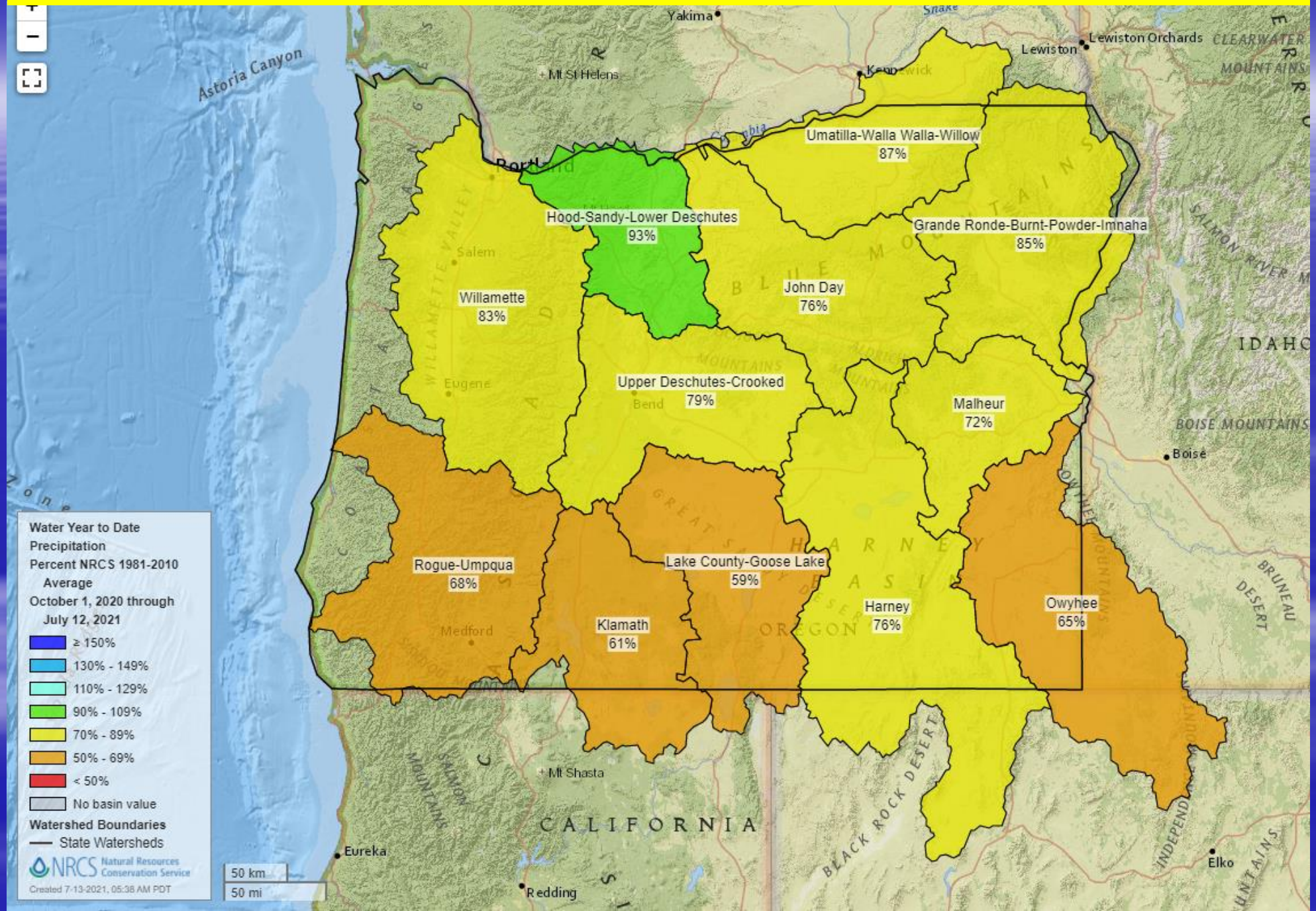
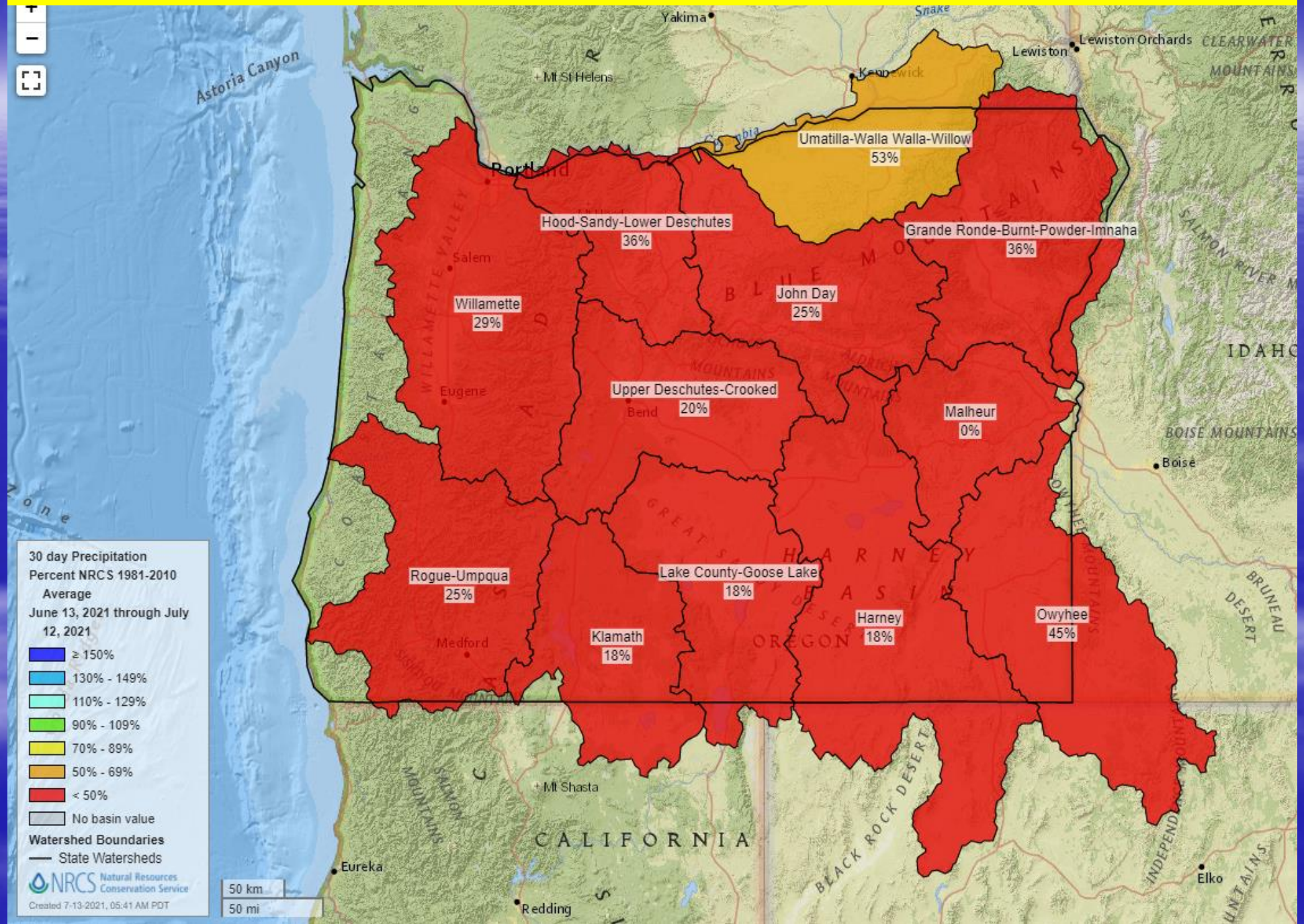
Oregon Water Supply Availability Committee – July 13, 2021

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

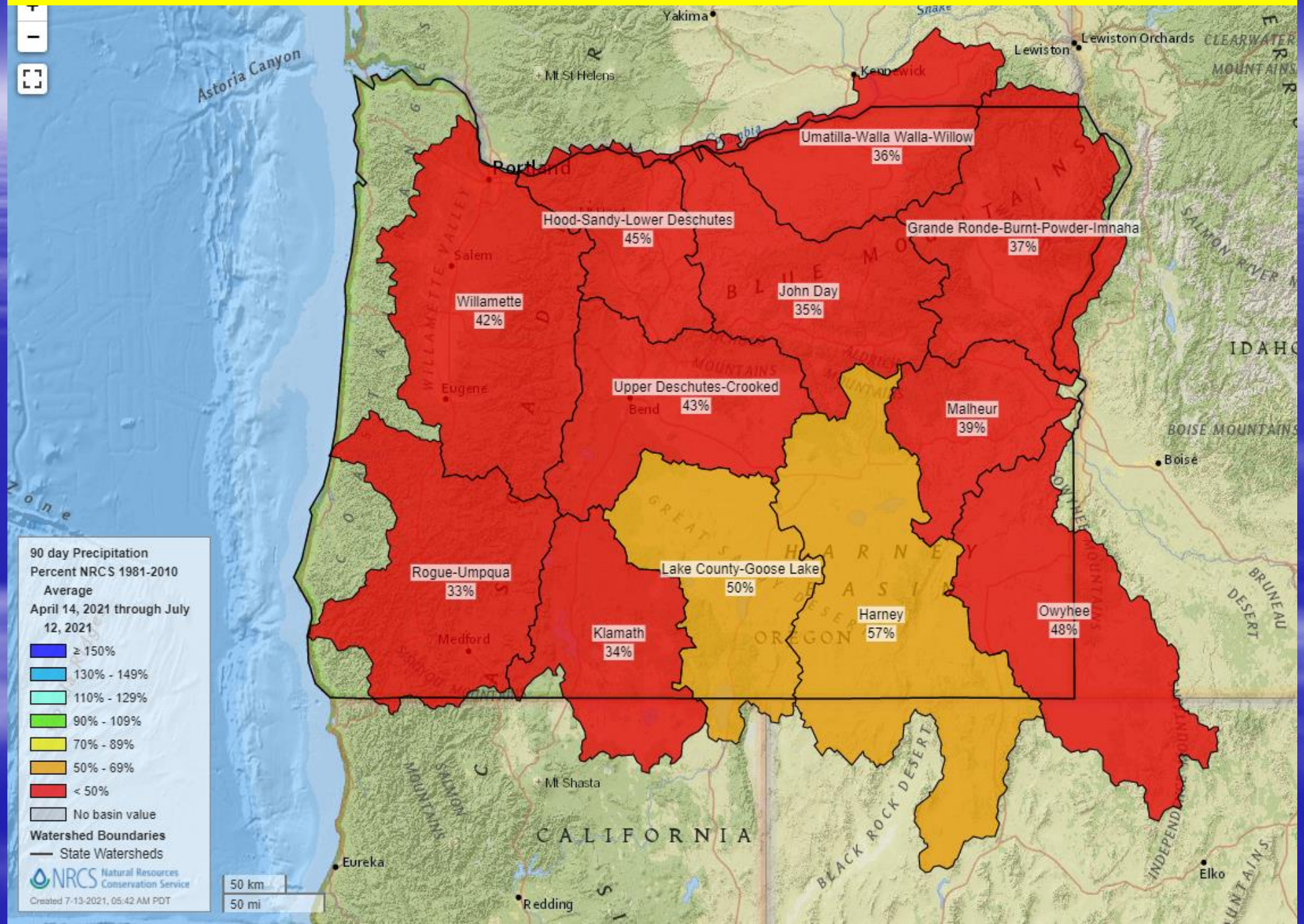
July 12th Statewide SNOTEL Water Year Precipitation is 80% of average



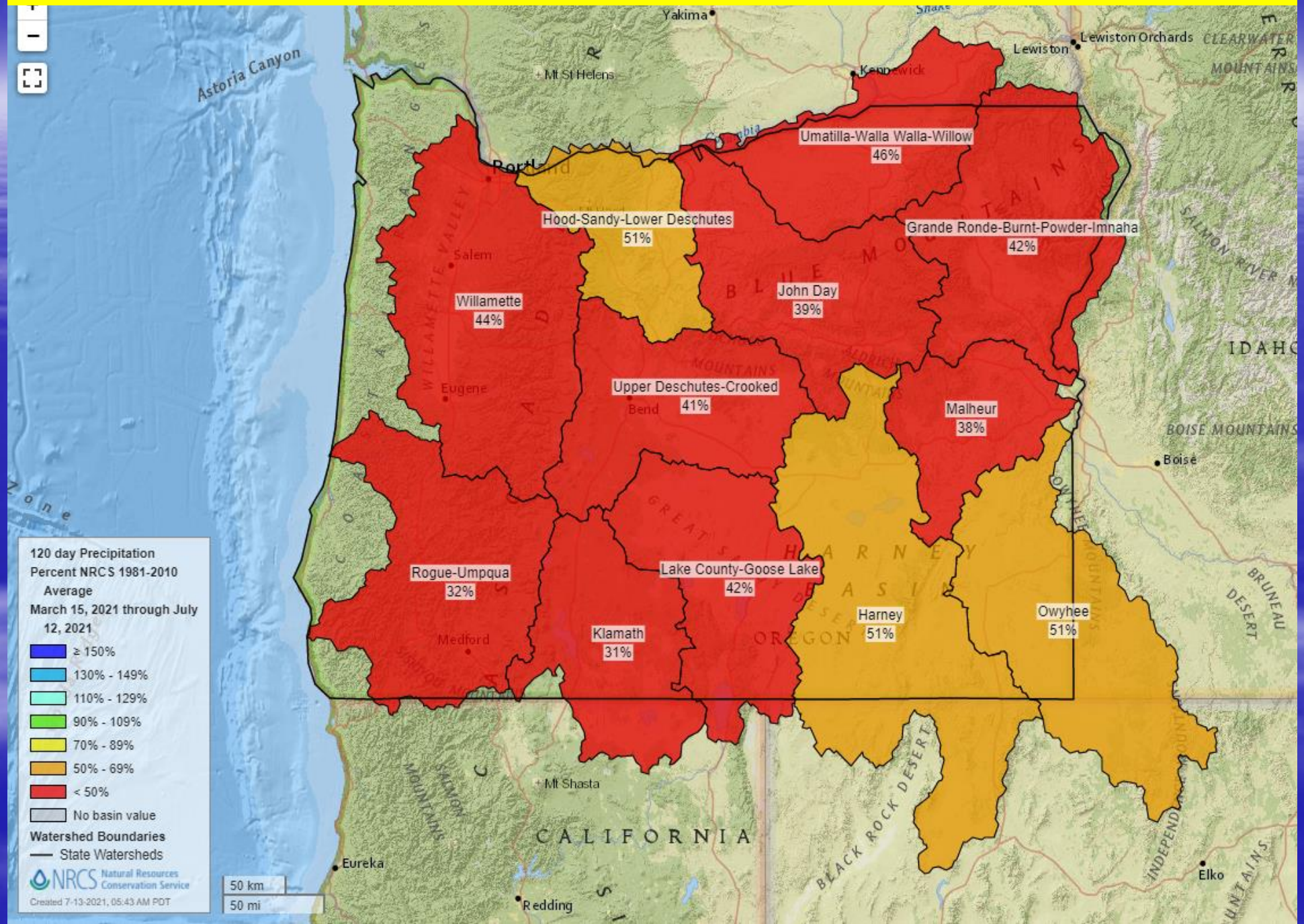
SNOTEL 30-Day Precipitation % of Average – June 13, 2021 – July 12, 2021



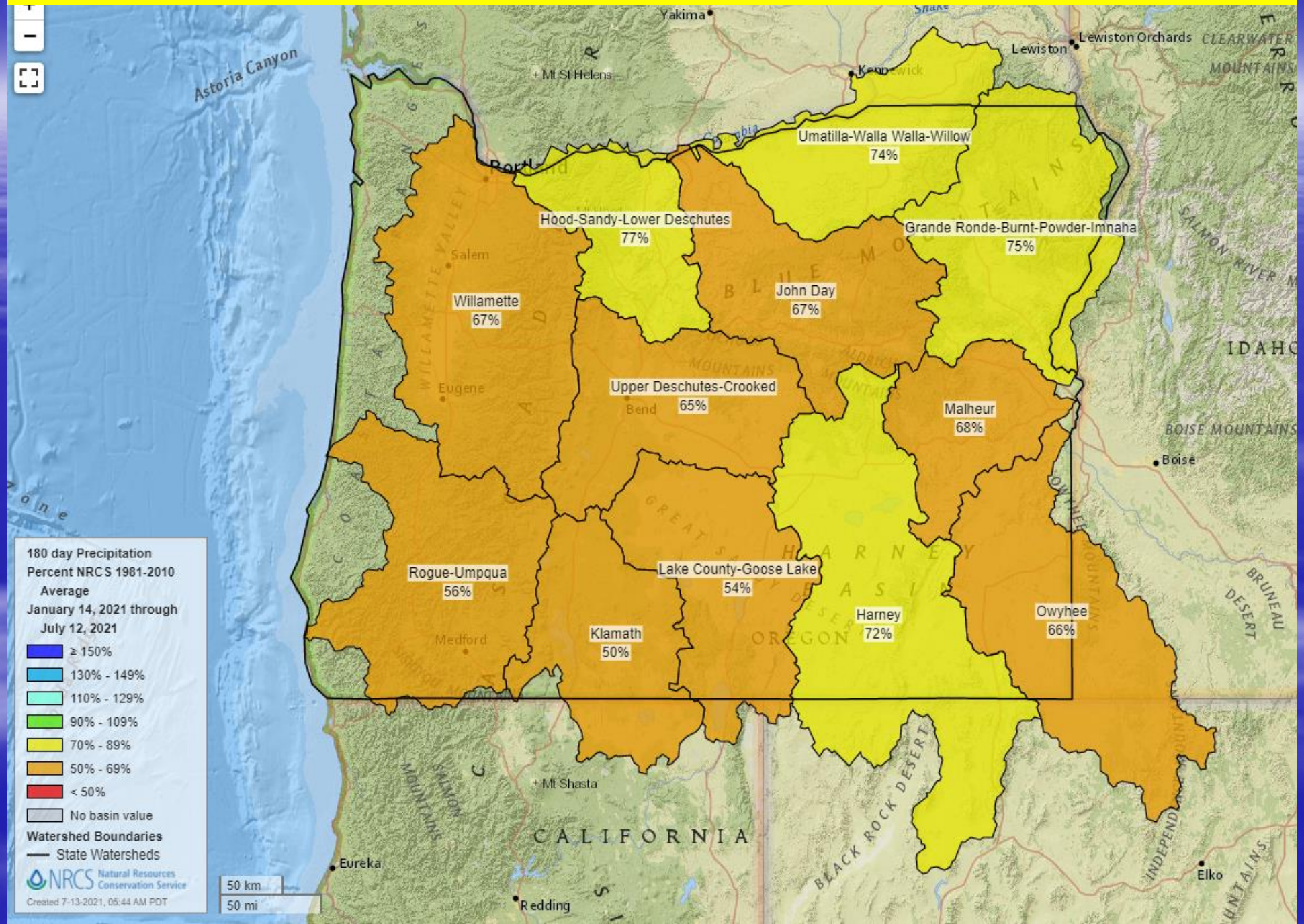
SNOTEL 90-Day Precipitation % of Average – April 14, 2021 – July 12, 2021



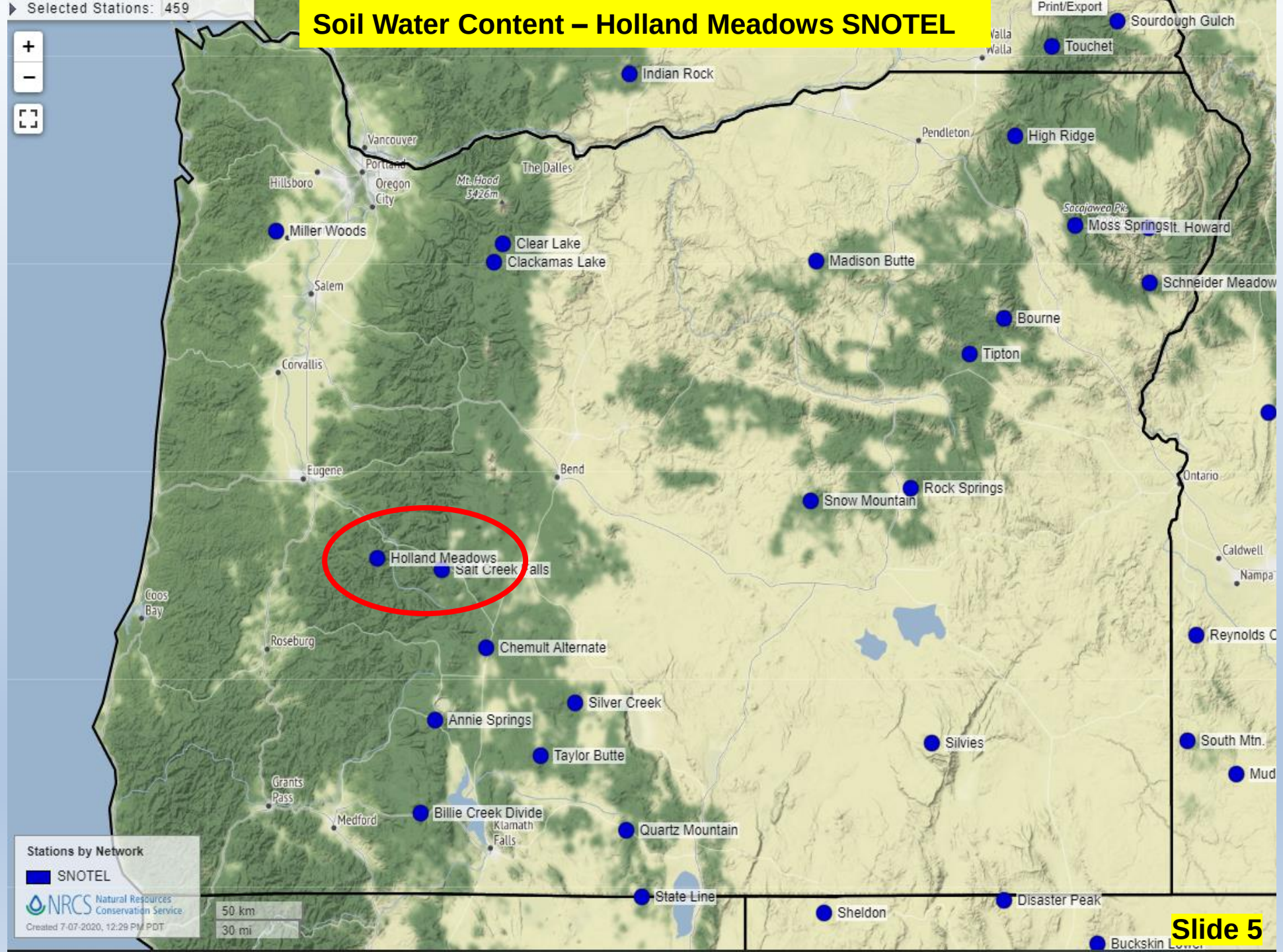
SNOTEL 120-Day Precipitation % of Average – March 15, 2021 – July 12, 2021



SNOTEL 180-Day Precipitation % of Average – January 14, 2021 – July 12, 2021

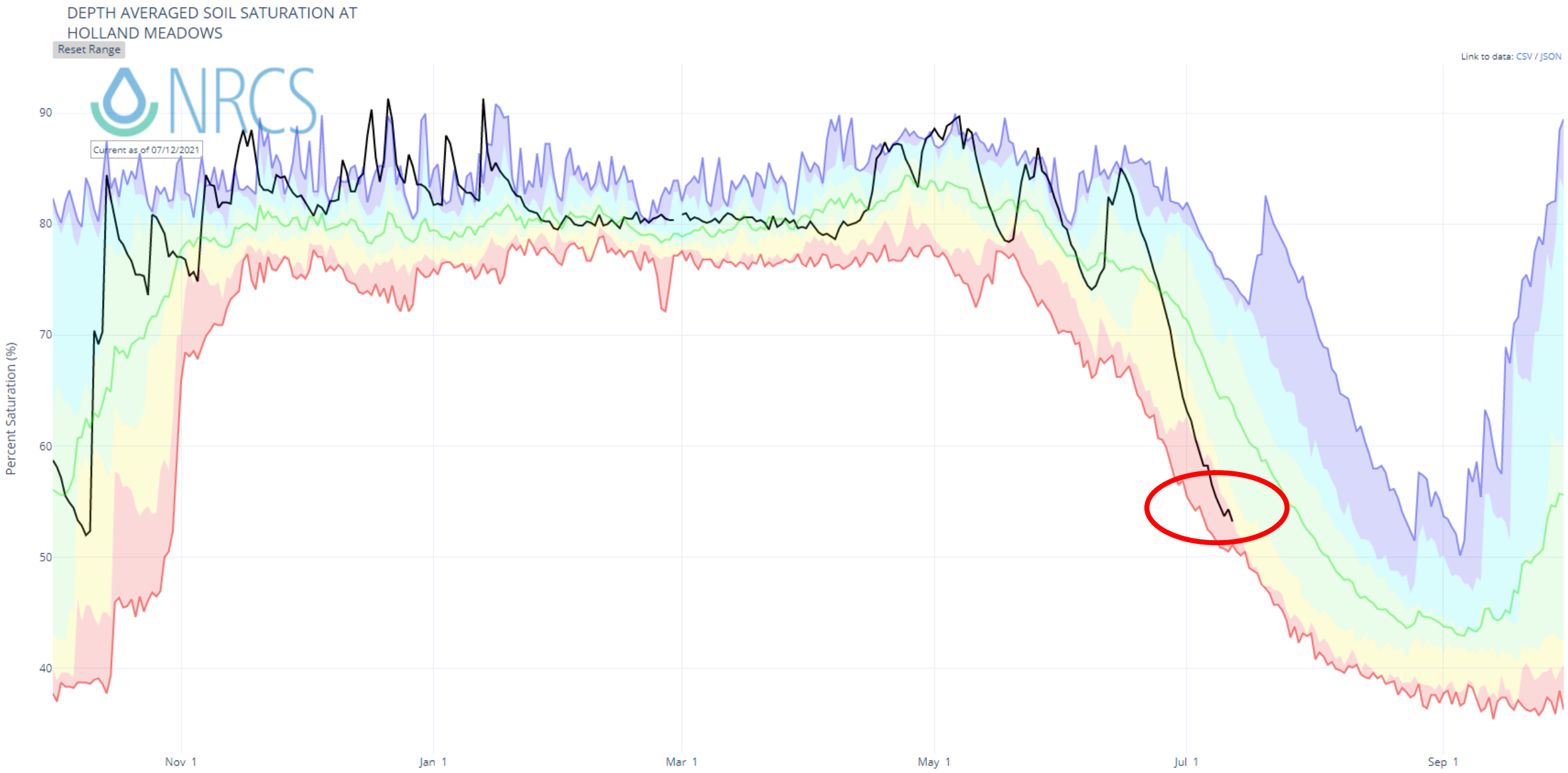


Soil Water Content – Holland Meadows SNOTEL

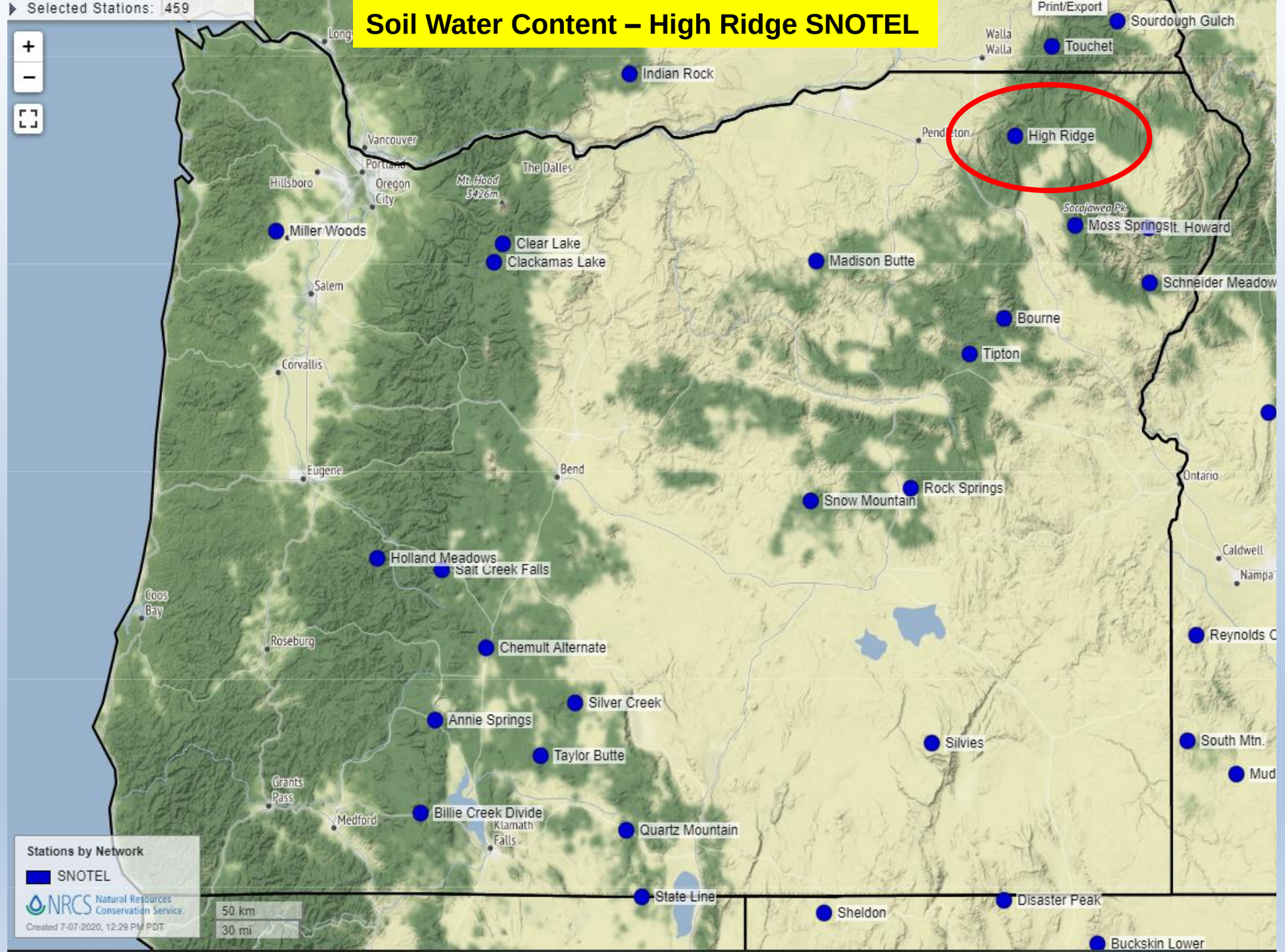


Slide 5

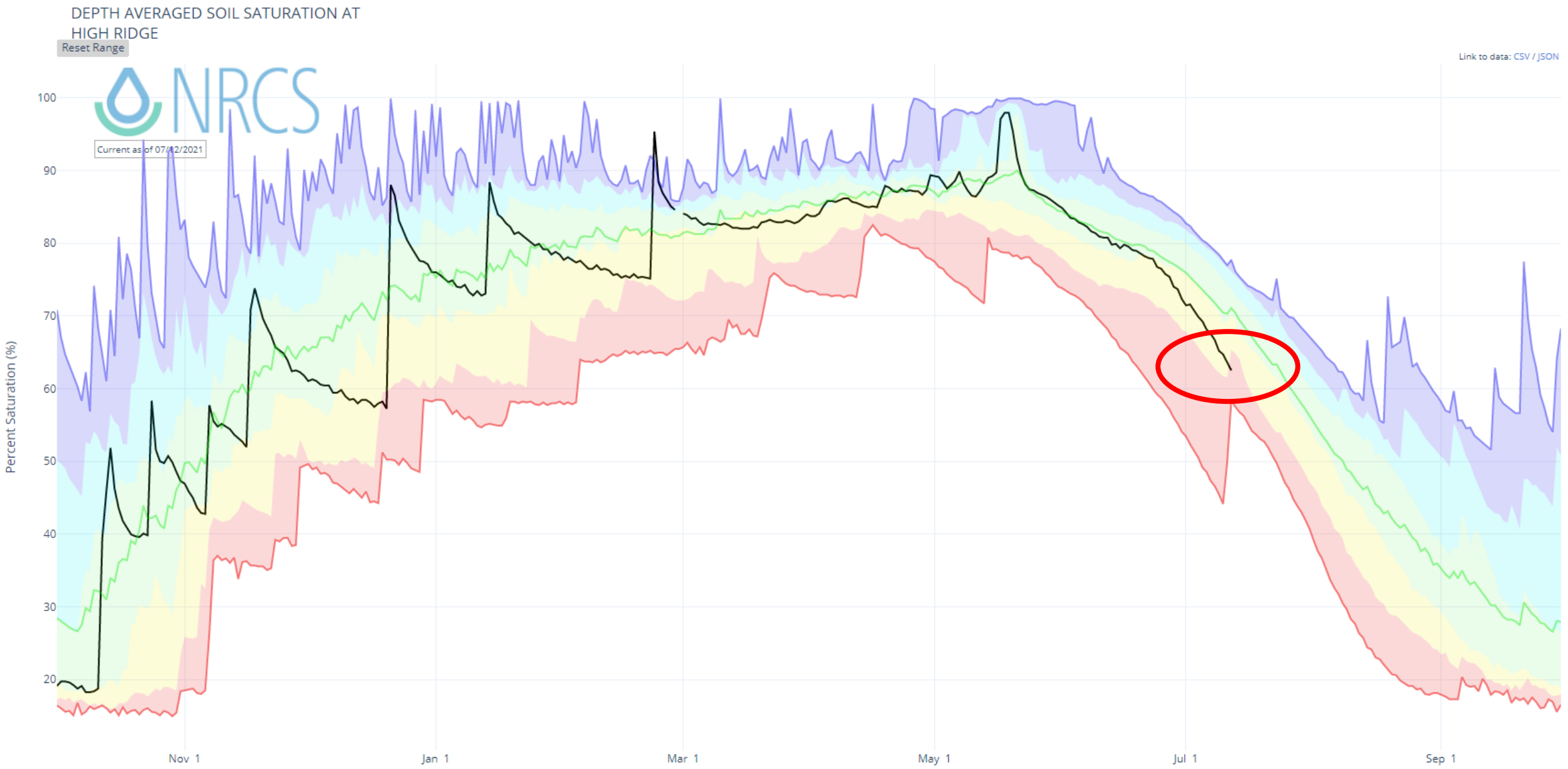
Soil Water Content – Holland Meadows SNOTEL (2011-2021)



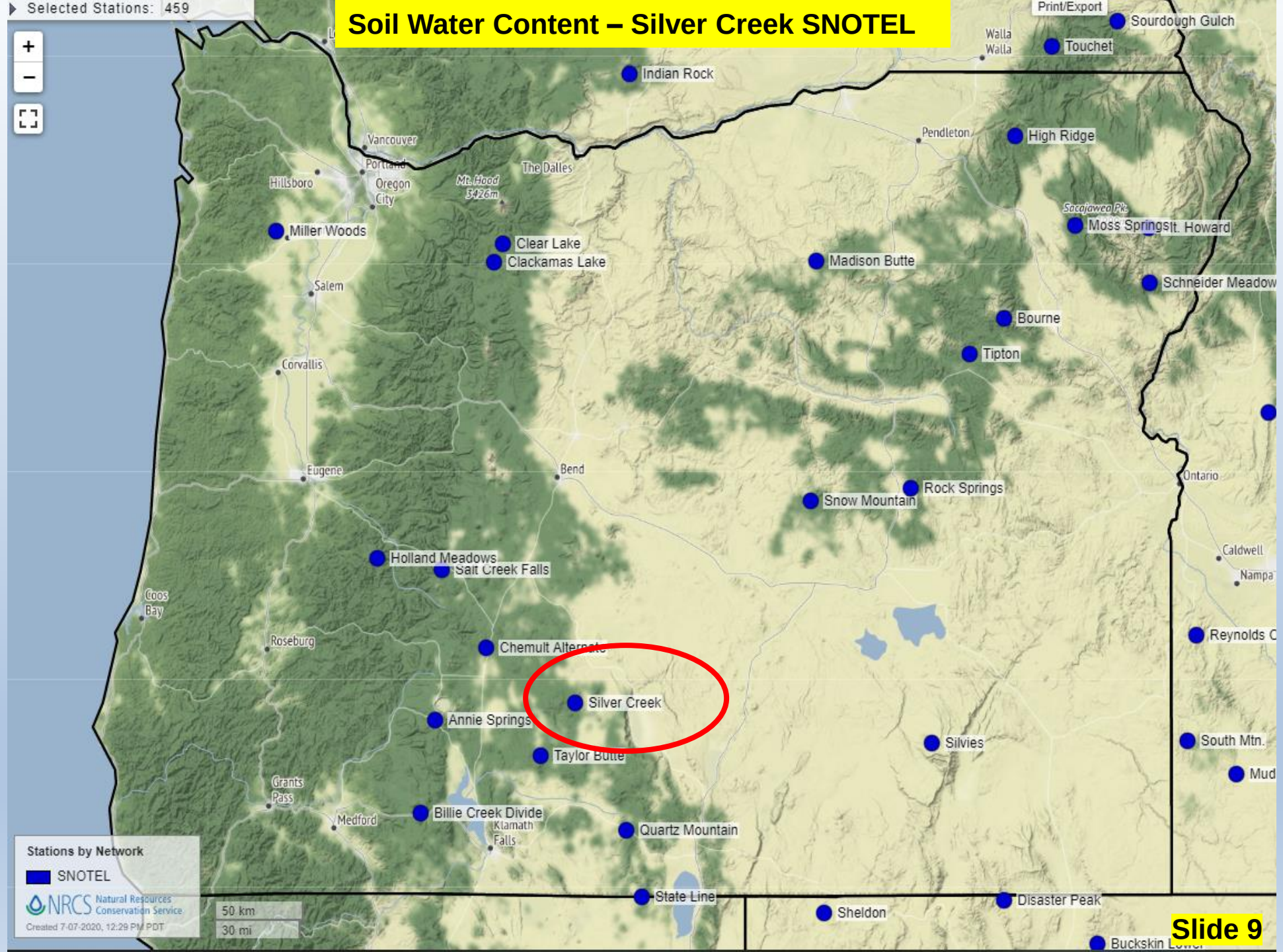
Soil Water Content – High Ridge SNOTEL



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

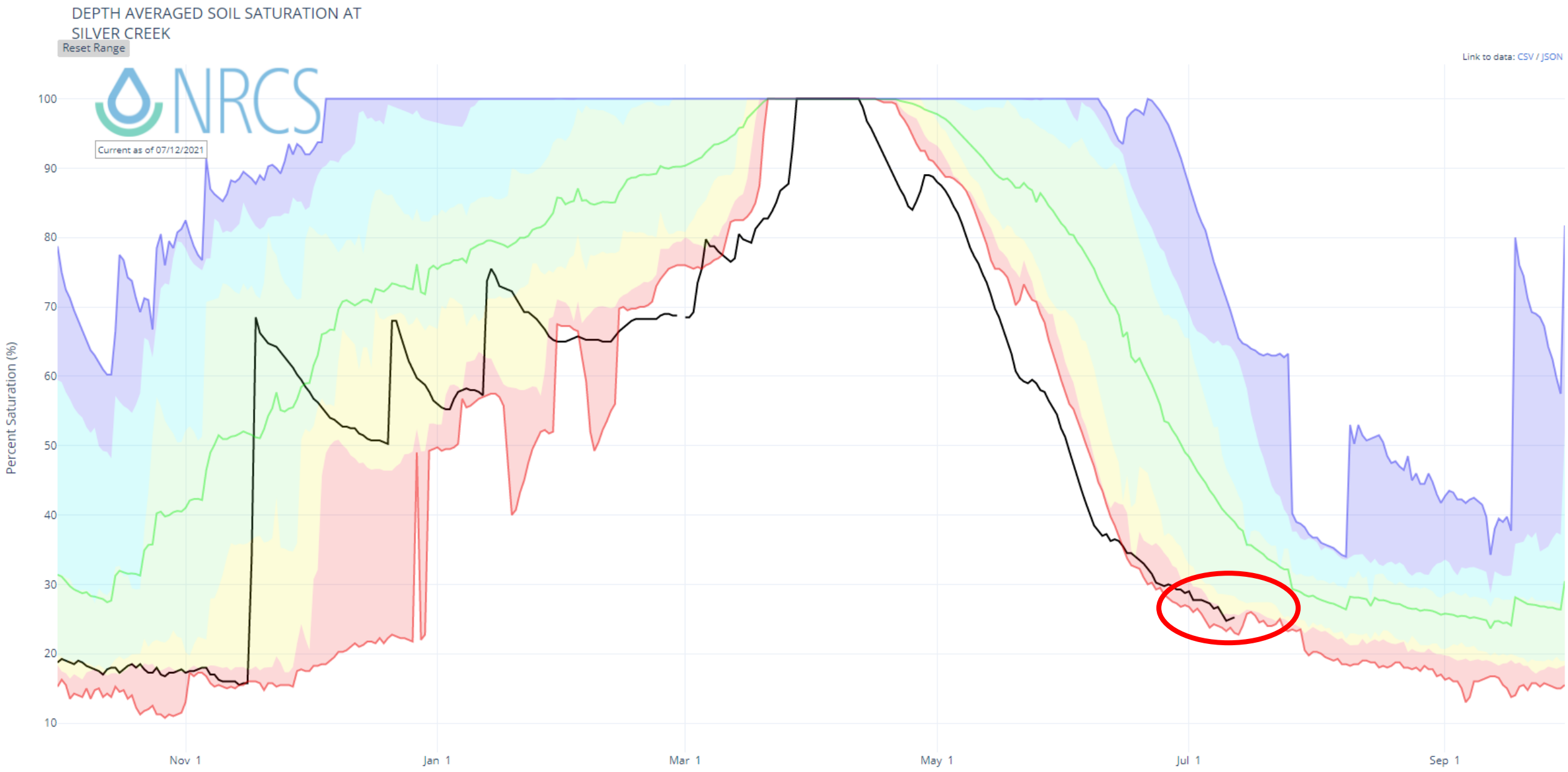


Soil Water Content – Silver Creek SNOTEL

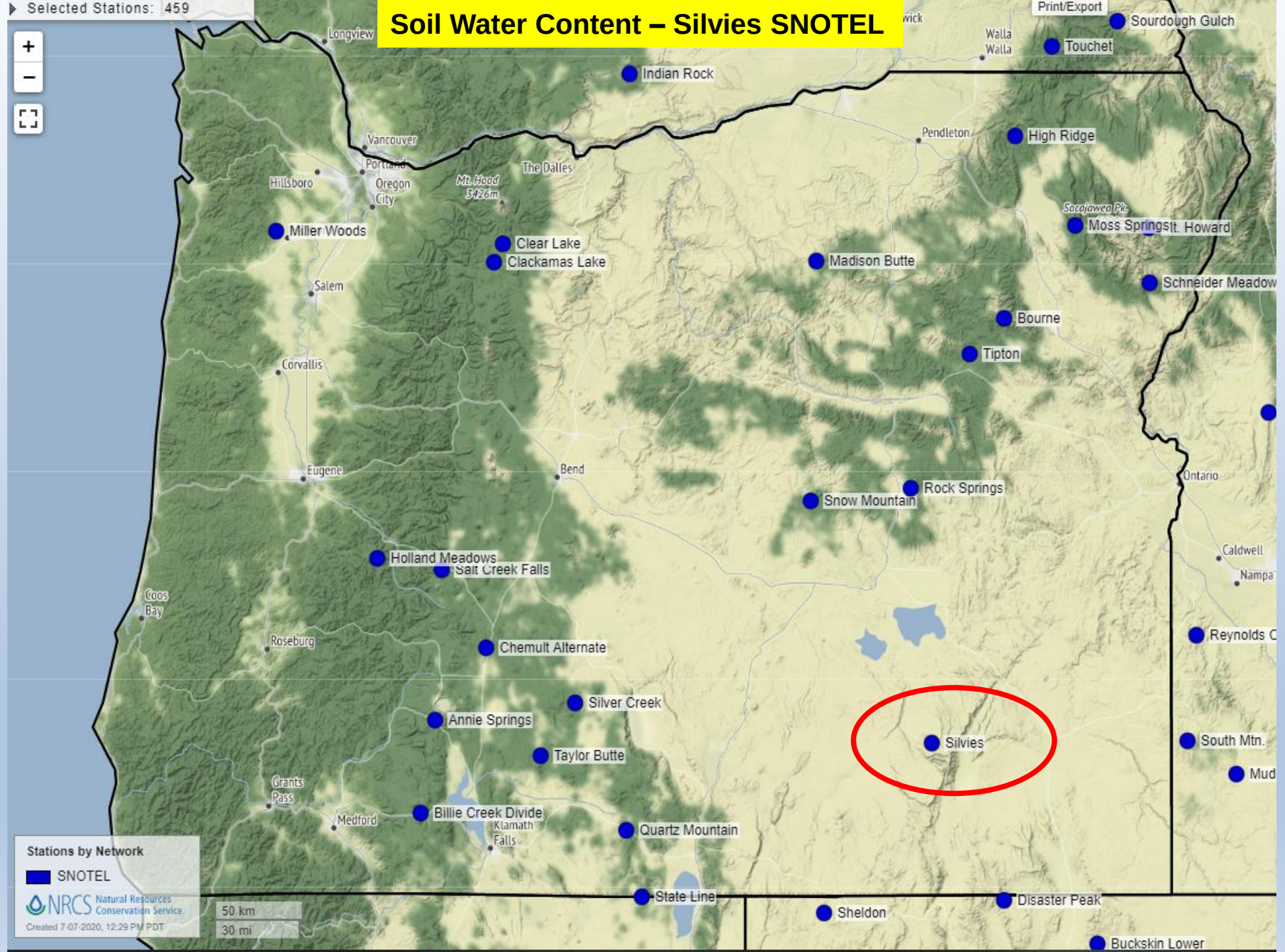


Slide 9

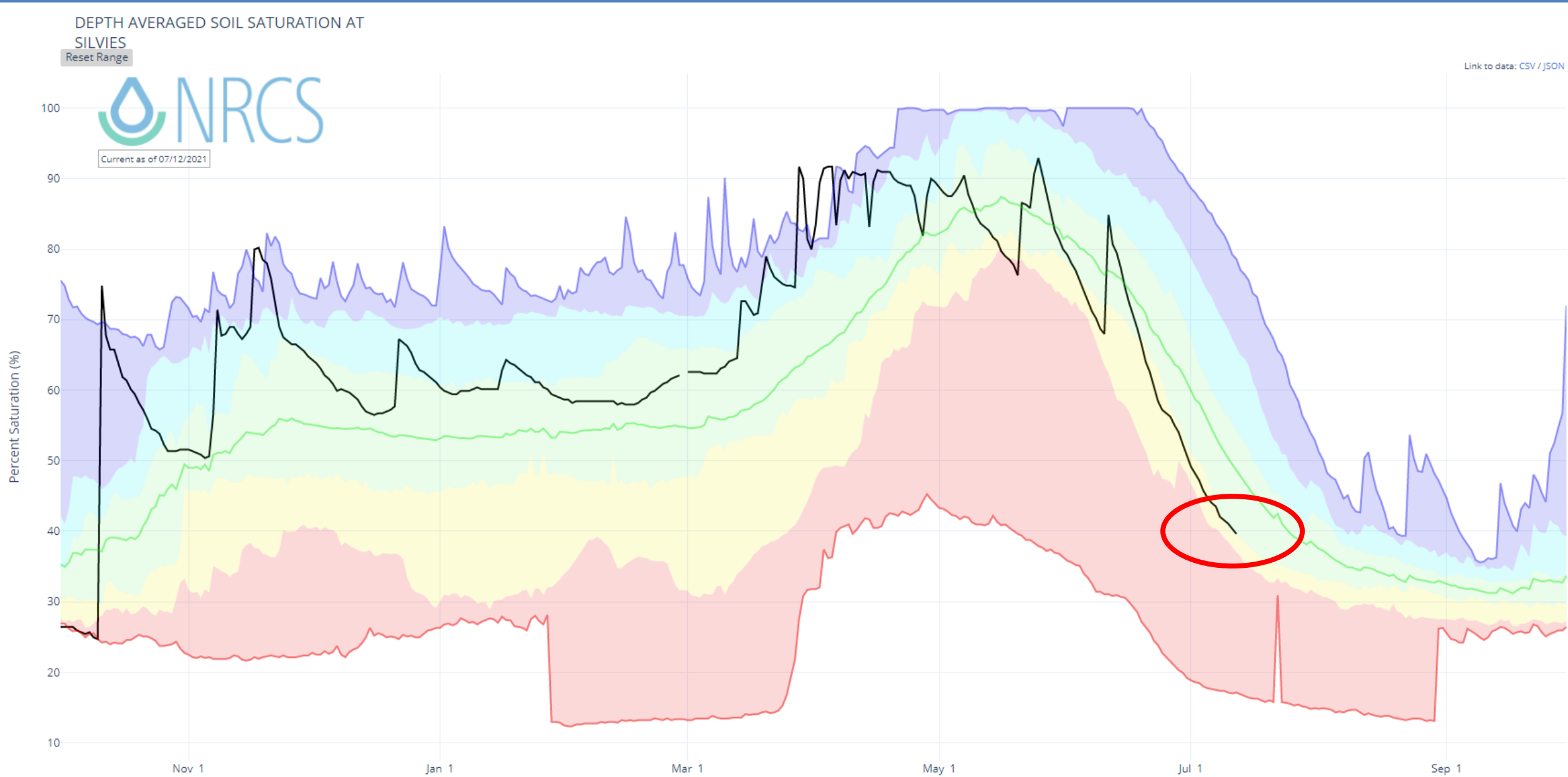
Soil Water Content – Silver Creek SNOTEL (2004-2021)



Soil Water Content – Silvies SNOTEL



Soil Water Content – Silvies SNOTEL (1997-2021)



Thank you

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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.

