

Oregon Water Supply Availability Committee – May 12, 2021



H. Scott Oviatt  
USDA – Natural Resources Conservation Service  
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503-414-3271

# May 12<sup>th</sup> Statewide SNOTEL Snowpack is 59% of normal



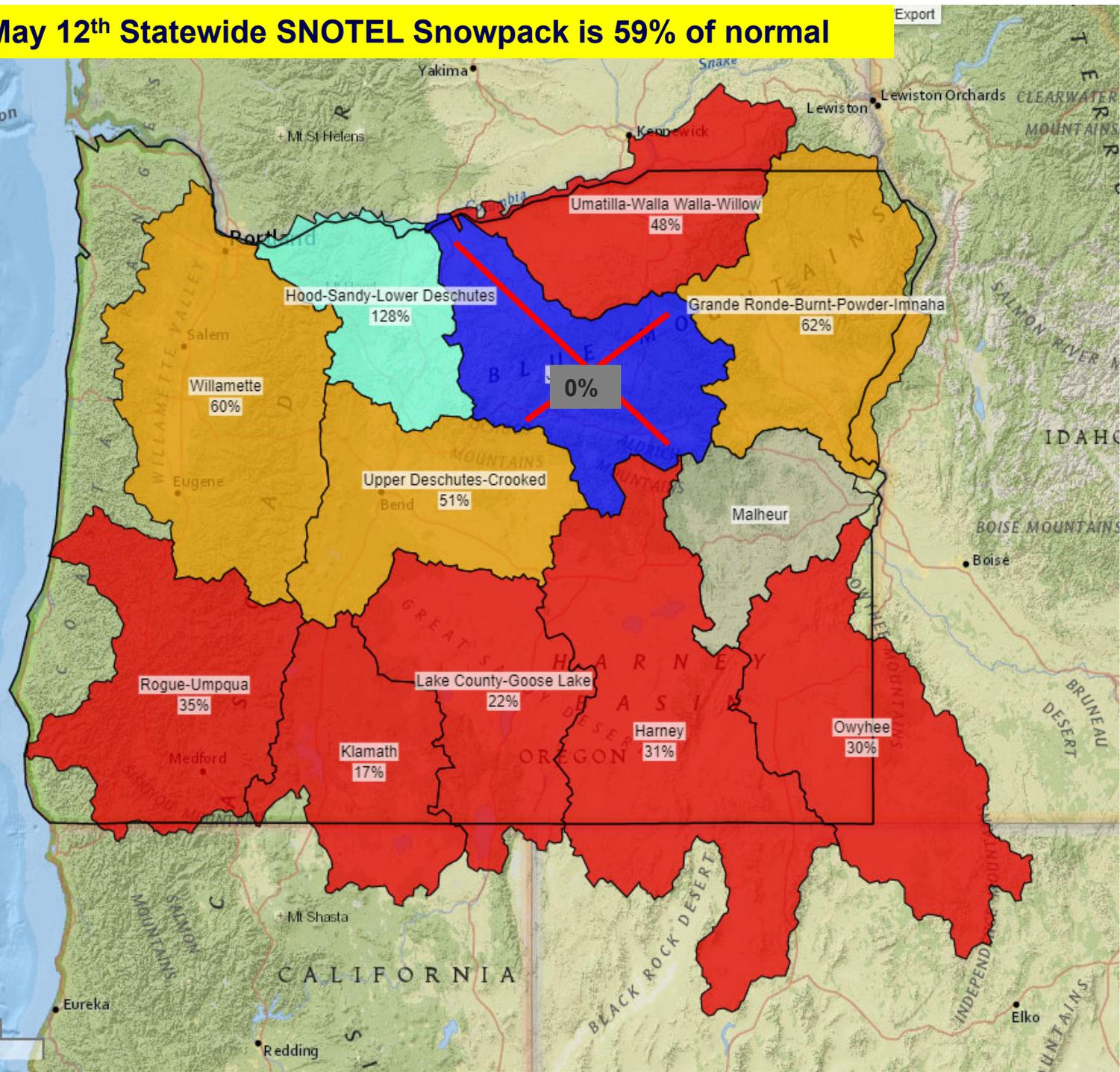
**Snow Water Equivalent  
Percent NRCS 1981-2010  
Median  
May 11, 2021, end of day**

- ≥ 150%
- 130% - 149%
- 110% - 129%
- 90% - 109%
- 70% - 89%
- 50% - 69%
- < 50%
- No basin value

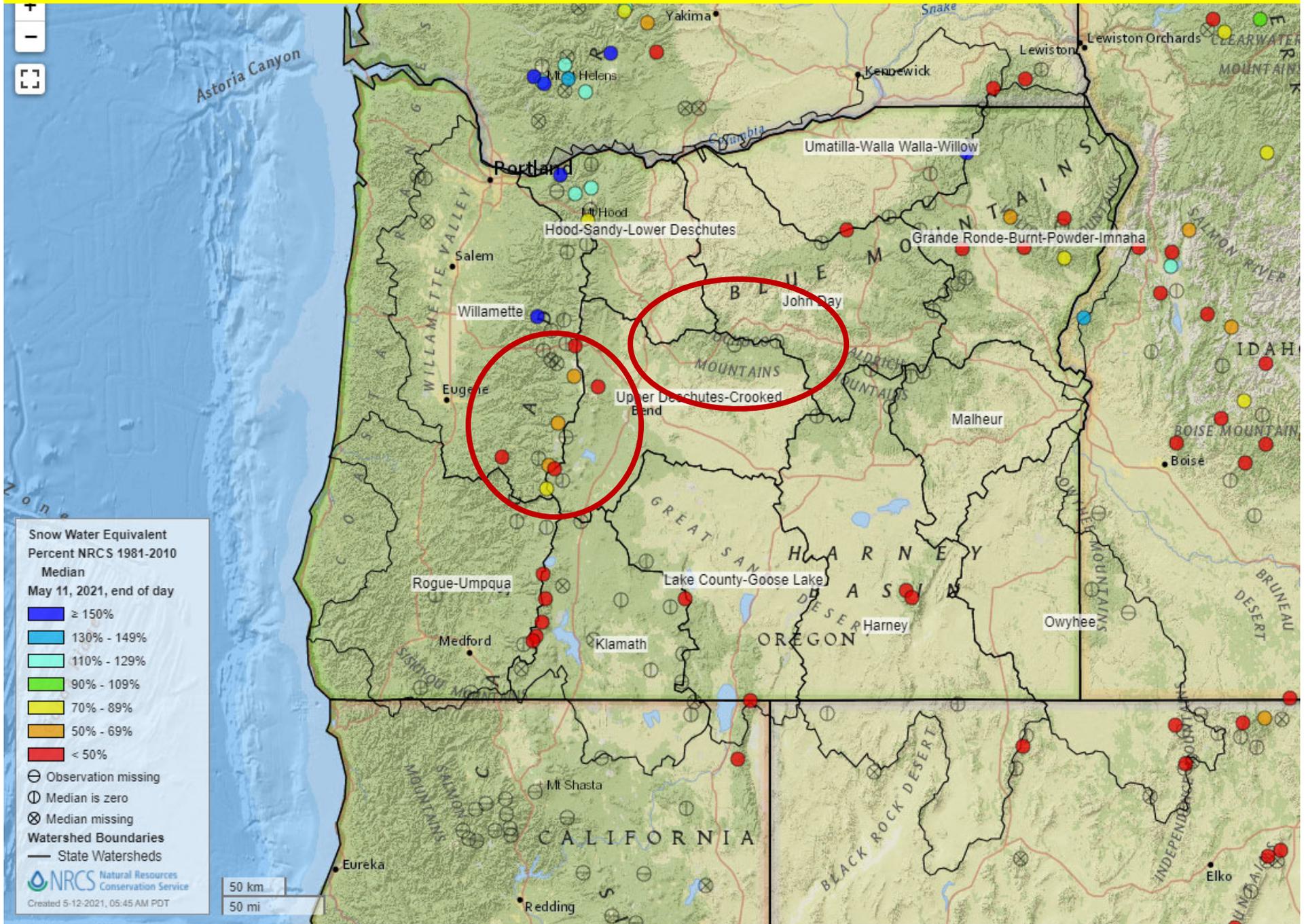
**Watershed Boundaries**  
 State Watersheds

**NRCS** Natural Resources Conservation Service  
 Created 5-12-2021, 05:35 AM PDT

50 km  
50 mi

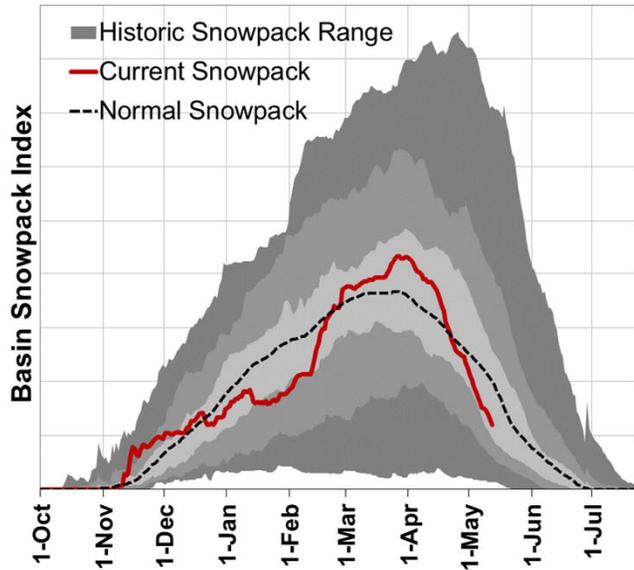


# May 12<sup>th</sup> Oregon SNOTEL % of median by station

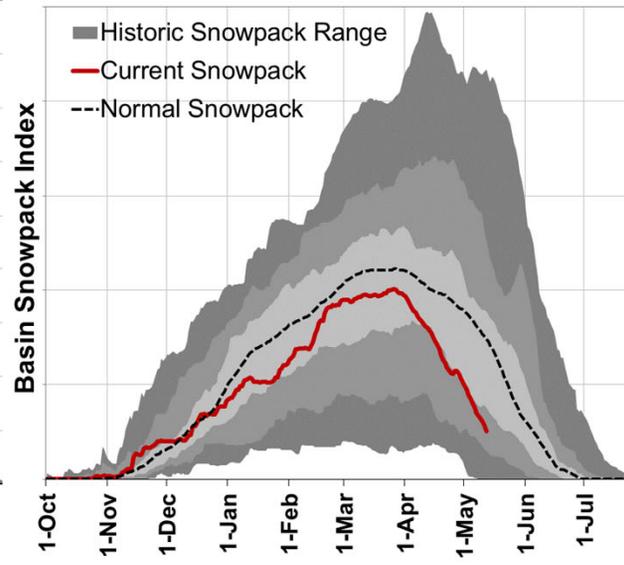


# OREGON SNOWPACK GRAPHS – May 12, 2021

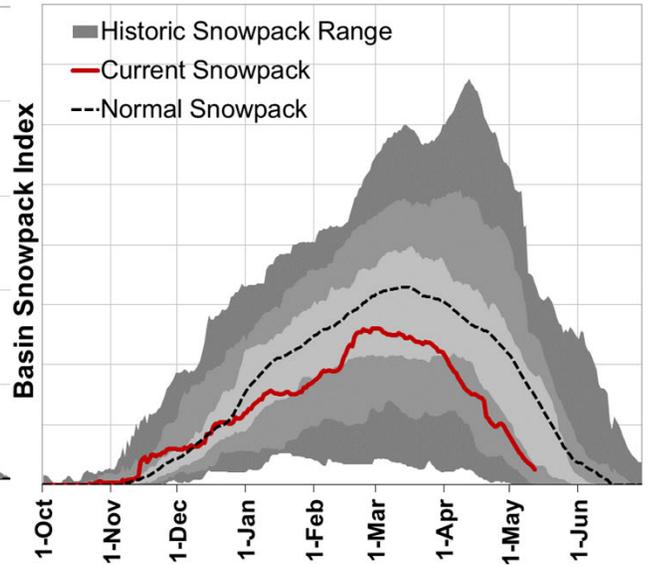
## Willamette



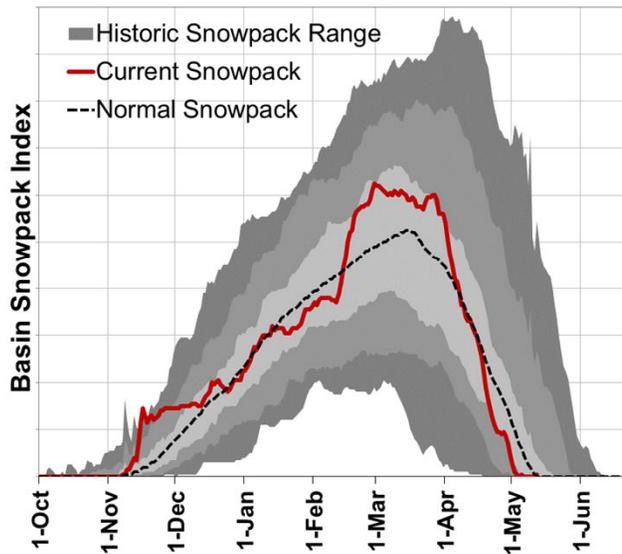
## Rogue-Umpqua



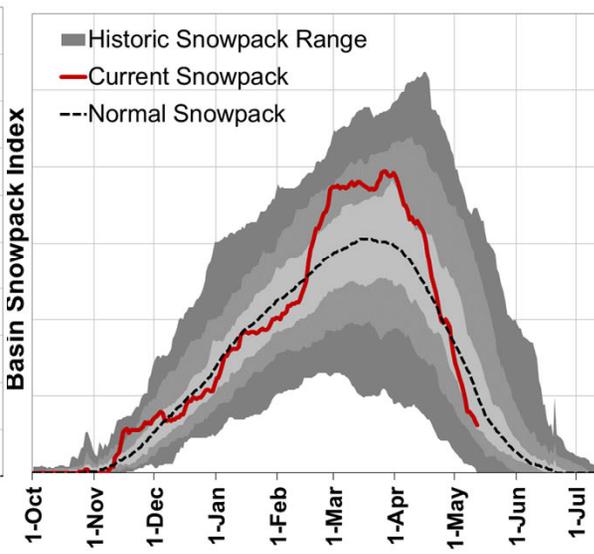
## Klamath



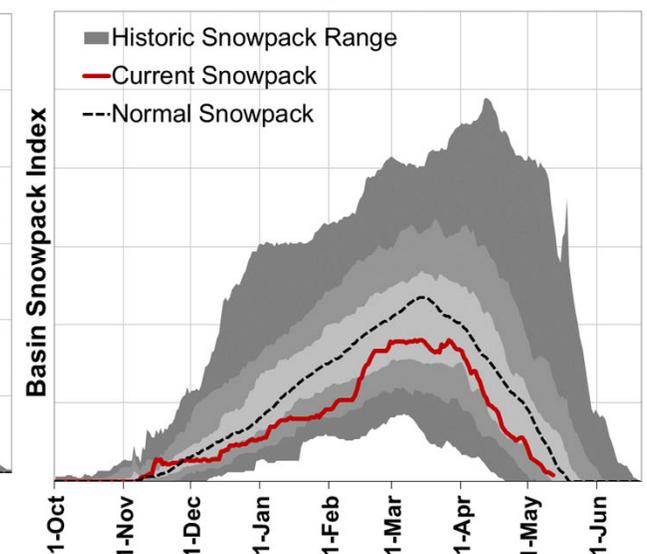
## John Day



## Grande Ronde-Burnt-Powder-Imnaha

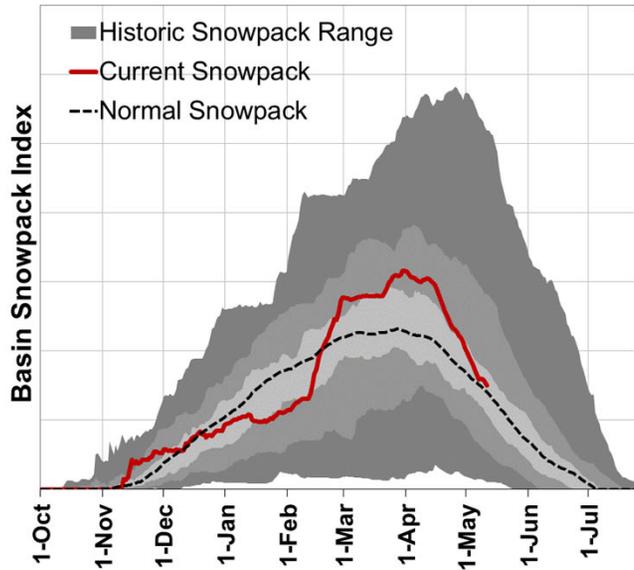


## Owyhee

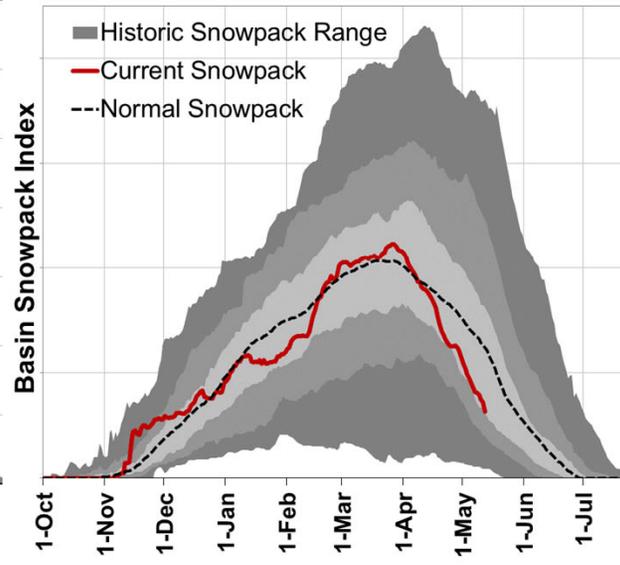


# OREGON SNOWPACK GRAPHS – May 12, 2021

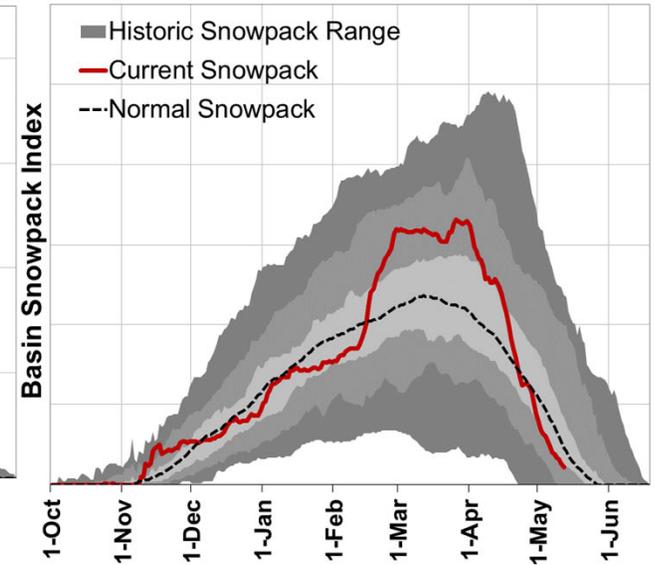
## Hood-Sandy-Lower Deschutes



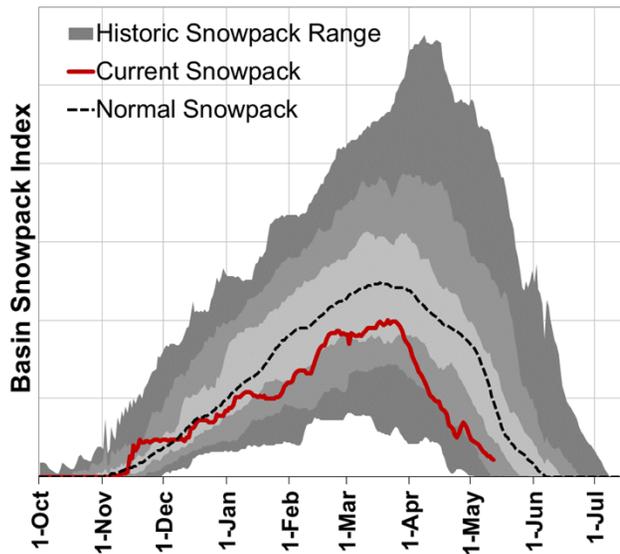
## Upper Deschutes-Crooked



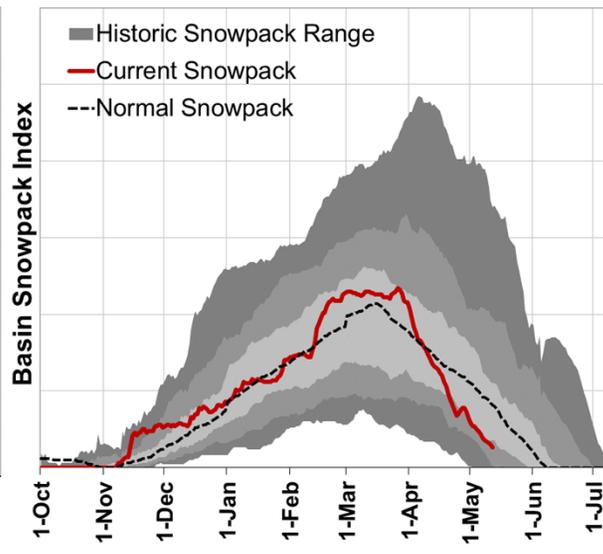
## Umatilla-Walla Walla-Willow



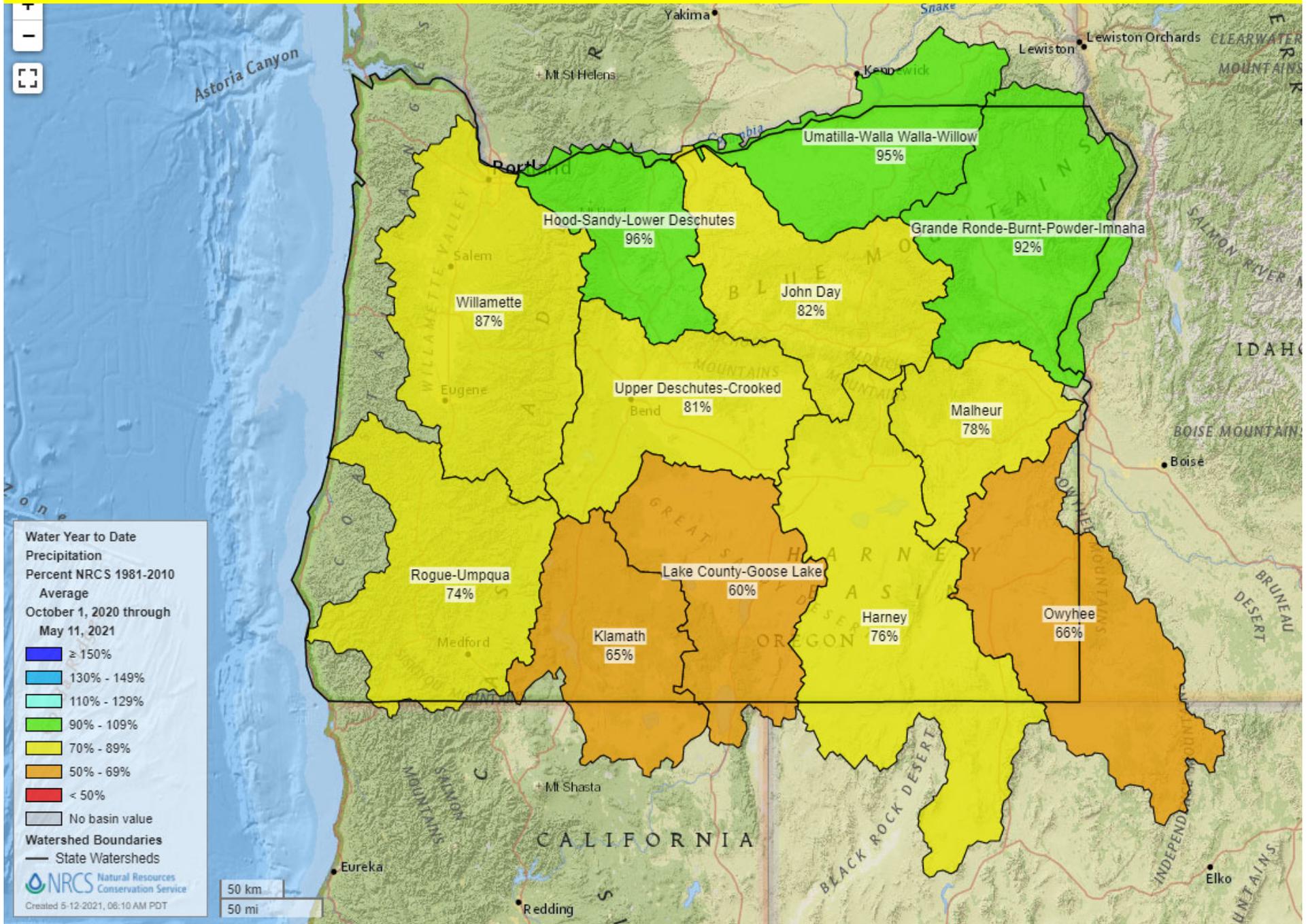
## Lake County-Goose Lake



## Harney

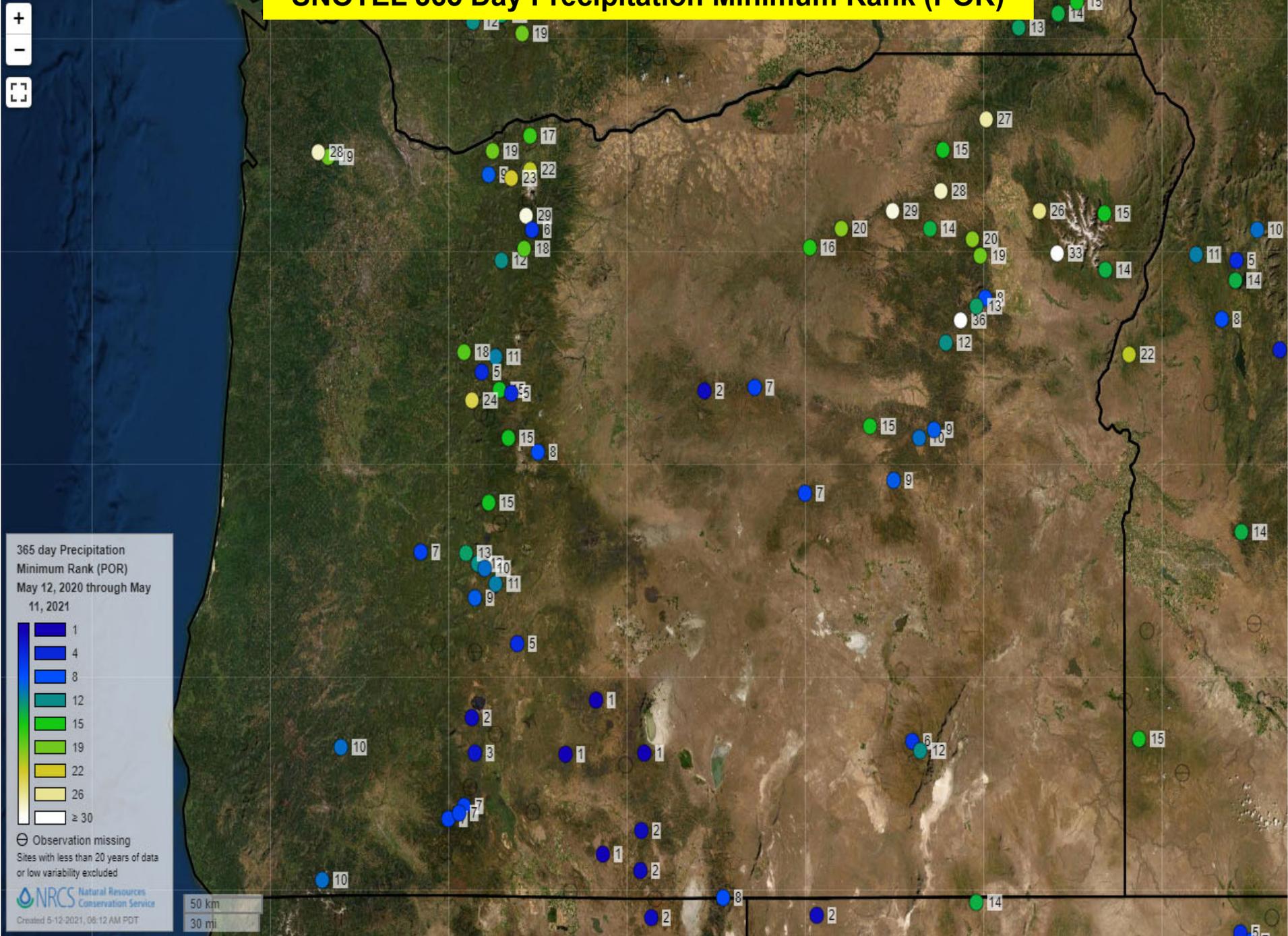


# May 12<sup>th</sup> Statewide SNOTEL Water Year Precipitation is 84% of average



Selected Stations: 1127

# SNOTEL 365 Day Precipitation Minimum Rank (POR)



Selected Stations: 1127

# SNOTEL Water Year Precipitation Records (POR) October 1, 2020 – May 11, 2021

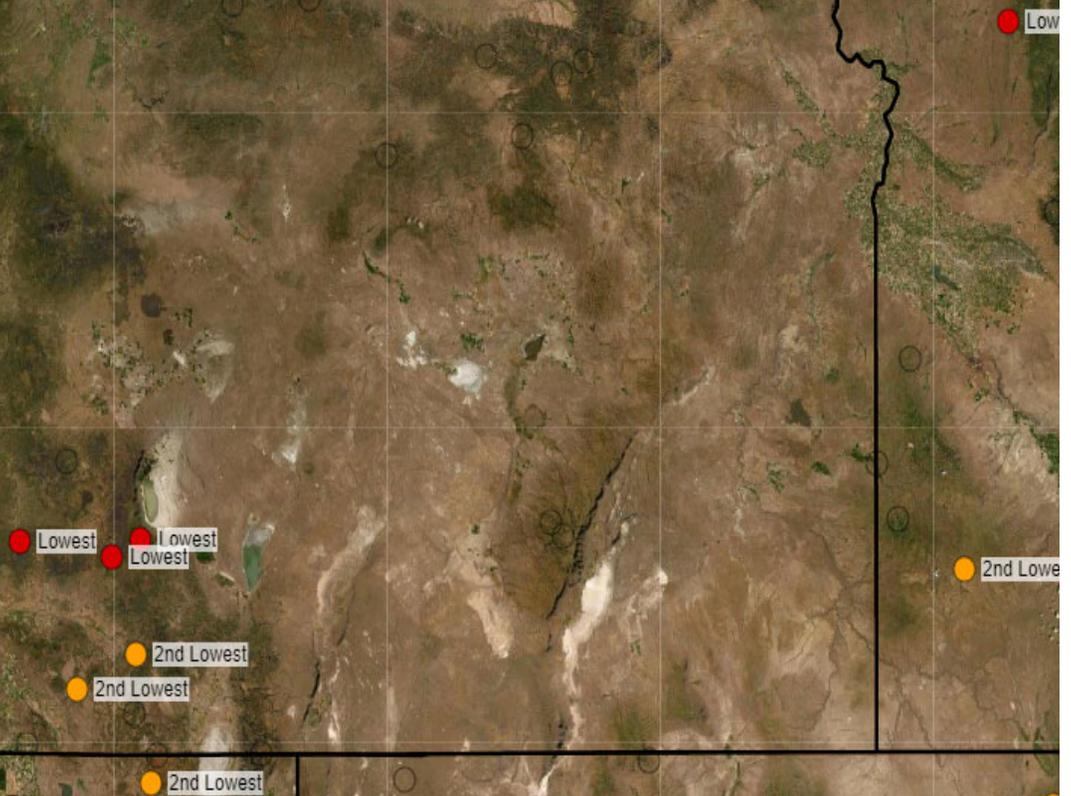


Water Year to Date  
Precipitation  
Records (POR)  
October 1, 2020 through  
May 9, 2021

- Highest
- 2nd Highest
- 2nd Lowest
- Lowest

⊖ Observation missing  
Sites with less than 20 years of data  
or low variability excluded

50 km  
30 mi



Selected Stations: 1127

# SNOTEL 30-Day Precipitation % of Average April 12, 2021 – May 11, 2021

Print/Export



30 day Precipitation  
Percent NRCS 1981-2010  
Average  
April 12, 2021 through May  
11, 2021

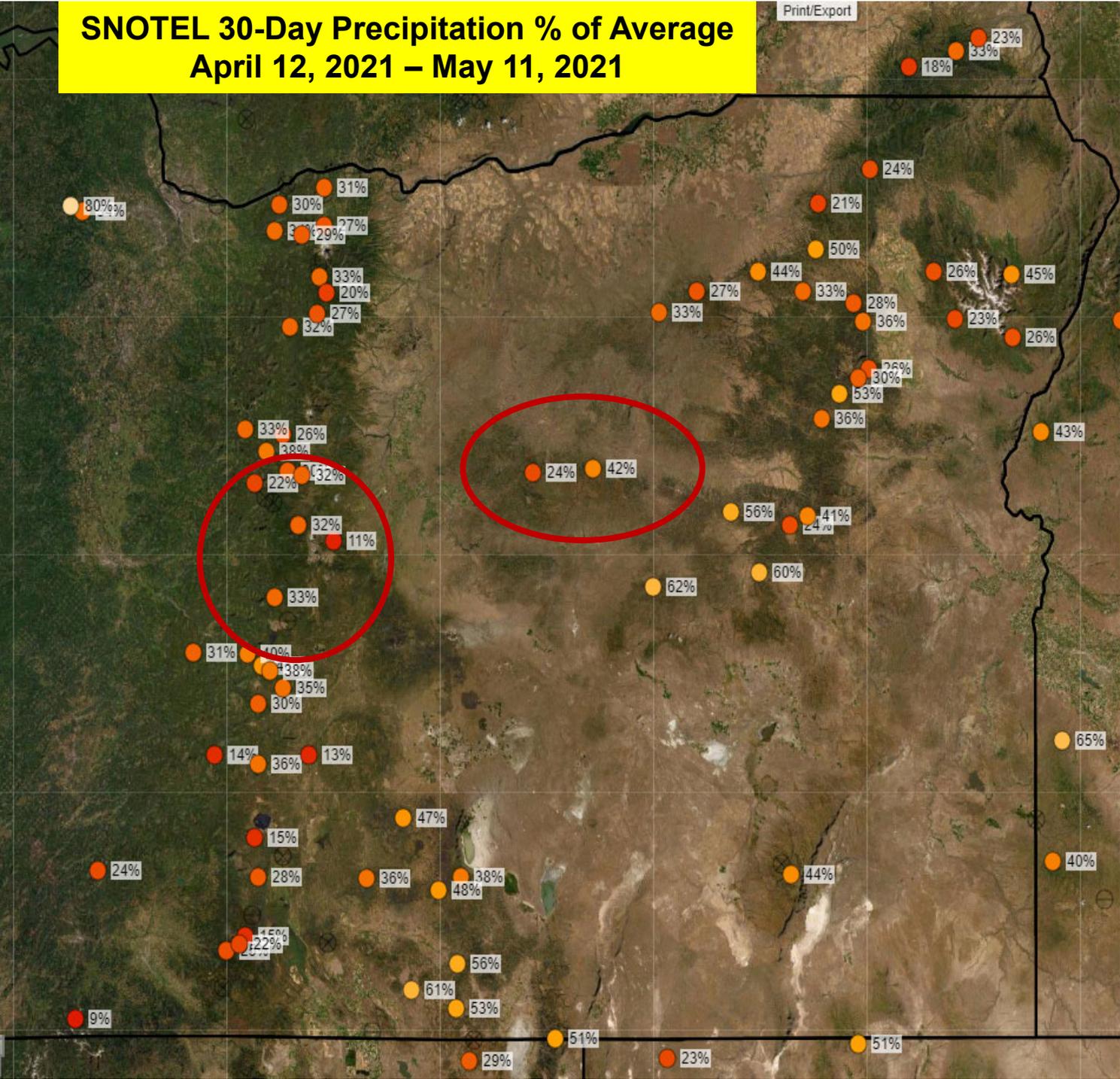
- ≥ 200%
- 175%
- 150%
- 125%
- 100%
- 75%
- 50%
- 25%
- ≤ 0%

⊖ Observation missing  
⊗ Average missing

**NRCS** Natural Resources  
Conservation Service

Created 5-12-2021, 06:17 AM PDT

50 km  
30 mi



Selected Stations: 1127

# SNOTEL 60-Day Precipitation % of Average March 13, 2021 – May 11, 2021

Print/Export



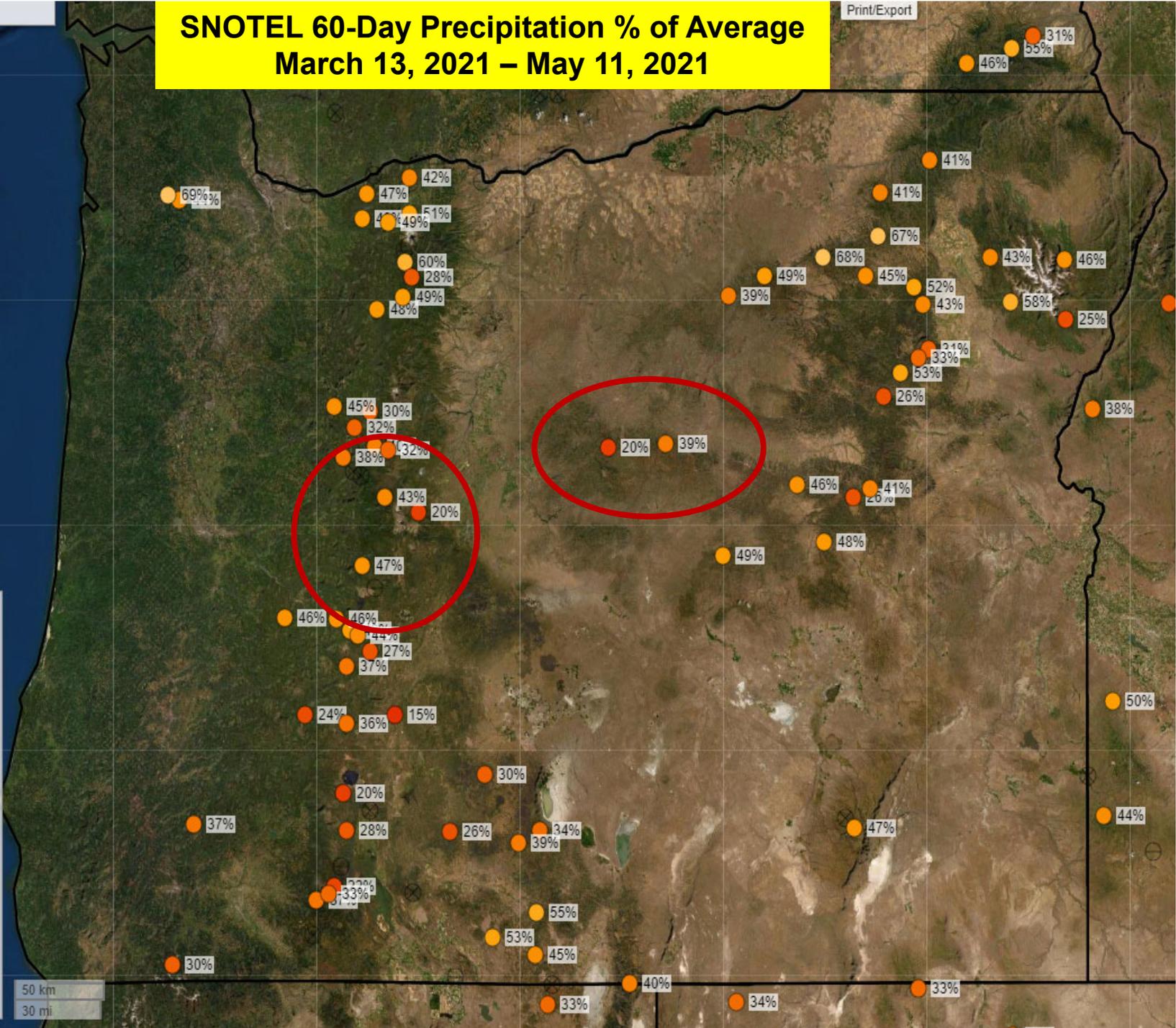
60 day Precipitation  
Percent NRCS 1981-2010  
Average  
March 13, 2021 through May  
11, 2021

≥ 200%
175%
150%
125%
100%
75%
50%
25%
≤ 0%

⊖ Observation missing  
⊗ Average missing

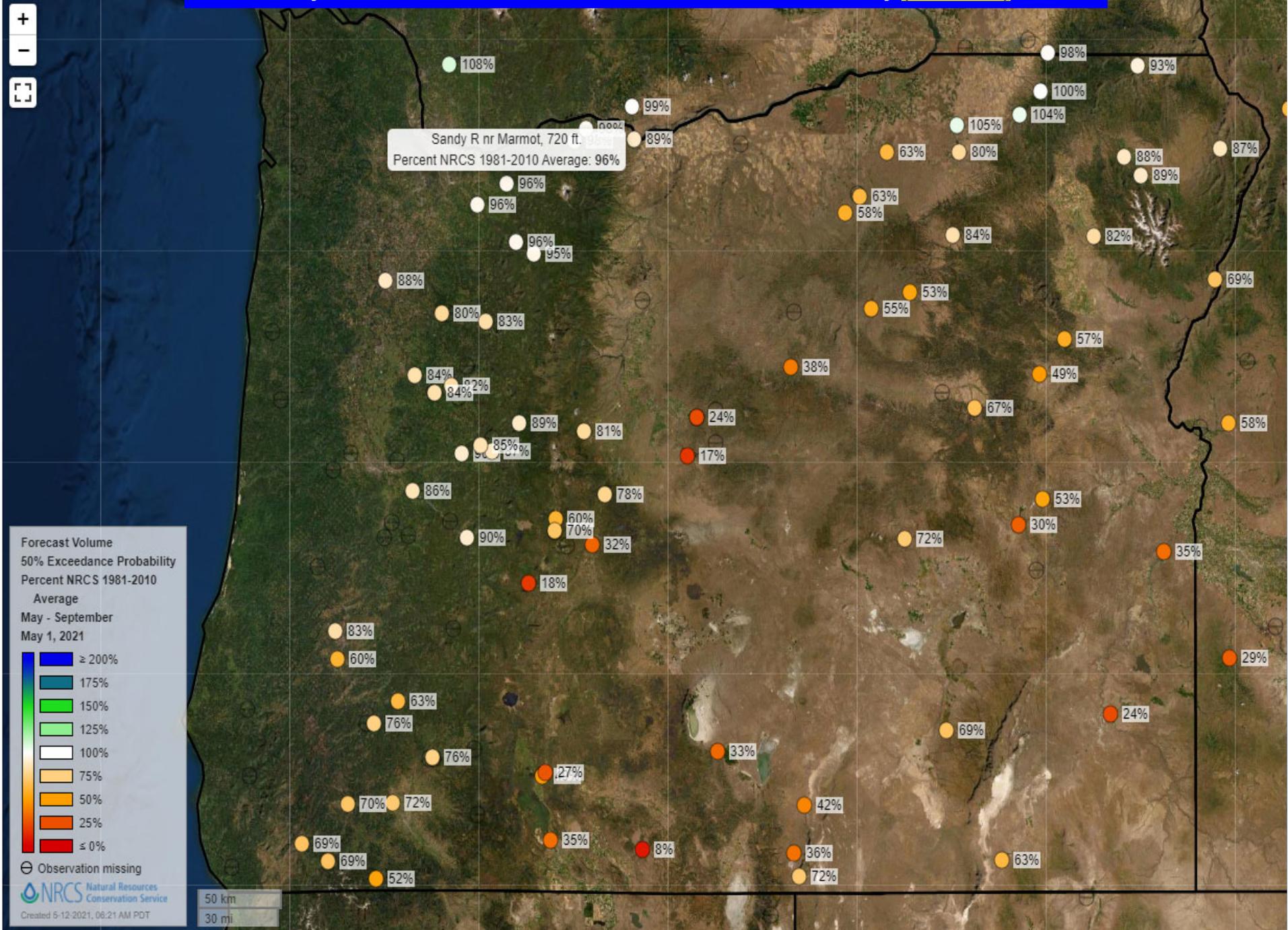
50 km  
30 mi

Created 5-12-2021, 06:18 AM PDT



Selected Stations: 880

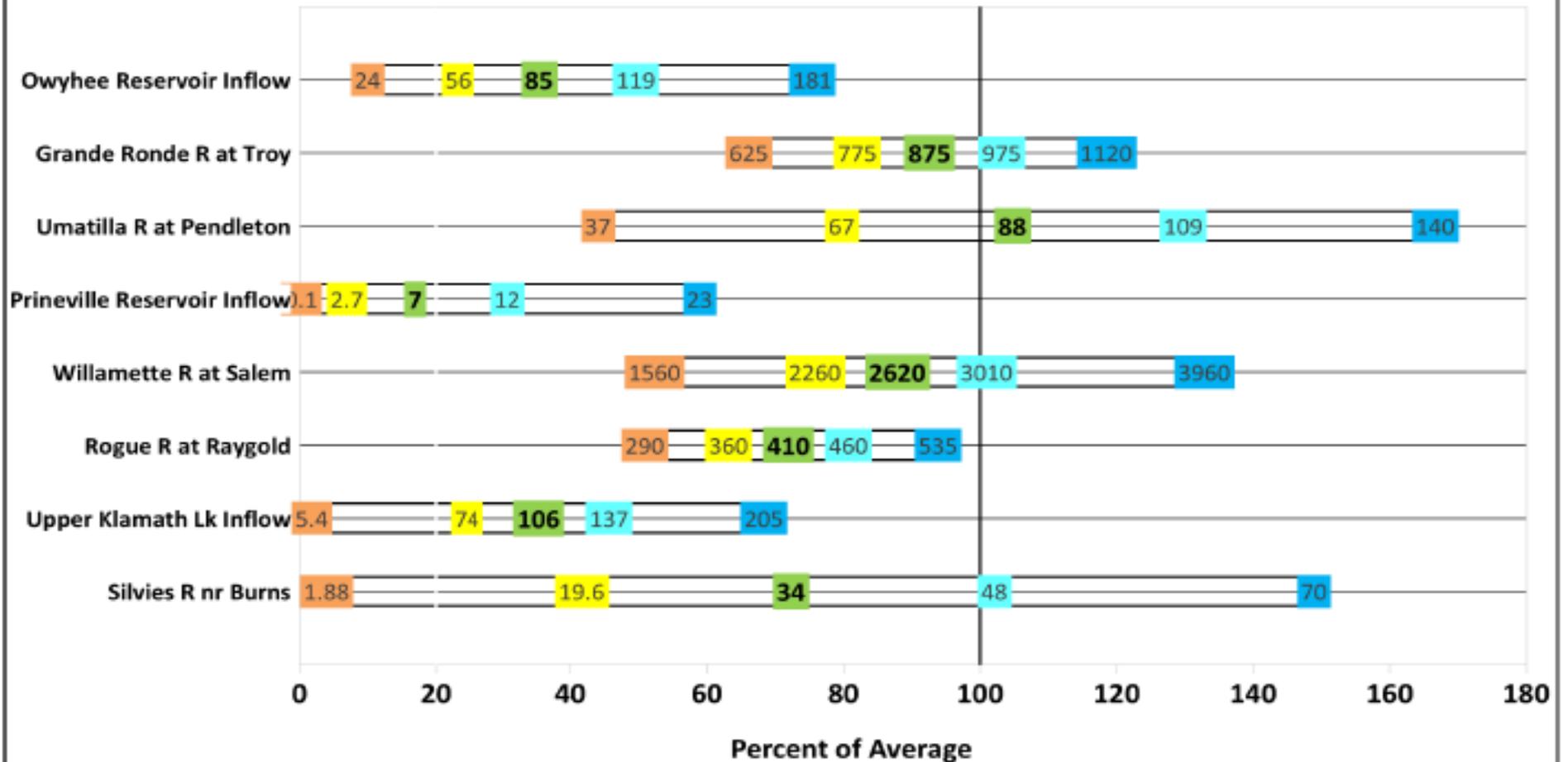
# May 1, 2021 – Forecast Volume, 50% Exceedance Probability (MAY-SEP)



