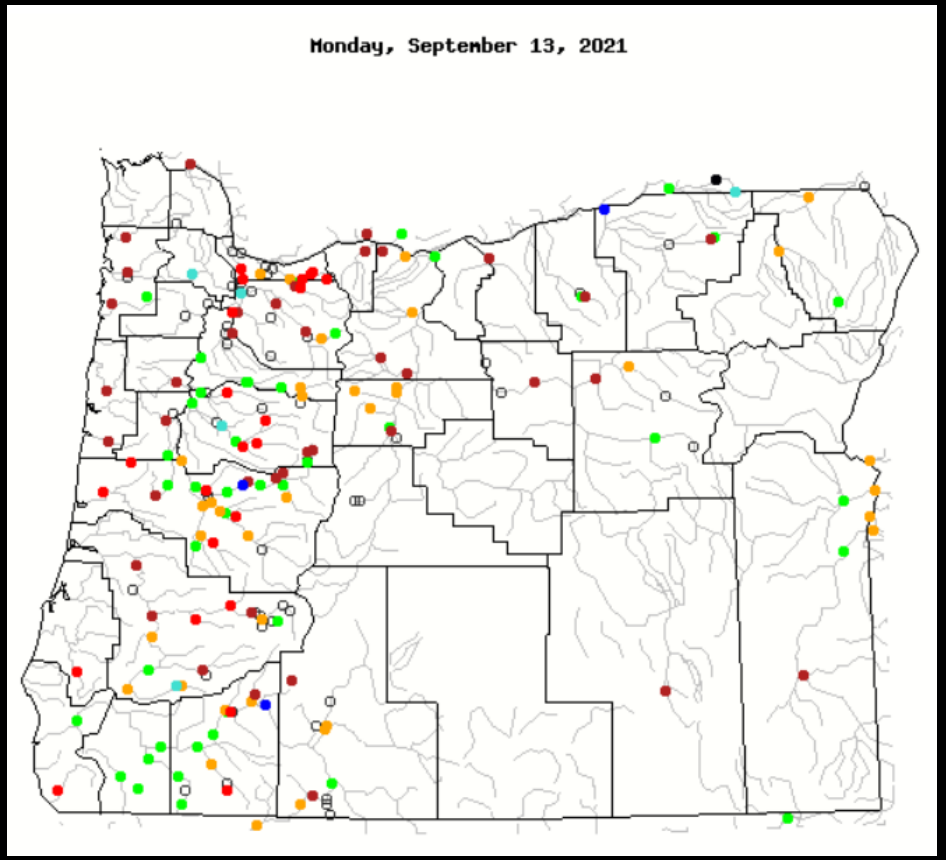


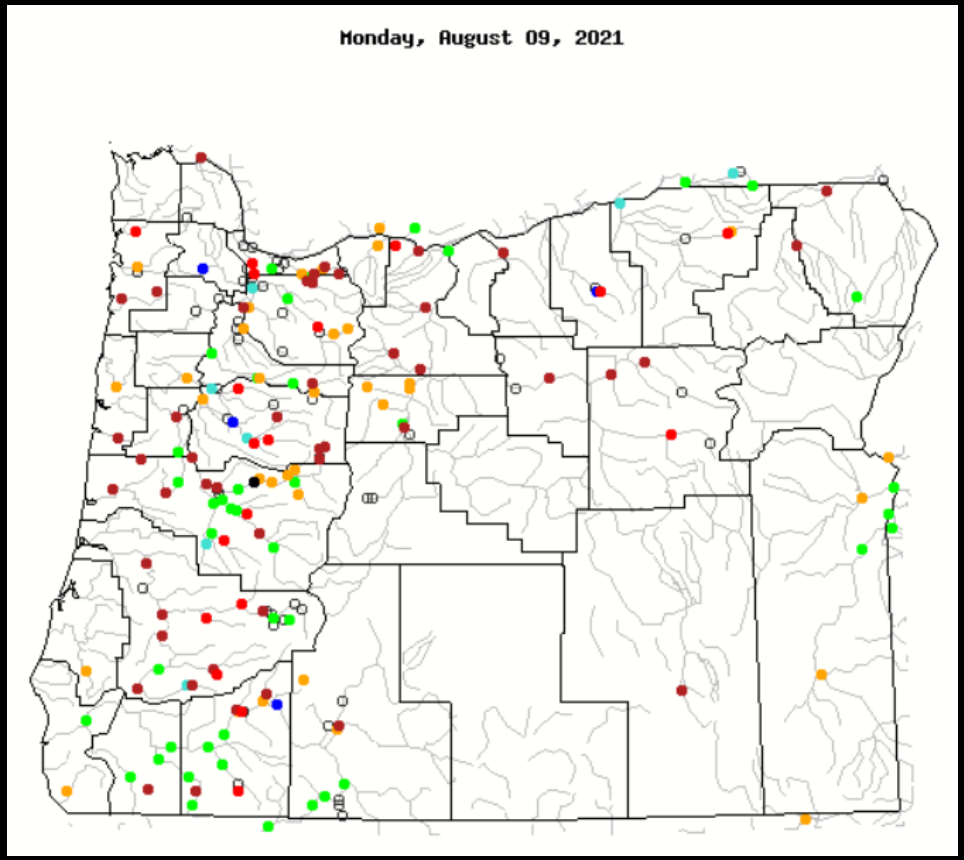
USGS

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)

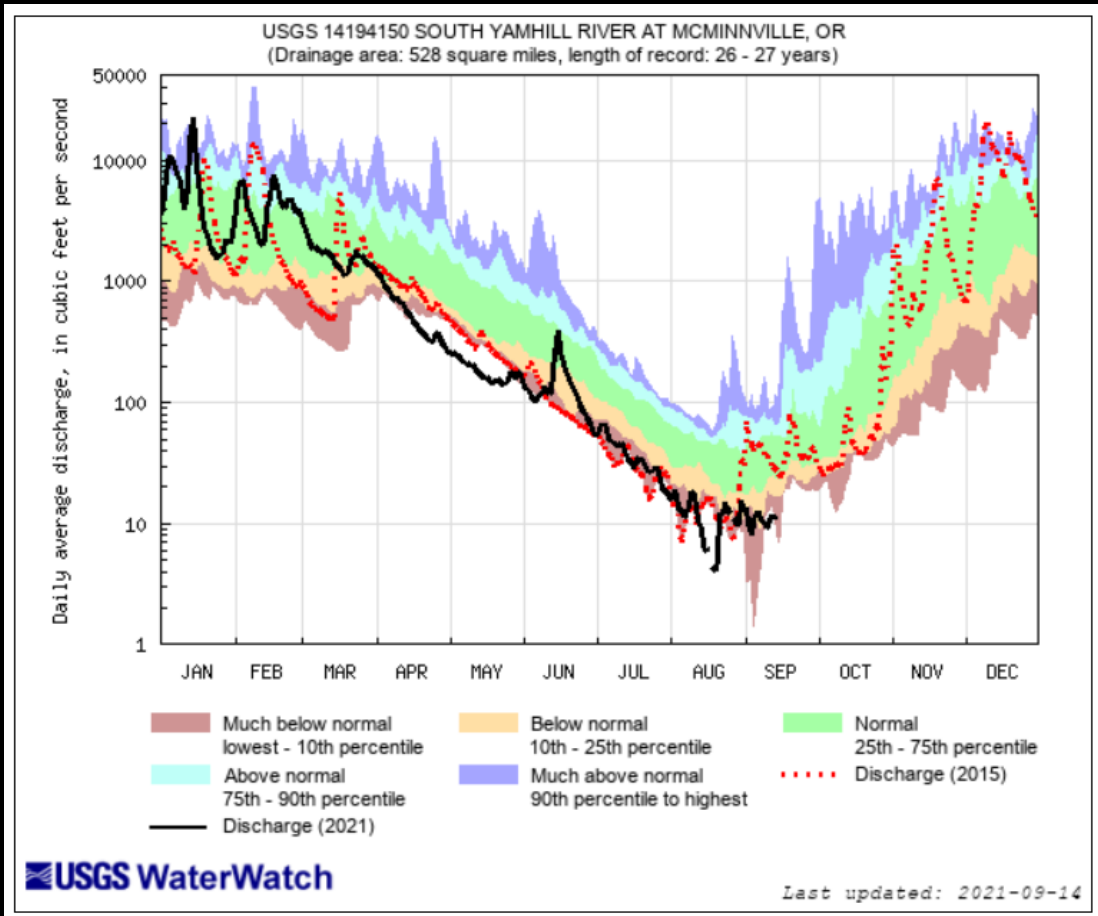


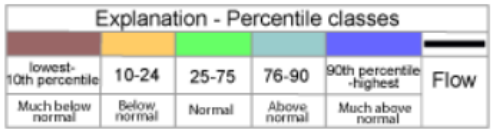


Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

USGS

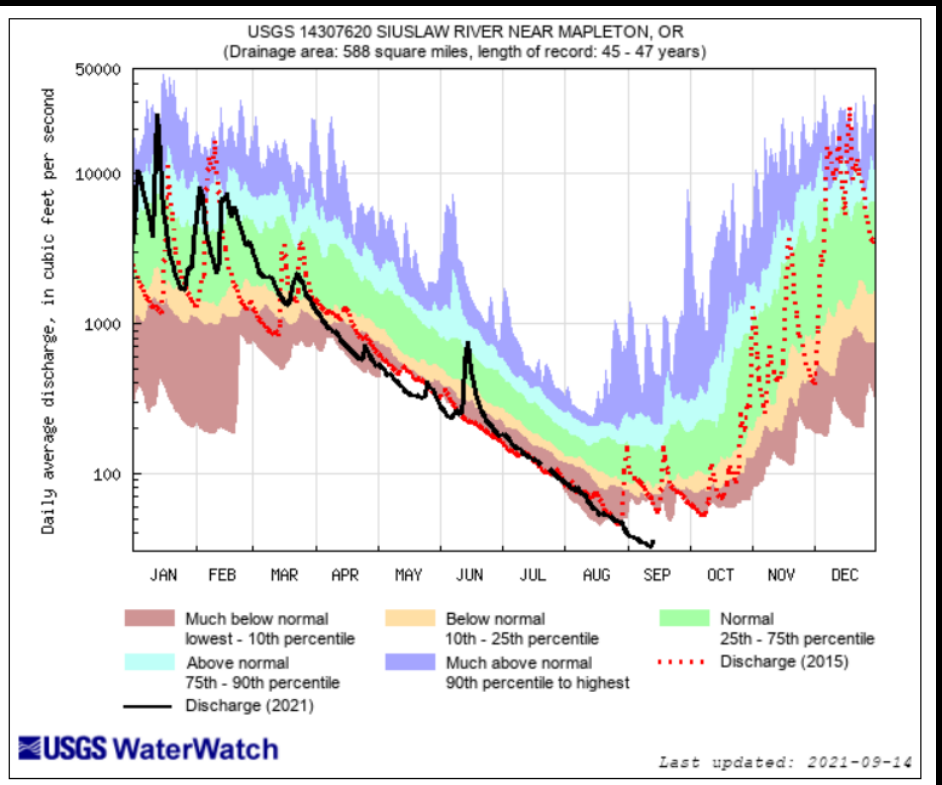
Yamhill County

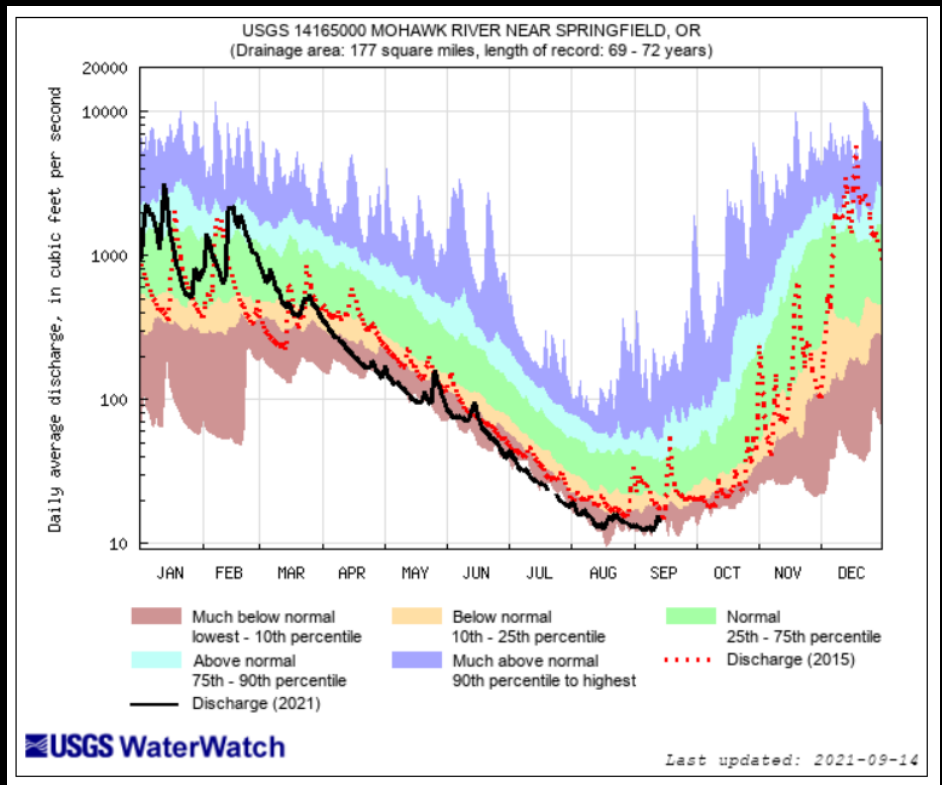


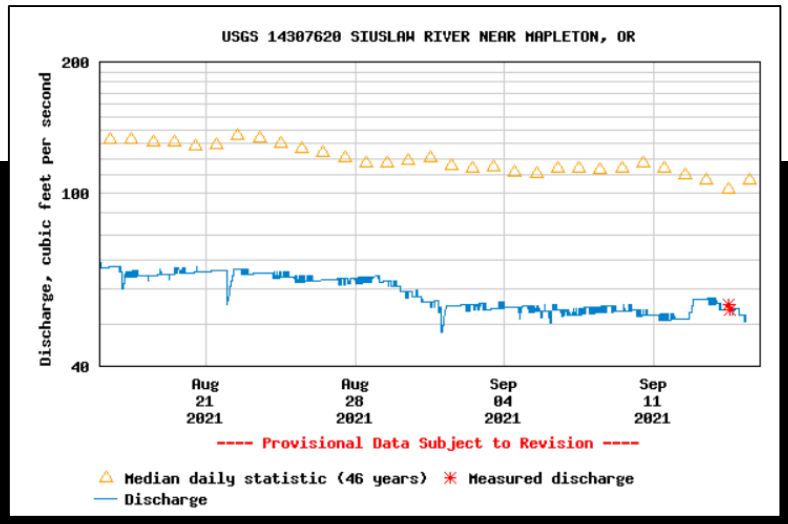


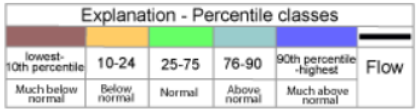
USGS

Linn County

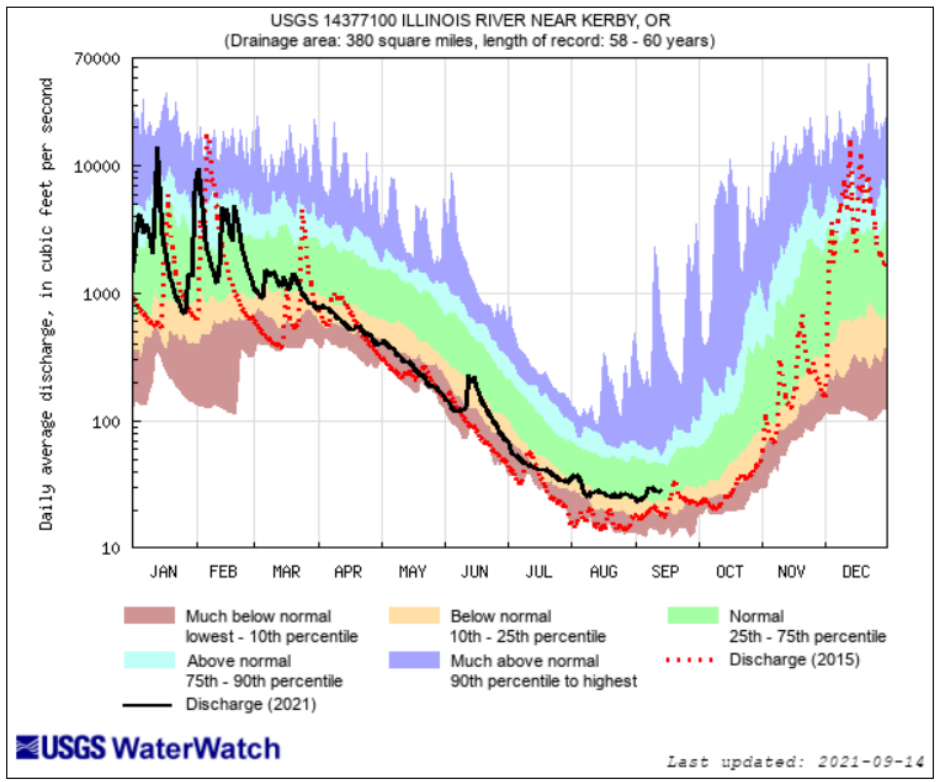

USGS 14307620 SIUSLAW RIVER NEAR MAPLETON, OR
(Drainage area: 588 square miles, length of record: 45 - 47 years)
Daily average discharge, in cubic feet per second
50000
10000
1000
100
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Much below normal
lowest - 10th percentile
Below normal
10th - 25th percentile
Normal
25th - 75th percentile
Above normal
75th - 90th percentile
Much above normal
90th percentile to highest
Discharge (2015)
Discharge (2021)
USGS WaterWatch
Last updated: 2021-09-14

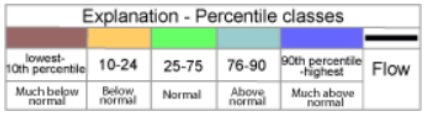

USGS 14165000 MOHAWK RIVER NEAR SPRINGFIELD, OR
(Drainage area: 177 square miles, length of record: 69 - 72 years)
Daily average discharge, in cubic feet per second
20000
10000
1000
100
10
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Much below normal
lowest - 10th percentile
Below normal
10th - 25th percentile
Normal
25th - 75th percentile
Above normal
75th - 90th percentile
Much above normal
90th percentile to highest
Discharge (2015)
Discharge (2021)
USGS WaterWatch
Last updated: 2021-09-14

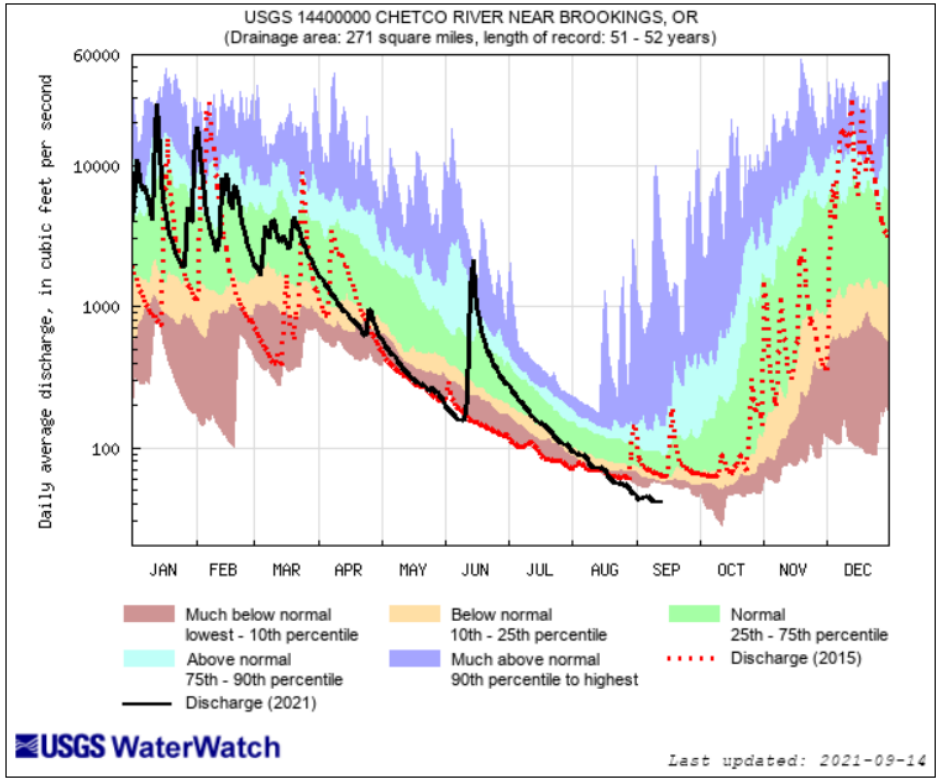

USGS 14307620 SIUSLAW RIVER NEAR MAPLETON, OR
Discharge, cubic feet per second
200
100
40
Aug 21 2021
Aug 28 2021
Sep 04 2021
Sep 11 2021
---- Provisional Data Subject to Revision ----
Median daily statistic (46 years)
Measured discharge
Discharge

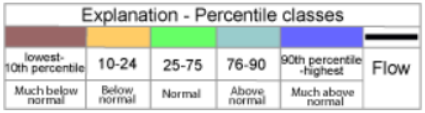

Explanation - Percentile classes
lowest-10th percentile
10-24
25-75
76-90
90th percentile -highest
Flow
Much below normal
Below normal
Normal
Above normal
Much above normal