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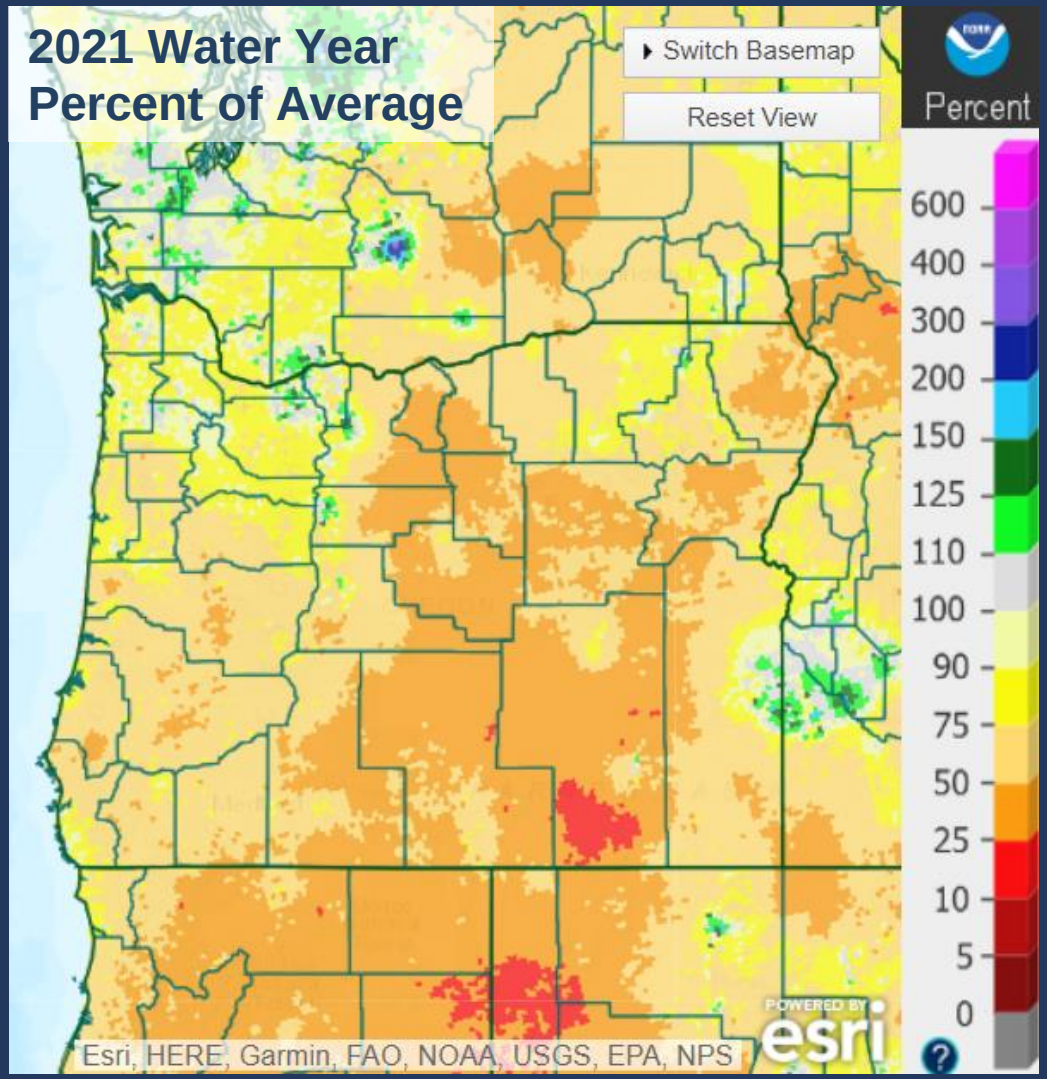
NWS Portland

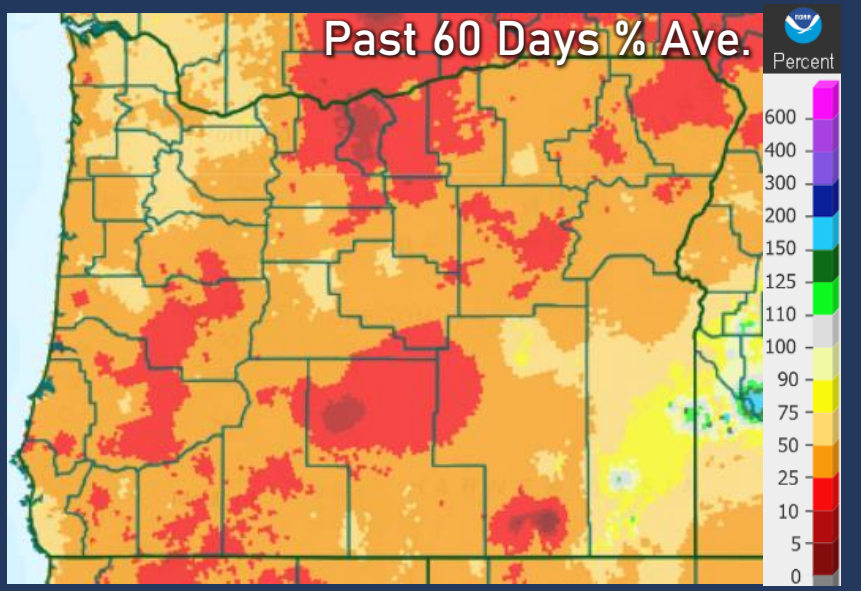
July 13, 2021

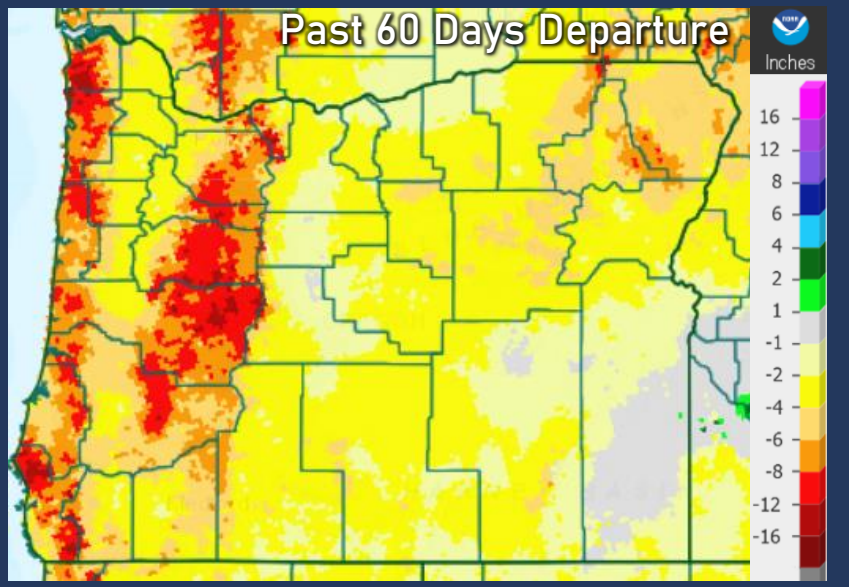
NWS Update on Precipitation, Temperatures, and Seasonal Water Supply Conditions

Andy Bryant
NOAA/NWS Portland
Weather Forecast Office

Precipitation



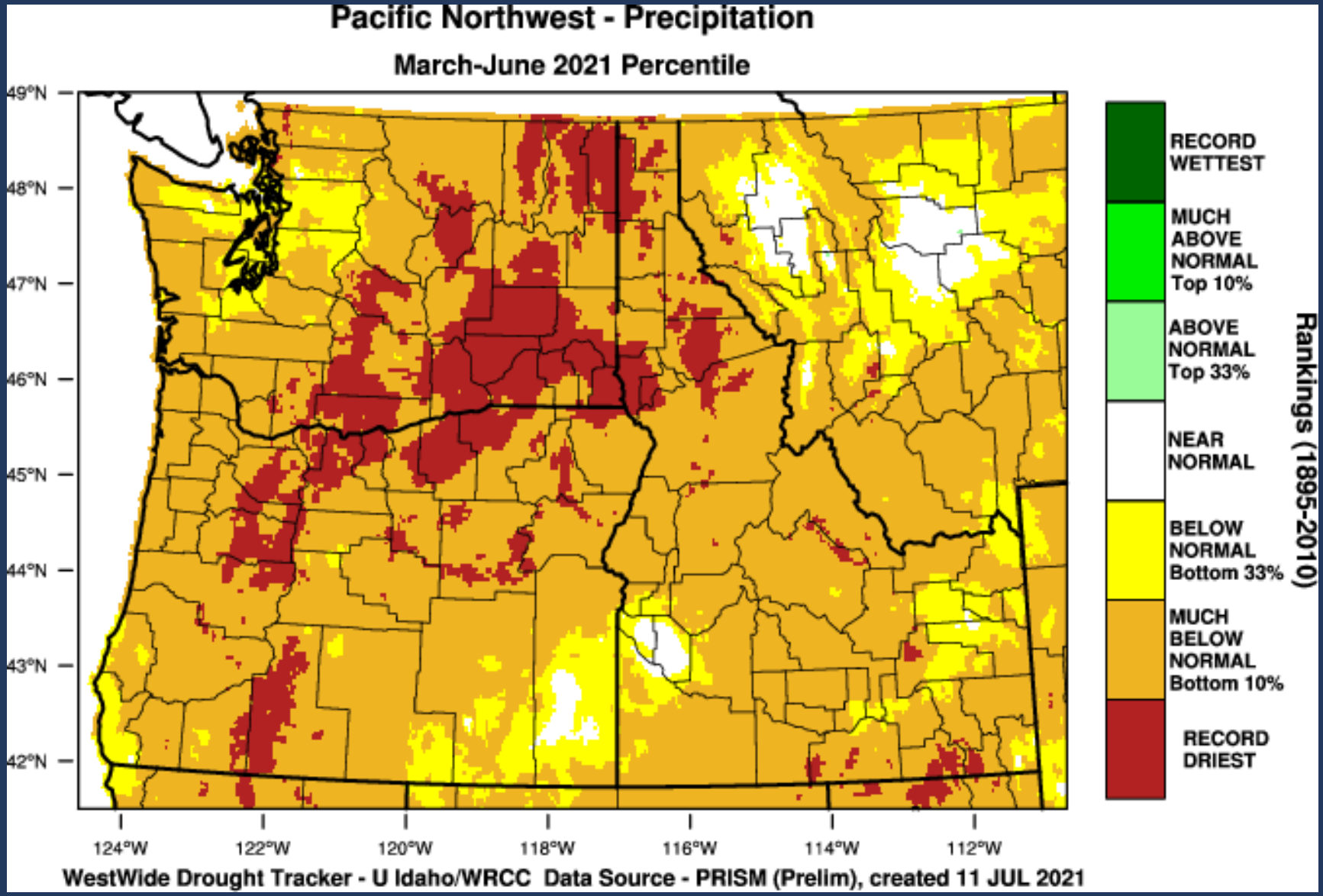




Precipitation Data as of July 12, 2021

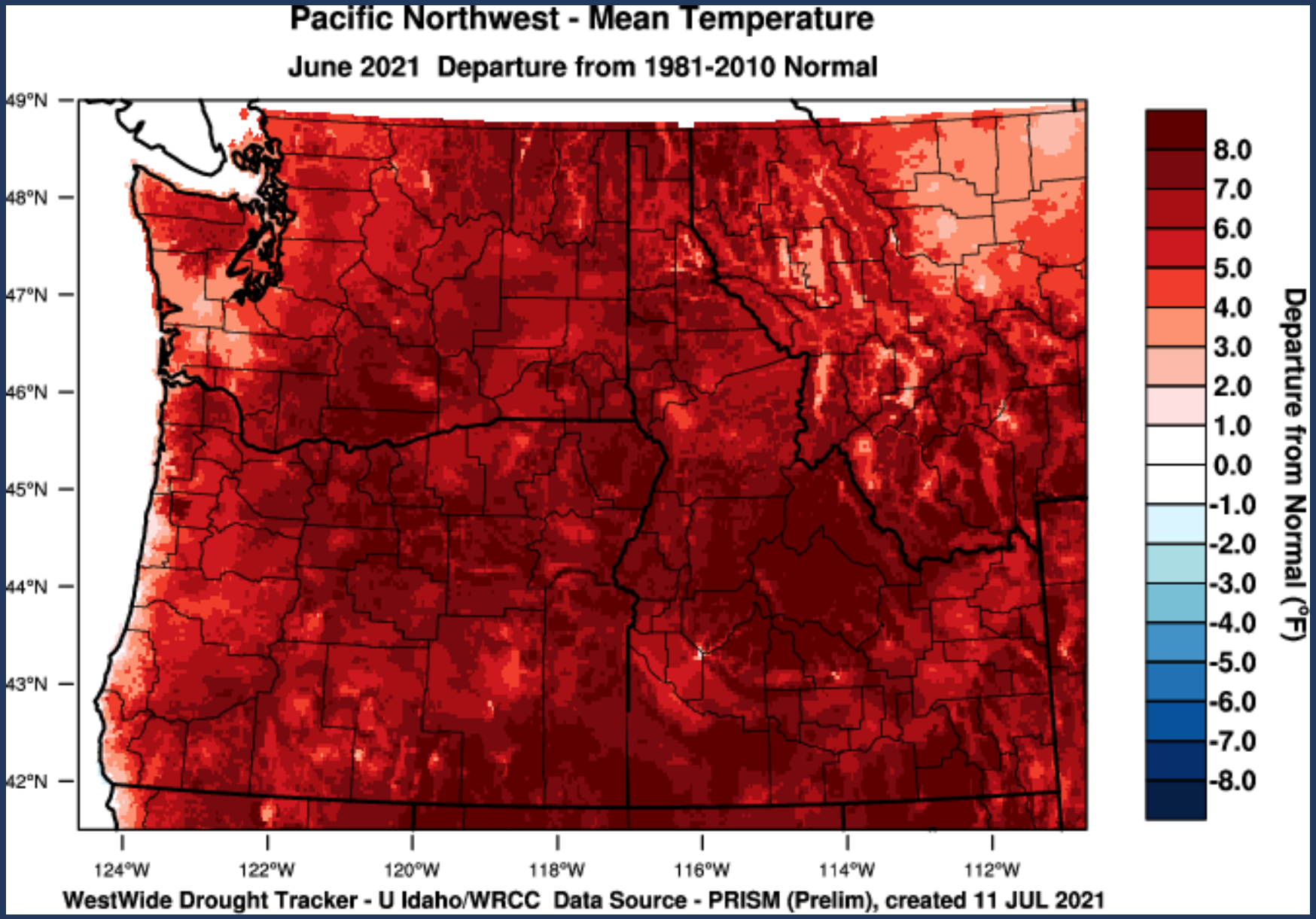
Source: water.weather.gov/precip/index.php?location_type=wfo&location_name=pqr

Precipitation – March through June



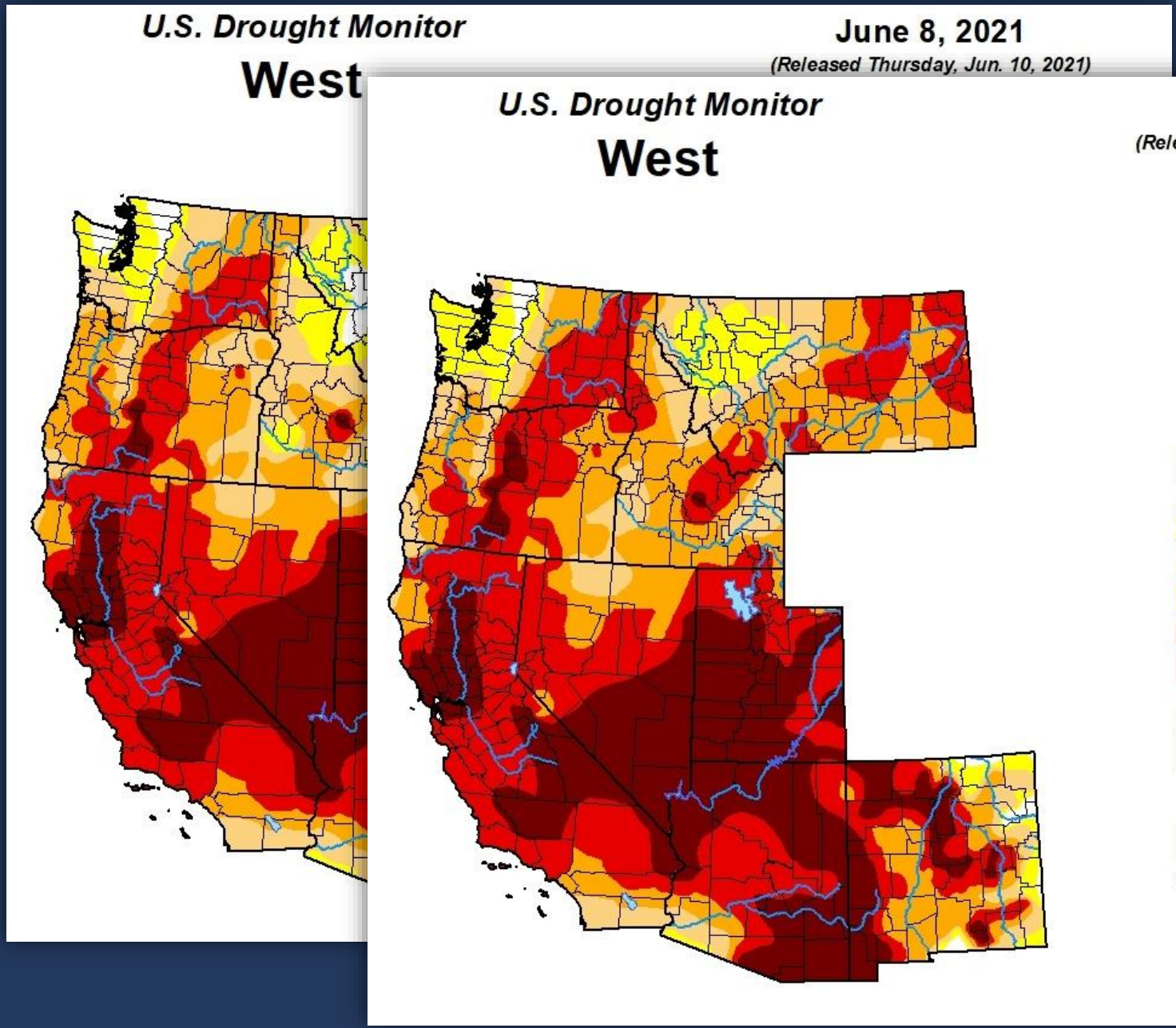
https://wrcc.dri.edu/wwdt/index.php?folder=pon4per

Recent Temperatures



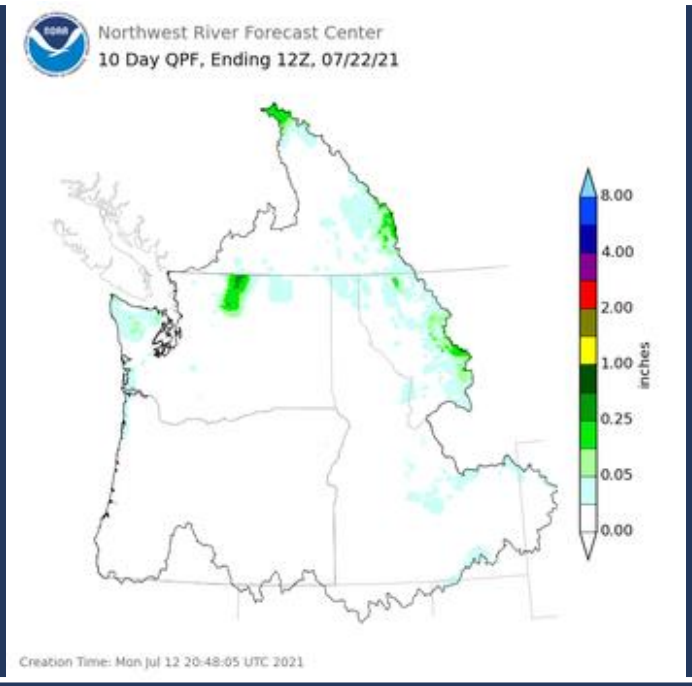
https://wrcc.dri.edu/wwdt/index.php?folder=mdn1

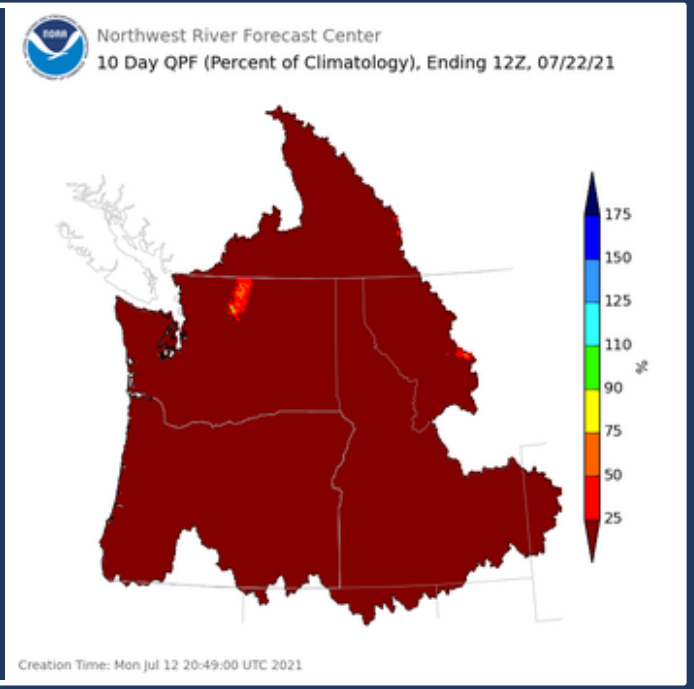
Drought Monitor



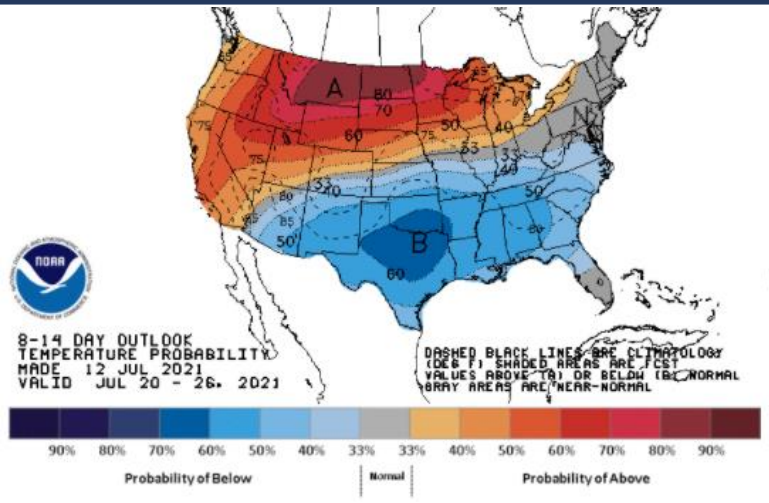
Mid/Late June Outlook

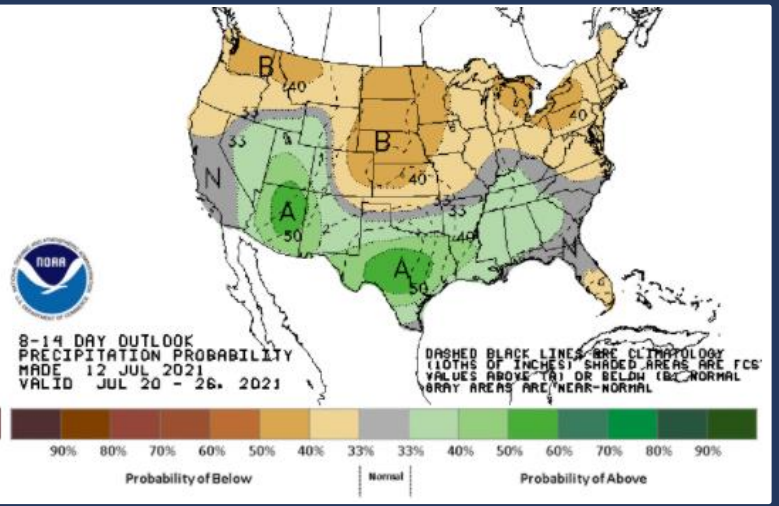
NWRFC
10-DAY
PRECIPITATION





CPC
8 – 14 DAY
OUTLOOK





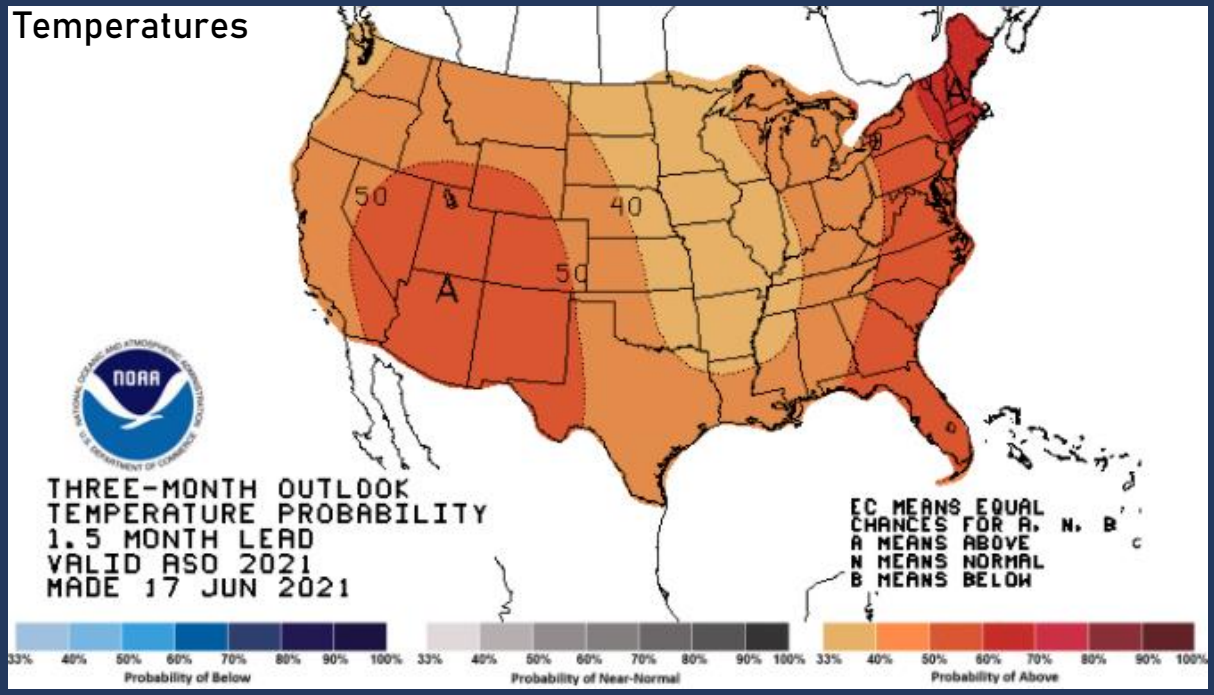
https://www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?tab=3