MAY 1, 2021

## Summary of Streamflow Forecasts across Oregon

May through September Forecast Volumes at a Selection of Streamflow Points  
(Volumes listed in KAF)



Legend: ←-----Drier-----Future Conditions-----Wetter-----→

**90% Exceedance Forecast (KAF)**  
There is a 90% chance that flows will exceed this volume.

**70% Exceedance Forecast (KAF)**  
There is a 70% chance that flows will exceed this volume.

**50% Exceedance Forecast (KAF)**  
There is a 50% chance that flows will exceed this volume.

**30% Exceedance Forecast (KAF)**  
There is a 30% chance that flows will exceed this volume.

**10% Exceedance Forecast (KAF)**  
There is a 10% chance that flows will exceed this volume.

# Thank you

**In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.**

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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](mailto:program.intake@usda.gov).**

Oregon Water Supply Availability Committee – May 12, 2021



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503-414-3271

# NWS Portland

1



May 12, 2021

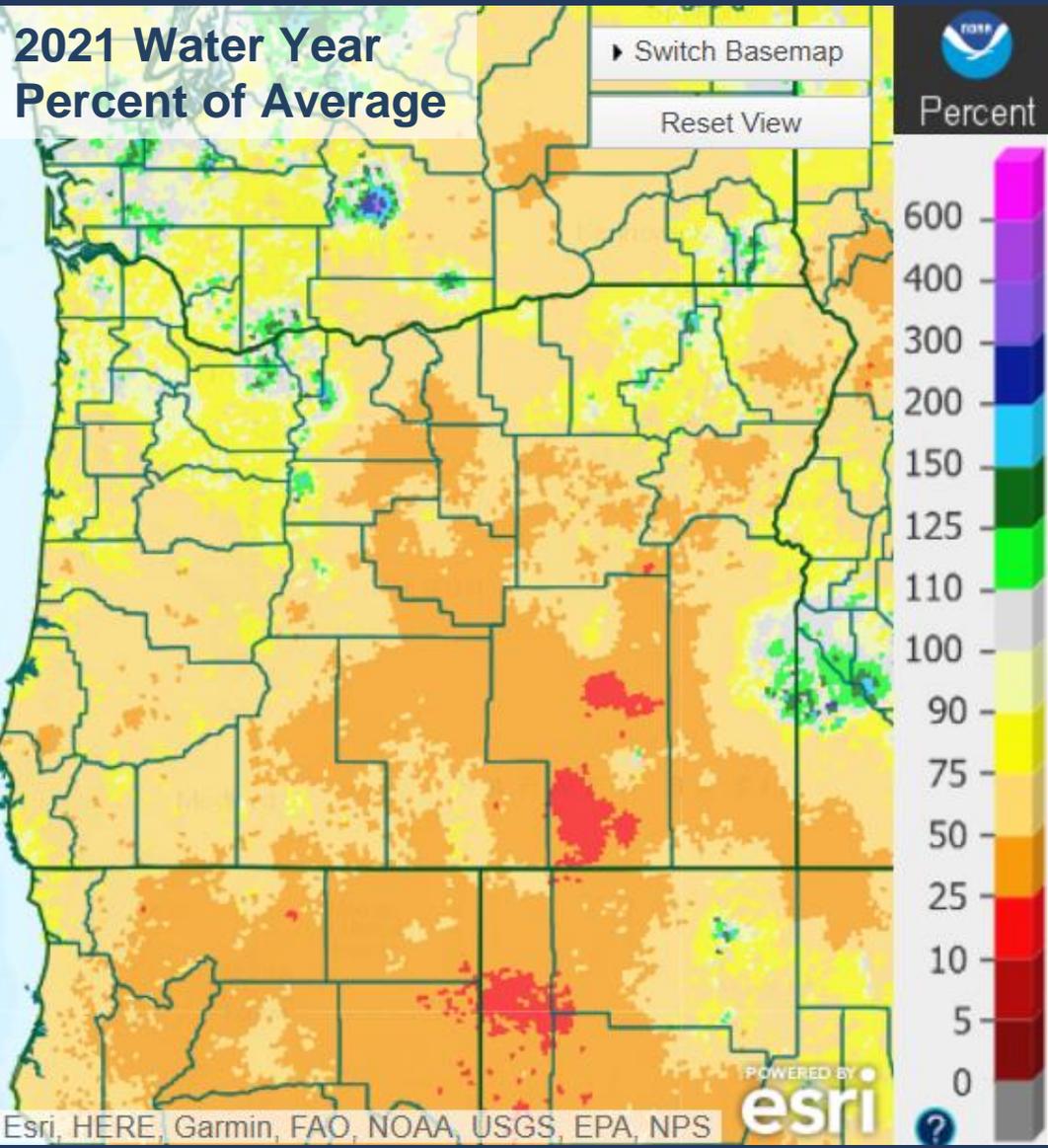
## NWS Update on Precipitation & Temperatures

Andy Bryant  
NOAA/NWS Portland  
Weather Forecast Office

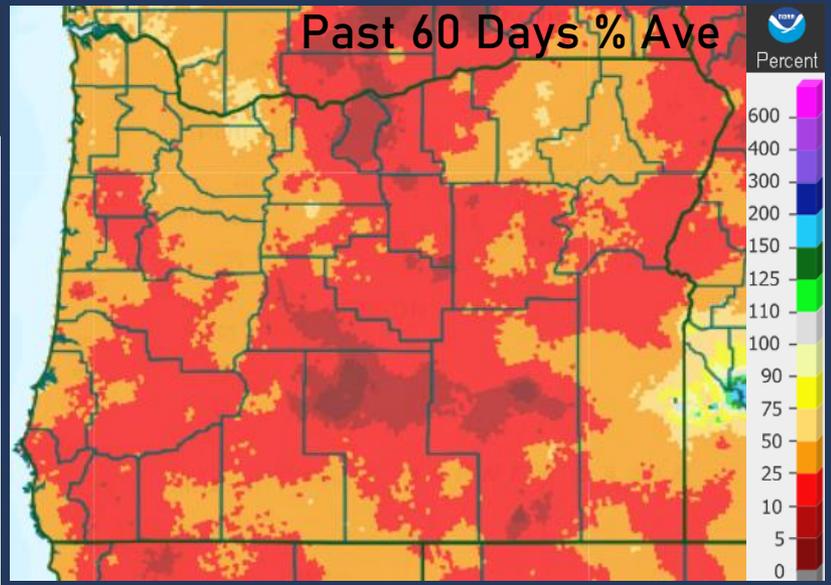


# Precipitation

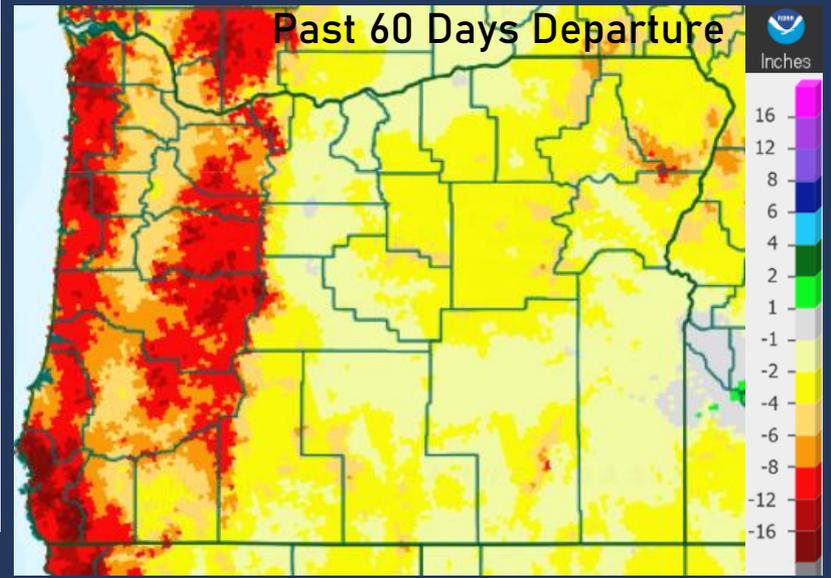
## 2021 Water Year Percent of Average



## Past 60 Days % Ave



## Past 60 Days Departure



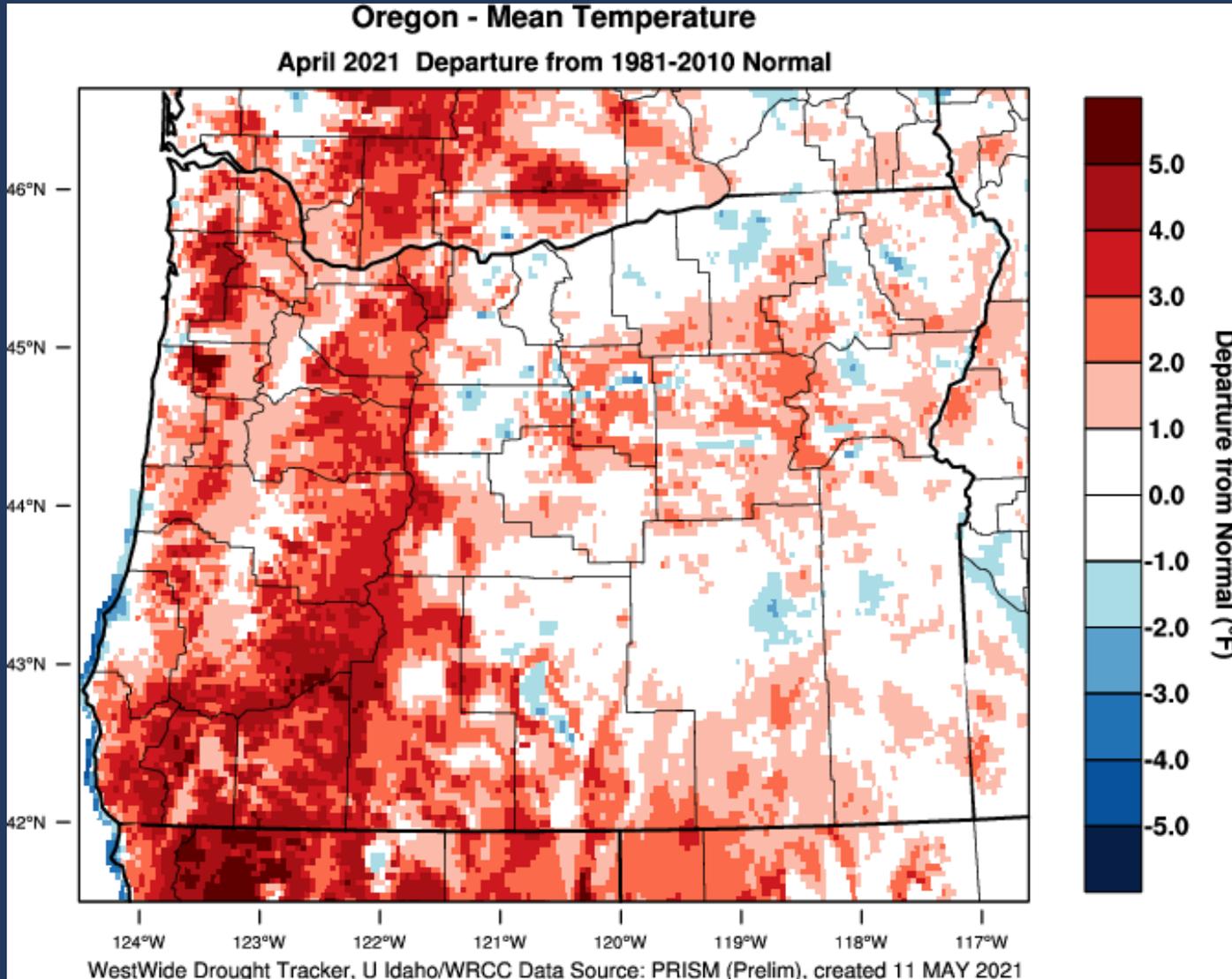
Precipitation Data as of May 10, 2021

Source: [water.weather.gov/precip/index.php?location\\_type=wfo&location\\_name=pqr](http://water.weather.gov/precip/index.php?location_type=wfo&location_name=pqr)



# Recent Temperatures

April 2021





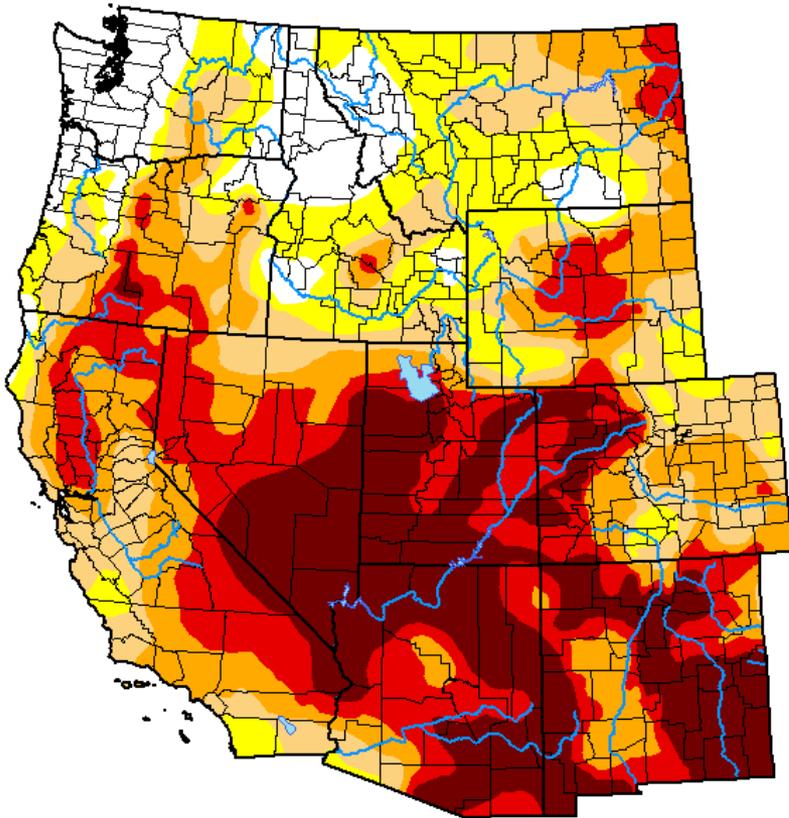
# Drought Monitor

## U.S. Drought Monitor West

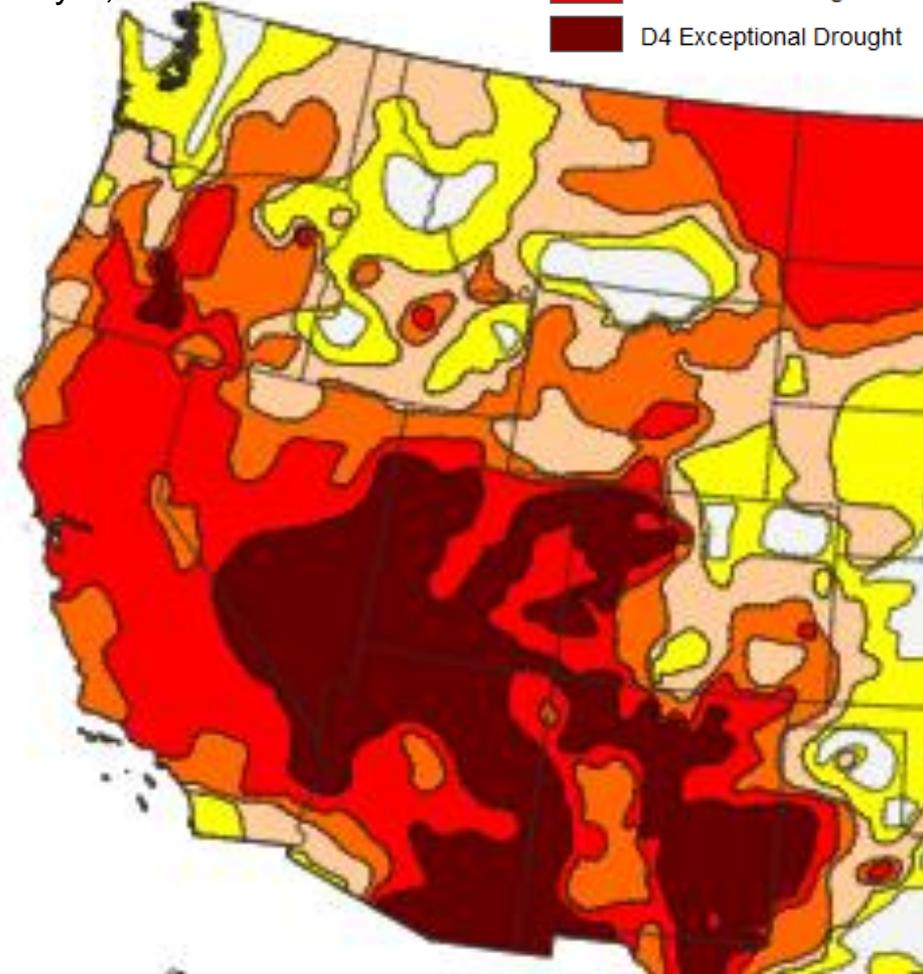
April 6, 2021  
(Released Thursday, Apr. 8, 2021)  
Valid 8 a.m. EDT

### Intensity:

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



May 4, 2021



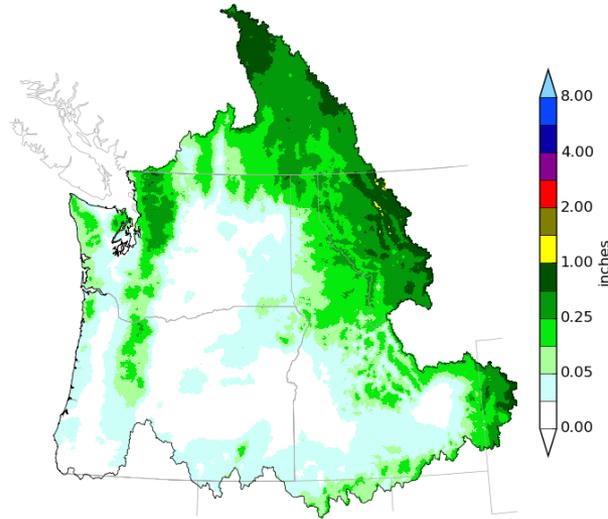


# Mid/Late May Outlook

## NWRFC 10-DAY PRECIPITATION



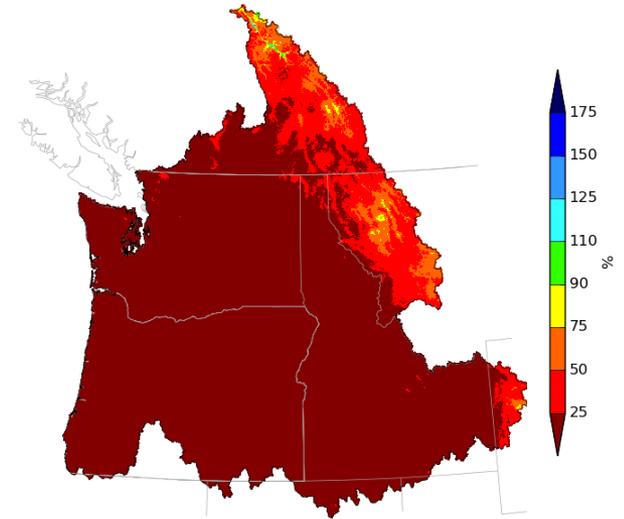
Northwest River Forecast Center  
10 Day QPF, Ending 12Z, 05/21/21



Creation Time: Tue May 11 14:32:54 UTC 2021



Northwest River Forecast Center  
10 Day QPF (Percent of Climatology), Ending 12Z, 05/21/21

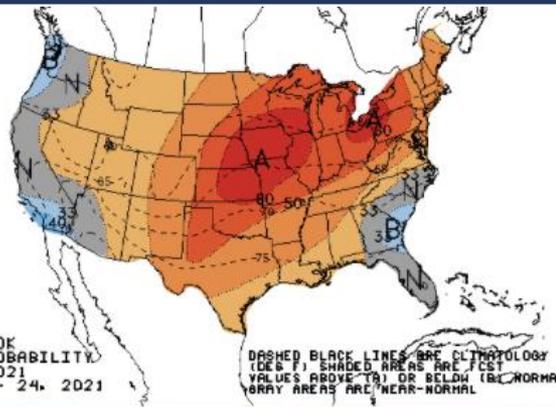


Creation Time: Tue May 11 14:33:48 UTC 2021

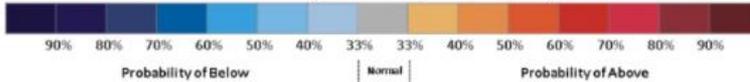
## CPC 8 - 14 DAY OUTLOOK



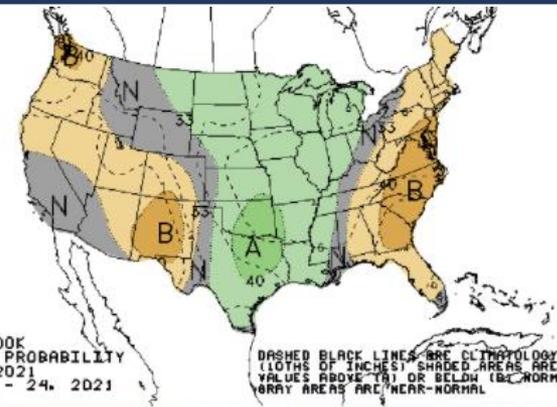
8-14 DAY OUTLOOK  
TEMPERATURE PROBABILITY  
MADE 10 MAY 2021  
VALID MAY 18 - 24, 2021



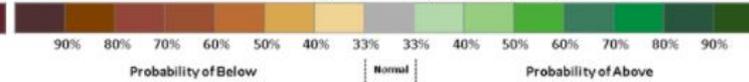
DASHED BLACK LINES ARE CLIMATOLOGY  
(10% OF INCHES) SHADED AREAS ARE FCS  
VALUES ABOVE (A) OR BELOW (B) NORMAL  
GRAY AREAS ARE NEAR-NORMAL



8-14 DAY OUTLOOK  
PRECIPITATION PROBABILITY  
MADE 10 MAY 2021  
VALID MAY 18 - 24, 2021



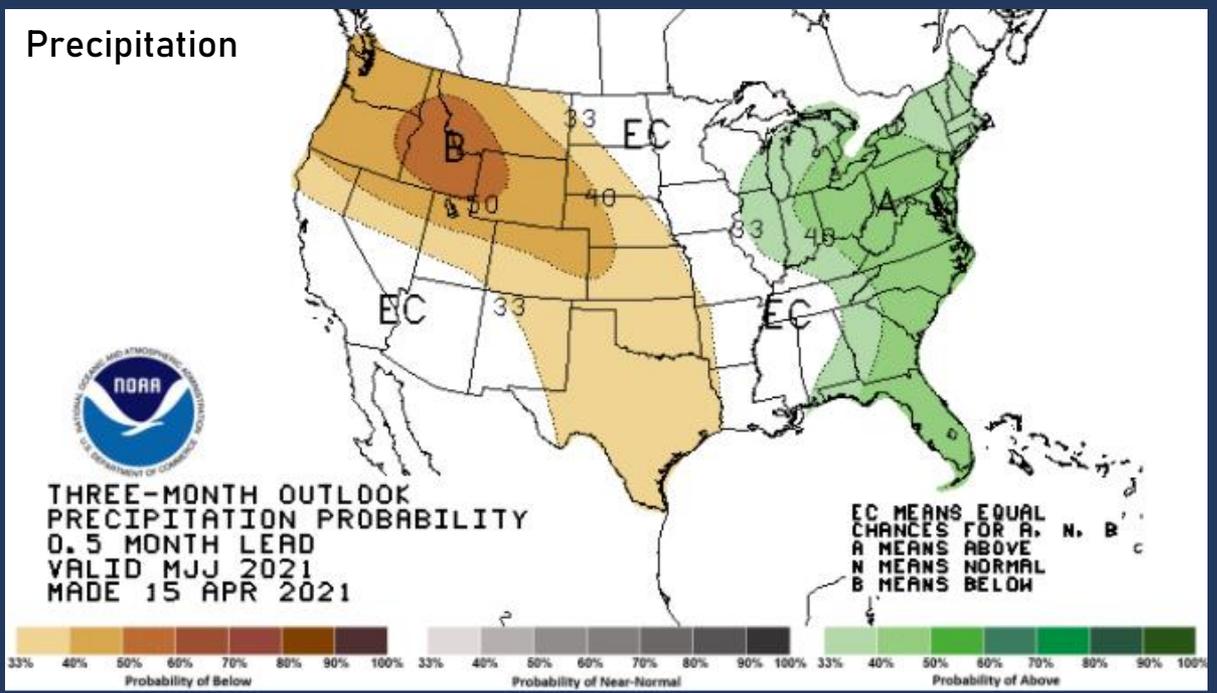
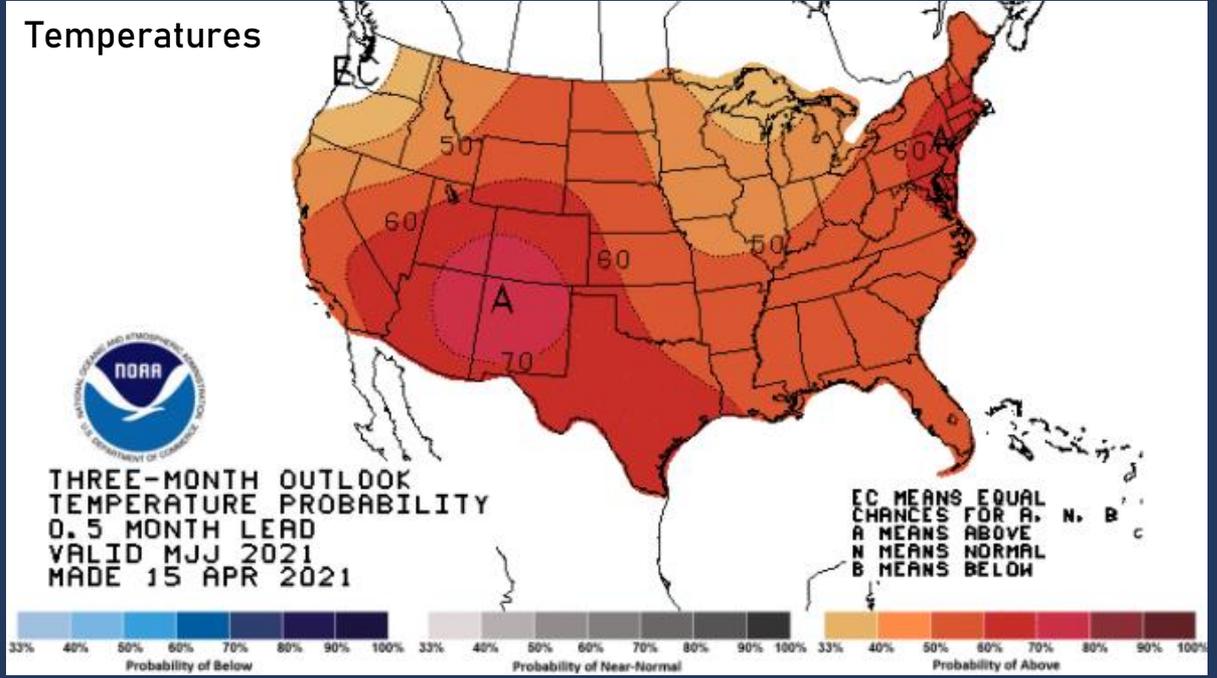
DASHED BLACK LINES ARE CLIMATOLOGY  
(10% OF INCHES) SHADED AREAS ARE FCS  
VALUES ABOVE (A) OR BELOW (B) NORMAL  
GRAY AREAS ARE NEAR-NORMAL





# Climate Prediction Center Outlook

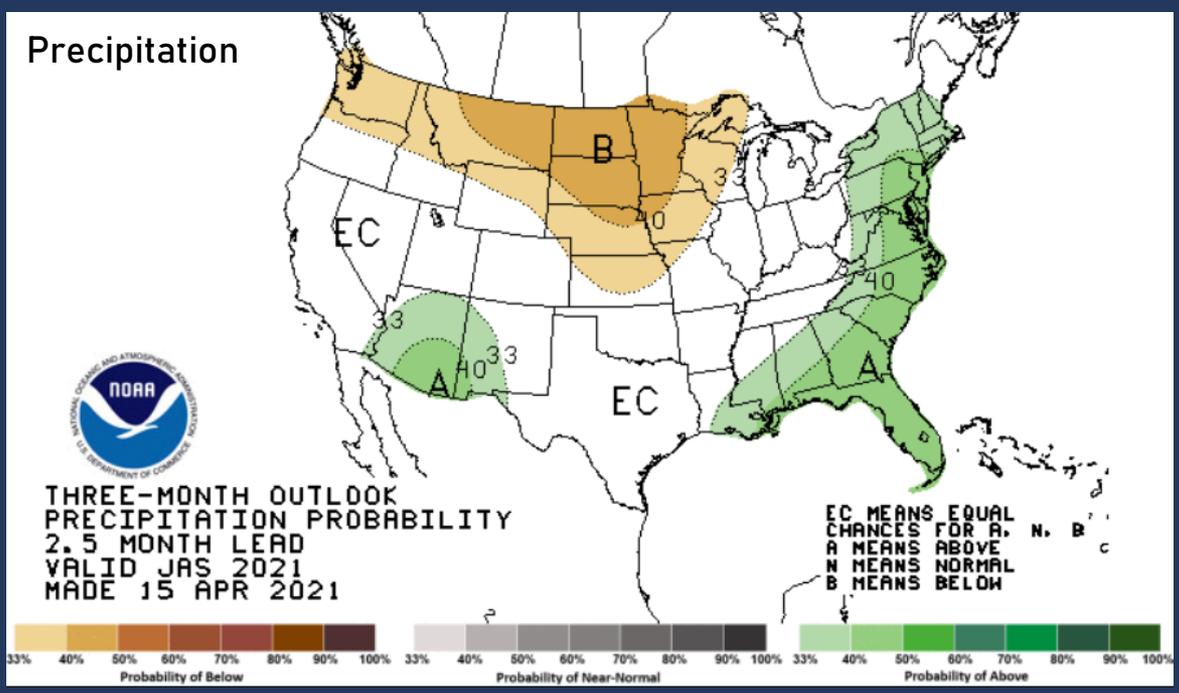
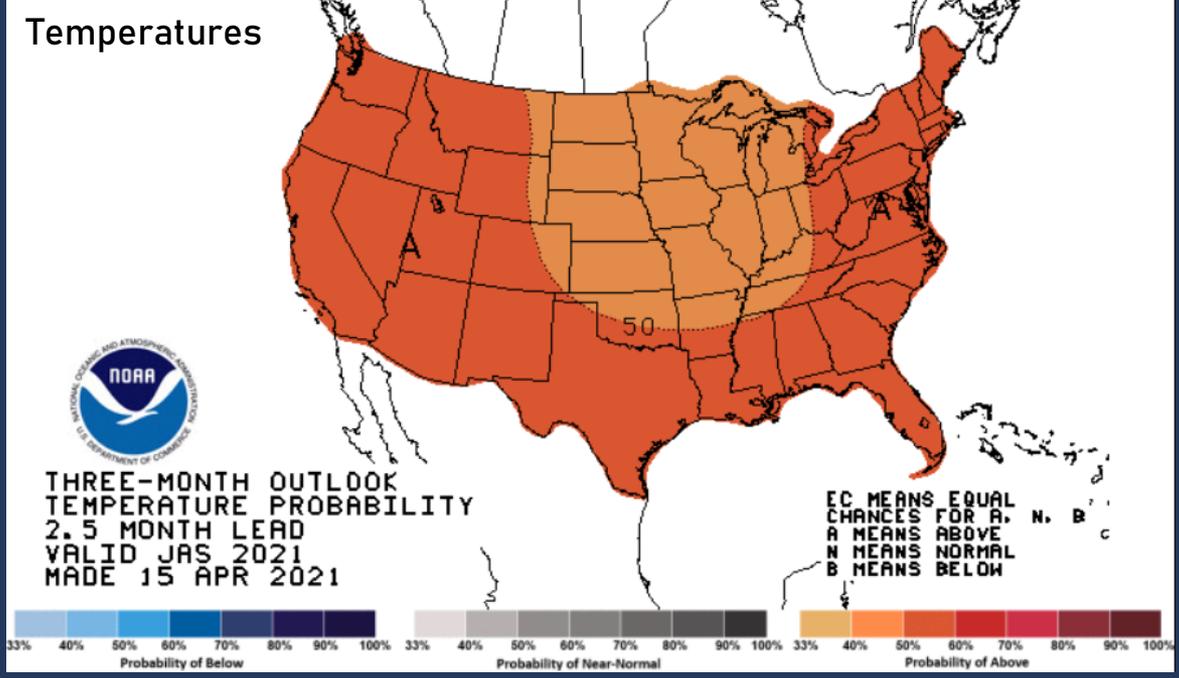
## May-June-July 2021





# Climate Prediction Center Outlook

## July-Aug-Sep 2021





# Observed Runoff Volume 2021 Water Year thus far - % of Normal



## Northwest River Forecast Center Observed Water Year Natural Runoff



River and Hydrology	Water Supply	Observations	Weather Forecasts	Climate	NWRFC
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Home    Zoom Out    --- Quick Zooms ---    ESP Issued: 2021-05-11    Ensemble Date: 2021-05-11    Permalink

Search  
Enter NWS ID:  
  
GO

Map Overlays

- NWRFC Boundary
- NWRFC Basins
- NWS HSAs
- Counties

ESP Natural Forecast

- Natural Status
- Natural % of Normal
- Rank (ASC)
- Rank (DESC)
- Exceedance (%)
- Percentile (%)

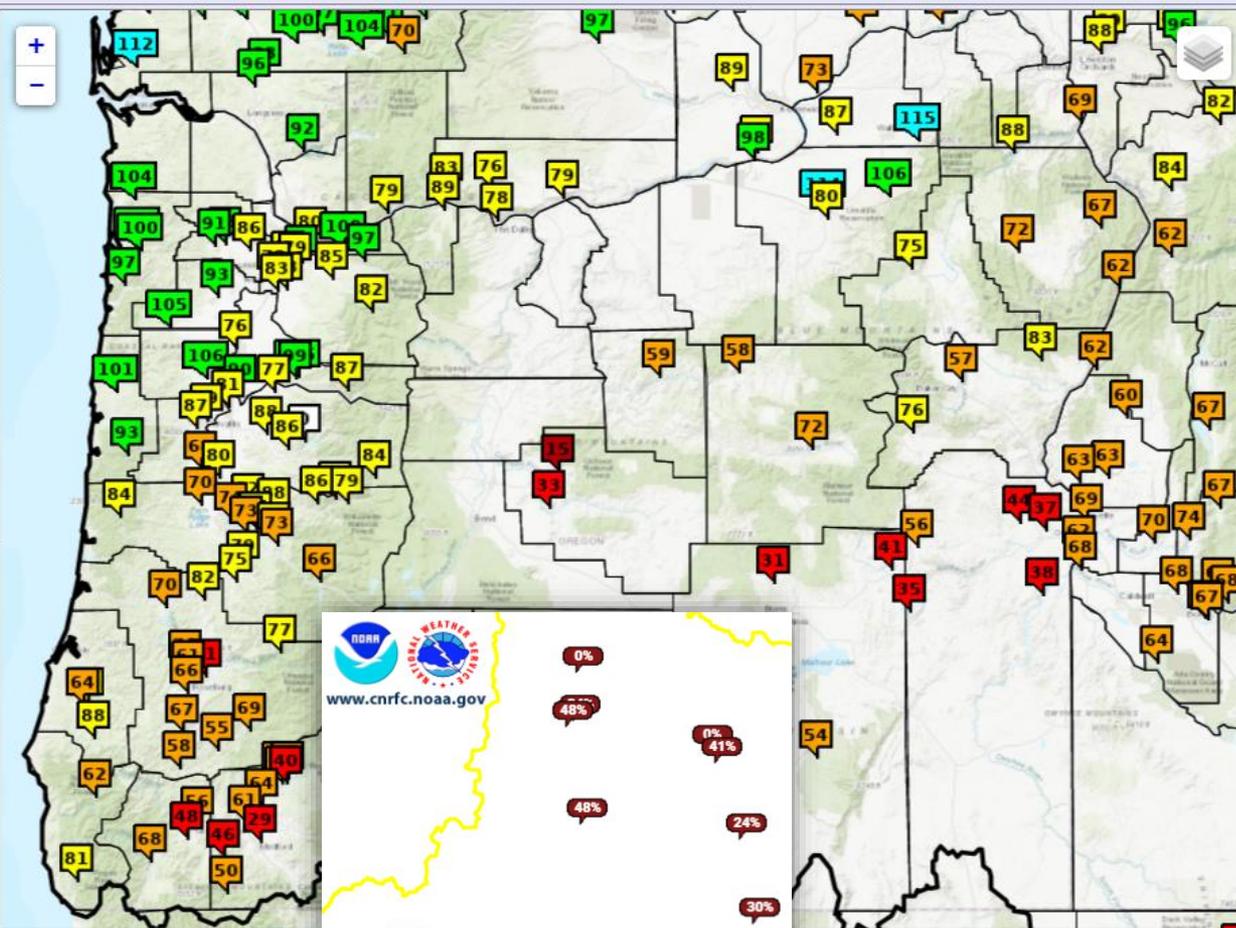
Natural Runoff

- Runoff Status
- Runoff % of Normal

Natural Runoff

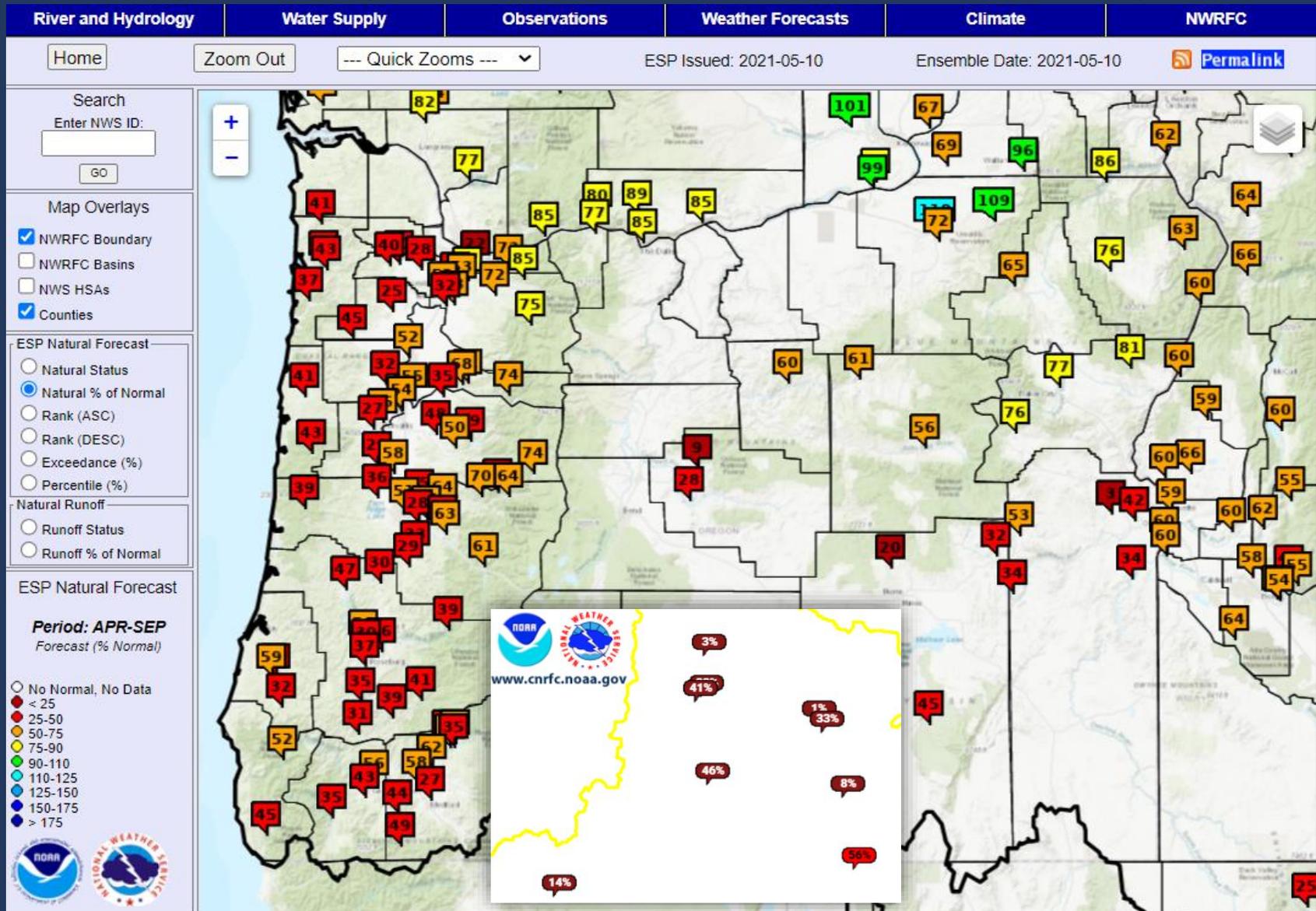
Period: Oct thru Curr  
(% Normal)