Josephine County and Southern Coast

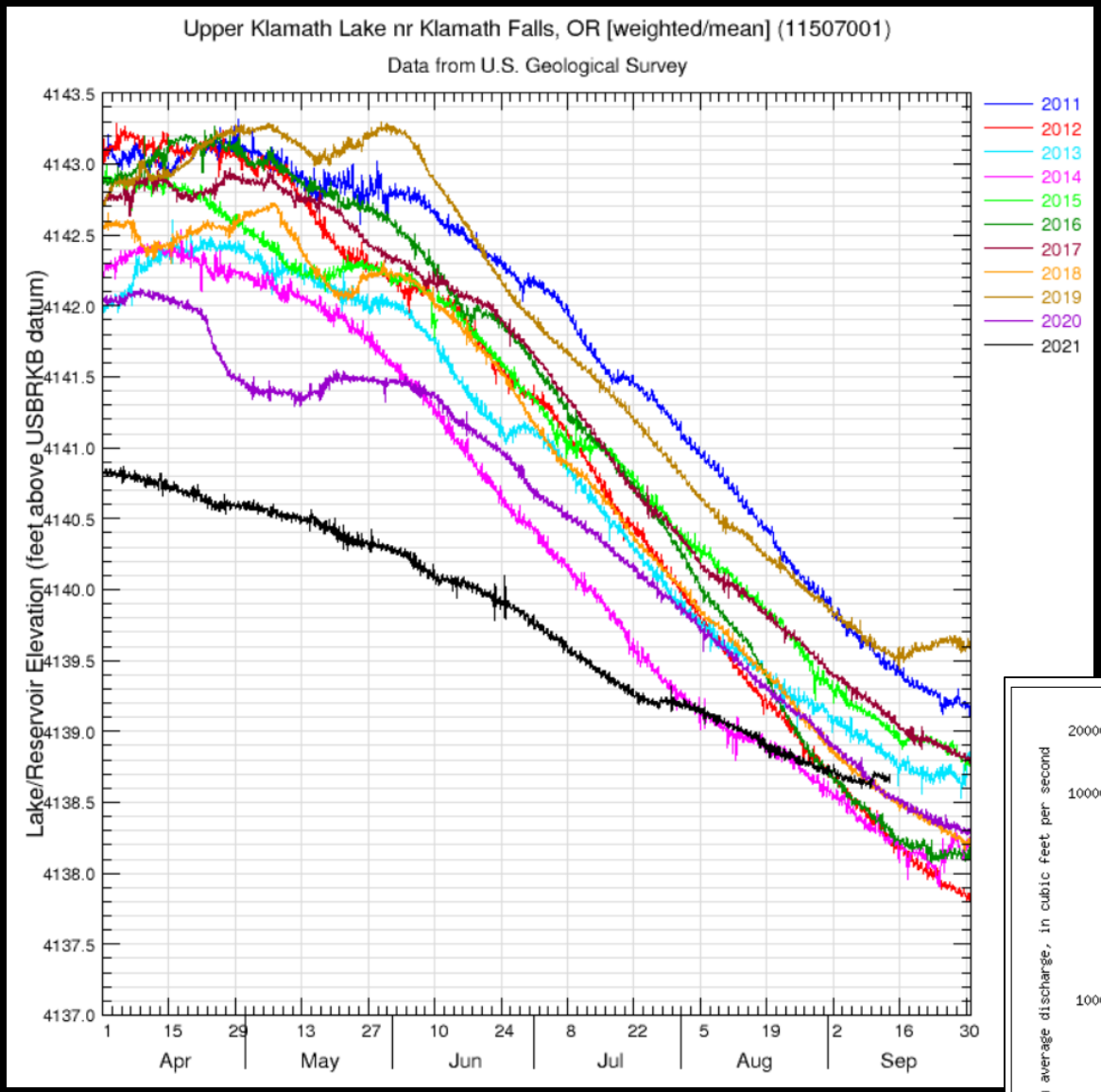






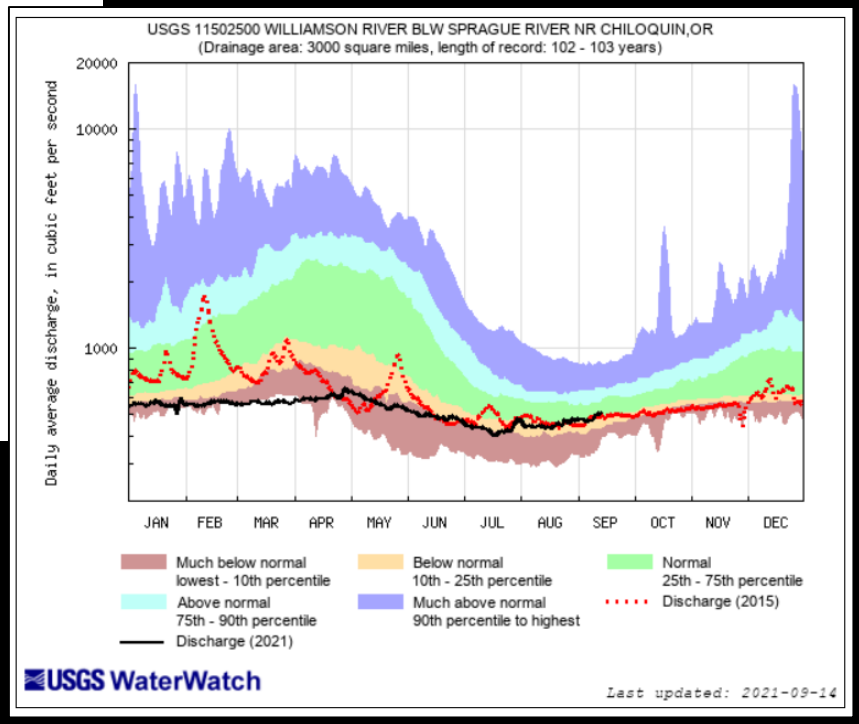


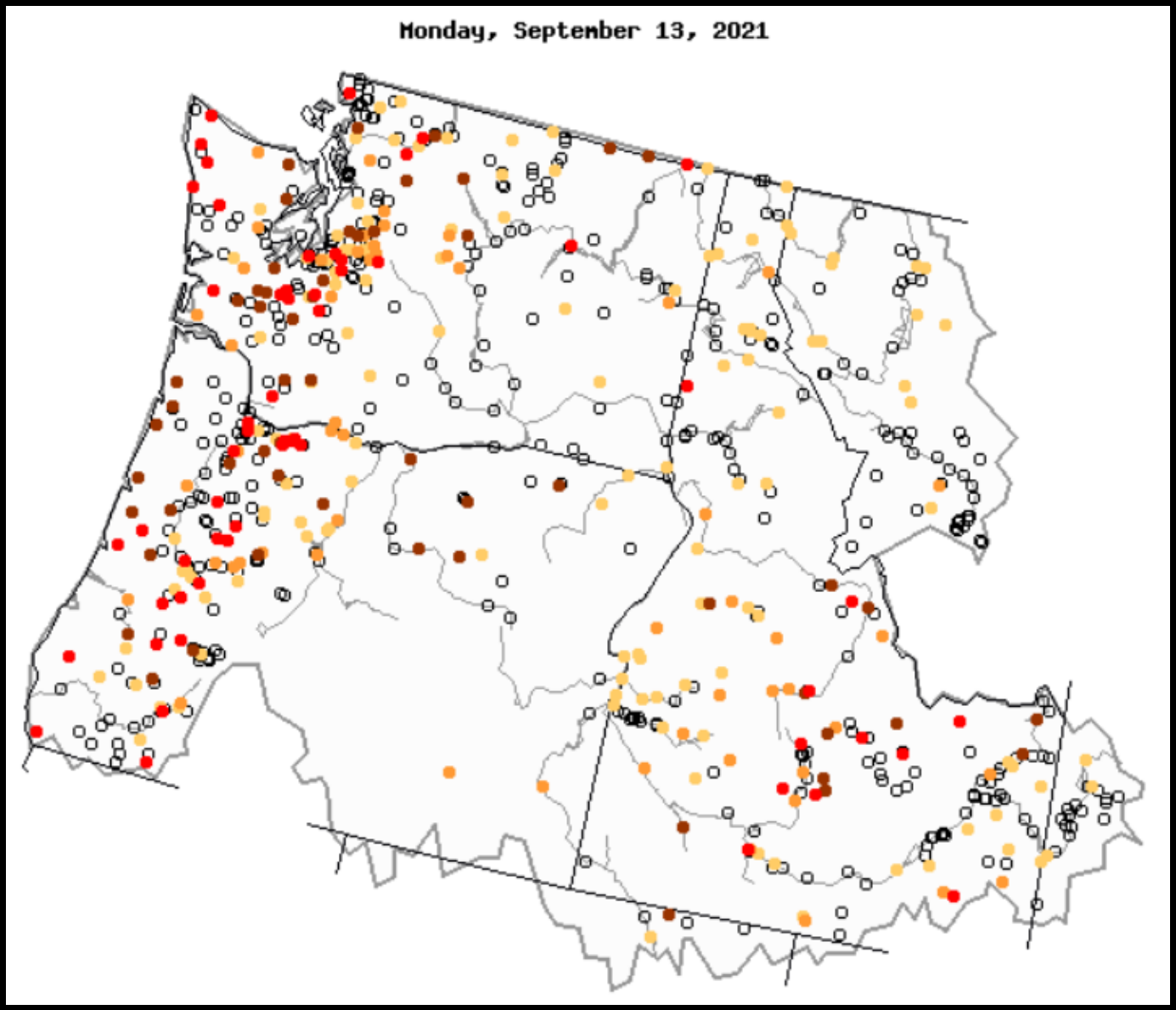
USGS



Klamath Lake

USGS





Map of below normal 28-day average streamflow compared to historical streamflow for the day of year (Pacific Northwest)

Explanation - Percentile classes				
New low	<=5	6-9	10-24	Not ranked
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

USGS

Summary of Recent 7-day Average Flow Conditions

(2021-09-07 -- 2021-09-14)

["--", no data; ">", greater than all historical minimum values]

USGS station number	USGS station name	Drain. area [mi^2]	2021-09-07 to 2021-09-14				Historical annual minimum 7-day flows		
			No. of days with zero flows	Lowest 7-day average flow			No. of years	Min. (year) [ft^3/s]	No. of years with zero flows
				Date	Stream flow [ft^3/s]	Rank			
14154500	ROW RIVER ABOVE PITCHER CREEK, NEAR DORENA, OR	211	0	2021-09-10	10.8	1	83	10.9 (2003)	0
14316700	STEAMBOAT CREEK NEAR GLIDE, OR	227	0	2021-09-07	23.7	1	62	24 (2009)	0
14152500	COAST FORK WILLAMETTE AT LONDON, OR	72.1	0	2021-09-10	5.25	1	55	7.93 (1965)	0
14318000	LITTLE RIVER AT PEEL, OR	177	0	2021-09-10	8.14	1	55	9.99 (2003)	0
14138870	FIR CREEK NEAR BRIGHTWOOD, OR	5.46	0	2021-09-14	1.5	1	43	1.55 (2003)	0
14211550	JOHNSON CREEK AT MILWAUKIE, OR	53.17	0	2021-09-10	9.36	1	30	10.1 (2005)	0
14211814	FAIRVIEW CREEK AT GLISAN ST NEAR GRESHAM, OR	4.94	0	2021-09-10	0.09	1	27	0.27 (2001)	0
14046778	BRIDGE CR ABV COYOTE CANYON NR MITCHELL, OR	267	0	2021-09-09	0.42	1	13	0.87 (2015)	0
14144700	COLUMBIA RIVER AT VANCOUVER, WA	241000	0	2021-09-12	80900	1	9	86300 (2017)	0
14158740	MCKENZIE RIVER BL PAYNE CR, NR BELKNAP SPRINGS, OR	160	0	2021-09-14	136	1	3	160 (2017)	0
14158798	SMITH RIVER ABV TRAIL BRDG RESV NR BELKNAP SPRINGS	21.4	0	2021-09-09	4.97	1	2	7.18 (2018)	0
11493500	WILLIAMSON RIVER NEAR KLAMATH AGENCY, OR	1290	8	2021-09-07	0	Tie 1	61	0 (1960)	47
14034470	WILLOW CREEK ABV WILLOW CR LAKE, NR HEPPNER, OR	67.9	7	2021-09-07	0	Tie 1	36	0 (2000)	4
14320934	LITTLE WOLF CREEK NEAR TYEE, OR	9.05	8	2021-09-07	0	Tie 1	12	0 (2015)	1
14171000	MARYS RIVER NEAR PHILOMATH, OR	159	0	2021-09-13	3.32	2	63	2.36 (1967)	0
14158790	SMITH RIVER ABV SMITH R RESV,NR BELKNAP SPRNGS,OR	15.6	0	2021-09-09	2.62	2	58	2.49 (2015)	0
14185900	QUARTZVILLE CREEK NEAR CASCADIA, OR	99.2	0	2021-09-10	15.8	2	56	14.3 (1973)	0
14187000	WILEY CREEK NEAR FOSTER, OR	51.80	0	2021-09-10	3.23	2	56	3.01 (1992)	0
14400000	CHETCO RIVER NEAR BROOKINGS, OR	271	0	2021-09-14	41.6	2	49	32.3 (2013)	0
14354200	BEAR CREEK BLW ASHLAND CREEK AT ASHLAND, OR	168	0	2021-09-07	3.94	2	29	1.43 (1991)	0
14036860	JOHN DAY R AT BLUE MTN HOT SPGS NR PRAIRIE CITY,OR	40.14	0	2021-09-07	22.6	2	20	22 (2015)	0
14211499	KELLEY CREEK AT SE 159TH DRIVE AT PORTLAND, OR	4.69	0	2021-09-12	0.06	2	19	0.04 (2009)	0
14171600	WILLAMETTE RIVER AT CORVALLIS, OR	4420	0	2021-09-08	3940	2	9	3710 (2015)	0
14325000	SOUTH FORK COQUILLE RIVER AT POWERS, OR	169	0	2021-09-14	10.1	3	100	7.34 (1995)	0
14165000	MOHAWK RIVER NEAR SPRINGFIELD, OR	177	0	2021-09-10	12.6	3	71	10.8 (1966)	0
14211720	WILLAMETTE RIVER AT PORTLAND, OR	11200	0	2021-09-07	5790	3	46	5260 (1973)	0
14020300	MEACHAM CREEK AT GIBBON, OR	176	0	2021-09-09	6.61	3	44	6.06 (2005)	0
14307620	SIUSLAW RIVER NEAR MAPLETON, OR	588	0	2021-09-12	53.1	3	44	47 (1977)	0
14150800	WINBERRY CREEK NEAR LOWELL,OR	43.9	0	2021-09-10	2.35	3	37	2.19 (1967)	0
14353000	WEST FORK ASHLAND CREEK NEAR ASHLAND, OR	10.7	0	2021-09-09	1.16	3	33	0.88 (2013)	0
14353500	EAST FORK ASHLAND CREEK NEAR ASHLAND, OR	8.14	0	2021-09-09	1.34	3	33	1 (1931)	0
14194150	SOUTH YAMHILL RIVER AT MCMINNVILLE, OR	528	0	2021-09-09	10.6	3	24	3.94 (2003)	0
14209700	FISH CREEK NEAR THREE LYNX, OR	45.1	0	2021-09-14	7.98	3	19	6.39 (1992)	0
14087380	CROOKED RIVER BLW OSBORNE CANYON, NR OPAL CITY, OR	4520	0	2021-09-09	99	3	15	91.5 (2005)	0

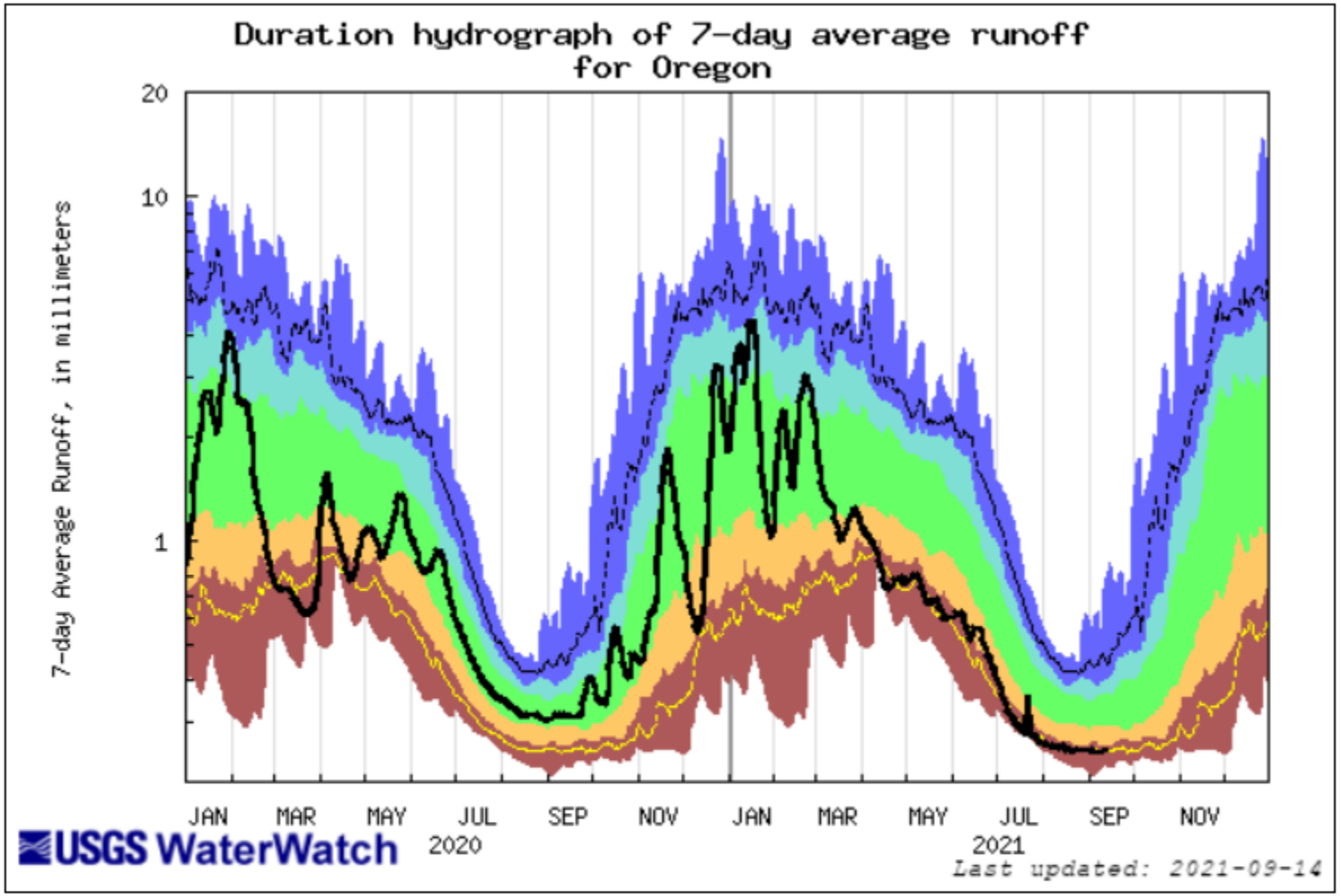
USGS

Station	NRCS SWSI Basin	Monthly mean discharge: Cubic feet per second	Monthly mean discharge: Percent of average	Change in discharge from previous month (percent)	Accumulated Runoff For the Period Oct. to Aug.: Percent of average
Donner Und Blitzen nr Frenchglen	Harney	28	55	-28	54
(*)Deep Creek above Adel	Lake County	5	36	0	23
(*)Chewaucan River near Paisley	Lake County	14	44	-13	32
Williamson River near Chiloquin	Klamath	451	97	4	50
Owyhee River near Rome	Owyhee	67	45	-19	24
(*)NF Malheur River near Beulah	Malheur	37	79	-10	58
Grande Ronde R at Troy	Grande Ronde Powder/Burnt	489	65	-31	80
Umatilla River nr Gibbon	Umatilla Lower John Day	43	96	-4	99
John Day River at Service Crk	Upper John Day	31	16	-60	52
(*)Little Deschutes River nr LaPine	Upper Deschutes	61	39	-16	44
Hood River nr Hood River	Lower Deschutes Mt.Hood	252	74	-27	85
Willamette River at Salem	Willamette	5,700	81	-9	83
Wilson River near Tillamook	North Coast	62	63	-42	103
Umpqua River near Elkton	Rogue/Umpqua	765	65	-10	66
Rogue River near Agness	Rogue/Umpqua	1,890	81	11	61
SF Coquille River at Powers	South Coast	18	51	-47	84
Chetco River near Brookings	South Coast	69	60	-58	80

All data should be considered provisional and subject to revision.
Percent of average computed using 30-year base period, water years 1981-2010.
(*) provided by Oregon Water Resources Department