https://www.cpc.ncep.noaa.gov/products/predictions/814day/

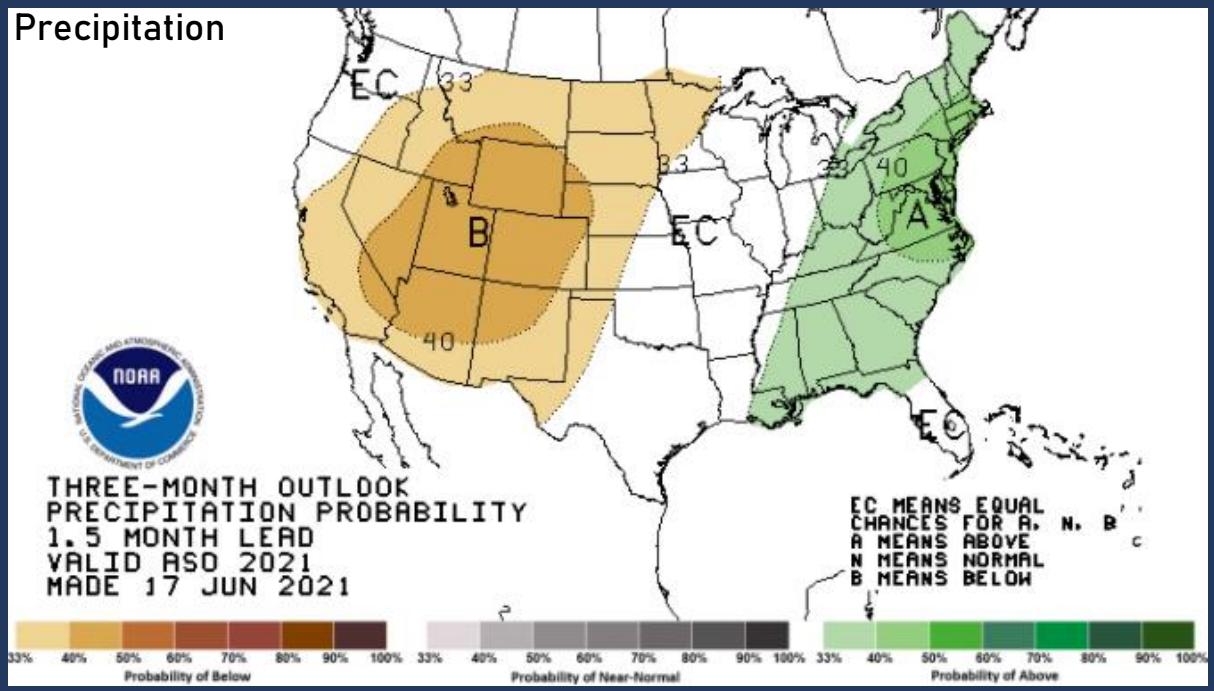
Climate Prediction Center Outlook

Aug-Sep-Oct 2021

Temperatures



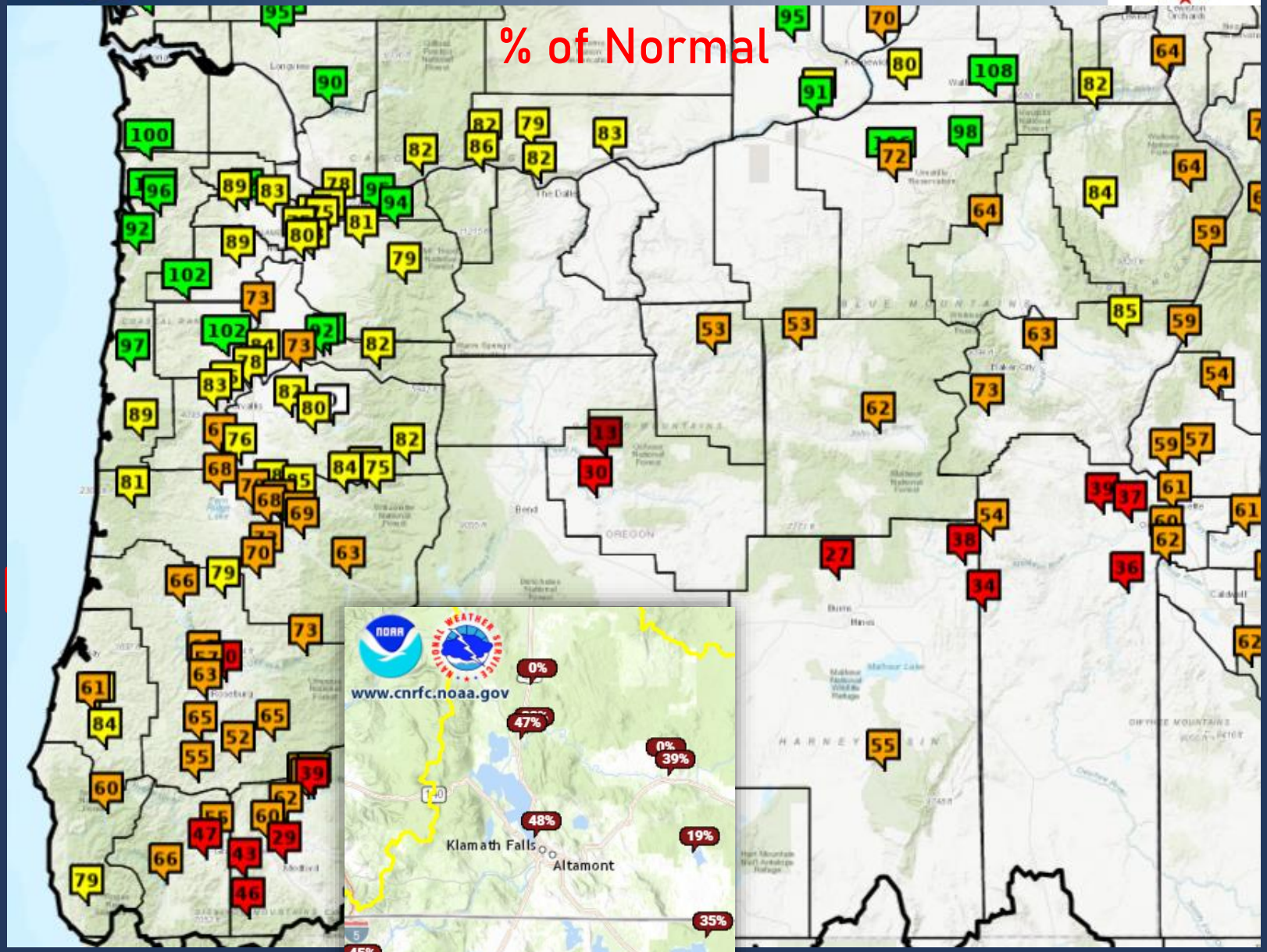
Precipitation



https://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2

Northwest River Forecast Center

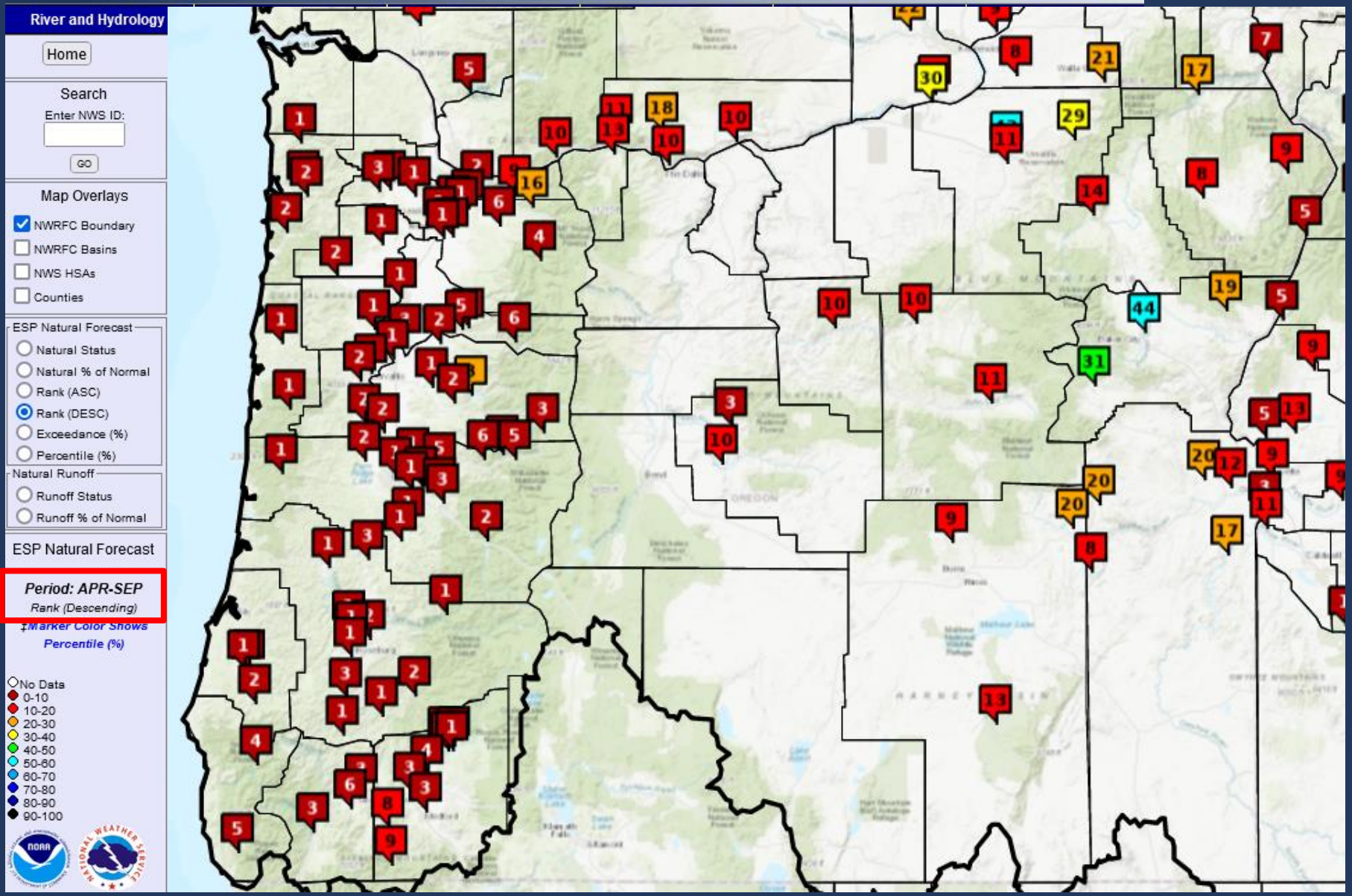
Observed Water Year Natural Runoff



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

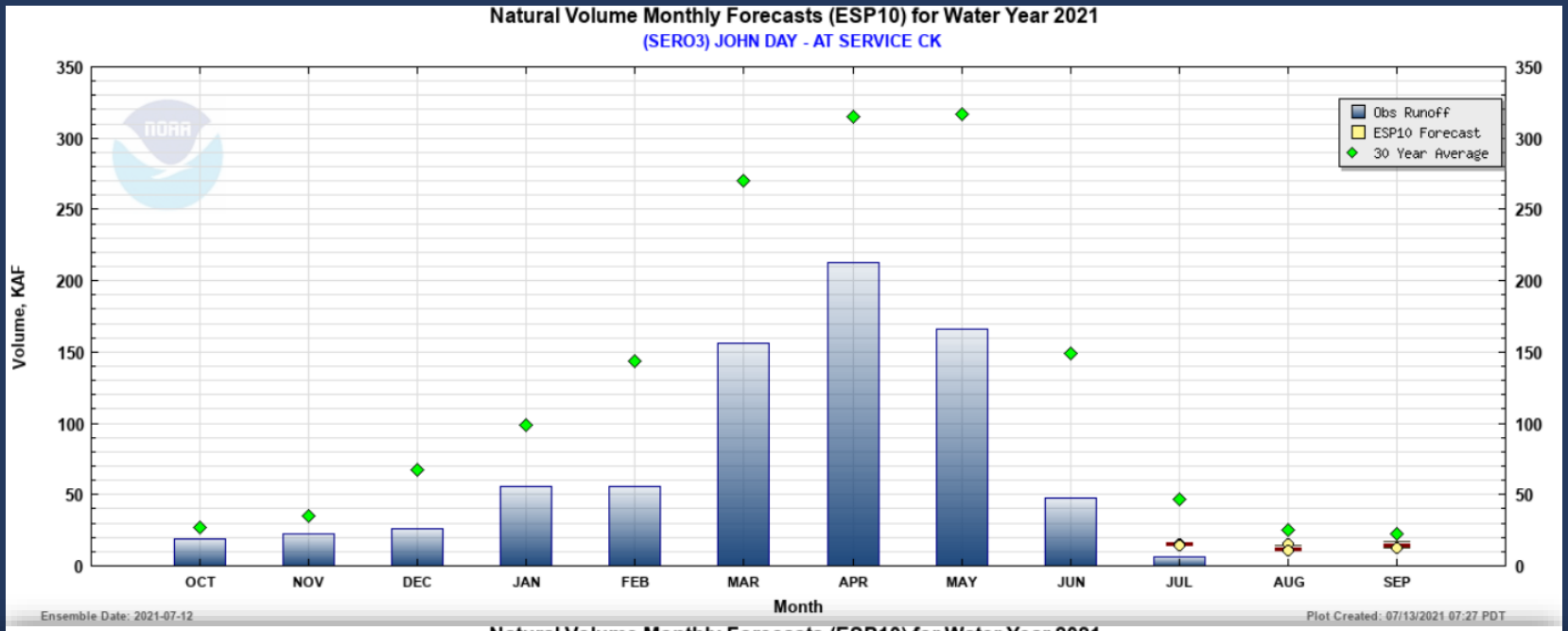
Northwest River Forecast Center

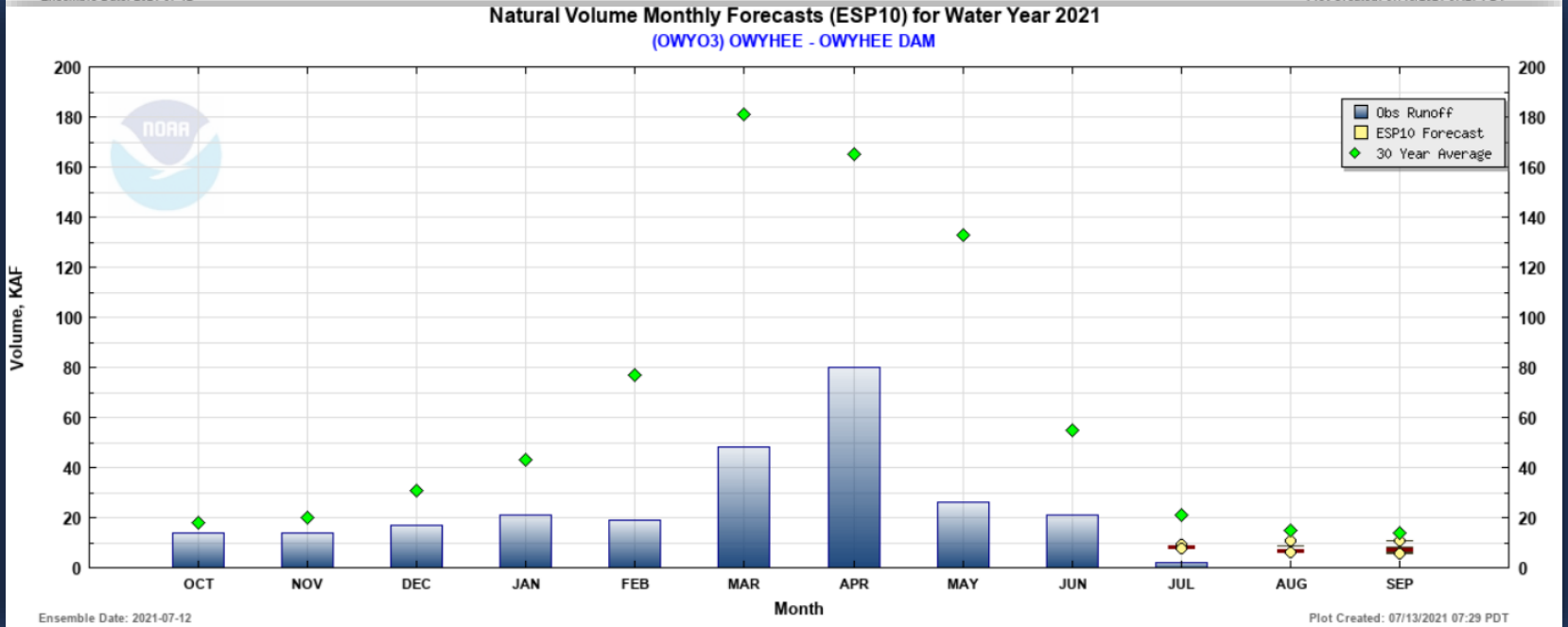
ESP Natural Forecast



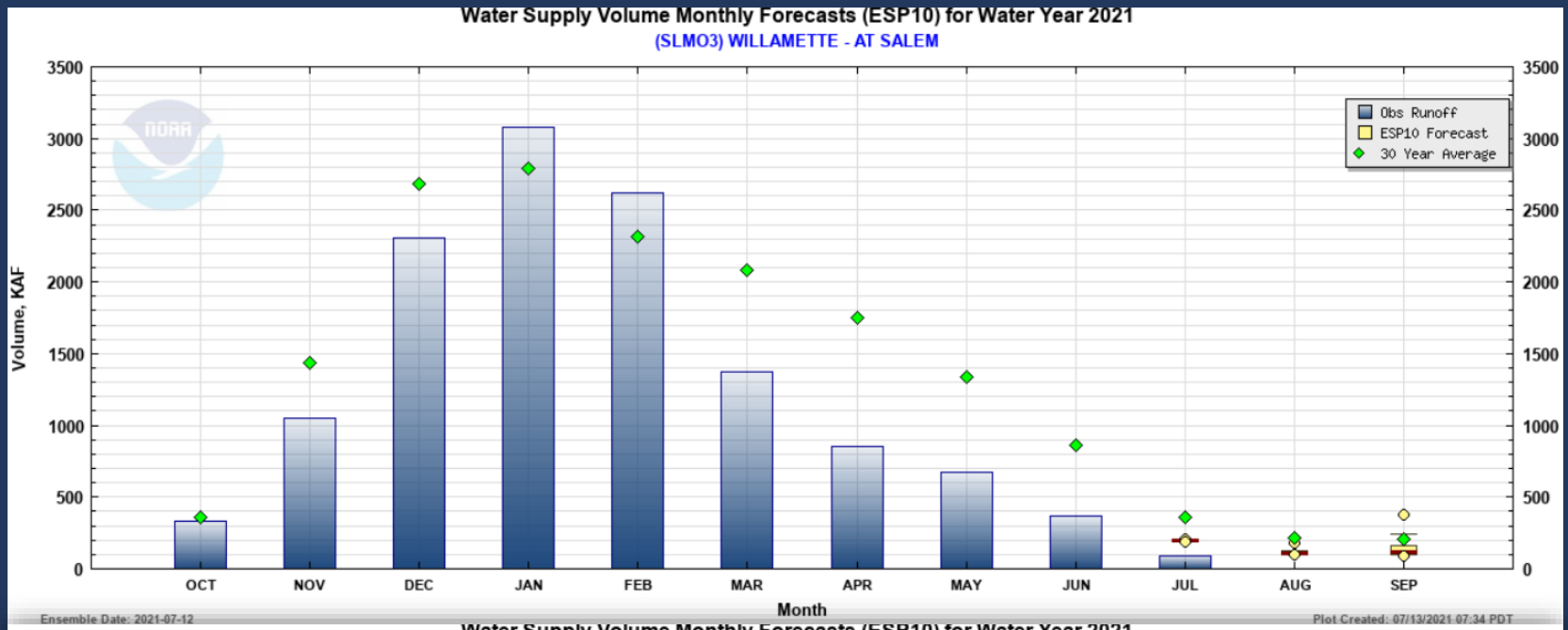
https://www.nwrfc.noaa.gov/natural/index.html

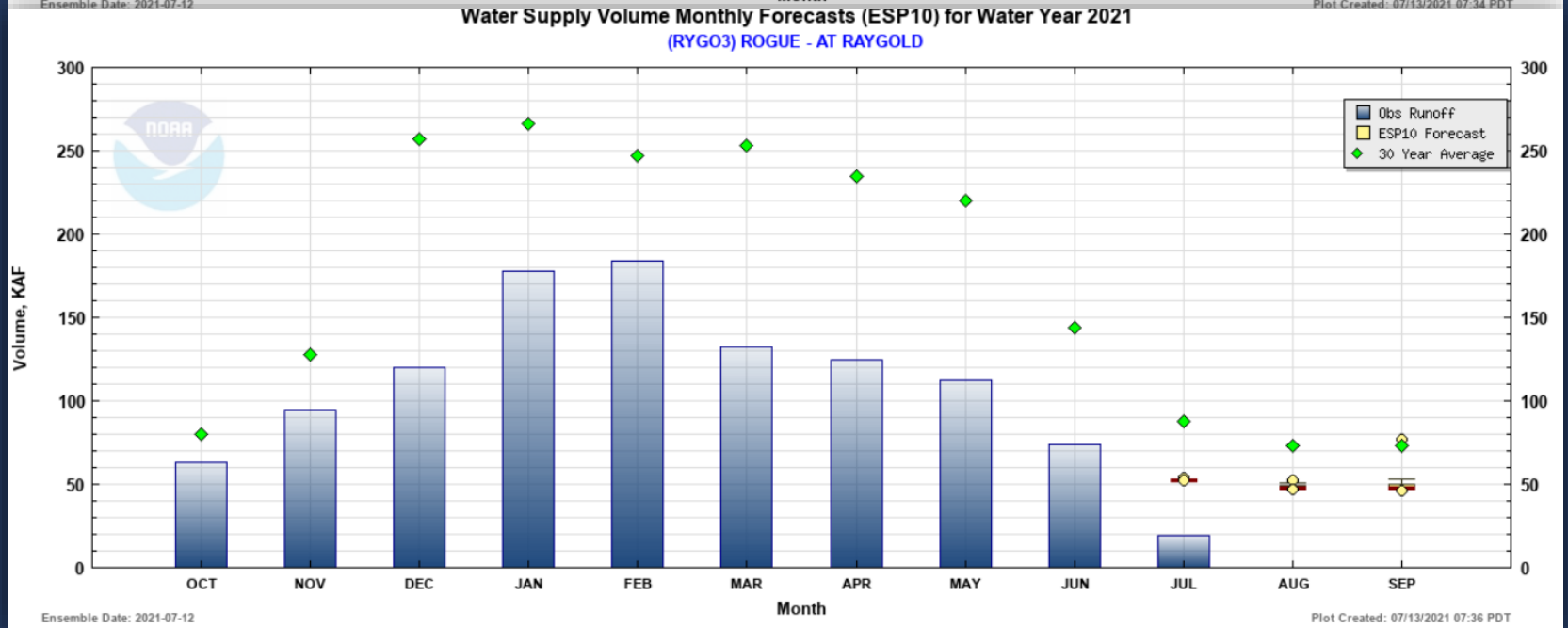
Monthly Volume Forecasts - Eastside



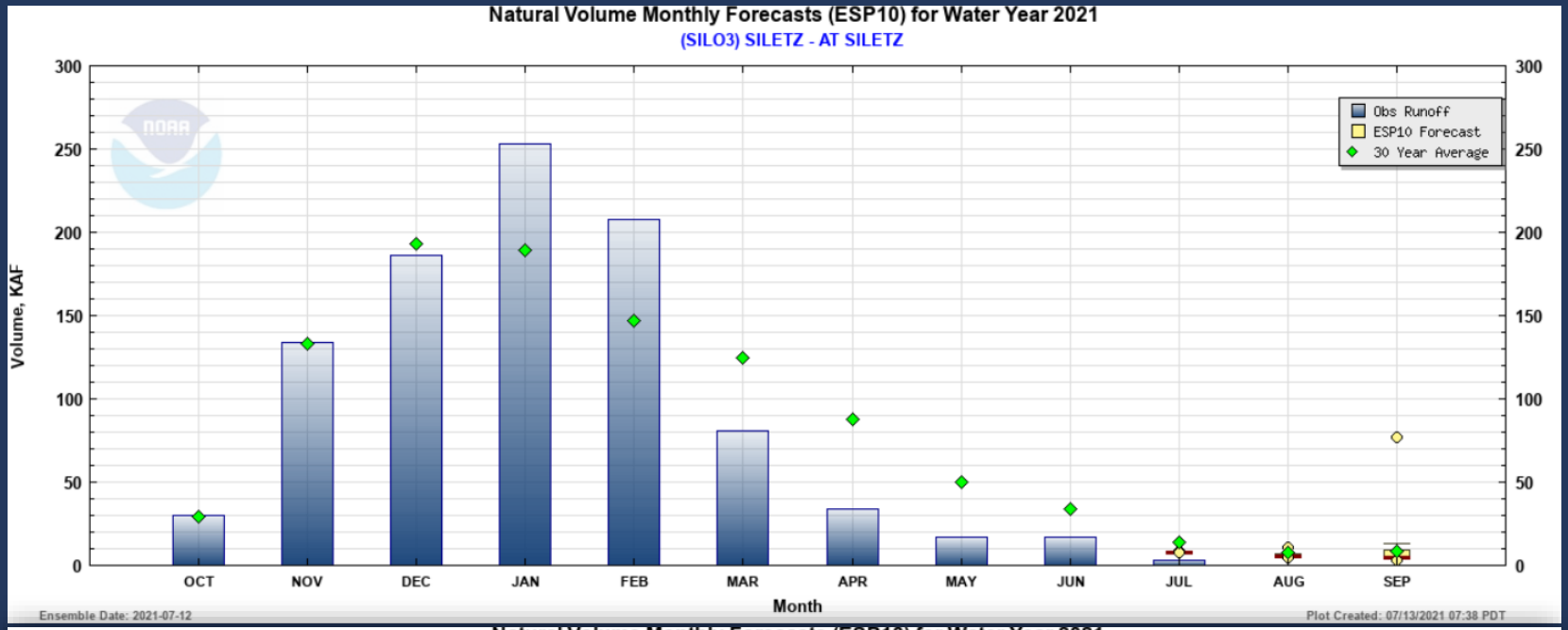


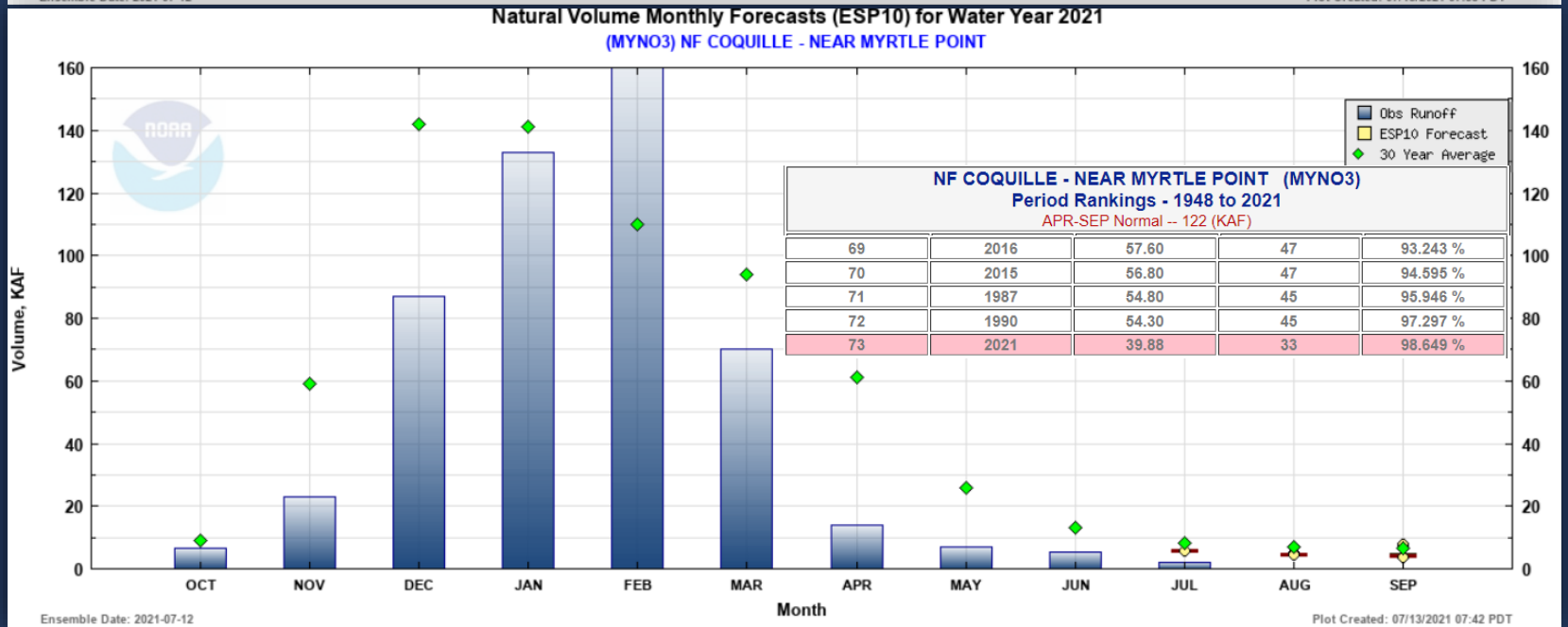
Monthly Volume Forecasts – Westside





Monthly Volume Forecasts – Coast





Oregon WSAC/DRC
Drought Status and Climate Updates
July 2021

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

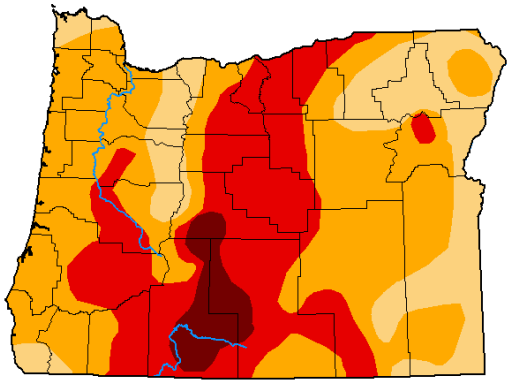
Tuesday, July 13, 2021


Moody Farms Agrimet (MDEO)
119.27˚F between 4:00-4:15 PST on June 29th
Unofficially tied all-time state record set in
Pendleton and Prineville in 1898

U.S. Drought Monitor

Oregon

June 8, 2021



June 8, 2021

(Released Thursday, Jun. 10, 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	80.37	34.37	4.78
Last Week 06-01-2021	0.00	100.00	97.08	72.03	27.36	3.57
3 Months Ago 03-09-2021	19.33	80.67	67.28	43.99	12.53	0.00
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 06-09-2020	4.88	95.12	81.33	38.77	4.79	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:

Brian Fuchs

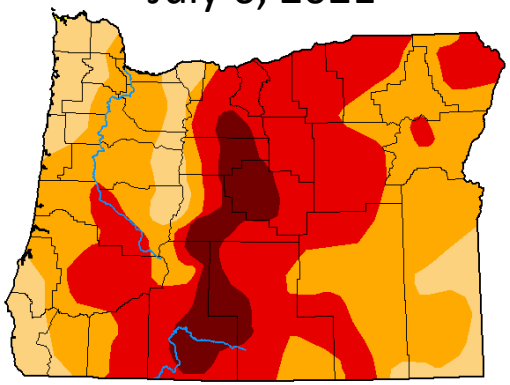
National Drought Mitigation Center

droughtmonitor.unl.edu

U.S. Drought Monitor

Oregon

July 6, 2021



July 6, 2021

(Released Thursday, Jul. 8, 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	99.97	86.40	46.02	8.24
Last Week 06-29-2021	0.00	100.00	99.97	81.96	43.93	4.78
3 Months Ago 04-06-2021	17.73	82.27	65.94	41.68	13.22	1.48
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 07-07-2020	9.21	90.79	74.48	46.67	6.18	0.00

Intensity:

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

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Author:

Deborah Bathke

National Drought Mitigation Center

droughtmonitor.unl.edu

USDM categorical changes over the month:

	July 6, 2021	**June 8, 2021**	**Change**
D1-D4	99.97%	100%	-0.03%
D2-D4	86.4%	80.4%	+6.0%
D3-D4	46.0%	34.4%	+11.6%
D4	8.2%	4.9%	+3.3%

Notable contributing meteorological events:

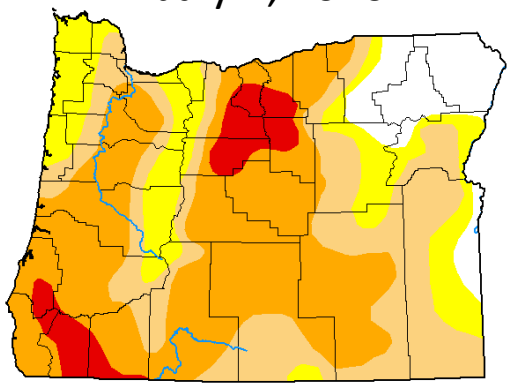
(1) Moderate atmospheric river event, mostly impacting western Oregon

(2) Unprecedented late June heat wave

U.S. Drought Monitor

Oregon

July 7, 2020



July 7, 2020

(Released Thursday, Jul. 9, 2020)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	9.21	90.79	74.48	46.67	6.18	0.00
Last Week 07-02-2020	7.49	92.51	76.67	45.51	5.33	0.00
3 Months Ago 04-09-2020	13.99	86.01	55.61	13.05	0.00	0.00
Start of Calendar Year 01-02-2020	2.40	97.60	24.46	0.00	0.00	0.00
Start of Water Year 10-03-2019	88.54	11.46	0.00	0.00	0.00	0.00
One Year Ago 07-11-2019	66.08	33.92	10.83	0.00	0.00	0.00

Intensity:

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

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Author:

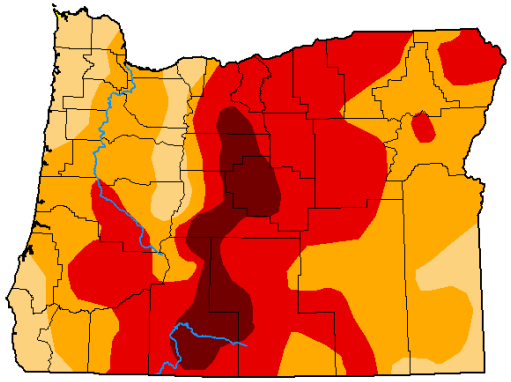
David Miskus
NOAA/NWS/NCEP/CPC

droughtmonitor.unl.edu

U.S. Drought Monitor

Oregon

July 6, 2021



July 6, 2021

(Released Thursday, Jul. 8, 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	99.97	86.40	46.02	8.24
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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 07-07-2020	9.21	90.79	74.48	46.67	6.18	0.00

Intensity:

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

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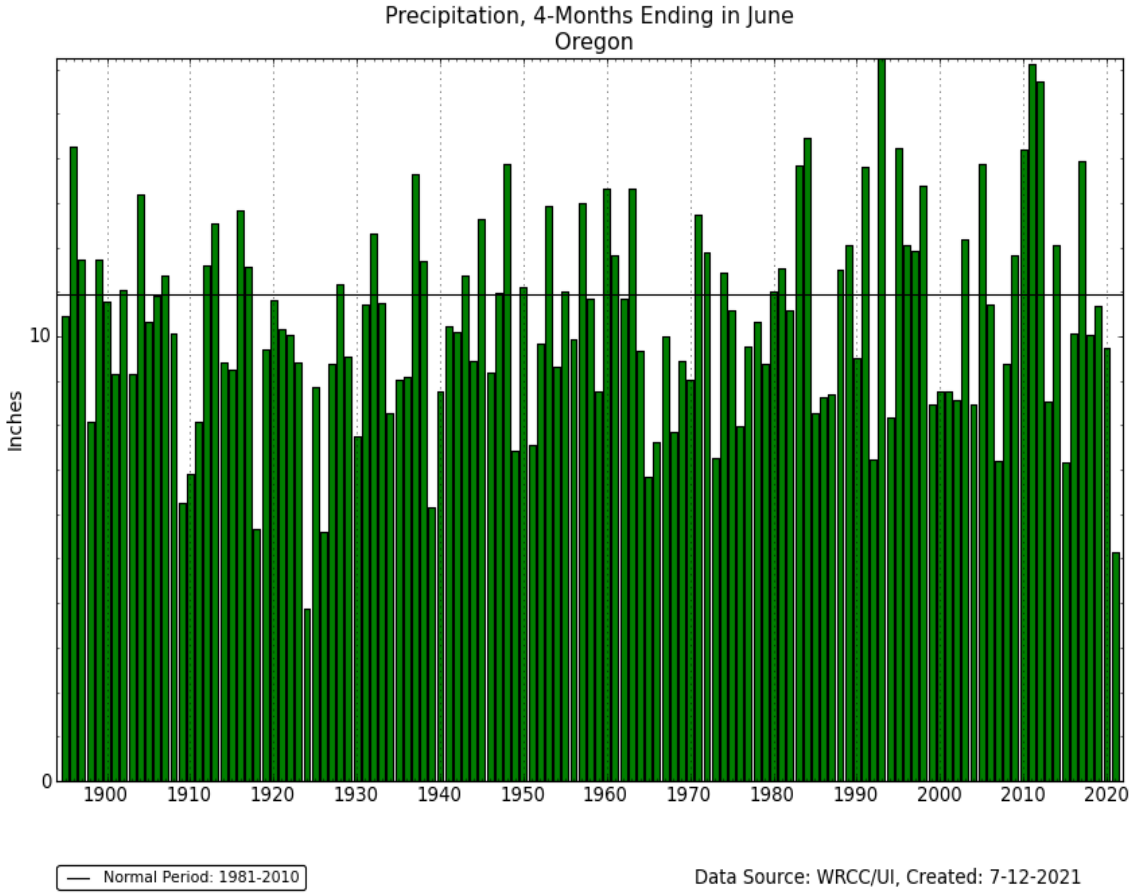
Author:

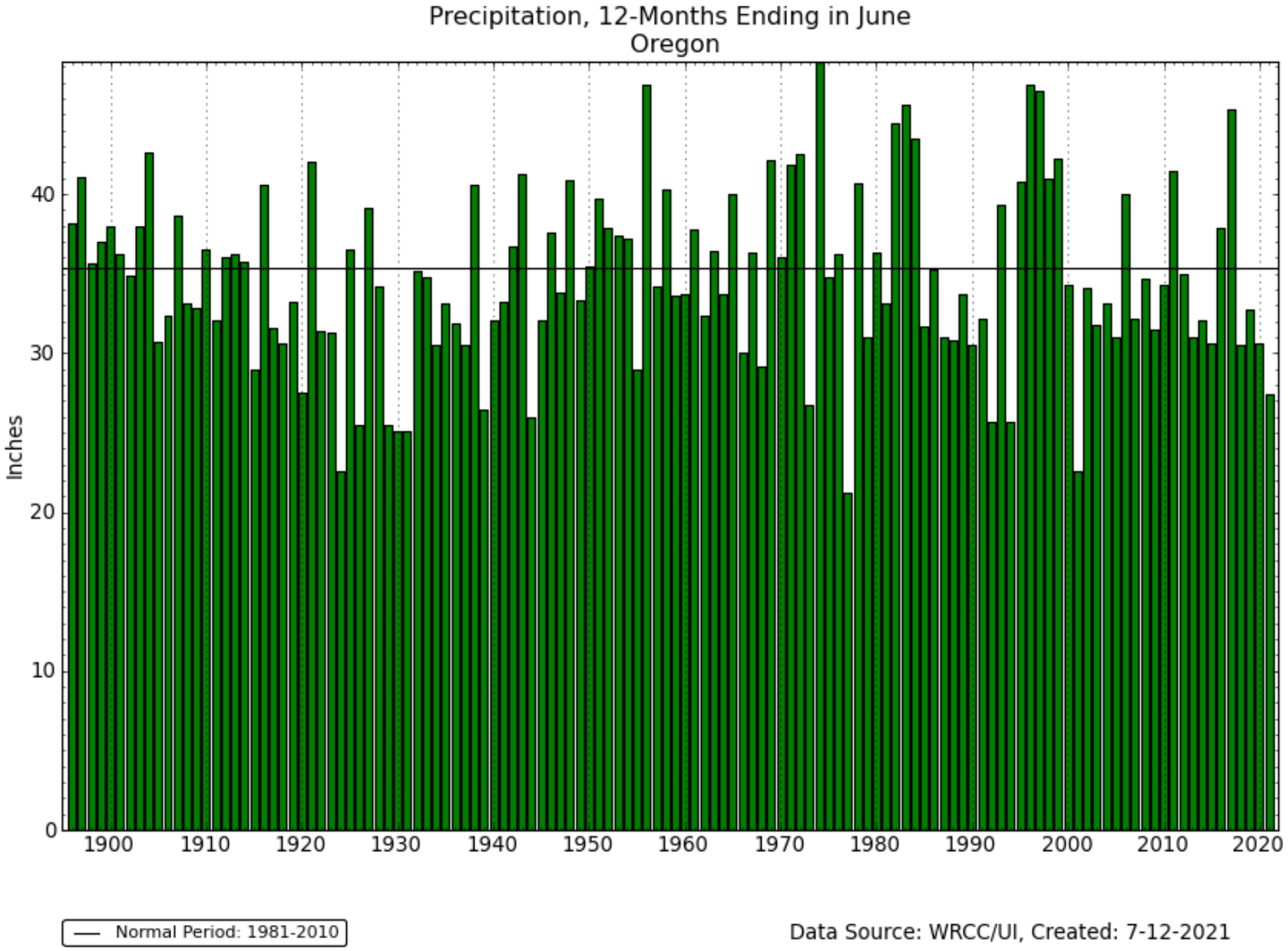
Deborah Bathke
National Drought Mitigation Center

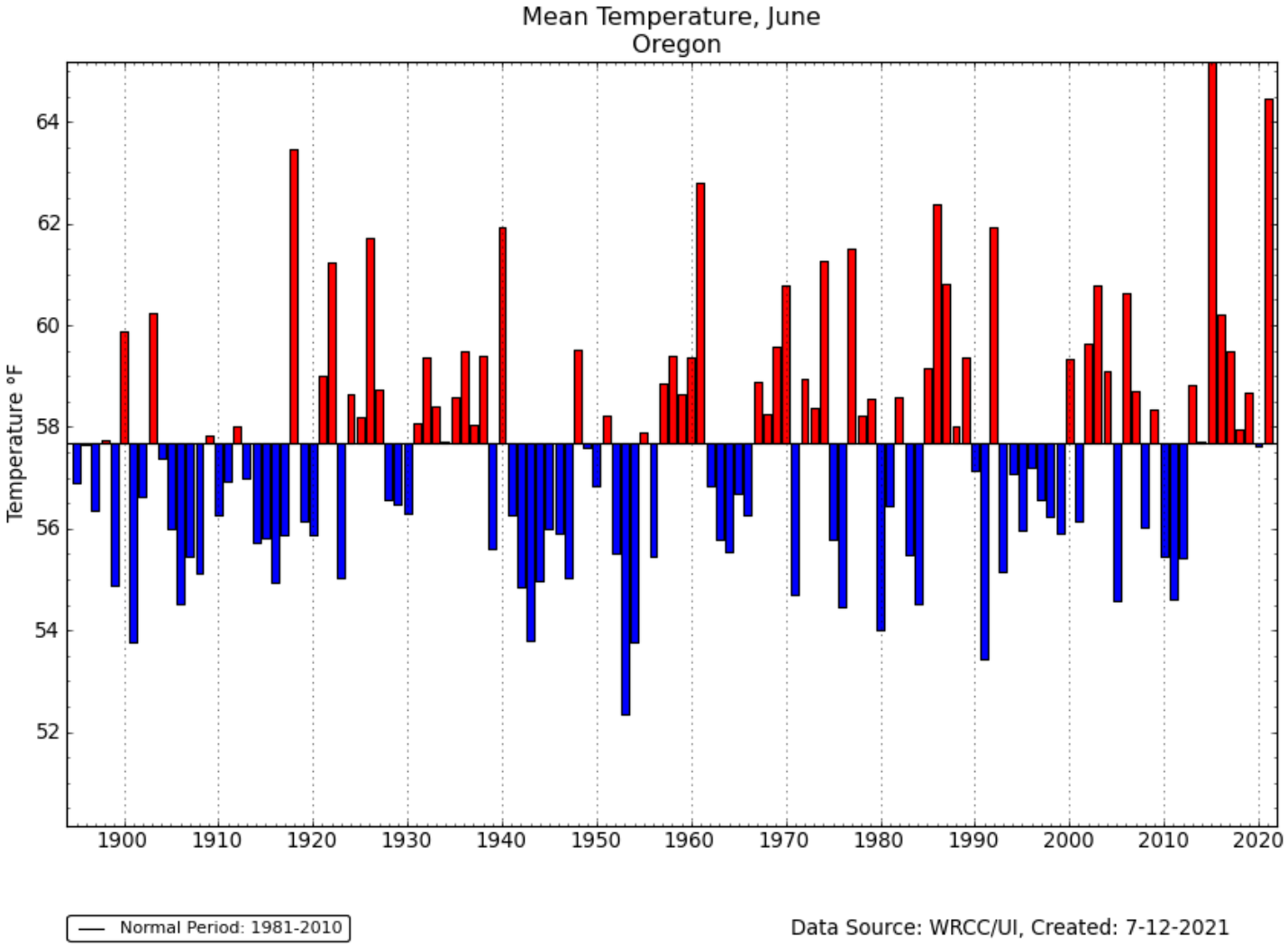
droughtmonitor.unl.edu



Second driest March-June 4-month period on record statewide

(1) 1924: 3.89” (35% of avg)
(2) 2021: 5.13” (47% of avg)
(3) 1926: 5.59” (51% of avg)
(4) 1918: 5.68”
(5) 1939: 6.14”
(6) 1909: 6.25”
(7) 1965: 6.86”
(8) 1910: 6.91”
(9) 2015: 7.18”


Precipitation, 12-Months Ending in June
Oregon
Inches
0
10
20
30
40
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Normal Period: 1981-2010
Data Source: WRCC/UI, Created: 7-12-2021

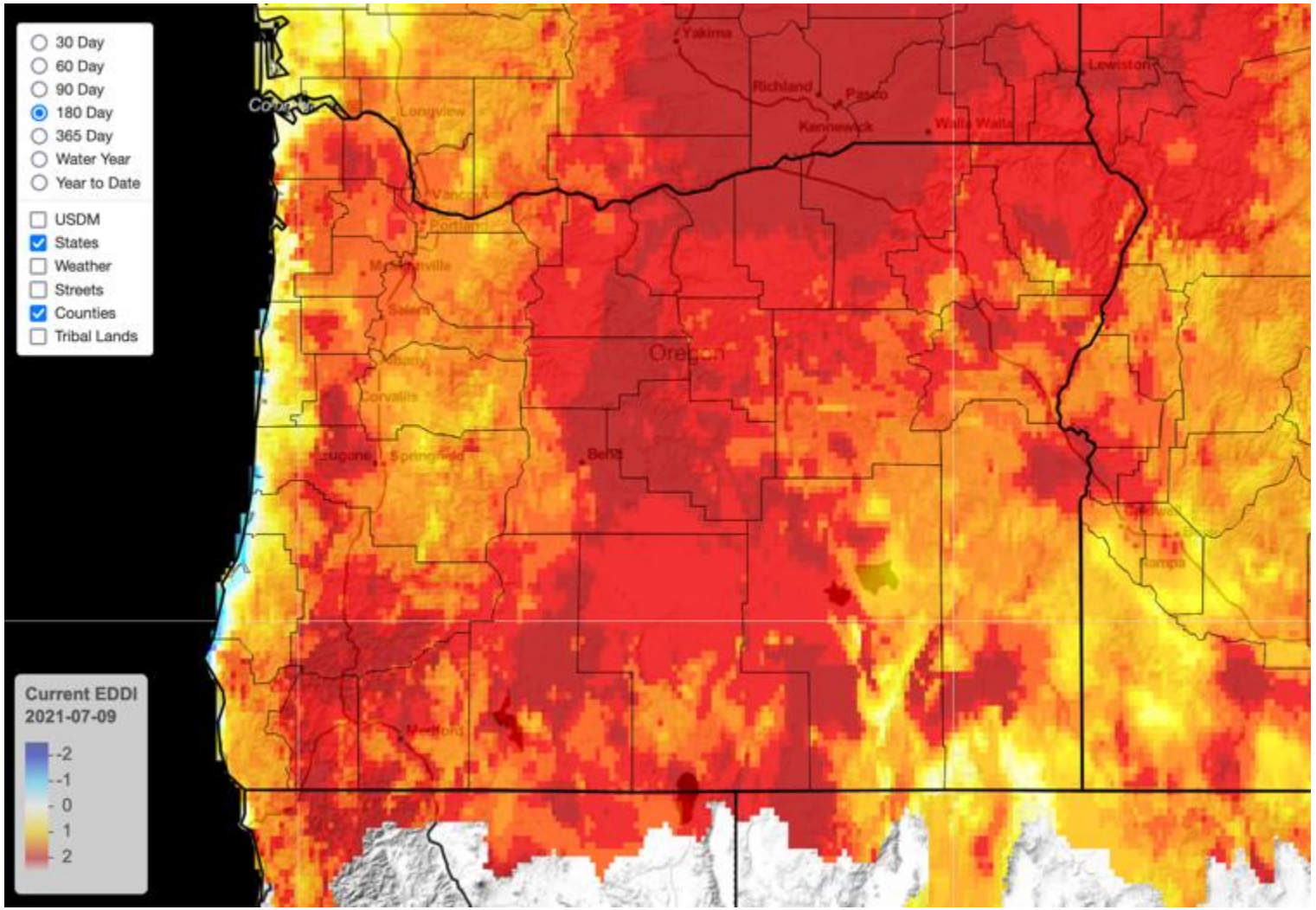


June 2021 was the second warmest June on record

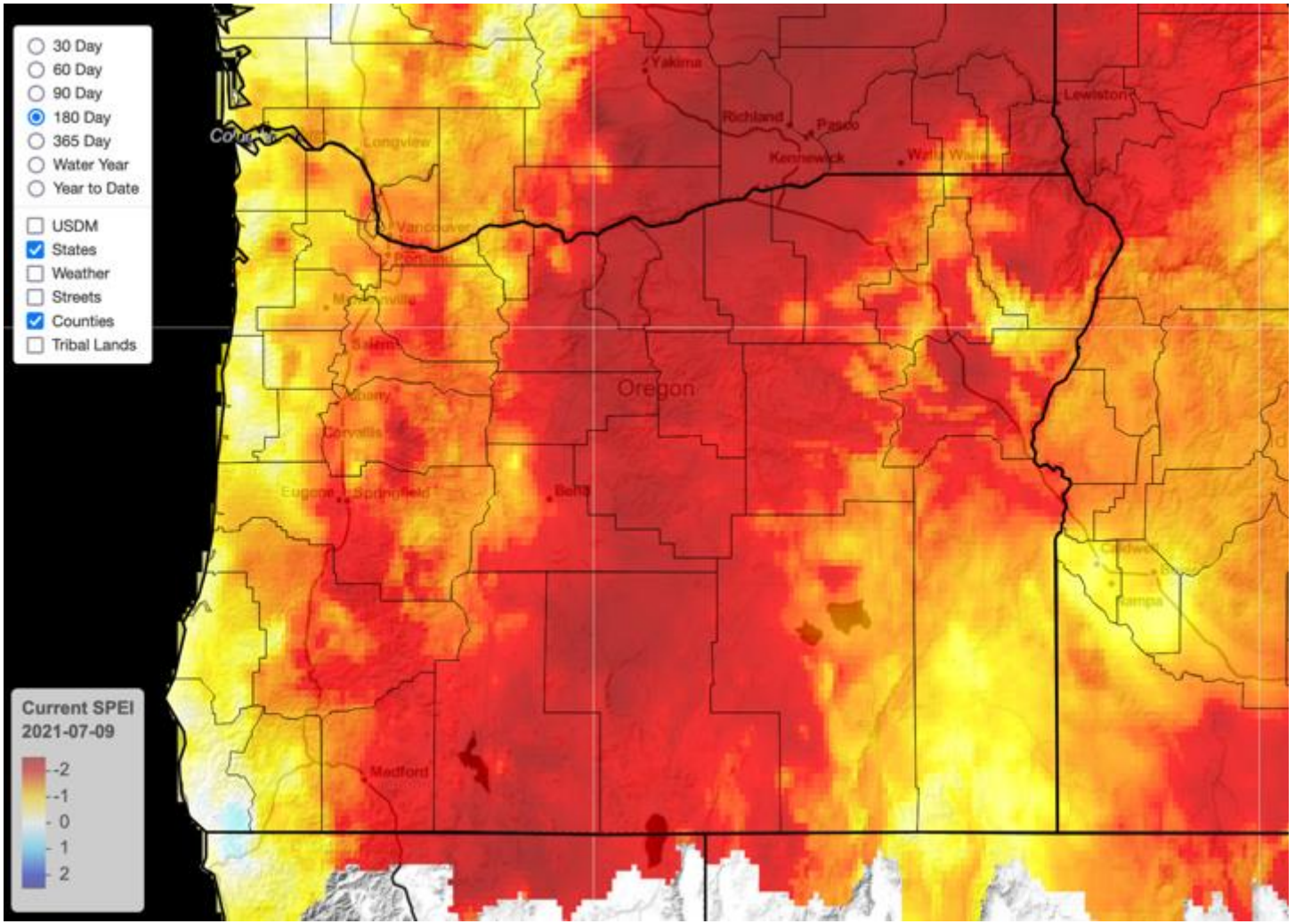
(1) 2015: 65.19°F

(2) 2021: 64.45°F

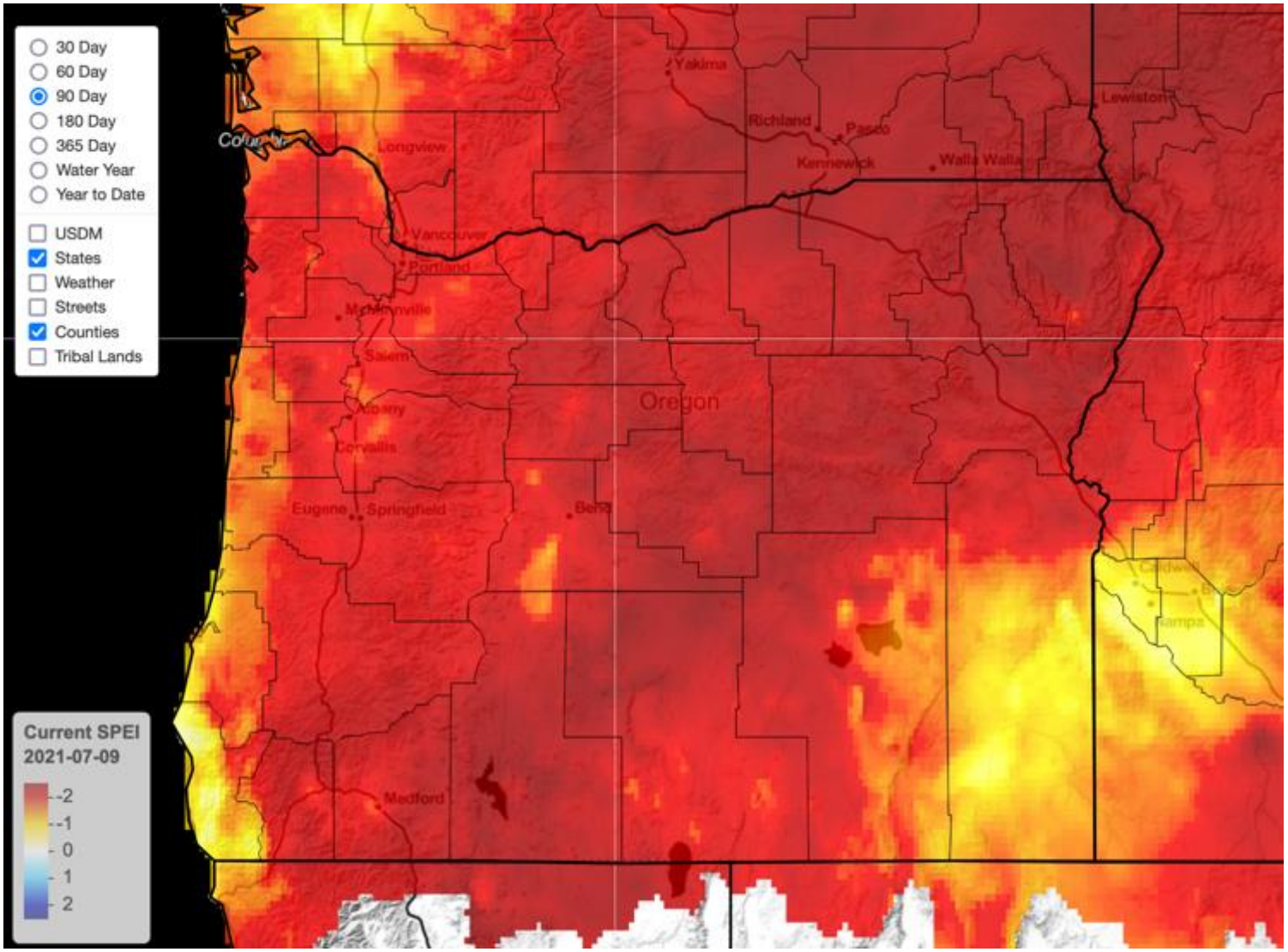
180-day EDDI
(Evaporative Demand Drought Index)