- No Normal, No data
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150
- 150-175
- > 175



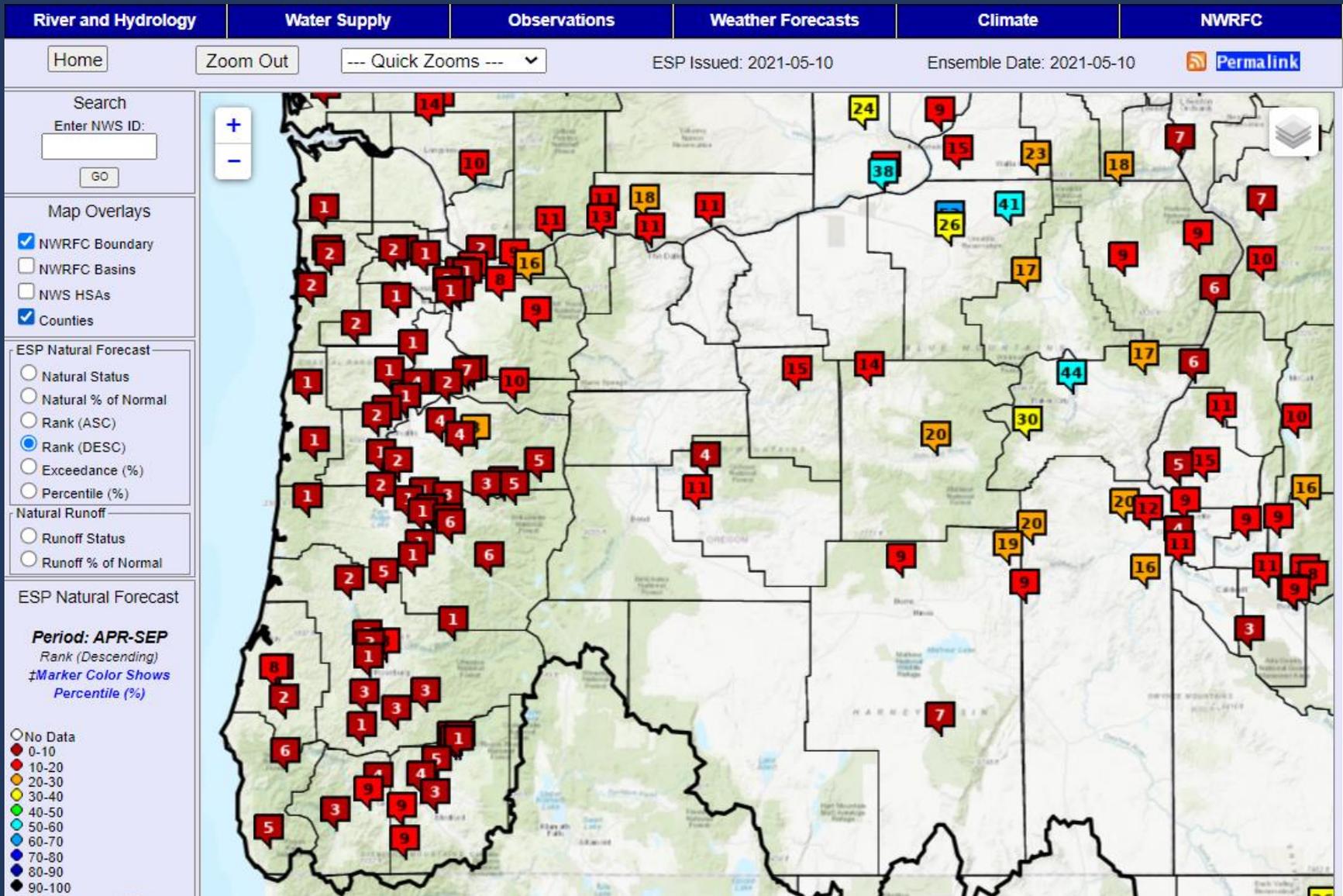


# Streamflow Volume Forecast April – September ESP Natural - % of Average





# Streamflow Volume Forecast April - September ESP Natural - Ranking



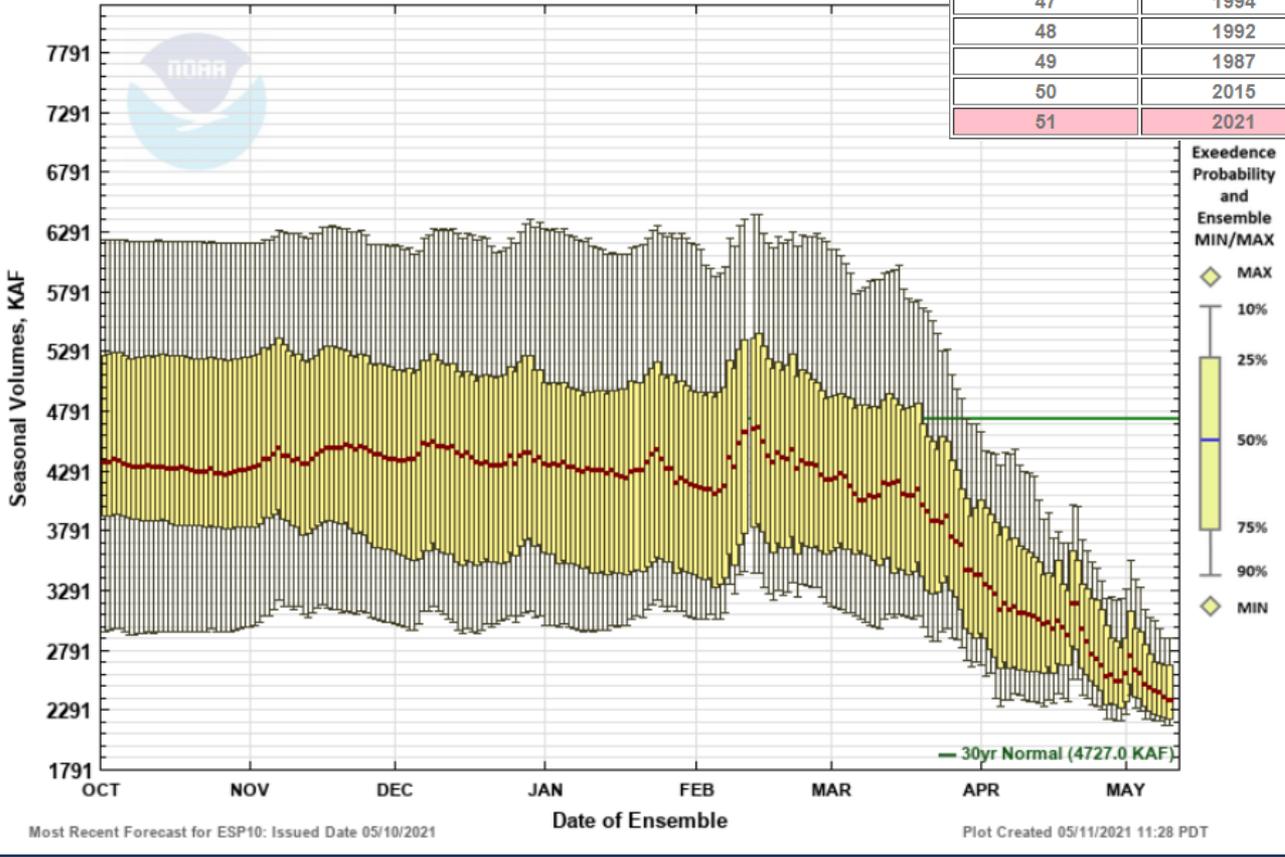


# Streamflow Volume Forecast Willamette River at Salem

**WILLAMETTE - AT SALEM (SLMO3)**  
**Period Rankings - 1970 to 2021**  
 APR-SEP Normal -- 4727 (KAF)

Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability
42	1986	3641.08	77	80.769 %
43	2001	3290.73	70	82.692 %
44	2007	3142.92	66	84.615 %
45	2016	3109.05	66	86.538 %
46	1973	2982.05	63	88.462 %
47	1994	2940.84	62	90.385 %
48	1992	2912.56	62	92.308 %
49	1987	2578.52	55	94.231 %
50	2015	2466.00	52	96.154 %
51	2021	2380.95	50	98.077 %

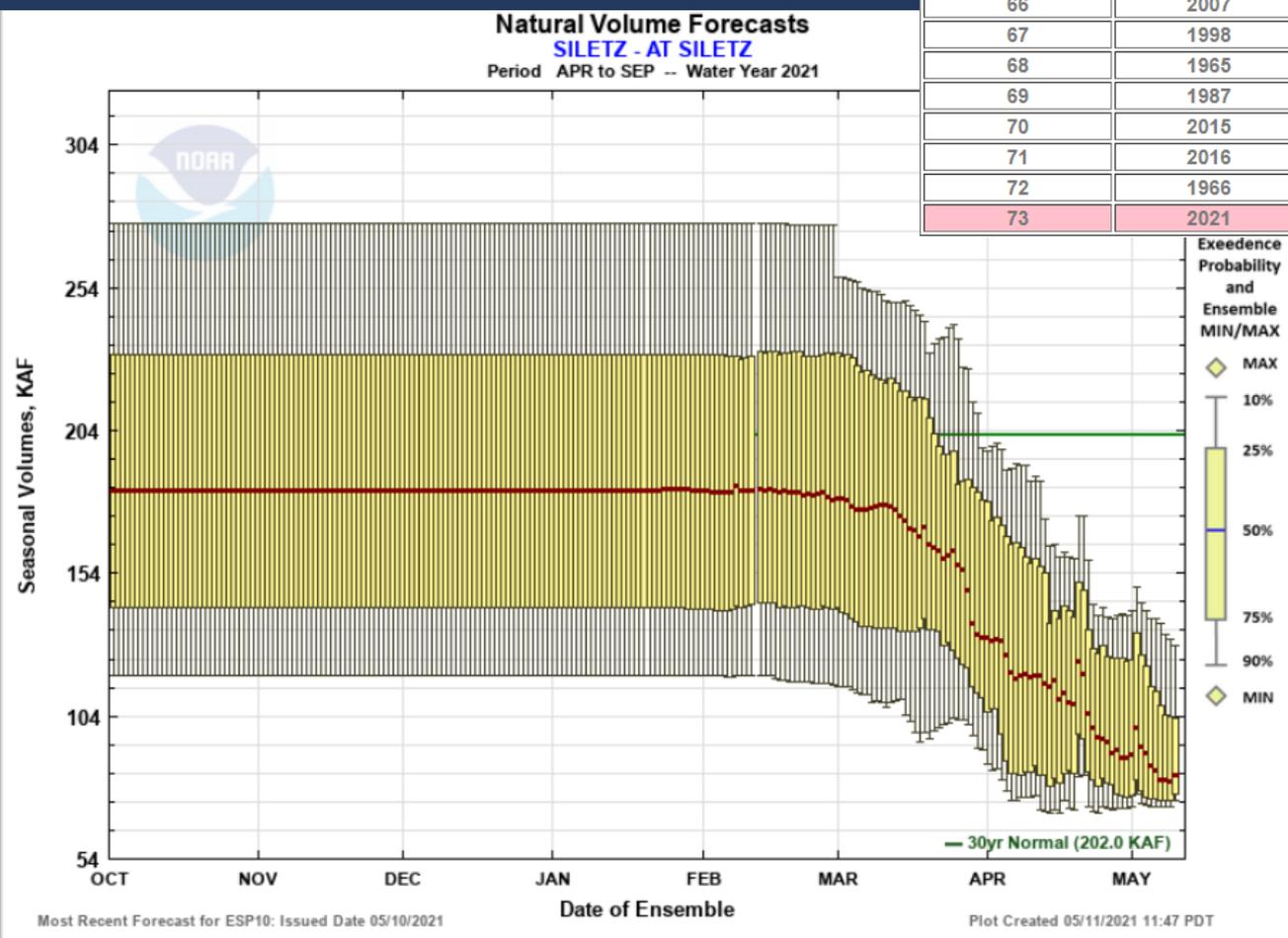
**Water Supply Forecasts**  
**WILLAMETTE - AT SALEM**  
 Period APR to SEP -- Water Year 2021





# Streamflow Volume Forecast Siletz River at Siletz

SILETZ - AT SILETZ (SILO3) Period Rankings - 1948 to 2021 APR-SEP Normal -- 202 (KAF)				
Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability*
64	1989	135.80	67	86.486 %
65	2006	134.30	66	87.838 %
66	2007	131.10	65	89.189 %
67	1998	124.10	61	90.541 %
68	1965	117.60	58	91.892 %
69	1987	105.70	52	93.243 %
70	2015	104.20	52	94.595 %
71	2016	103.42	51	95.946 %
72	1966	101.80	50	97.297 %
73	2021	83.37	41	98.649 %



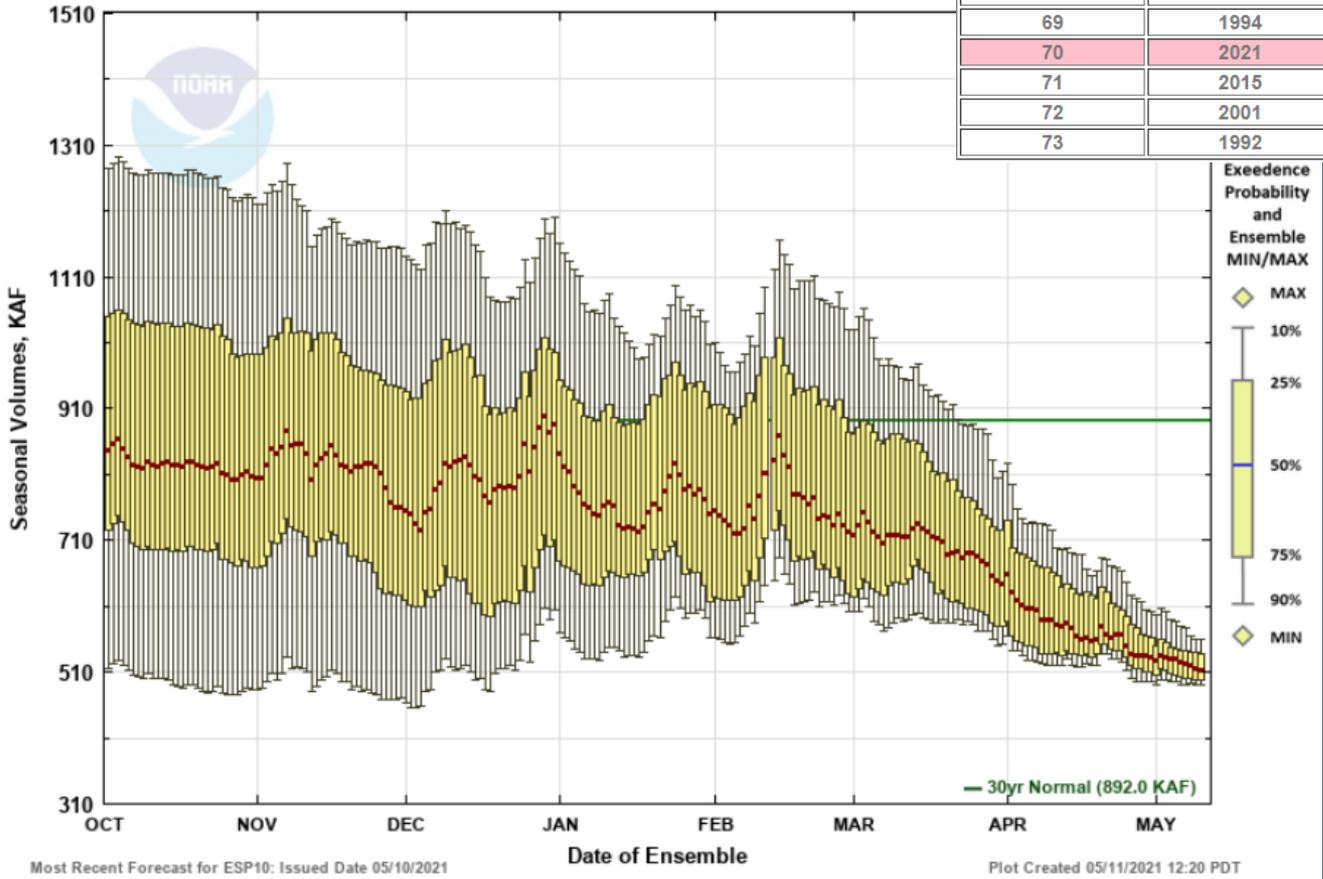


# Streamflow Volume Forecast Rogue River at Raygold

**ROGUE - AT RAYGOLD (RYGO3)**  
**Period Rankings - 1948 to 2021**  
 APR-SEP Normal -- 892 (KAF)

Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability*
64	1988	652.90	73	86.486 %
65	1987	636.30	71	87.838 %
66	1981	616.20	69	89.189 %
67	1977	577.90	65	90.541 %
68	1968	569.70	64	91.892 %
69	1994	517.00	58	93.243 %
70	2021	513.68	58	94.595 %
71	2015	511.10	57	95.946 %
72	2001	484.60	54	97.297 %
73	1992	406.90	46	98.649 %

**Natural Volume Forecasts**  
**ROGUE - AT RAYGOLD**  
 Period APR to SEP -- Water Year 2021





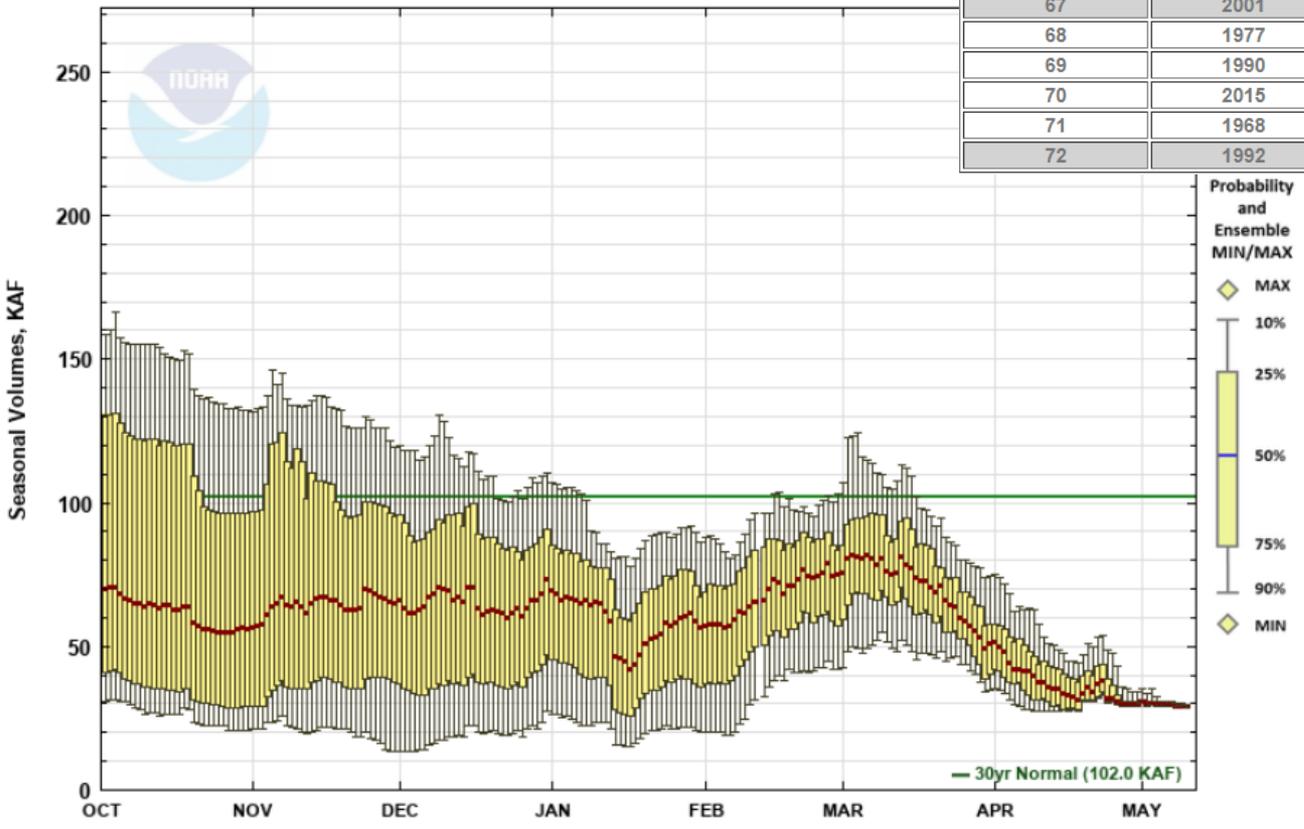
# Streamflow Volume Forecast

## Crooked River near Prineville

**CROOKED - NR PRINEVILLE (PRV03)**  
**Period Rankings - 1948 to 2021**  
 APR-SEP Normal -- 102 (KAF)

Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability*
62	1991	30.70	30	84.932 %
63	2021	29.06	28	86.301 %
64	2014	28.40	28	87.671 %
65	1973	26.20	26	89.041 %
66	1994	24.20	24	90.411 %
67	2001	22.30	22	91.781 %
68	1977	19.60	19	93.151 %
69	1990	15.70	15	94.521 %
70	2015	9.00	9	95.890 %
71	1968	8.80	9	97.260 %
72	1992	7.70	8	98.630 %

**Natural Volume Forecasts**  
**CROOKED - NR PRINEVILLE**  
 Period APR to SEP -- Water Year 2021



Most Recent Forecast for ESP10: Issued Date 05/10/2021

Plot Created 05/11/2021 12:27 PDT

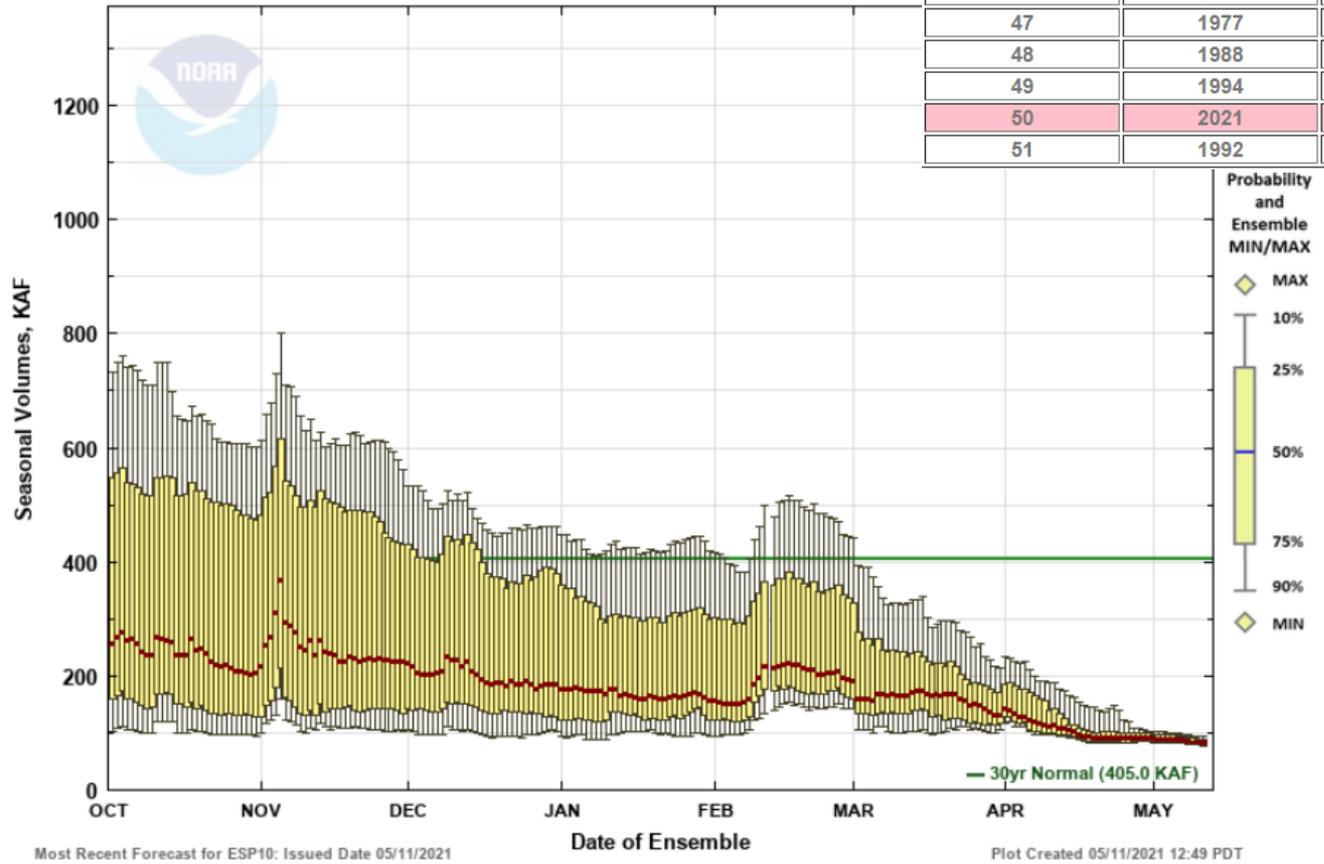


# Streamflow Volume Forecast Owyhee River at Owyhee Dam

**OWYHEE - OWYHEE DAM (OWYO3)**  
**Period Rankings - 1970 to 2021**  
APR-SEP Normal -- 405 (KAF)

Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability*
42	2018	127.29	31	80.769 %
43	1987	117.64	29	82.692 %
44	2007	116.58	29	84.615 %
45	2015	108.00	27	86.538 %
46	2013	103.20	25	88.462 %
47	1977	98.27	24	90.385 %
48	1988	95.62	24	92.308 %
49	1994	90.47	22	94.231 %
50	2021	82.52	20	96.154 %
51	1992	71.71	18	98.077 %

**Water Supply Forecasts**  
**OWYHEE - OWYHEE DAM**  
Period APR to SEP -- Water Year 2021



Most Recent Forecast for ESP10: Issued Date 05/11/2021

Plot Created 05/11/2021 12:49 PDT



# Northwest River Forecast Center

## Water Supply Web Briefings

Last scheduled briefing of the season: June 3<sup>rd</sup>, 10 am PDT

[https://www.nwrfc.noaa.gov/water\\_supply/ws\\_schd.cgi](https://www.nwrfc.noaa.gov/water_supply/ws_schd.cgi)

Also note that NWS Portland will issue Drought Information Statements on a monthly basis starting in July.

The latest water supply summary or drought statement can be viewed at:  
<https://www.weather.gov/media/pqr/WaterSupplyOutlook.pdf>



# Observed Runoff Volume 2021 Water Year thus far - % of Normal



## Northwest River Forecast Center Observed Water Year Natural Runoff



River and Hydrology	Water Supply	Observations	Weather Forecasts	Climate	NWRFC
---------------------	--------------	--------------	-------------------	---------	-------

Home    Zoom Out    --- Quick Zooms ---    ESP Issued: 2021-05-11    Ensemble Date: 2021-05-11    Permalink

Search  
Enter NWS ID:  
  
GO

Map Overlays

- NWRFC Boundary
- NWRFC Basins
- NWS HSAs
- Counties

ESP Natural Forecast

- Natural Status
- Natural % of Normal
- Rank (ASC)
- Rank (DESC)
- Exceedance (%)
- Percentile (%)

Natural Runoff

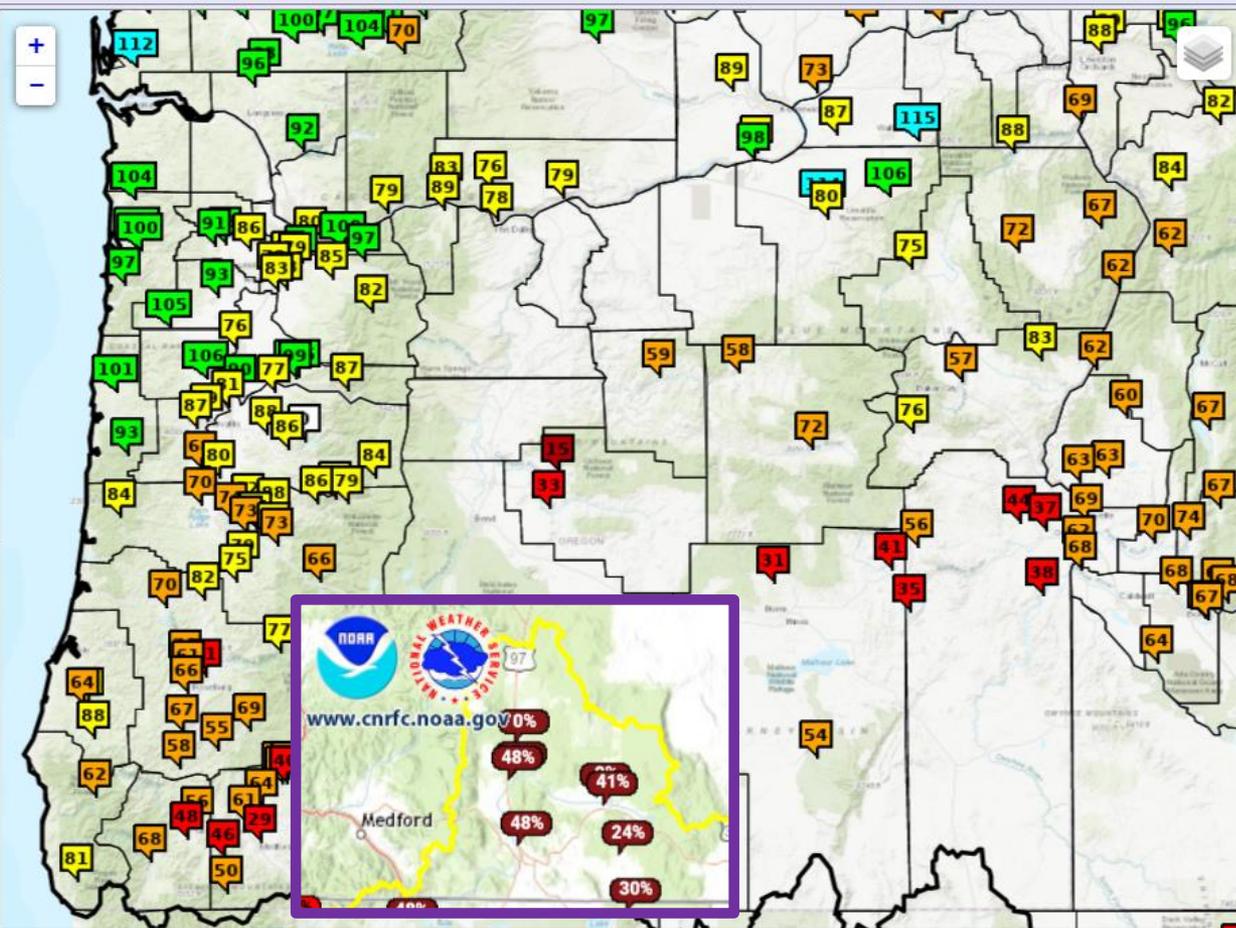
- Runoff Status
- Runoff % of Normal

Natural Runoff

Period: Oct thru Curr  
(% Normal)

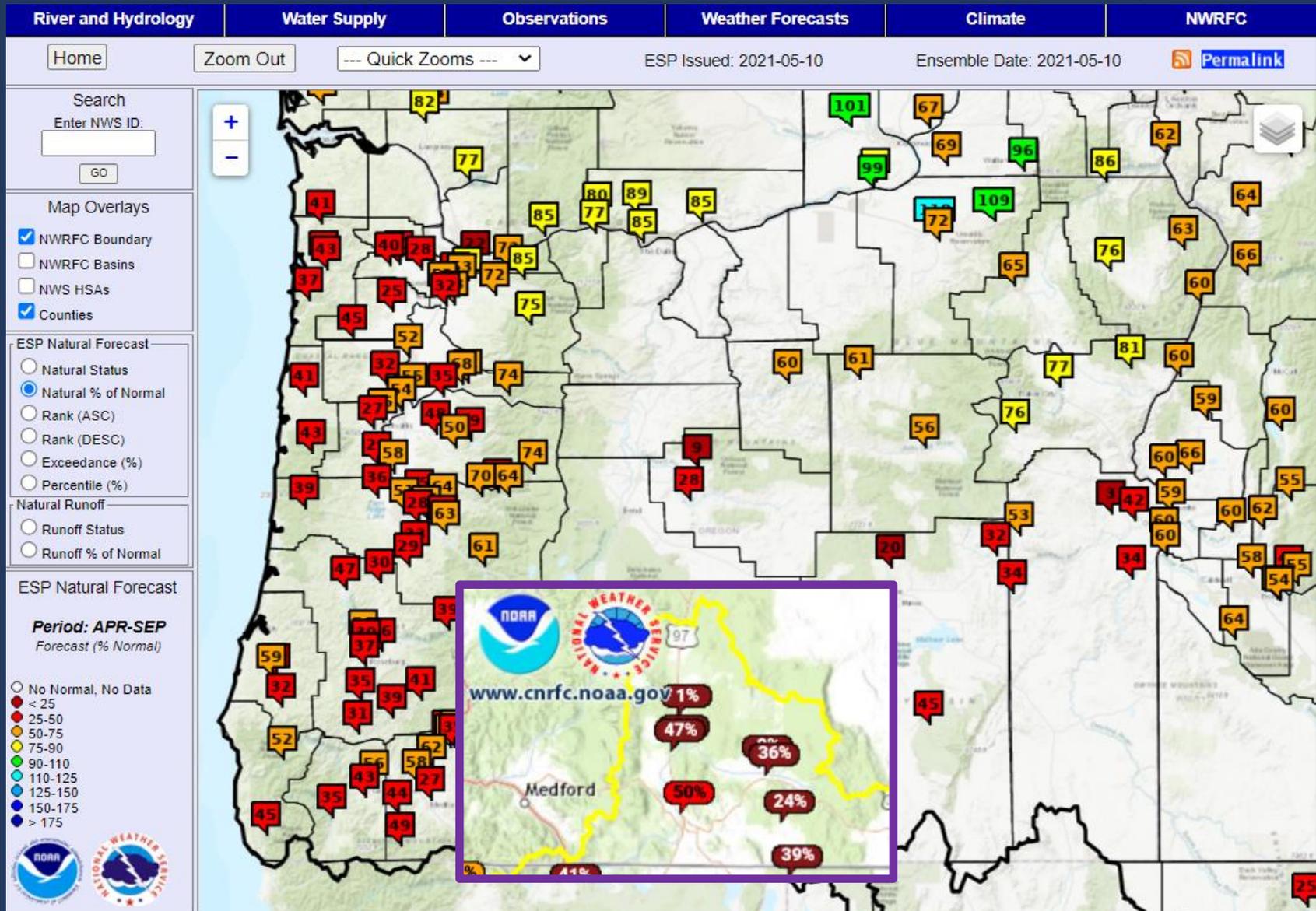
- No Normal, No data
- < 25
- 25-50
- 50-75
- 75-90
- 90-110
- 110-125
- 125-150
- 150-175
- > 175





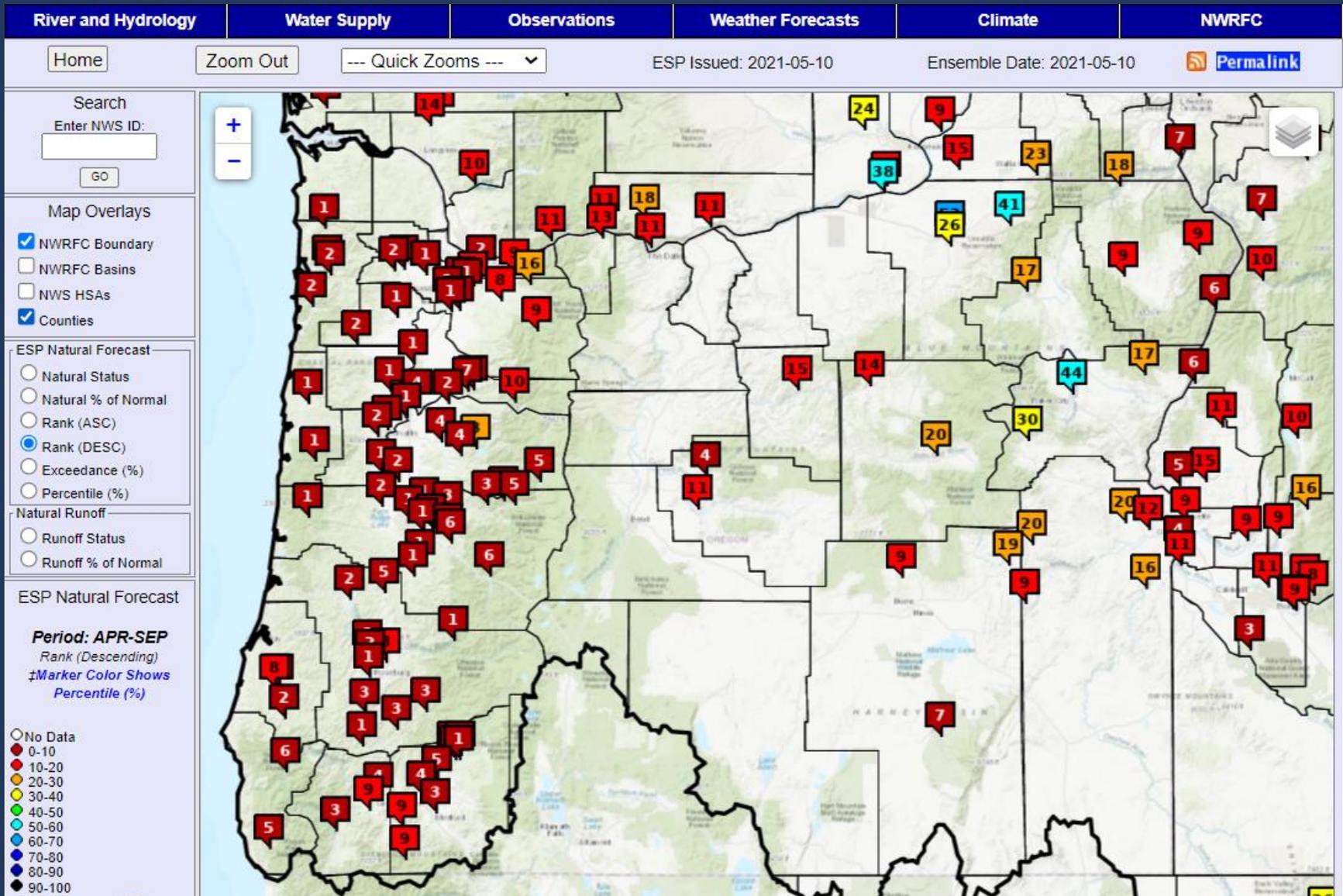


# Streamflow Volume Forecast April - September ESP Natural - % of Average





# Streamflow Volume Forecast April – September ESP Natural - Ranking



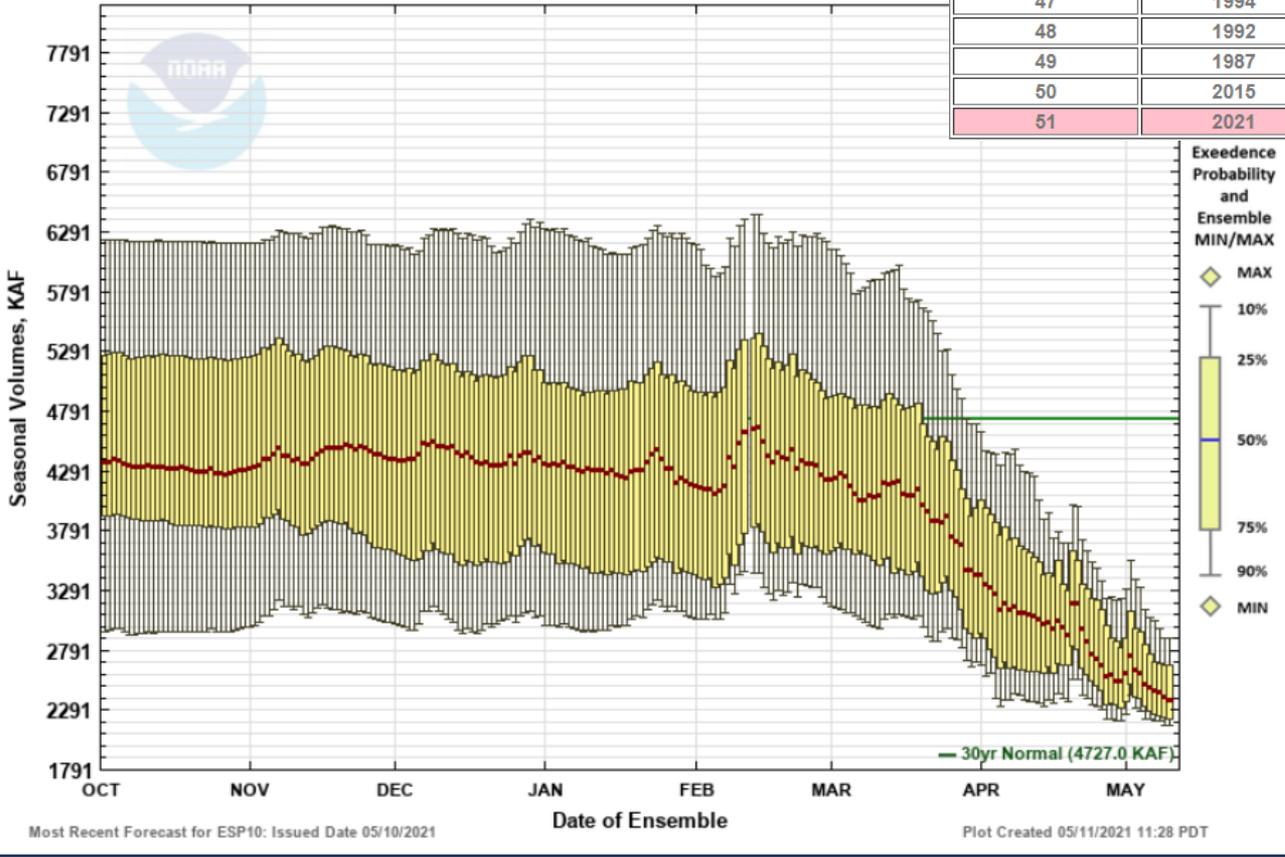


# Streamflow Volume Forecast Willamette River at Salem

**WILLAMETTE - AT SALEM (SLM03)**  
**Period Rankings - 1970 to 2021**  
 APR-SEP Normal -- 4727 (KAF)

Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability
42	1986	3641.08	77	80.769 %
43	2001	3290.73	70	82.692 %
44	2007	3142.92	66	84.615 %
45	2016	3109.05	66	86.538 %
46	1973	2982.05	63	88.462 %
47	1994	2940.84	62	90.385 %
48	1992	2912.56	62	92.308 %
49	1987	2578.52	55	94.231 %
50	2015	2466.00	52	96.154 %
51	2021	2380.95	50	98.077 %