9/1/2021

USGS



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

USGS

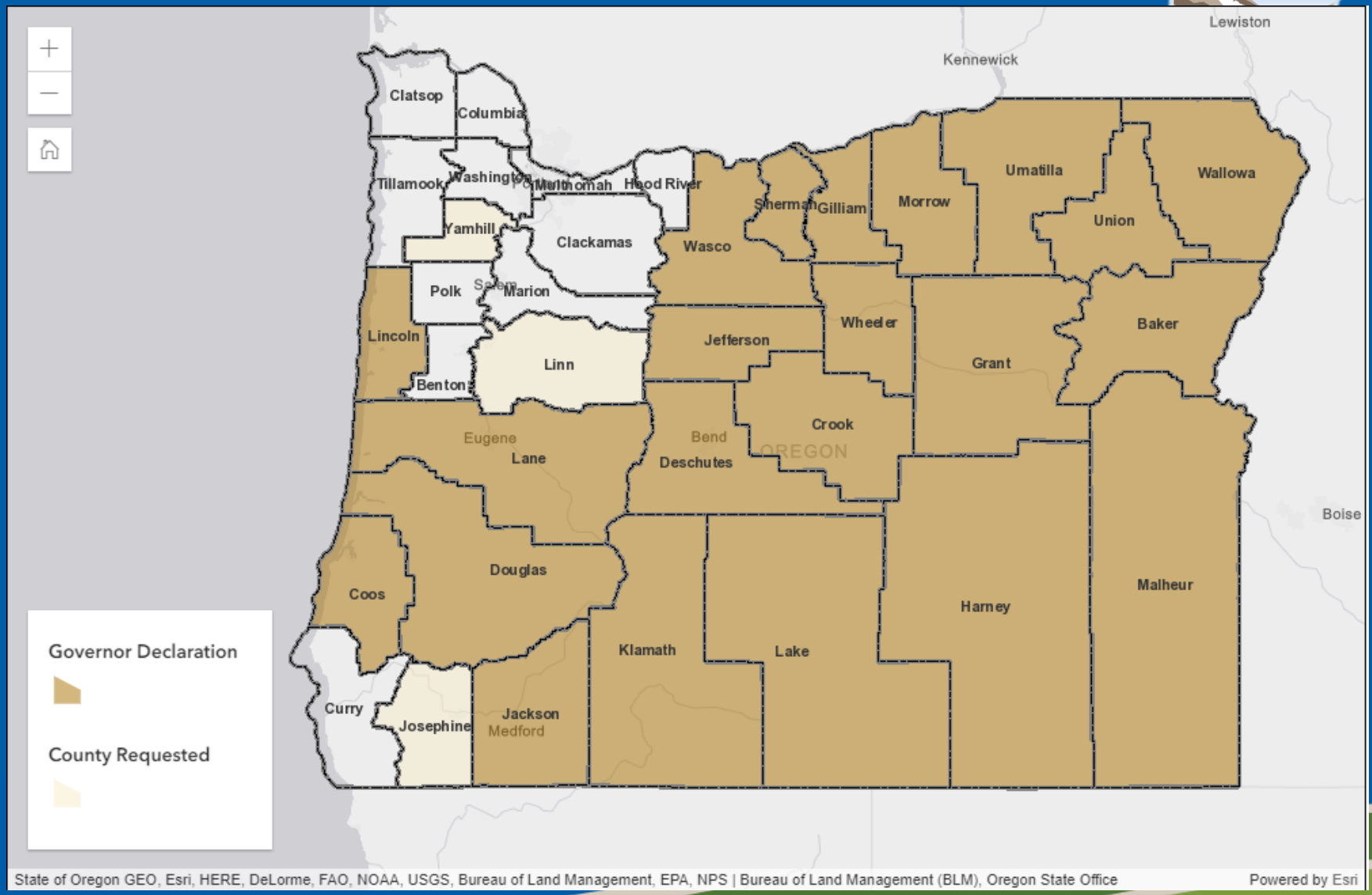
Water Supply Availability Committee

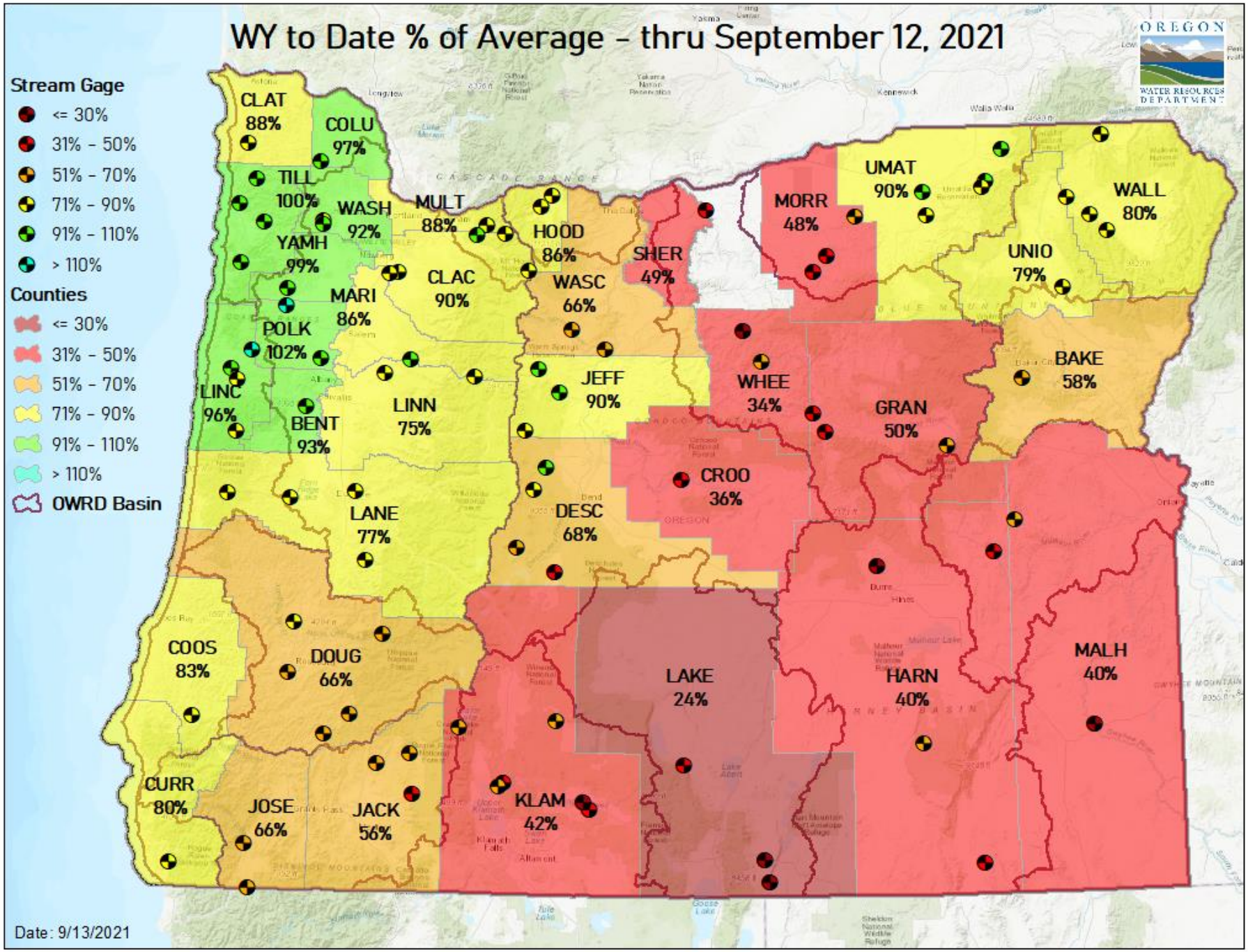
OREGON
WATER RESOURCES DEPARTMENT

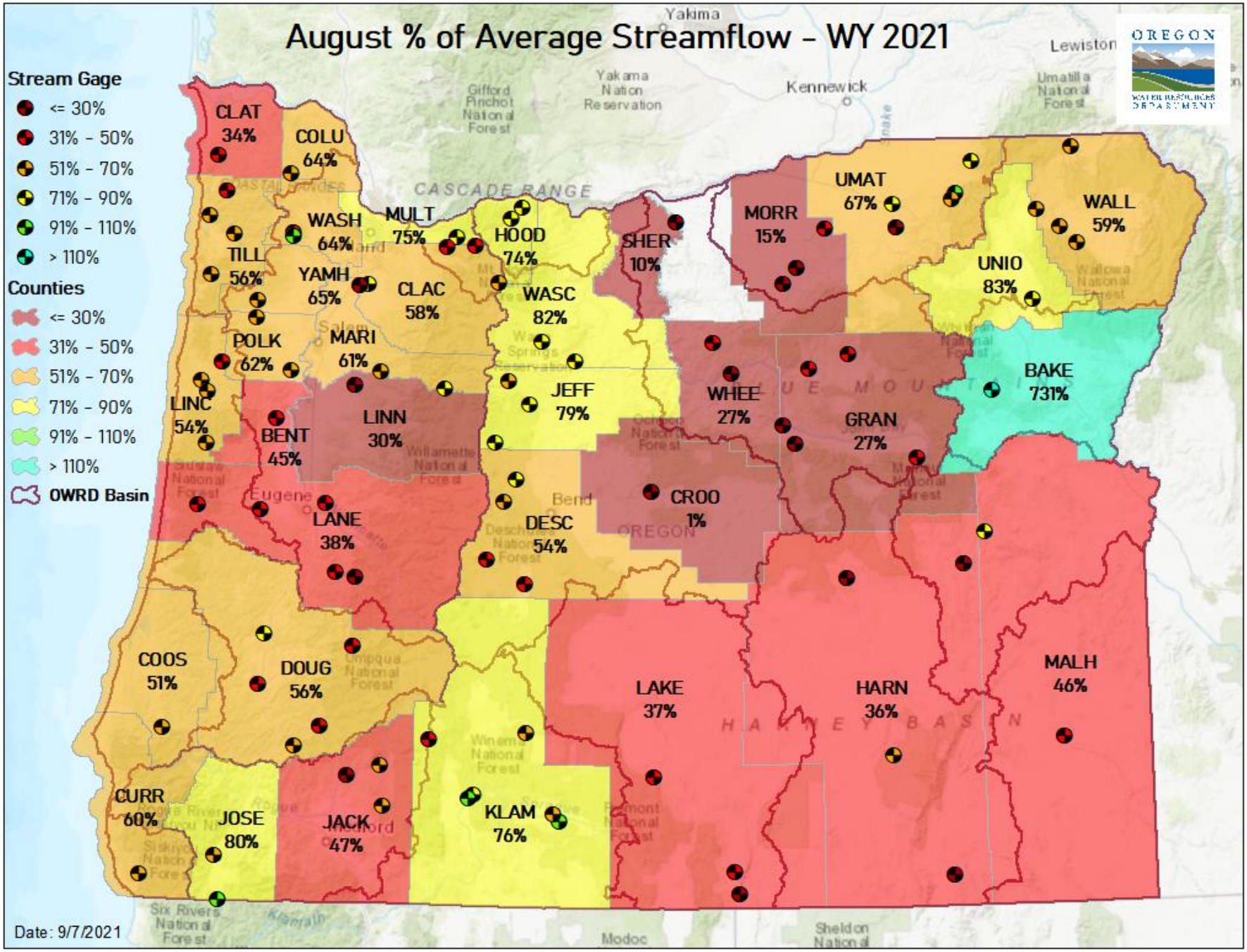
Dry Creek diversion dam near Lakeview

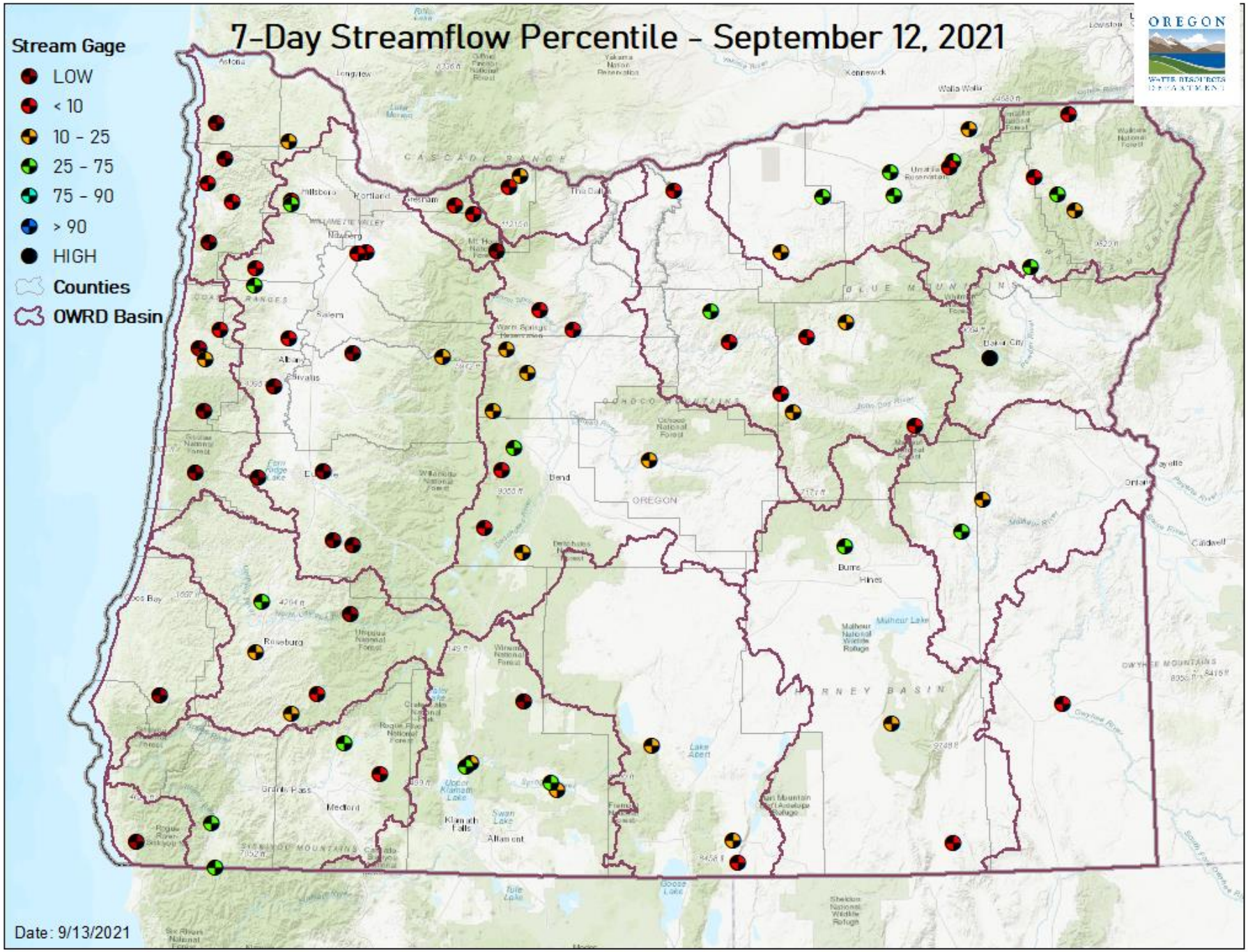
Ryan Andrews
Oregon Water Resources Department
September 15th, 2021

Drought Declaration Status Map

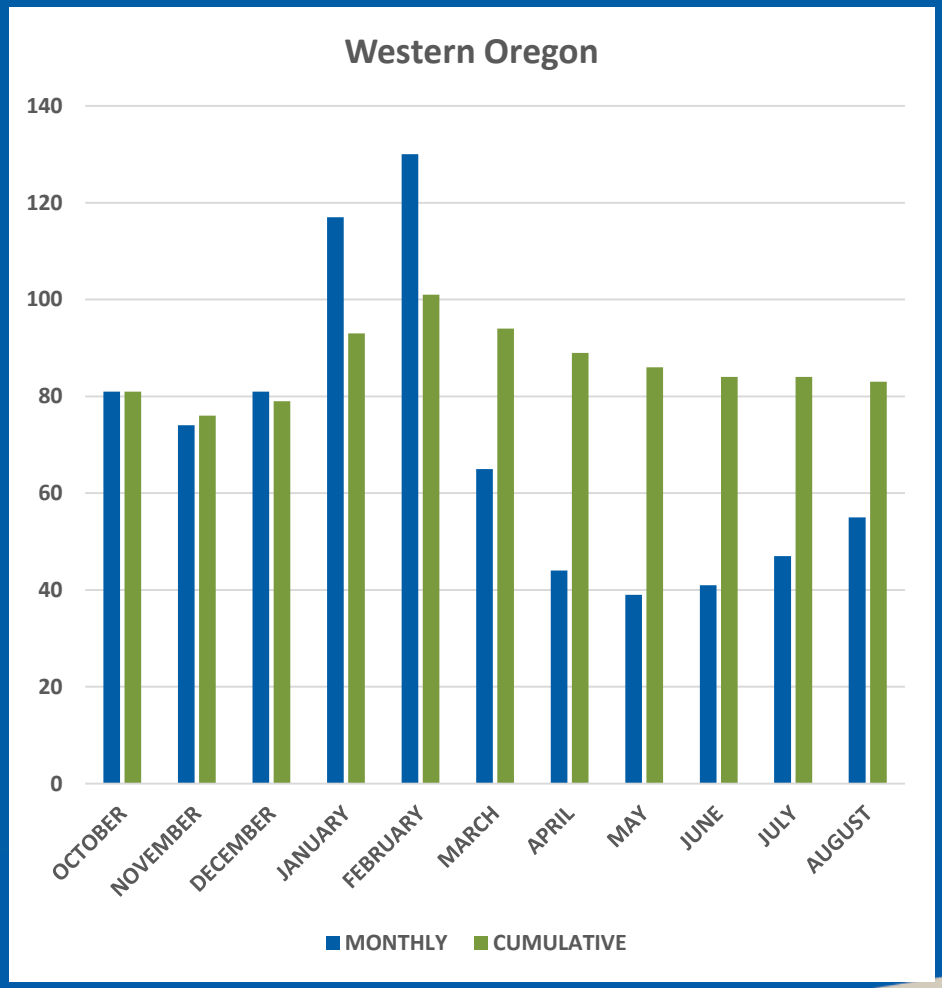


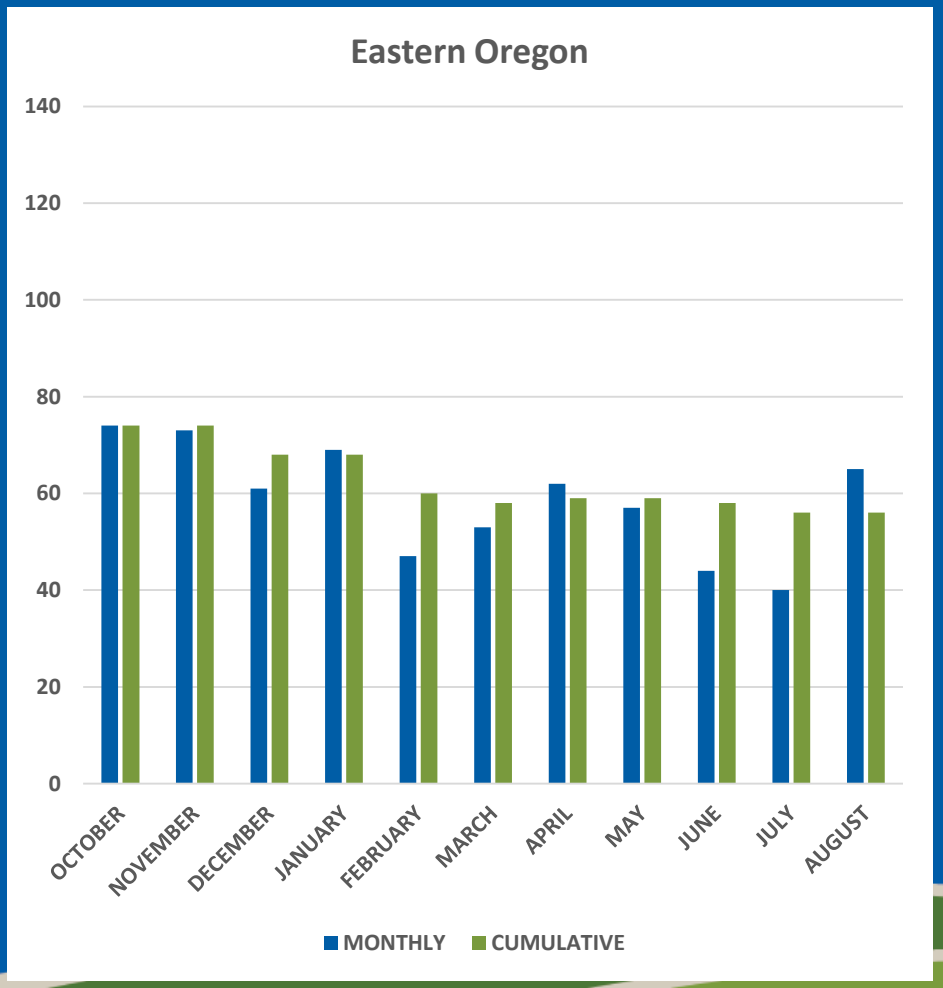

WY to Date % of Average - thru September 12, 2021
OREGON
WATER RESOURCES DEPARTMENT
Stream Gage
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
> 110%
Counties
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
> 110%
OWRD Basin
CLAT 88%
COLU 97%
TILL 100%
WASH 92%
YAMH 99%
MULT 88%
HOOD 86%
CLAC 90%
MARI 86%
POLK 102%
LINC 96%
BENT 93%
LINN 75%
LANE 77%
SHER 49%
WASC 66%
JEFF 90%
MORR 48%
UMAT 90%
UNIO 79%
WALL 80%
WHEE 34%
GRAN 50%
BAKE 58%
CROO 36%
DESC 68%
COOS 83%
DOUG 66%
CURR 80%
JOSE 66%
JACK 56%
KLAM 42%
LAKE 24%
HARN 40%
MALH 40%
Date: 9/13/2021

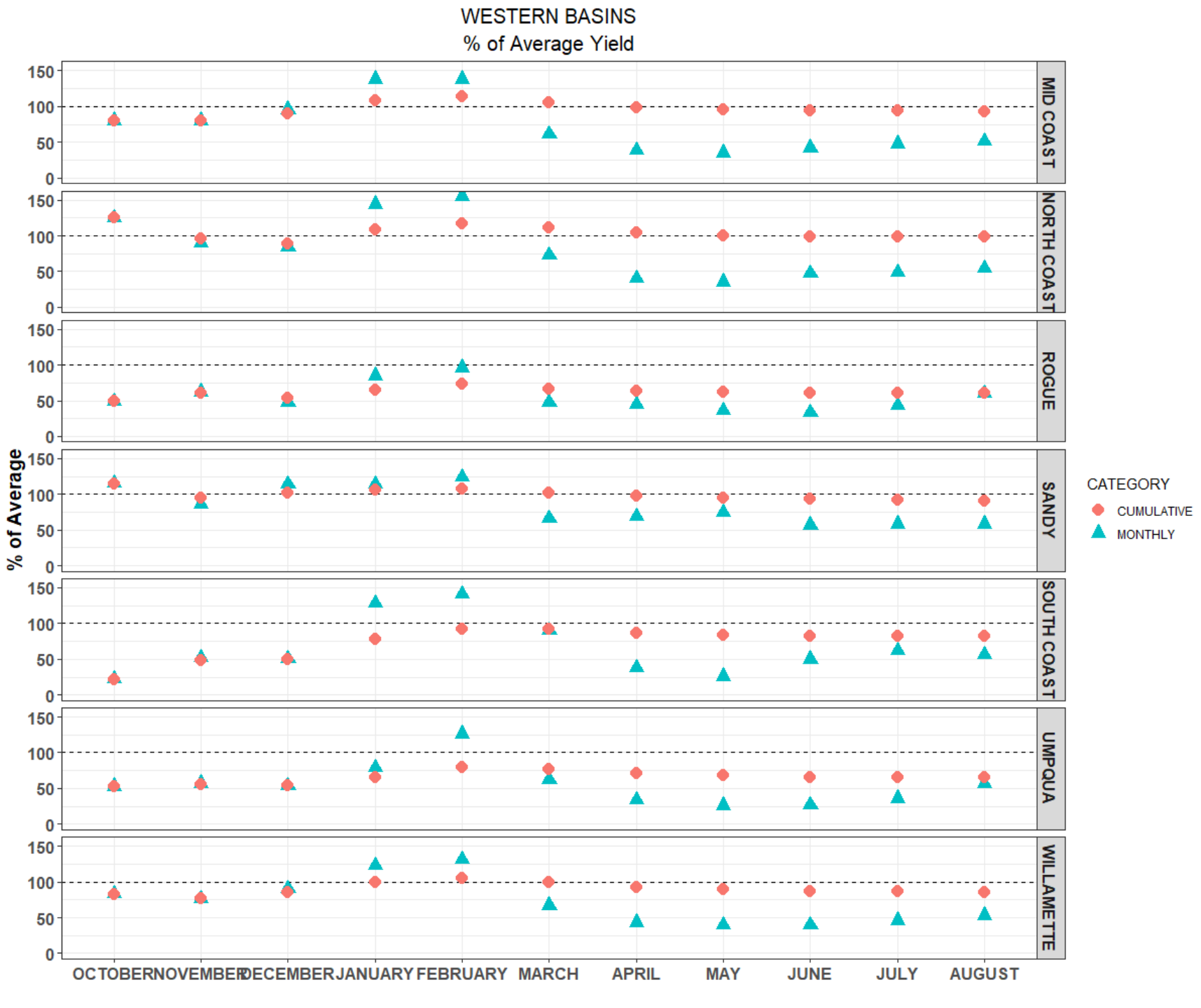

August % of Average Streamflow - WY 2021
Stream Gage
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
> 110%
Counties
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
> 110%
OWRD Basin
CLAT 34%
COLU 64%
WASH 64%
MULT 75%
HOOD 74%
SHER 10%
MORR 15%
UMAT 67%
WALL 59%
UNIO 83%
BAKE 731%
TILL 56%
YAMH 65%
CLAC 58%
WASC 82%
POLK 62%
MARI 61%
LINC 54%
BENT 45%
LINN 30%
JEFF 79%
WHEE 27%
GRAN 27%
LANE 38%
DESC 54%
CROO 1%
COOS 51%
DOUG 56%
LAKE 37%
HARN 36%
MALH 46%
CURR 60%
JOSE 80%
JACK 47%
KLAM 76%
Date: 9/7/2021
Yakima
Lewiston
Kennewick
Gifford Pinchot National Forest
Yakama Nation Reservation
Umatilla National Forest
CASCADE RANGE
Eugene
Bend
OREGON
HARNEY BASIN
Six Rivers National Forest
Modoc
Sheldon National
OREGON WATER RESOURCES DEPARTMENT

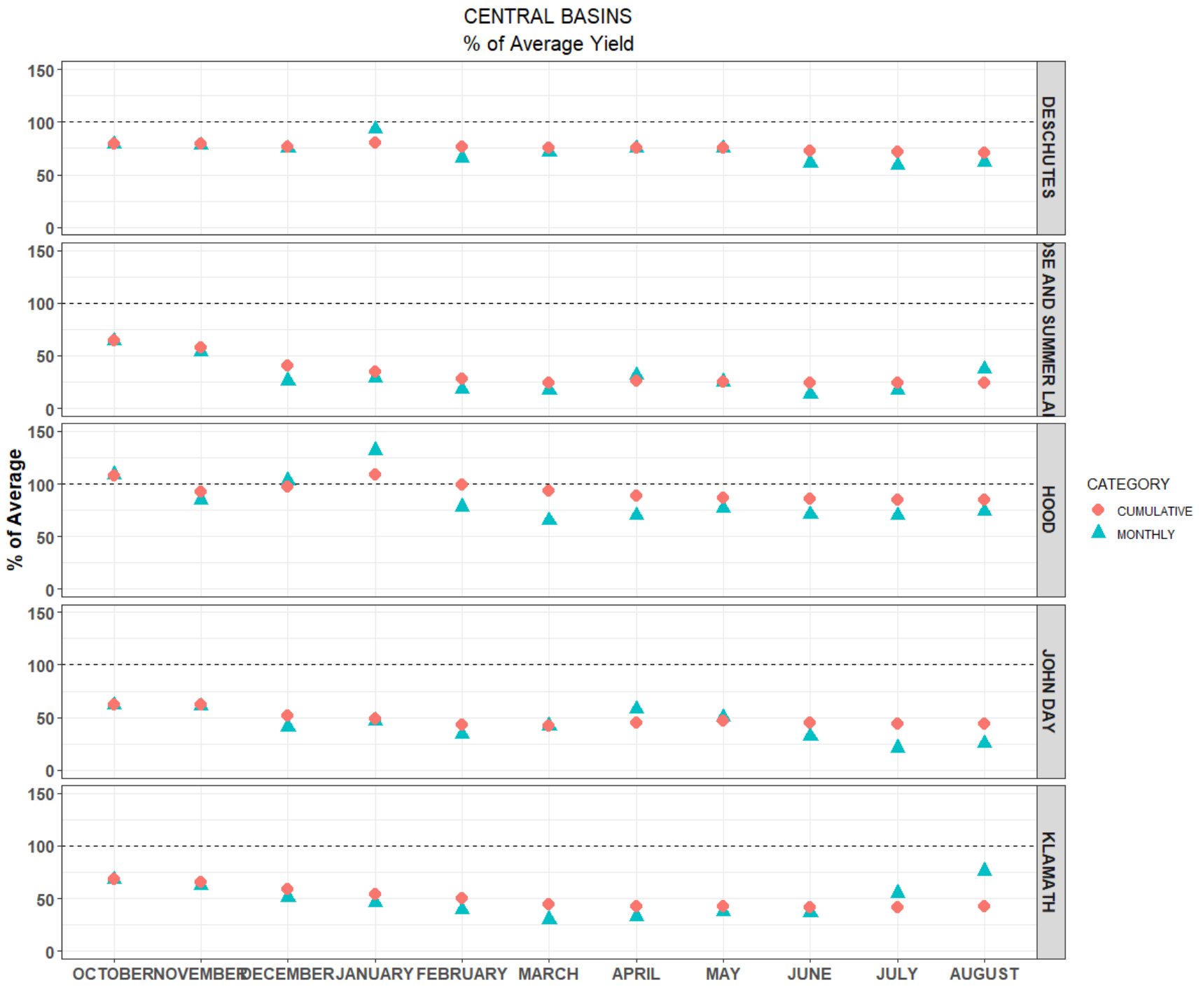

7-Day Streamflow Percentile - September 12, 2021
Stream Gage
LOW
< 10
10 - 25
25 - 75
75 - 90
> 90
HIGH
Counties
OWRD Basin
OREGON
WATER RESOURCES DEPARTMENT
Date: 9/13/2021