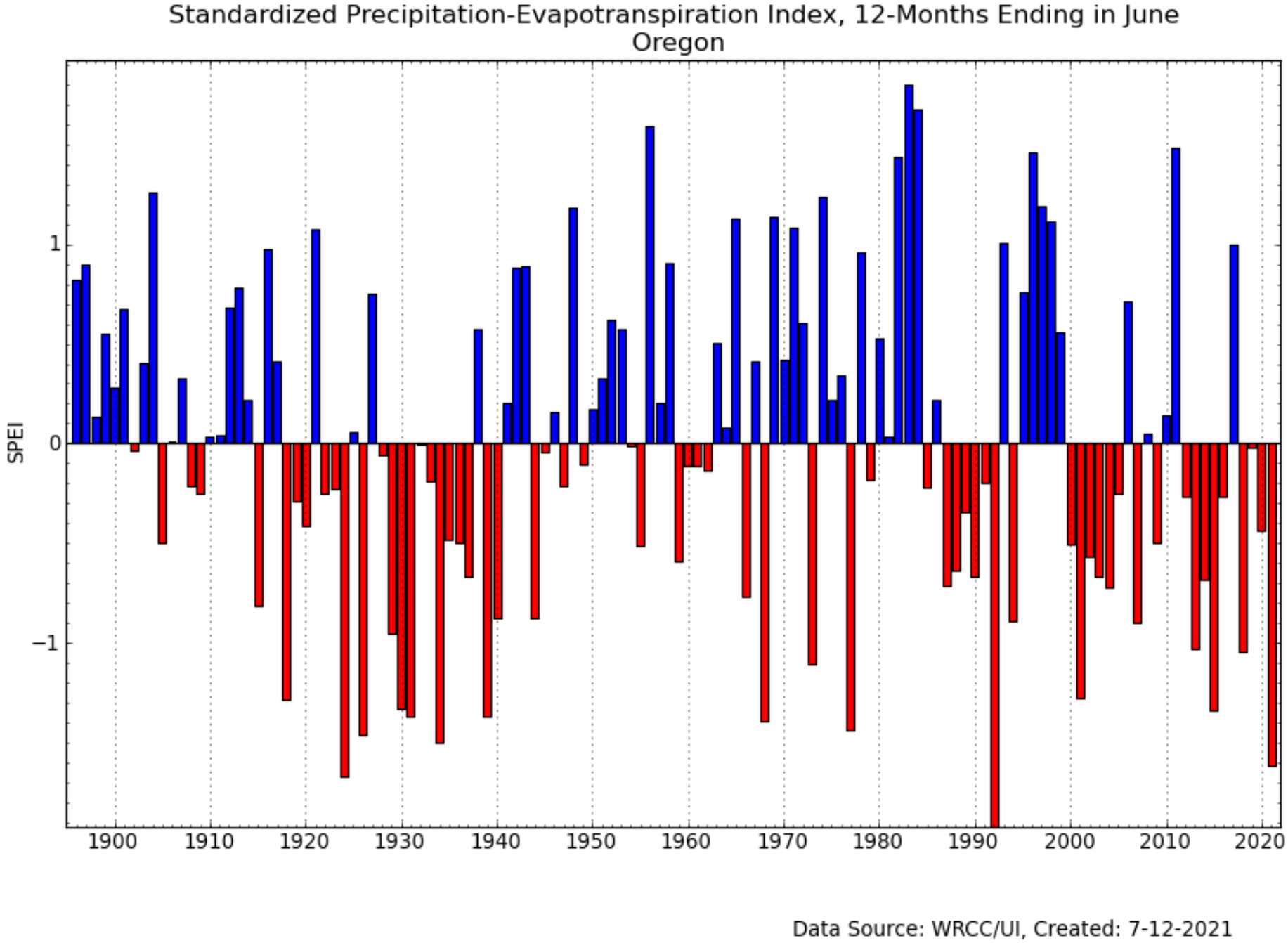


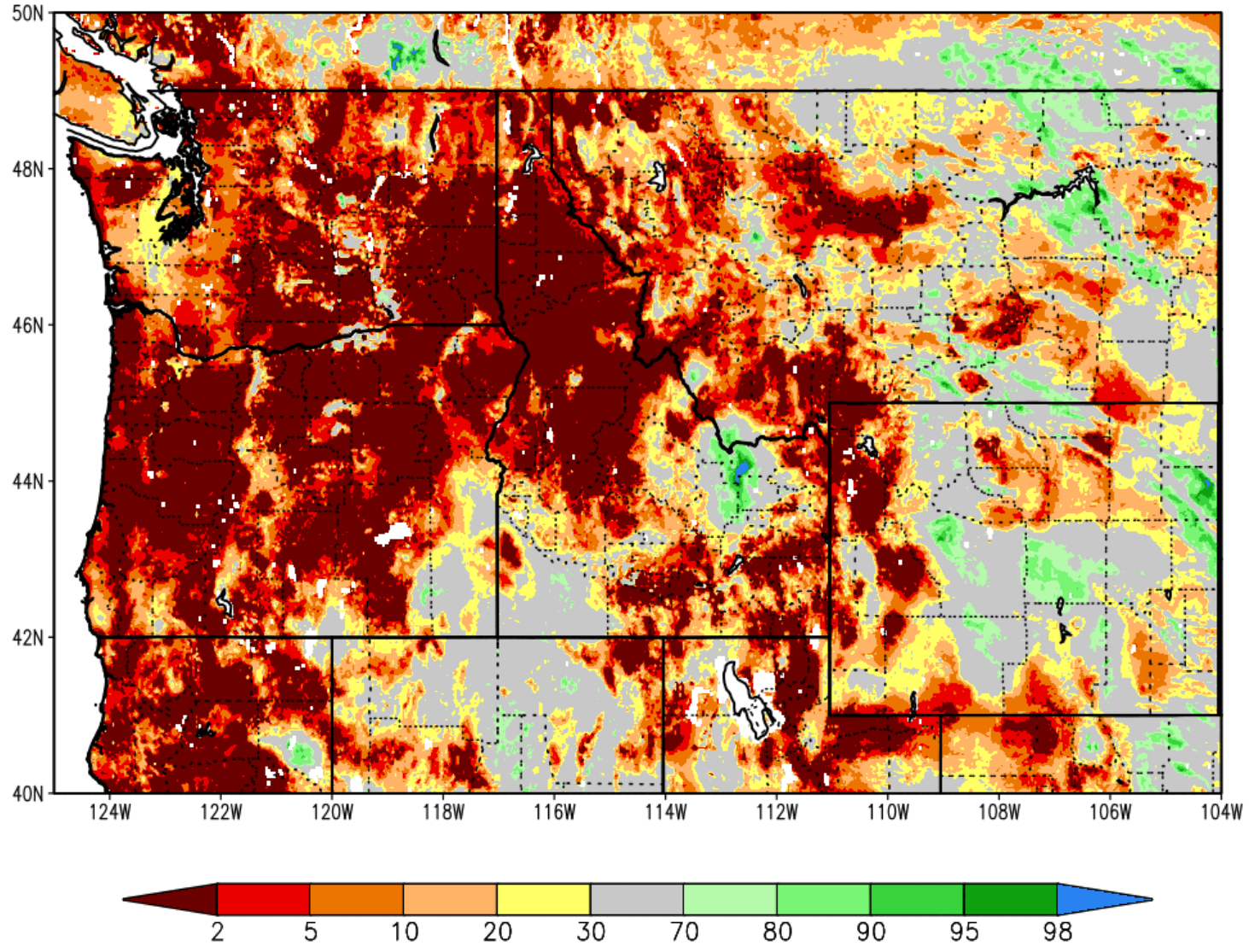
180-day SPEI


30 Day
60 Day
90 Day
180 Day
365 Day
Water Year
Year to Date
USDM
States
Weather
Streets
Counties
Tribal Lands
Current SPEI
2021-07-09
-2
-1
0
1
2
Yakima
Richland
Pasco
Kennewick
Lewiston
Longview
Vancouver
Oregon
Salem
Albany
Corvallis
Eugene
Springfield
Bend
Medford

90-day SPEI

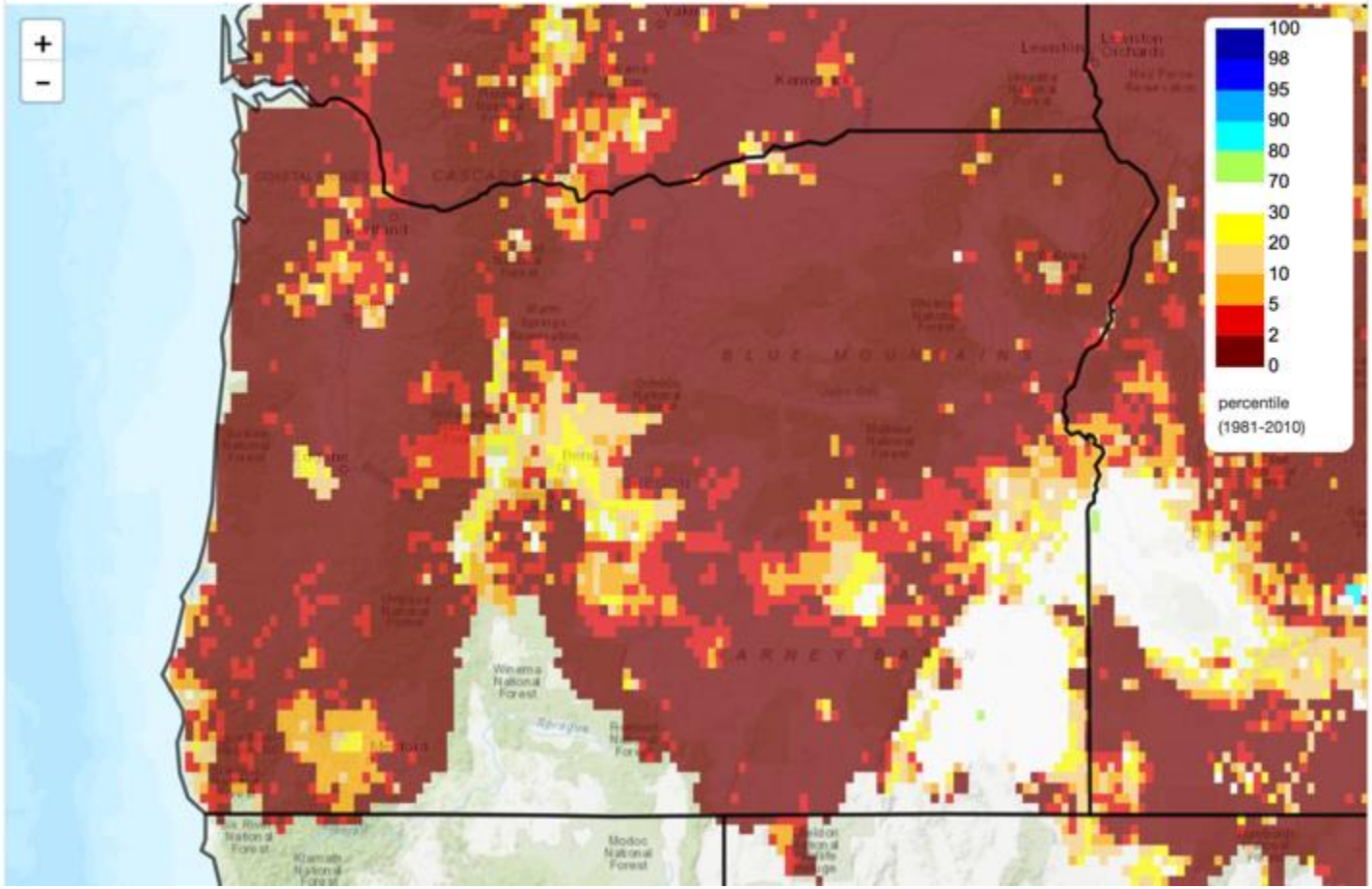

30 Day
60 Day
90 Day
180 Day
365 Day
Water Year
Year to Date
USDM
States
Weather
Streets
Counties
Tribal Lands
Current SPEI
2021-07-09
-2
-1
0
1
2
Yakima
Richland
Pasco
Kennewick
Walla Walla
Lewiston
Longview
Vancouver
Portland
McMinnville
Salem
Albany
Corvallis
Eugene
Springfield
Bend
Oregon
Medford


Standardized Precipitation-Evapotranspiration Index, 12-Months Ending in June
Oregon
SPEI
1
0
−1
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Data Source: WRCC/UI, Created: 7-12-2021


SPoRT–LIS 0–10 cm Soil Moisture percentile valid 11 Jul 2021
50N
48N
46N
44N
42N
40N
124W
122W
120W
118W
116W
114W
112W
110W
108W
106W
104W
2
5
10
20
30
70
80
90
95
98

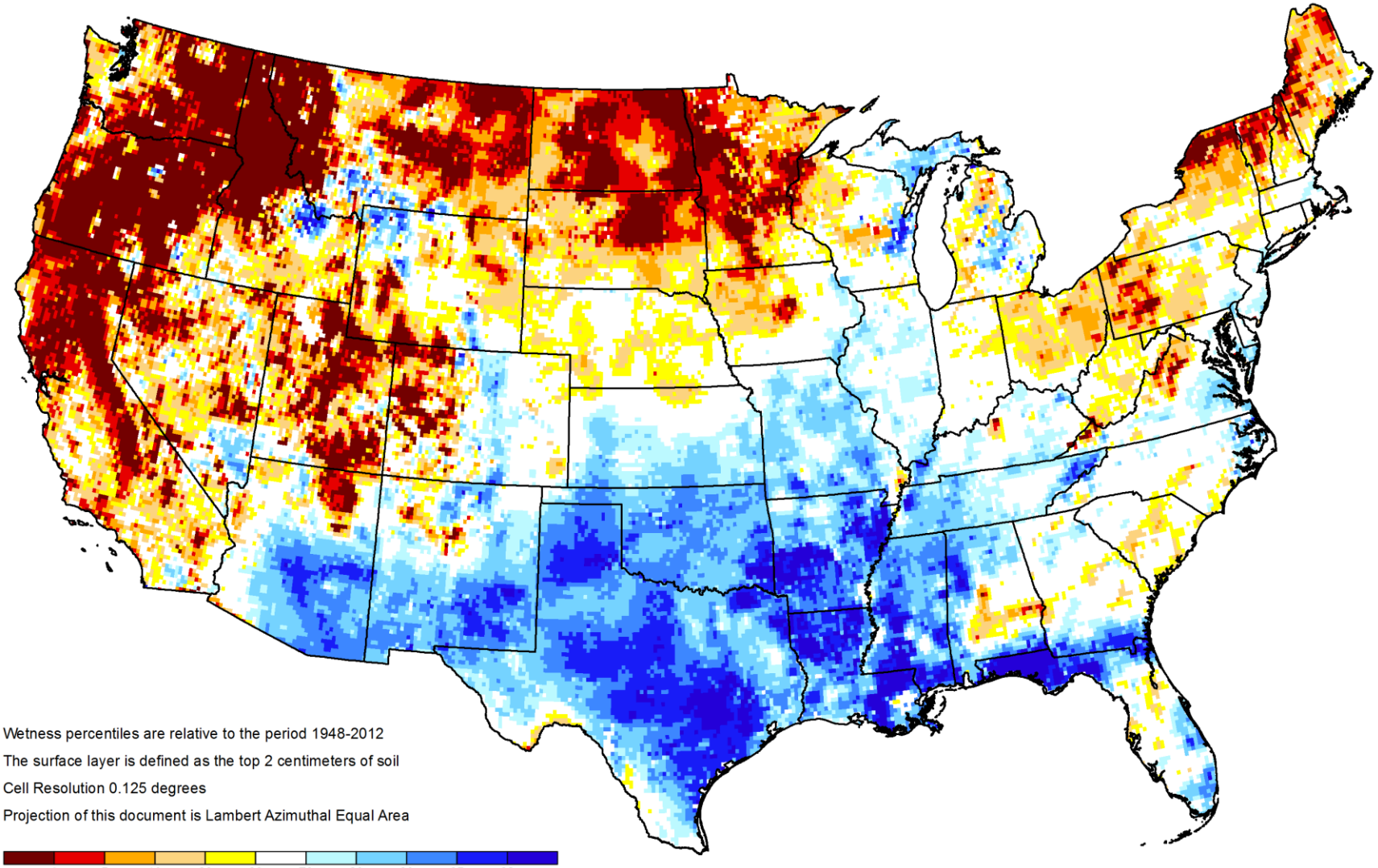
Soil Moisture Percentile

2021/07/08



GRACE-Based Surface Soil Moisture Drought Indicator

July 05, 2021



Wetness percentiles are relative to the period 1948-2012

The surface layer is defined as the top 2 centimeters of soil

Cell Resolution 0.125 degrees

Projection of this document is Lambert Azimuthal Equal Area

2 5 10 20 30 70 80 90 95 98

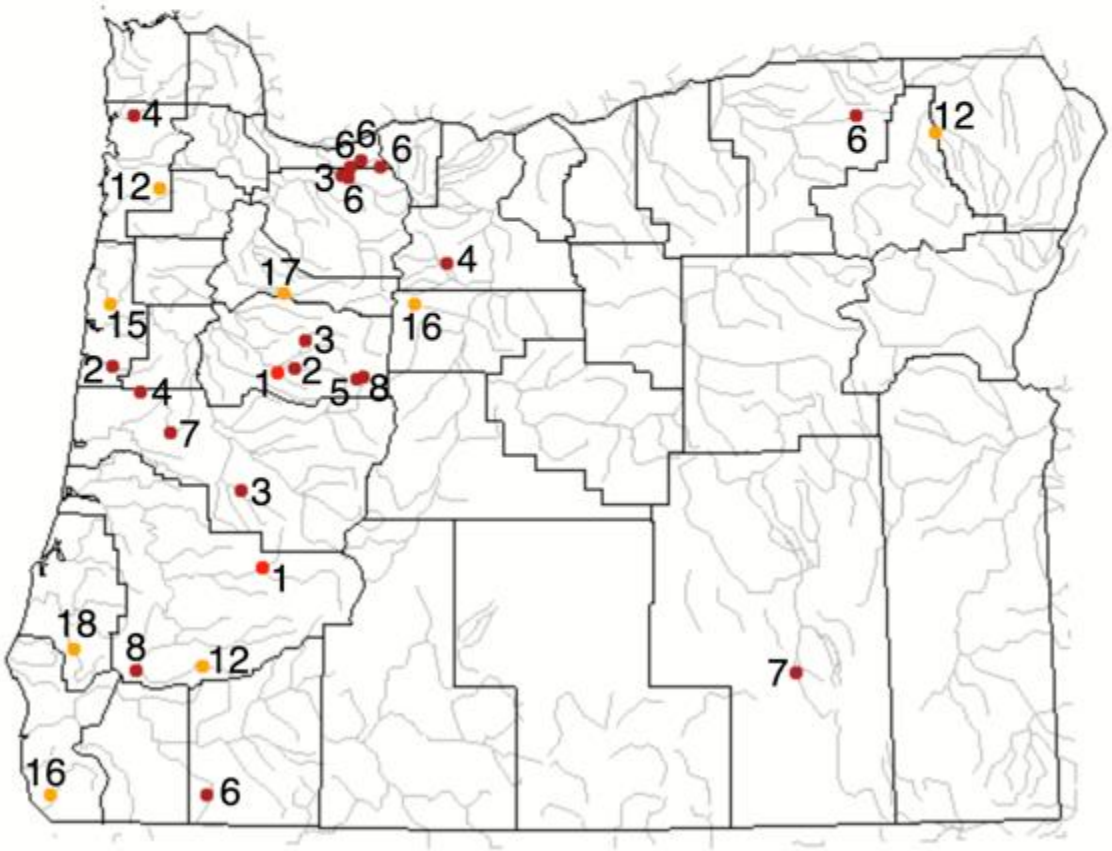
Wetness Percentile

https://nasagrace.unl.edu

Map of 7-day average streamflow compared to historical streamflow for the day of the year for HCDN sites (Oregon)

Oregon or Water-Resources Regions All Days

Saturday, July 10, 2021



Oregon Water Supply Availability Meeting

July 2021

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

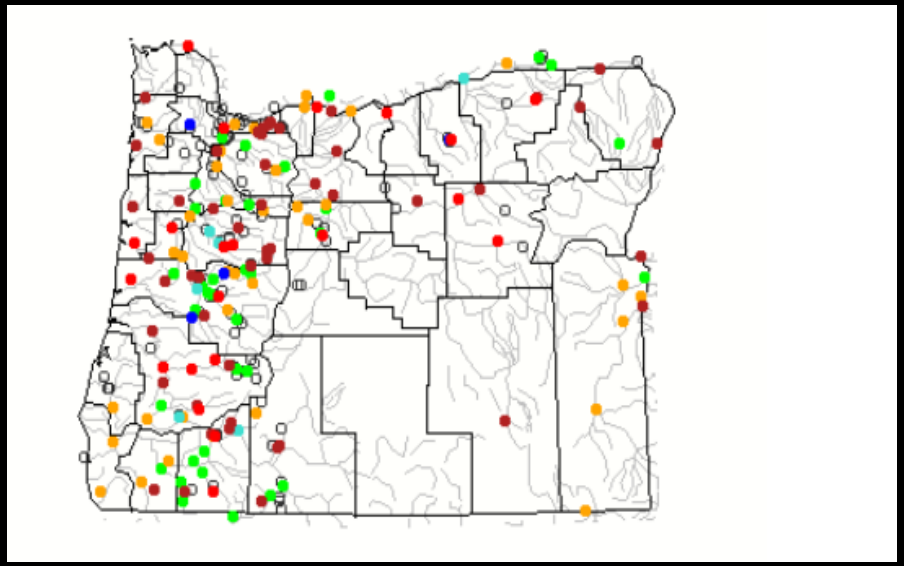
USGS Update on Surface Water Conditions

Carrie Boudreau & Marc Stewart
Oregon Water Science Center

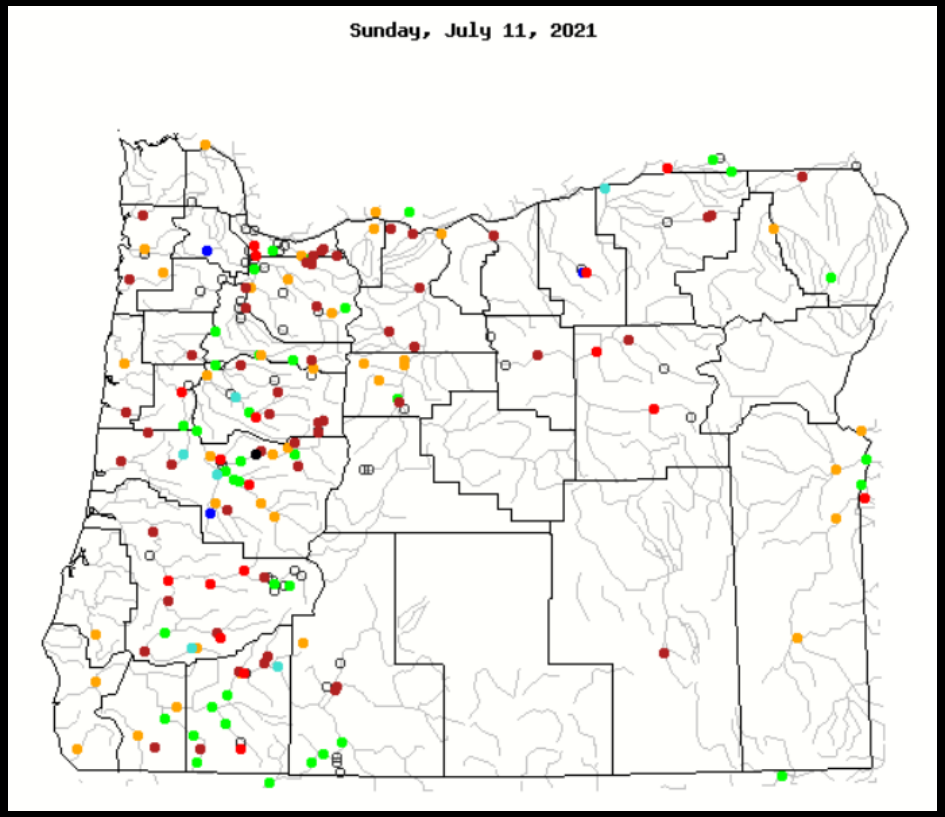
Streamflow Conditions

Oregon Streamflow Maps (as compared to Historical Record)

Daily



7-day Average

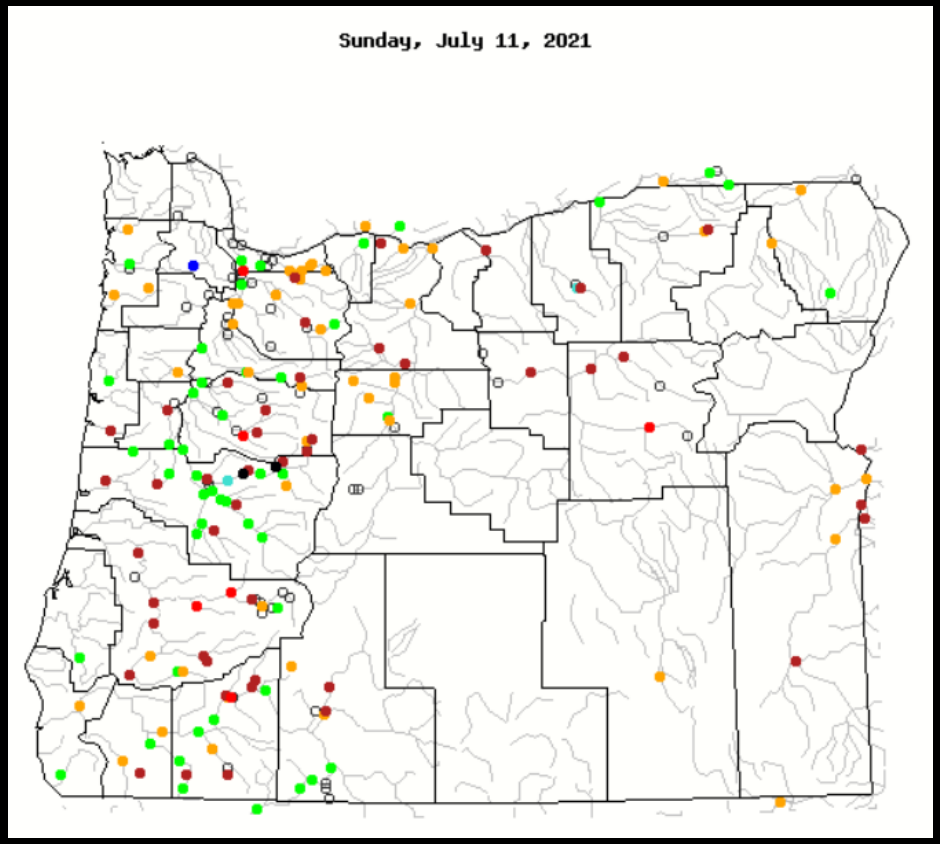


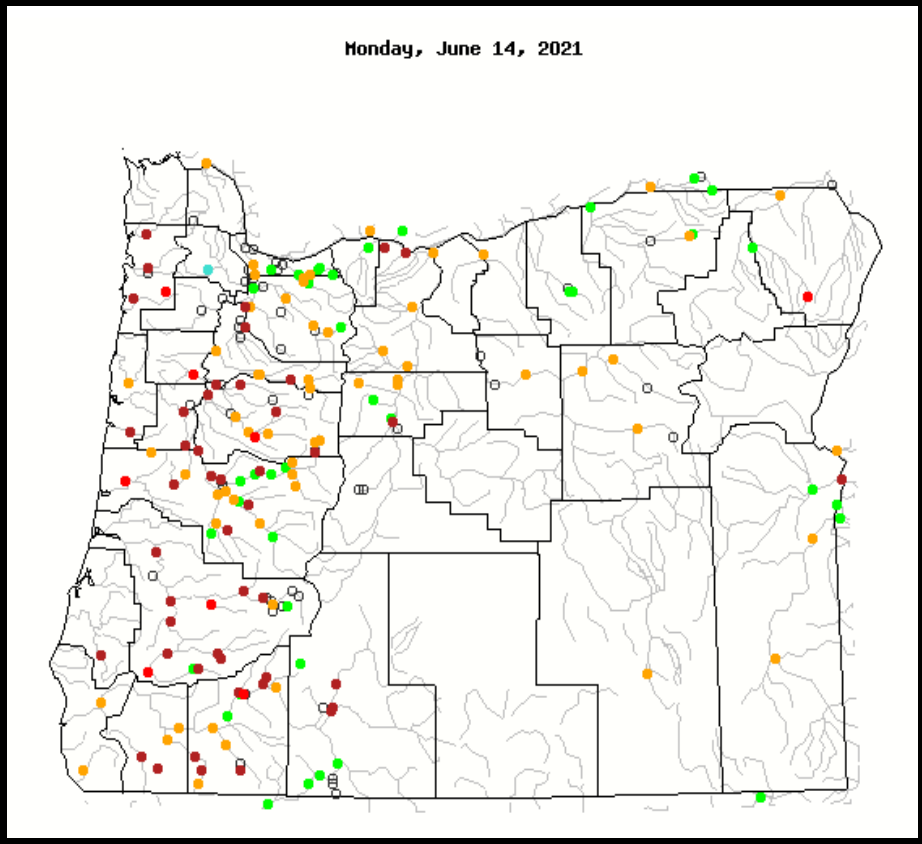
Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

USGS

Streamflow Conditions

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

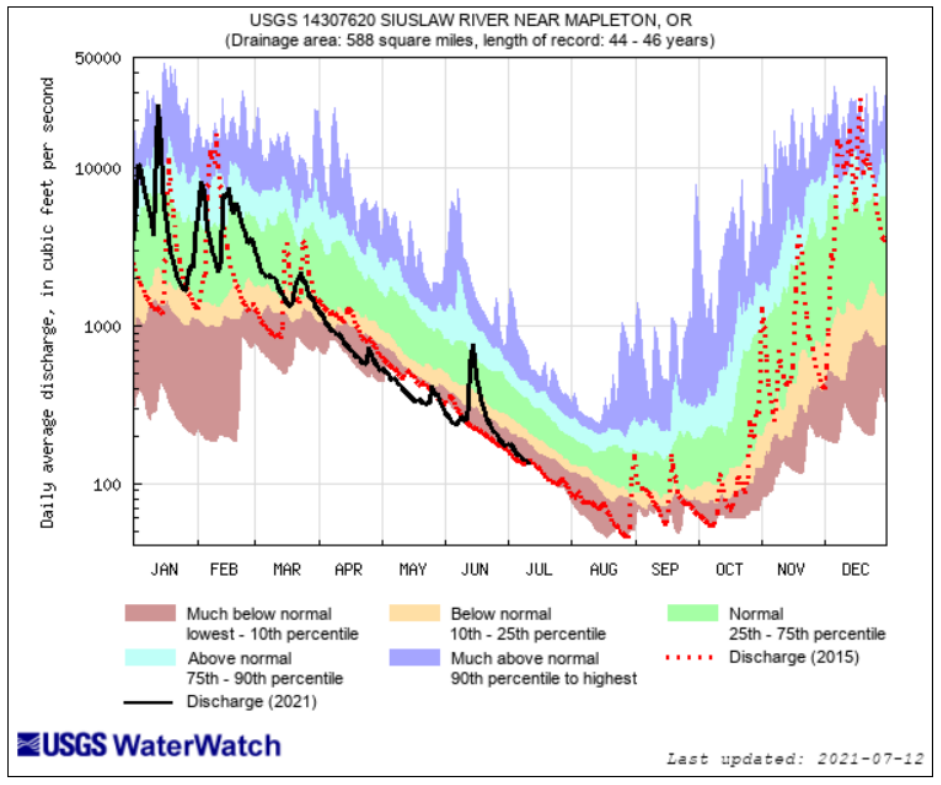


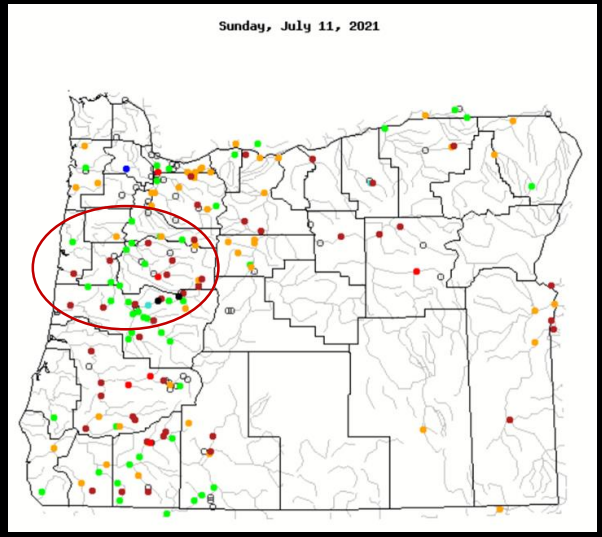


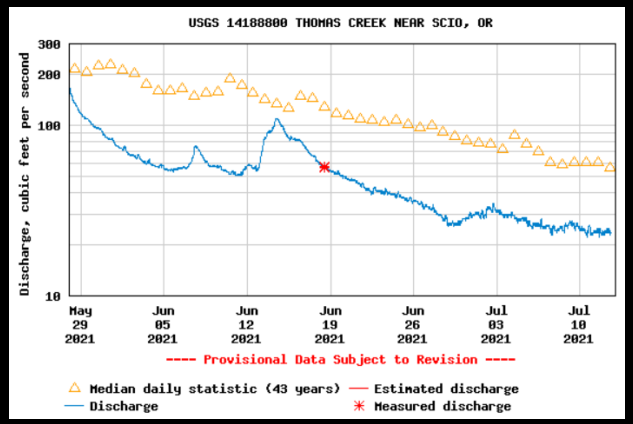
Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