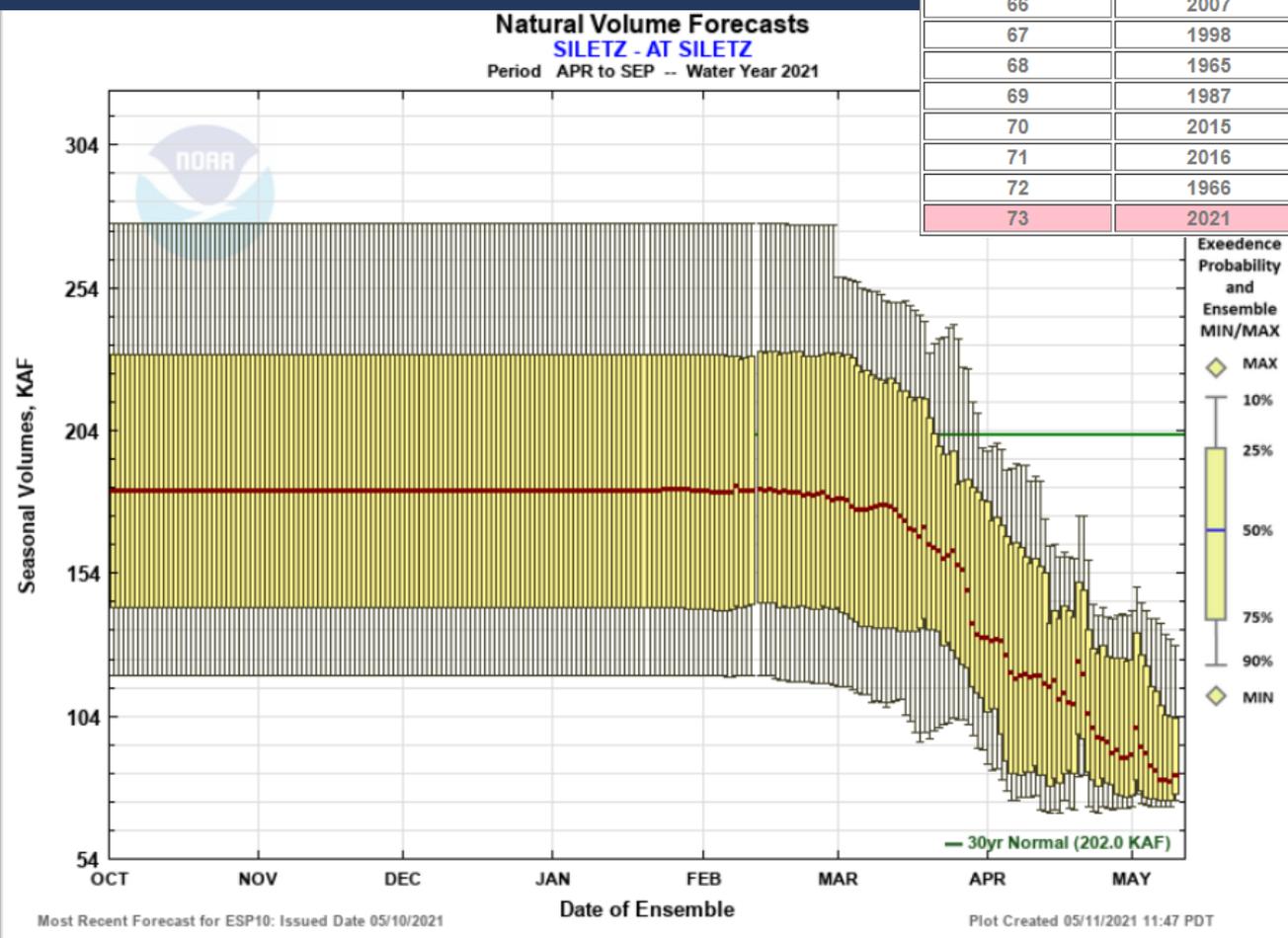
**Water Supply Forecasts**  
**WILLAMETTE - AT SALEM**  
 Period APR to SEP -- Water Year 2021





# Streamflow Volume Forecast Siletz River at Siletz

SILETZ - AT SILETZ (SILO3) Period Rankings - 1948 to 2021 APR-SEP Normal -- 202 (KAF)				
Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability*
64	1989	135.80	67	86.486 %
65	2006	134.30	66	87.838 %
66	2007	131.10	65	89.189 %
67	1998	124.10	61	90.541 %
68	1965	117.60	58	91.892 %
69	1987	105.70	52	93.243 %
70	2015	104.20	52	94.595 %
71	2016	103.42	51	95.946 %
72	1966	101.80	50	97.297 %
73	2021	83.37	41	98.649 %



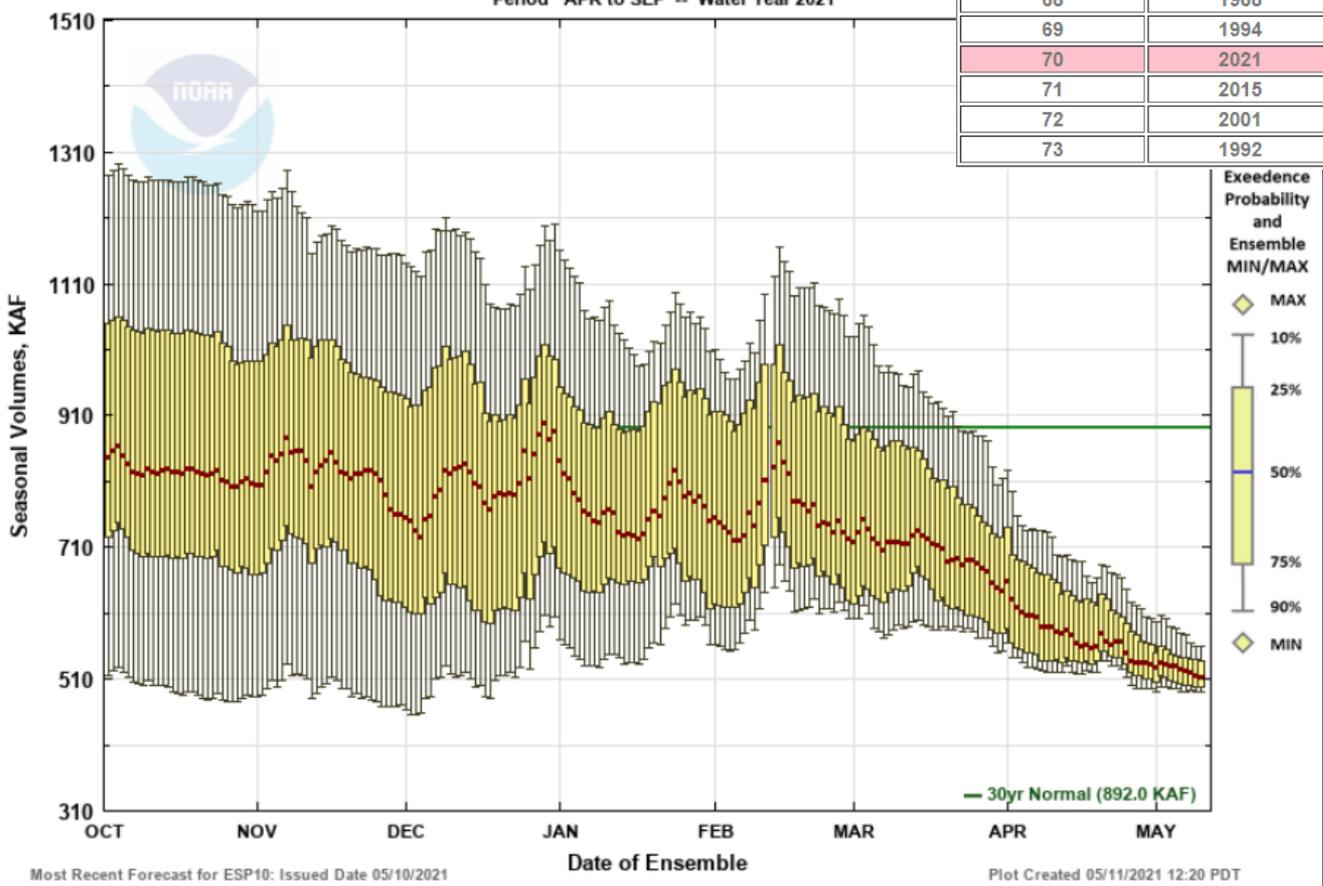


# Streamflow Volume Forecast Rogue River at Raygold

**ROGUE - AT RAYGOLD (RYGO3)**  
**Period Rankings - 1948 to 2021**  
 APR-SEP Normal -- 892 (KAF)

Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability*
64	1988	652.90	73	86.486 %
65	1987	636.30	71	87.838 %
66	1981	616.20	69	89.189 %
67	1977	577.90	65	90.541 %
68	1968	569.70	64	91.892 %
69	1994	517.00	58	93.243 %
70	2021	513.68	58	94.595 %
71	2015	511.10	57	95.946 %
72	2001	484.60	54	97.297 %
73	1992	406.90	46	98.649 %

**Natural Volume Forecasts**  
**ROGUE - AT RAYGOLD**  
 Period APR to SEP -- Water Year 2021



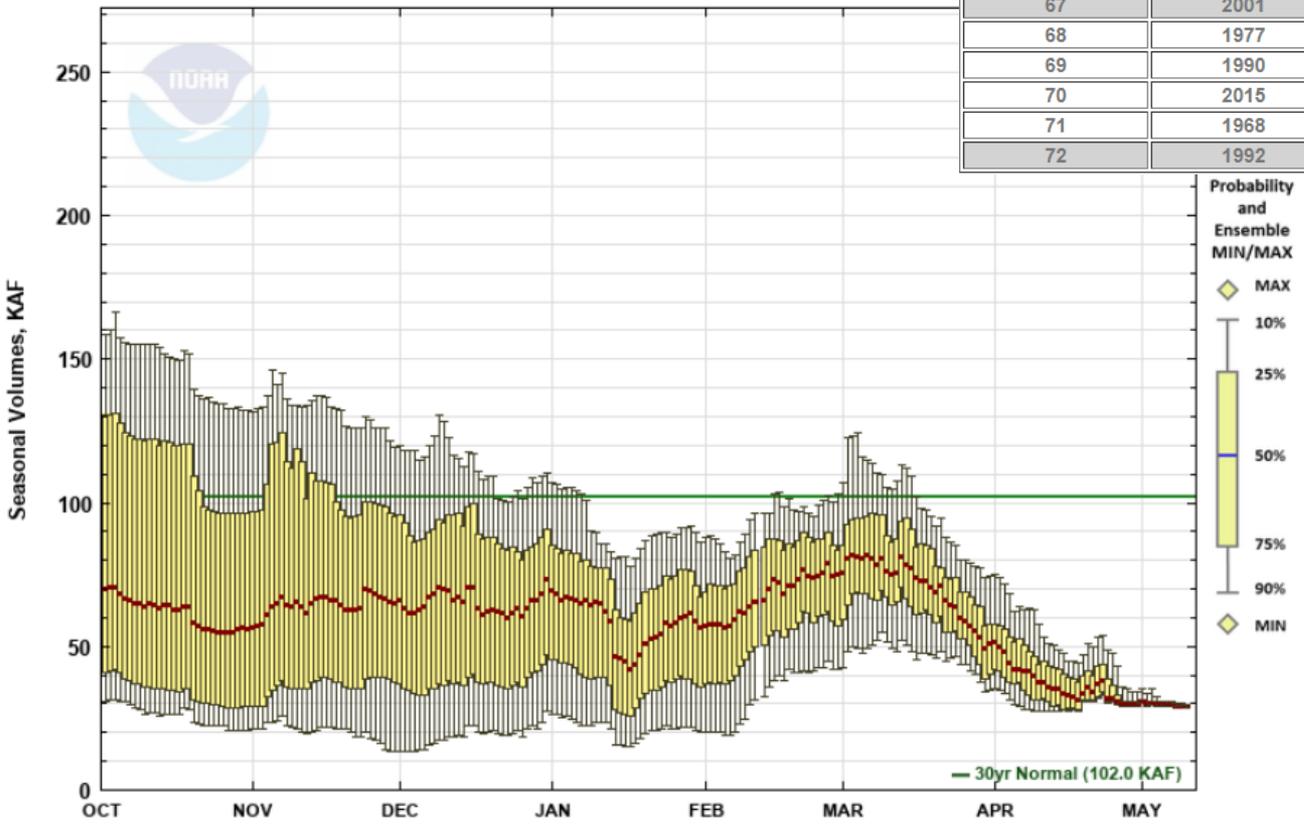


# Streamflow Volume Forecast Crooked River near Prineville

**CROOKED - NR PRINEVILLE (PRV03)**  
**Period Rankings - 1948 to 2021**  
 APR-SEP Normal -- 102 (KAF)

Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability*
62	1991	30.70	30	84.932 %
63	2021	29.06	28	86.301 %
64	2014	28.40	28	87.671 %
65	1973	26.20	26	89.041 %
66	1994	24.20	24	90.411 %
67	2001	22.30	22	91.781 %
68	1977	19.60	19	93.151 %
69	1990	15.70	15	94.521 %
70	2015	9.00	9	95.890 %
71	1968	8.80	9	97.260 %
72	1992	7.70	8	98.630 %

**Natural Volume Forecasts**  
**CROOKED - NR PRINEVILLE**  
 Period APR to SEP -- Water Year 2021



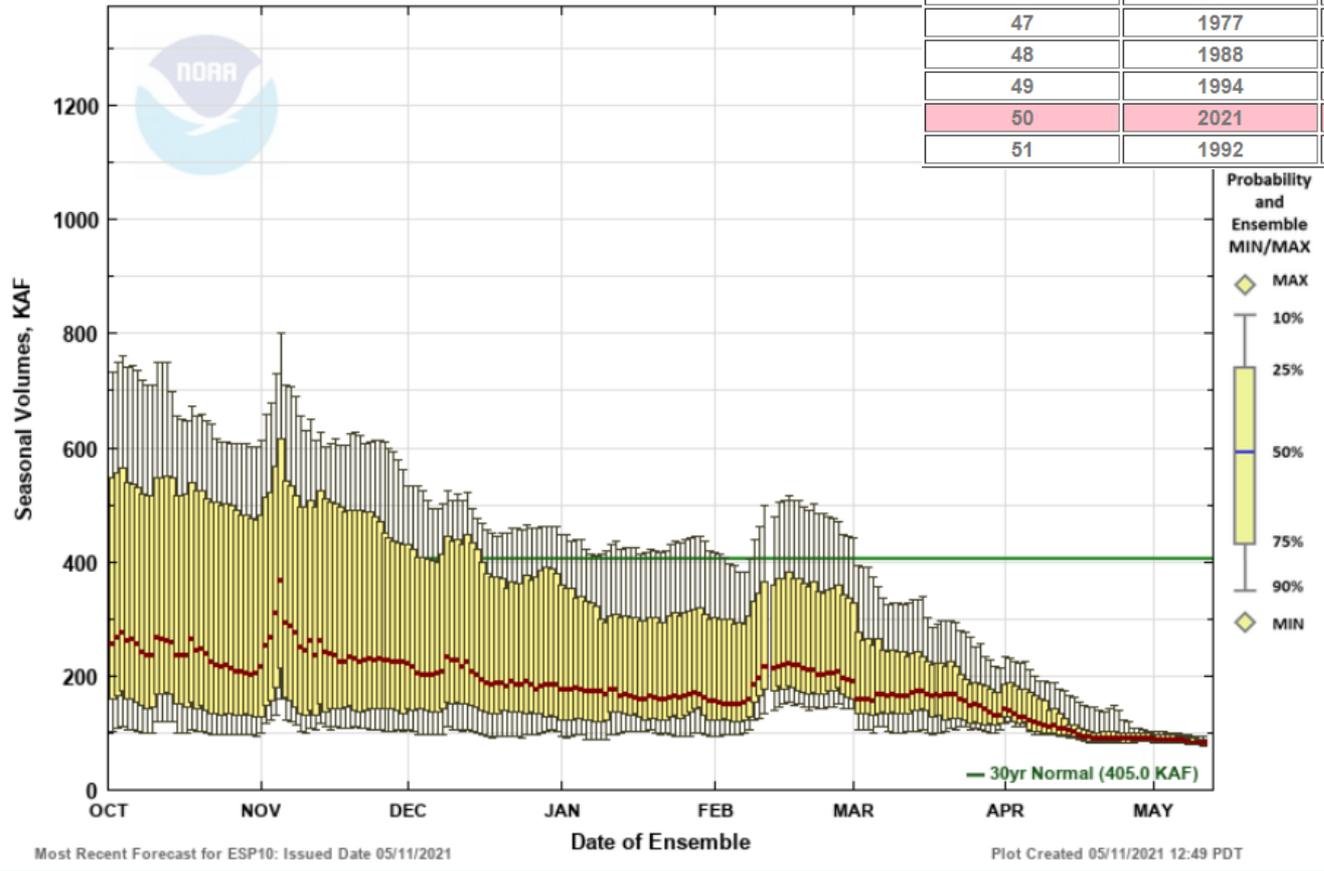
Most Recent Forecast for ESP10: Issued Date 05/10/2021

Plot Created 05/11/2021 12:27 PDT



# Streamflow Volume Forecast Owyhee River at Owyhee Dam

**Water Supply Forecasts**  
**OWYHEE - OWYHEE DAM**  
Period APR to SEP -- Water Year 2021



**OWYHEE - OWYHEE DAM (OWYO3)**  
**Period Rankings - 1970 to 2021**  
APR-SEP Normal -- 405 (KAF)

Rank	Year	Period Volume (KAF)	Percent of Normal	Exceedance Probability*
42	2018	127.29	31	80.769 %
43	1987	117.64	29	82.692 %
44	2007	116.58	29	84.615 %
45	2015	108.00	27	86.538 %
46	2013	103.20	25	88.462 %
47	1977	98.27	24	90.385 %
48	1988	95.62	24	92.308 %
49	1994	90.47	22	94.231 %
50	2021	82.52	20	96.154 %
51	1992	71.71	18	98.077 %



# Northwest River Forecast Center

## Water Supply Web Briefings

Last scheduled briefing of the season: June 3<sup>rd</sup>, 10 am PDT

[https://www.nwrfc.noaa.gov/water\\_supply/ws\\_schd.cgi](https://www.nwrfc.noaa.gov/water_supply/ws_schd.cgi)

Also note that NWS Portland will issue Drought Information Statements on a monthly basis starting in July.

The latest water supply summary or drought statement can be viewed at:  
<https://www.weather.gov/media/pqr/WaterSupplyOutlook.pdf>



# Oregon Water Supply Availability Meeting

## May 2021

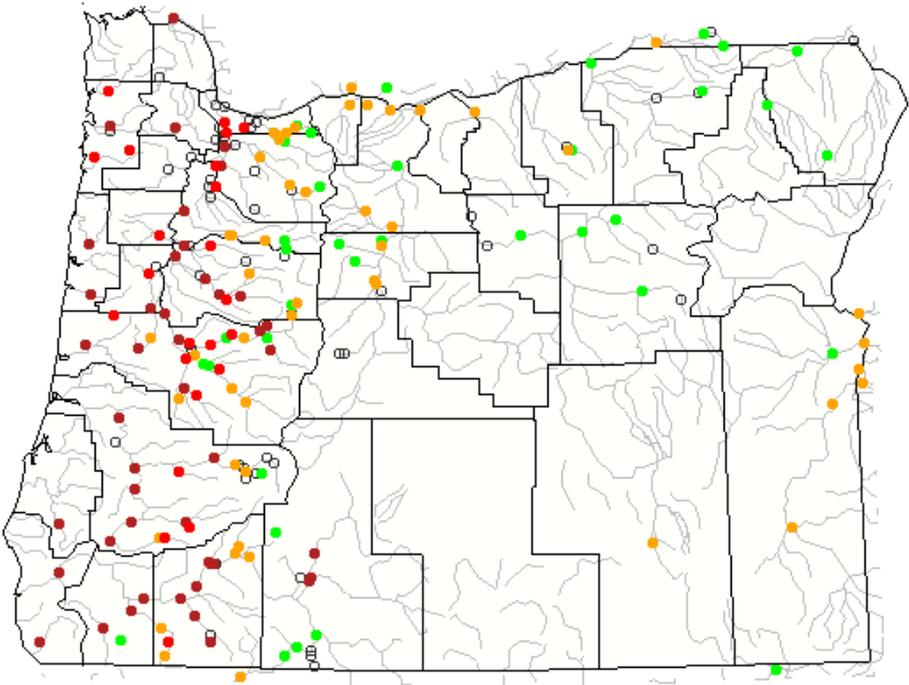
U.S. Department of the Interior  
U.S. Geological Survey

USGS Update on Surface Water Conditions  
Carrie Boudreau & Marc Stewart  
Oregon Water Science Center

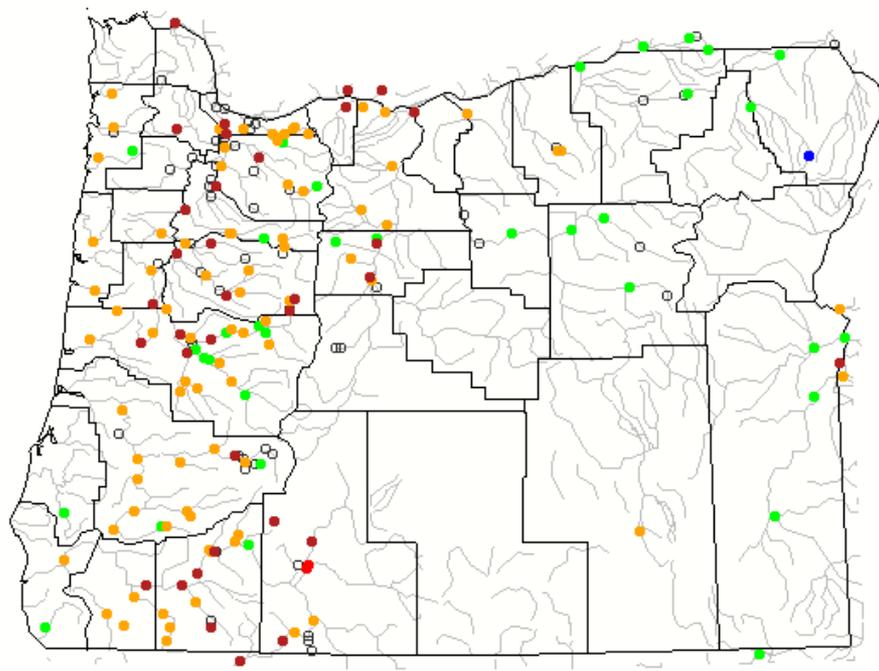
# Streamflow Conditions

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

Monday, May 10, 2021



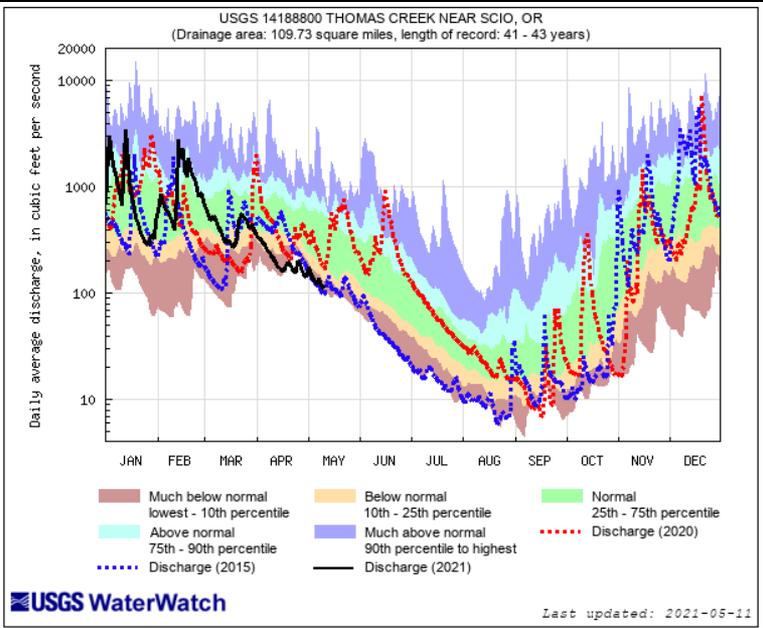
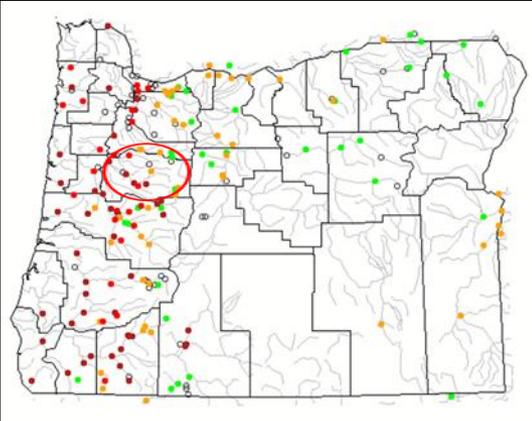
Monday, April 12, 2021



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		

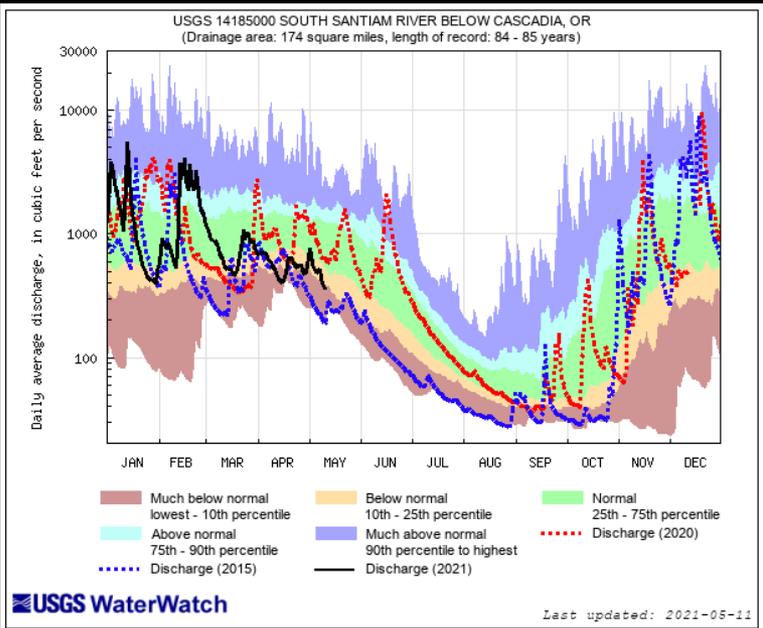
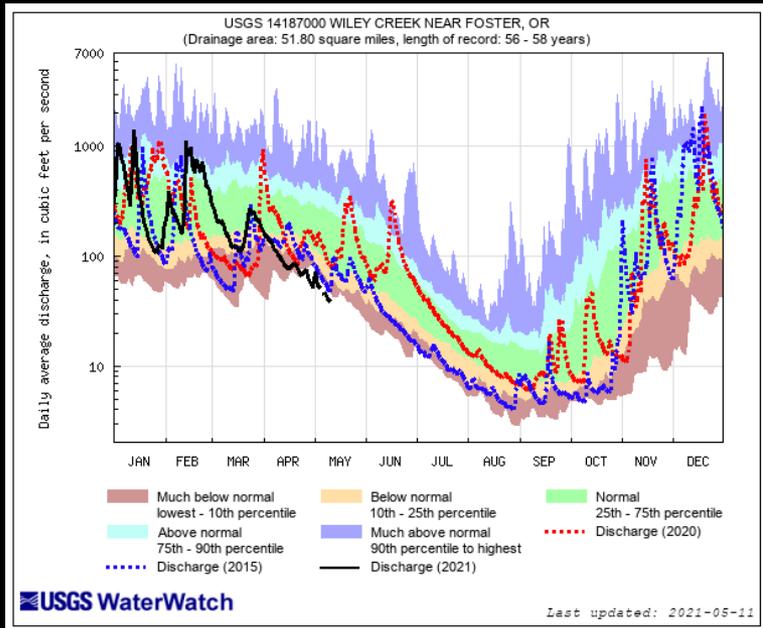


# Linn County

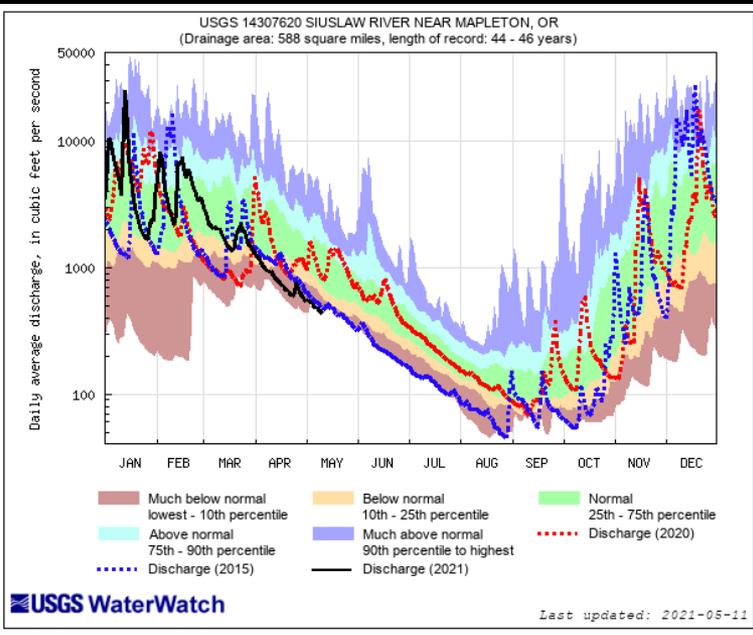
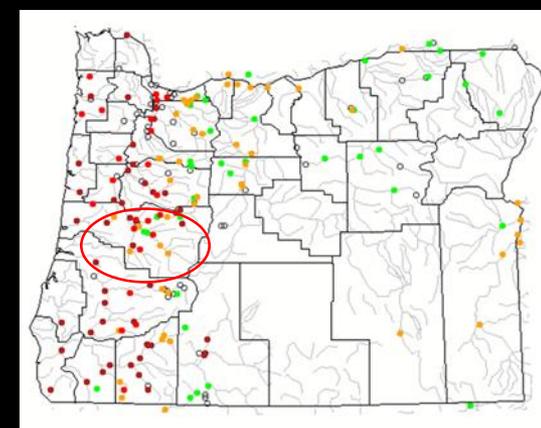


**Explanation - Percentile classes**

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

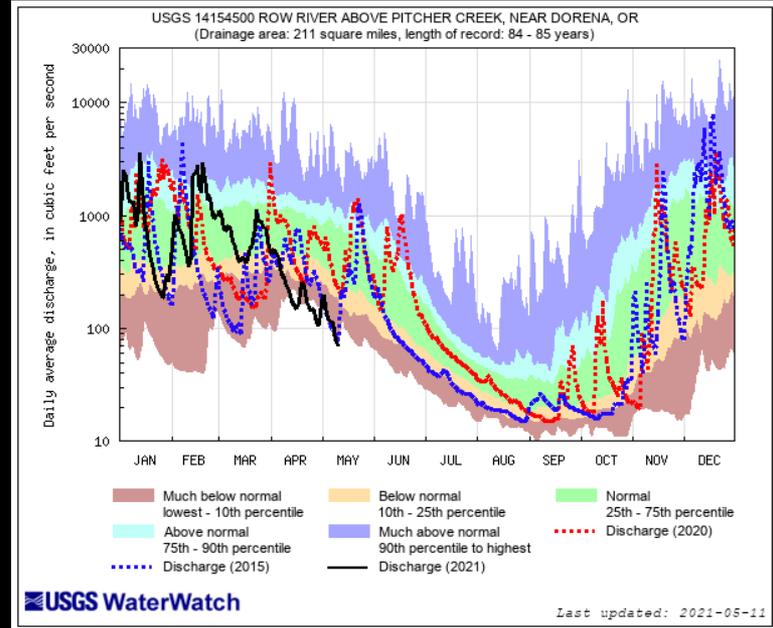
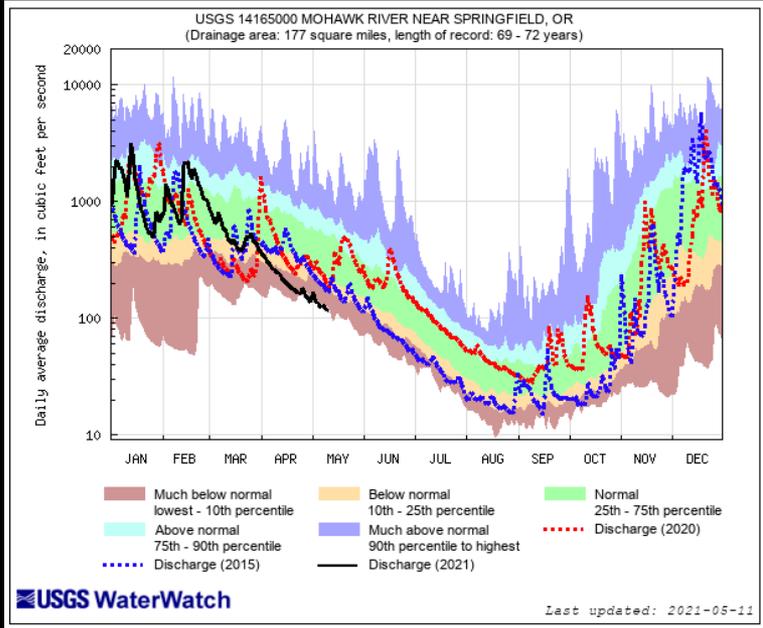


# Lane County

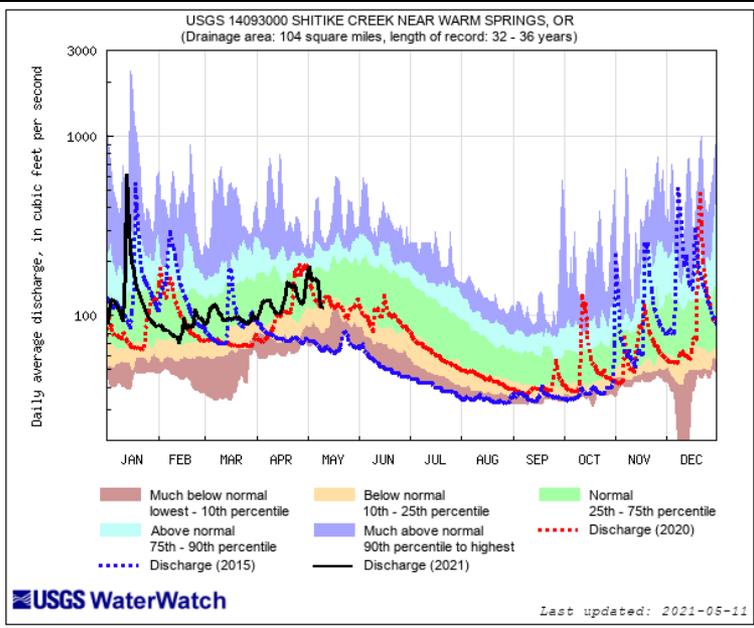
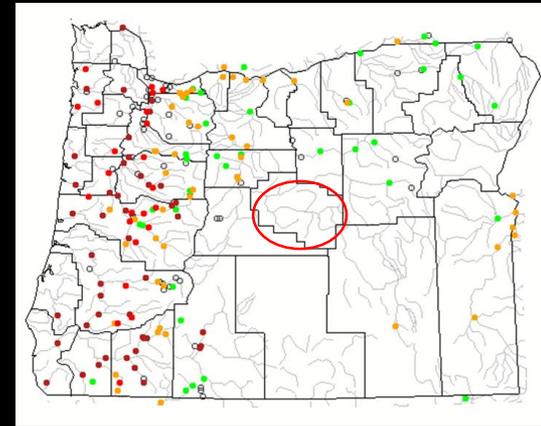


**Explanation - Percentile classes**

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



# Nearby Crook County

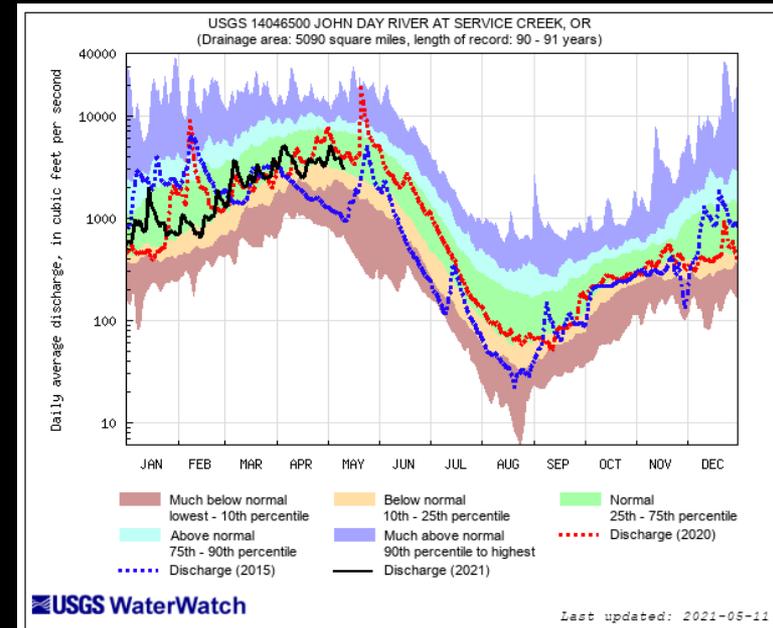
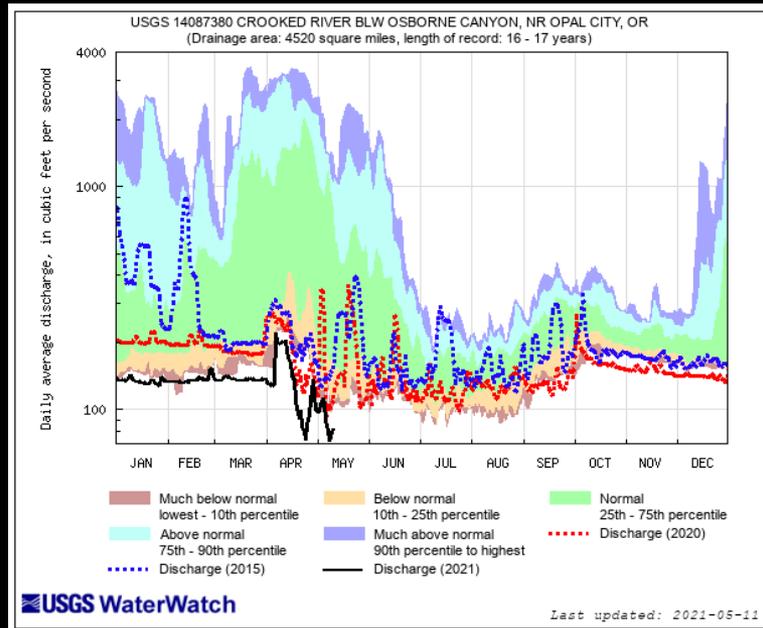


Explanation - Percentile classes

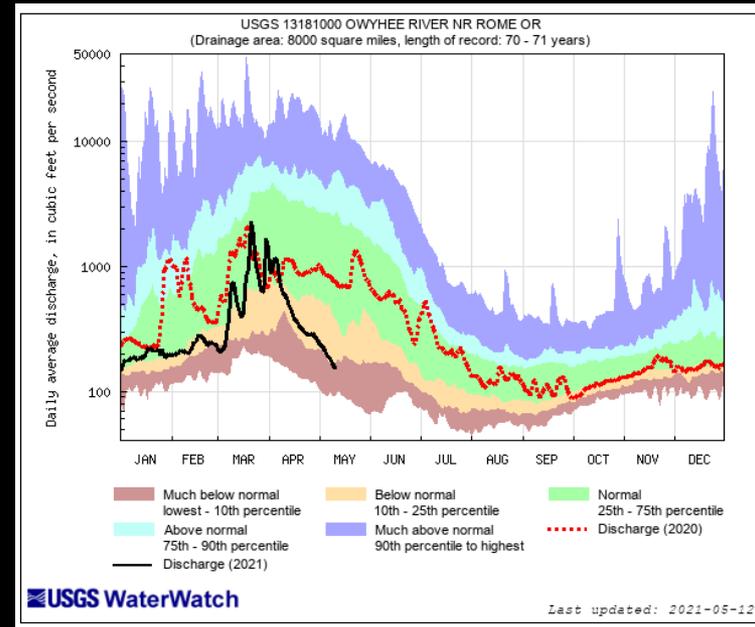
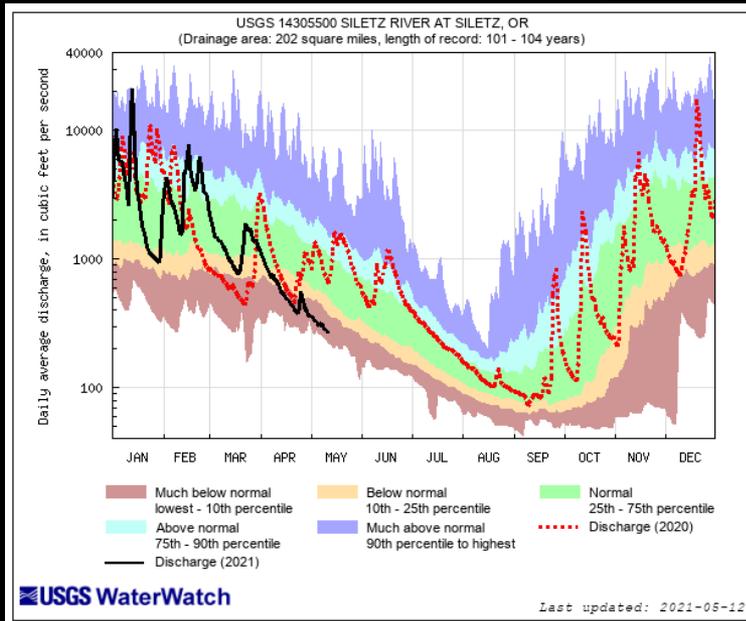
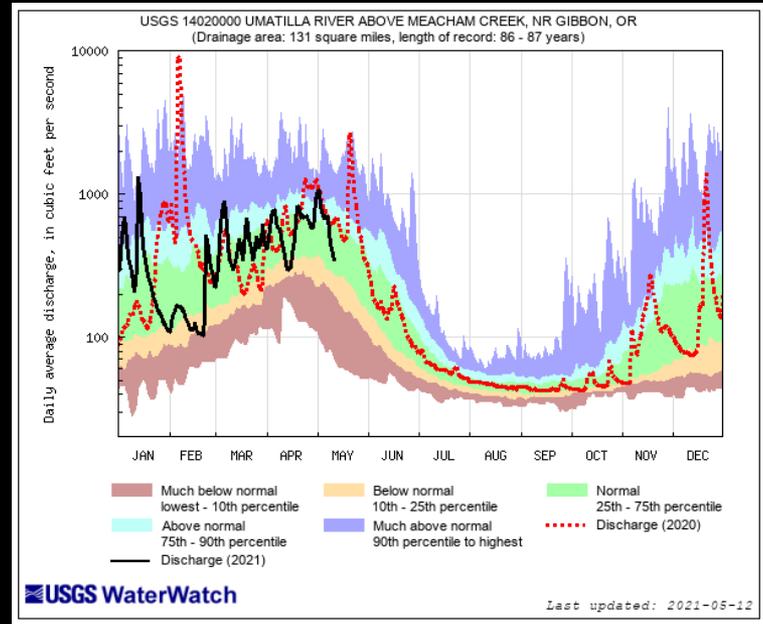
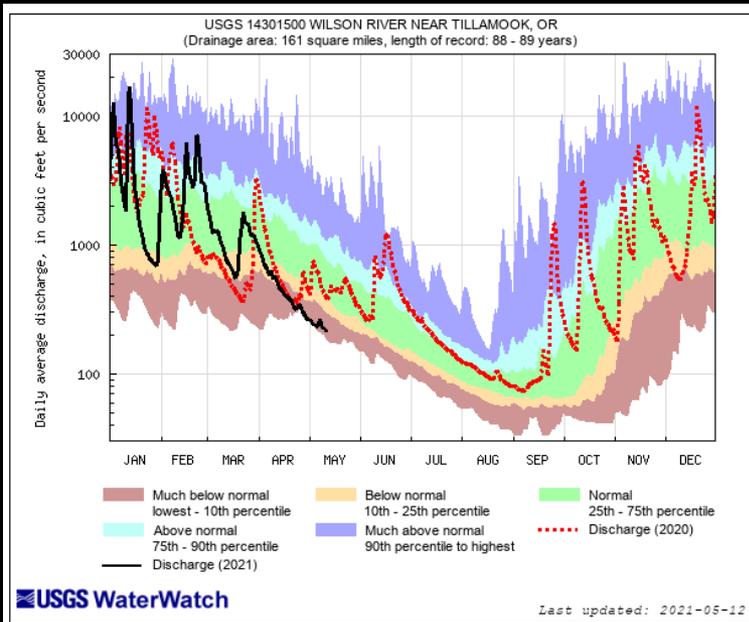
lowest-10th percentile	10-24	25-75	76-90	90th percentile - highest	Flow
Much below normal	Below normal	Normal	Above normal	Much above normal	