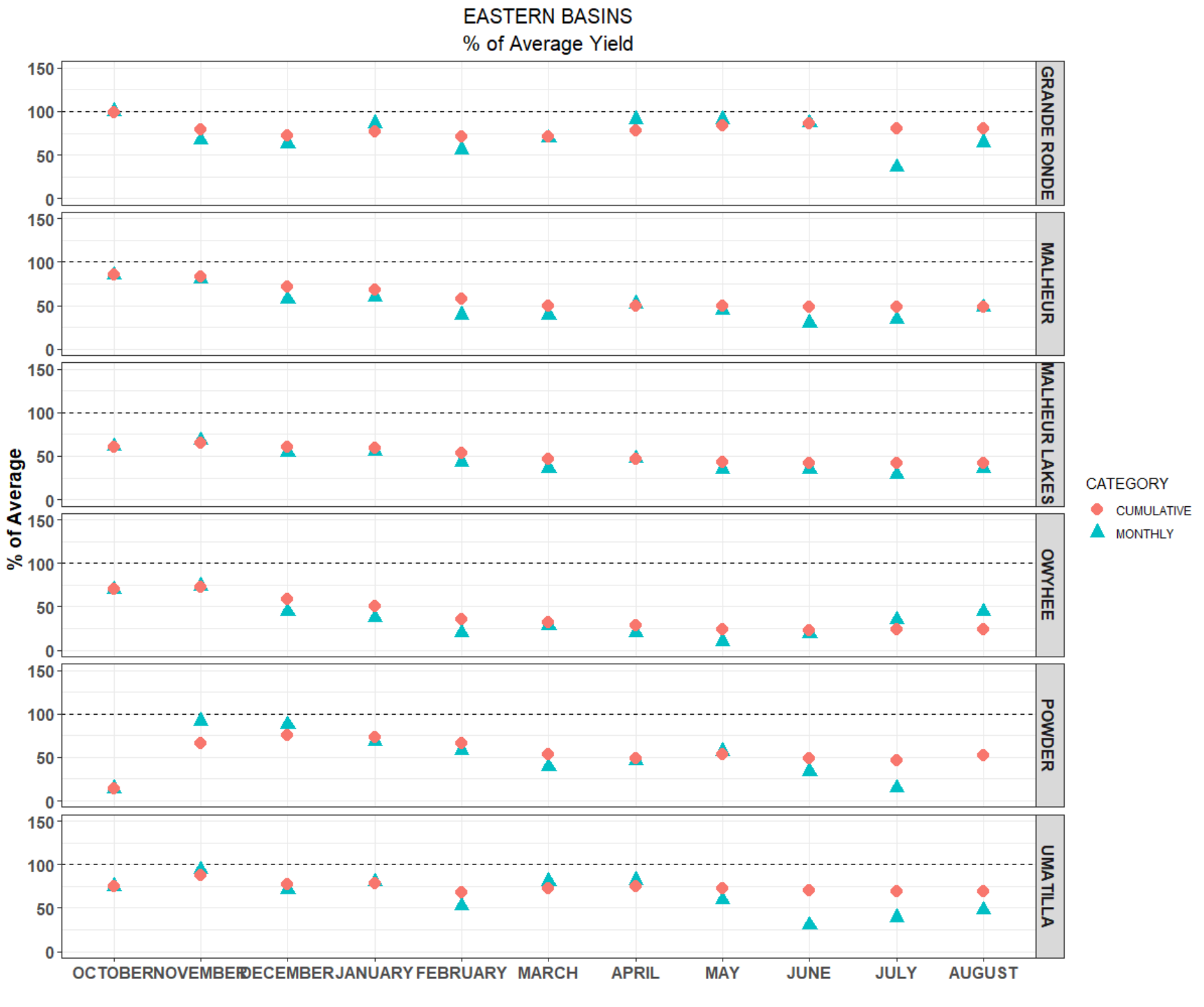
% of Average Streamflow thru August
Base period: 1981 – 2010

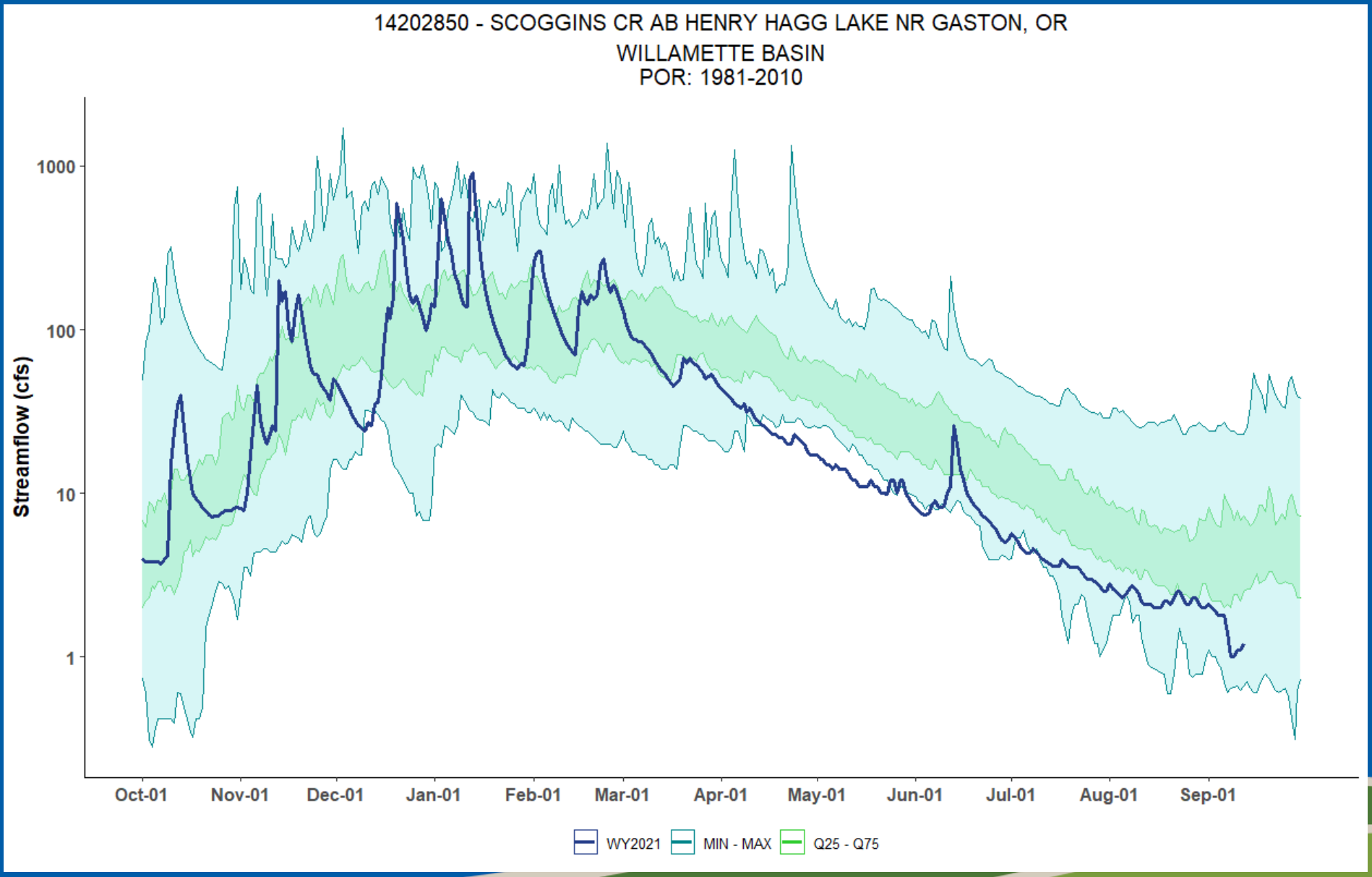


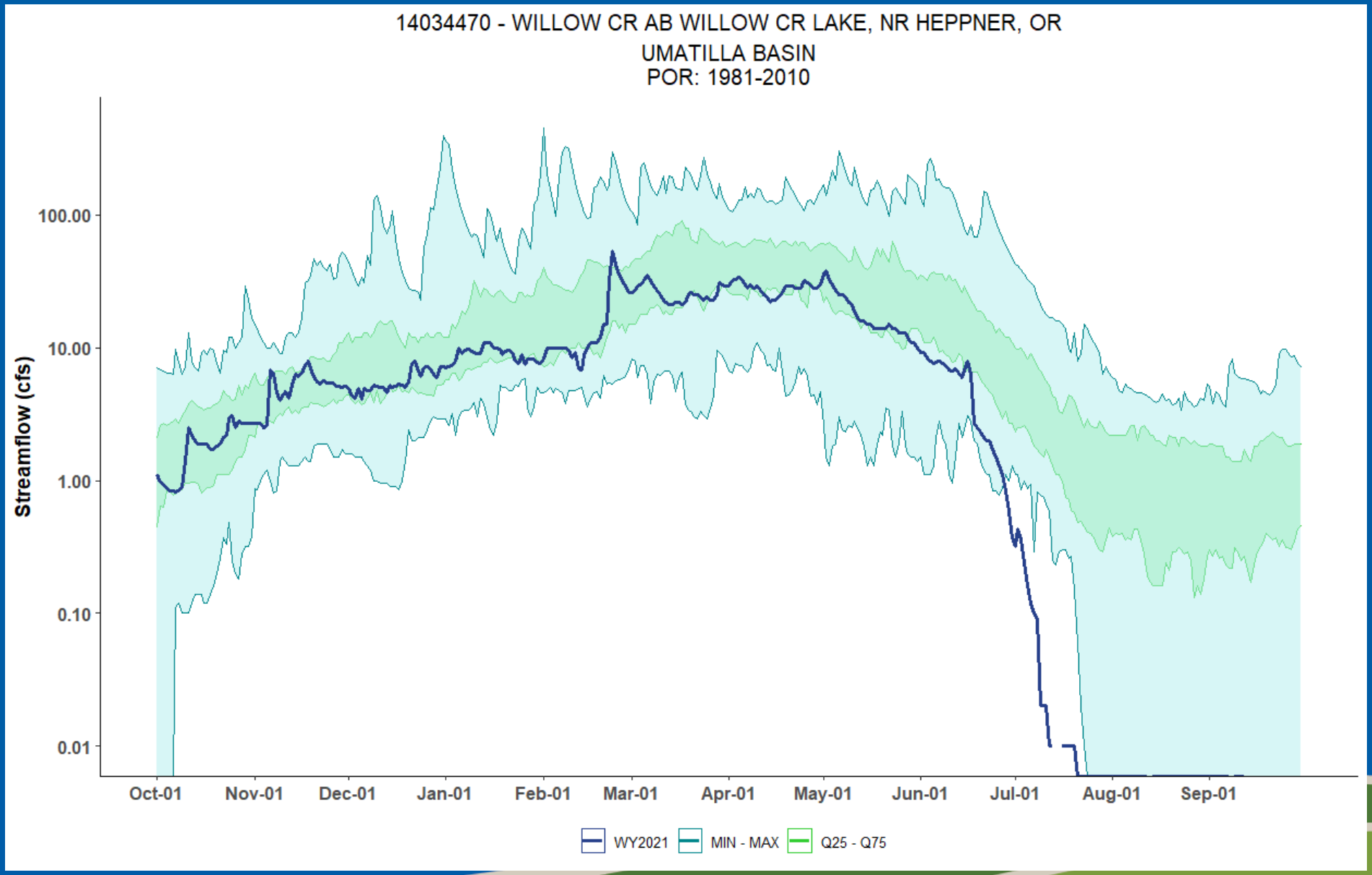


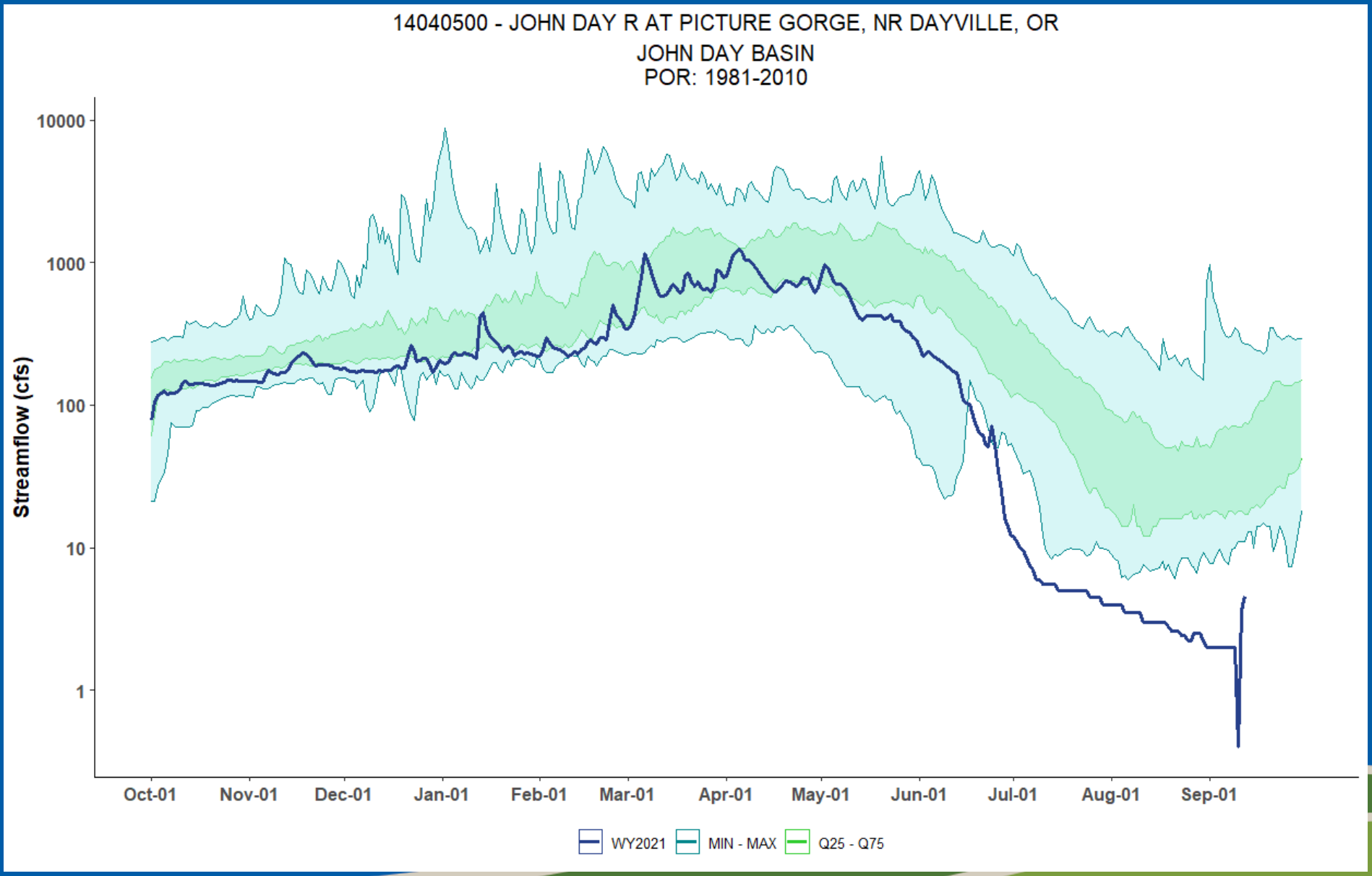

WESTERN BASINS
% of Average Yield
% of Average
150
100
50
0
MID COAST
NORTH COAST
ROGUE
SANDY
SOUTH COAST
UMPQUA
WILLAMETTE
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
CATEGORY
CUMULATIVE
MONTHLY

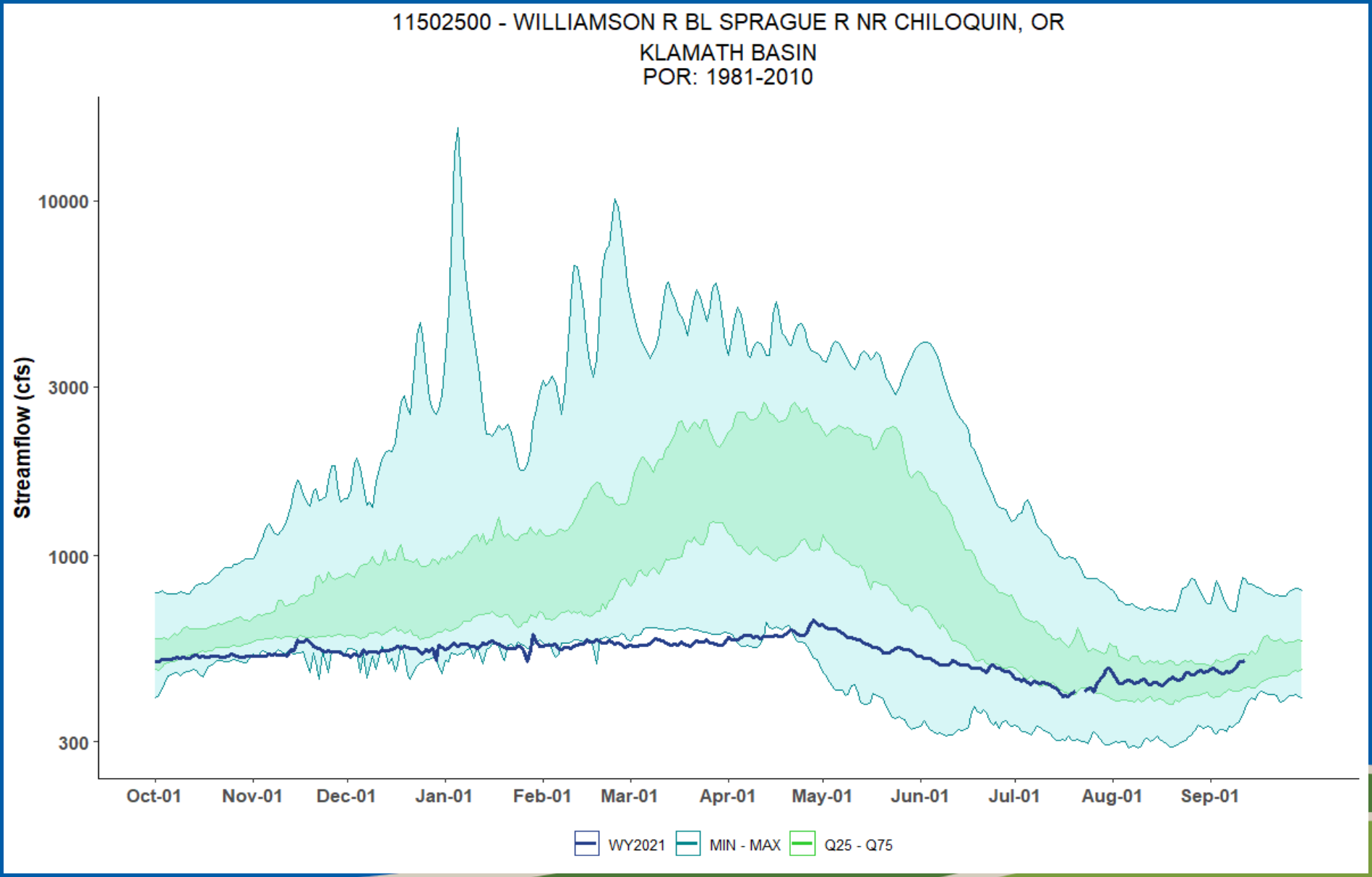

CENTRAL BASINS
% of Average Yield
% of Average
150
100
50
0
DESCHUTES
SE AND SUMMER LA
HOOD
JOHN DAY
KLAMATH
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
CATEGORY
CUMULATIVE
MONTHLY


EASTERN BASINS
% of Average Yield
% of Average
150
100
50
0
GRANDE RONDE
MALHEUR
MALHEUR LAKES
OWYHEE
POWDER
UMATILLA
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
CATEGORY
CUMULATIVE
MONTHLY

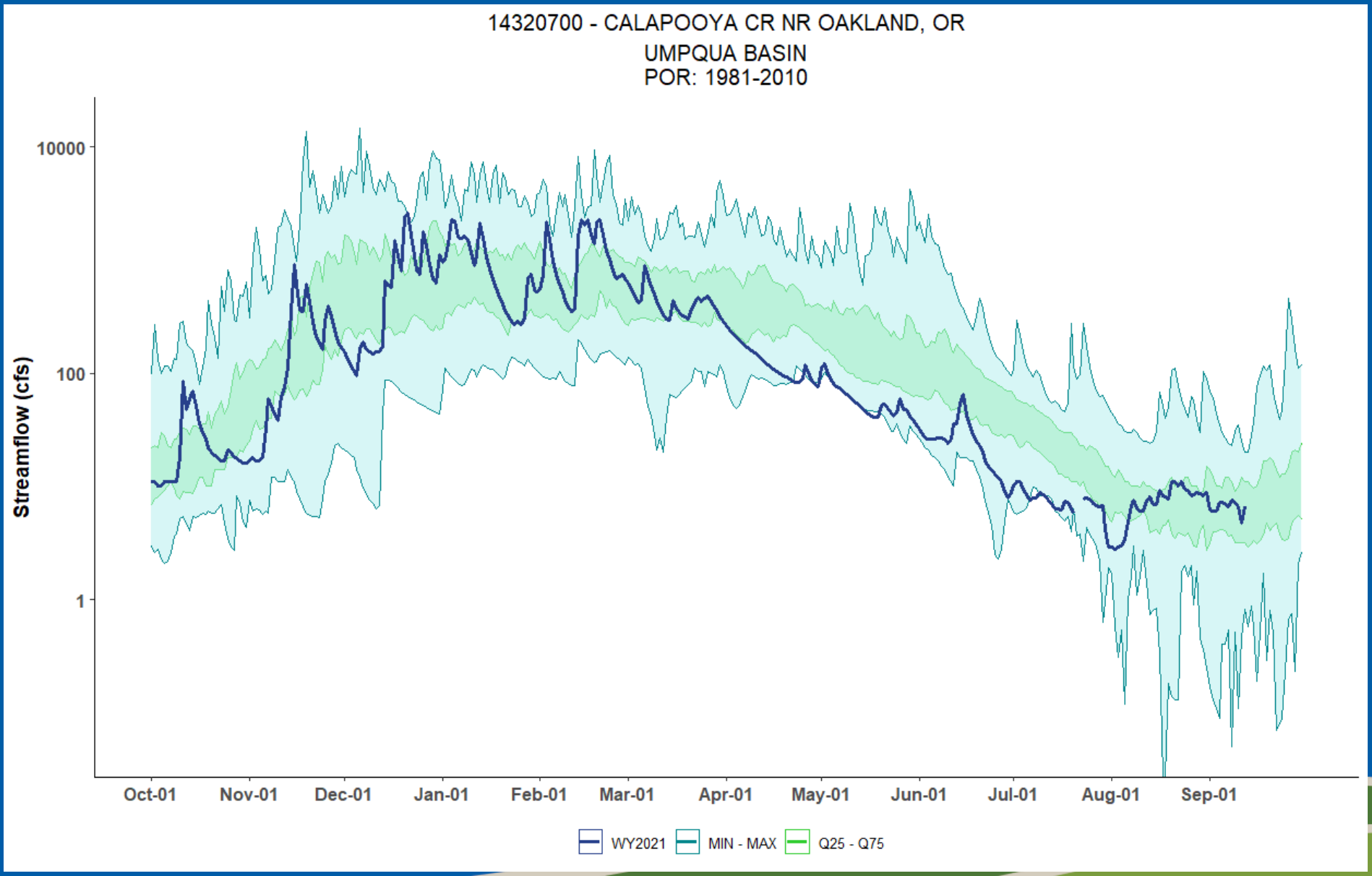

14202850 - SCOGGINS CR AB HENRY HAGG LAKE NR GASTON, OR
WILLAMETTE BASIN
POR: 1981-2010
Streamflow (cfs)
1000
100
10
1
Oct-01
Nov-01
Dec-01
Jan-01
Feb-01
Mar-01
Apr-01
May-01
Jun-01
Jul-01
Aug-01
Sep-01
WY2021
MIN - MAX
Q25 - Q75