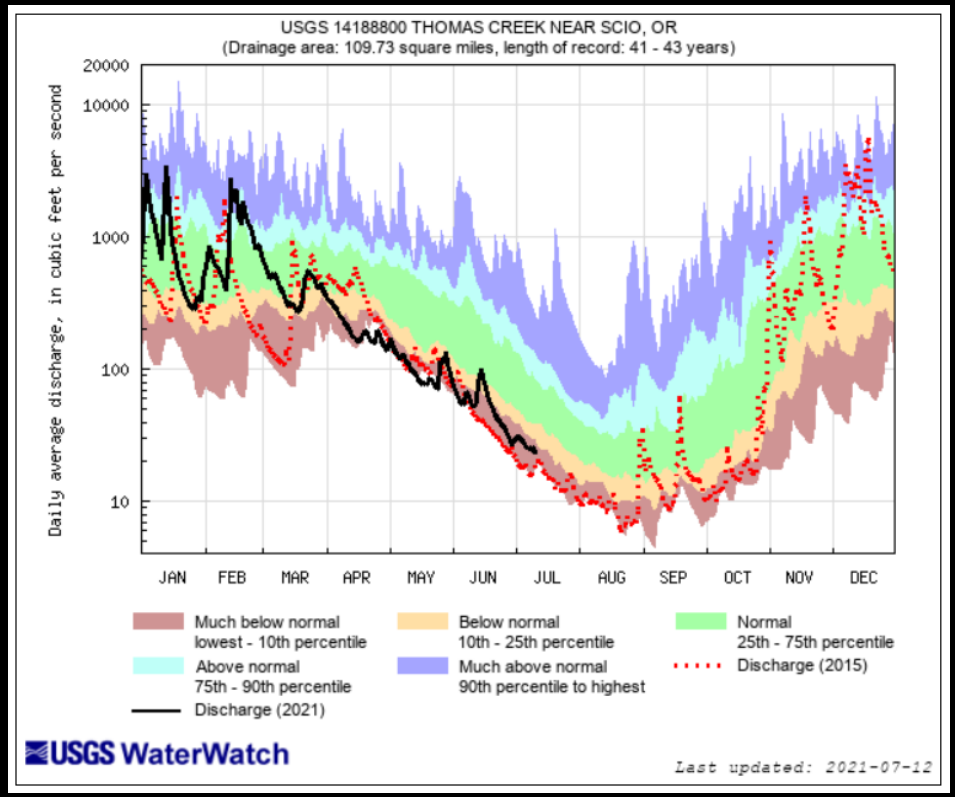
USGS

Northwestern OR



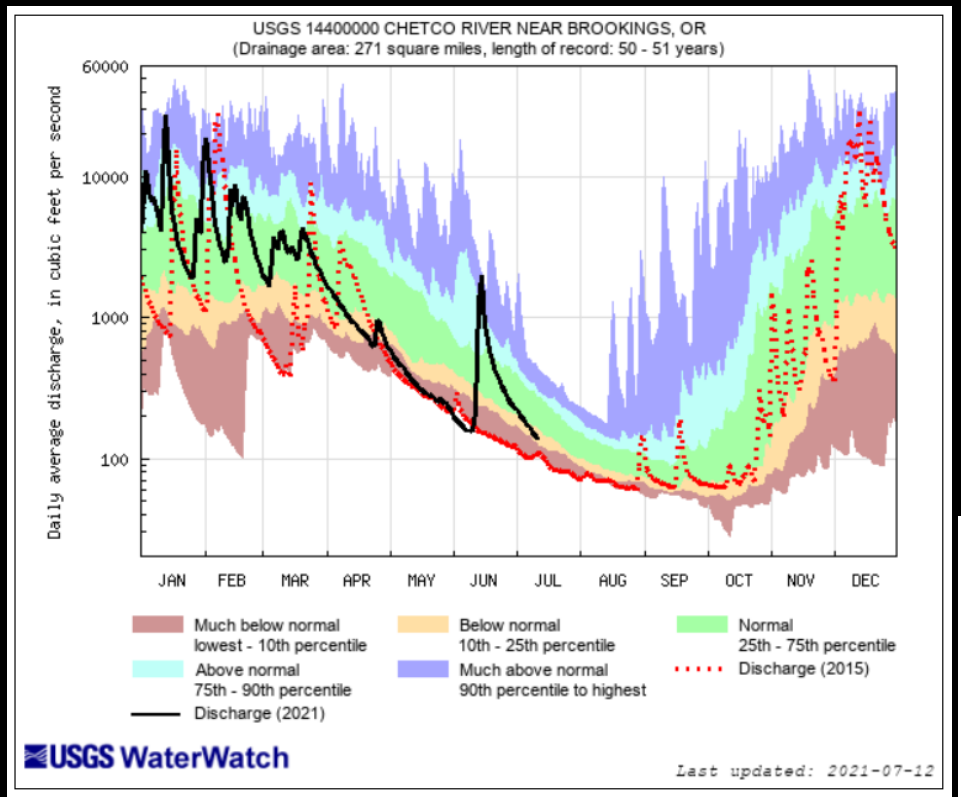


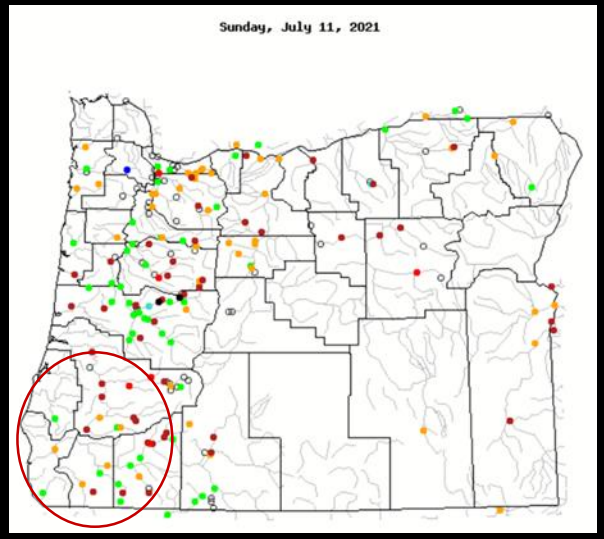


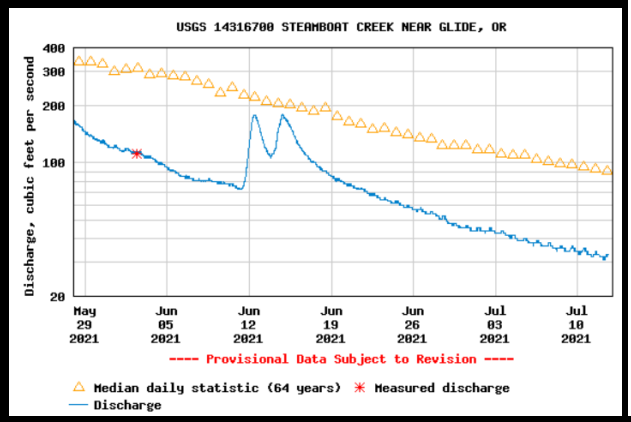


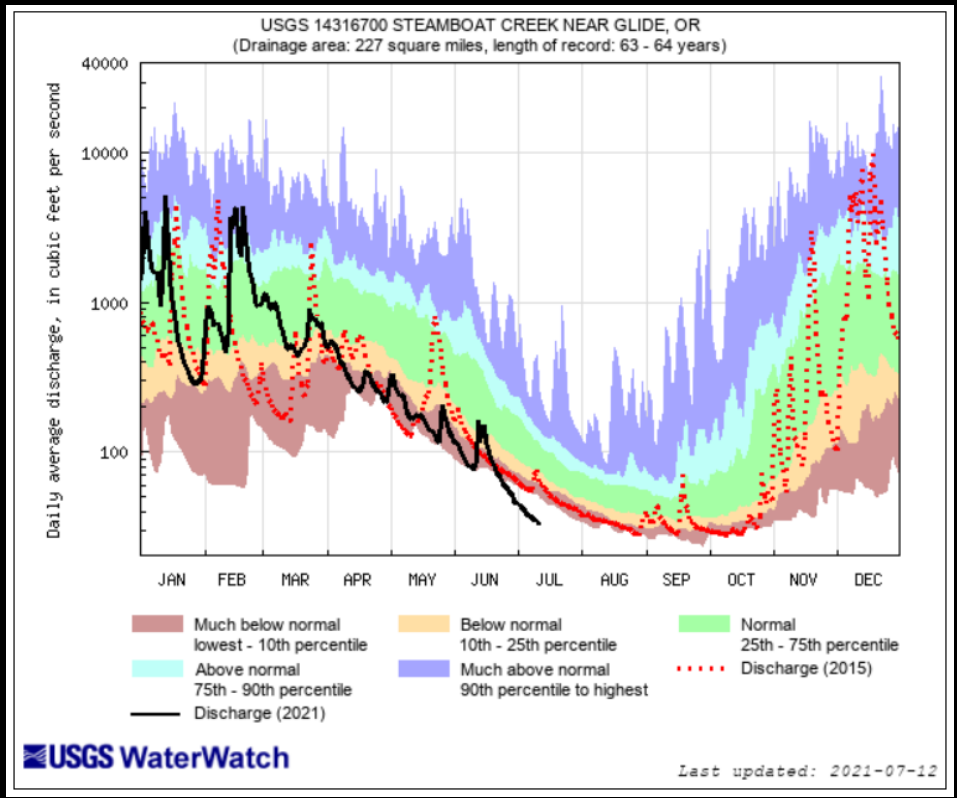
USGS

Southwestern OR



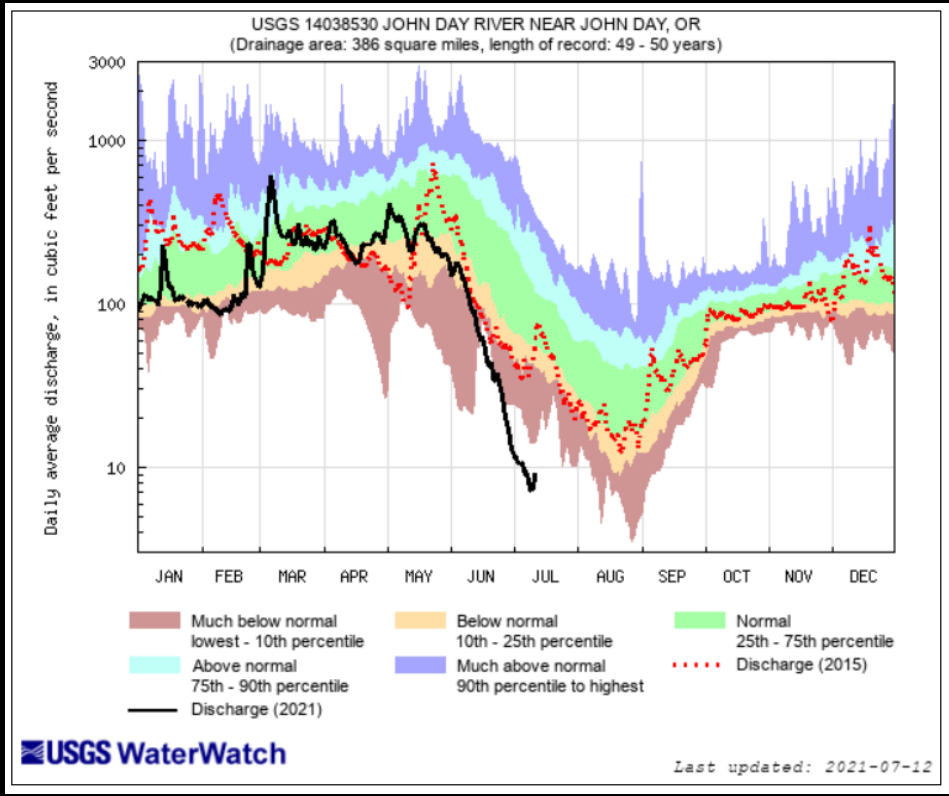


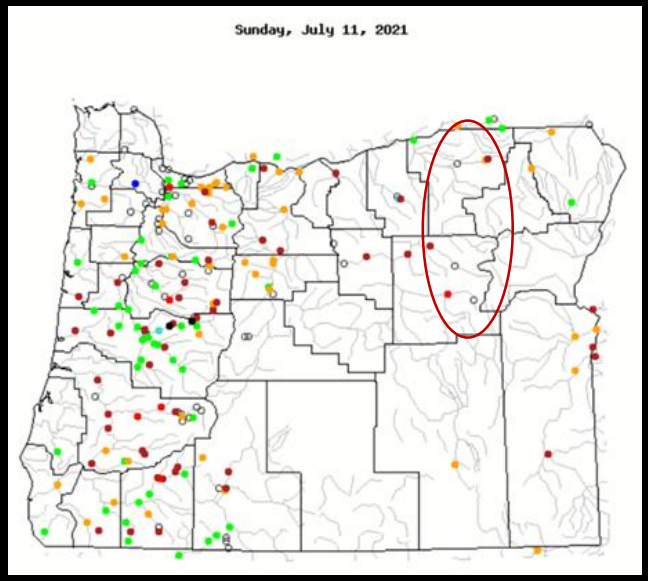


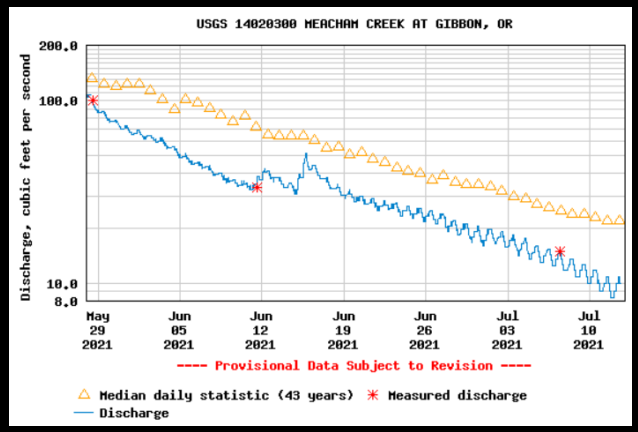


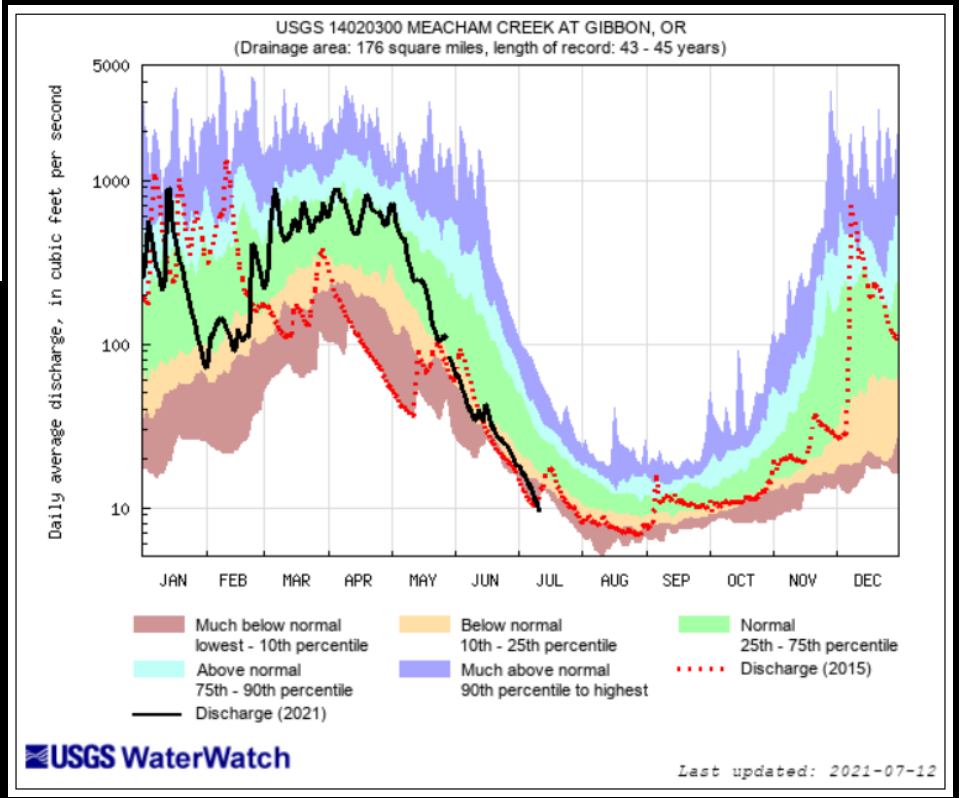
USGS

Northeastern OR



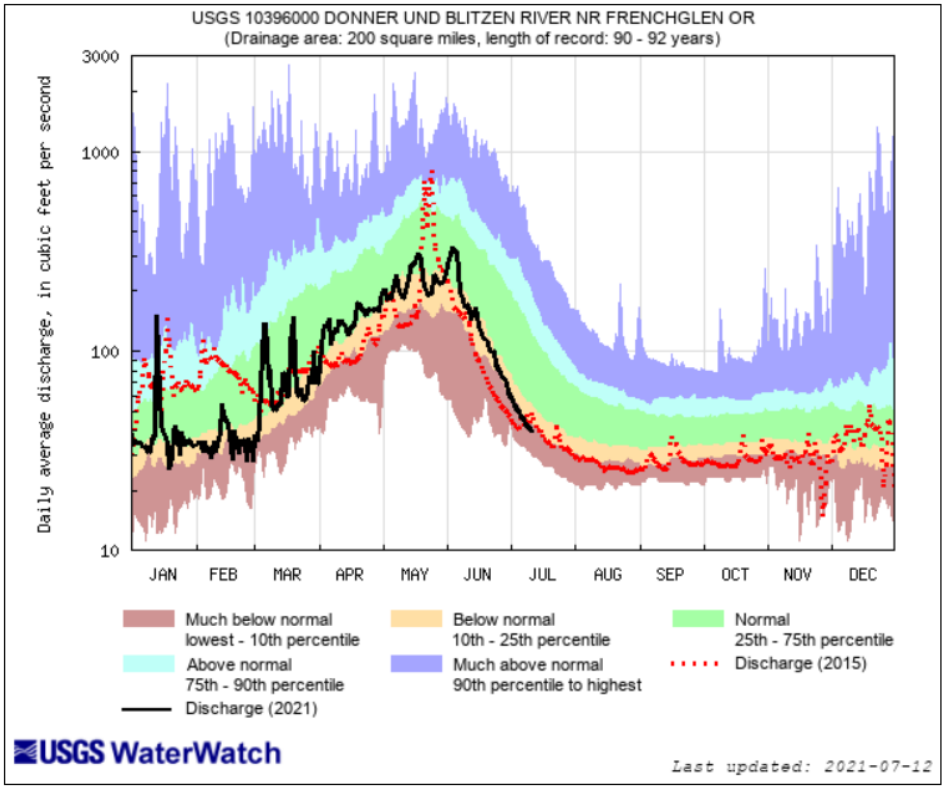


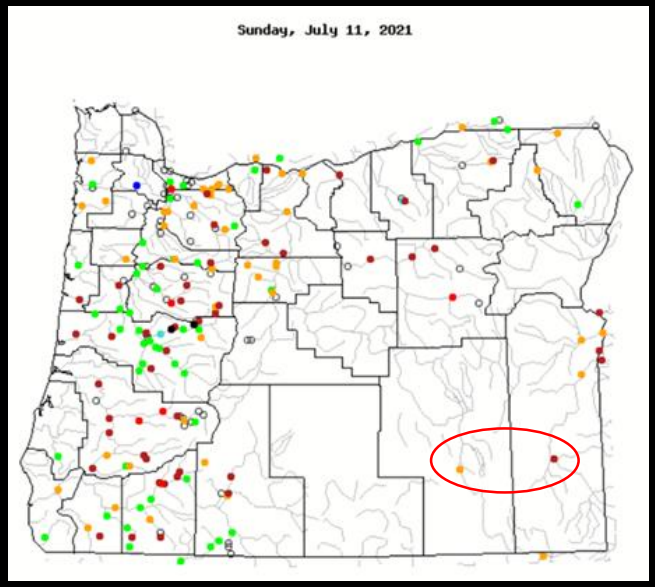


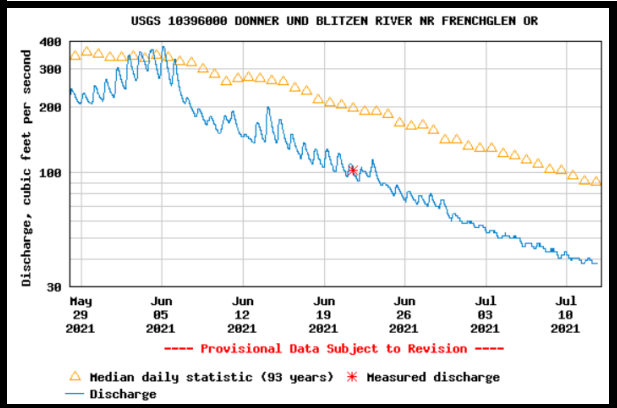


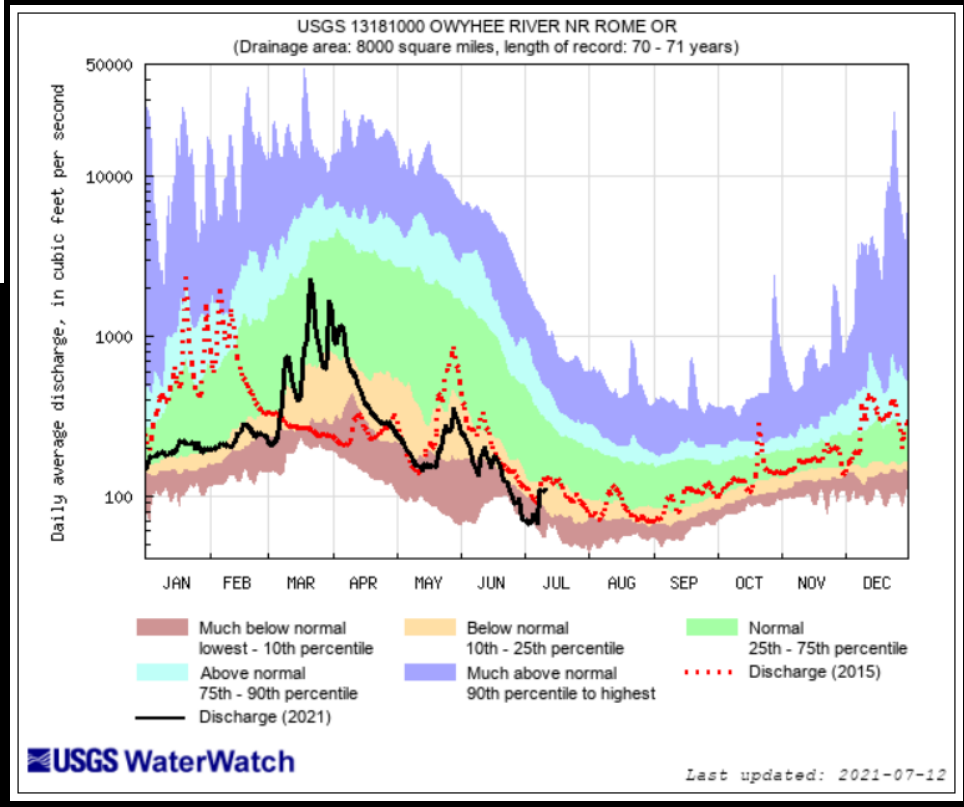
USGS

Southeastern OR

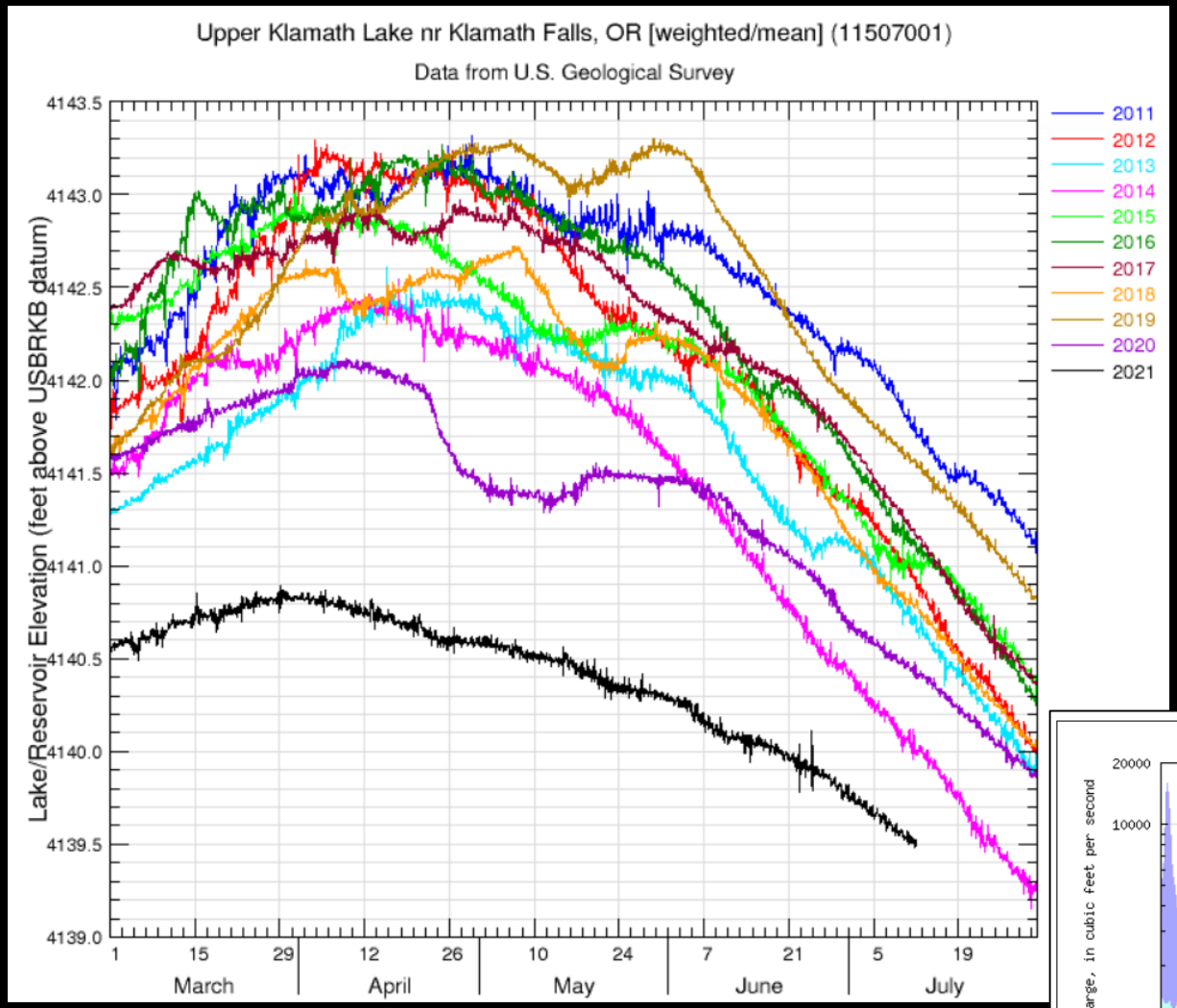


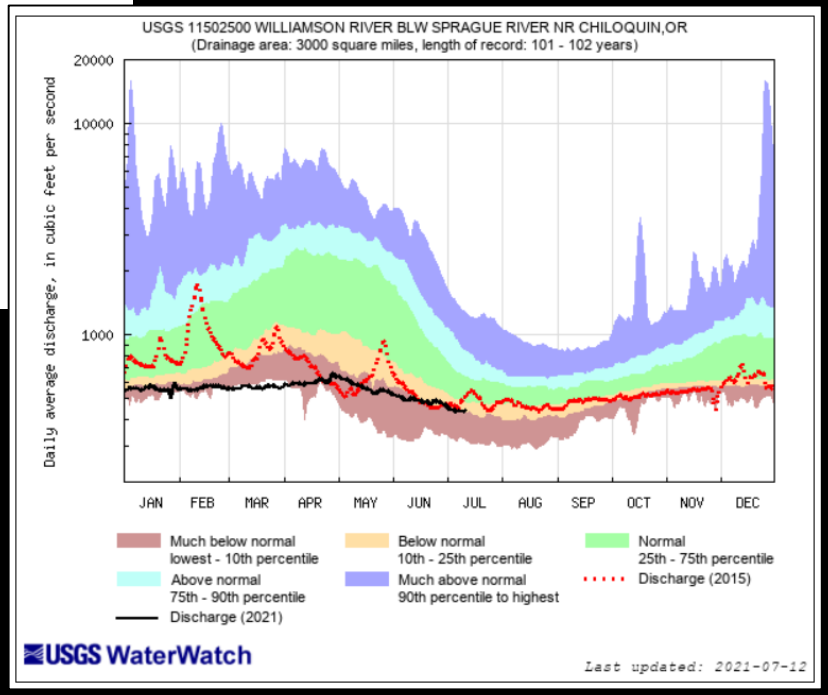






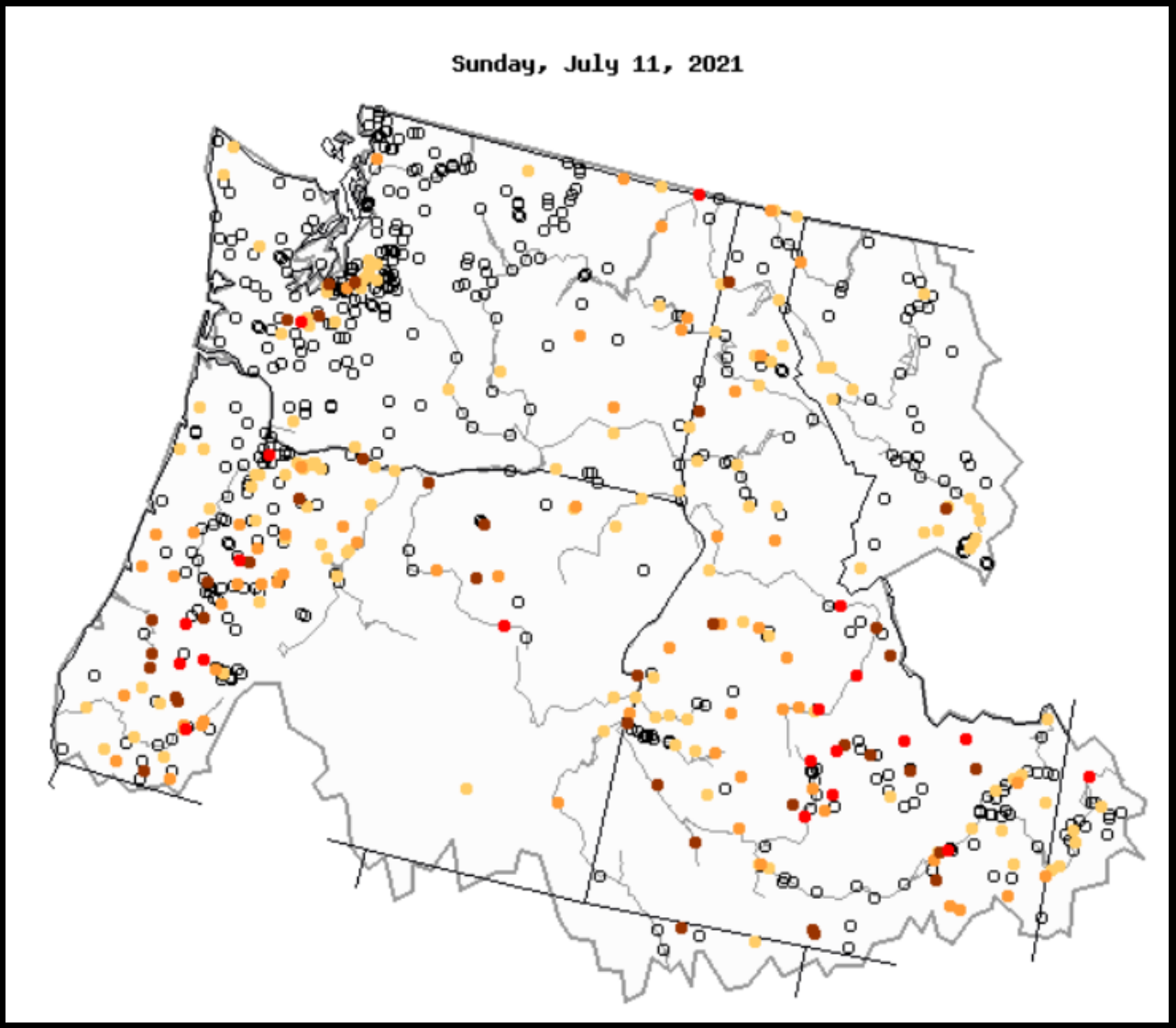
USGS





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	

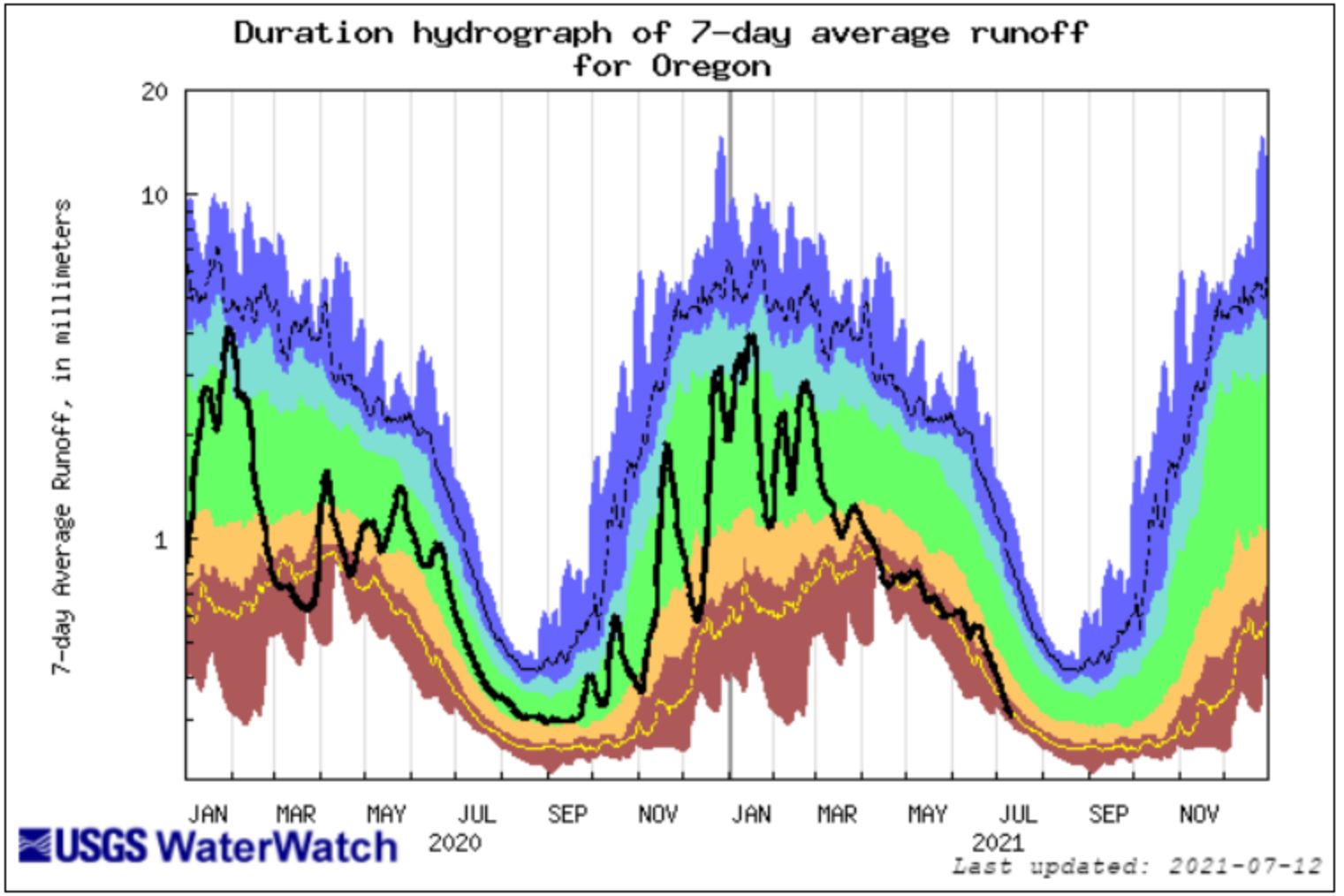
USGS

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 June: Percent of average
Donner Und Blitzen nr Frenchglen	Harney	157	53	-30	55
(*)Deep Creek above Adel	Lake County	21	11	-80	23
(*)Chewaucan River near Paisley	Lake County	35	14	-71	32
Williamson River near Chiloquin	Klamath	492	52	-14	46
Owyhee River near Rome	Owyhee	153	19	-26	24
(*)NF Malheur River near Beulah	Malheur	73	44	-62	57
Grande Ronde R at Troy	Grande Ronde Powder/Burnt	3,720	70	-33	83
Umatilla River nr Gibbon	Umatilla Lower John Day	88	49	-81	99
John Day River at Service Crk	Upper John Day	808	32	-71	53
(*)Little Deschutes River nr LaPine	Upper Deschutes	81	32	-36	44
Hood River nr Hood River	Lower Deschutes Mt.Hood	641	76	-26	86
Willamette River at Salem	Willamette	9,240	63	-5	83
Wilson River near Tillamook	North Coast	213	54	-4	103
Umpqua River near Elkton	Rogue/Umpqua	1,310	36	-40	66
Rogue River near Agness	Rogue/Umpqua	2,810	75	16	60
SF Coquille River at Powers	South Coast	86	41	-3	84
Chetco River near Brookings	South Coast	435	59	8	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

7/1/2021

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

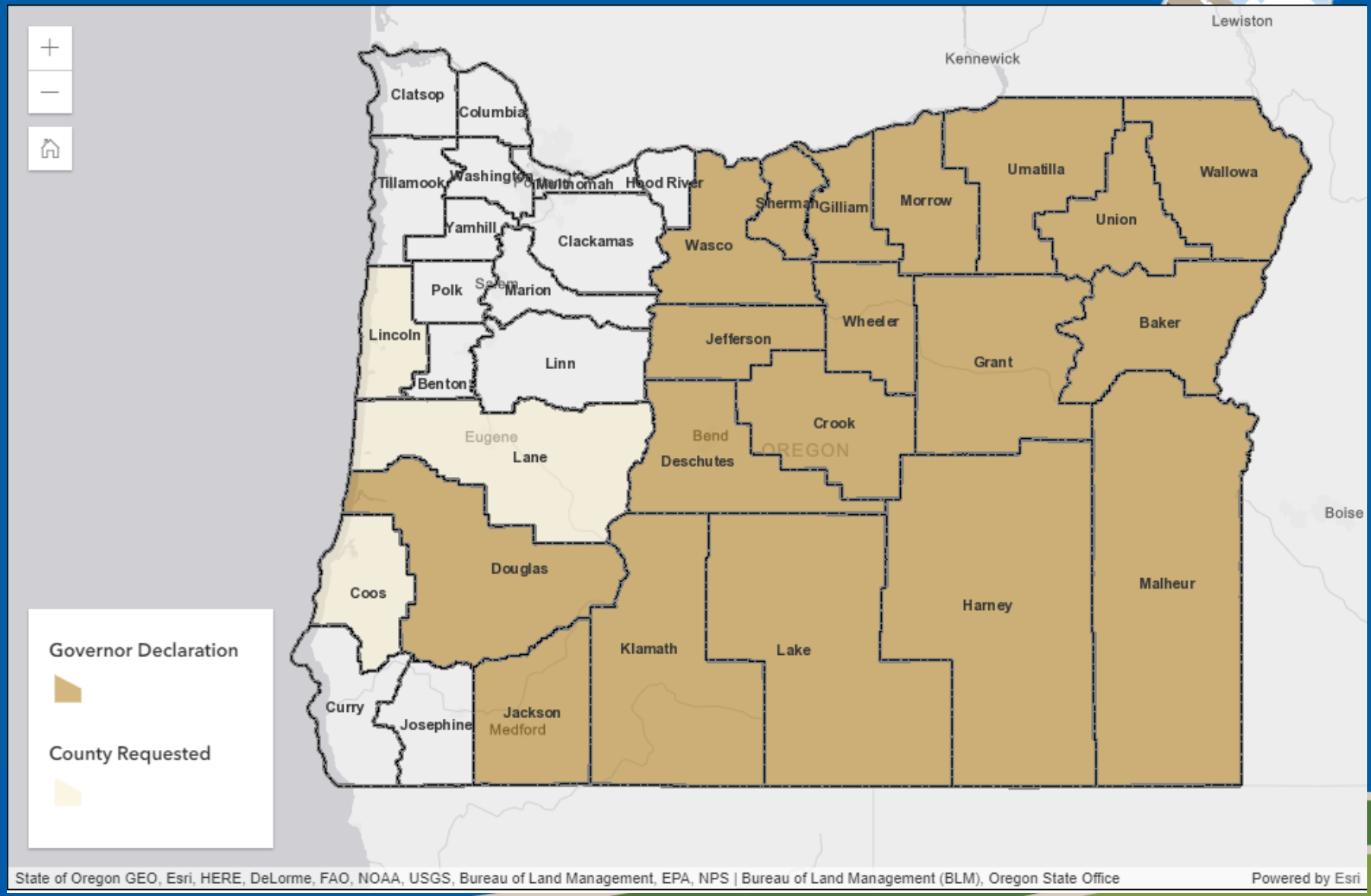
Water Supply Availability Committee

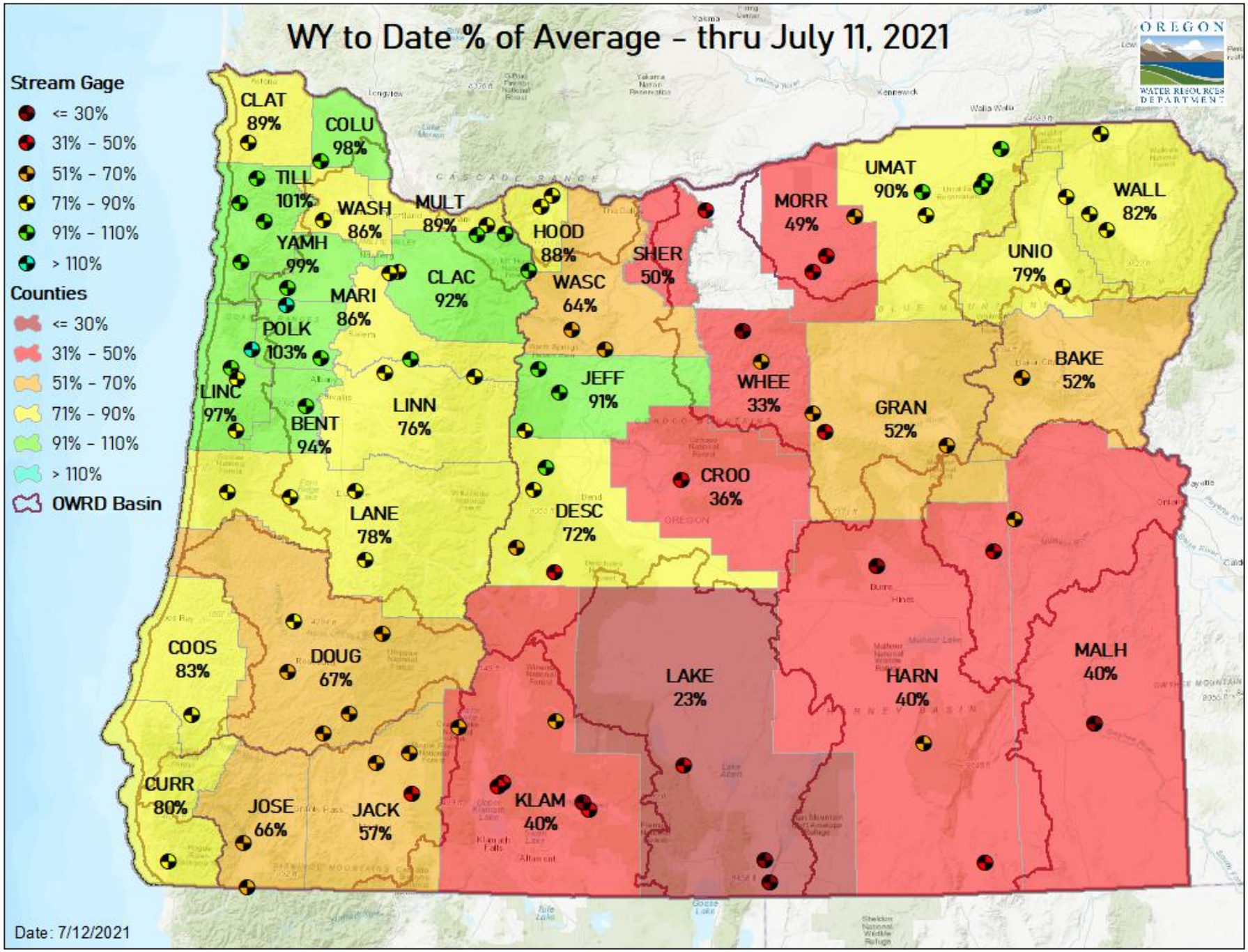
OREGON
WATER RESOURCES DEPARTMENT

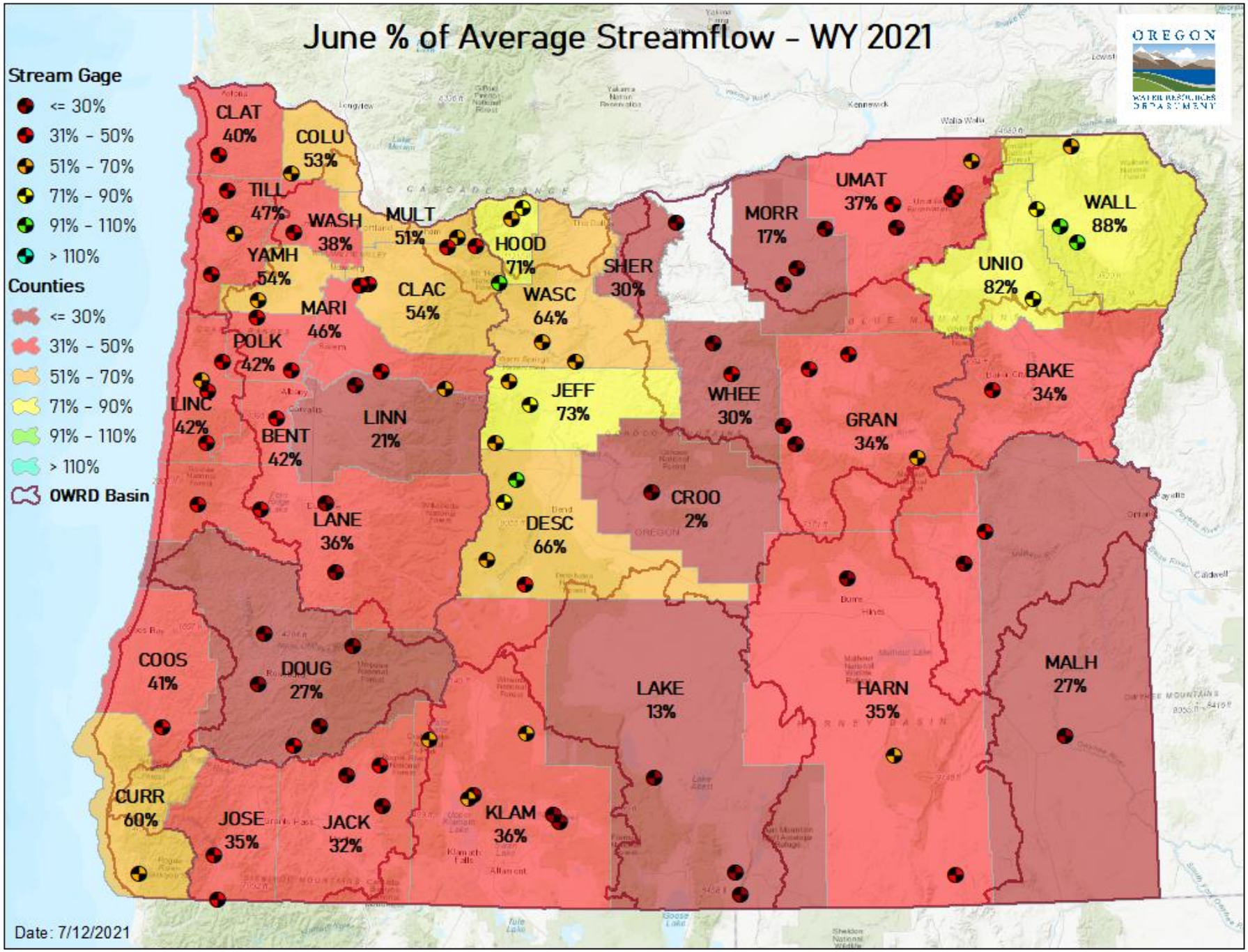
Ryan Andrews
Oregon Water Resources Department
July 13th, 2021