Wheeler County

Jefferson County

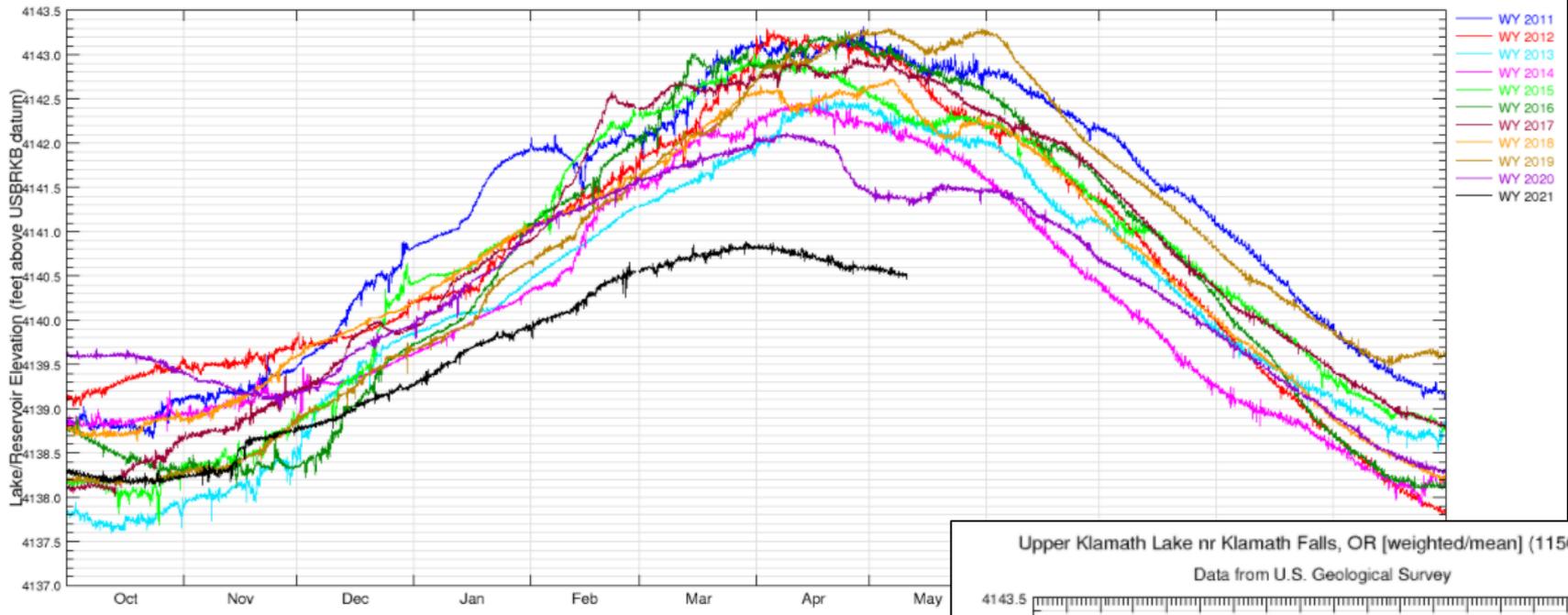


# Coastal OR and Eastern OR



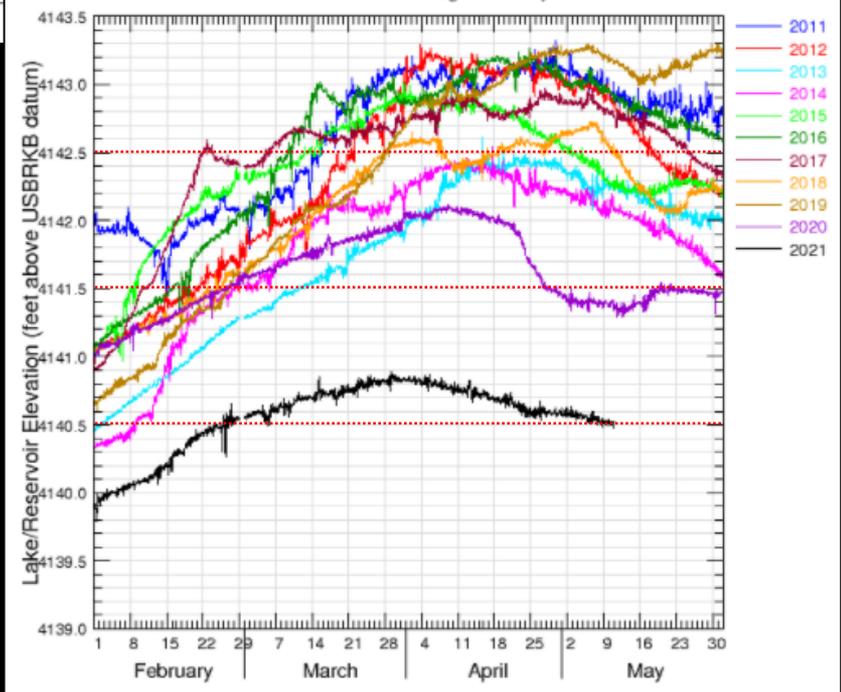
Upper Klamath Lake nr Klamath Falls, OR [weighted/mean] (11507001)

Data from U.S. Geological Survey



Upper Klamath Lake nr Klamath Falls, OR [weighted/mean] (11507001)

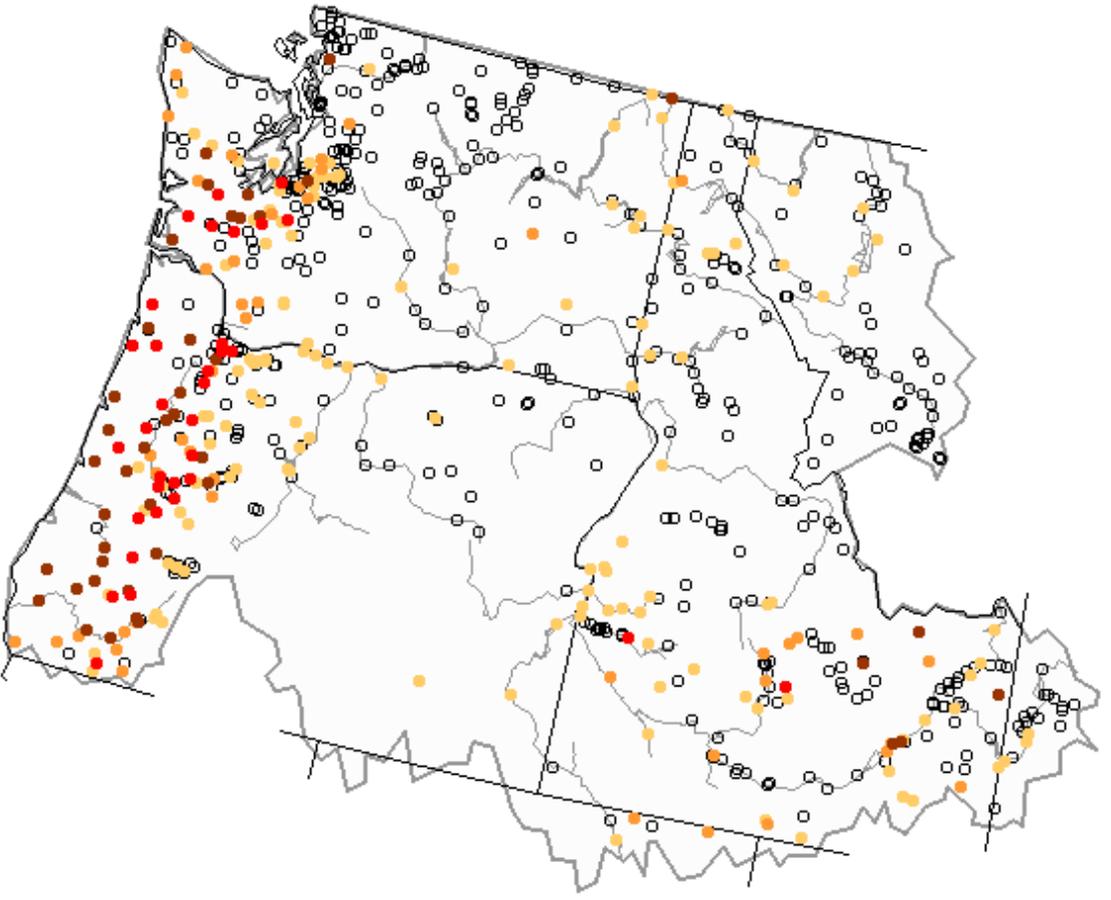
Data from U.S. Geological Survey



# 11507000 Upper Klamath Lake

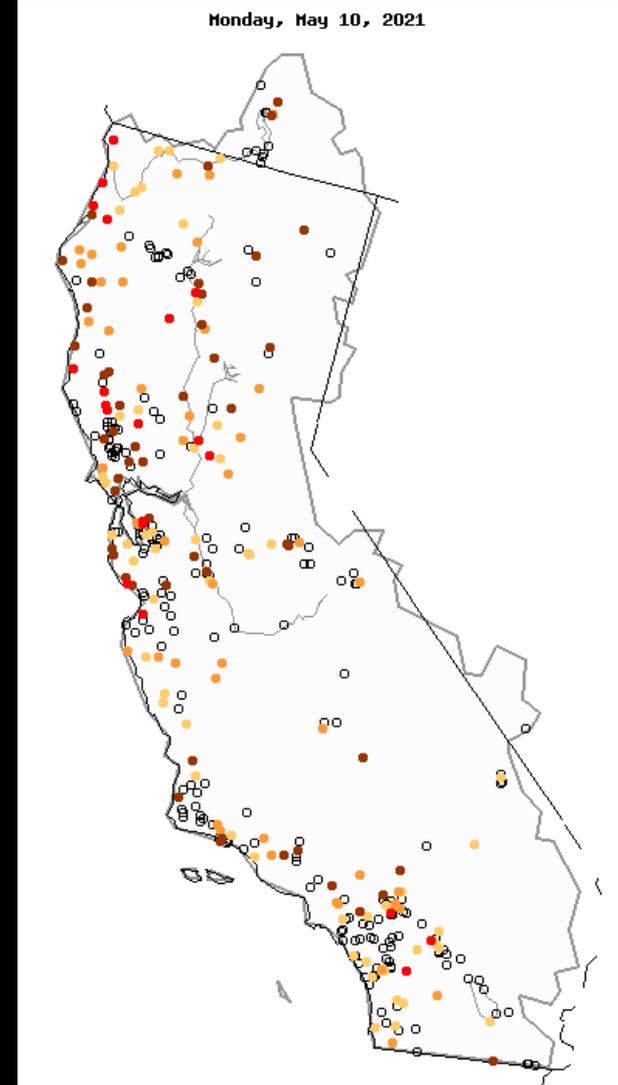


Monday, May 10, 2021



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

Monday, May 10, 2021



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



Station	NRCS SWSI Basin	Monthly mean discharge		Change in dis- charge from previous month (percent)	Accumulated Runoff For the Period Oct. to Apr.  Percent of average
		Cubic feet per second	Percent of average		
Donner Und Blitzen nr Frenchglen	Harney	144	64	97	56
(*)Deep Creek above Adel	Lake County	116	31	183	25
(*)Chewaucan River near Paisley	Lake County	167	47	248	41
Williamson River near Chiloquin	Klamath	603	33	6	48
Owyhee River near Rome	Owyhee	528	20	-31	28
(*)NF Malheur River near Beulah	Malheur	230	62	89	59
Grande Ronde R at Troy	Grande Ronde Powder/Burnt	6,030	99	48	88
Umatilla River nr Gibbon	Umatilla Lower John Day	587	109	19	103
John Day River at Service Crk	Upper John Day	3,570	67	39	56
(*)Little Deschutes River nr LaPine	Upper Deschutes	91	34	25	48
Hood River nr Hood River	Lower Deschutes Mt.Hood	821	66	-1	88
Willamette River at Salem	Willamette	12,200	52	-31	88
Wilson River near Tillamook	North Coast	475	40	-58	108
Umpqua River near Elkton	Rogue/Umpqua	3,600	39	-50	71
Rogue River near Agness	Rogue/Umpqua	2,380	37	-49	60
SF Coquille River at Powers	South Coast	317	34	-76	89
Chetco River near Brookings	South Coast	1,070	43	-63	84

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

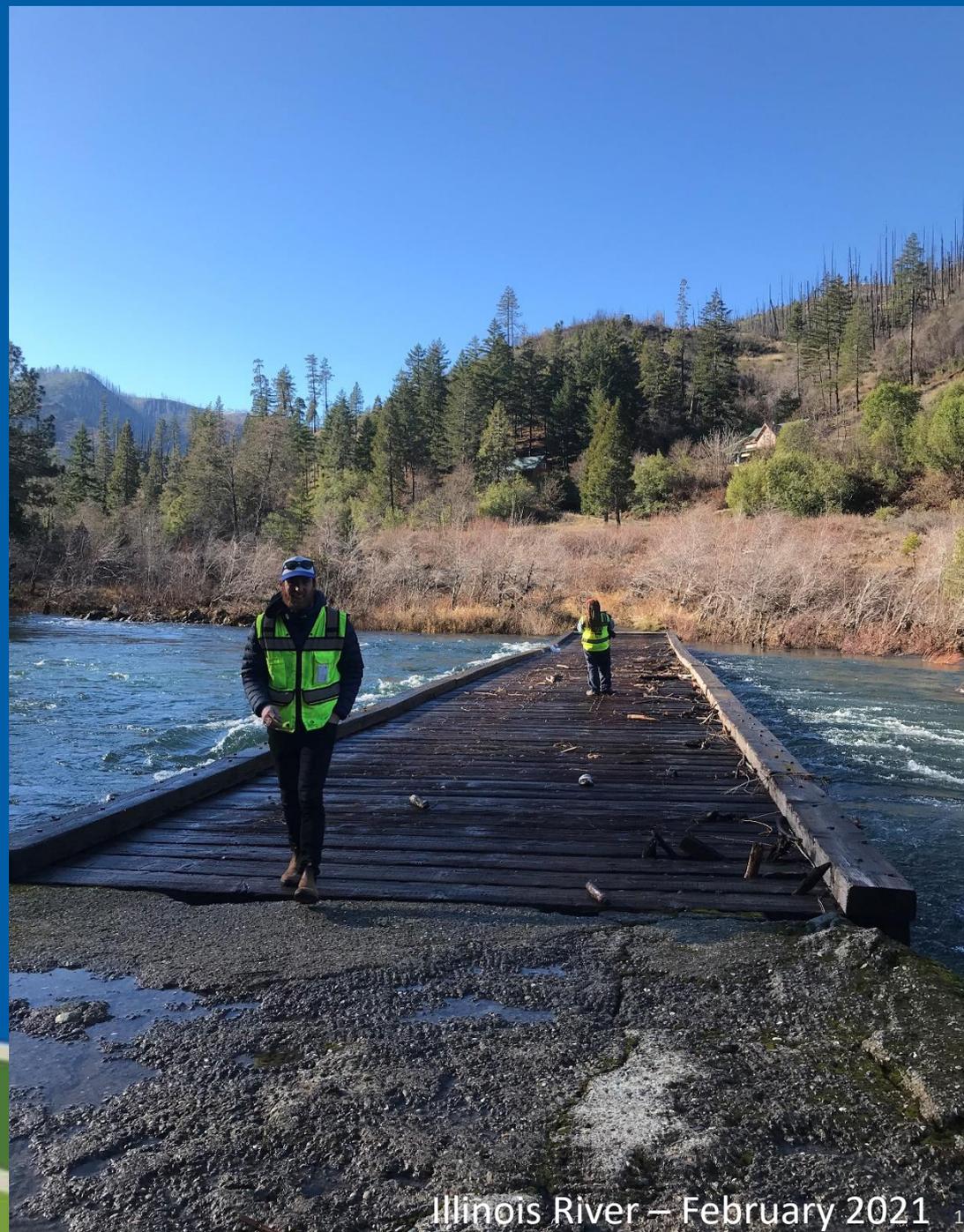
5/3/2021



# Water Supply Availability Committee



Ryan Andrews  
Oregon Water Resources  
Department  
May 12<sup>th</sup>, 2021



Illinois River – February 2021 1

# Oregon Drought Requests



County	State	Local
Baker	X	
Crook		X
Douglas	X	
Gilliam	X	
Jackson	X	
Klamath	X	
Lake	X	
Morrow	X	
Umatilla		X
Wheeler	X	

# WY to Date % of Average Yield - thru May 10, 2021

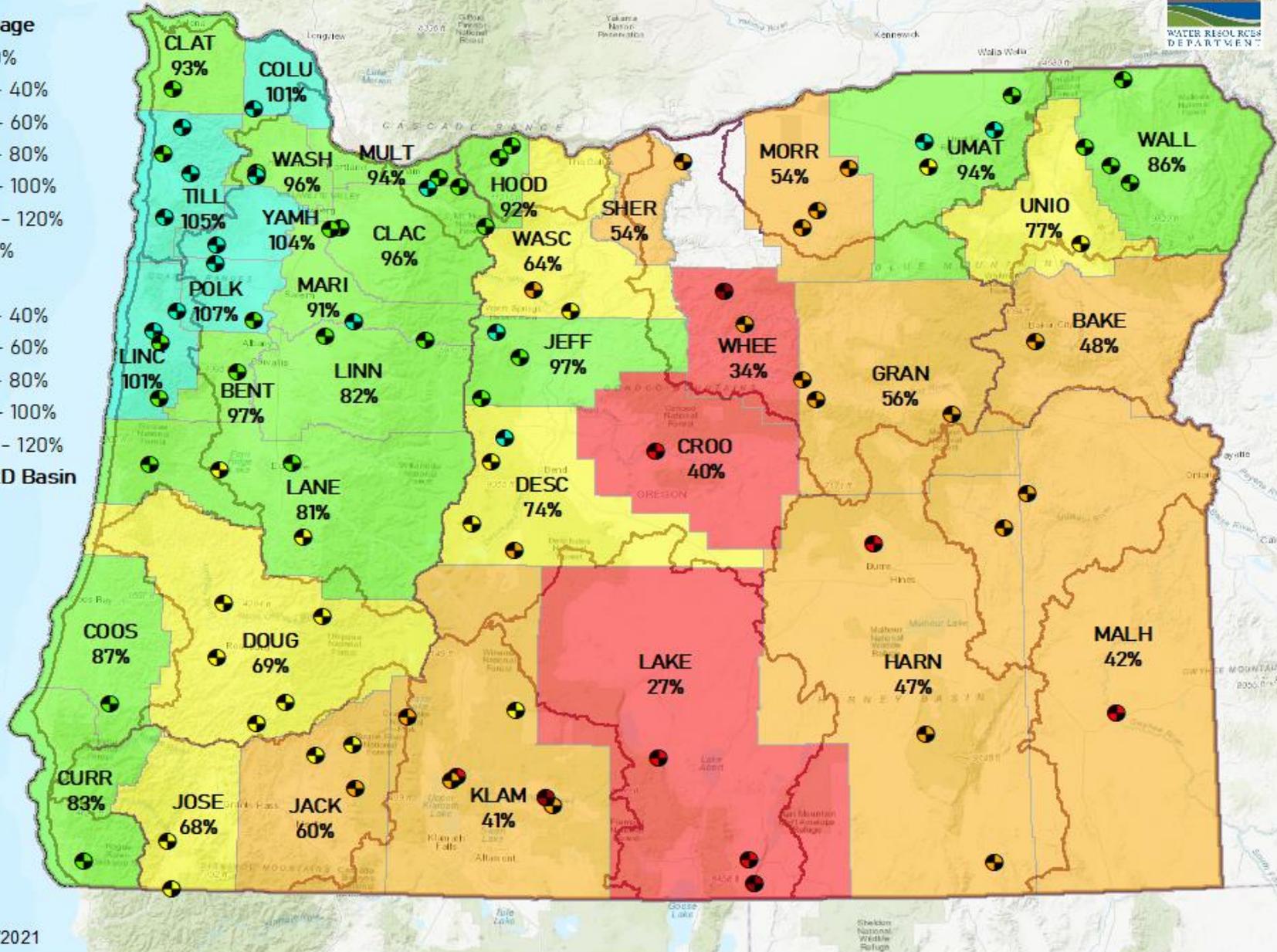


## Stream Gage

- ≤ 20%
- 21% - 40%
- 41% - 60%
- 61% - 80%
- 81% - 100%
- 101% - 120%
- > 120%

## Counties

- 21% - 40%
- 41% - 60%
- 61% - 80%
- 81% - 100%
- 101% - 120%
- OWRD Basin



Date: 5/11/2021

# April % of Average Streamflow - WY 2021

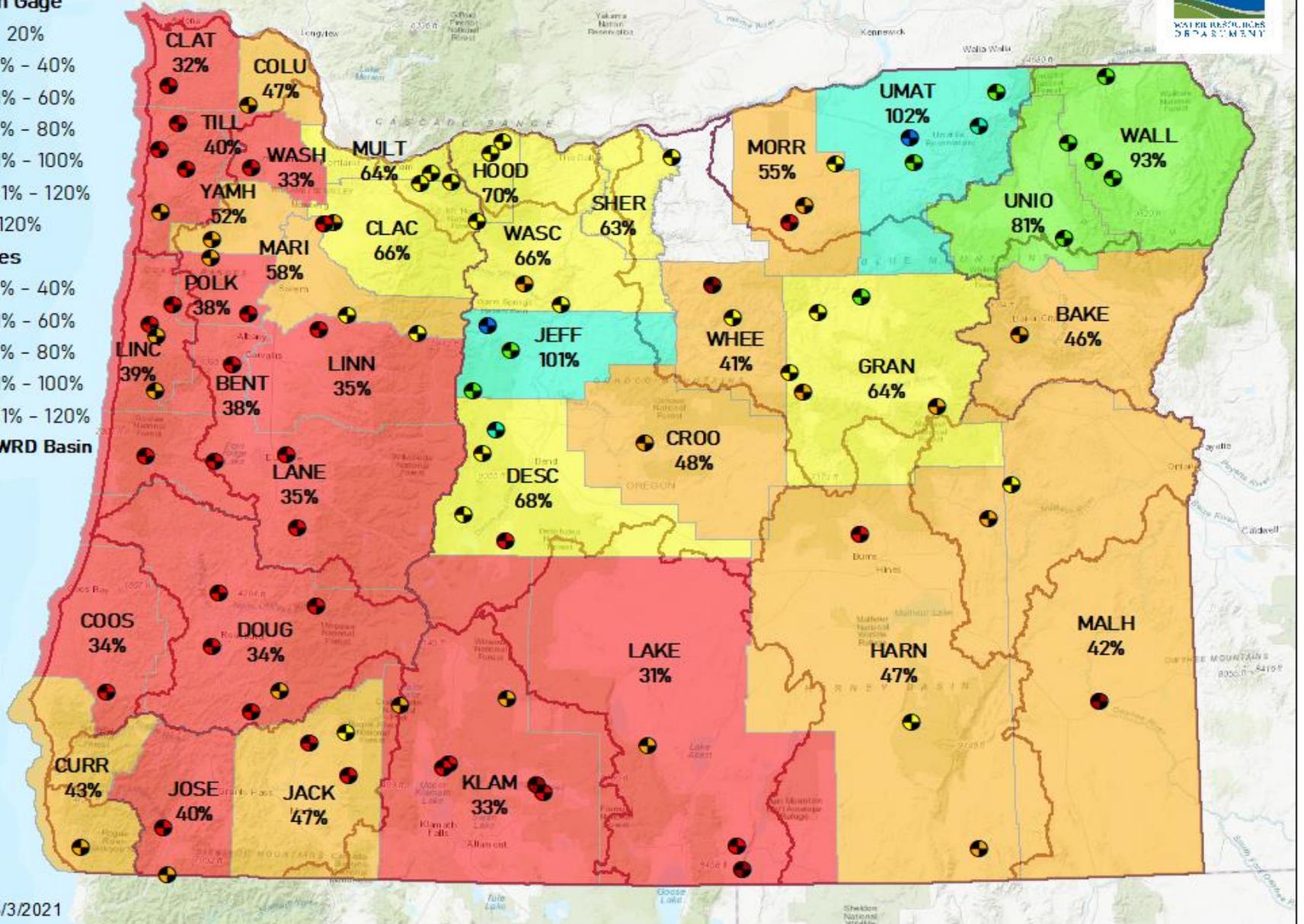


## Stream Gage

- <= 20%
- 21% - 40%
- 41% - 60%
- 61% - 80%
- 81% - 100%
- 101% - 120%
- > 120%

## Counties

- 21% - 40%
- 41% - 60%
- 61% - 80%
- 81% - 100%
- 101% - 120%
- OWRD Basin

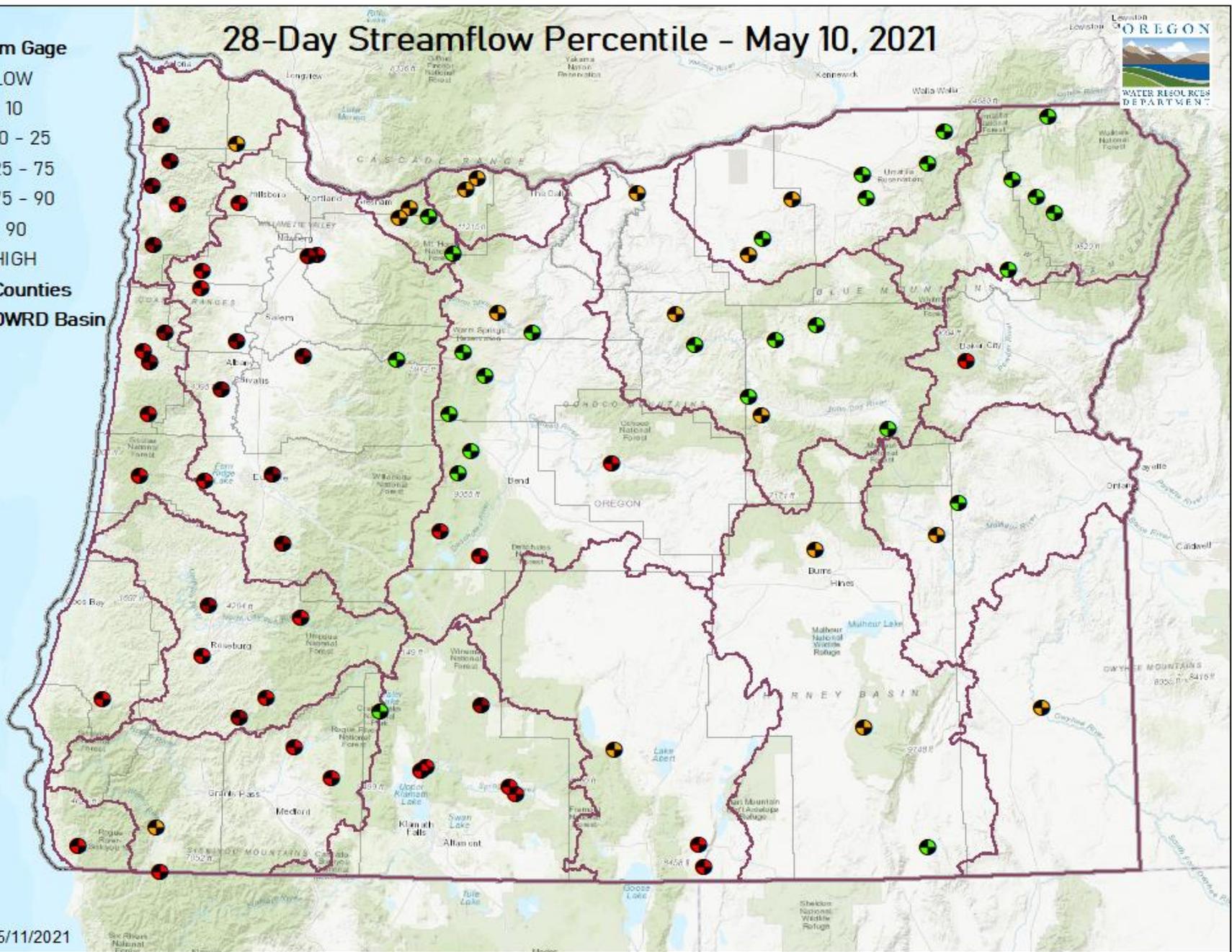


Date: 5/3/2021

# 28-Day Streamflow Percentile - May 10, 2021

## Stream Gage

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

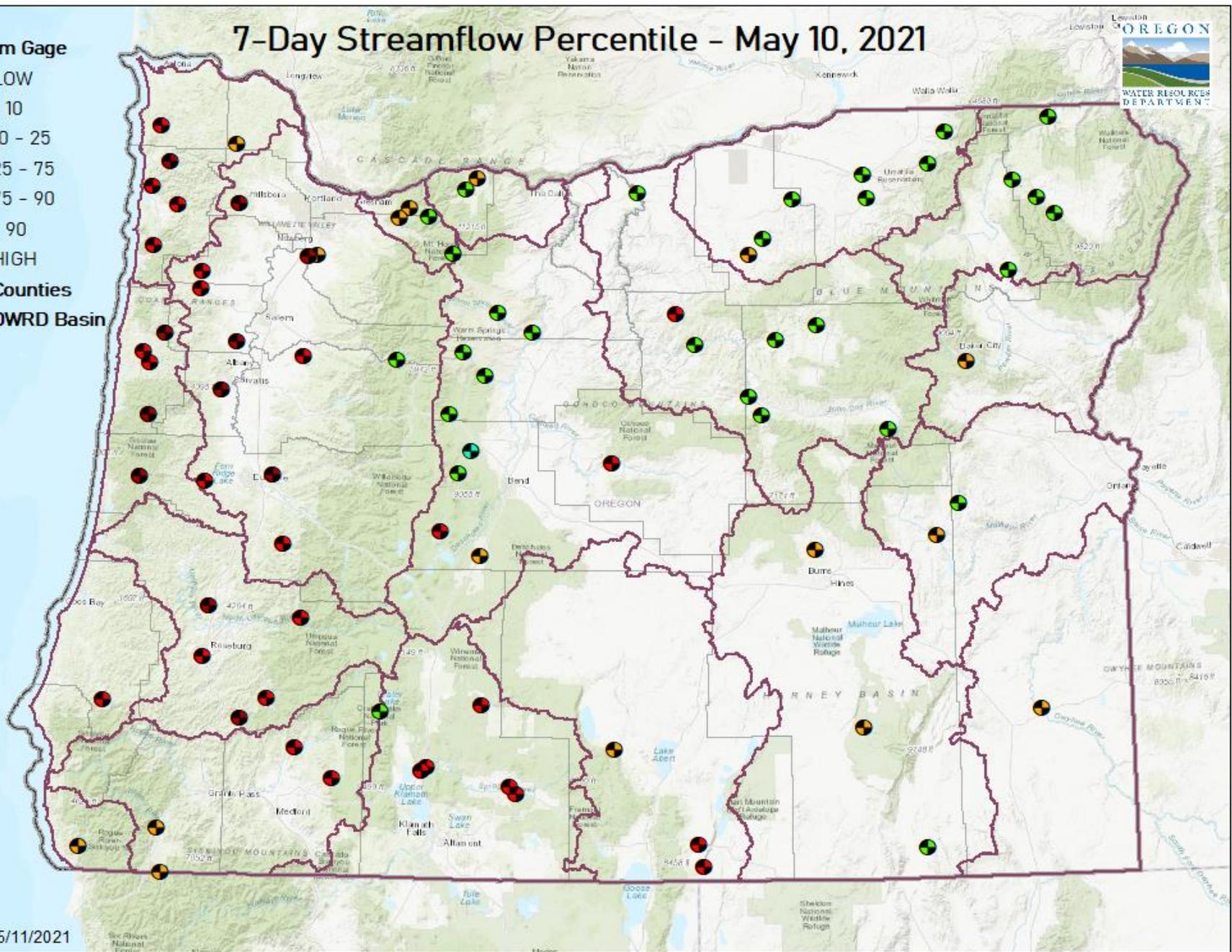


Date: 5/11/2021

# 7-Day Streamflow Percentile - May 10, 2021

## Stream Gage

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

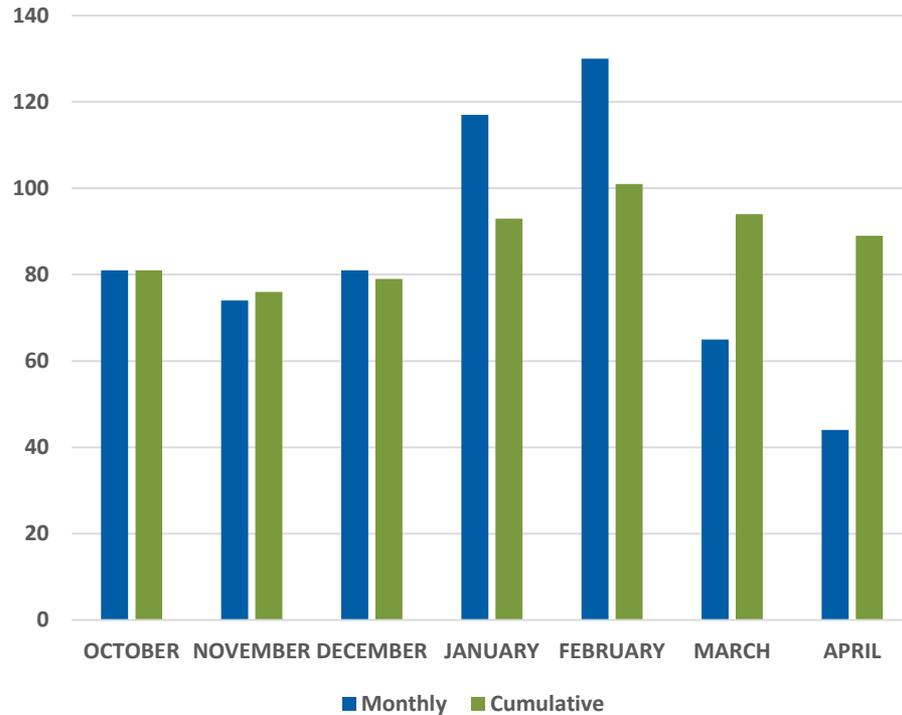


Date: 5/11/2021

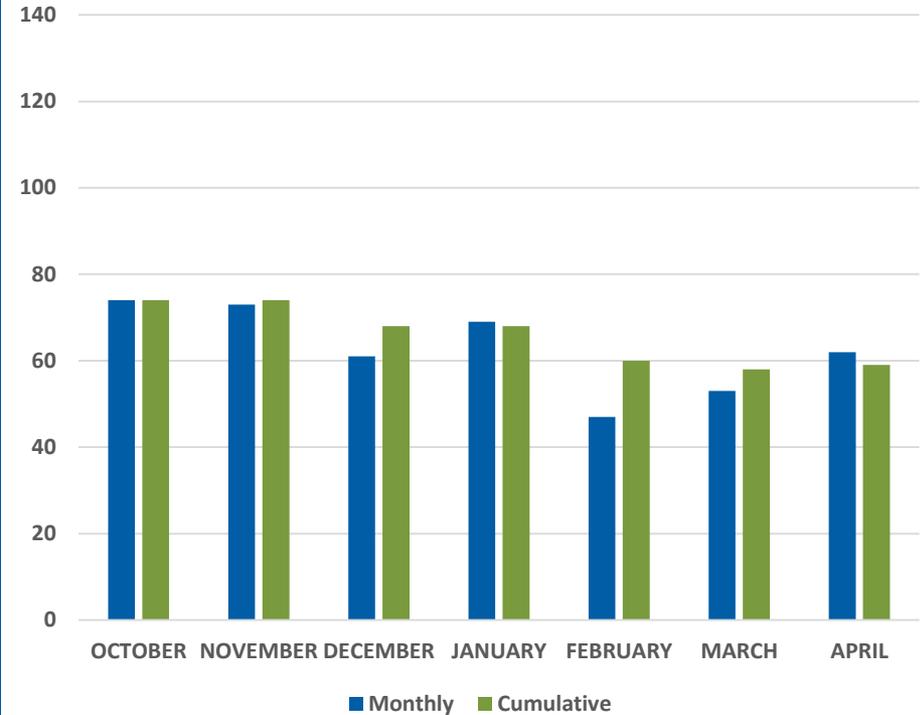
# % of Average Streamflow thru April Base period: 1981 – 2010