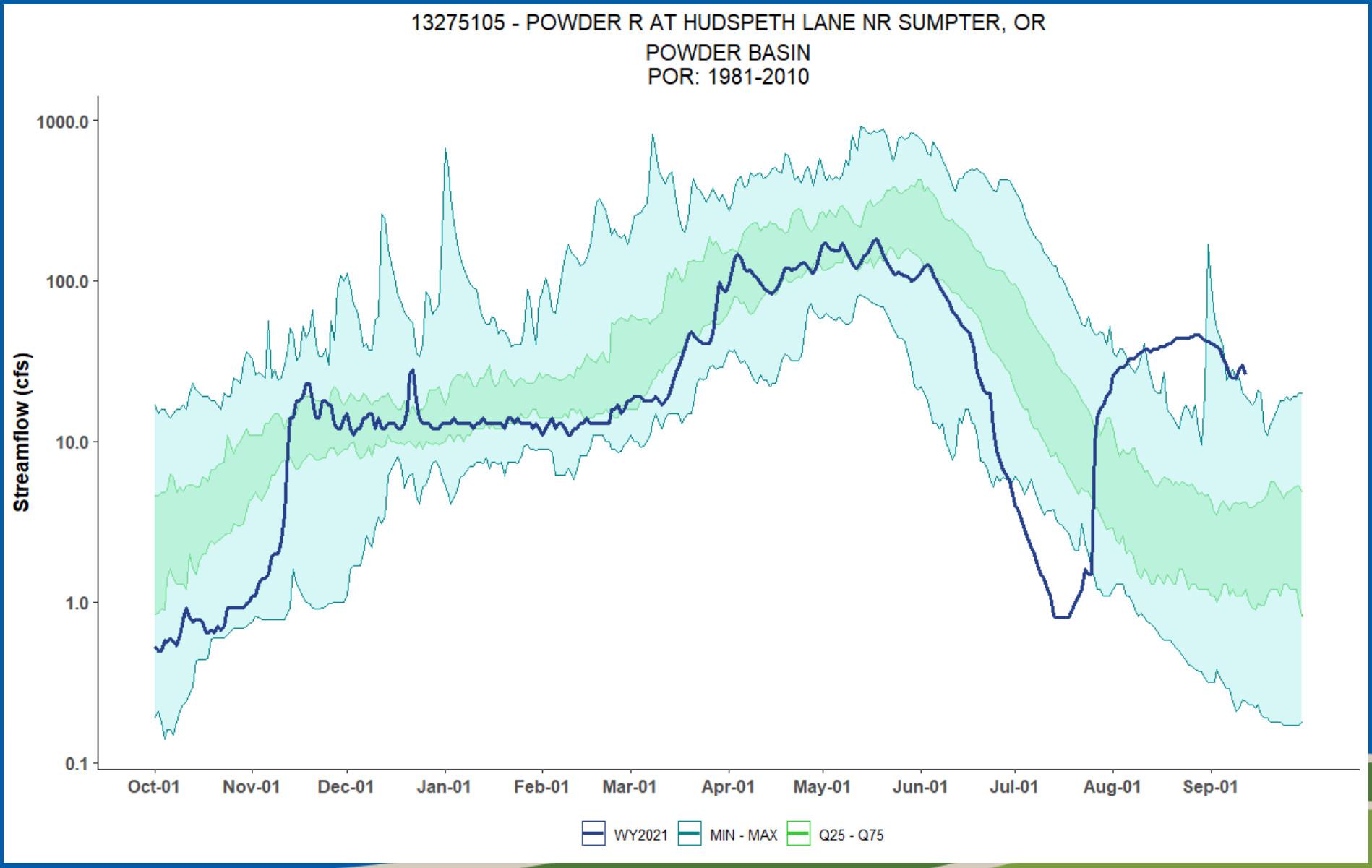

14034470 - WILLOW CR AB WILLOW CR LAKE, NR HEPPNER, OR
UMATILLA BASIN
POR: 1981-2010
Streamflow (cfs)
100.00
10.00
1.00
0.10
0.01
Oct-01
Nov-01
Dec-01
Jan-01
Feb-01
Mar-01
Apr-01
May-01
Jun-01
Jul-01
Aug-01
Sep-01
WY2021
MIN - MAX
Q25 - Q75


14040500 - JOHN DAY R AT PICTURE GORGE, NR DAYVILLE, OR
JOHN DAY BASIN
POR: 1981-2010
Streamflow (cfs)
10000
1000
100
10
1
Oct-01
Nov-01
Dec-01
Jan-01
Feb-01
Mar-01
Apr-01
May-01
Jun-01
Jul-01
Aug-01
Sep-01
WY2021
MIN - MAX
Q25 - Q75



KLAMATH COUNTY


14320700 - CALAPOOYA CR NR OAKLAND, OR
UMPQUA BASIN
POR: 1981-2010
Streamflow (cfs)
10000
100
1
Oct-01
Nov-01
Dec-01
Jan-01
Feb-01
Mar-01
Apr-01
May-01
Jun-01
Jul-01
Aug-01
Sep-01
WY2021
MIN - MAX
Q25 - Q75


13275105 - POWDER R AT HUDSPETH LANE NR SUMPTER, OR
POWDER BASIN
POR: 1981-2010
Streamflow (cfs)
1000.0
100.0
10.0
1.0
0.1
Oct-01
Nov-01
Dec-01
Jan-01
Feb-01
Mar-01
Apr-01
May-01
Jun-01
Jul-01
Aug-01
Sep-01
WY2021
MIN - MAX
Q25 - Q75

OREGON

WATER RESOURCES DEPARTMENT

QUESTIONS?

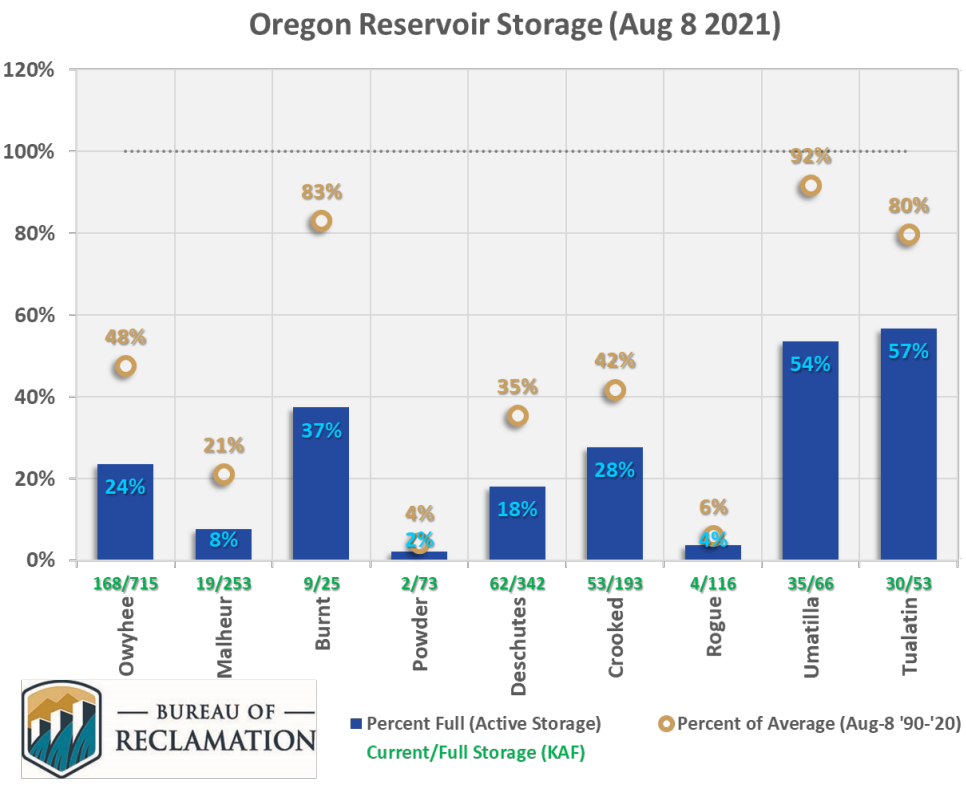
BUREAU OF RECLAMATION

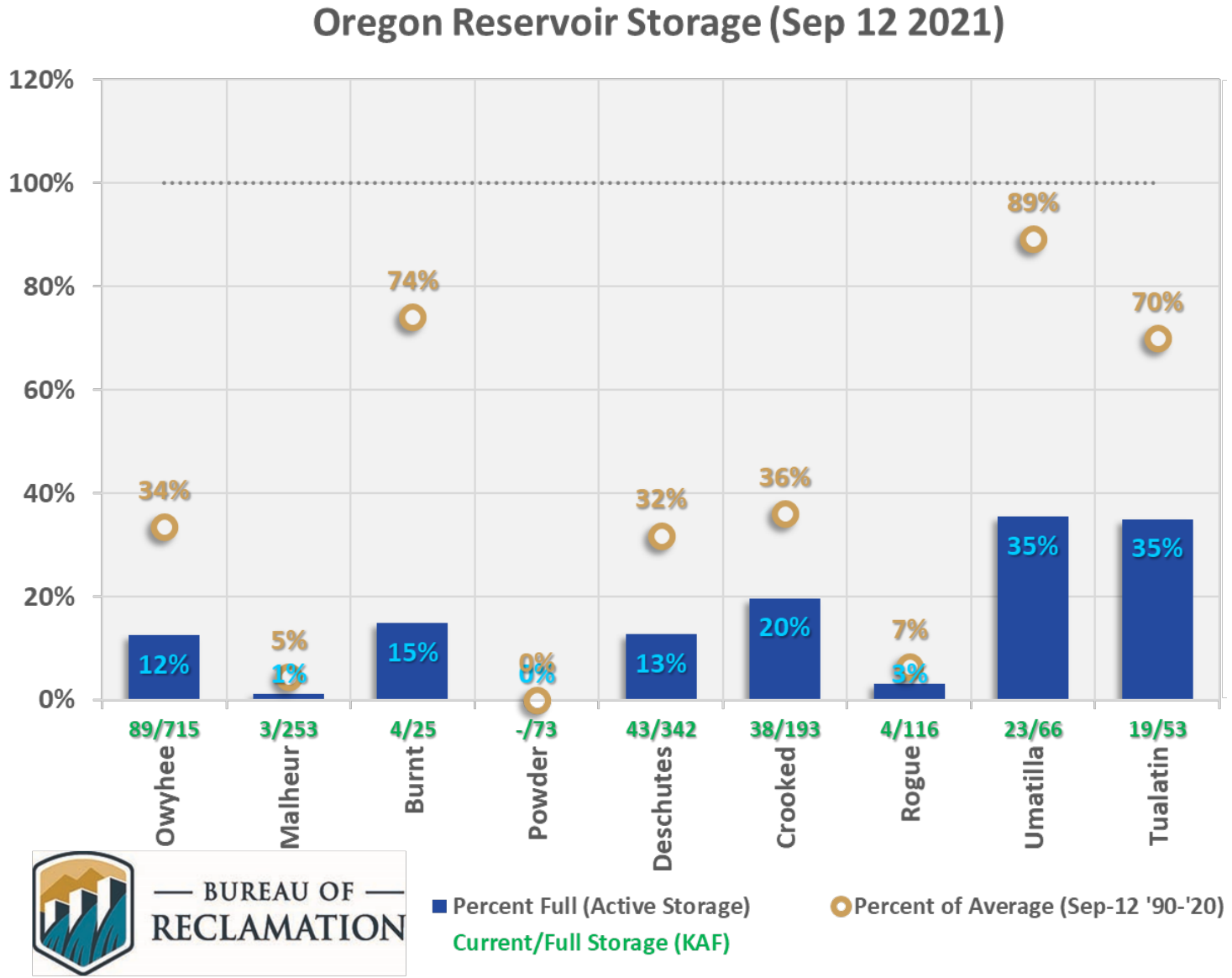
Reclamation Storage Update

Oregon Water Supply Availability Committee Meeting

September 15, 2021

Reservoir Storage Conditions



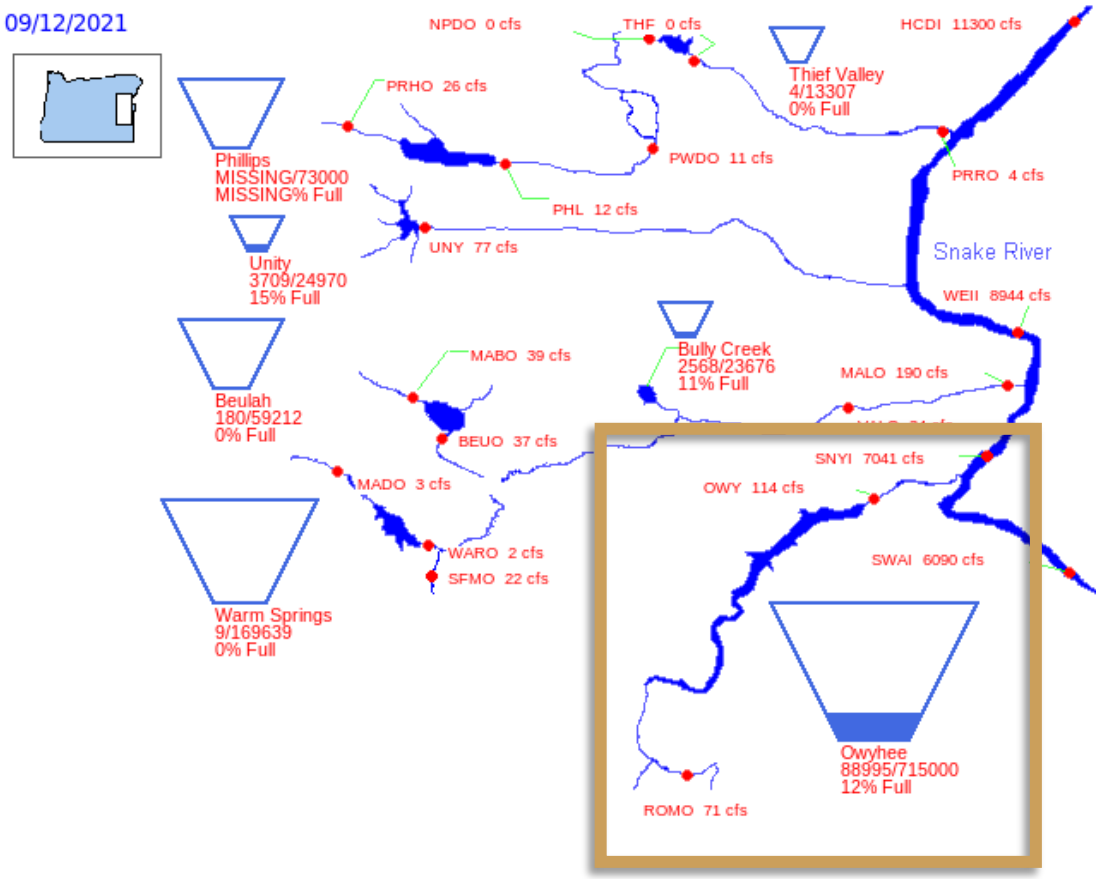


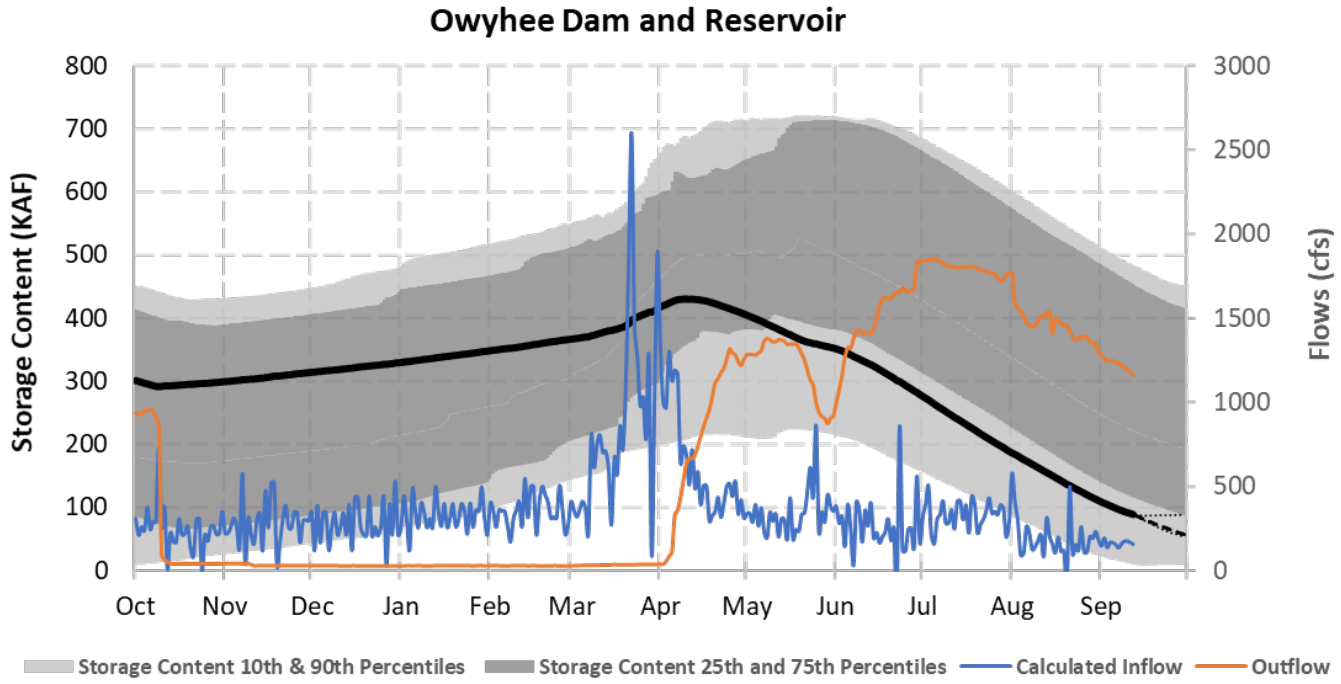
Basin Operations Summary

- Operations Activities:
  - Some Reclamation river basins still delivering irrigation water
    - Tualatin, Umatilla, Owyhee, Crooked, Burnt
  - Irrigation delivery shut-down dates
    - Rogue (July 19), Malheur (8/23), Deschutes (8/25), Powder (8/27), Crooked (10/1), Owyhee (10/1)

- Water Supply Challenges
  - Earlier than normal shut-down dates
  - Low carry-over to start the next WY for all Reclamation river basins