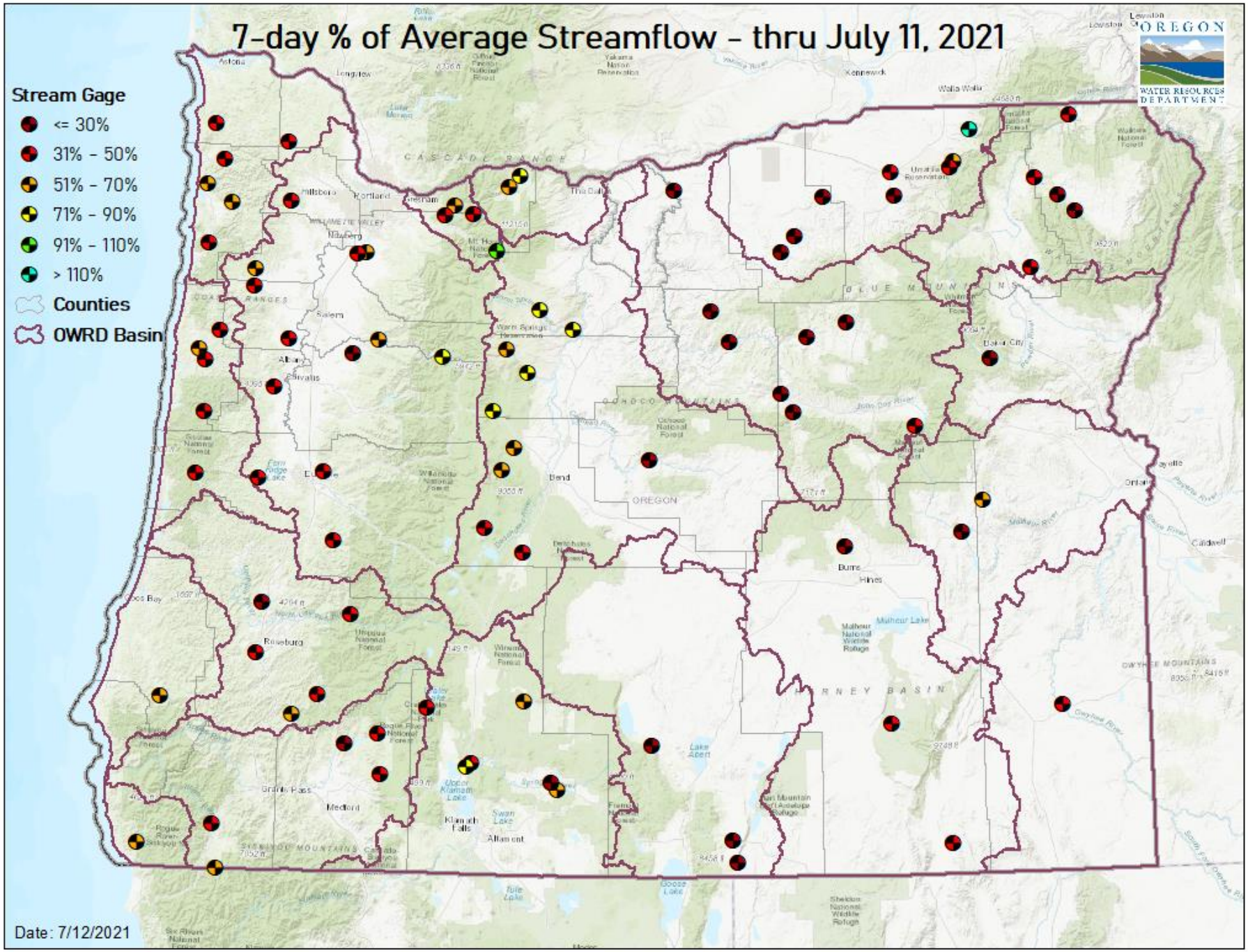
Lake Abert – July 2021

Drought Declaration Status Map

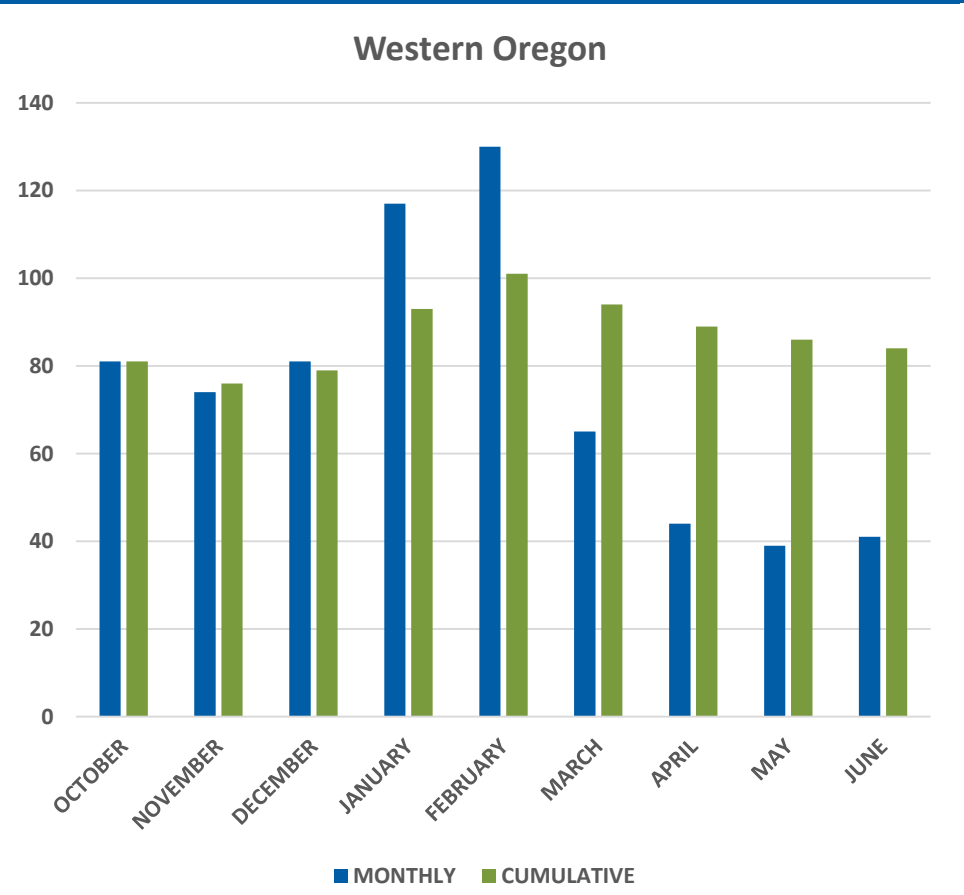


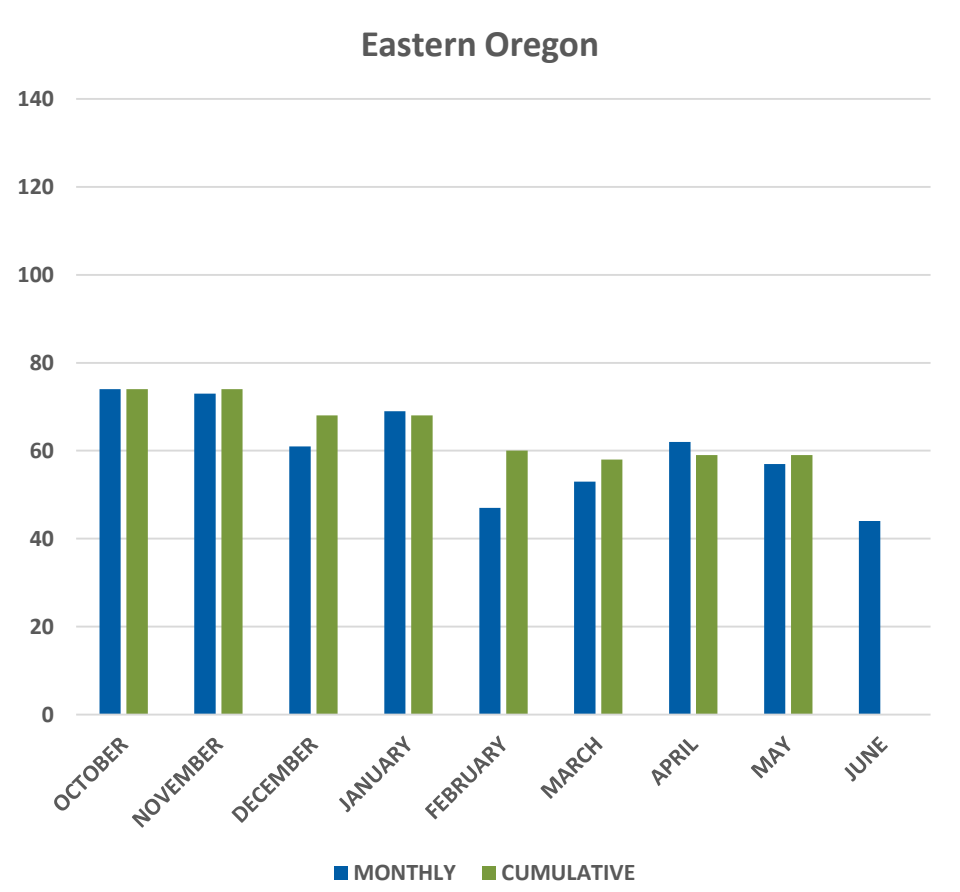

WY to Date % of Average - thru July 11, 2021
OREGON WATER RESOURCES DEPARTMENT
Stream Gage
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
> 110%
Counties
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
> 110%
OWRD Basin
CLAT 89%
COLU 98%
TILL 101%
WASH 86%
MULT 89%
HOOD 88%
SHER 50%
MORR 49%
UMAT 90%
WALL 82%
YAMH 99%
CLAC 92%
WASC 64%
UNIO 79%
MARI 86%
POLK 103%
JEFF 91%
WHEE 33%
BAKE 52%
LINC 97%
BENT 94%
LINN 76%
GRAN 52%
CROO 36%
LANE 78%
DESC 72%
COOS 83%
DOUG 67%
LAKE 23%
HARN 40%
MALH 40%
CURR 80%
JOSE 66%
JACK 57%
KLAM 40%
Date: 7/12/2021

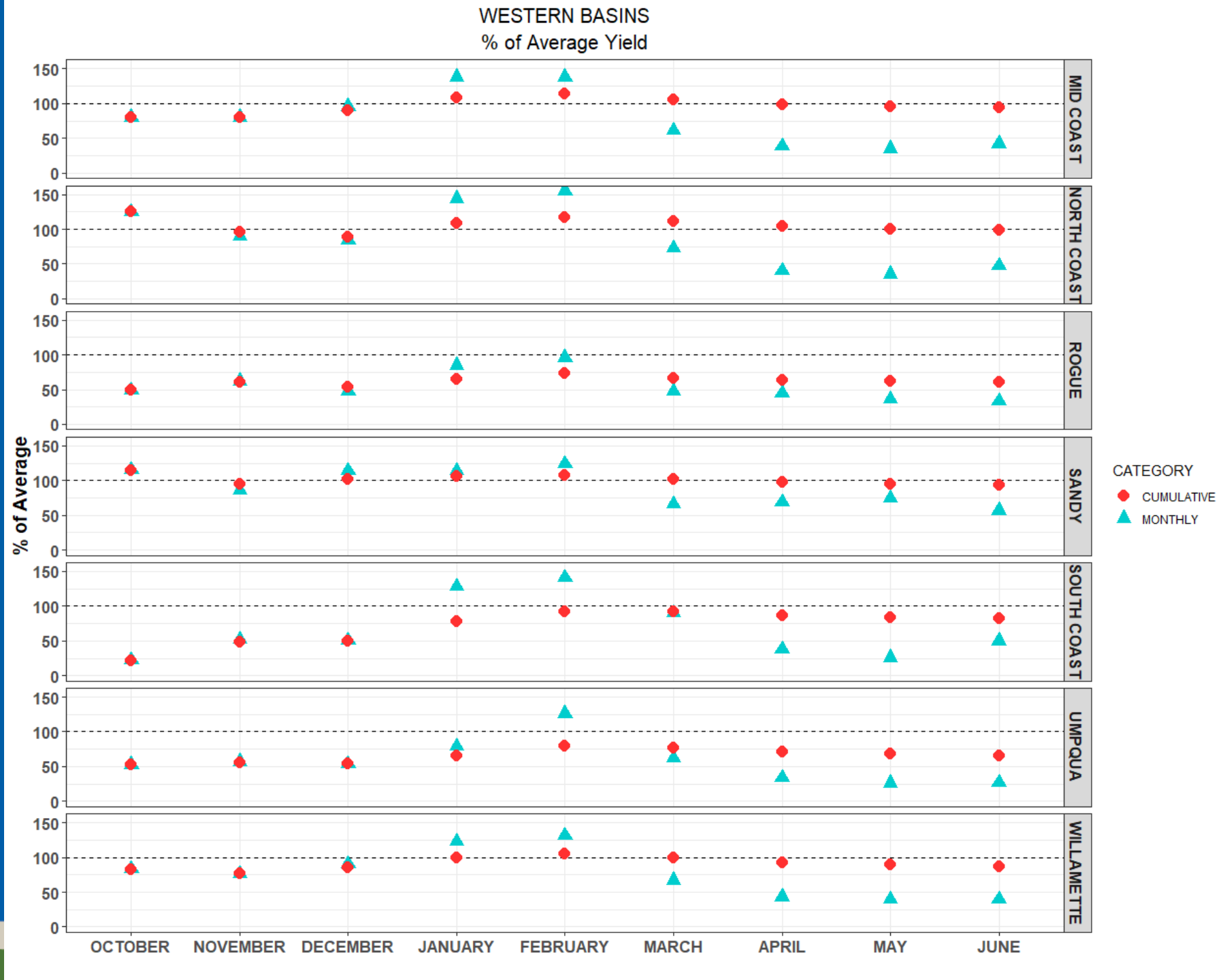

June % of Average Streamflow - WY 2021
OREGON
WATER RESOURCES DEPARTMENT
Stream Gage
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
> 110%
Counties
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
> 110%
OWRD Basin
CLAT 40%
COLU 53%
TILL 47%
WASH 38%
MULT 51%
HOOD 71%
SHER 30%
MORR 17%
UMAT 37%
WALL 88%
UNIO 82%
YAMH 54%
CLAC 54%
WASC 64%
MARI 46%
POLK 42%
LINC 42%
BENT 42%
LINN 21%
JEFF 73%
WHEE 30%
GRAN 34%
BAKE 34%
LANE 36%
DESC 66%
CROO 2%
COOS 41%
DOUG 27%
LAKE 13%
HARN 35%
MALH 27%
CURR 60%
JOSE 35%
JACK 32%
KLAM 36%
Date: 7/12/2021

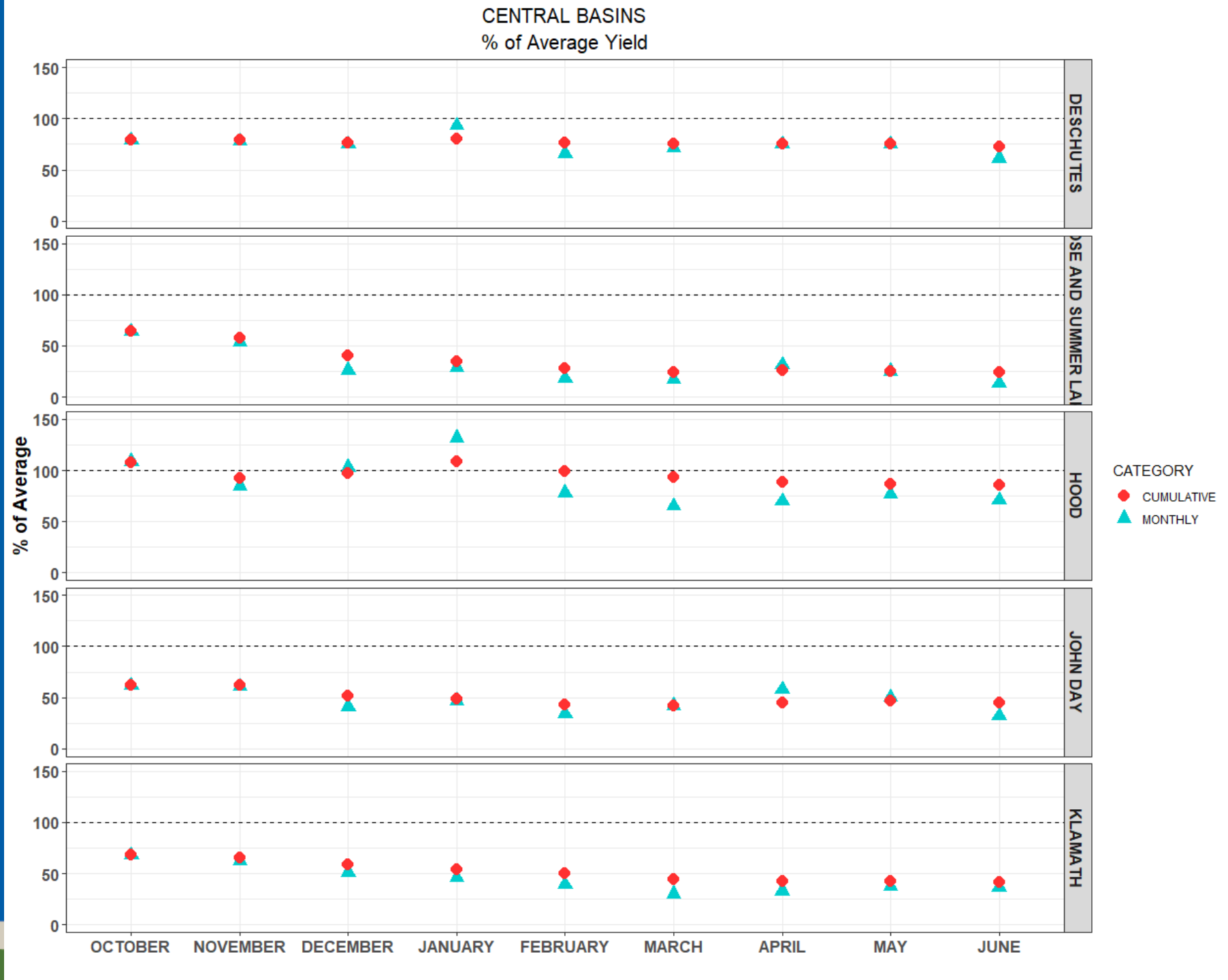

7-day % of Average Streamflow - thru July 11, 2021
OREGON
WATER RESOURCES DEPARTMENT
Stream Gage
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
> 110%
Counties
OWRD Basin
Date: 7/12/2021

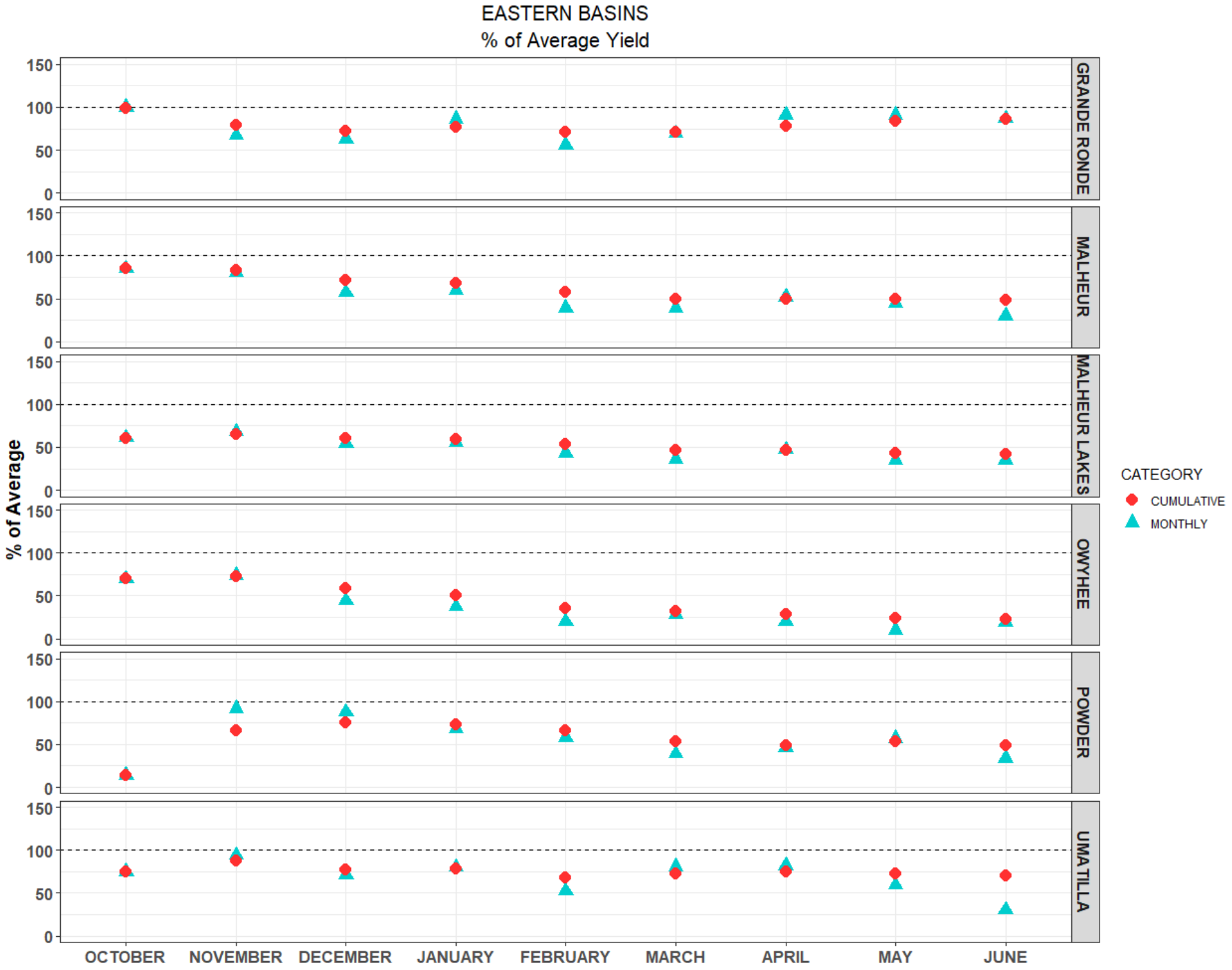
% of Average Streamflow thru June
Base period: 1981 – 2010

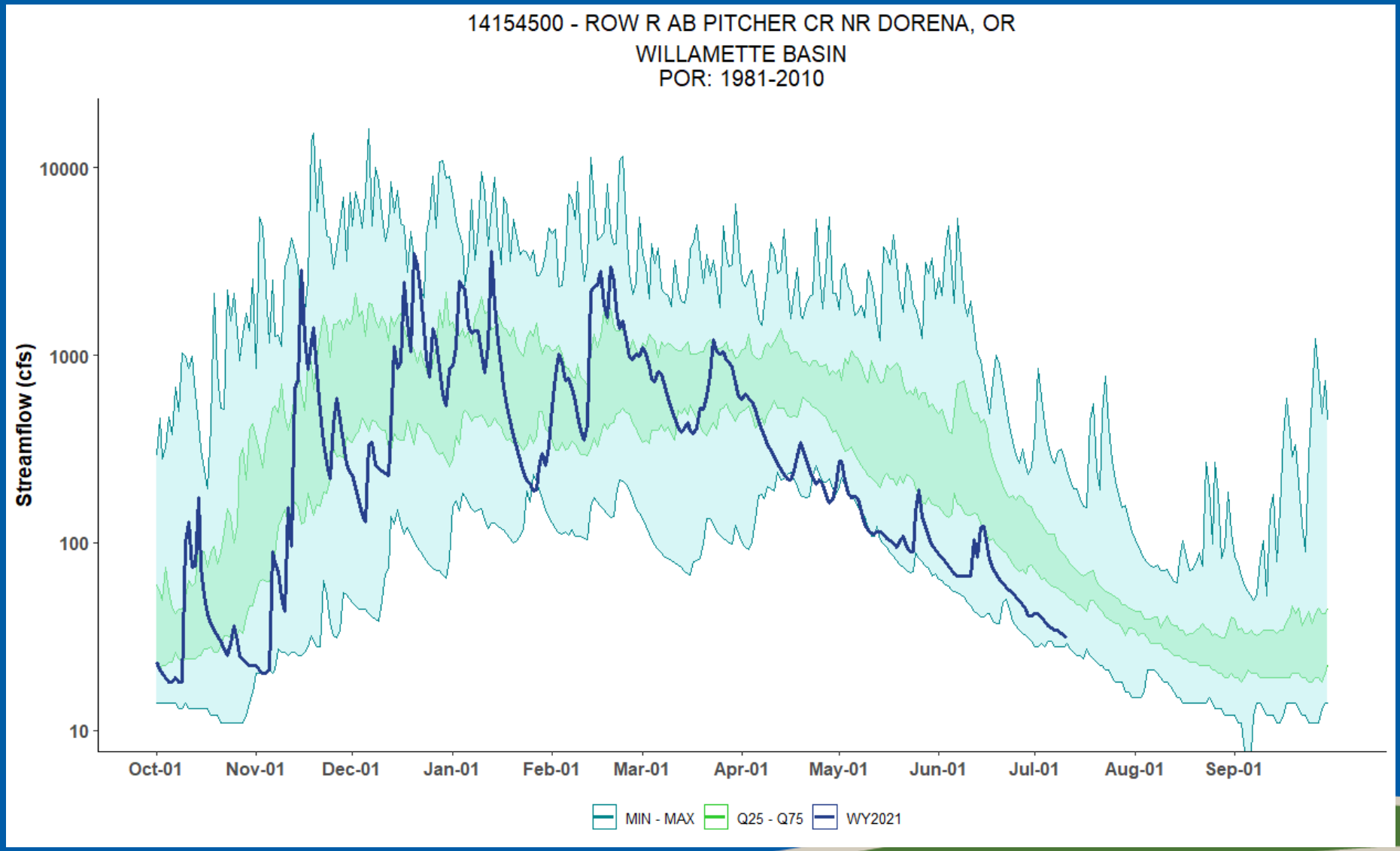


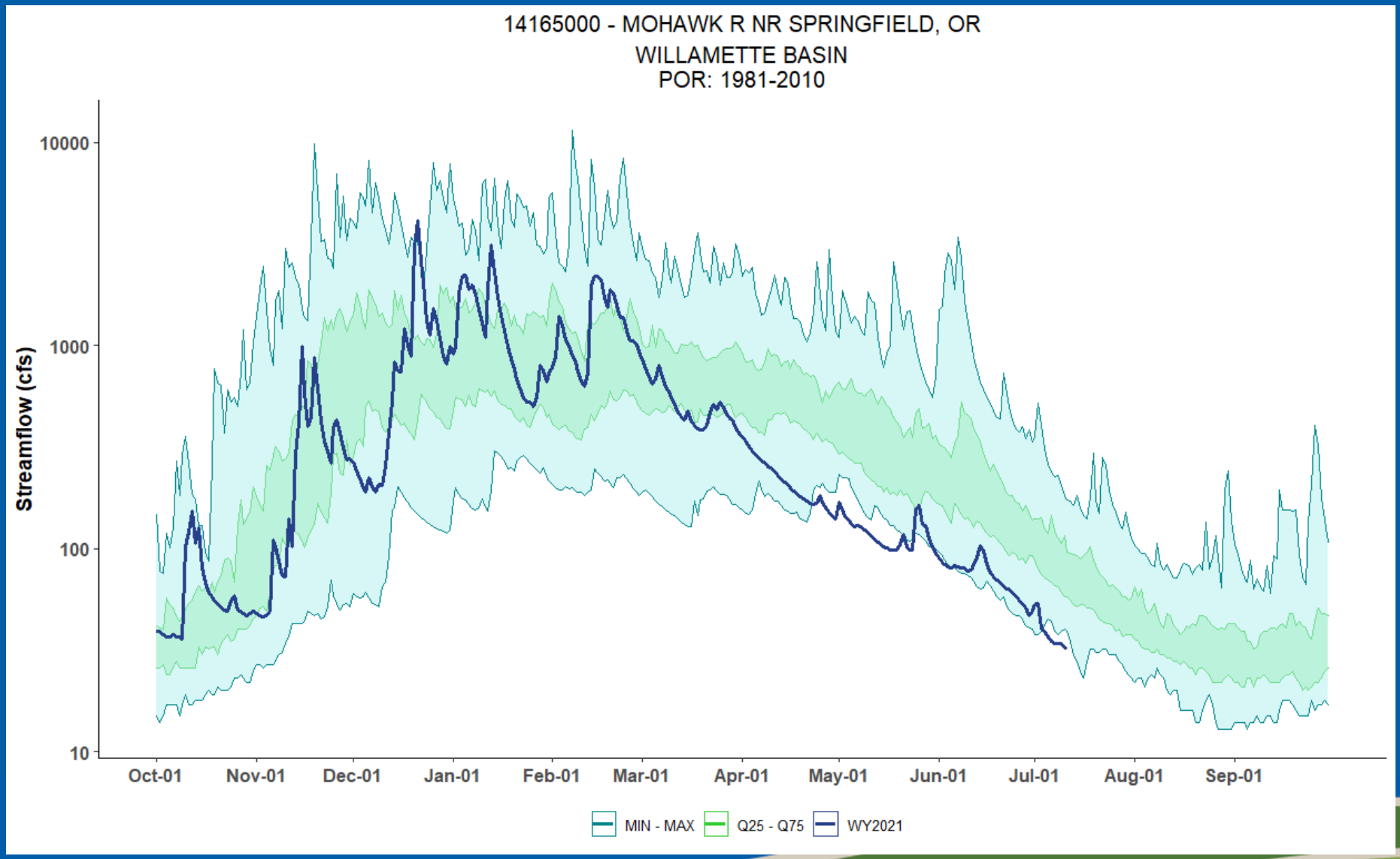



WESTERN BASINS
% of Average Yield
% of Average
150
100
50
0
MID COAST
NORTH COAST
ROGUE
SANDY
SOUTH COAST
UMPQUA
WILLAMETTE
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
CATEGORY
CUMULATIVE
MONTHLY


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
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
CATEGORY
CUMULATIVE
MONTHLY


14154500 - ROW R AB PITCHER CR NR DORENA, OR
WILLAMETTE BASIN
POR: 1981-2010
Streamflow (cfs)
10000
1000
100
10
Oct-01
Nov-01
Dec-01
Jan-01
Feb-01
Mar-01
Apr-01
May-01
Jun-01
Jul-01
Aug-01
Sep-01
MIN - MAX
Q25 - Q75
WY2021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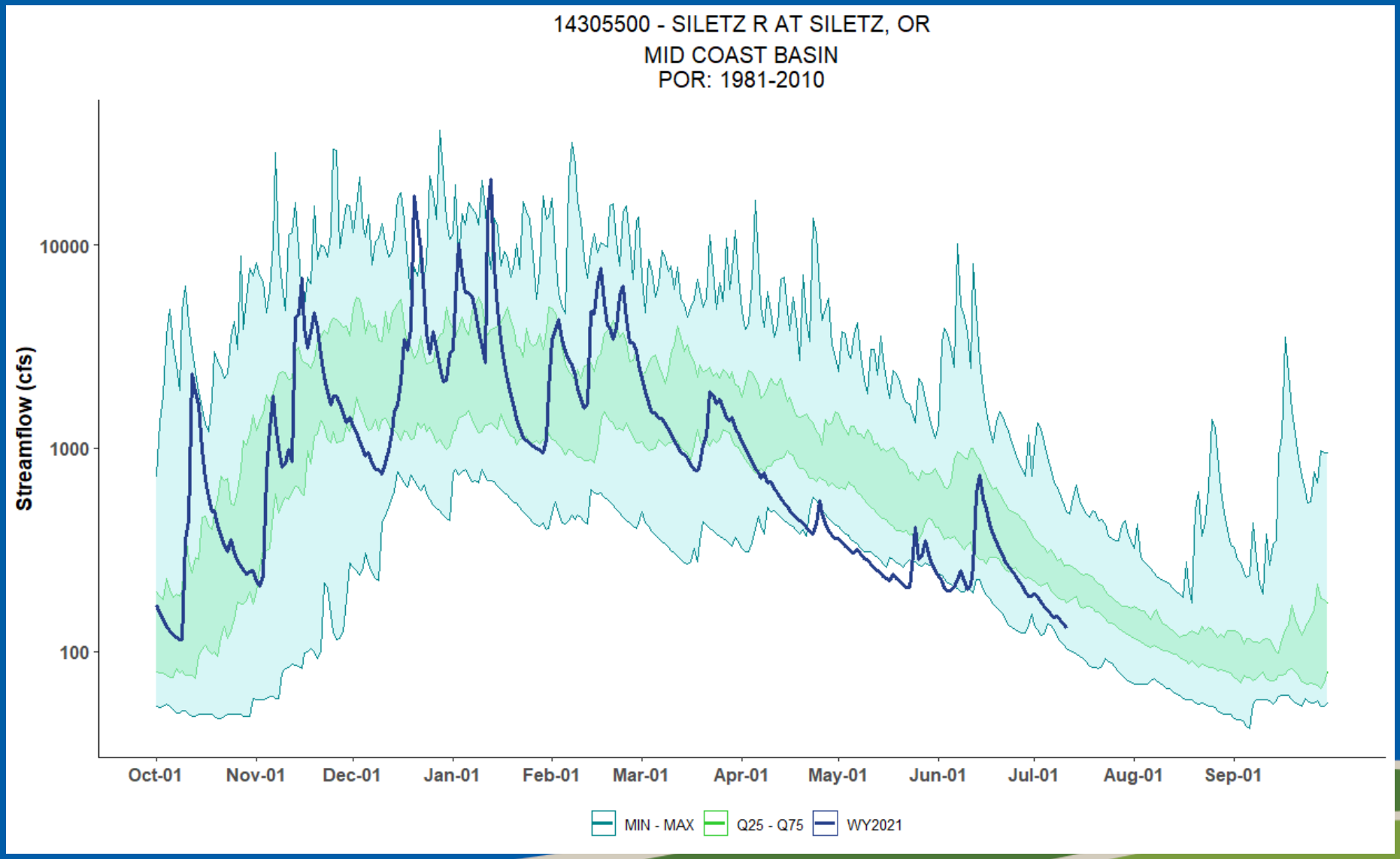
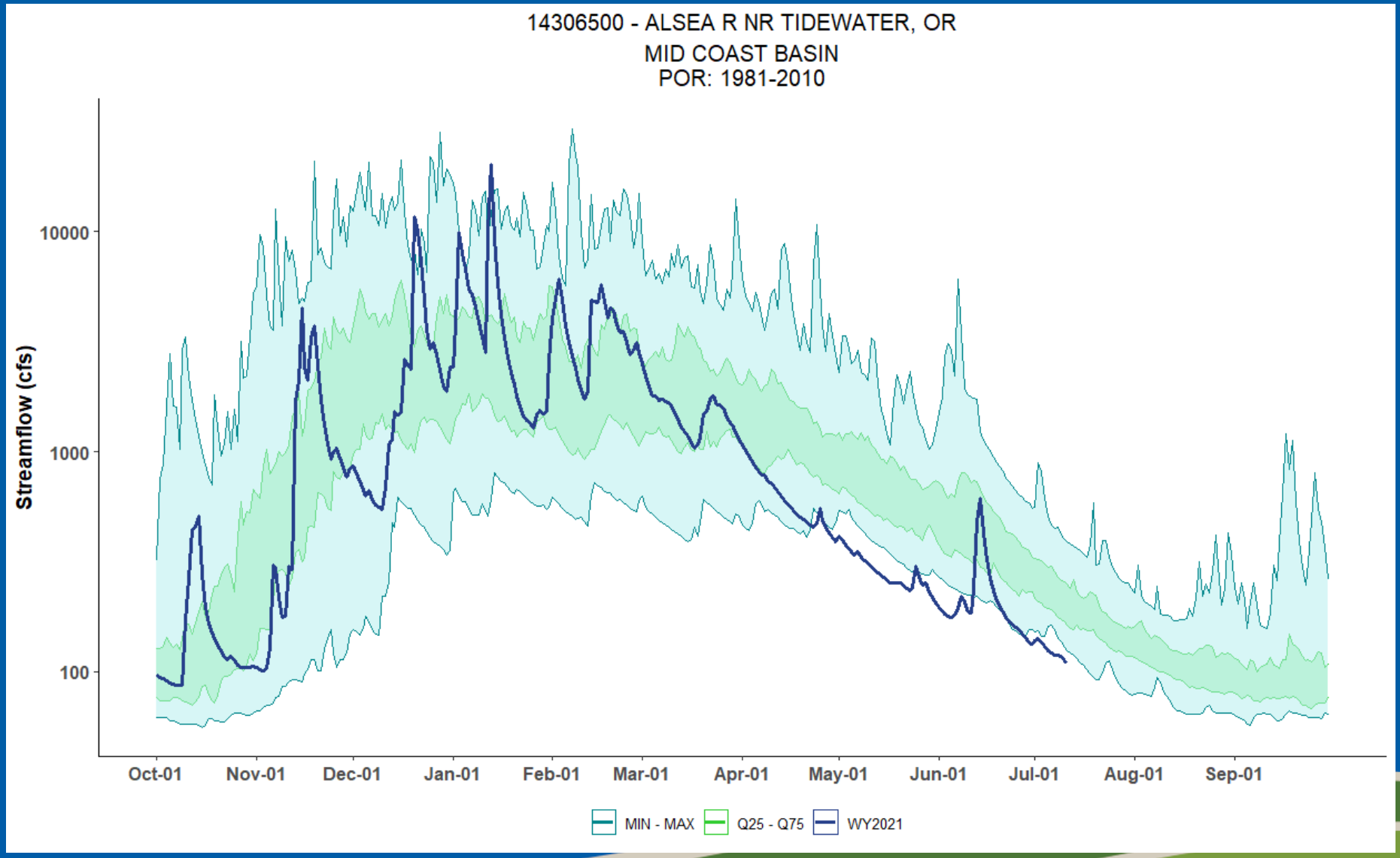
WILLAMETTE BASIN
POR: 1981-2010
Streamflow (cfs)
10000
1000
100
10
Oct-01
Nov-01
Dec-01
Jan-01
Feb-01
Mar-01
Apr-01
May-01
Jun-01
Jul-01
Aug-01
Sep-01
MIN - MAX
Q25 - Q75
WY2021



LINCOLN COUNTY


14306500 - ALSEA R NR TIDEWATER, OR
MID COAST BASIN
POR: 1981-2010
Streamflow (cfs)
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1000
100
Oct-01
Nov-01
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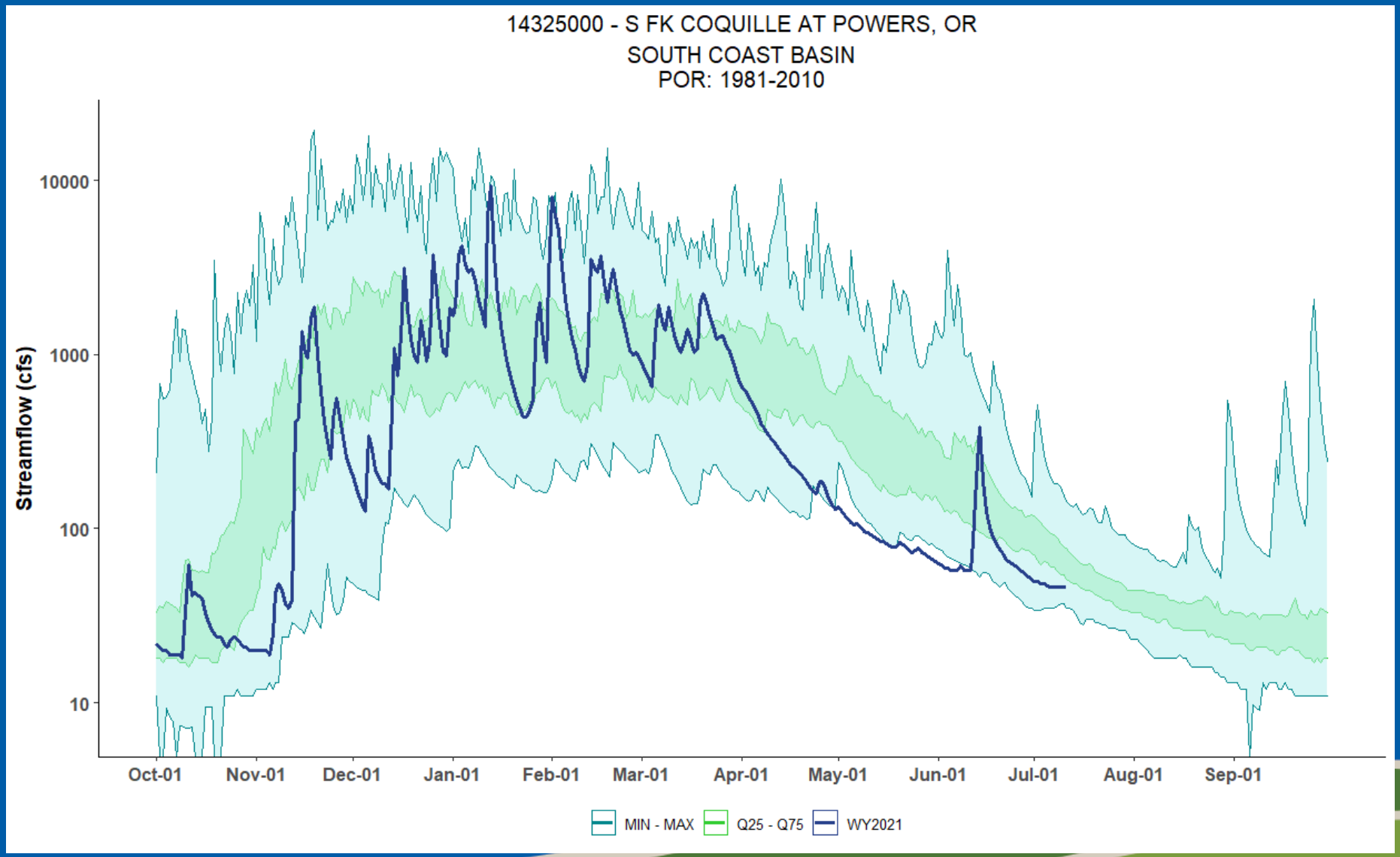
Aug-01
Sep-01
MIN - MAX
Q25 - Q75
WY2021


14325000 - S FK COQUILLE AT POWERS, OR
SOUTH COAST BASIN
POR: 1981-2010
Streamflow (cfs)
10000
1000
100
10
Oct-01
Nov-01
Dec-01
Jan-01
Feb-01
Mar-01
Apr-01
May-01
Jun-01
Jul-01
Aug-01
Sep-01
MIN - MAX
Q25 - Q75
WY2021

COOS COUNTY

QUESTIONS?