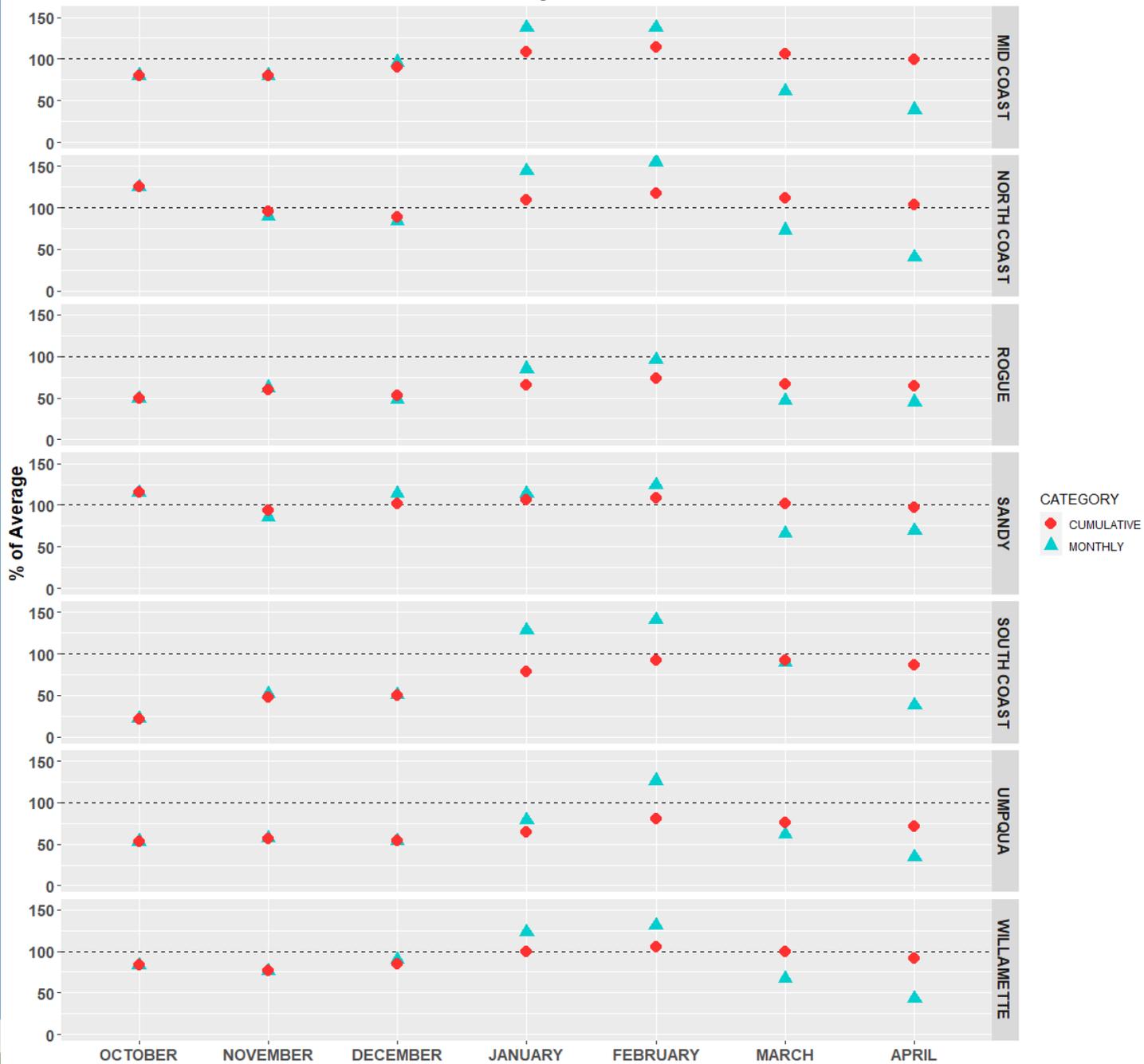
### Western Oregon



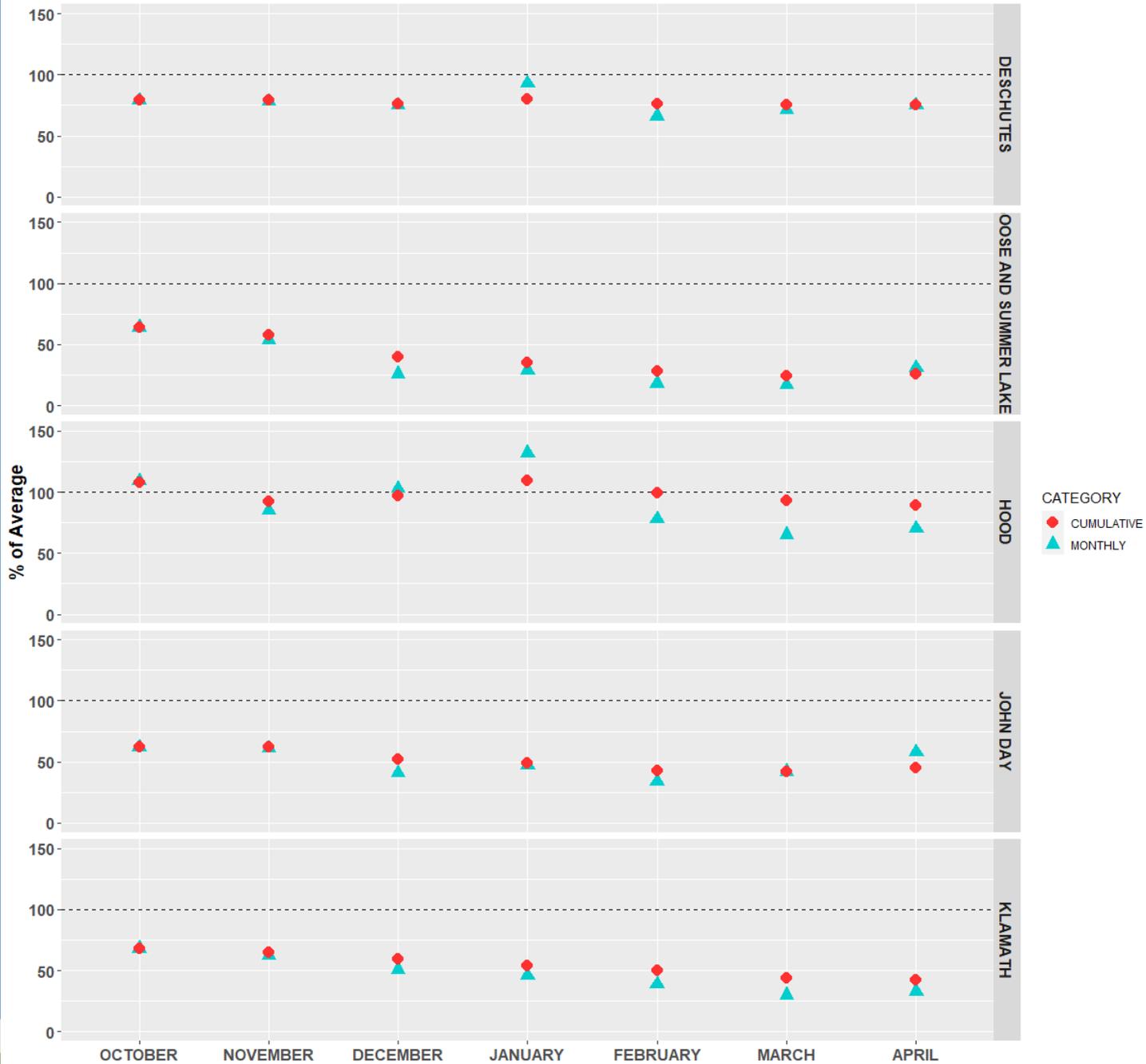
### Eastern Oregon



# WESTERN BASINS % of Average Yield

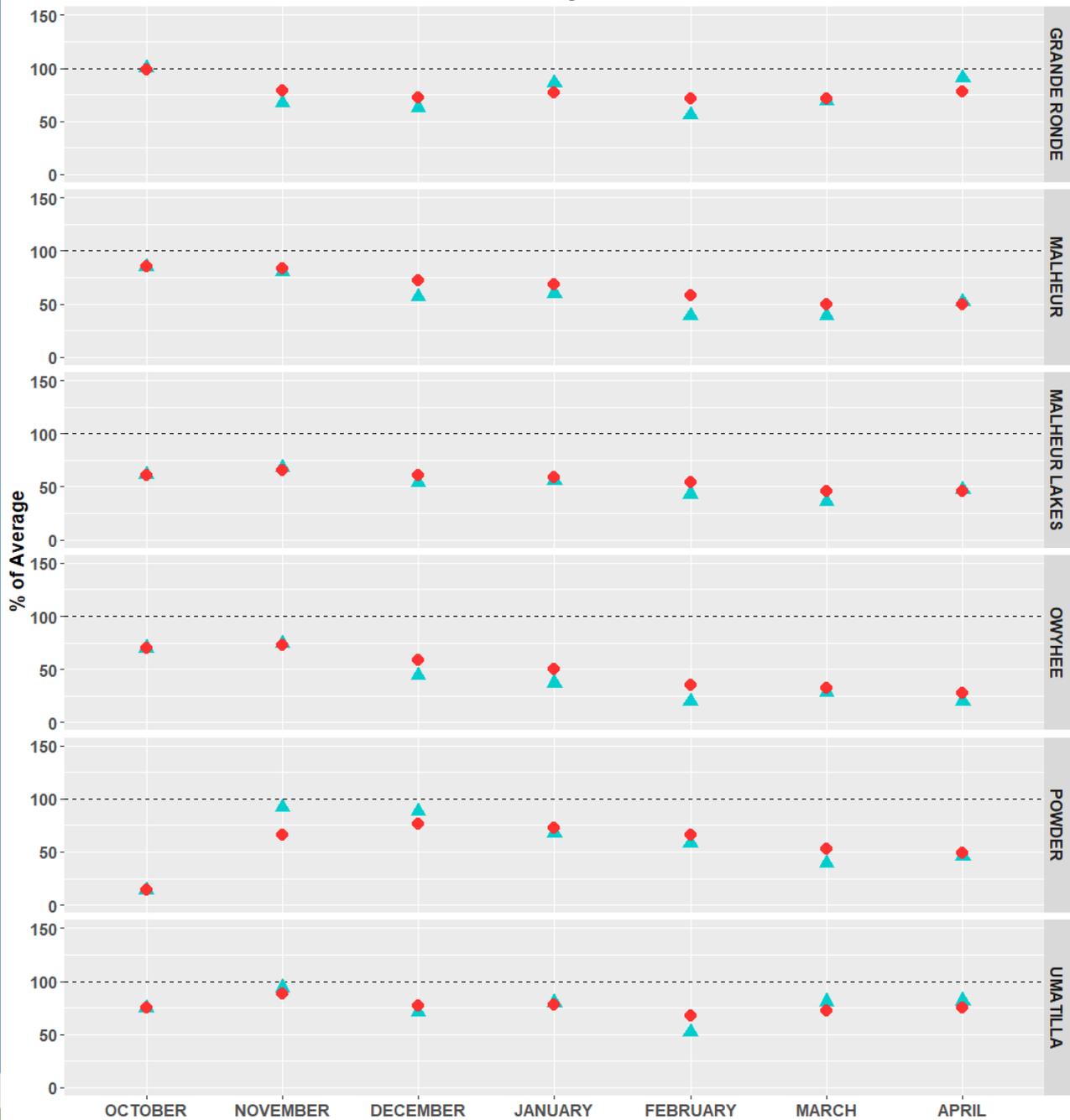


# CENTRAL BASINS % of Average Yield



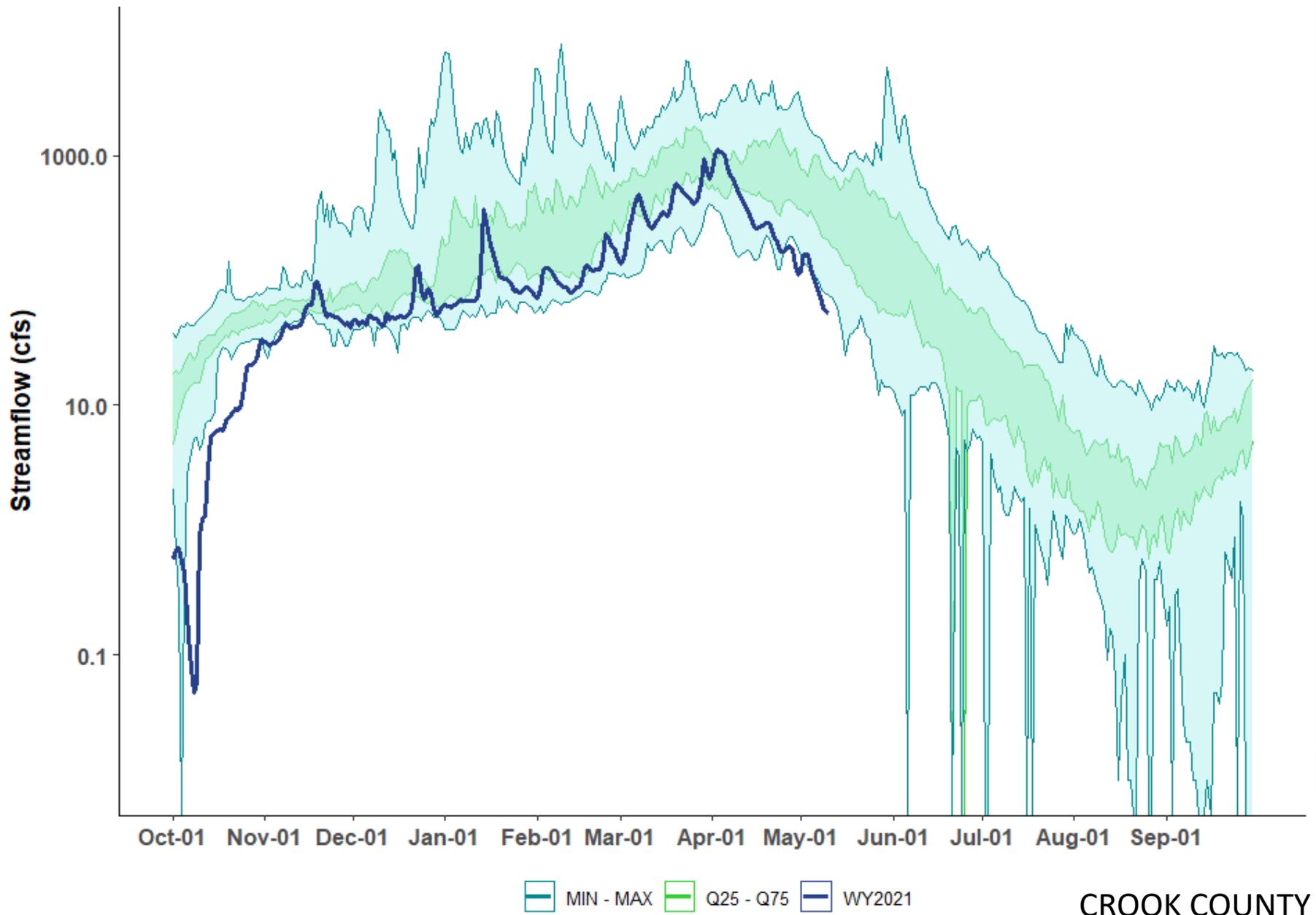
# EASTERN BASINS

## % of Average Yield

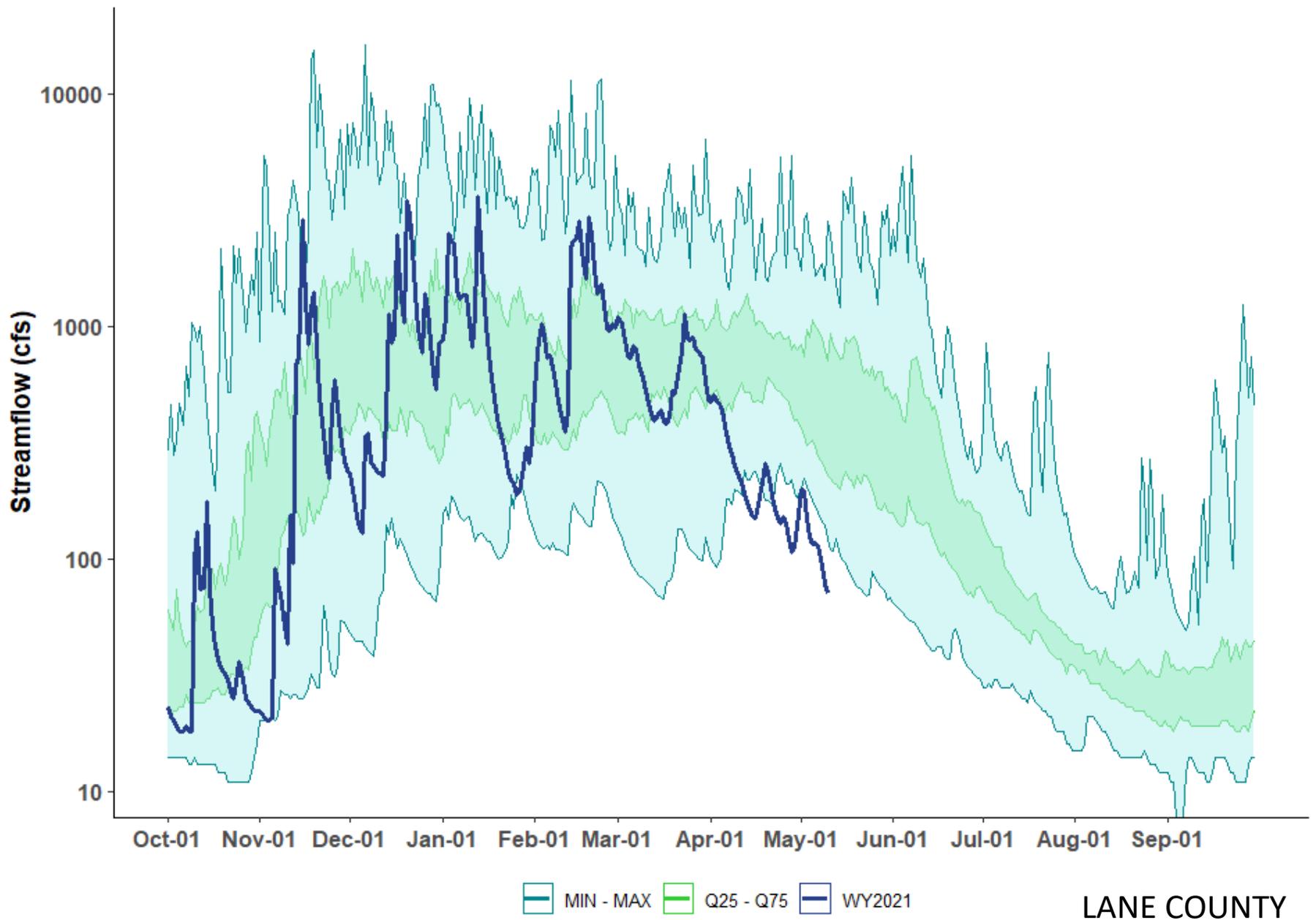


CATEGORY  
● CUMULATIVE  
▲ MONTHLY

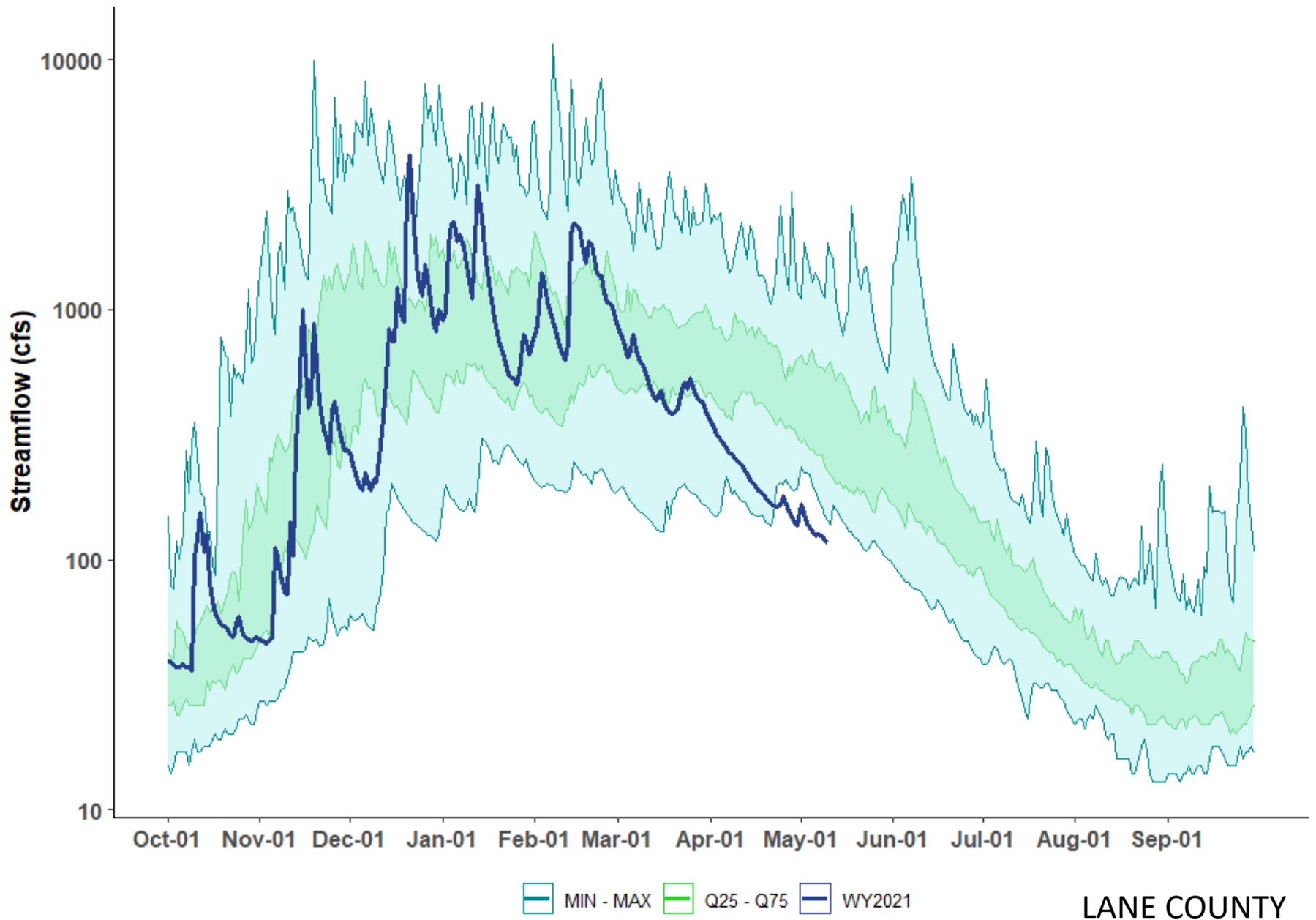
14079800 - CROOKED R AB PRINEVILLE RES NR POST, OR  
DESCHUTES BASIN  
POR: 1981-2010



14154500 - ROW R AB PITCHER CR NR DORENA, OR  
WILLAMETTE BASIN  
POR: 1981-2010



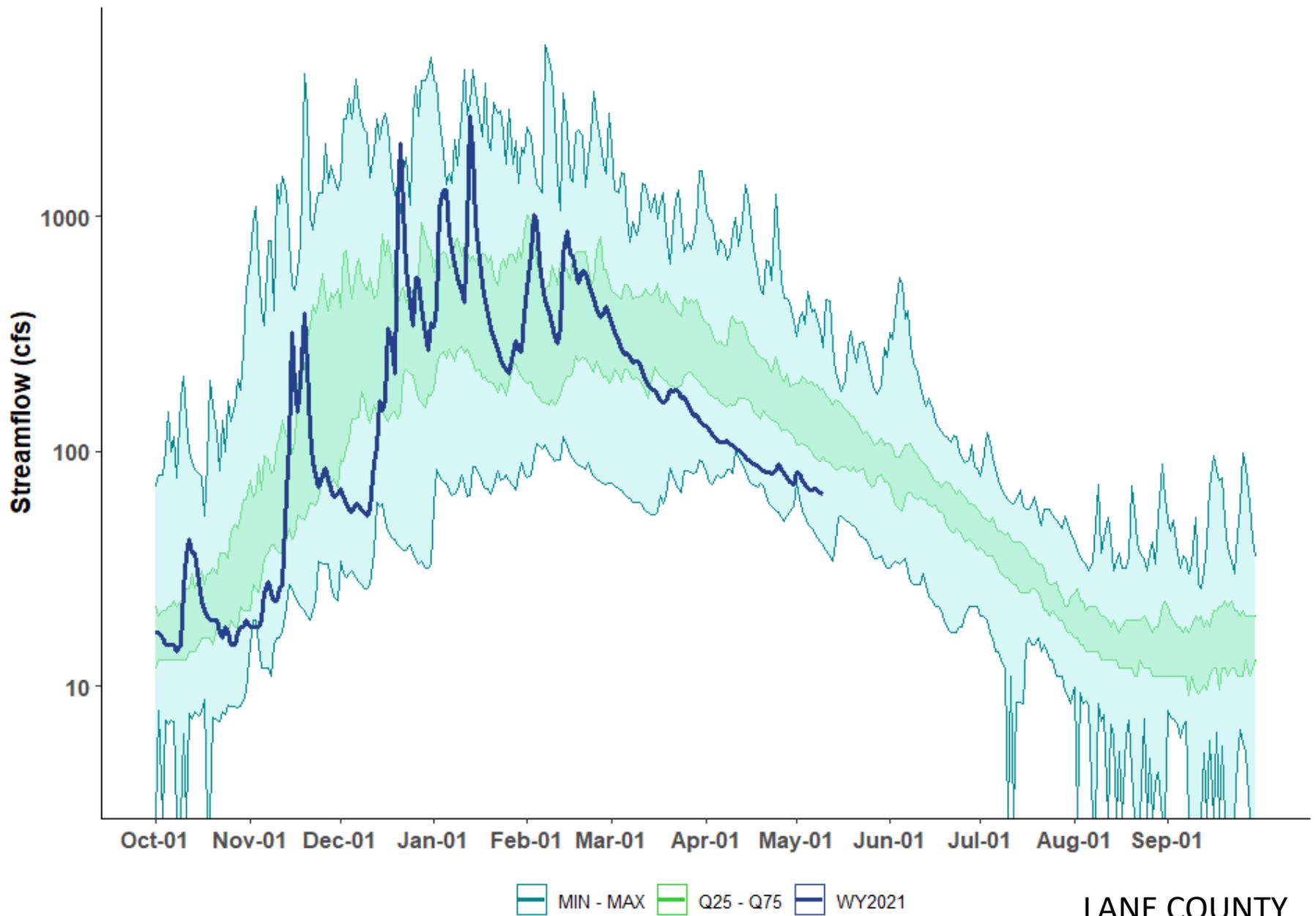
14165000 - MOHAWK R NR SPRINGFIELD, OR  
WILLAMETTE BASIN  
POR: 1981-2010



14166500 - LONG TOM R NR NOTI, OR

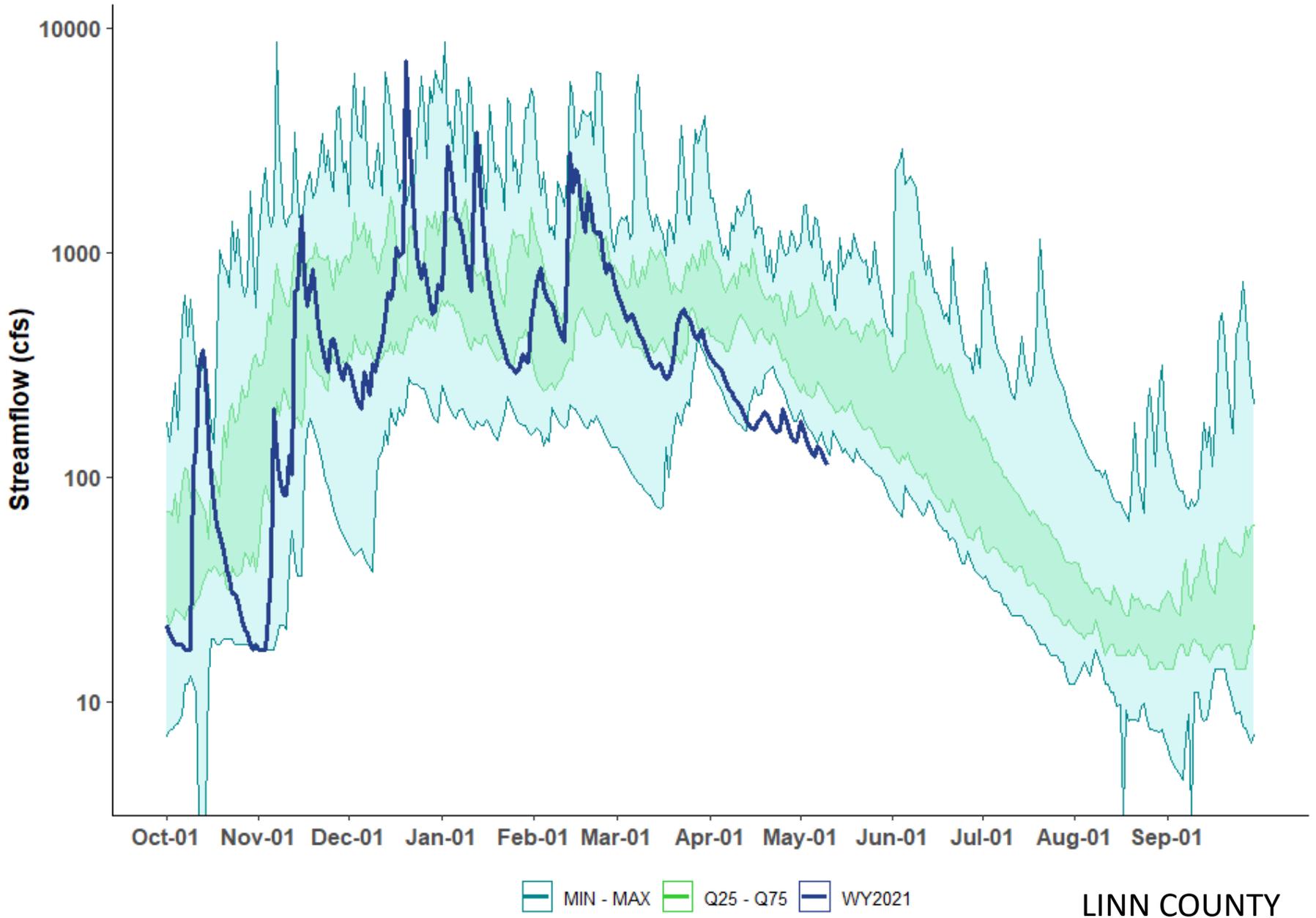
WILLAMETTE BASIN

POR: 1981-2010

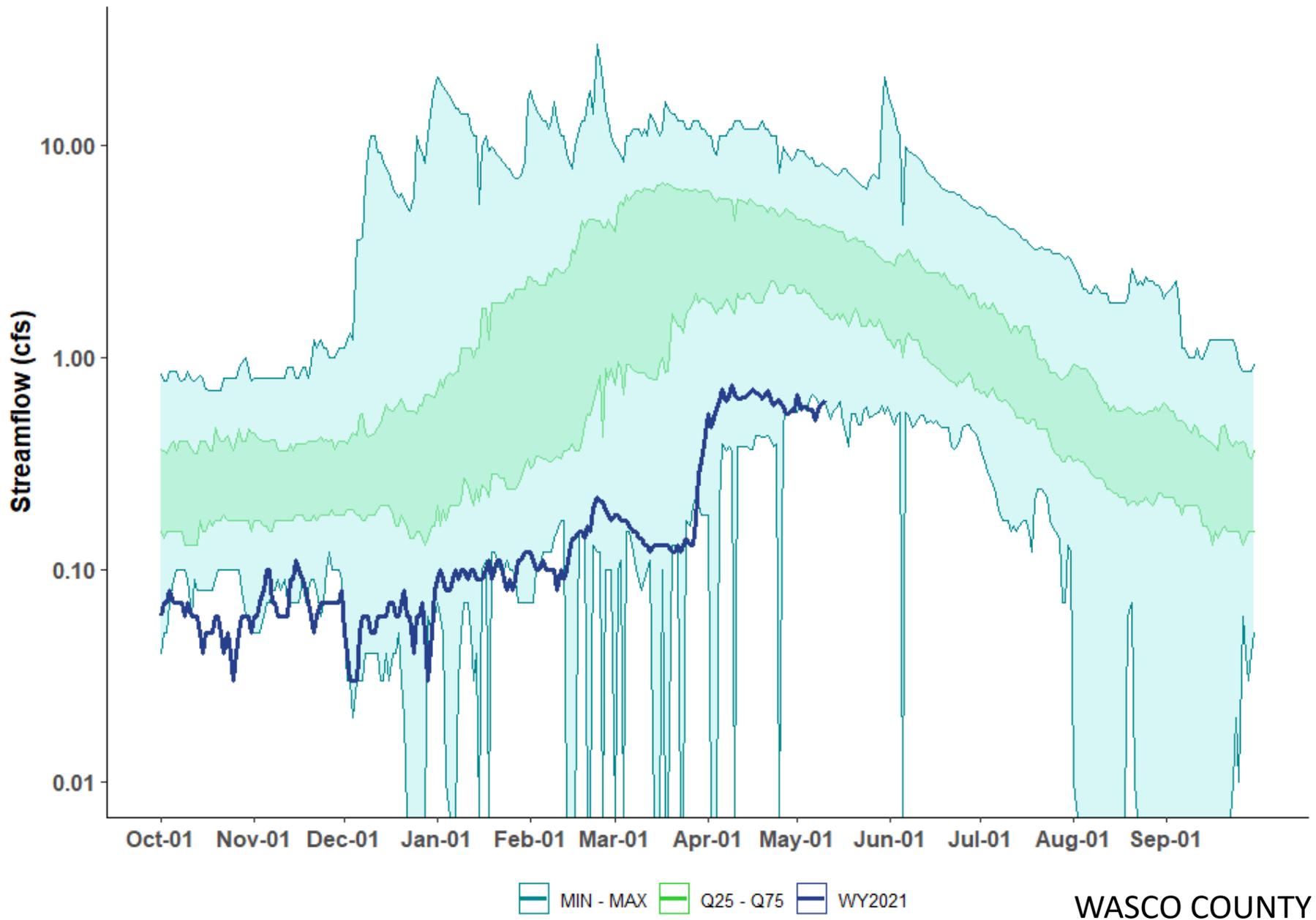


LANE COUNTY

14188800 - THOMAS CR NR SCIO, OR  
WILLAMETTE BASIN  
POR: 1981-2010



14047100 - BUTTE CR NR FOSSIL, OR  
JOHN DAY BASIN  
POR: 1981-2010



OREGON



WATER RESOURCES  
DEPARTMENT

QUESTIONS?



— BUREAU OF —  
RECLAMATION

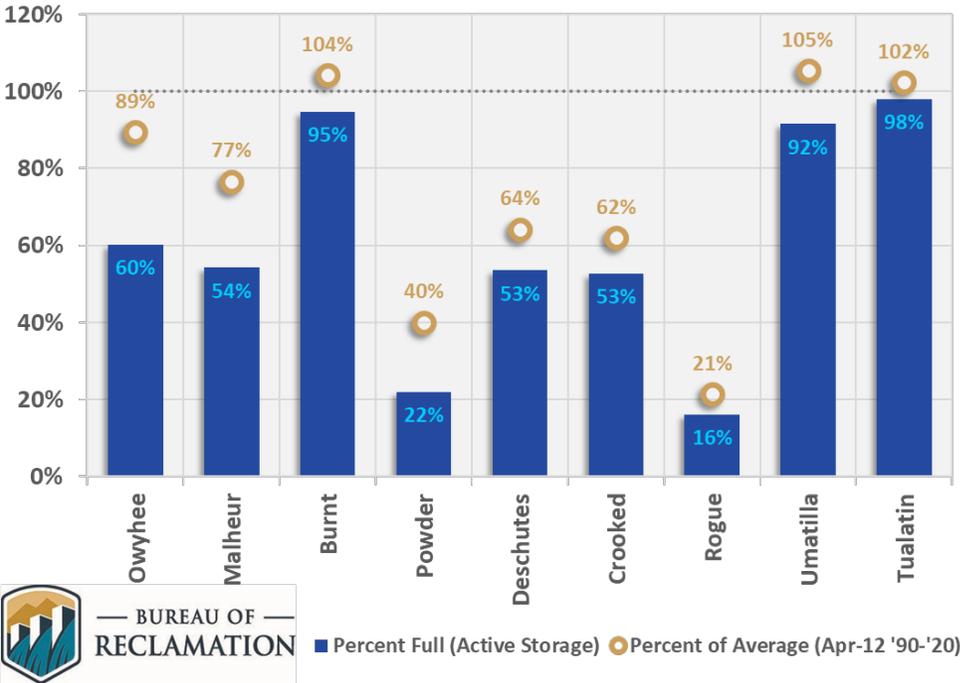
# Reclamation Storage Update

Oregon Water Supply Availability Committee  
Meeting

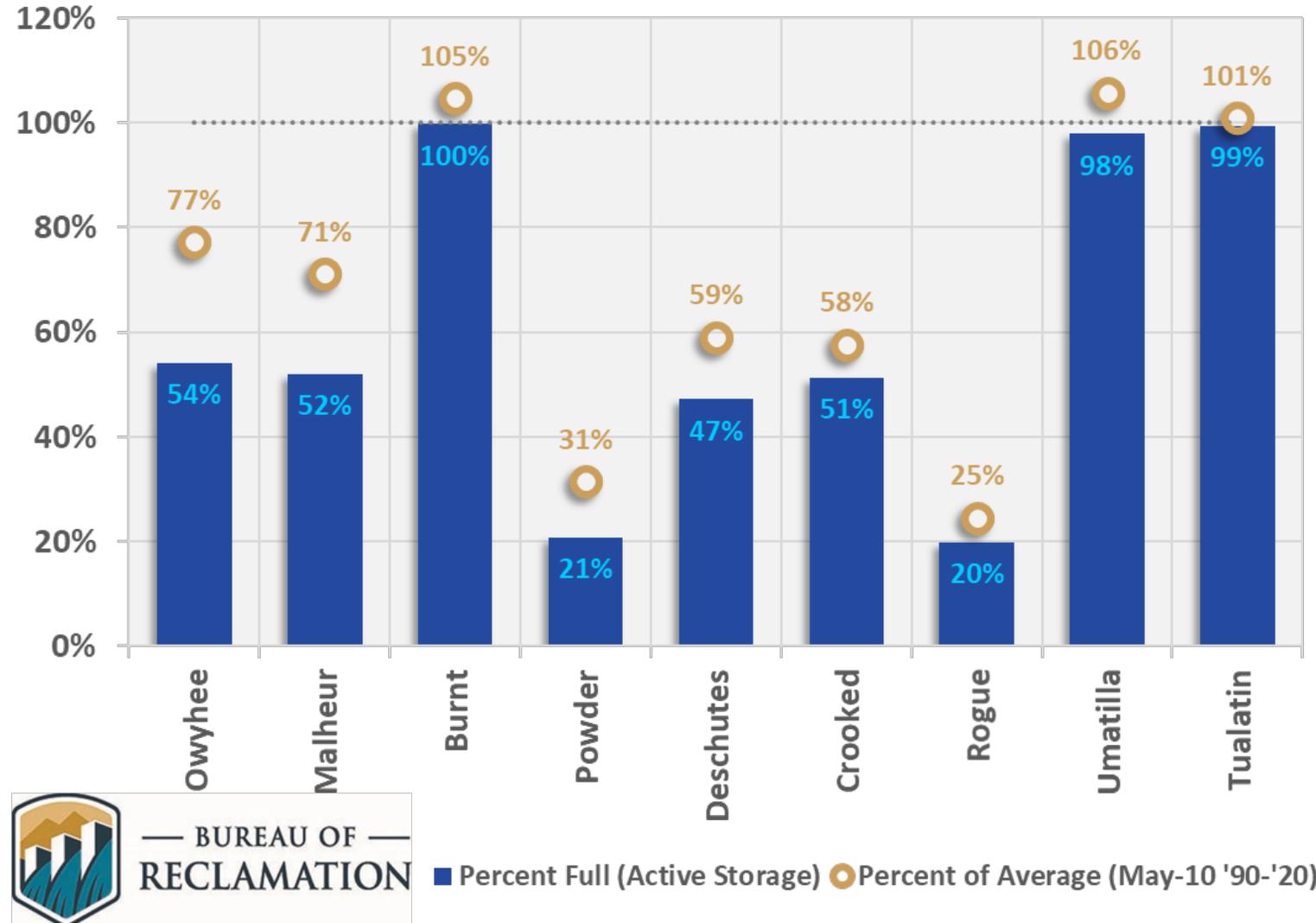
May 11, 2021

# Reservoir Storage Conditions

Oregon Reservoir Storage (Apr 12 2021)



Oregon Reservoir Storage (May 10 2021)



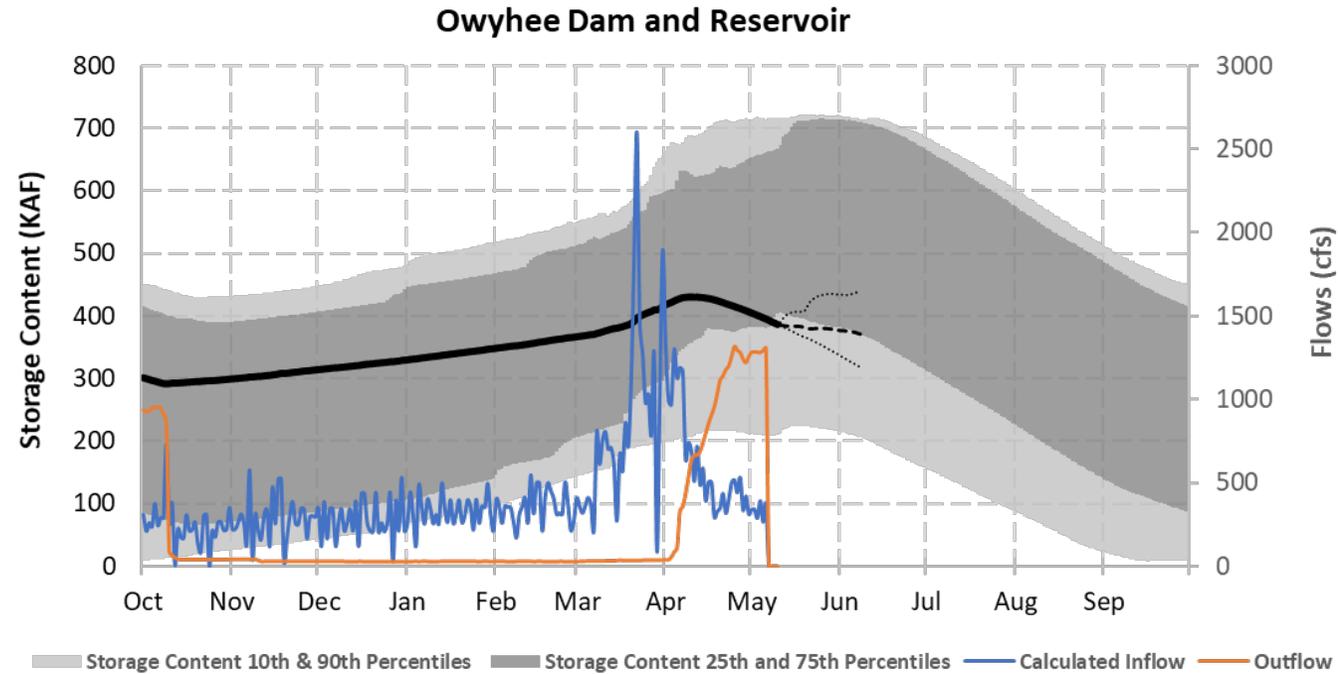
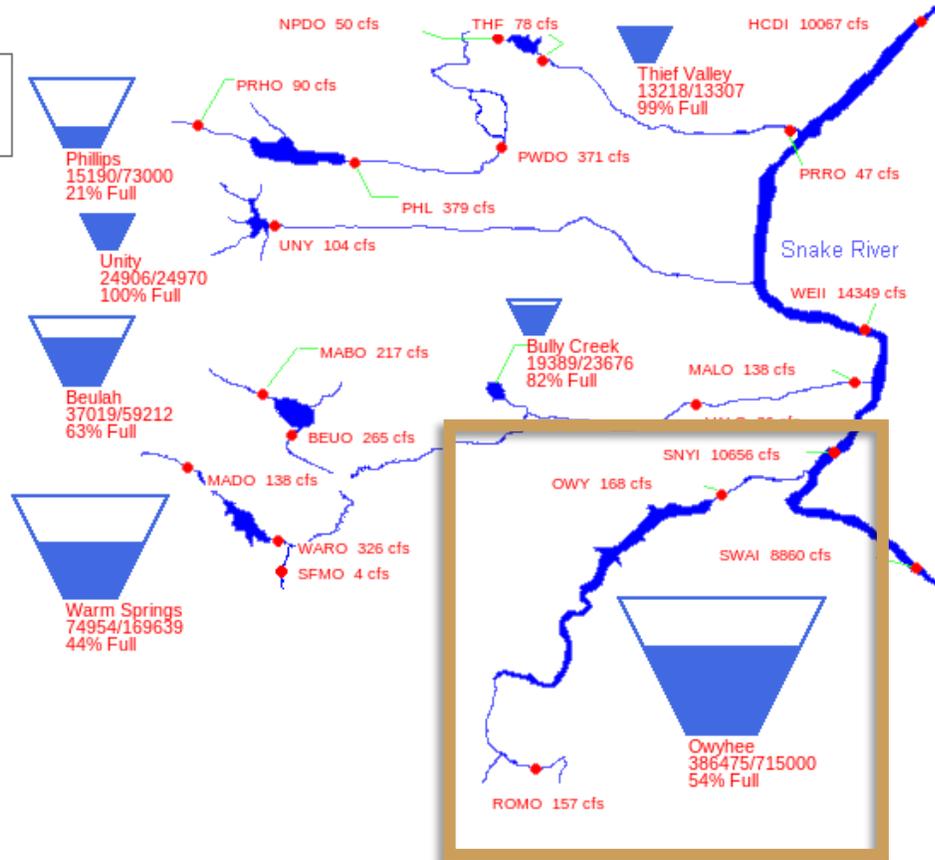
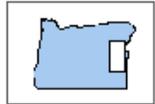
# Basin Operations Summary

- **Operations Activities:**
  - Refill: Rogue, Umatilla, Burnt
  - Irrigation: Owyhee, Malheur, Powder, Deschutes, Crooked, Tualatin
- **Water Supply Challenges**
  - Extremely dry March & April -- Anecdotal reports of already high irrigation demands typical of summer conditions
  - Likely carry-over problems to start the next WY for Owyhee, Malheur, Powder, Deschutes, Crooked, & Rogue
  - Owyhee: District is operating with 25% reductions in allotment
  - Rogue: District scheduled a late start (June) and early end (August) to the irrigation season
  - Crooked: Enacting a conservation measure on the newly established Habitat Conservation Plan to budget available water for minimum winter flow targets



# Owyhee River Basin

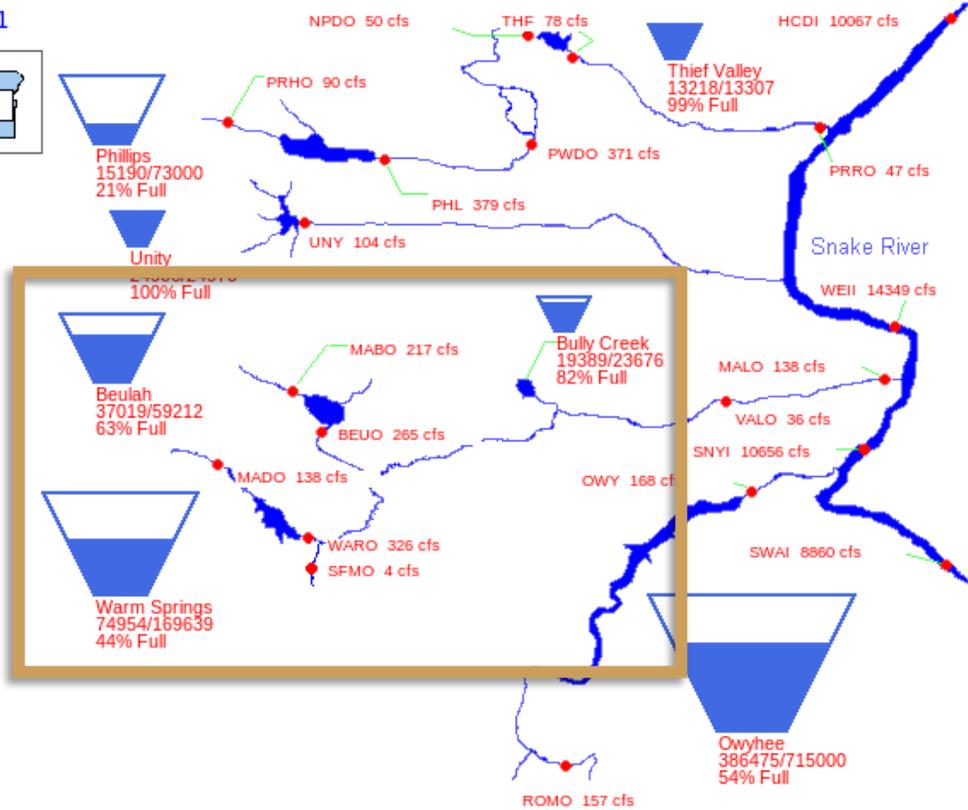
05/10/2021



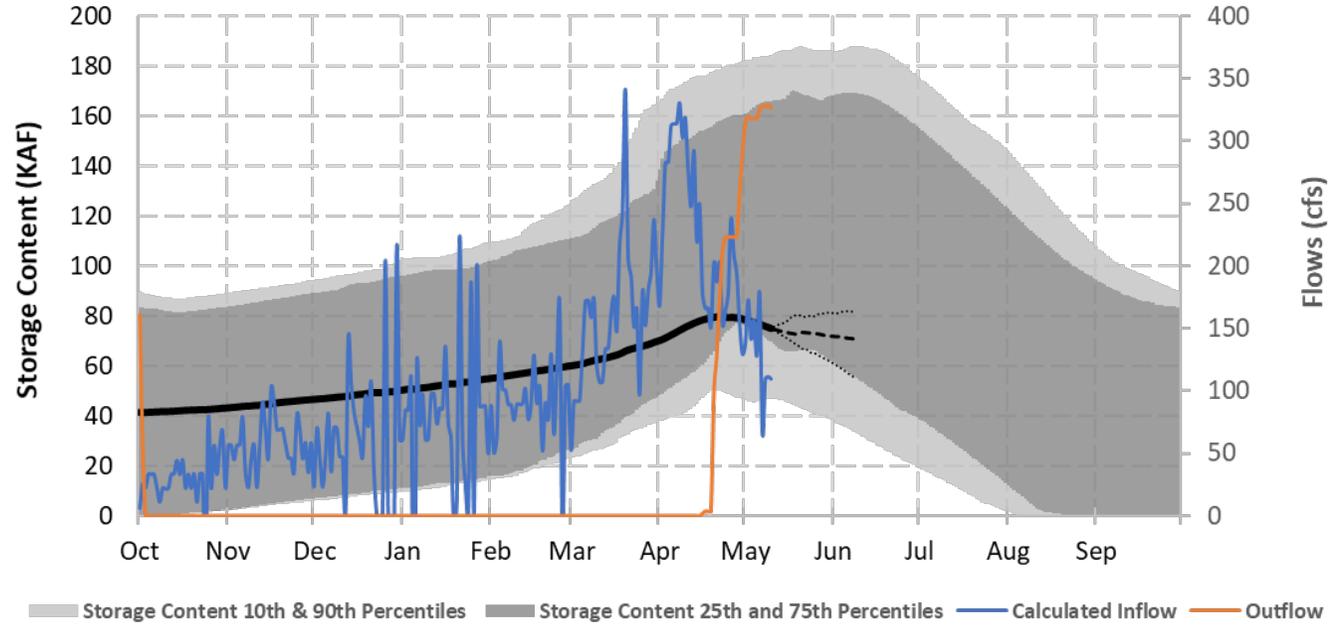
\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