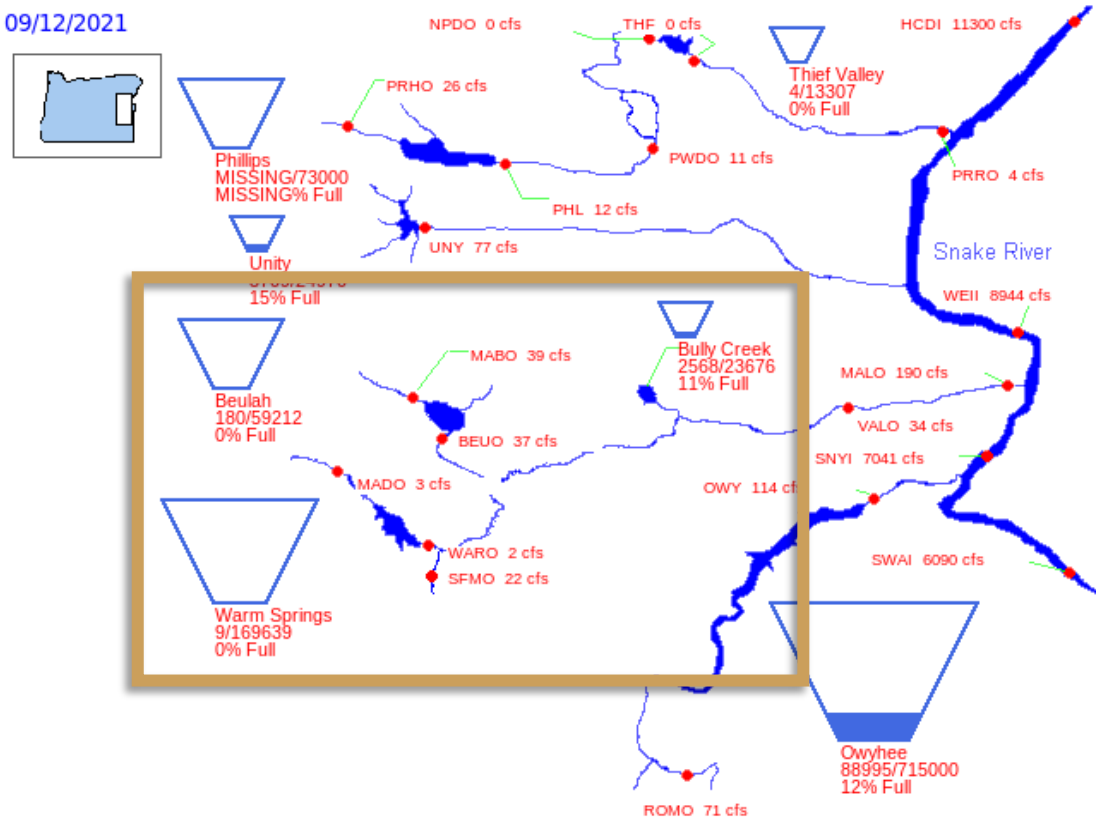
Owyhee River Basin

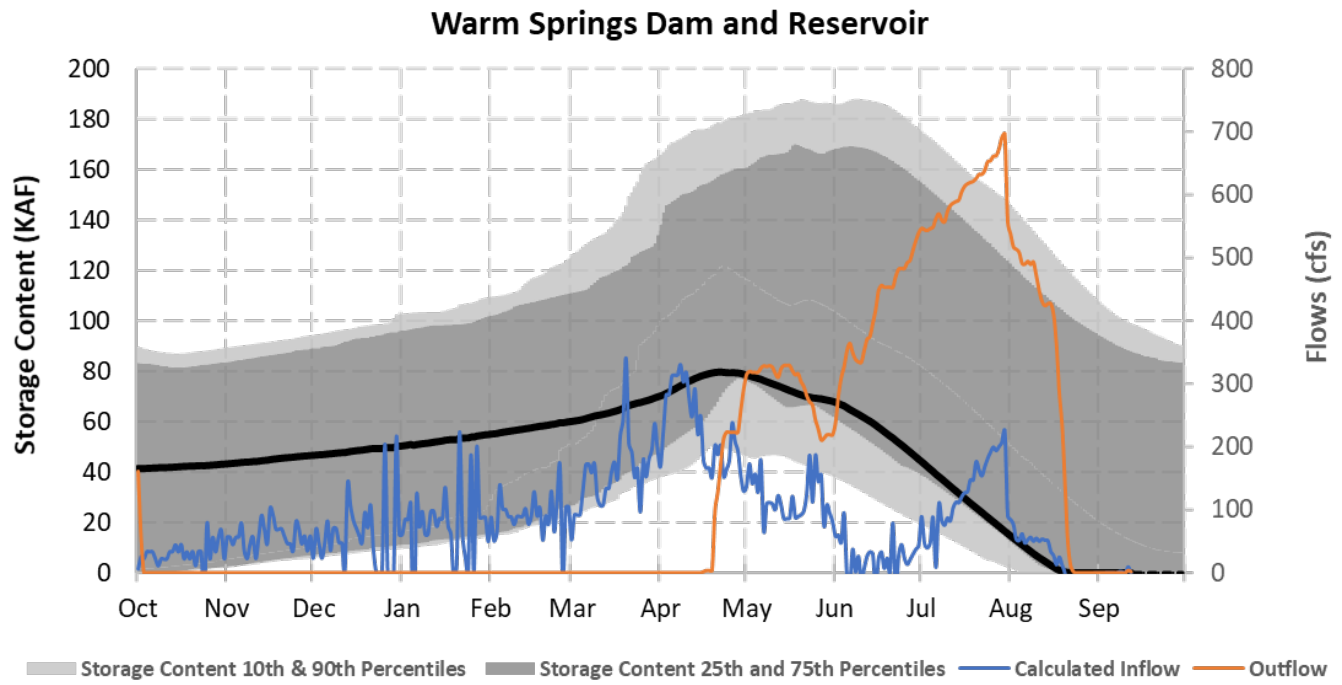


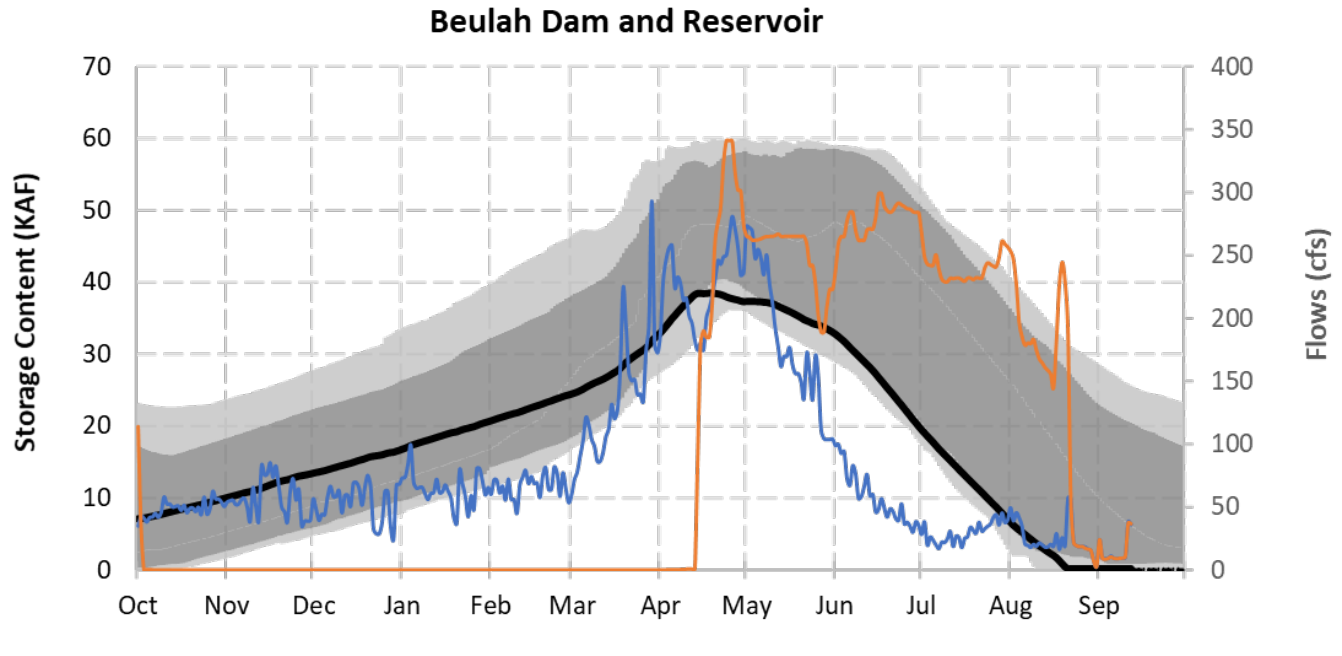


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Malheur River Basin







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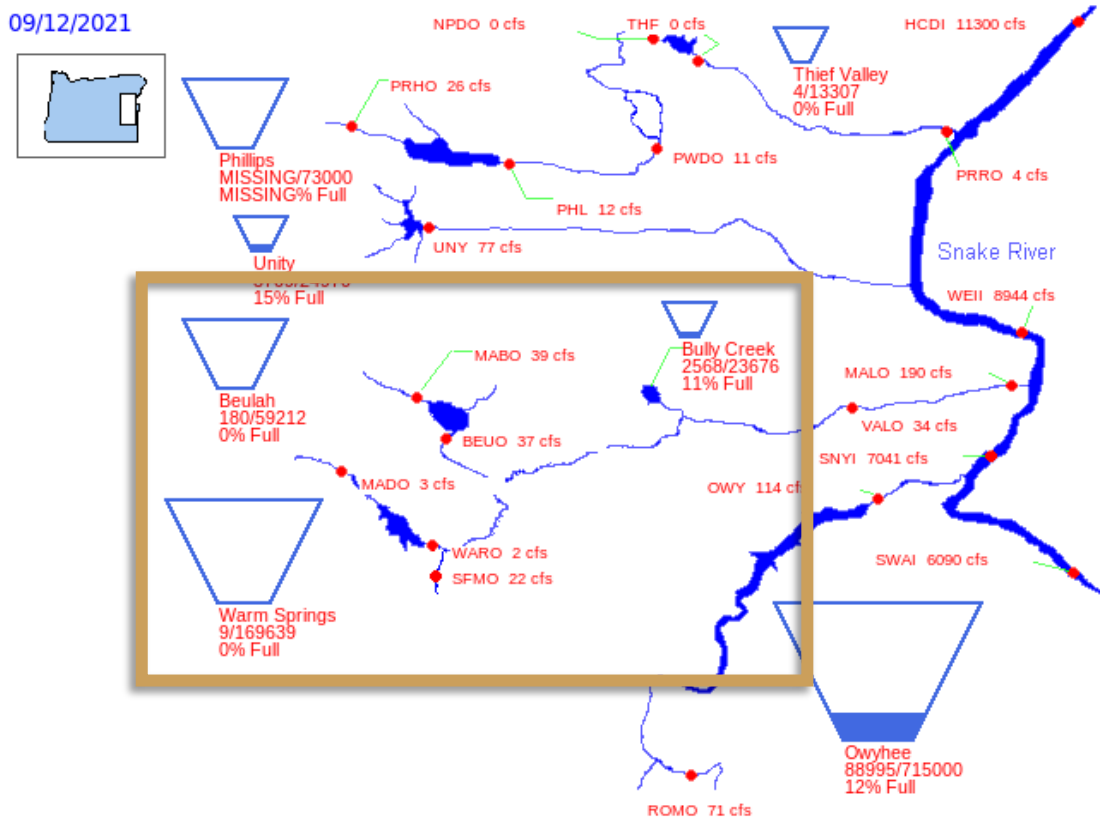
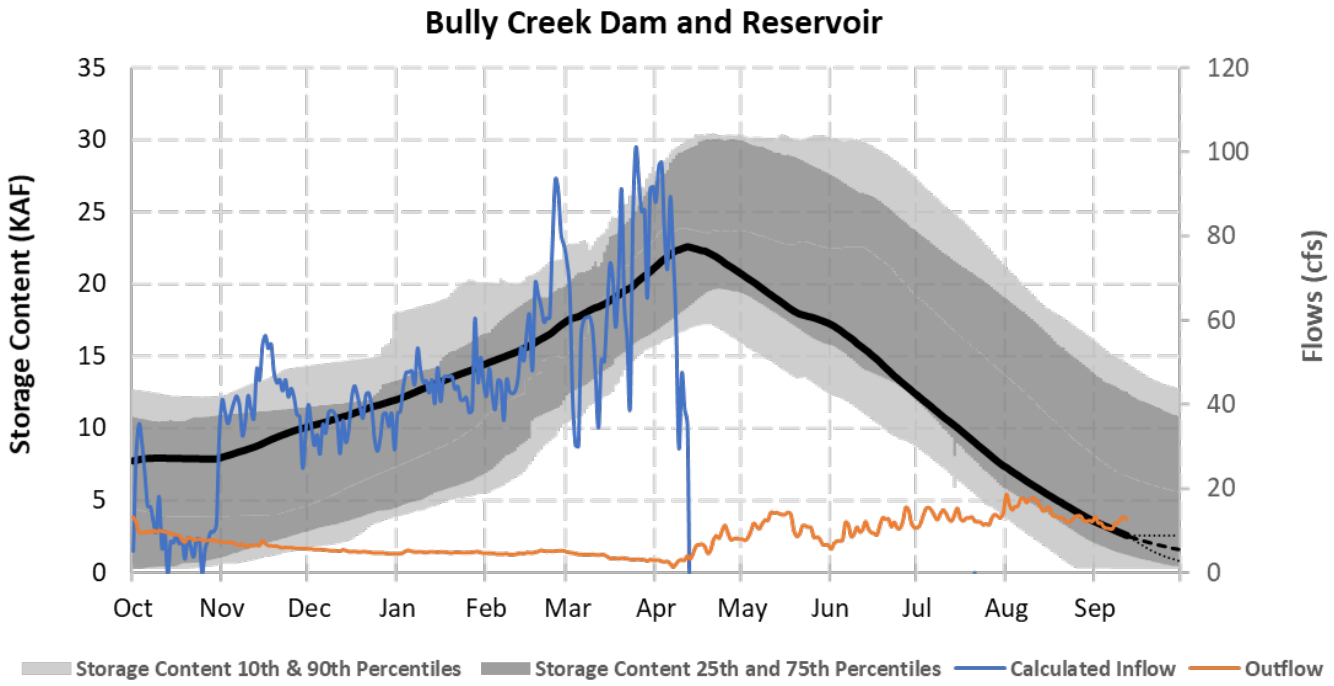
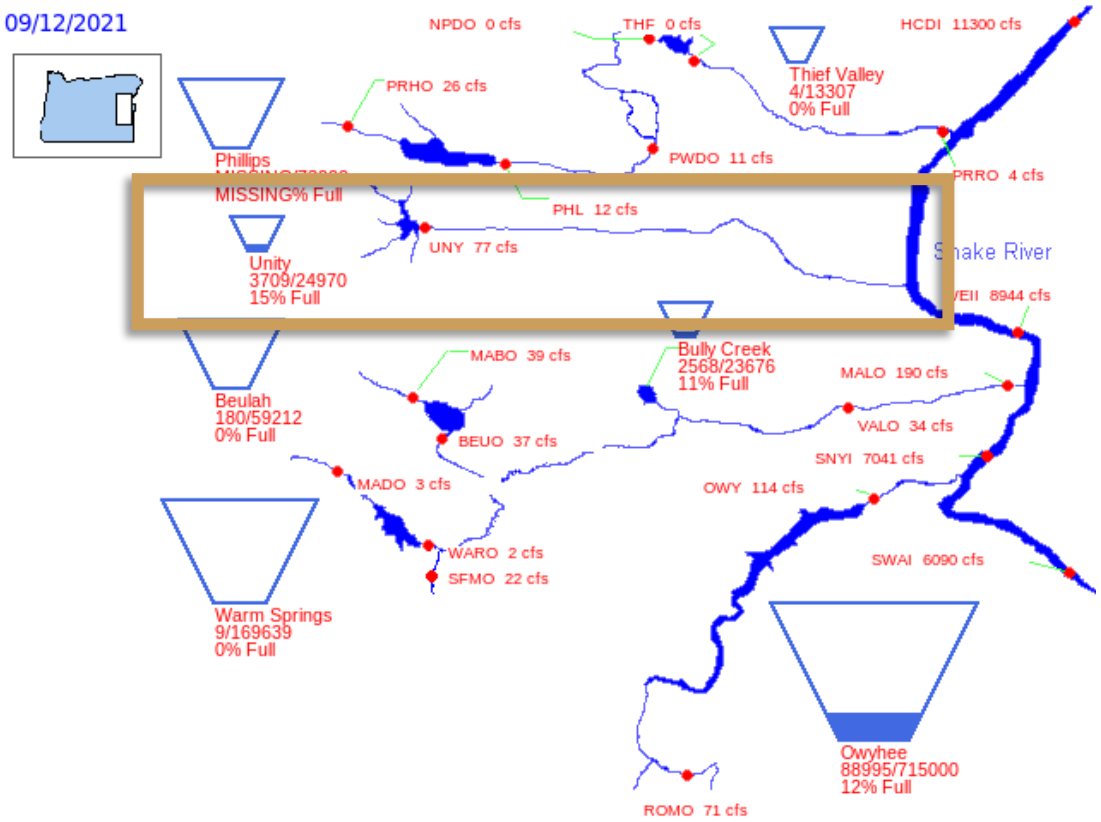
Malheur River Basin