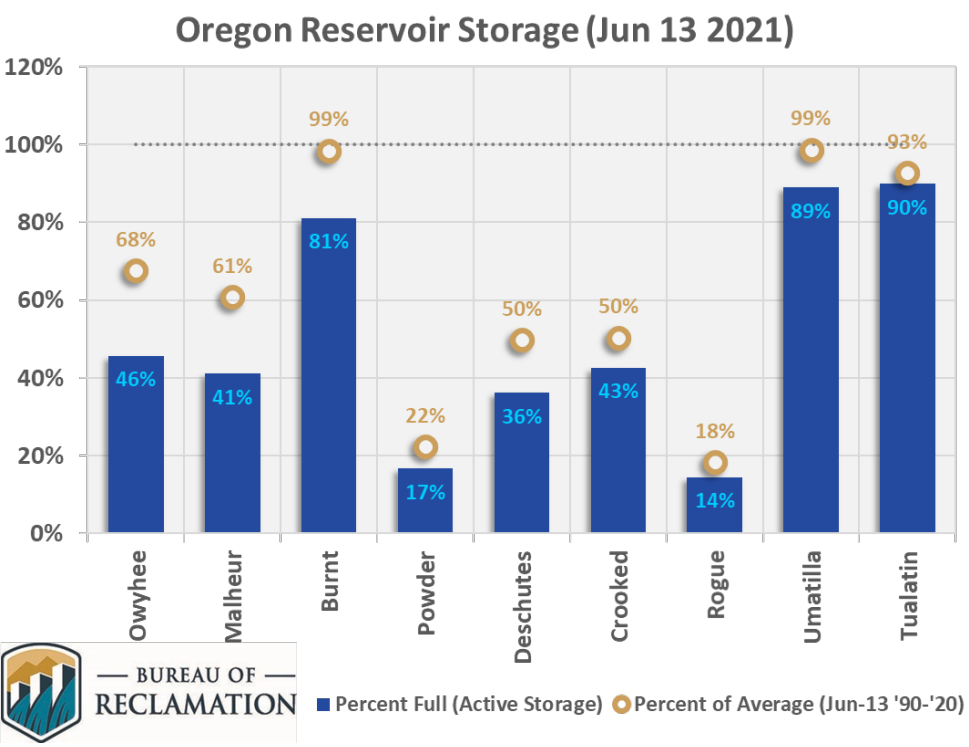
BUREAU OF RECLAMATION

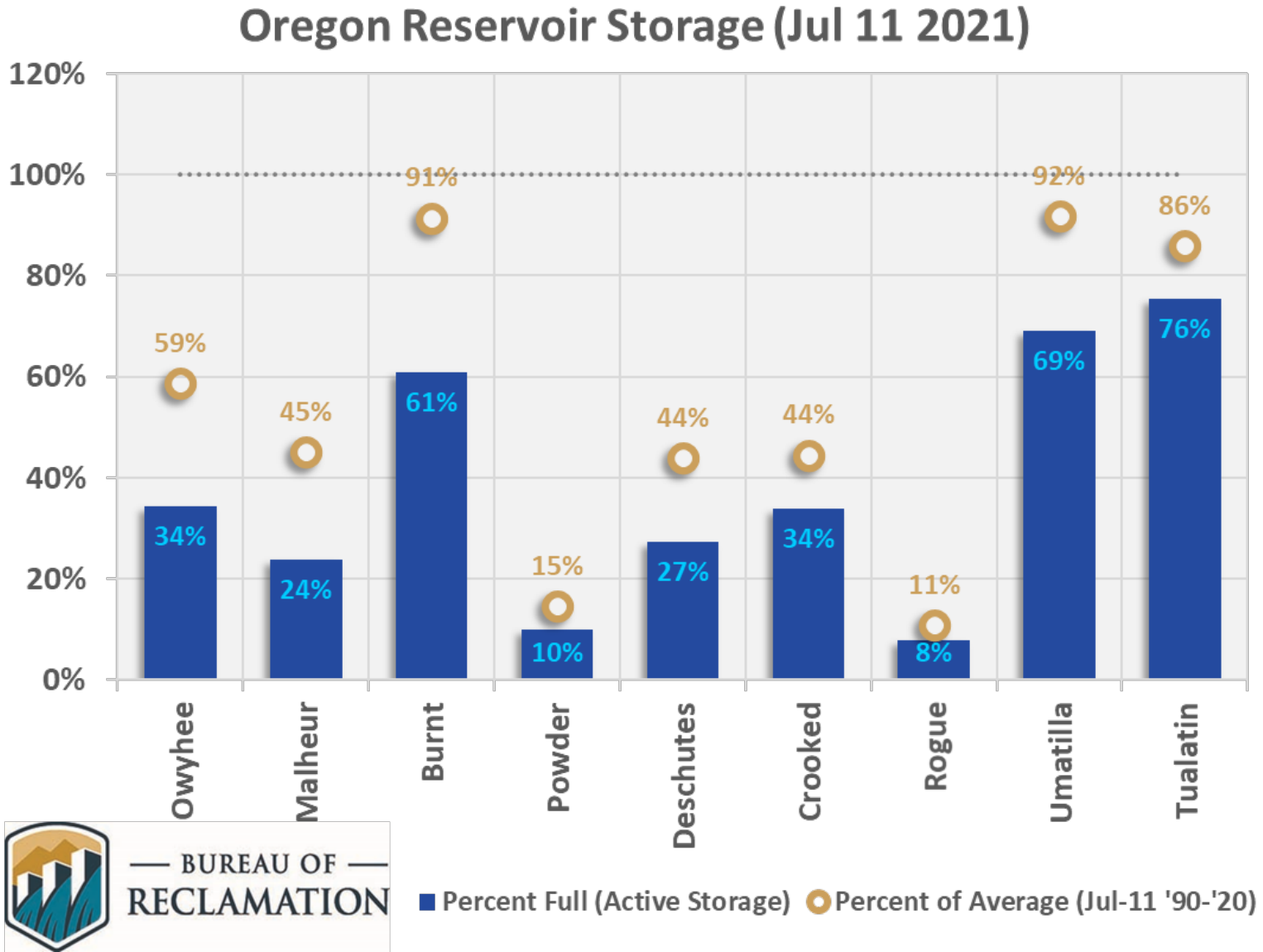
Reclamation Storage Update

Oregon Water Supply Availability Committee Meeting

July 13, 2021

Reservoir Storage Conditions



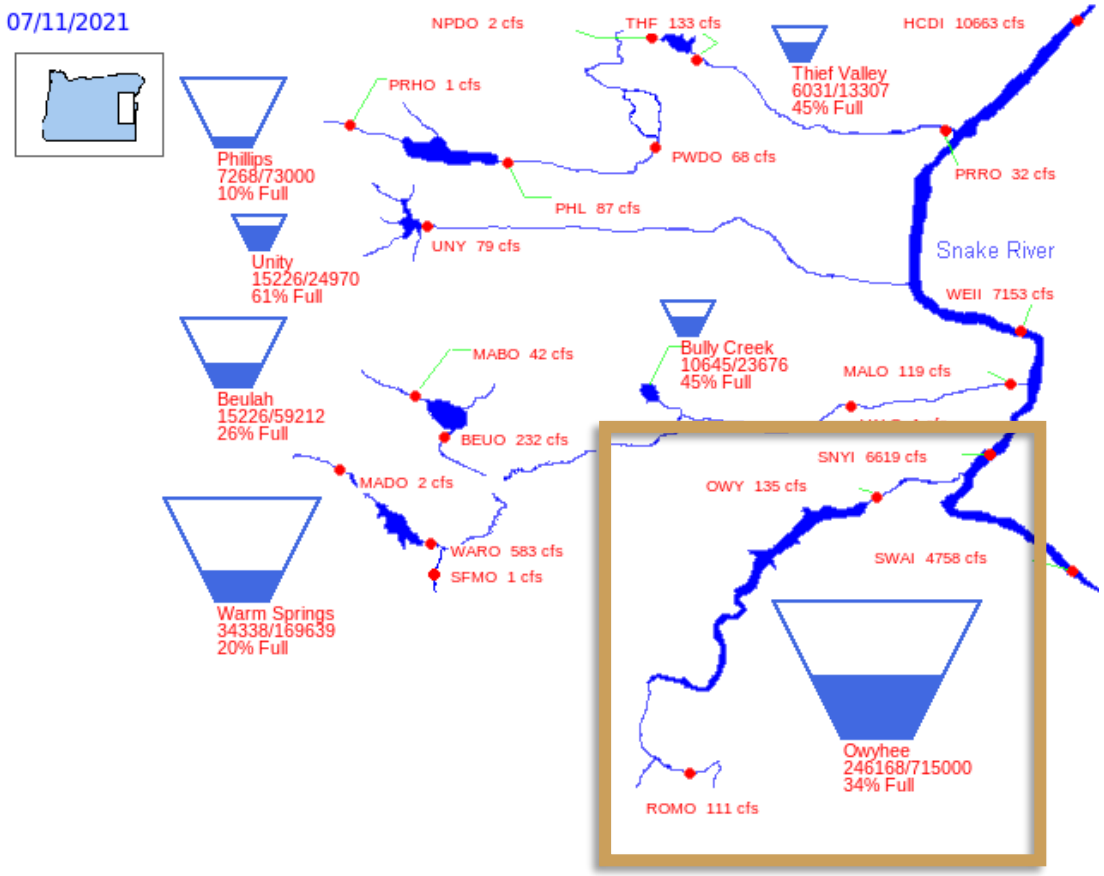


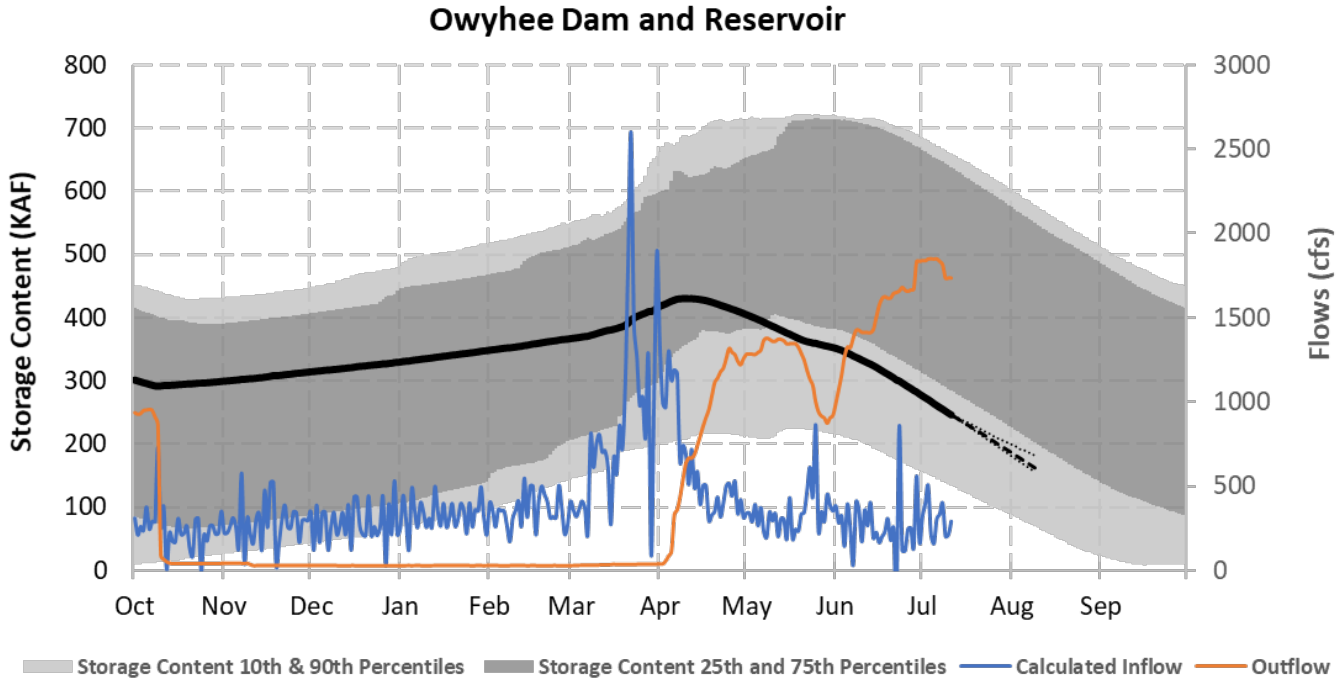
Basin Operations Summary

- Operations Activities:
  - All Reclamation river basins delivering irrigation water

- Water Supply Challenges
  - High irrigation demands persist
  - Dead pool at several projects by end of July or early August
    - Phillips Lake (Powder)
    - Emigrant, Howard Prairie, & Hyatt (Rogue)
    - Wickiup (Deschutes)
  - Low carry-over to start the next WY for Owyhee, Malheur, Powder, Deschutes, Crooked, & Rogue

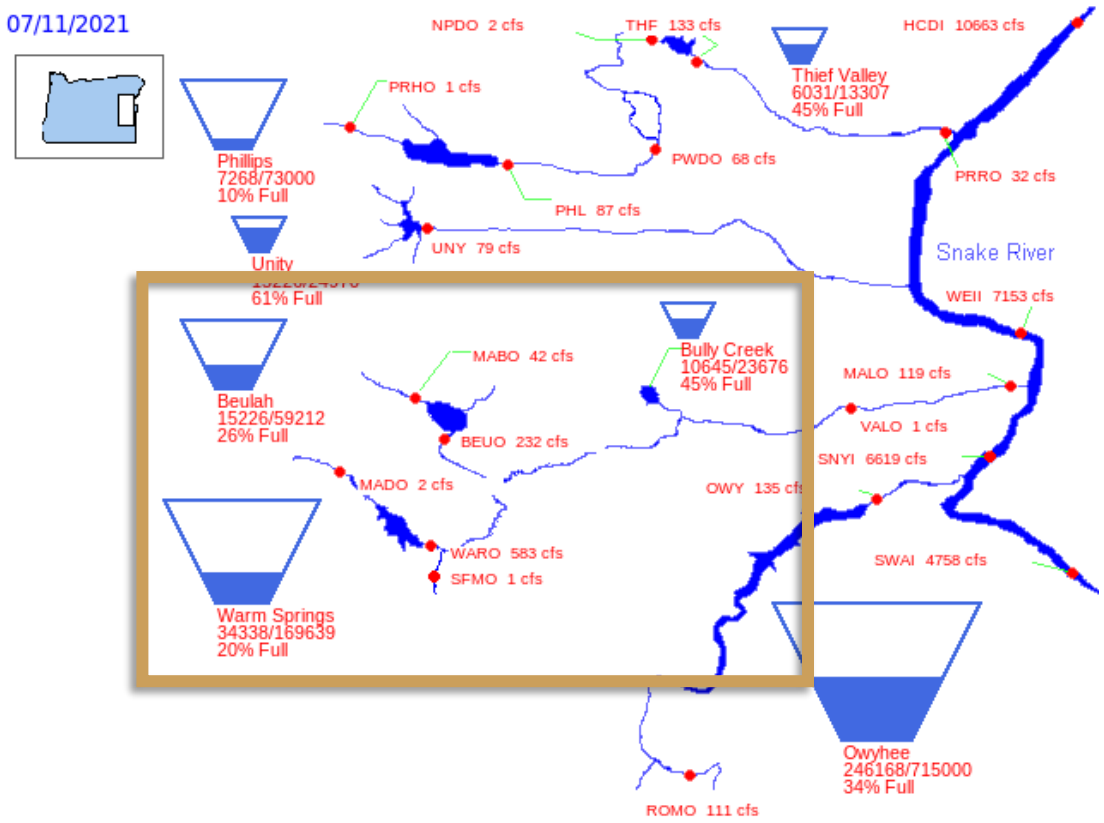
Owyhee River Basin

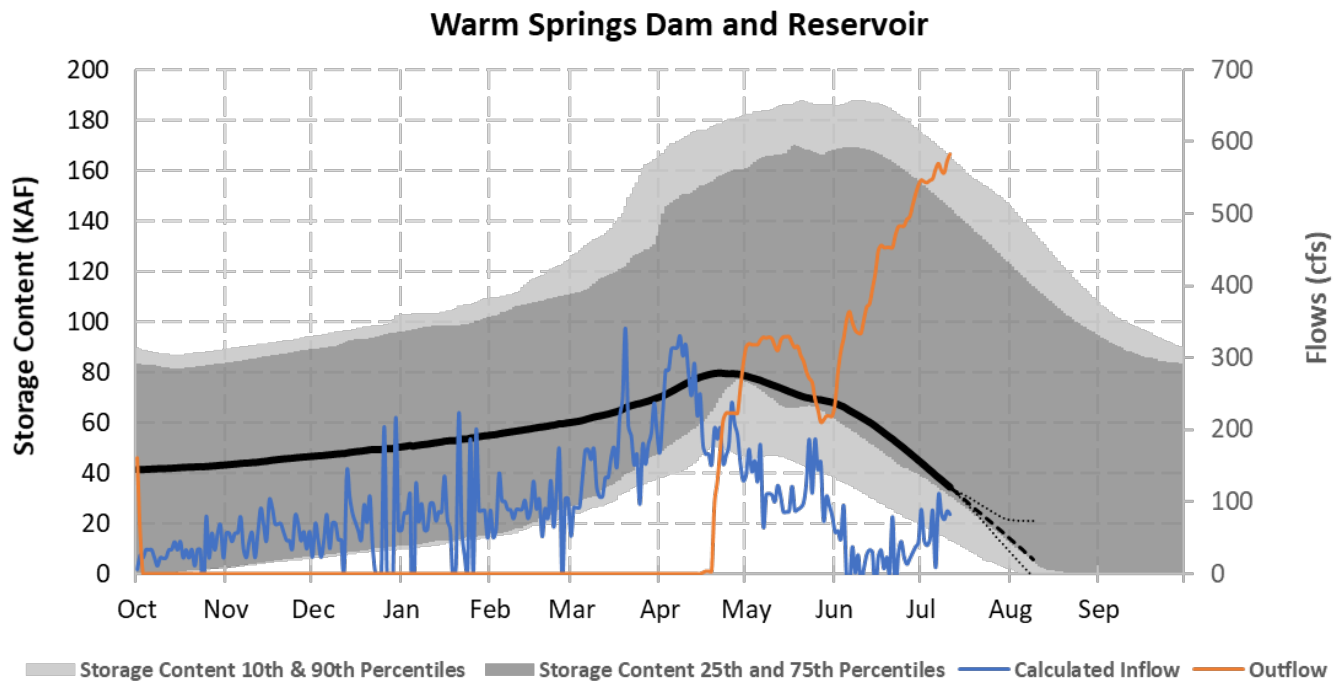


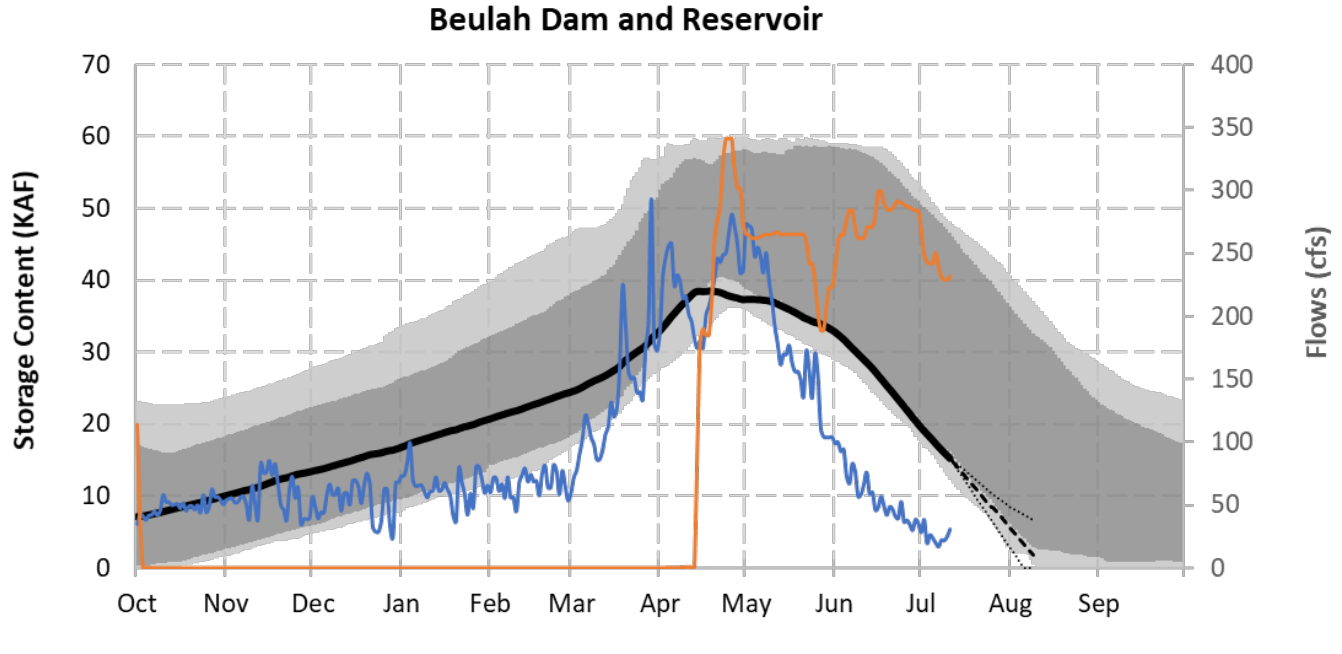


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Malheur River Basin







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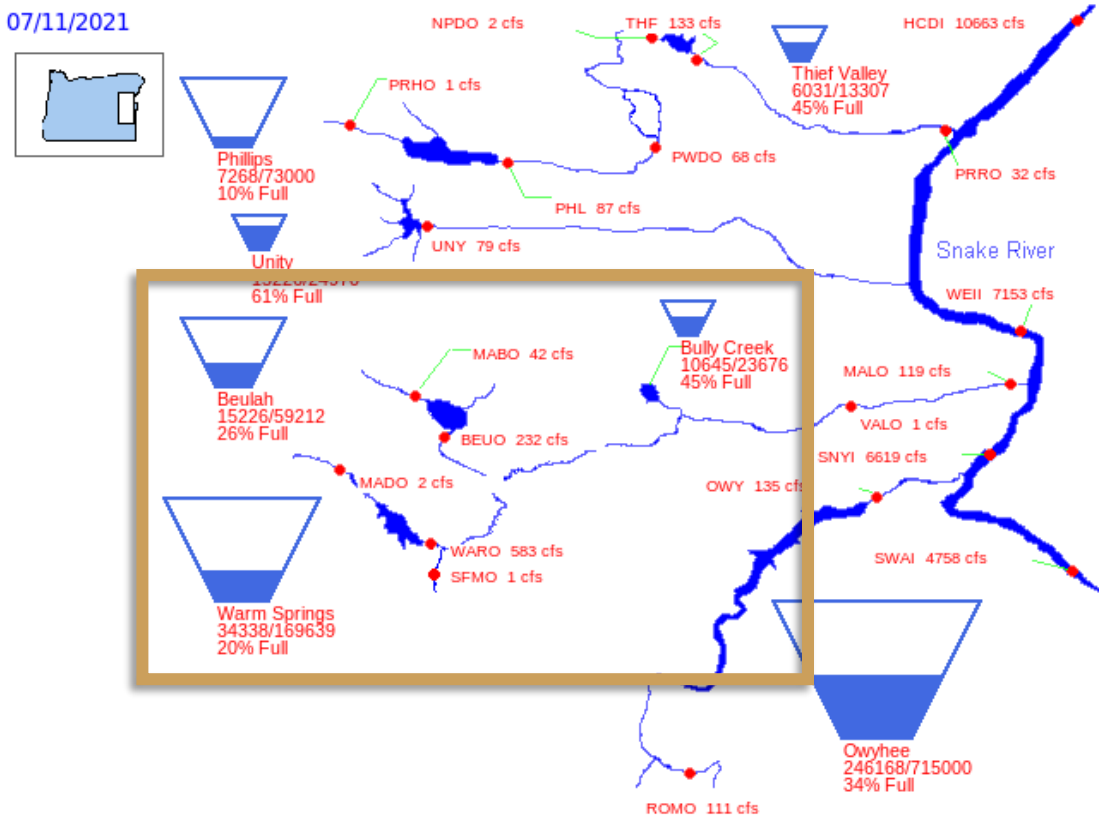
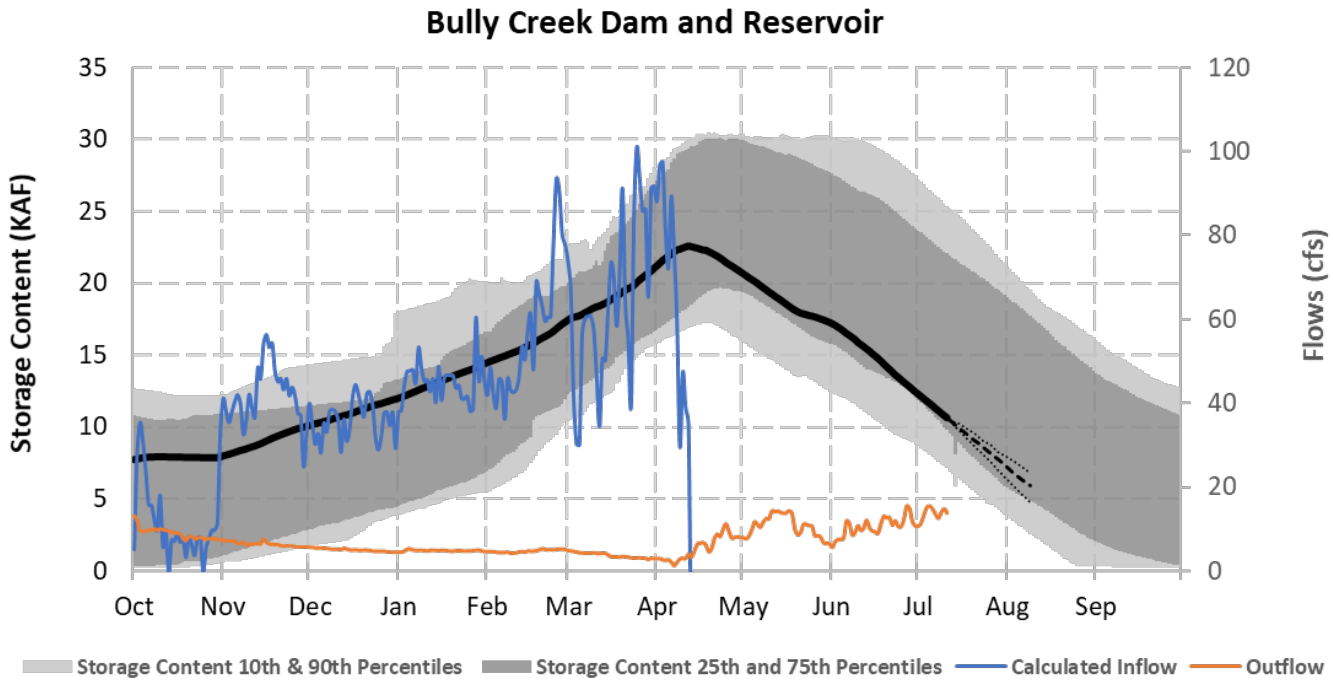
Malheur River Basin





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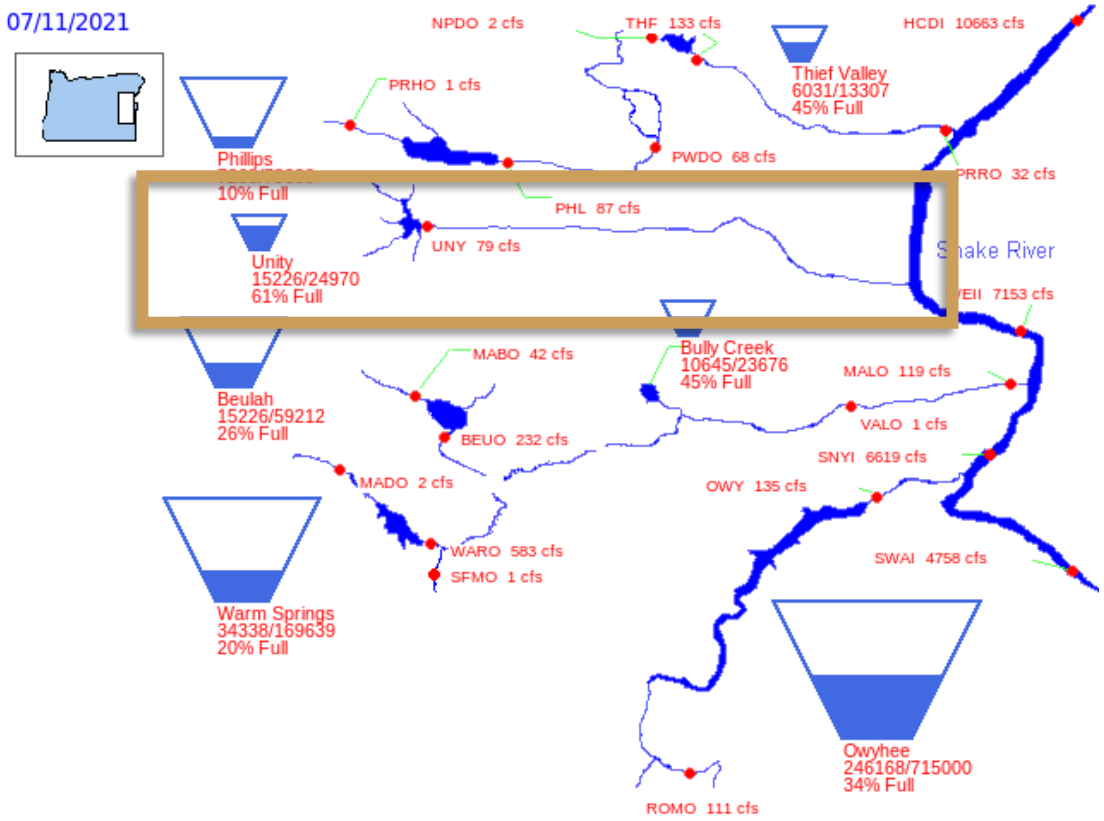
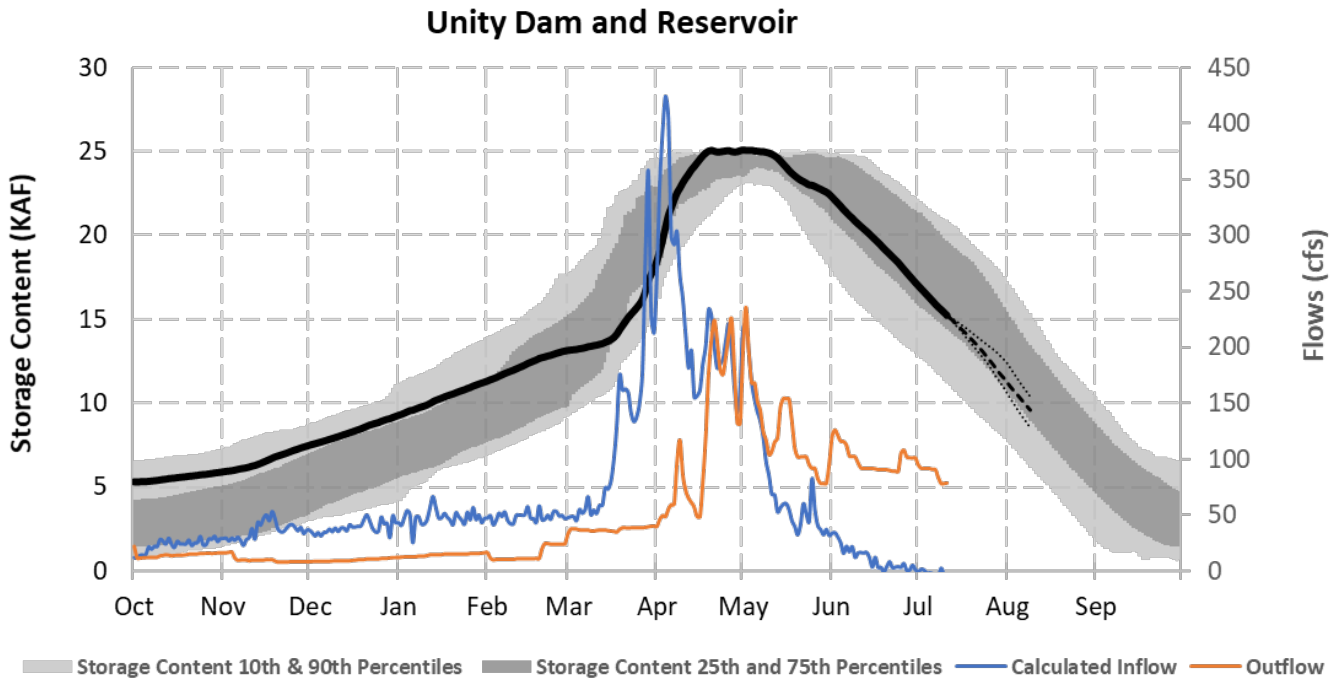
Burnt River Basin





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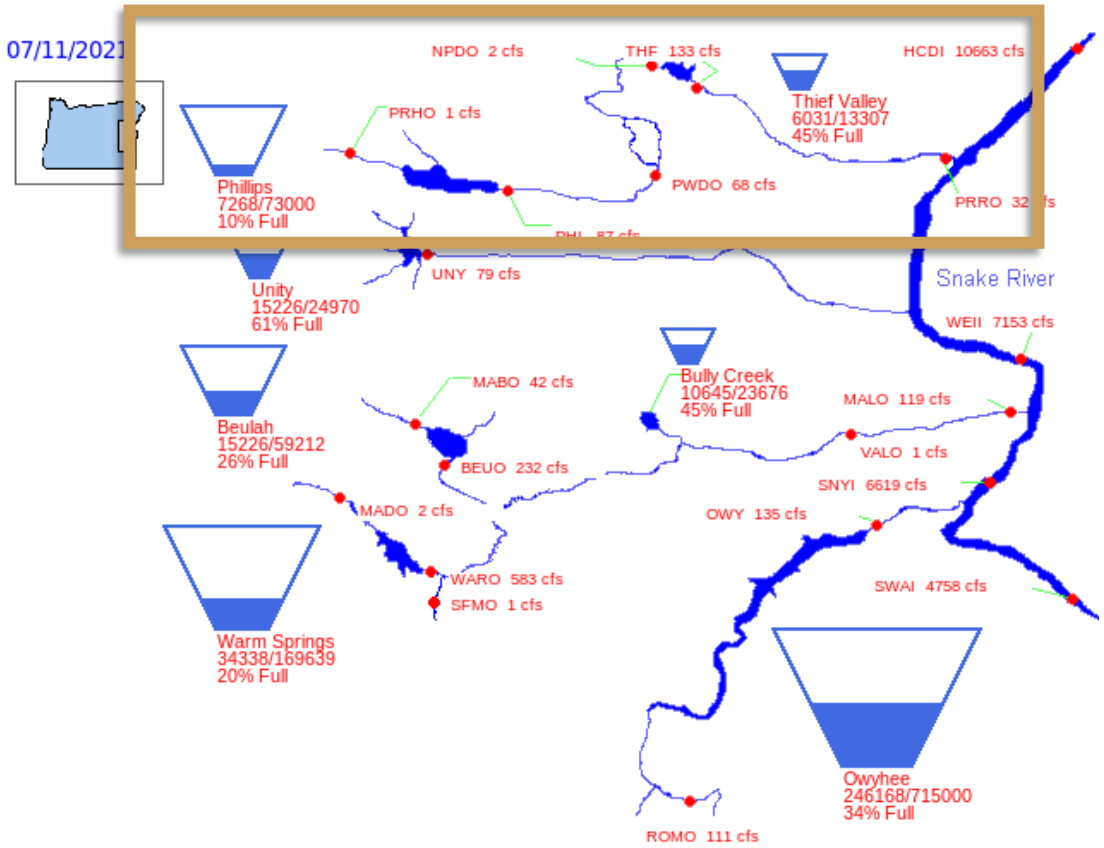
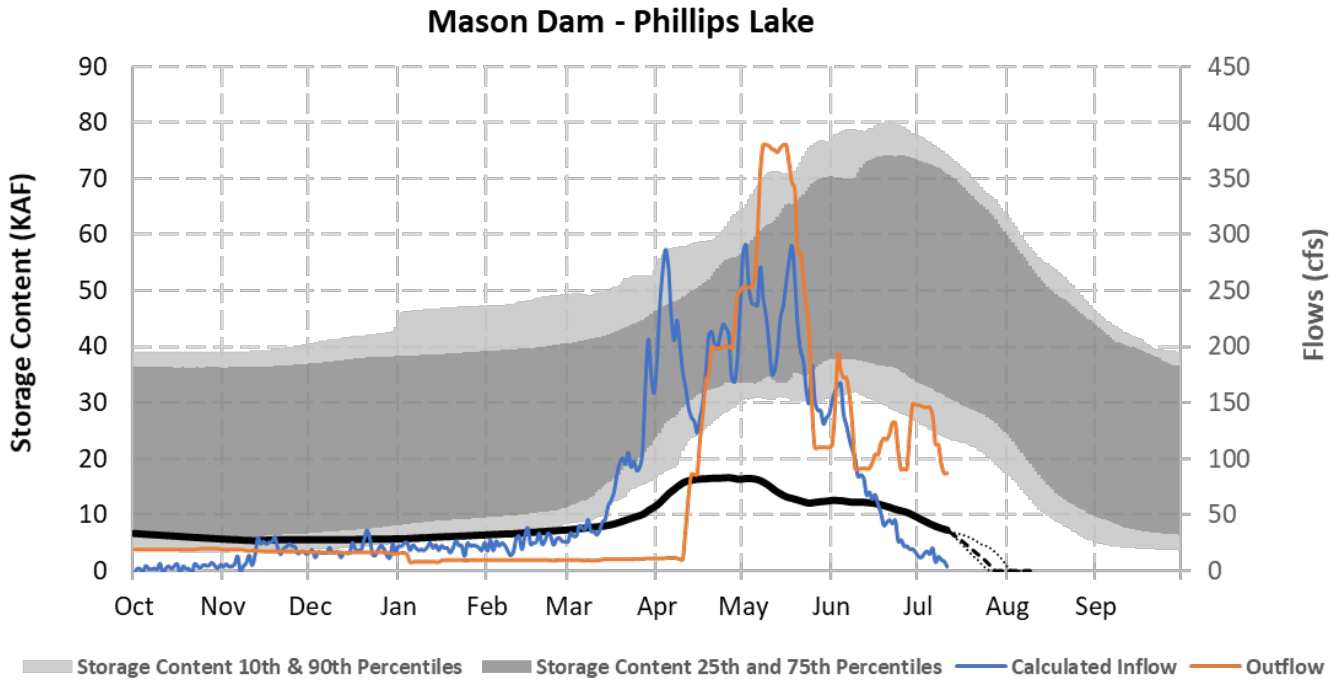
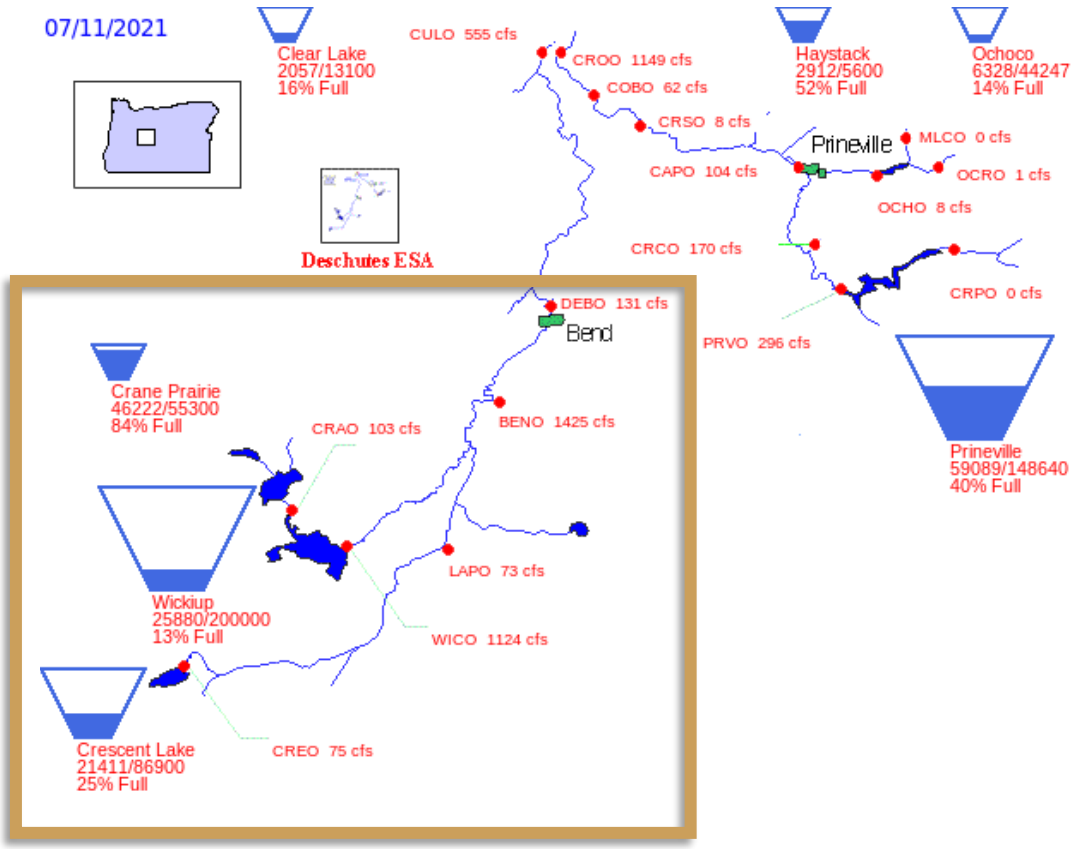
Powder River Basin