# Malheur River Basin

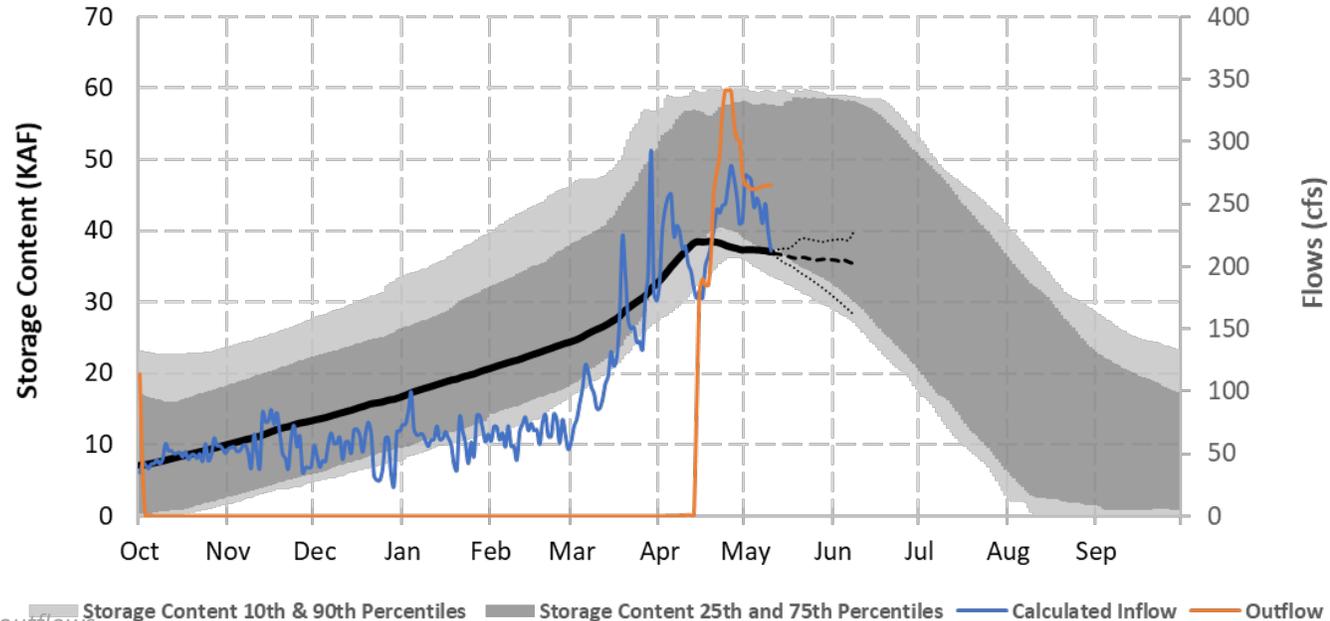
05/10/2021



### Warm Springs Dam and Reservoir



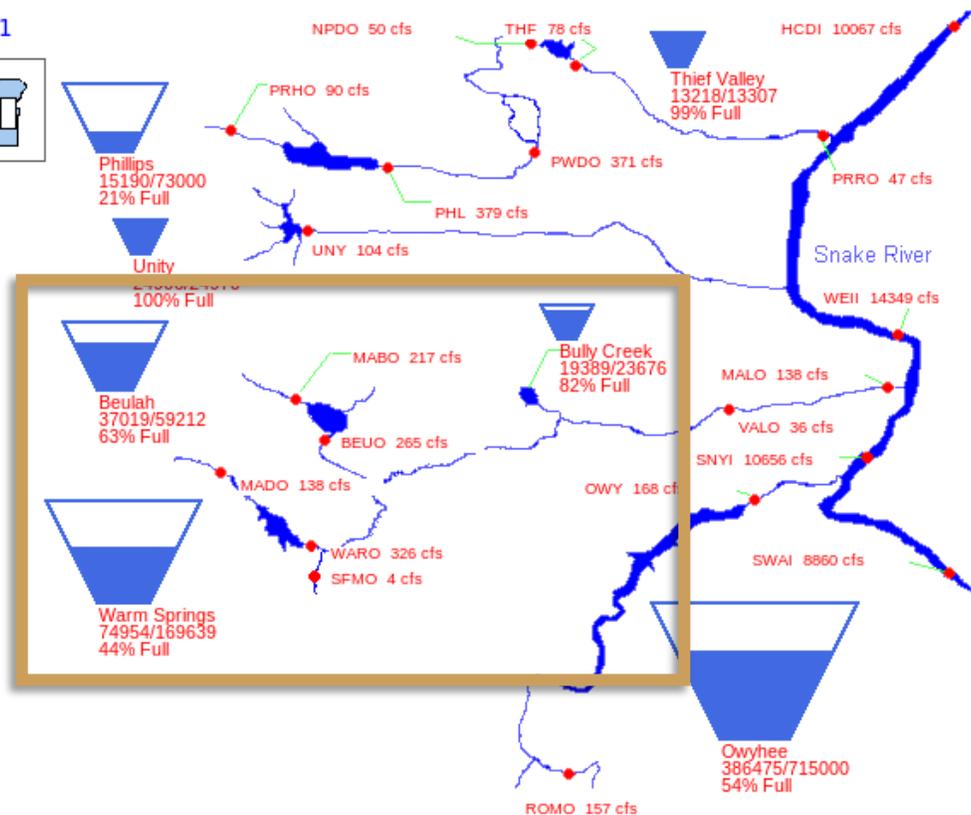
### Beulah Dam and Reservoir



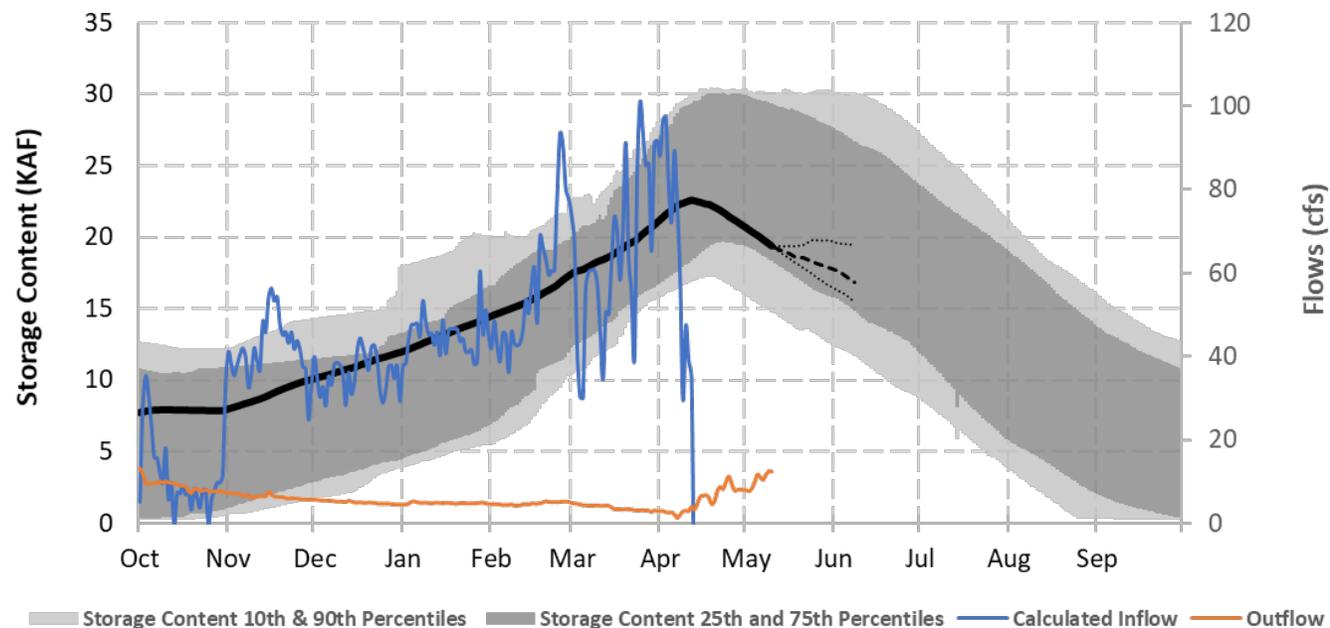
\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

# Malheur River Basin

05/10/2021



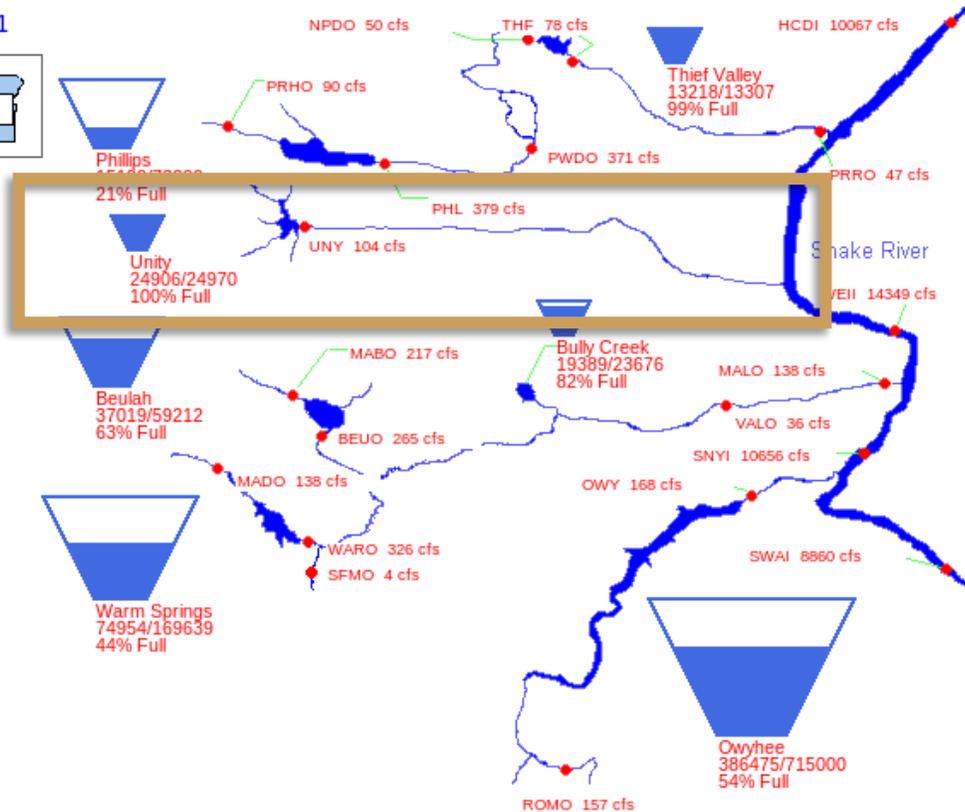
### Bully Creek Dam and Reservoir



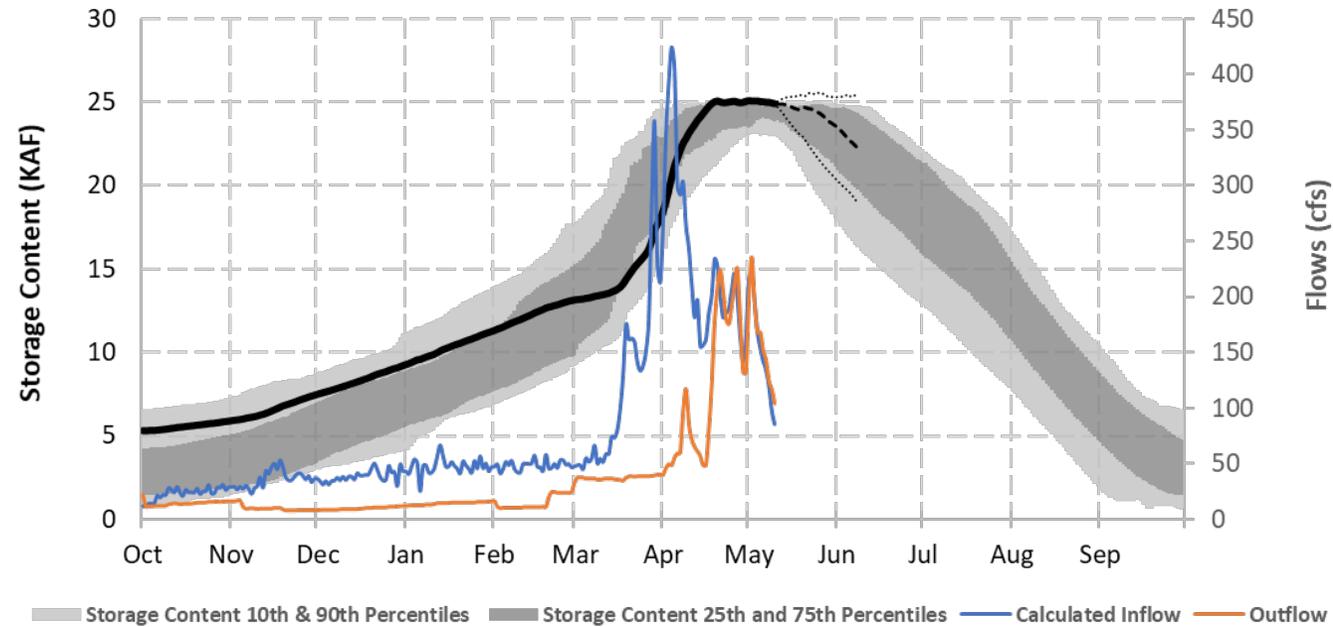
\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

# Burnt River Basin

05/10/2021



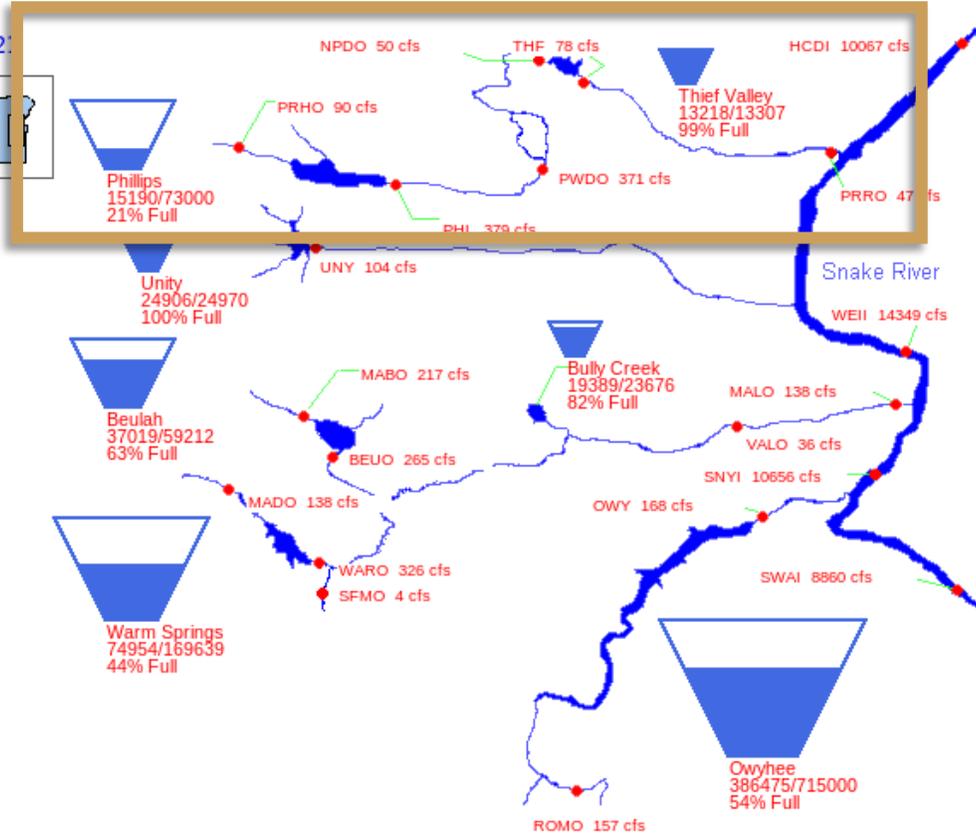
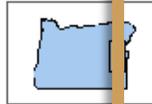
### Unity Dam and Reservoir



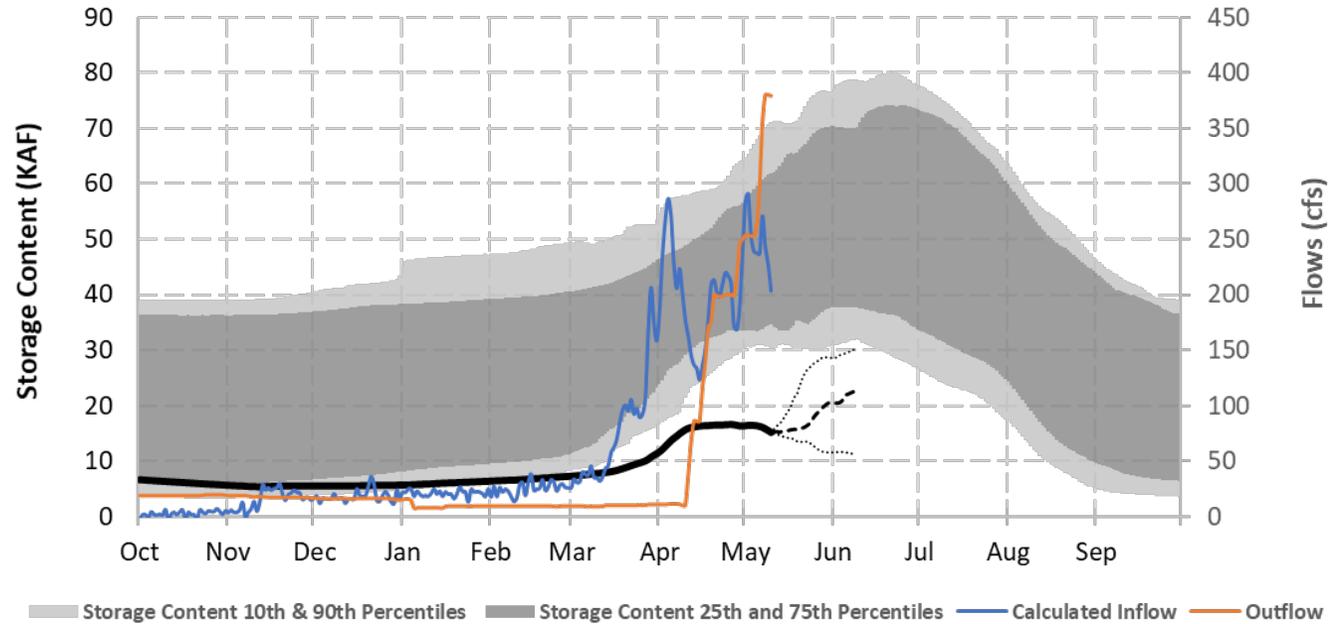
\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

# Powder River Basin

05/10/2021



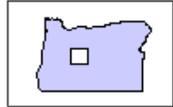
### Mason Dam - Phillips Lake



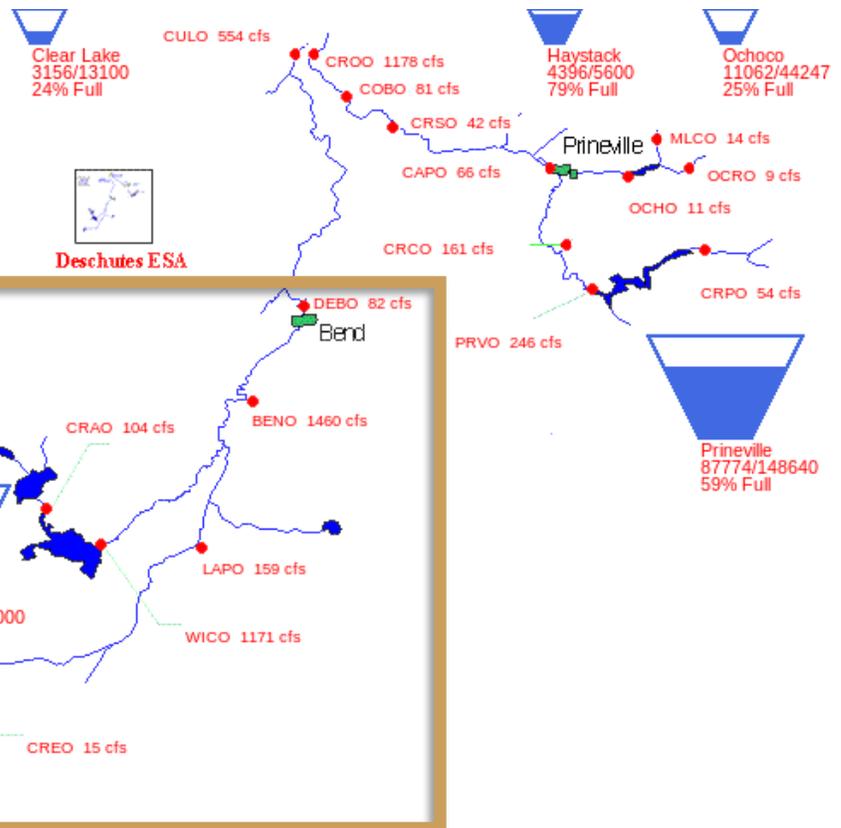
\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

# Deschutes River Basin

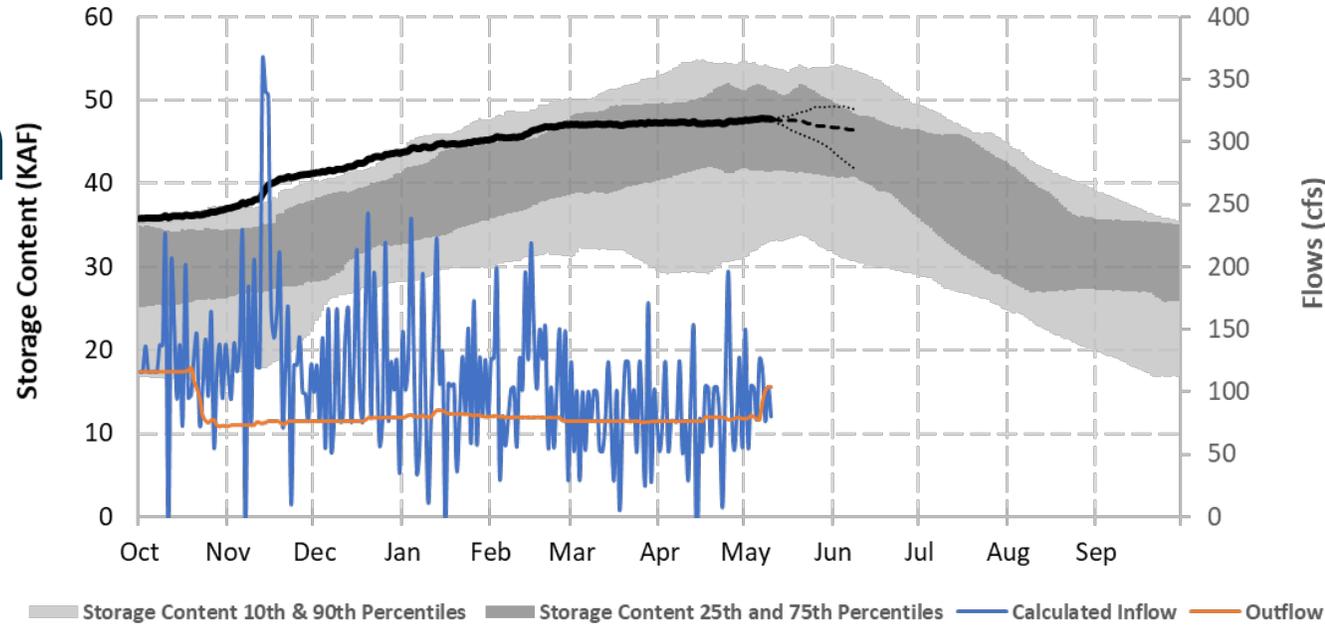
05/10/2021



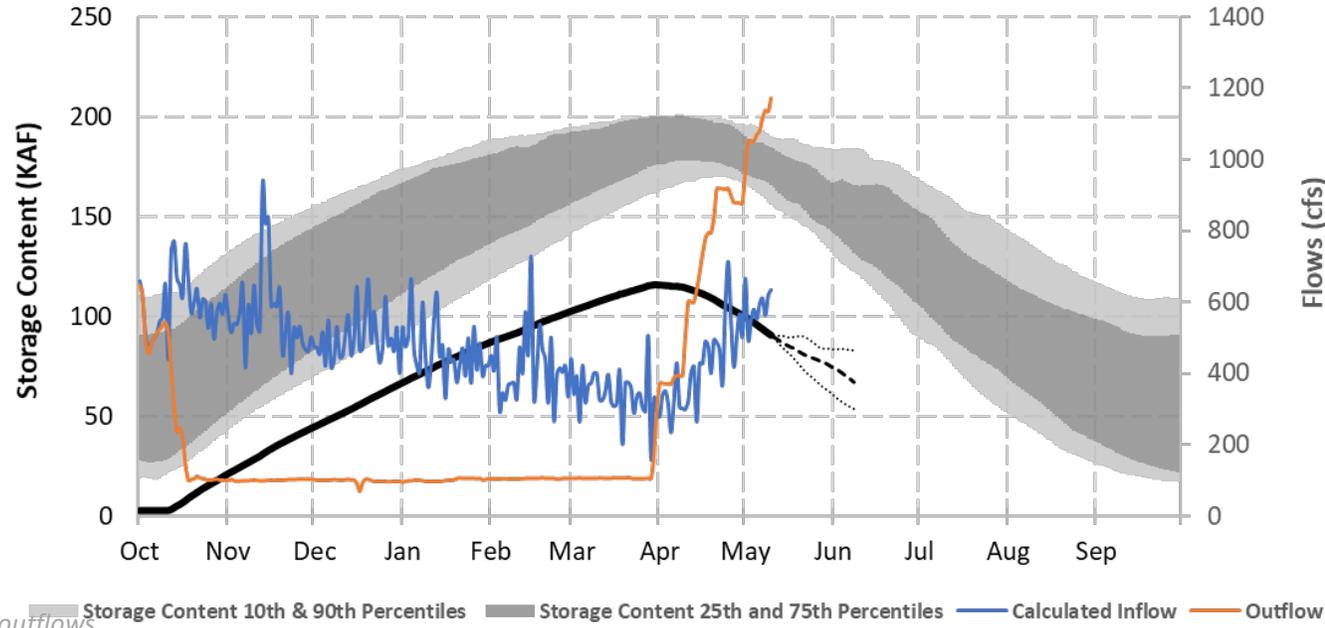
Deschutes ESA



### Crane Prairie Dam and Reservoir



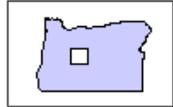
### Wickiup Dam and Reservoir



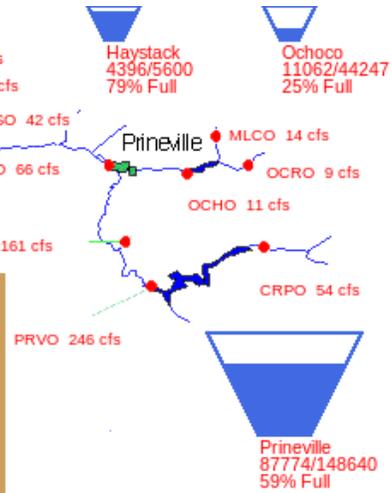
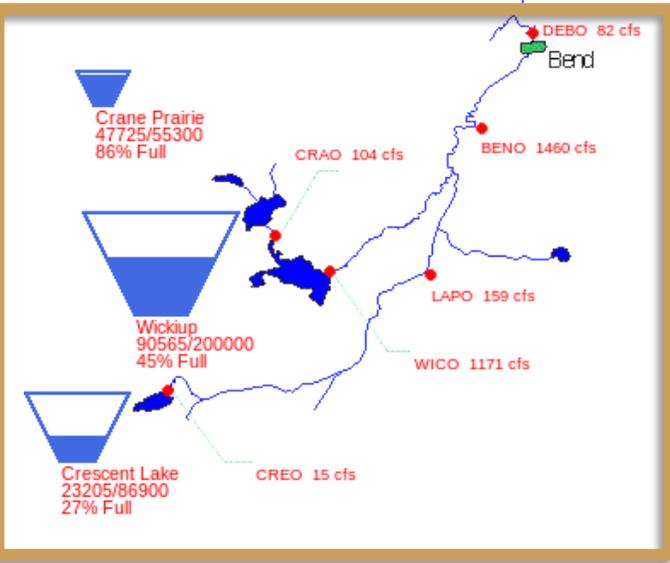
\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

# Deschutes River Basin

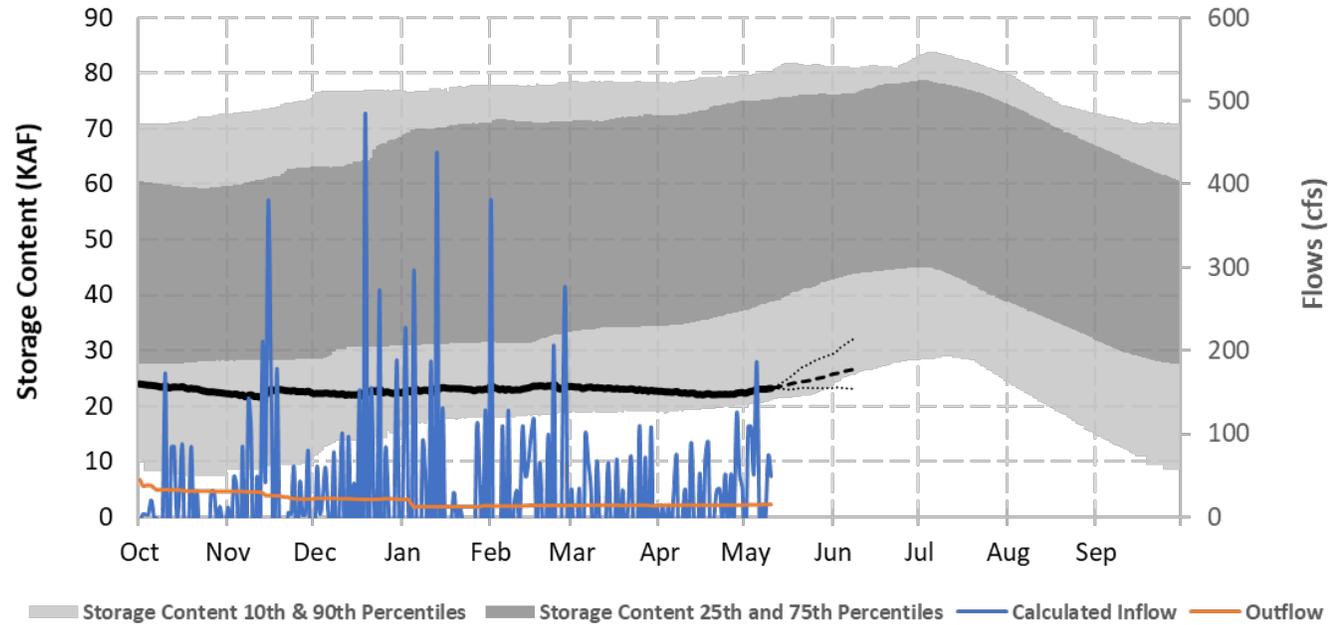
05/10/2021



Deschutes ESA

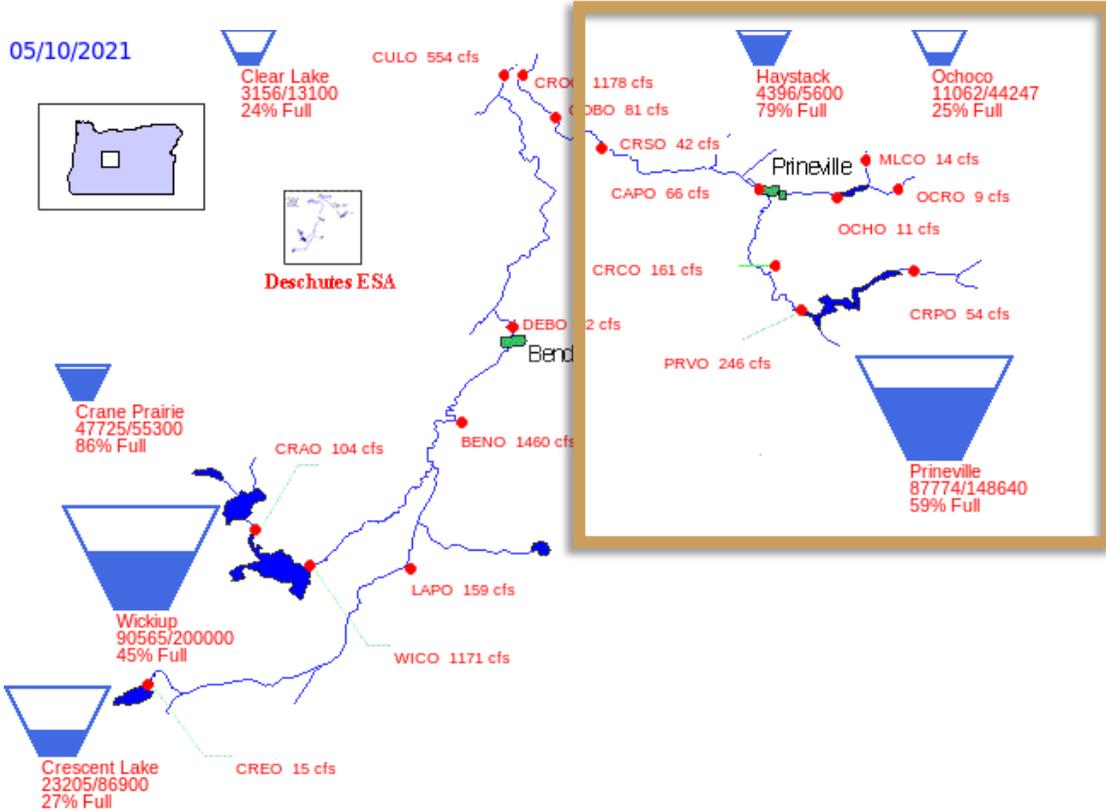


### Crescent Lake Dam

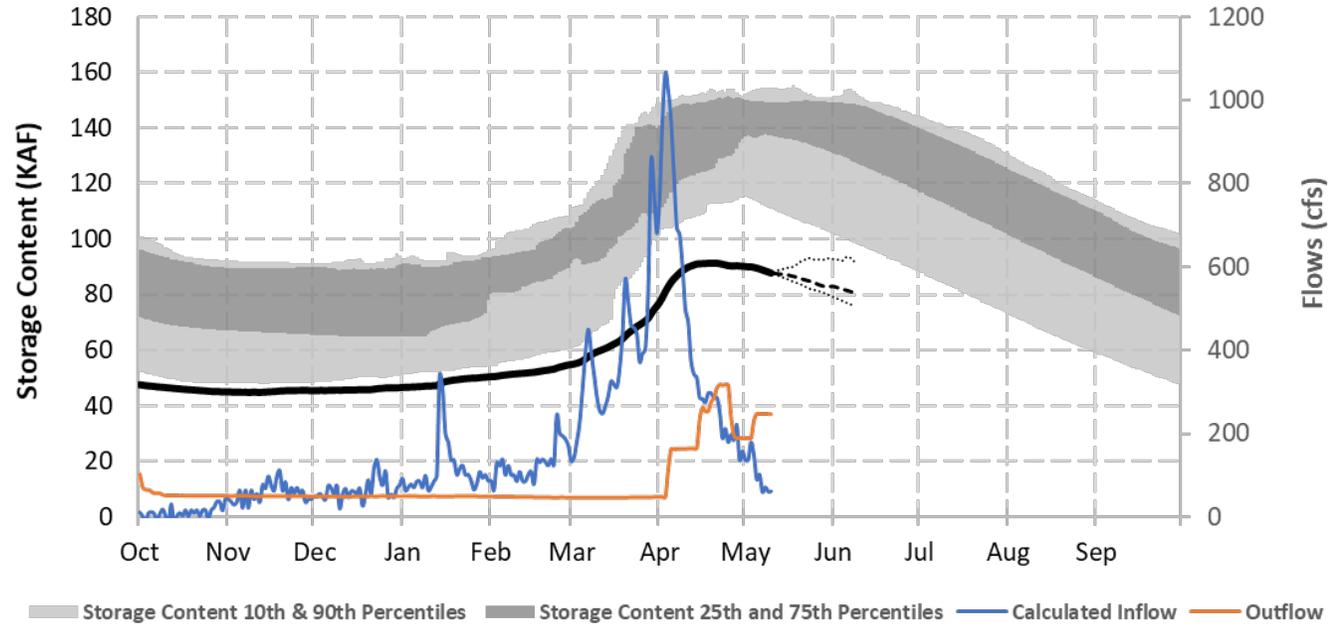


\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

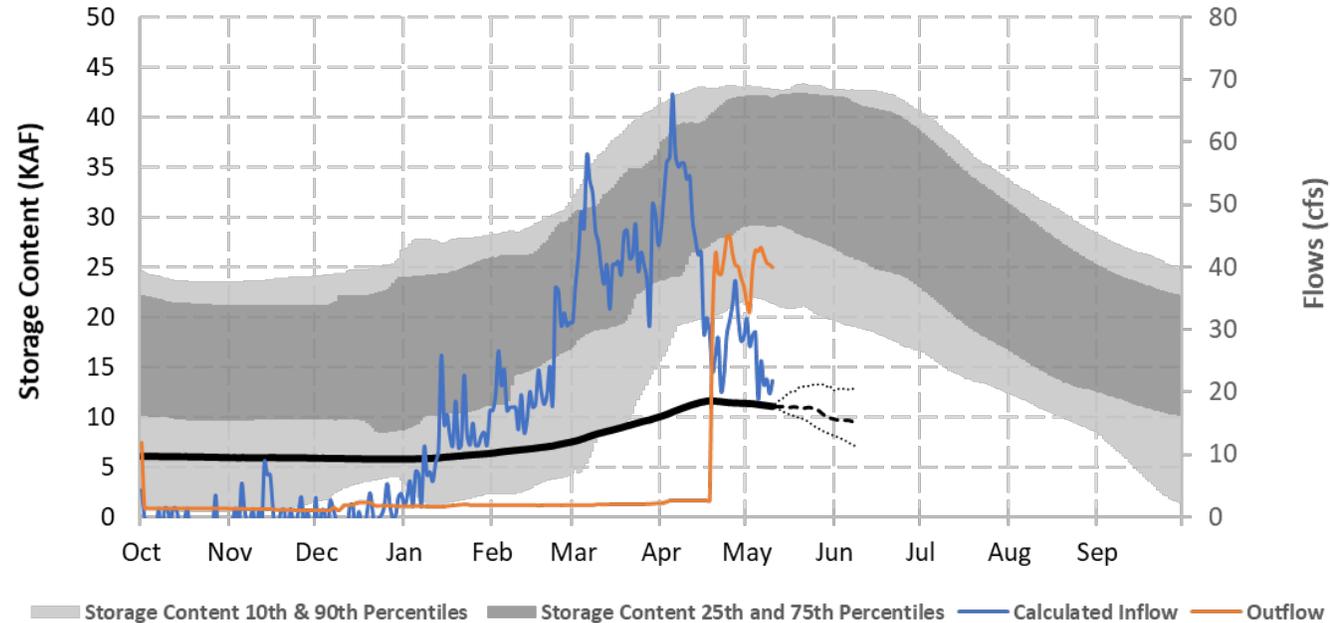
# Crooked River Basin



Bowman Dam - Prineville Reservoir



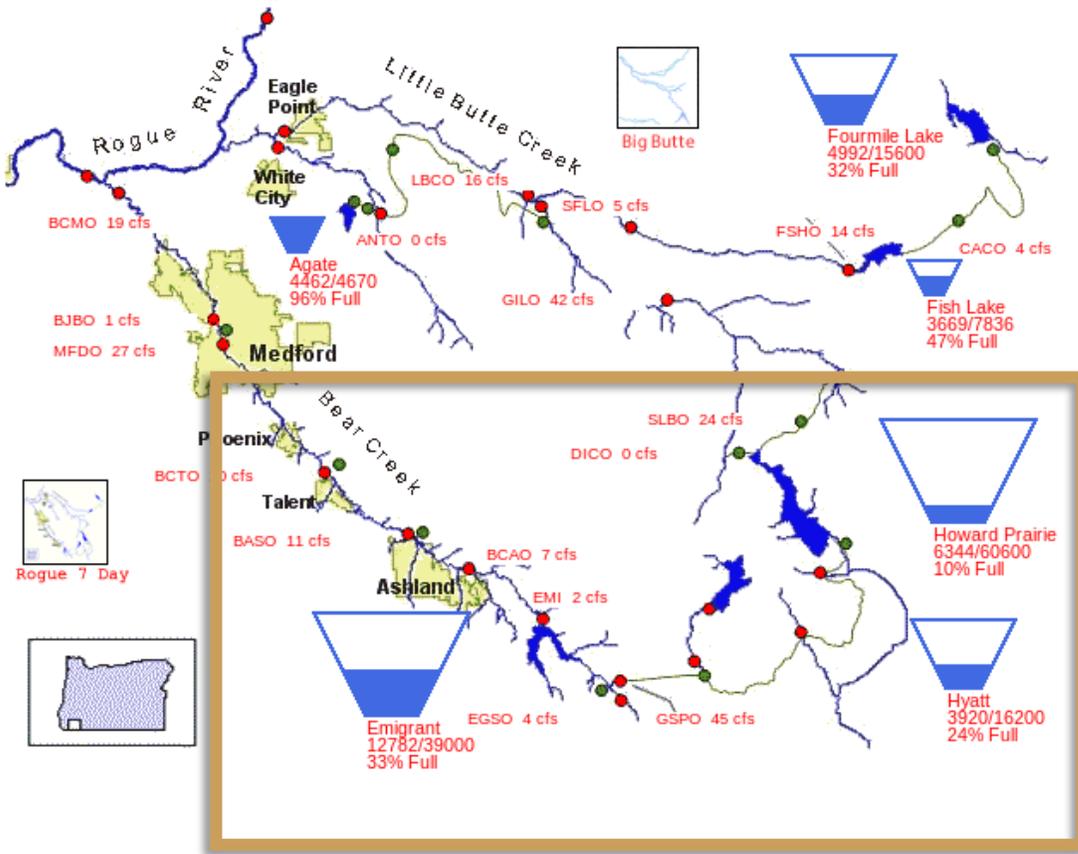
Ochoco Dam and Reservoir



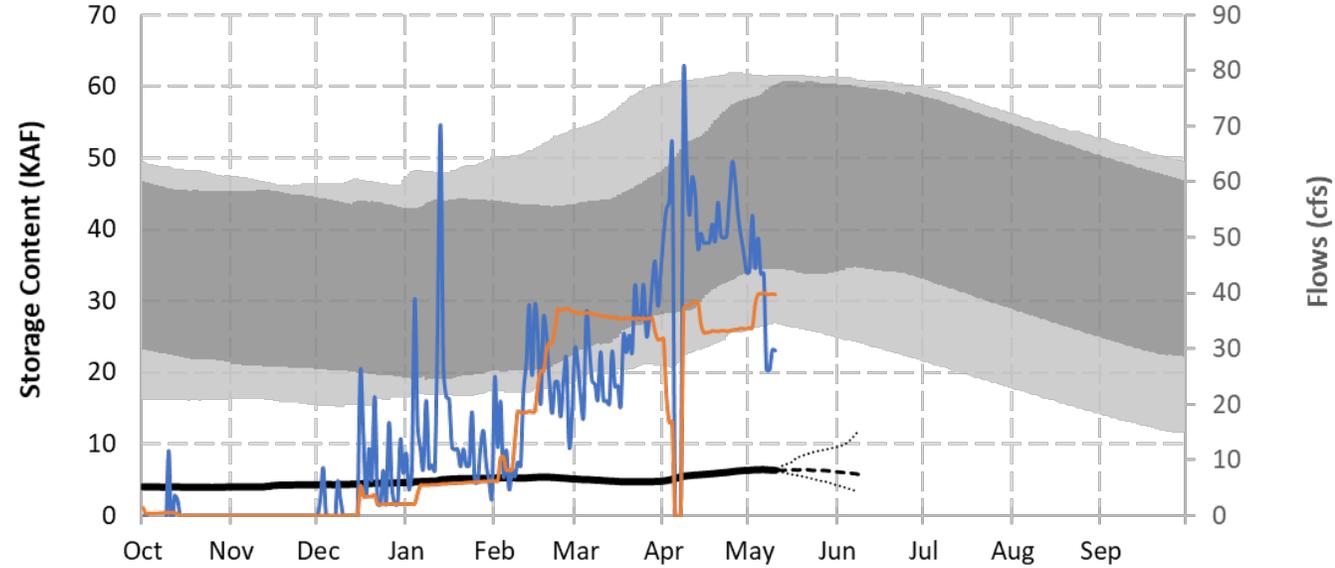
\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