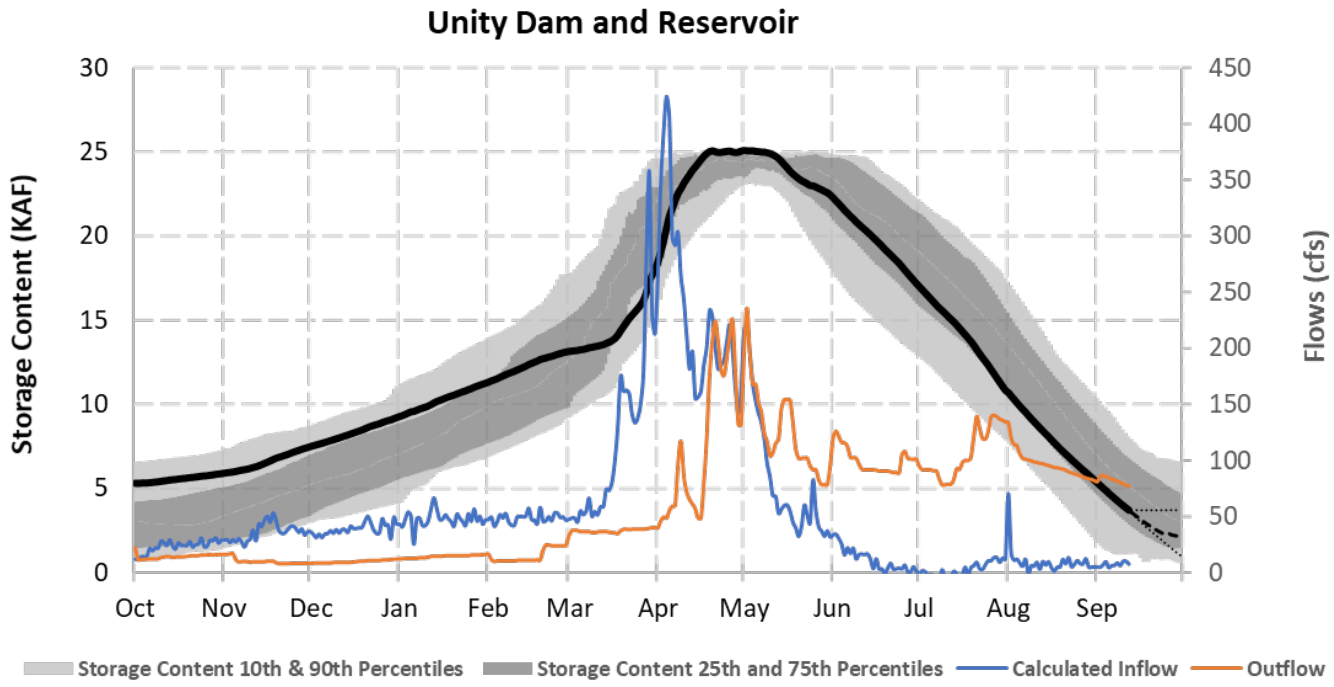




*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

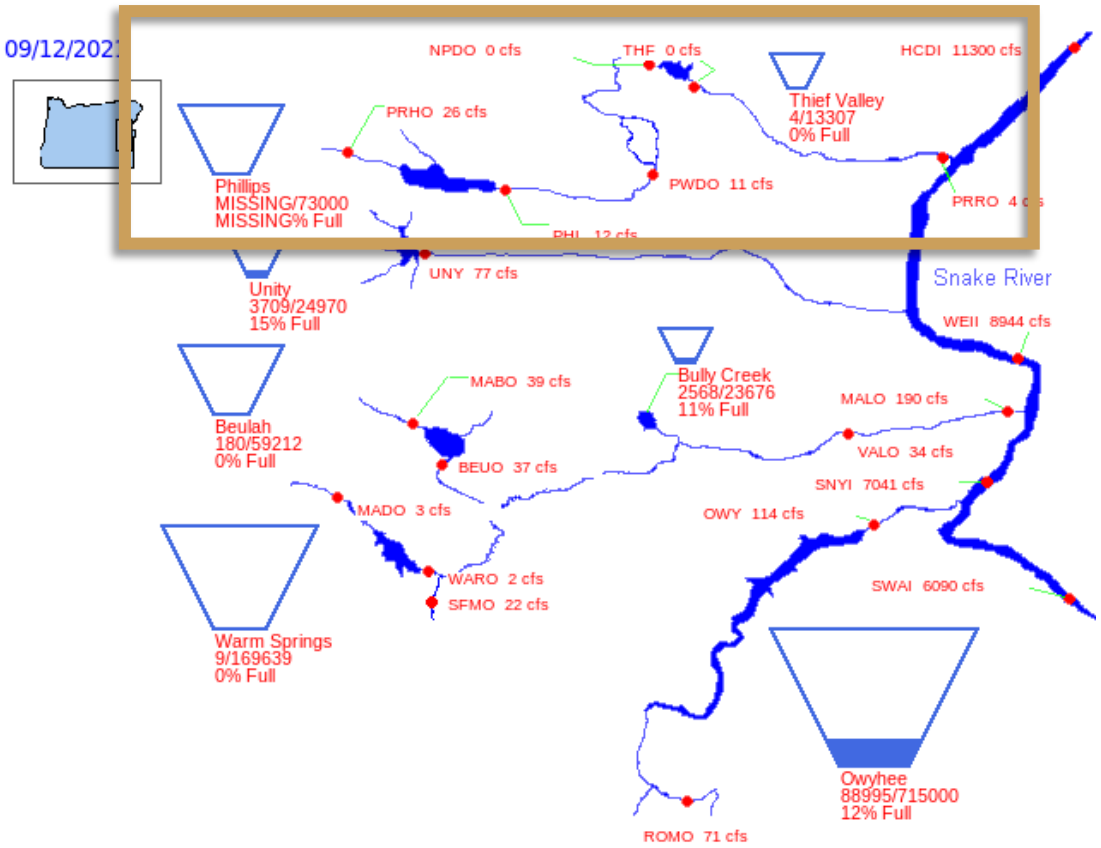
Burnt River Basin

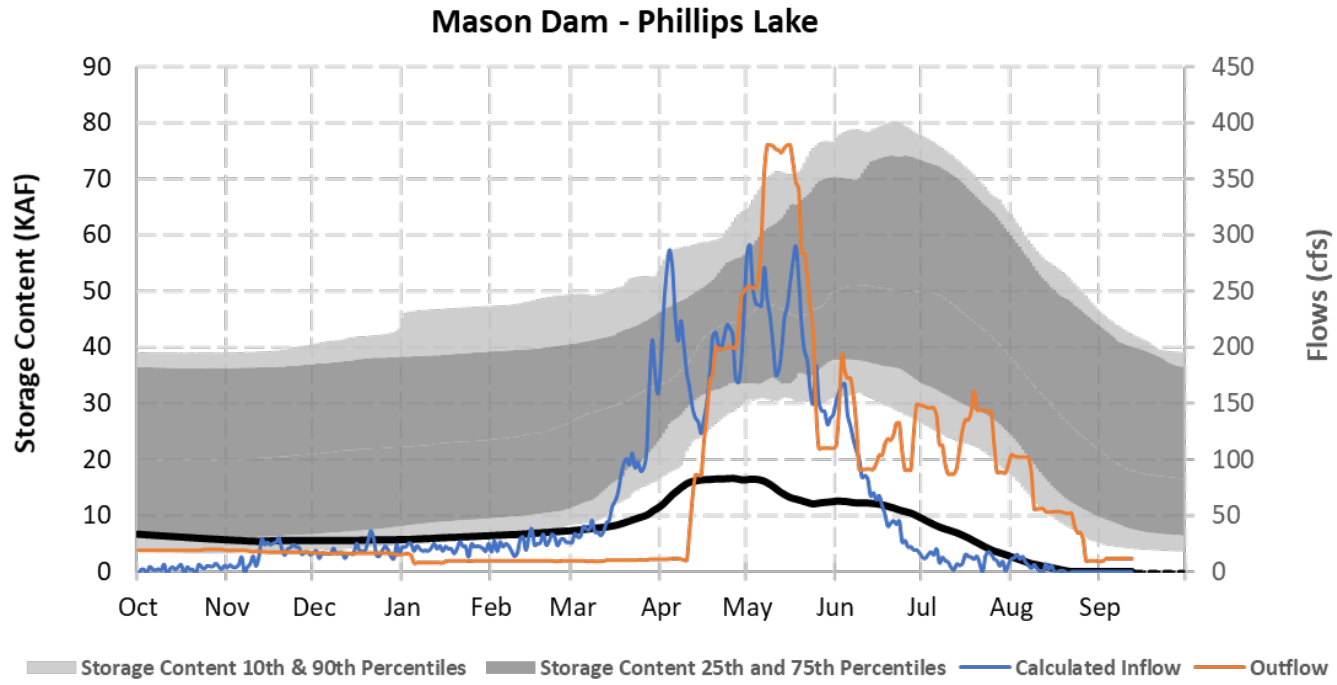




*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

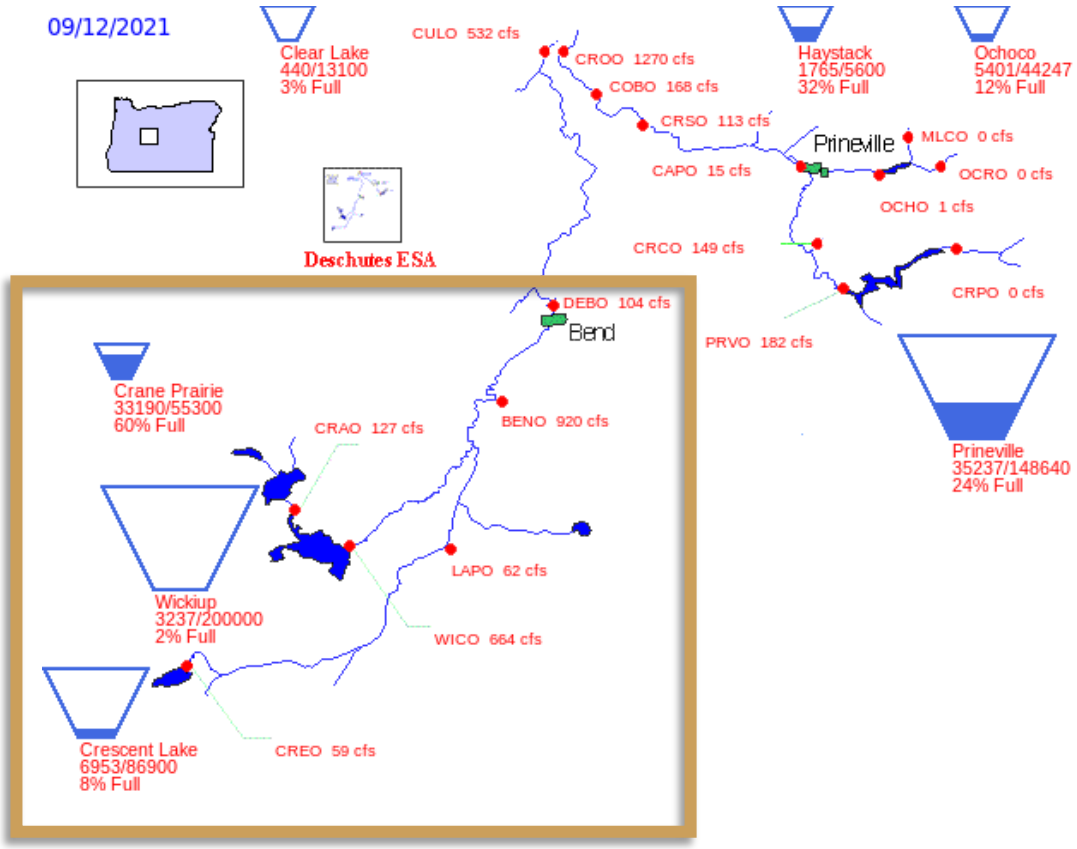
Powder River Basin

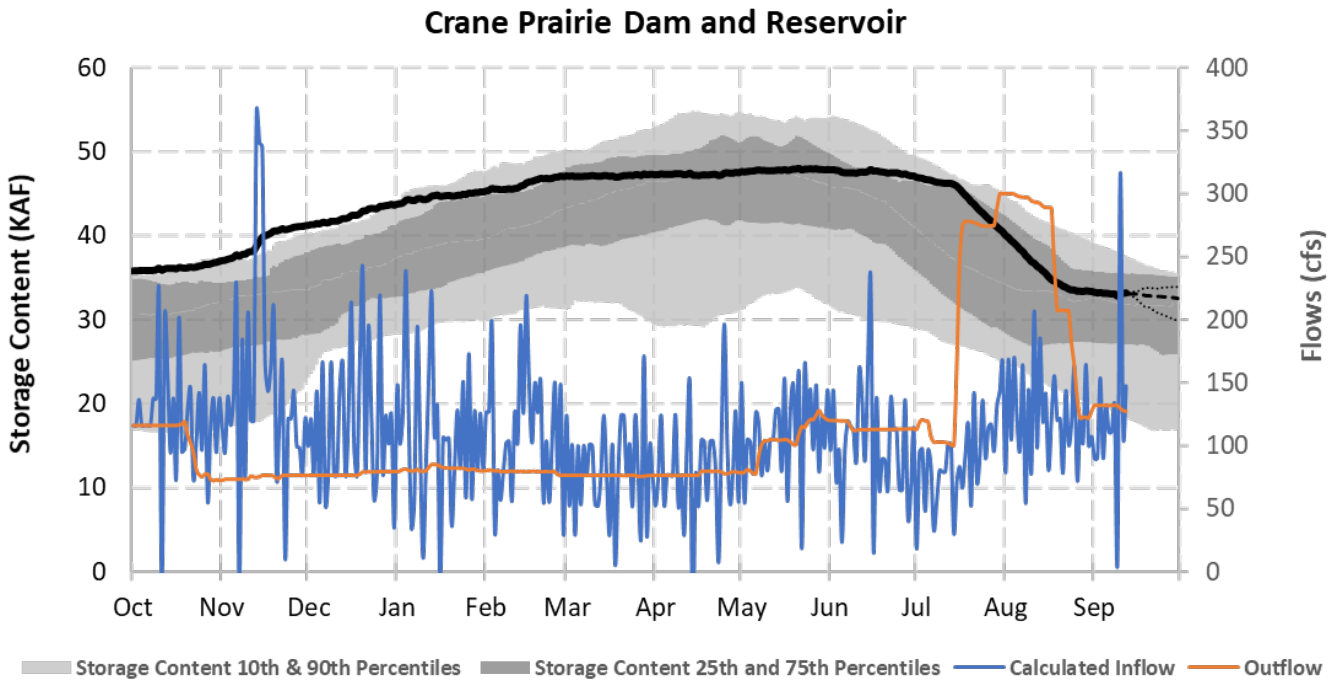


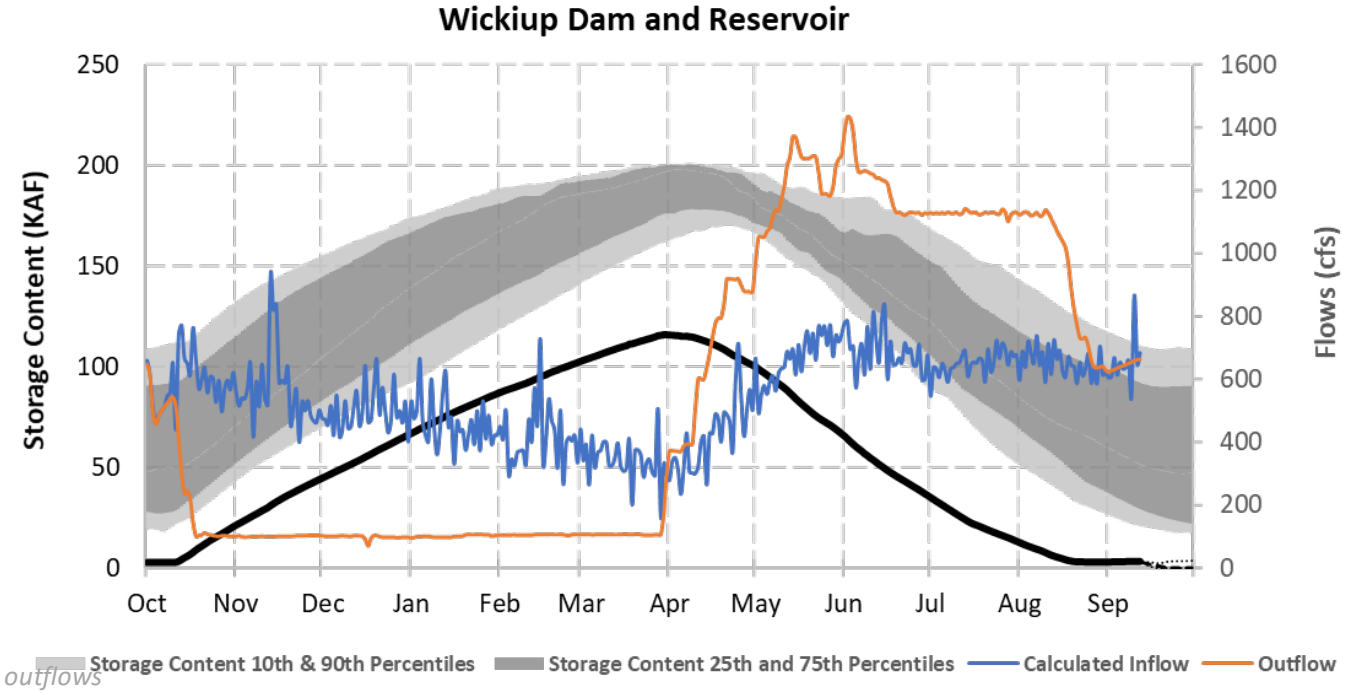


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Deschutes River Basin







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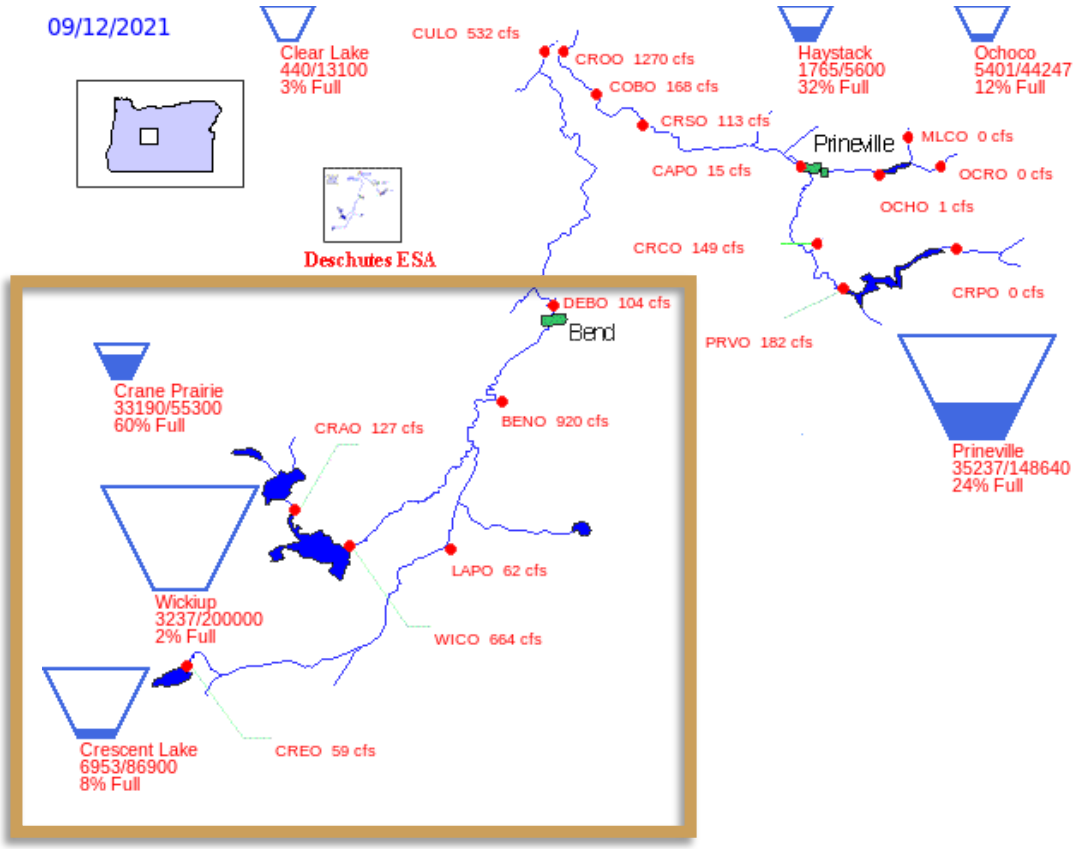
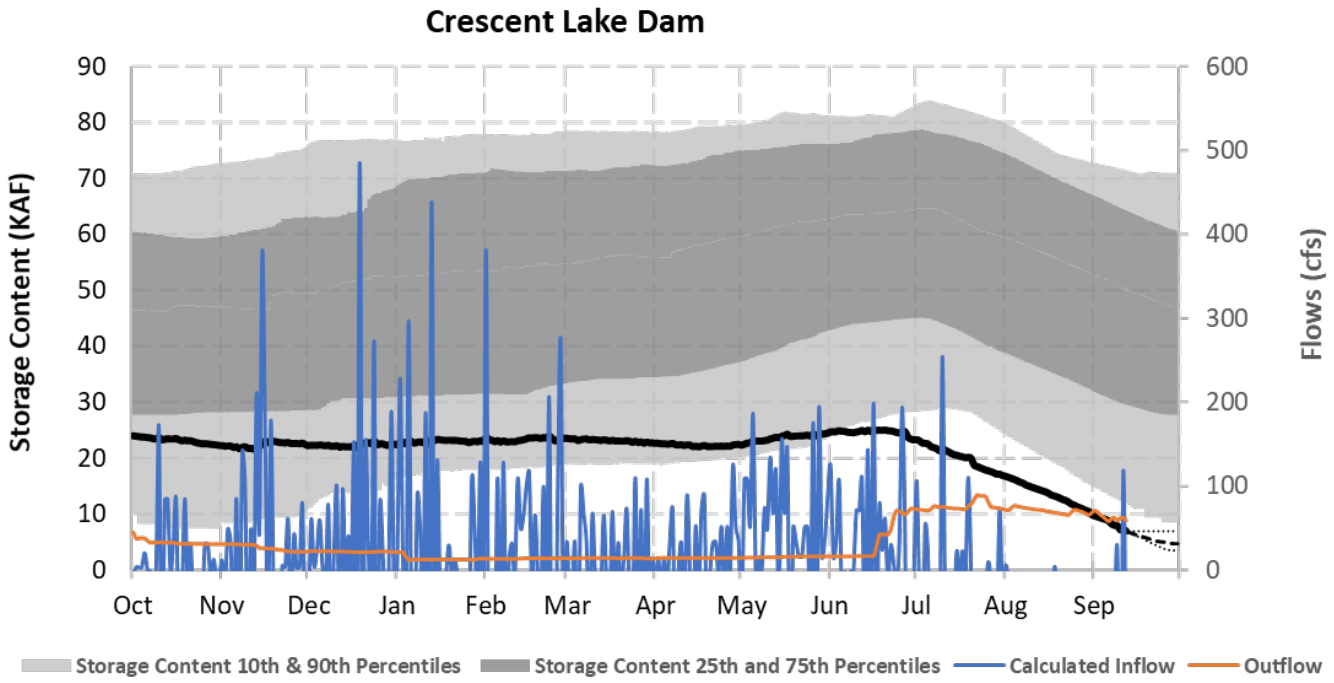
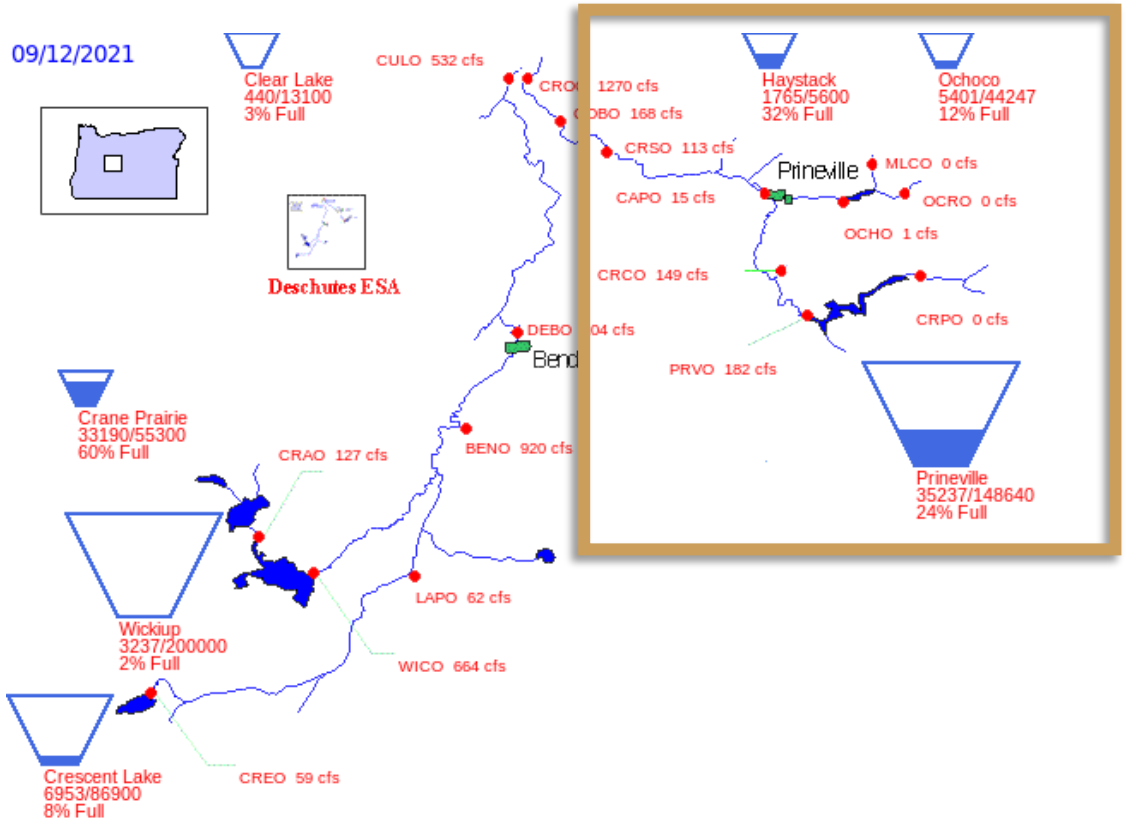
Deschutes River Basin