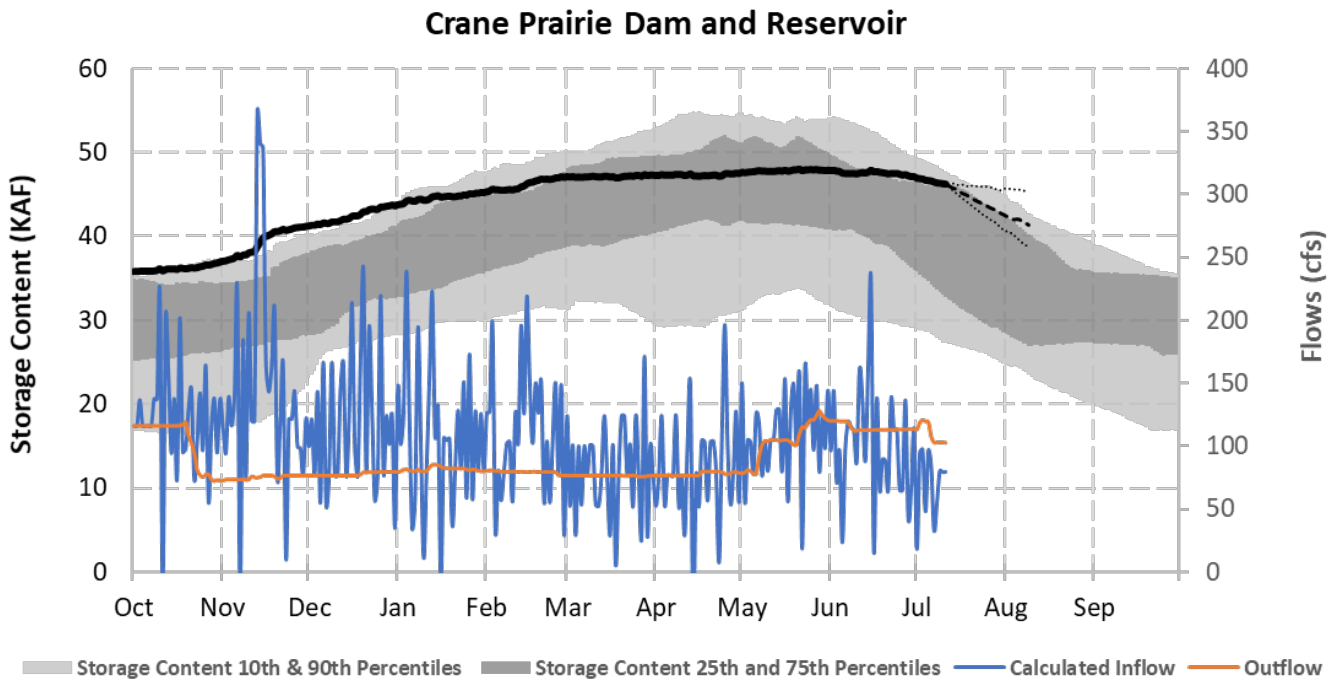


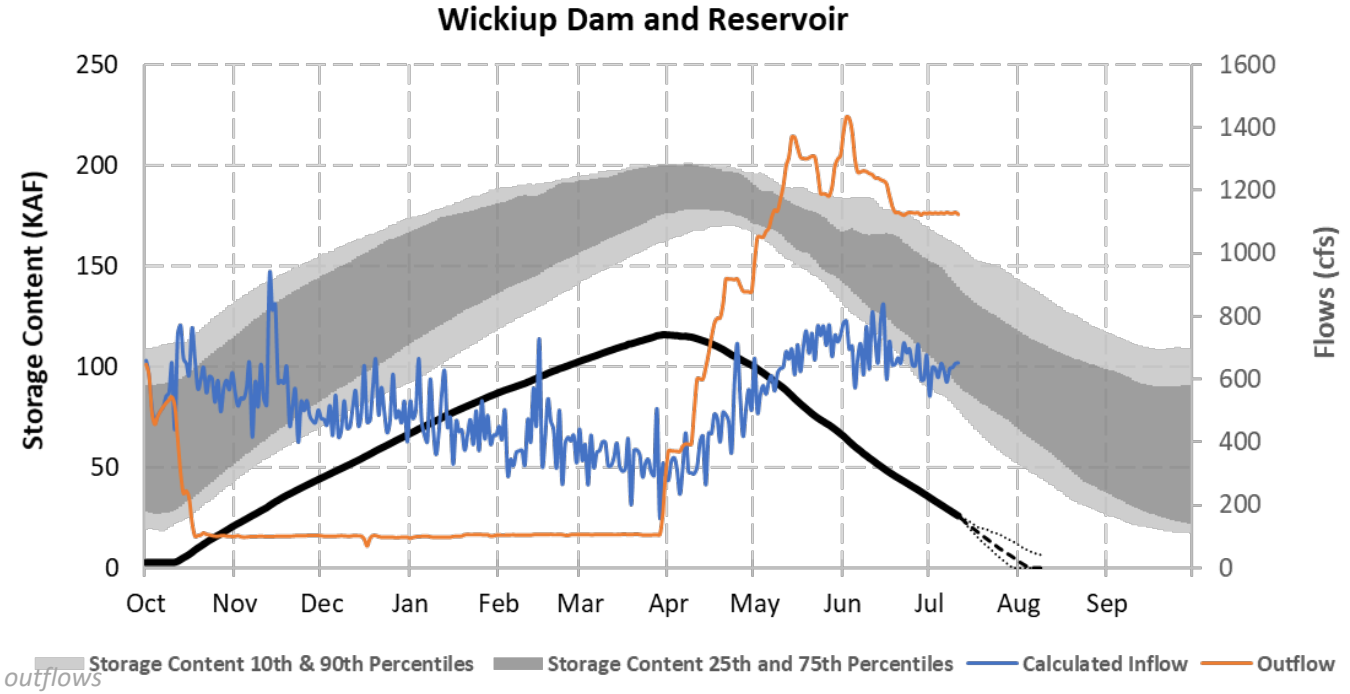


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Deschutes River Basin







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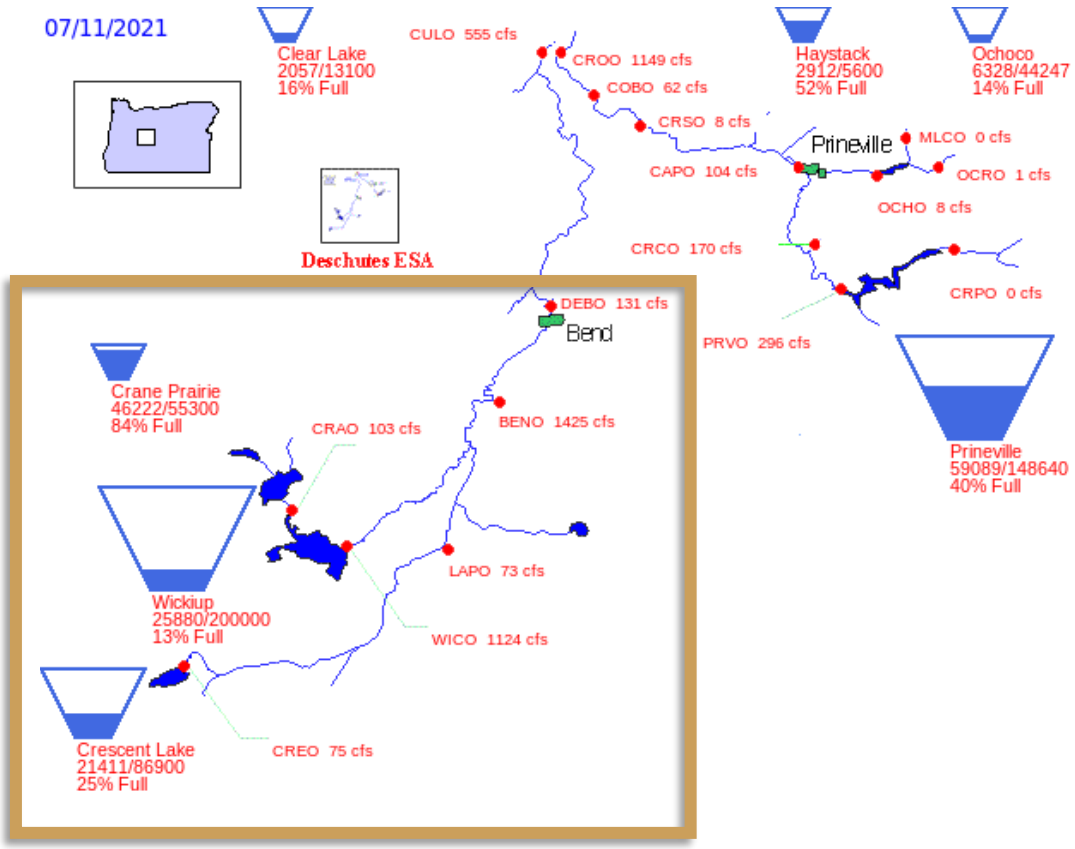
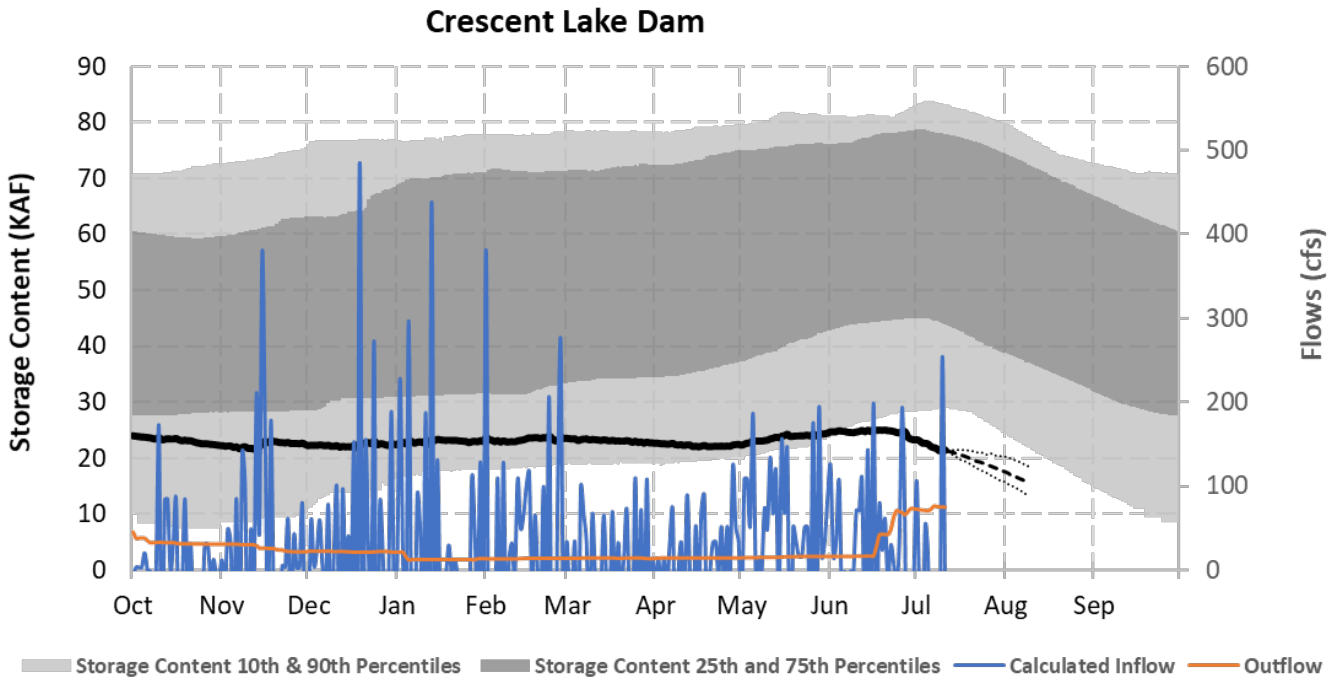
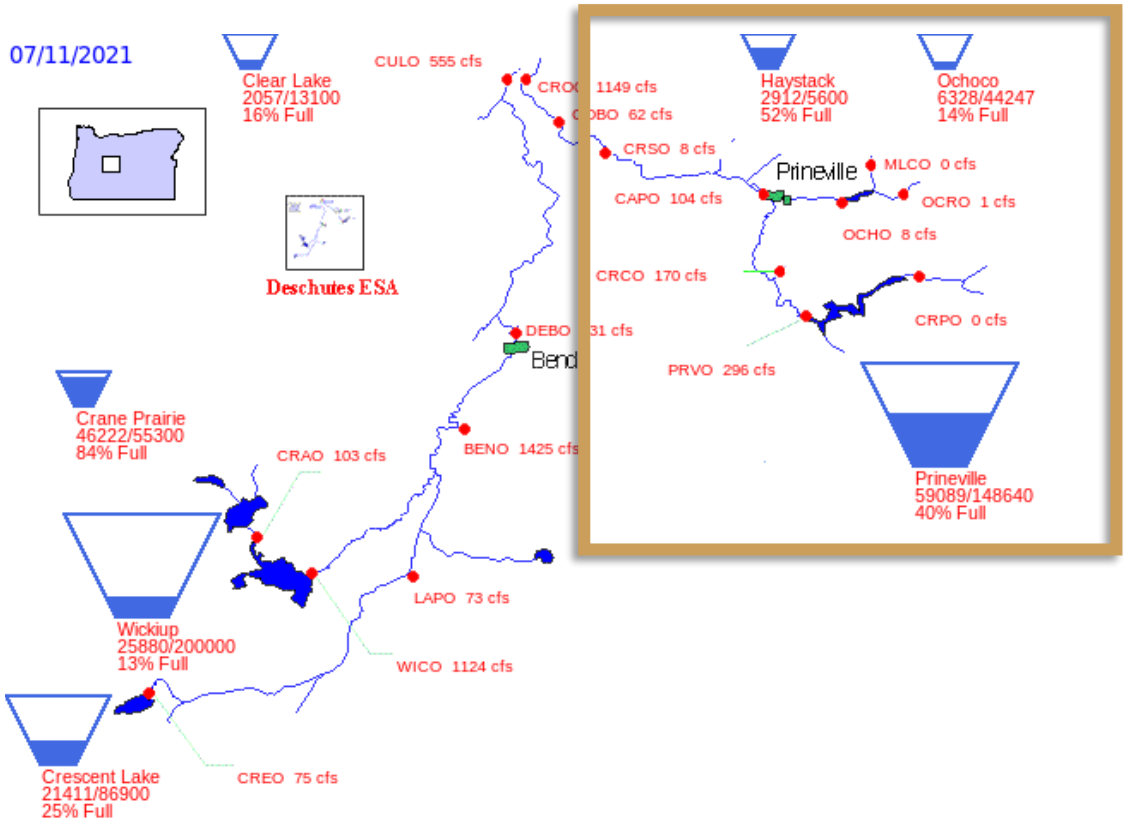
Deschutes River Basin

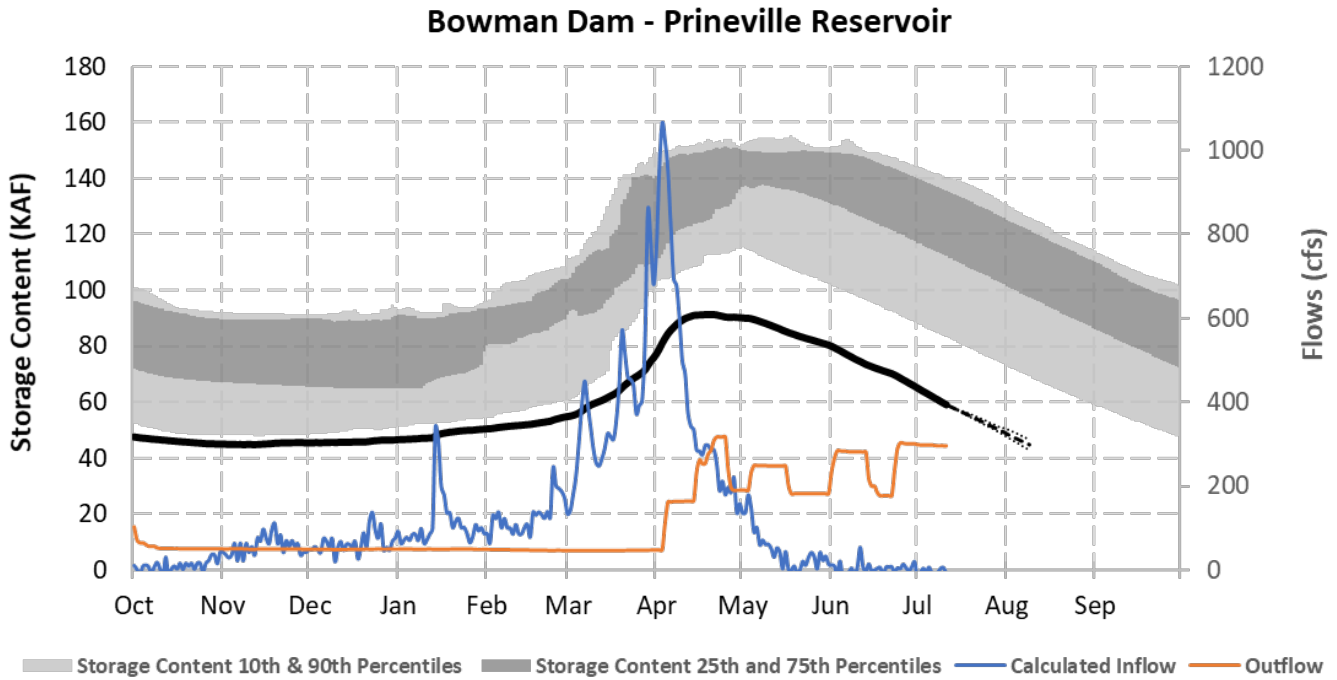


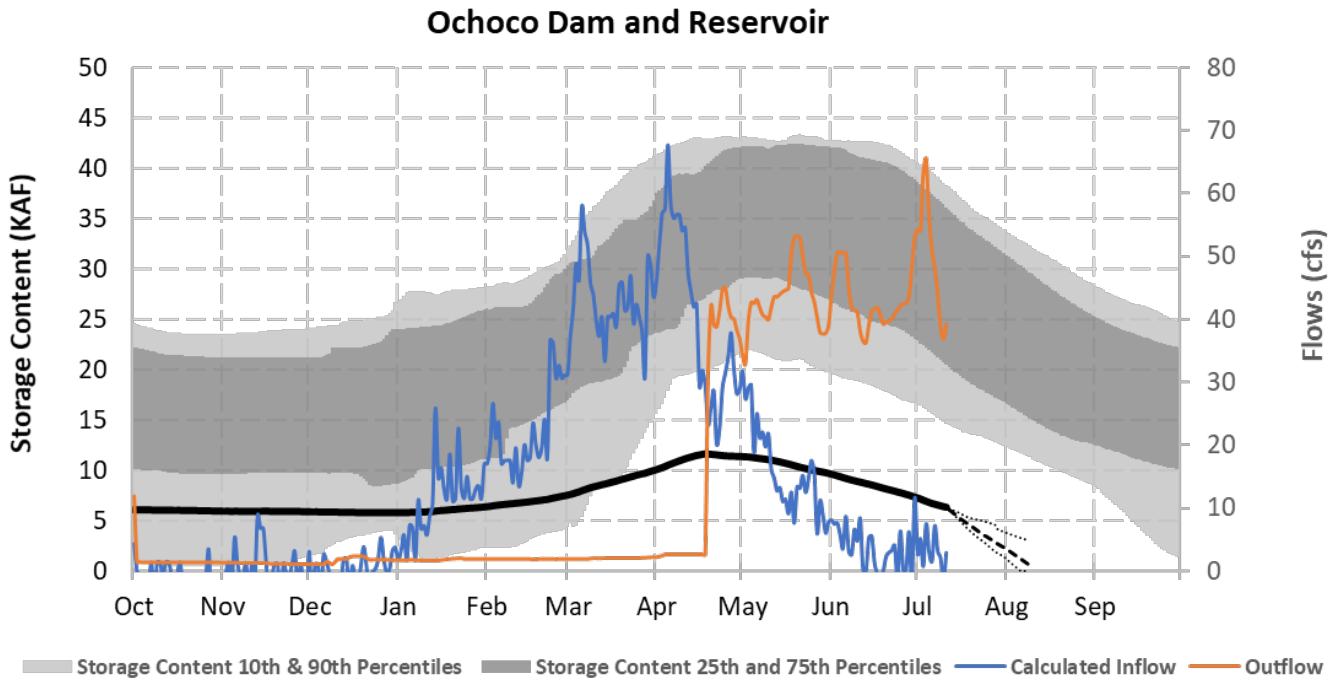


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Crooked River Basin







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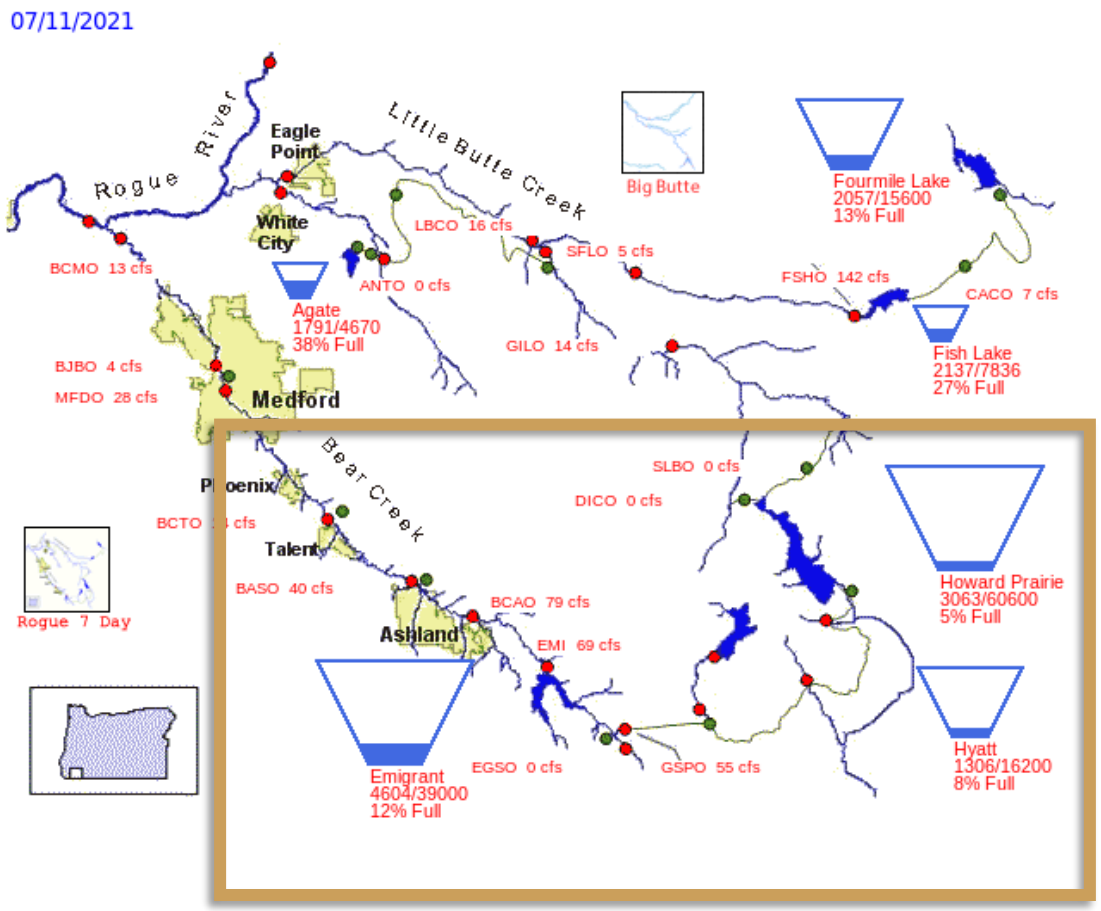
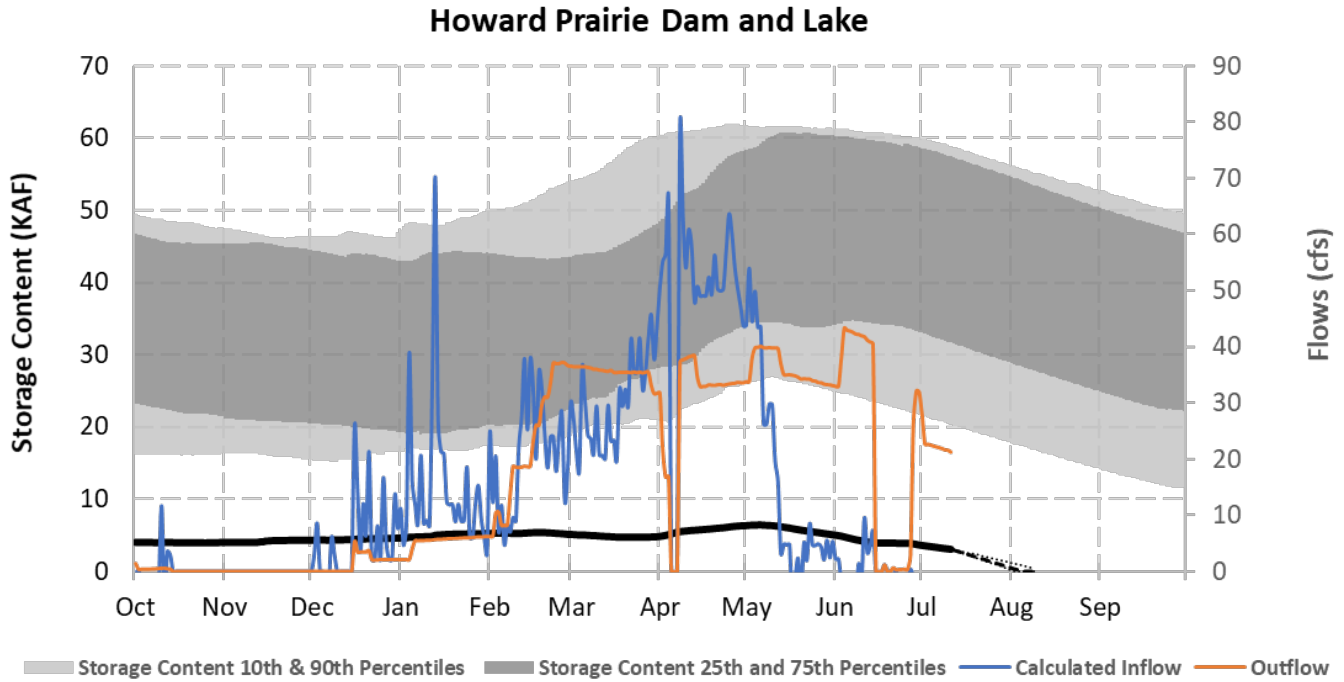
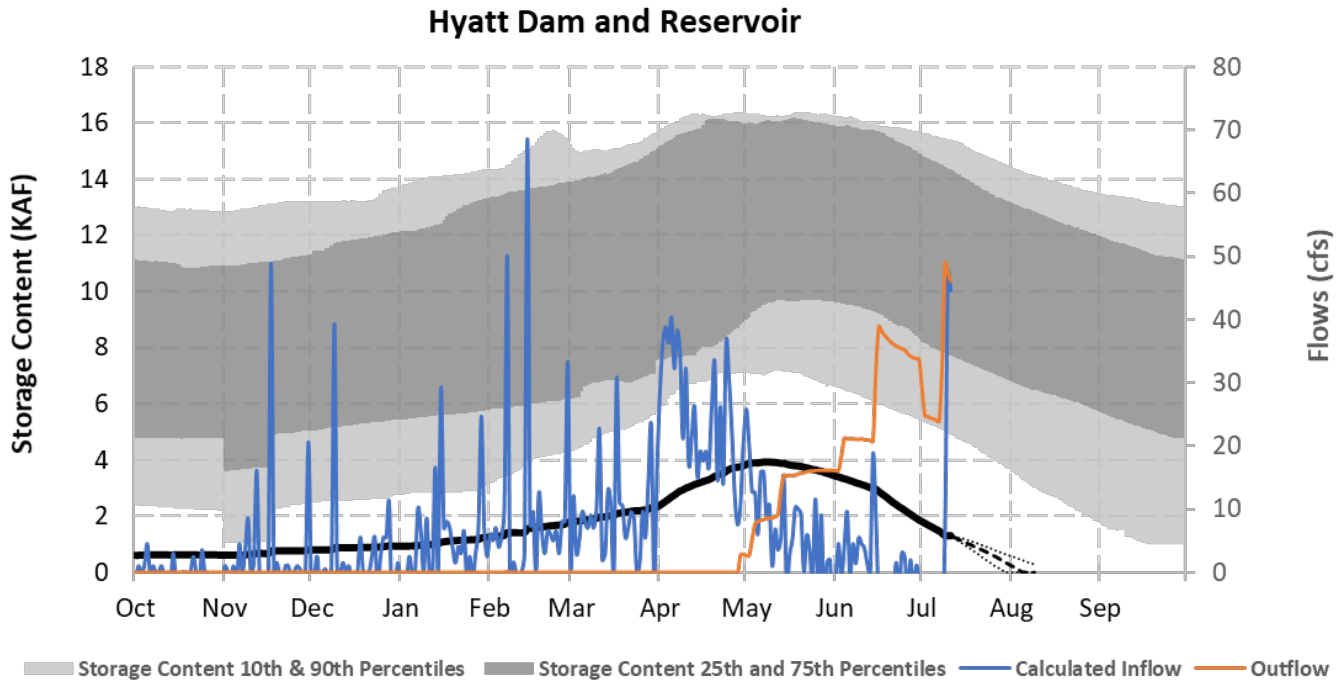
Rogue River Basin







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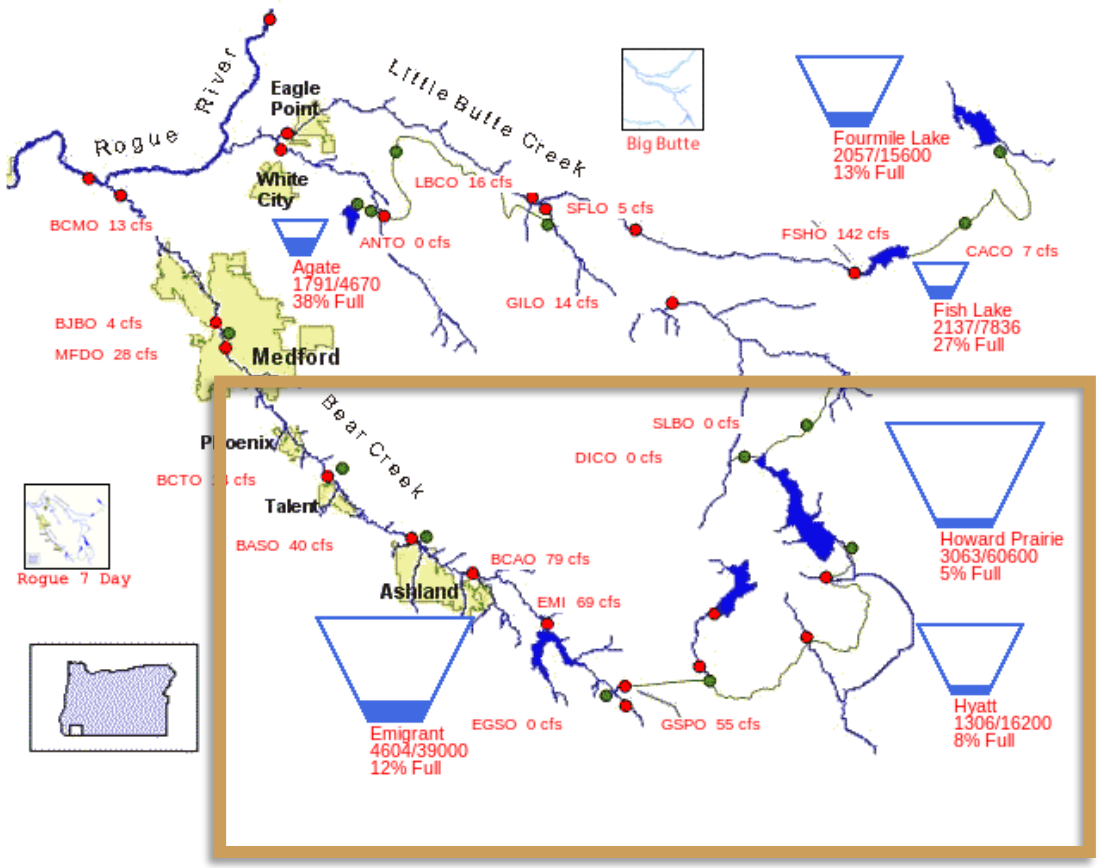
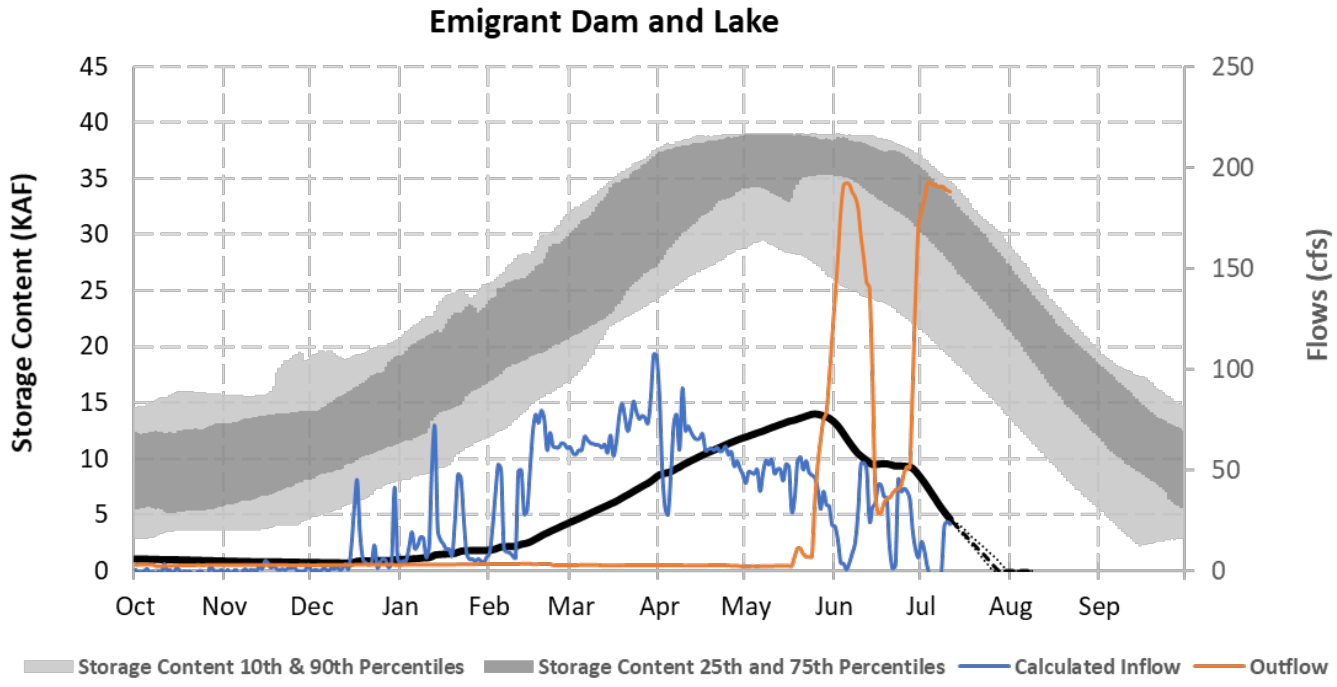
Rogue River Basin

07/11/2021





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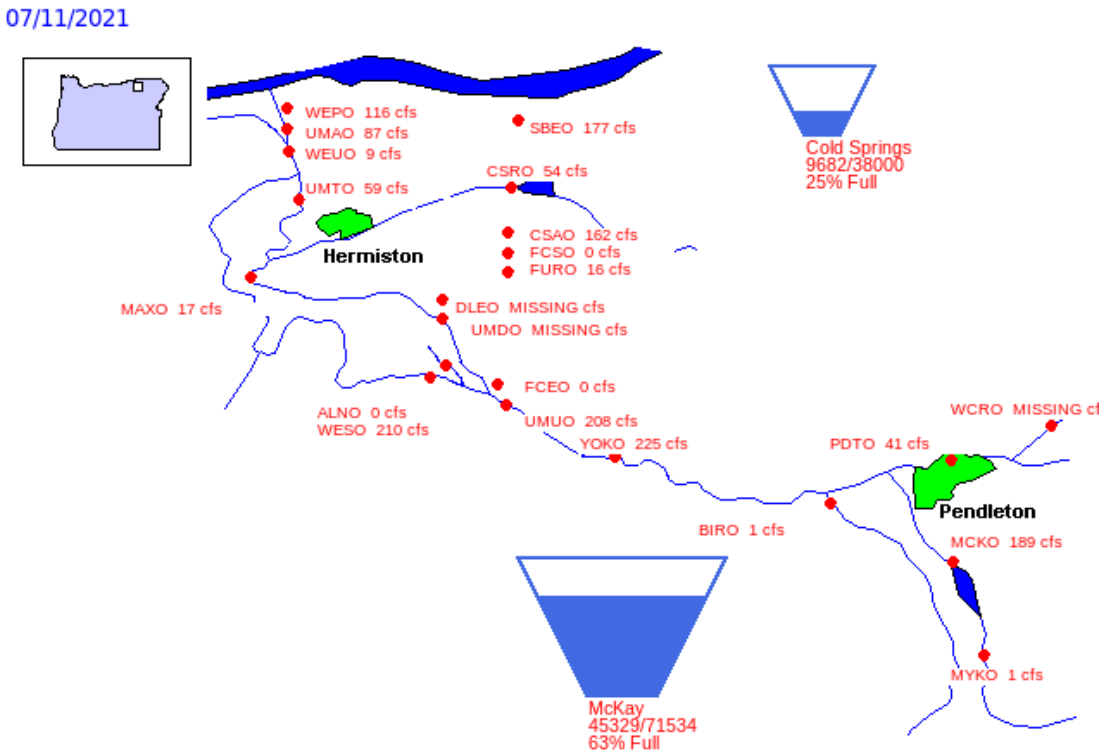
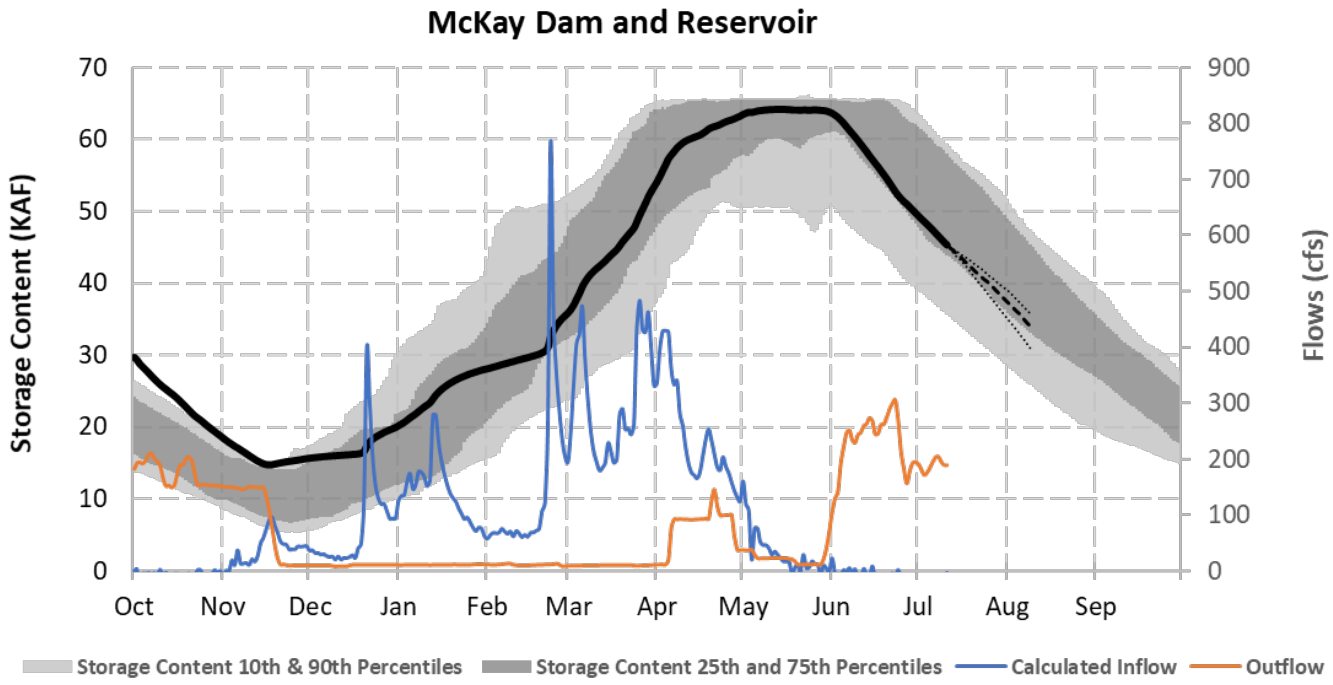
Umatilla River Basin





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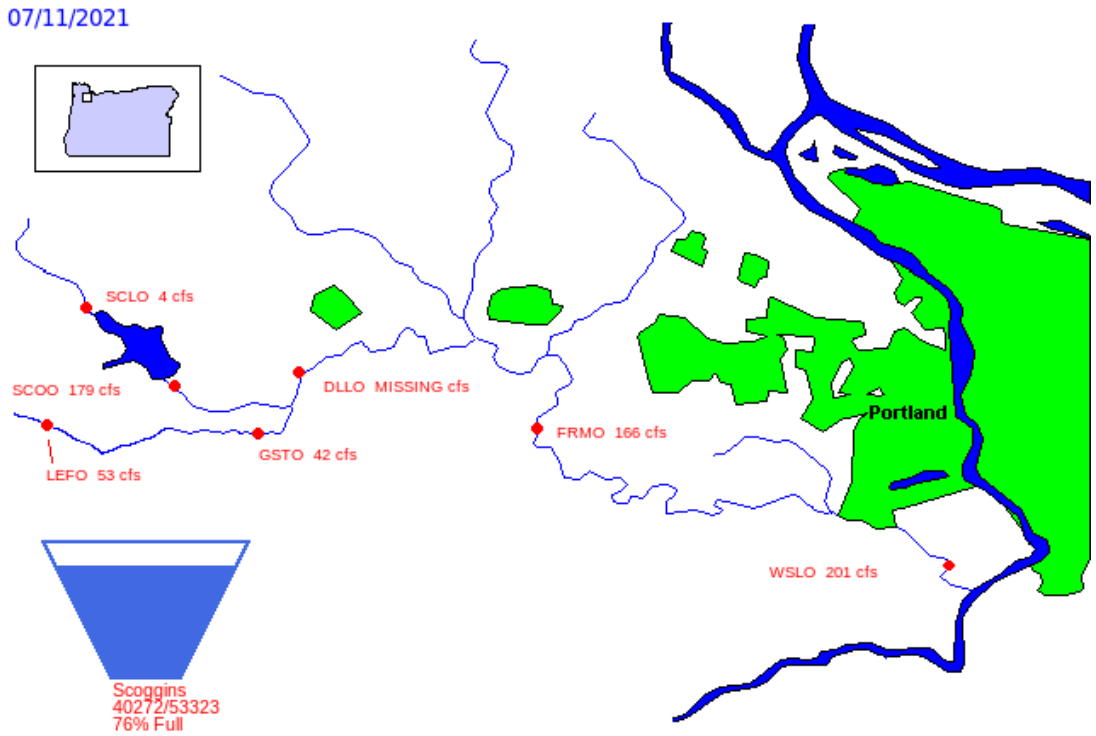
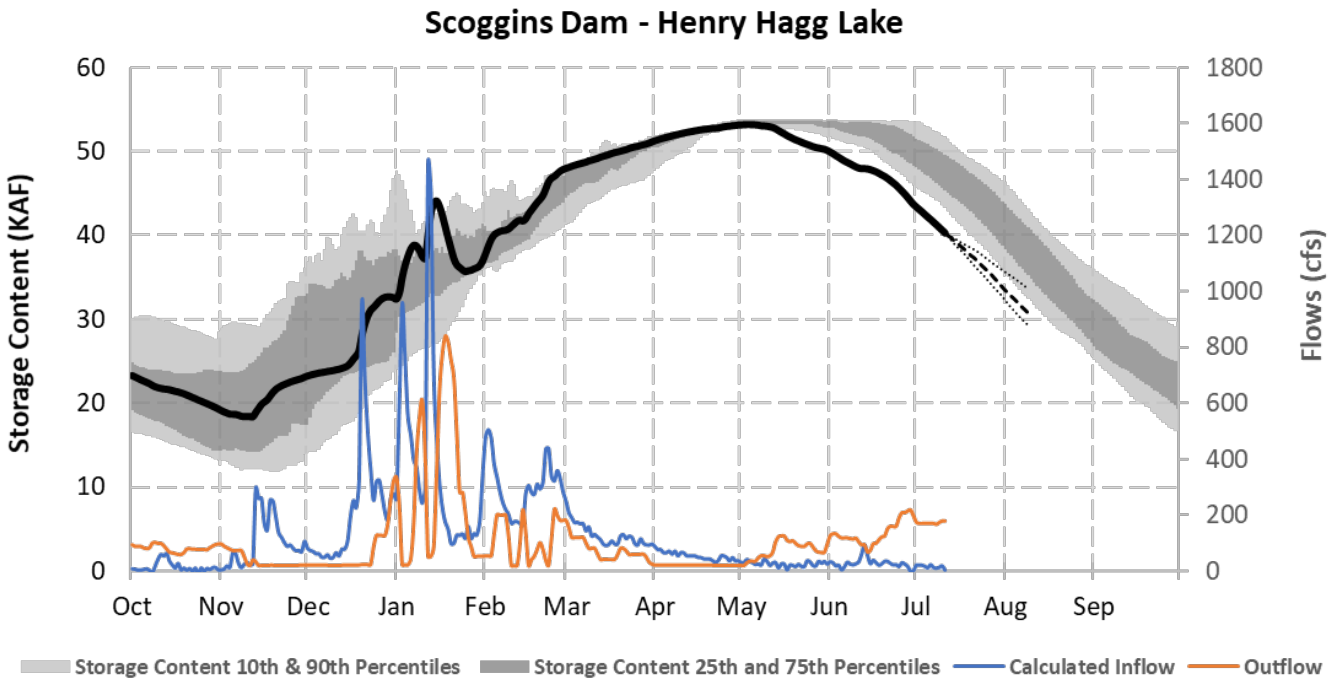
Tualatin River Basin





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208.378.6213

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