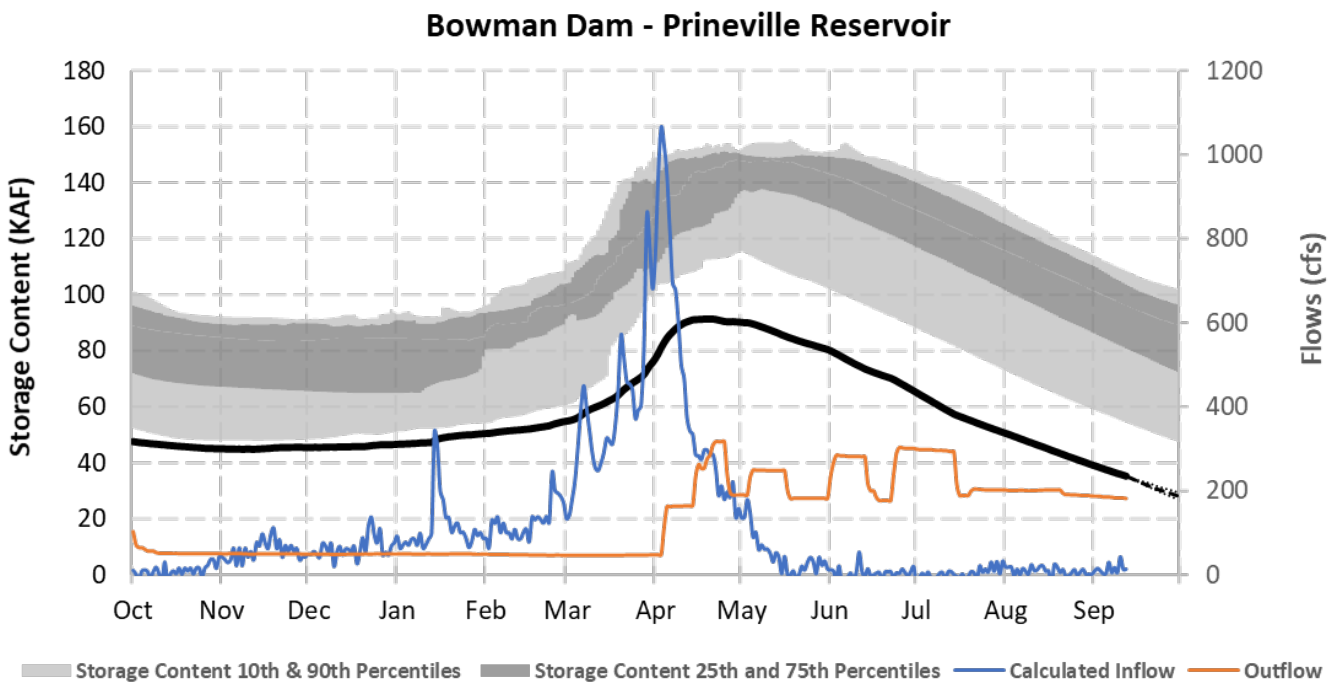


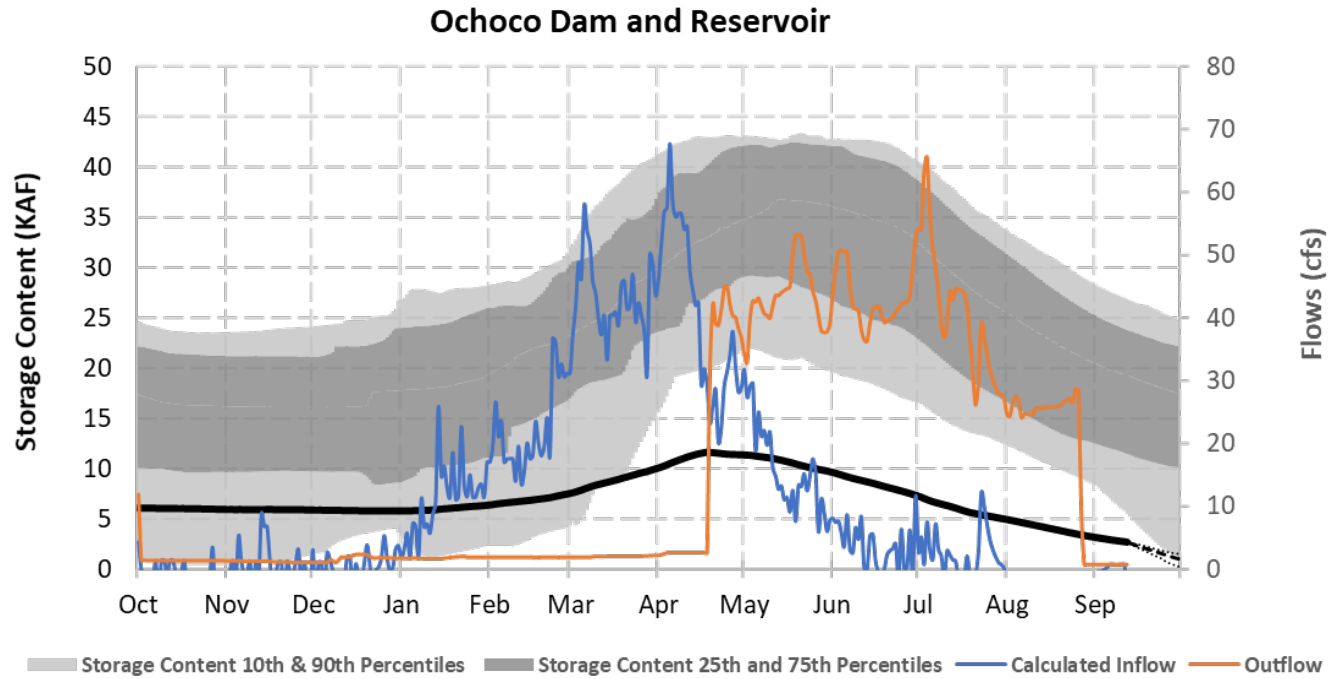


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Crooked River Basin



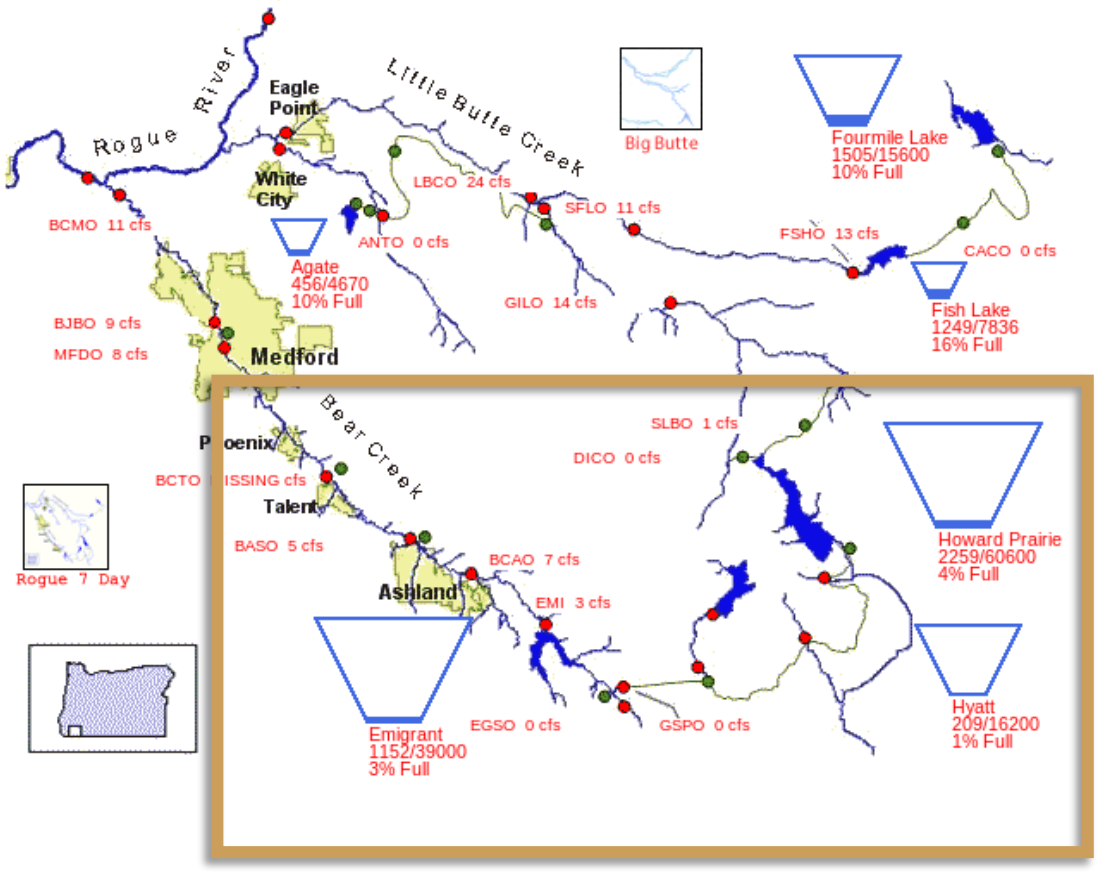


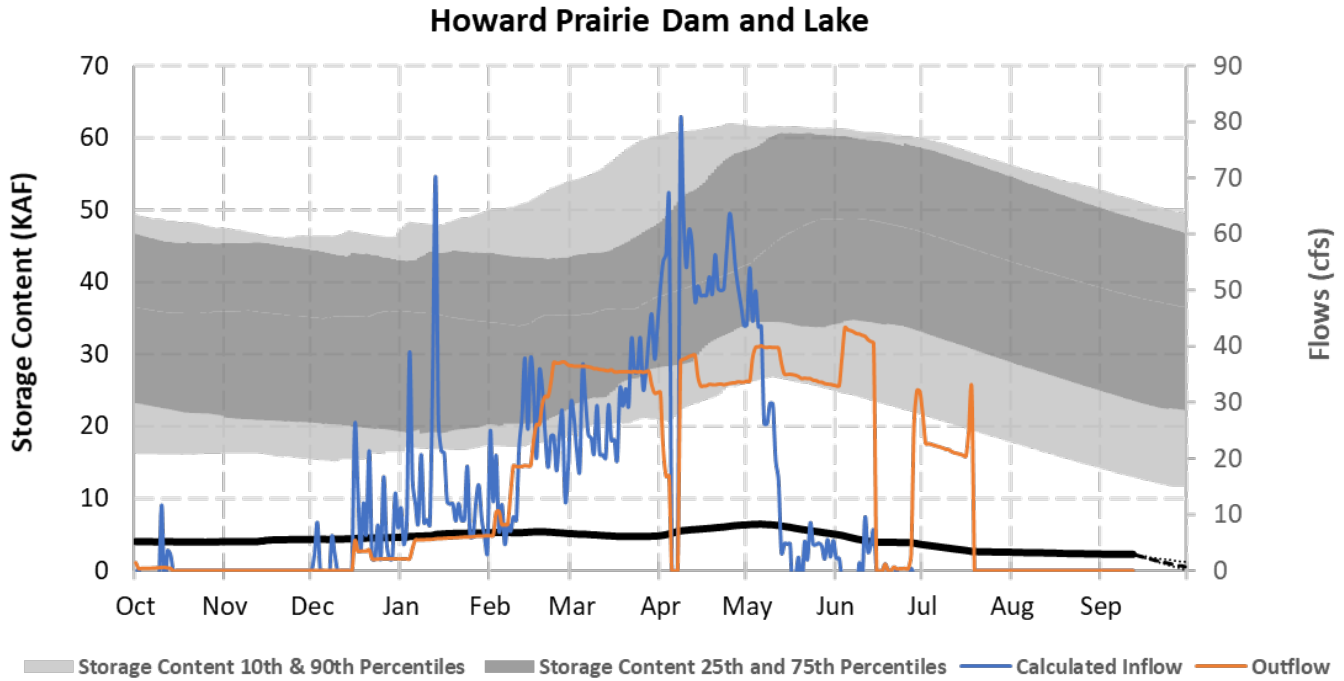


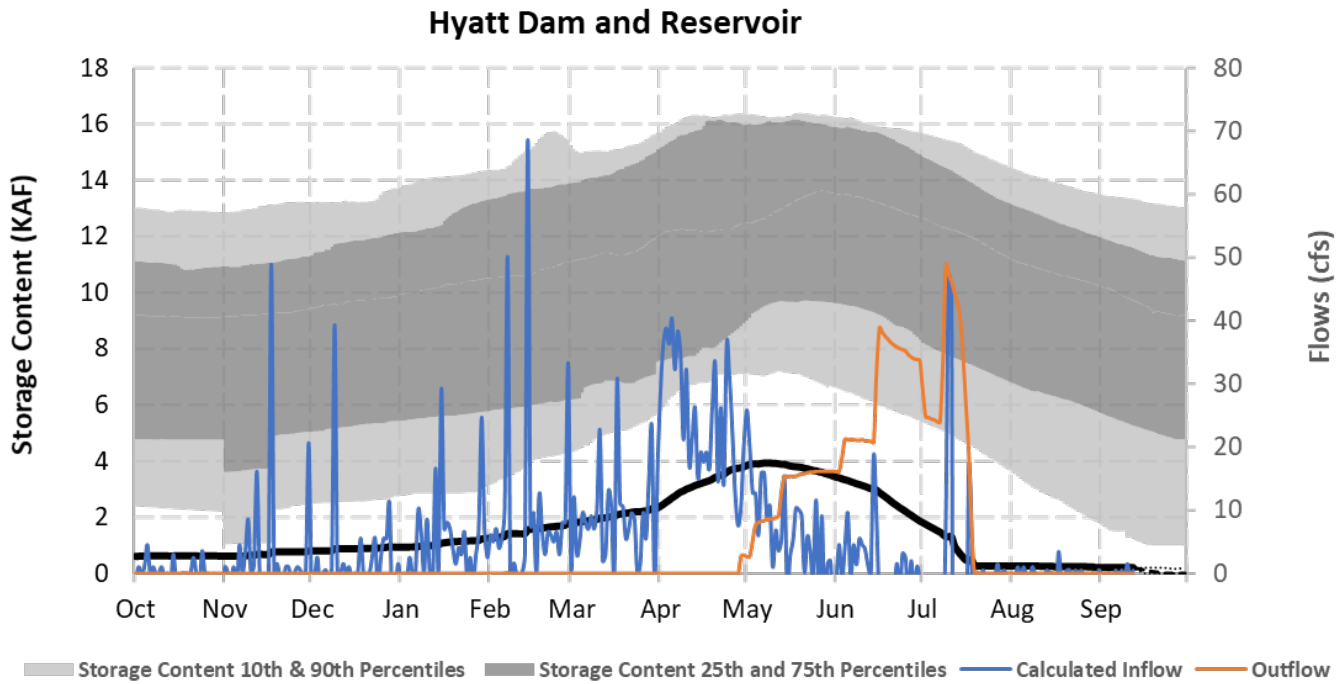
*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Rogue River Basin

09/12/2021







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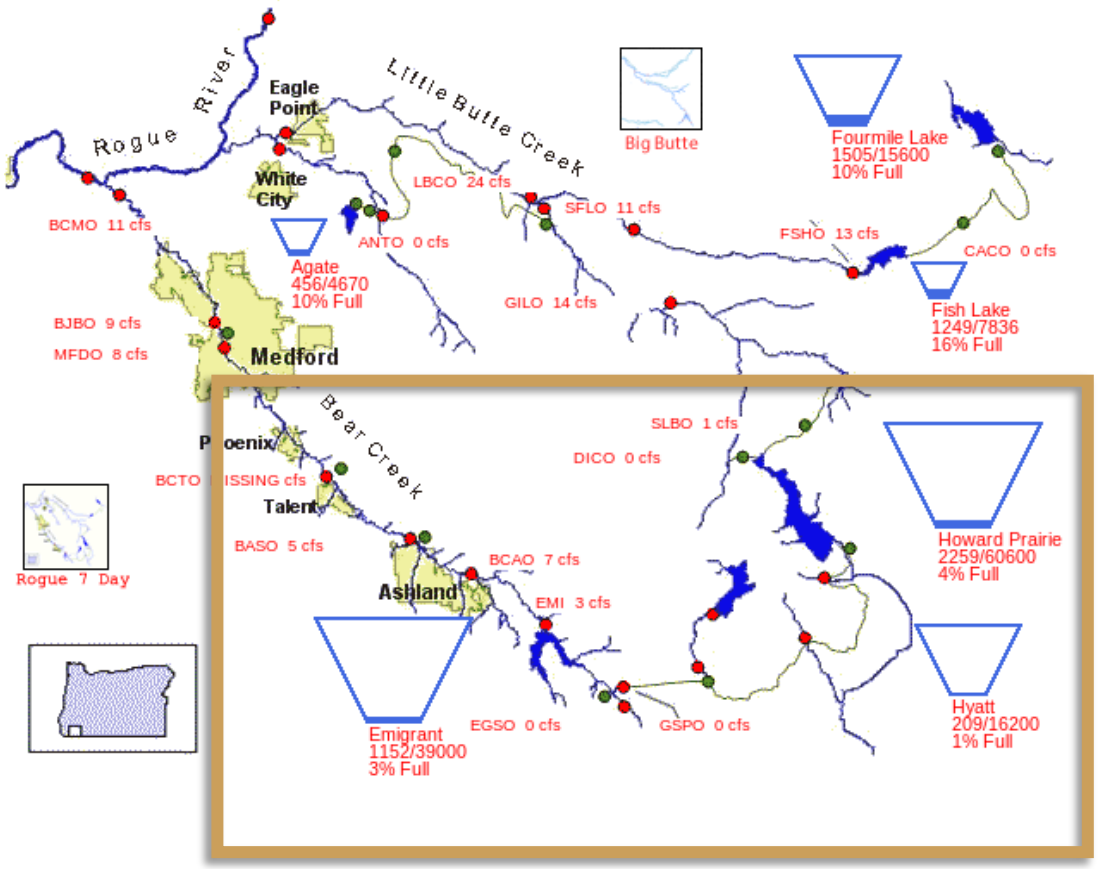
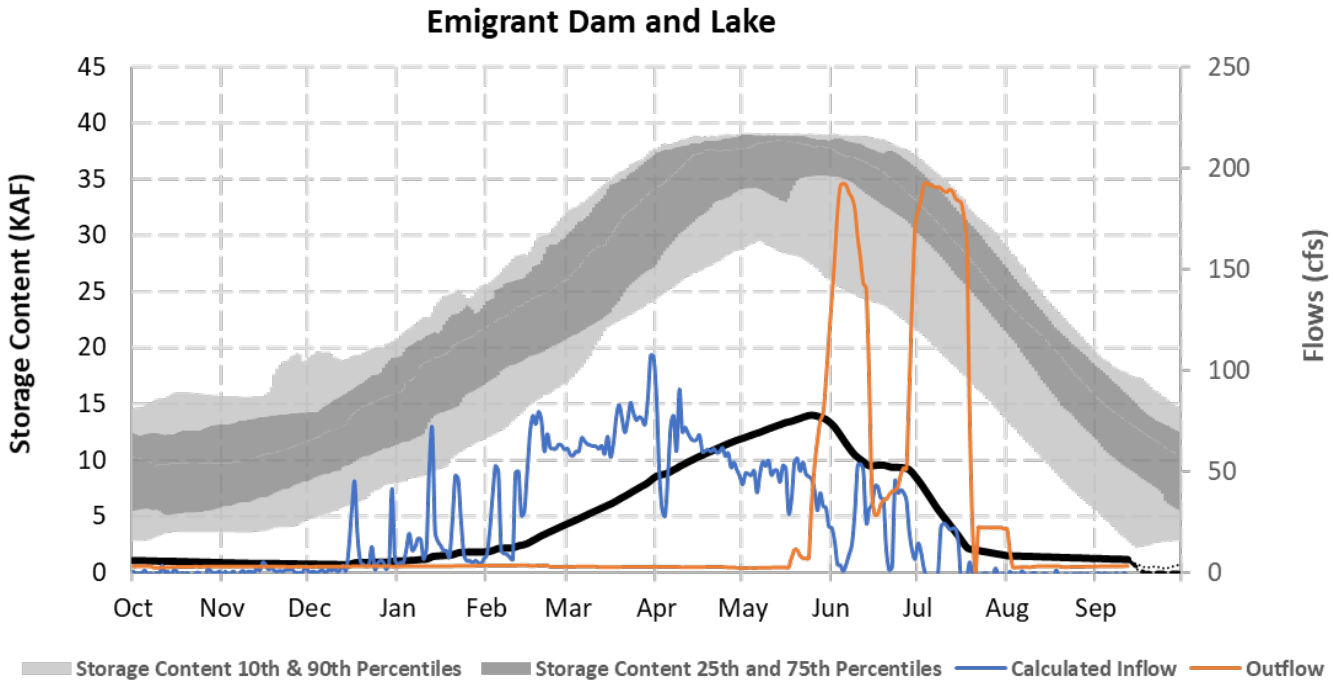
Rogue River Basin

09/12/2021

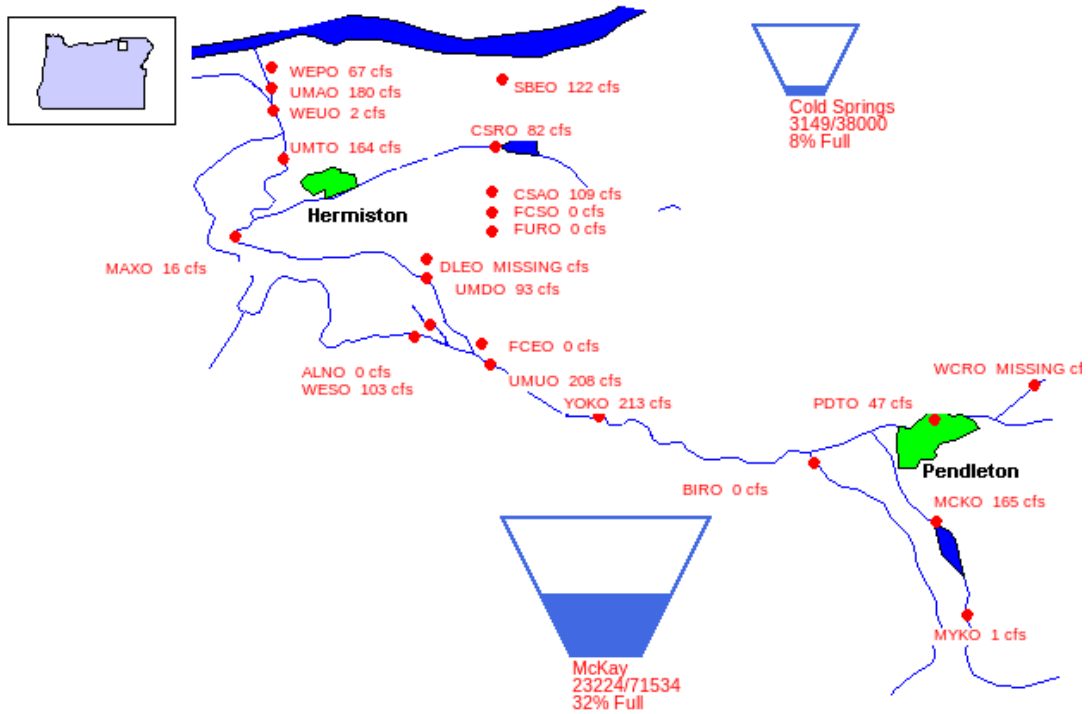


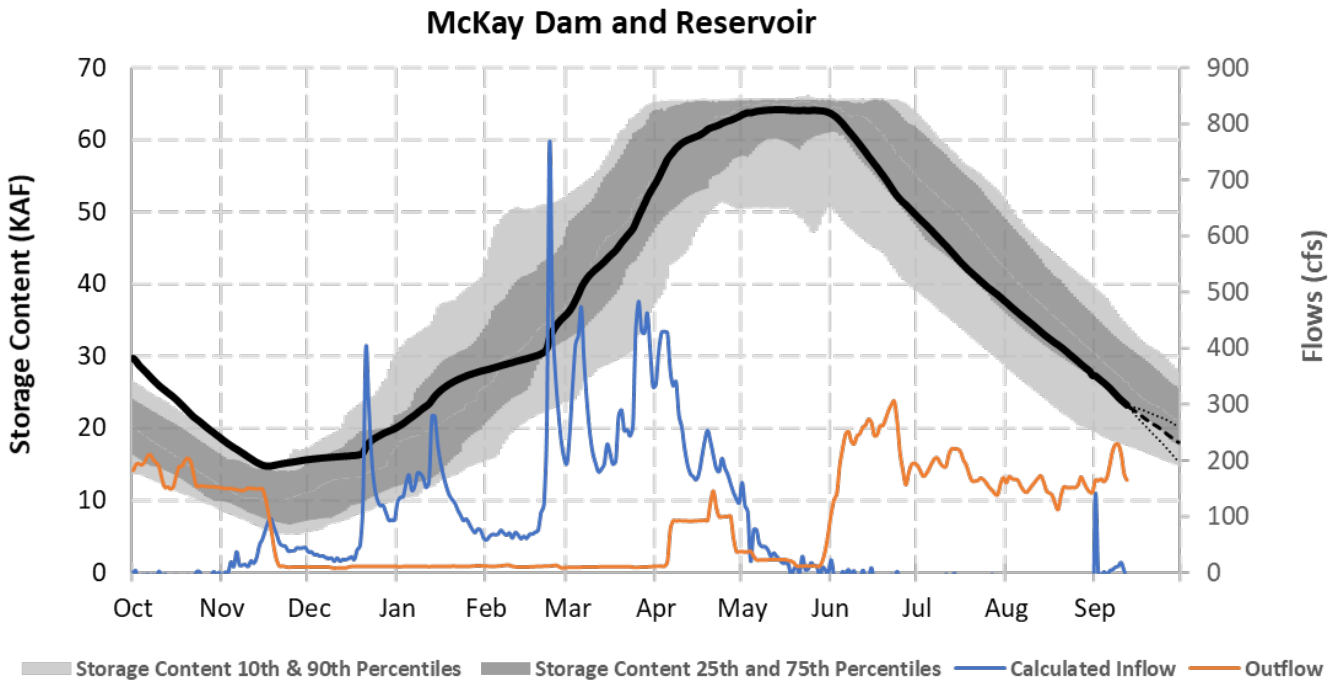


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Umatilla River Basin

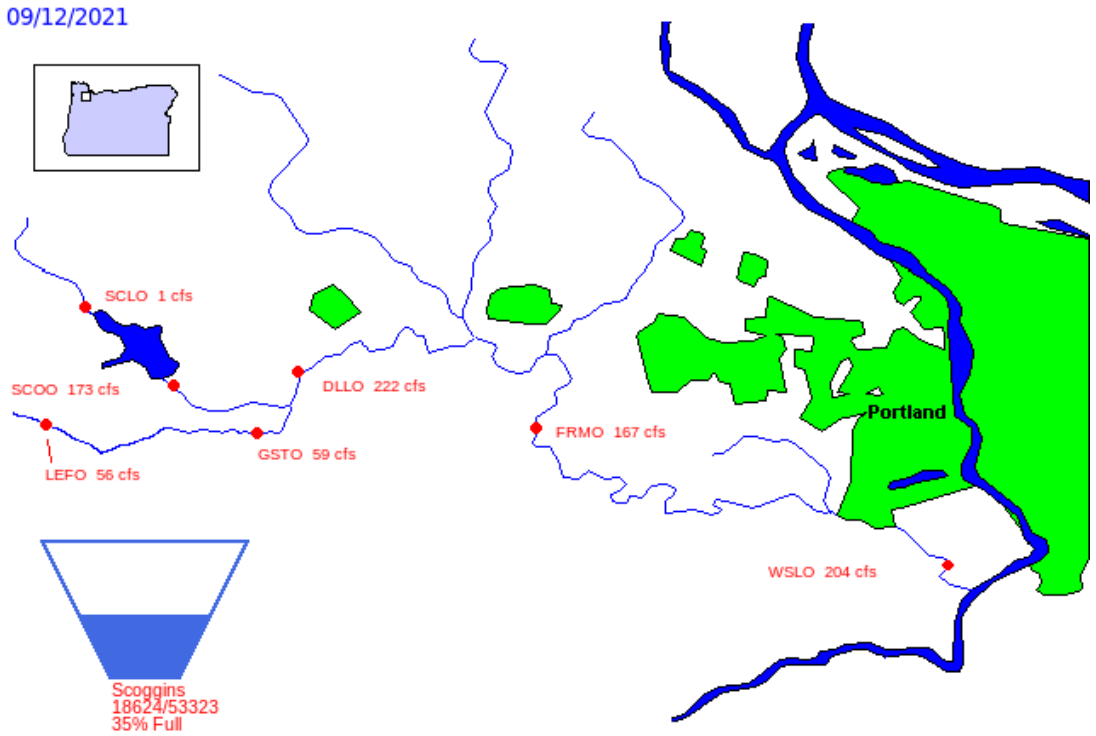
09/12/2021

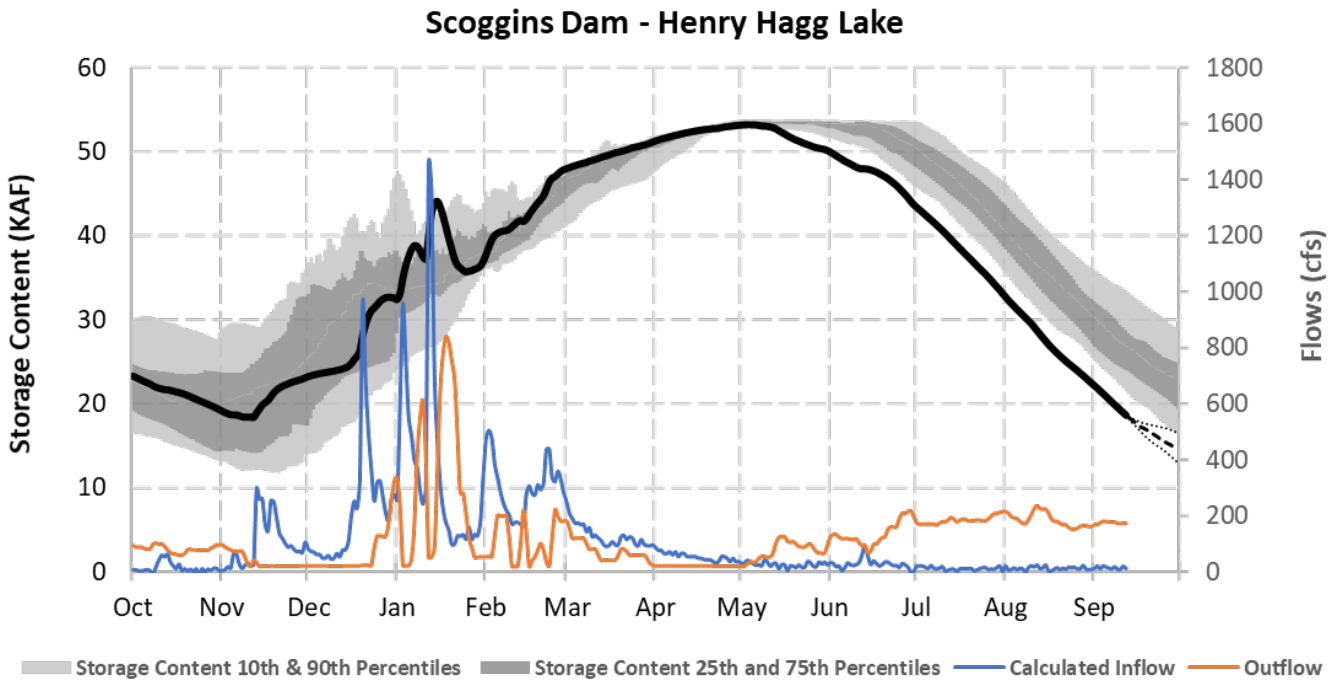




*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Tualatin River Basin





*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Jon Rocha – Columbia Pacific Northwest Regional Office

jrocha@usbr.gov

208.378.6213

BUREAU OF RECLAMATION