# Rogue River Basin

05/10/2021

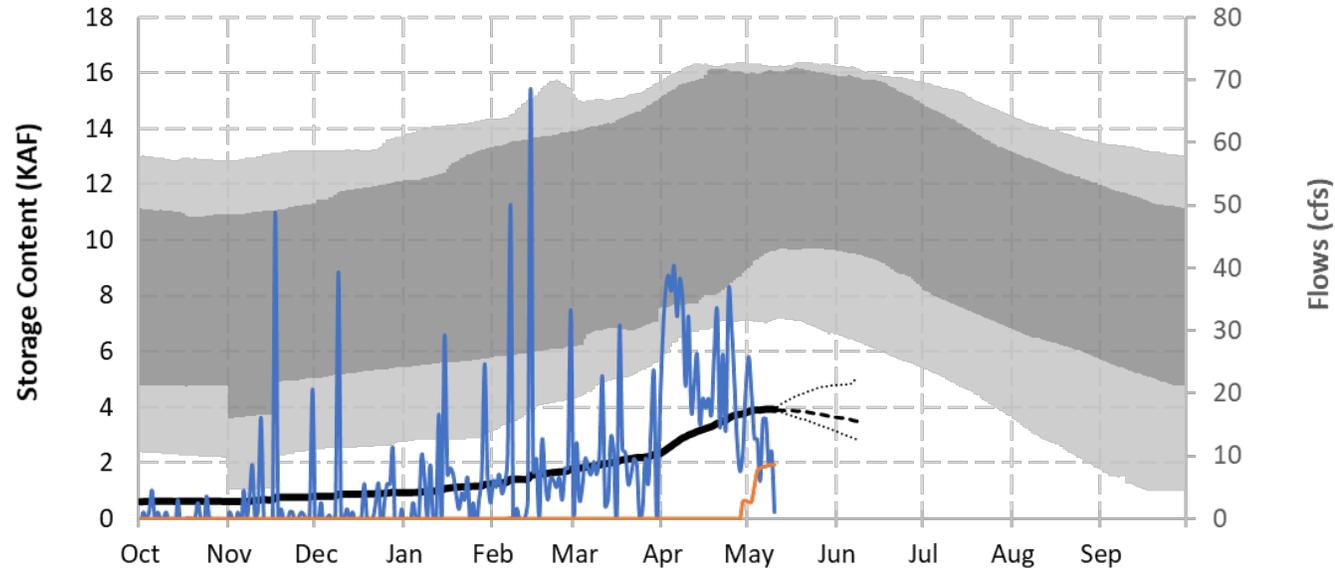


### Howard Prairie Dam and Lake



Storage Content 10th & 90th Percentiles Storage Content 25th and 75th Percentiles Calculated Inflow Outflow

### Hyatt Dam and Reservoir

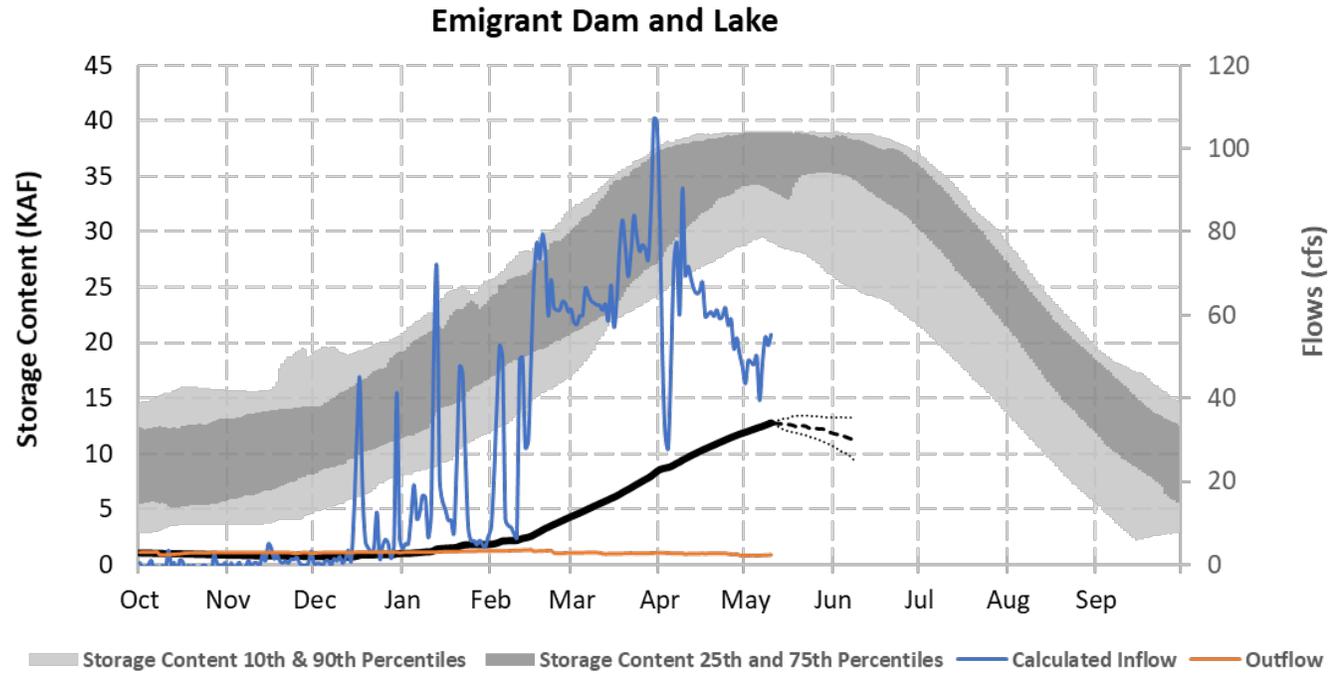
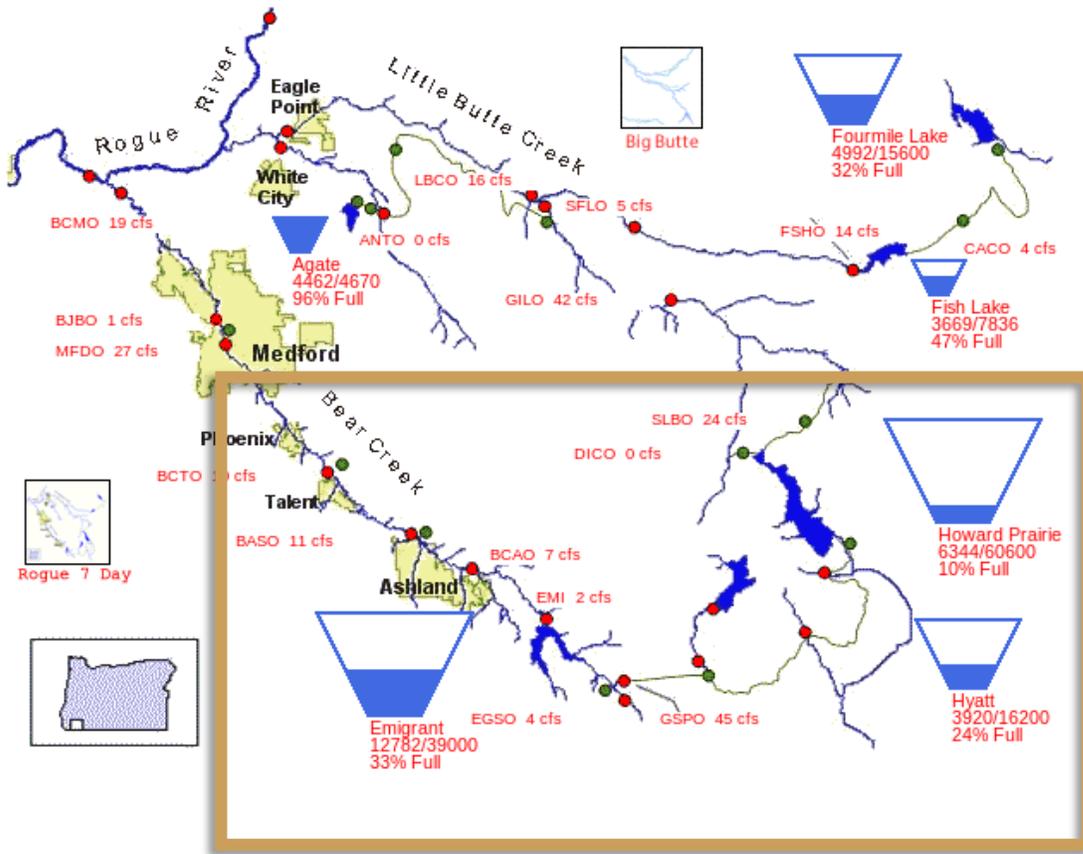


Storage Content 10th & 90th Percentiles Storage Content 25th and 75th Percentiles Calculated Inflow Outflow

\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

# Rogue River Basin

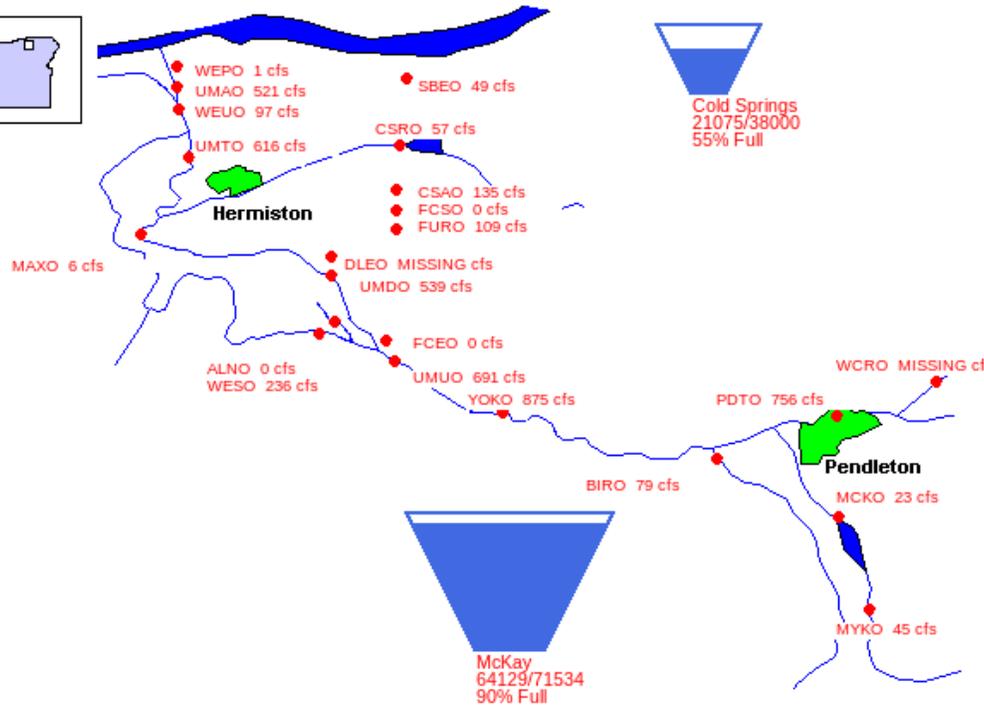
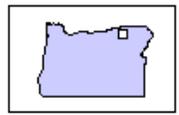
05/10/2021



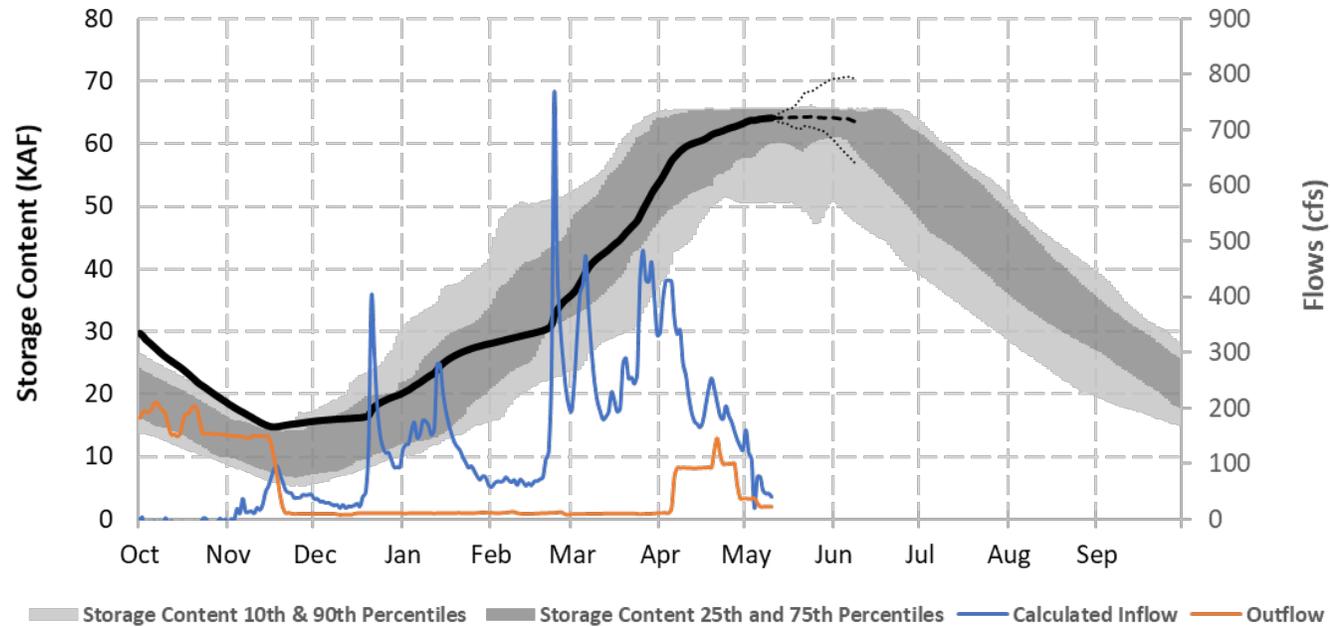
\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

# Umatilla River Basin

05/10/2021



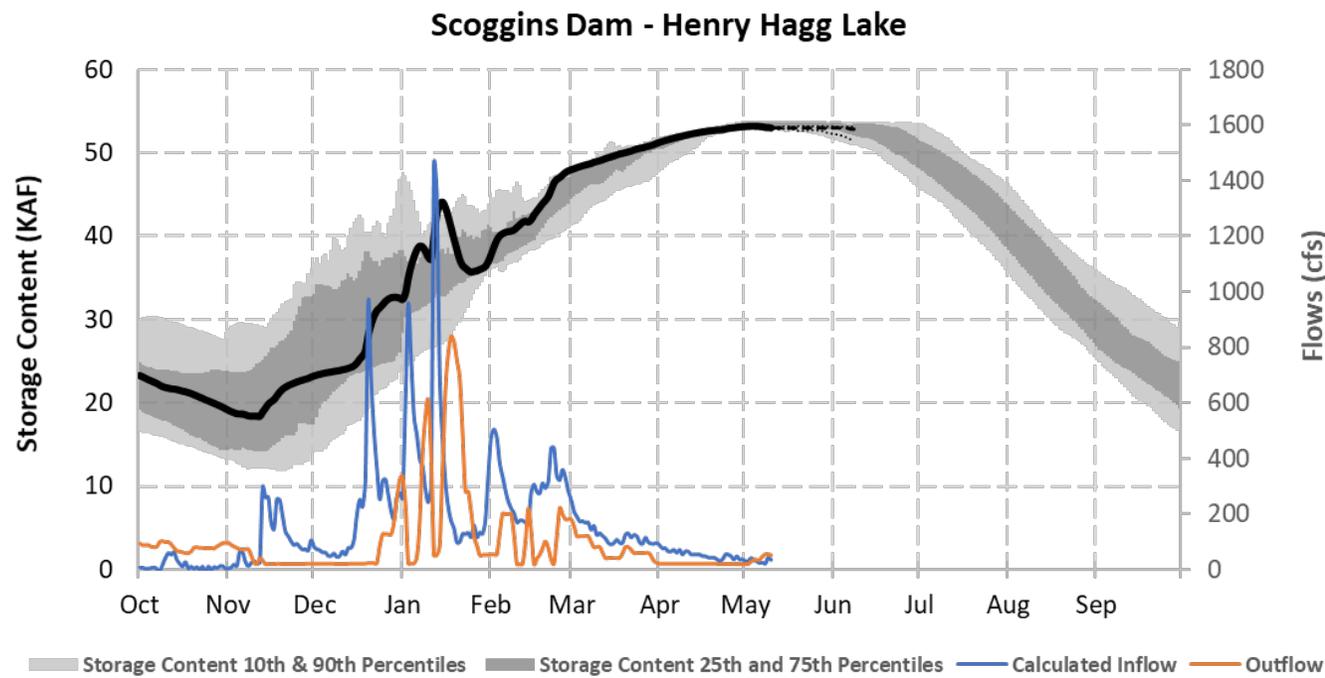
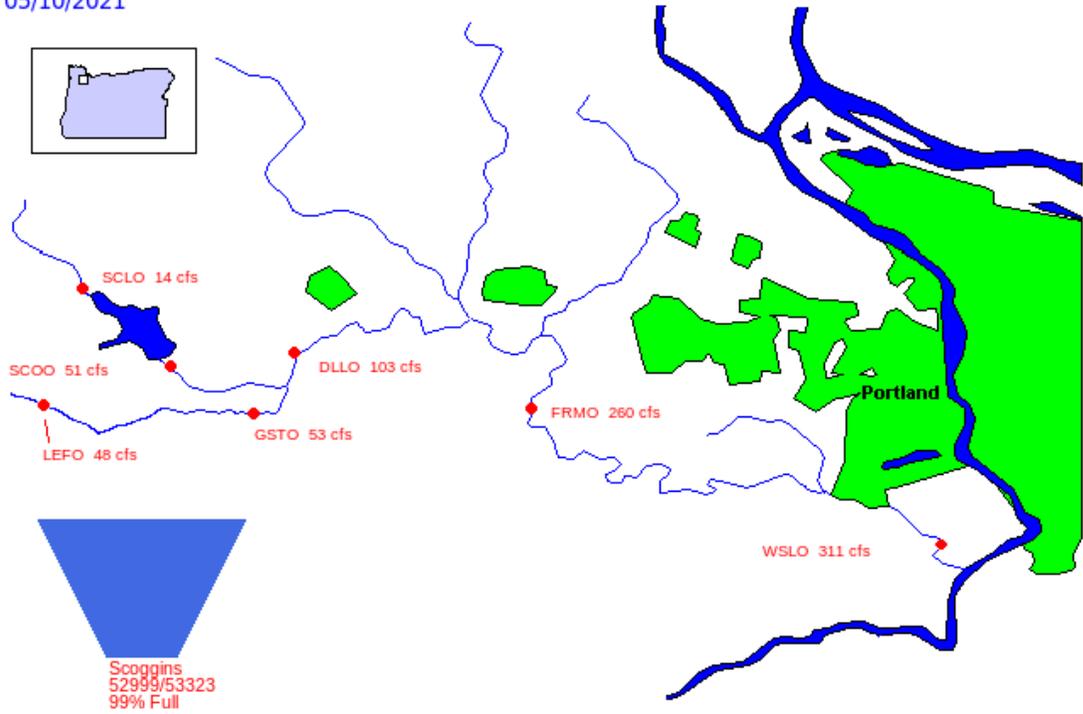
### McKay Dam and Reservoir



\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

# Tualatin River Basin

05/10/2021



\*Graphed projections are the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentile storage values based on historical inflows and outflows

Jon Rocha – Columbia Pacific Northwest Regional Office

[jrocha@usbr.gov](mailto:jrocha@usbr.gov)

208.378.6213



— BUREAU OF —  
RECLAMATION

# FLOW MANAGEMENT & WATER QUALITY TEAM

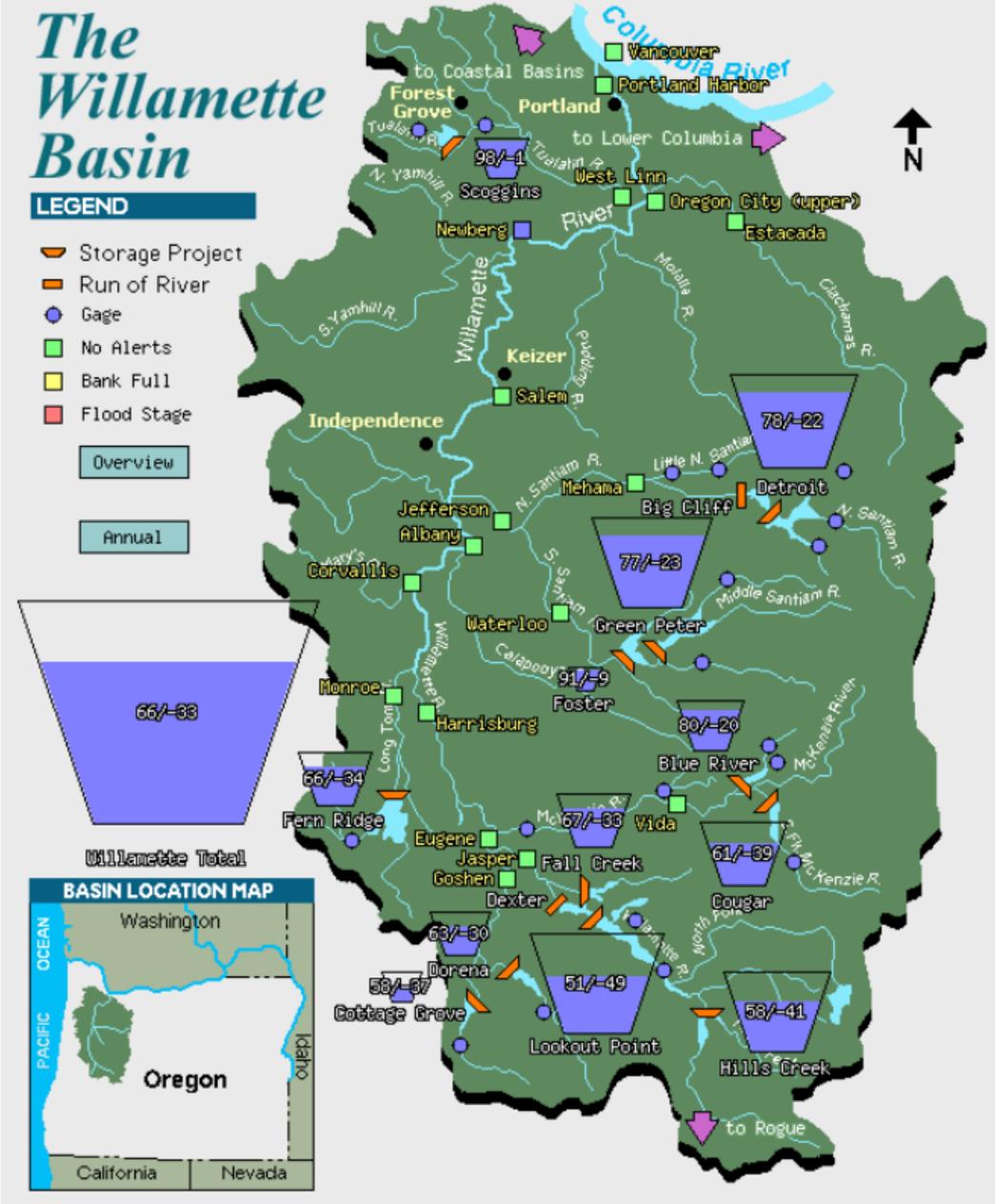
## WY2021 WILLAMETTE PROJECTS

### MODELING UPDATE

CENWP-ENC-HR  
 Reservoir Regulation & Water Quality Section  
 Date: 12 May 2021



US Army Corps  
 of Engineers®



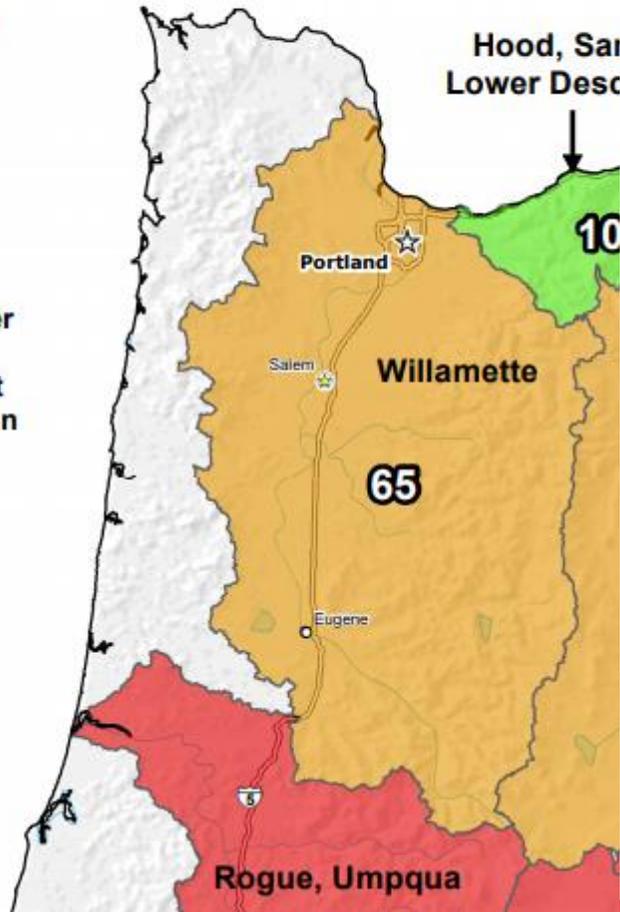
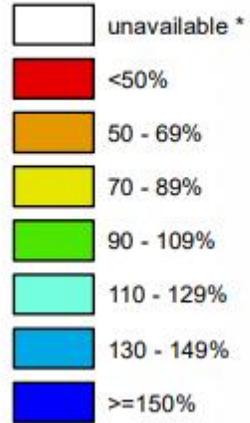


# SNOWPACK SUMMARY

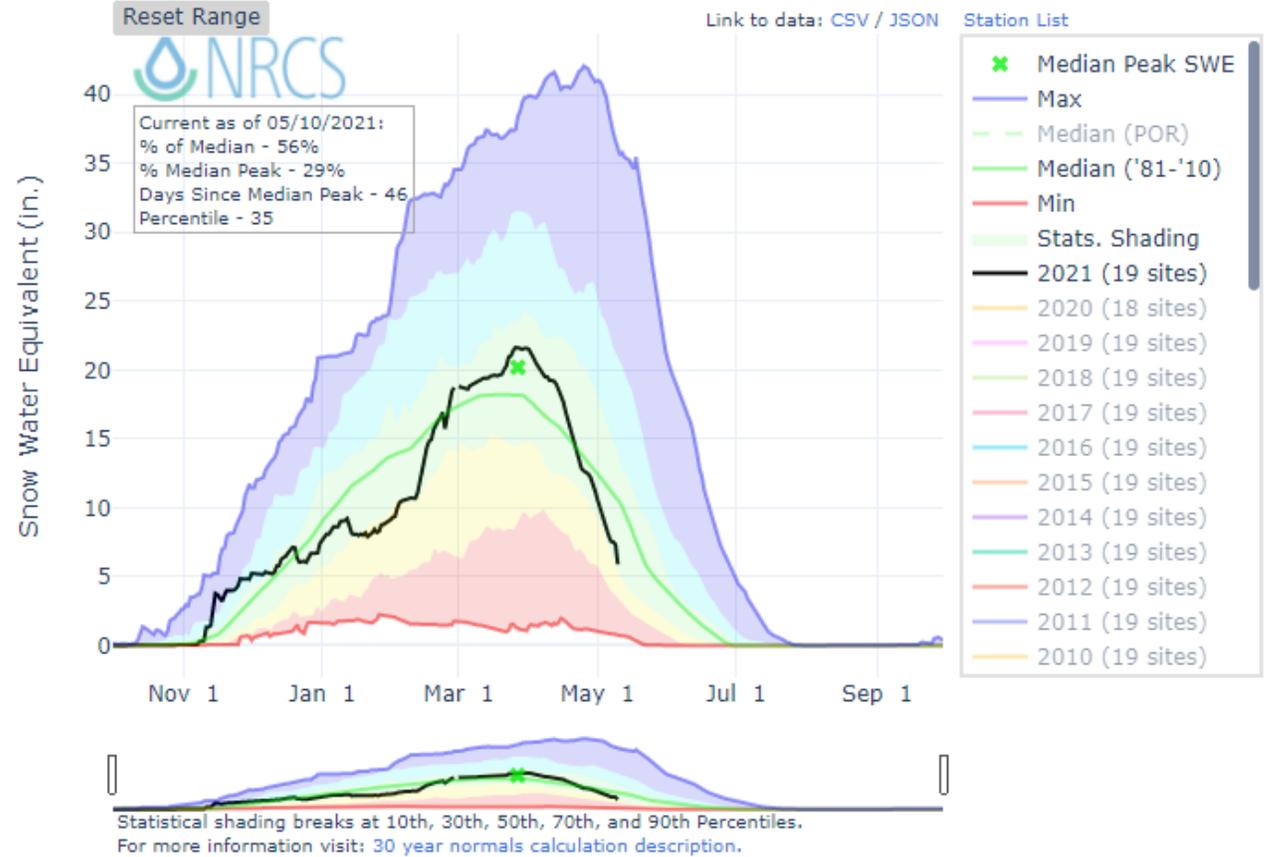
## Oregon SNOTEL Current Snow

May 10, 2021

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median



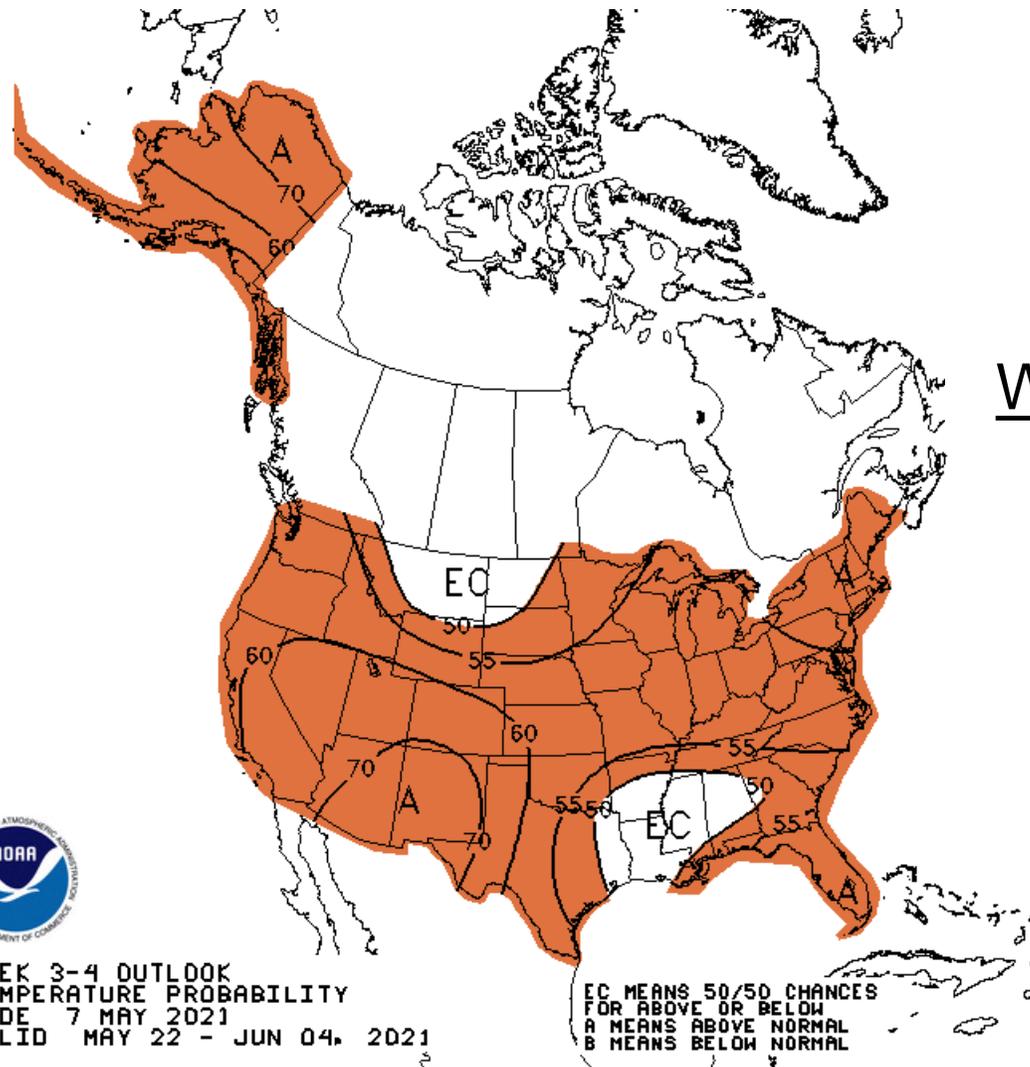
## SNOW WATER EQUIVALENT IN WILLAMETTE



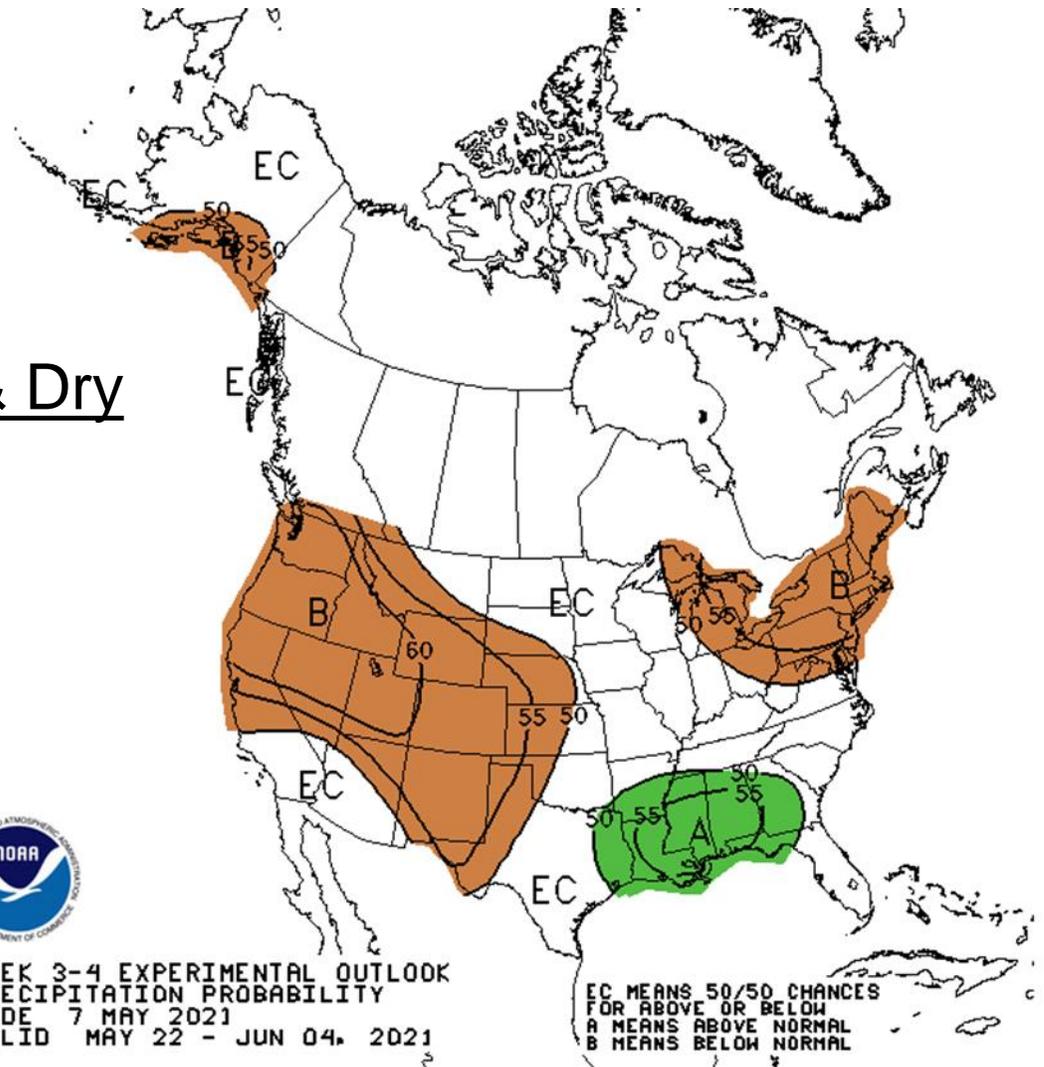


# CLIMATE OUTLOOK

[HTTPS://WWW.NWRFC.NOAA.GOV/CLIMATE/CLIMATE\\_FCST.CGI](https://www.nwrfc.noaa.gov/Climate/Climate_FCST.cgi)



Warm & Dry





# RESSIM MODEL ASSUMPTIONS



- NWRFC ESP Natural Forecast used for water supply forecasts.
- Current IRRM restrictions in effect for Hills Creek, Lookout Point and Detroit.
  - Hills Creek maximum conservation pool reduced by 10 ft to 1531 ft, also altered refill rate.
  - Lookout Point maximum conservation pool reduced by 5 ft to 921 ft.
  - Detroit maximum conservation pool reduced by 5 ft to 1558.5 ft.
- No mainstem targets at Salem or Albany.

RFC Ensemble Water Supply Availability Median Forecast at Salem:

**4 May Apr – Jul = 2.45 MAF**  
**Apr – Sep = 2.85 MAF**

17 April Apr – Jul = 2.98 MAF  
Apr – Sep = 3.40 MAF

13 April Apr – Jul = 2.84 MAF  
Apr – Sep = 3.30 MAF

7 April Apr – Jul = 2.91 MAF  
Apr – Sep = 3.39 MAF

30 March Apr – Jul = 3.23 MAF  
Apr – Sep = 3.67 MAF

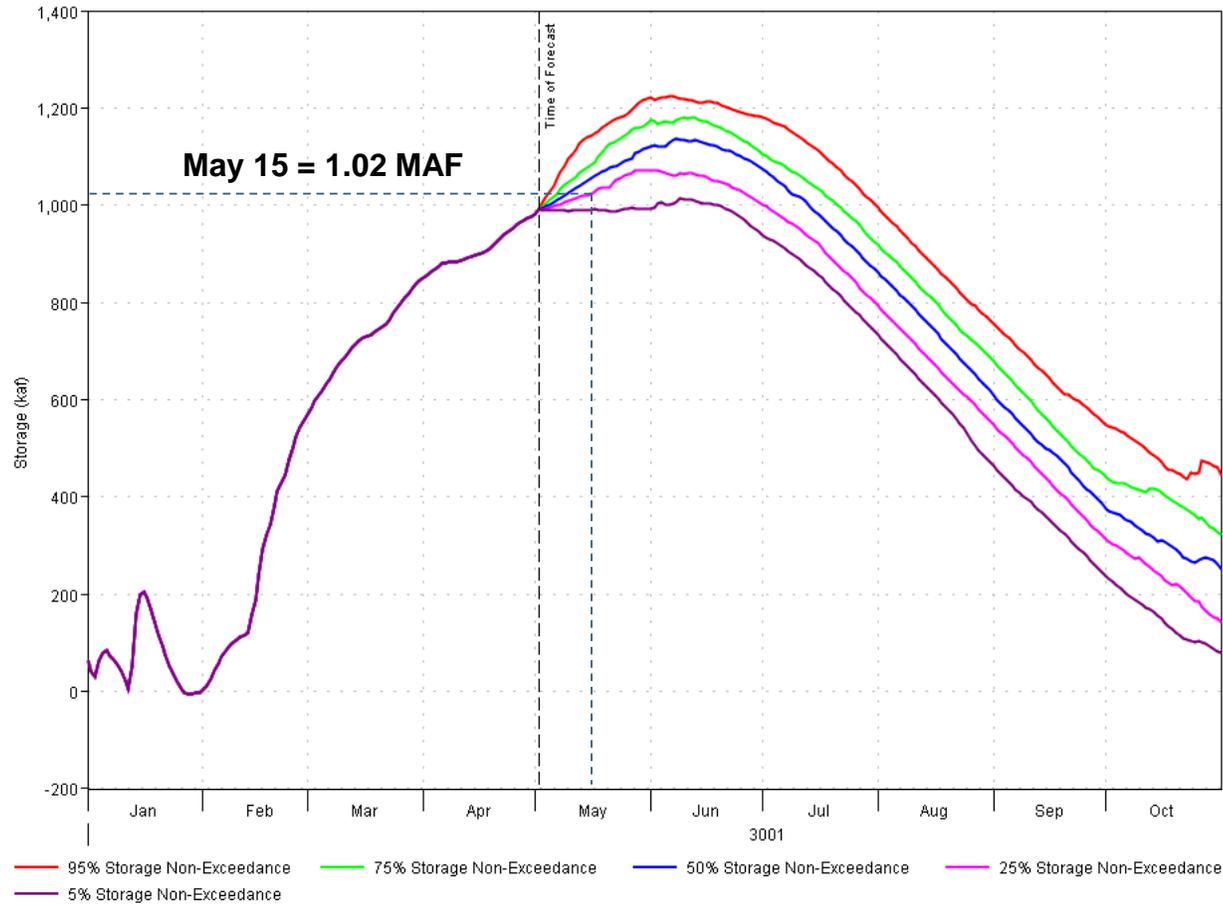
20 March Apr – Jul = 3.44 MAF  
Apr – Sep = 3.98 MAF



# SYSTEM STORAGE



**Total System Storage  
NWRFC 4 May 2021 Forecast (Median)**

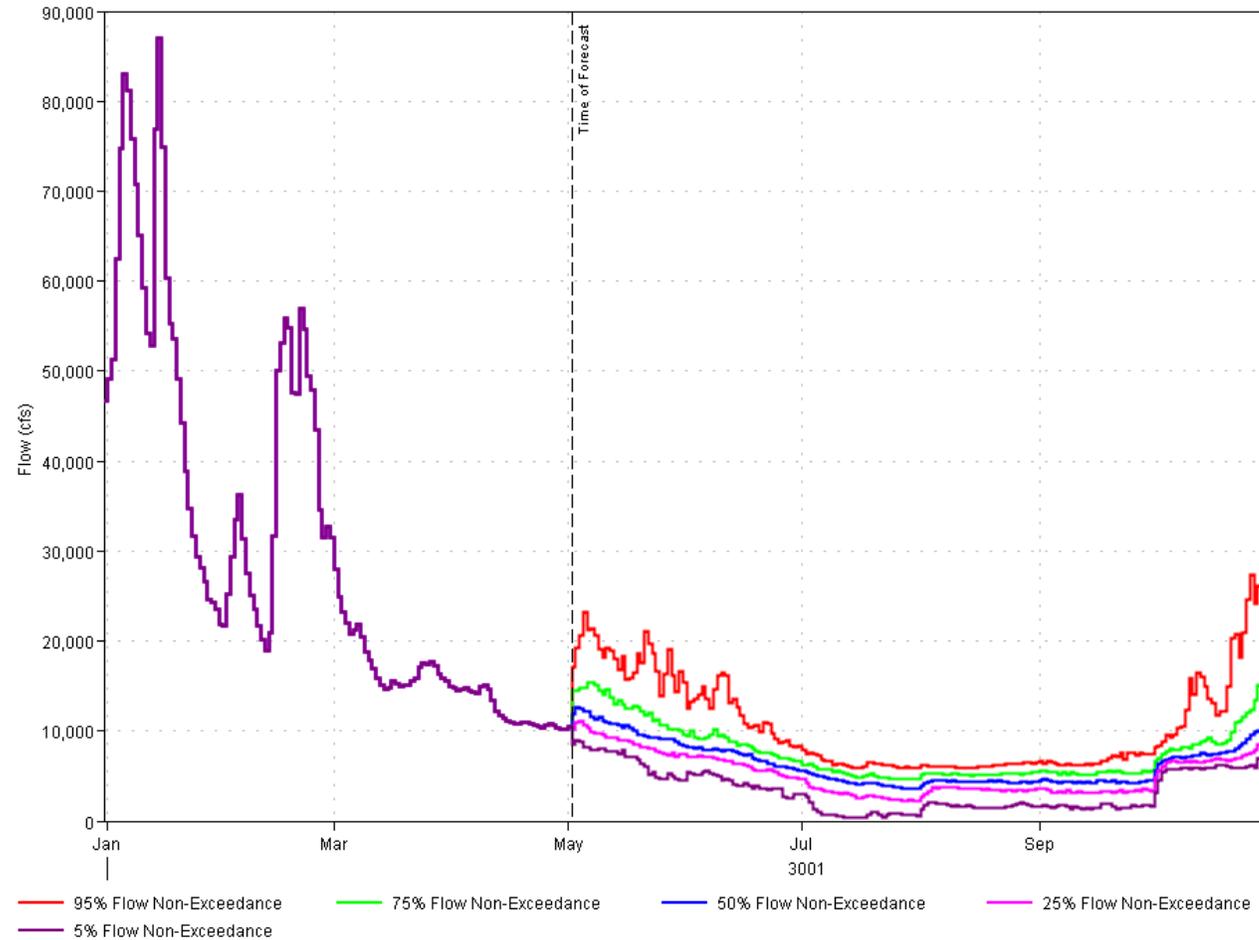




# SALEM



**WILLAMETTE\_AT SALEM**  
**NWRFC 4 May 2021 Forecast (Median)**



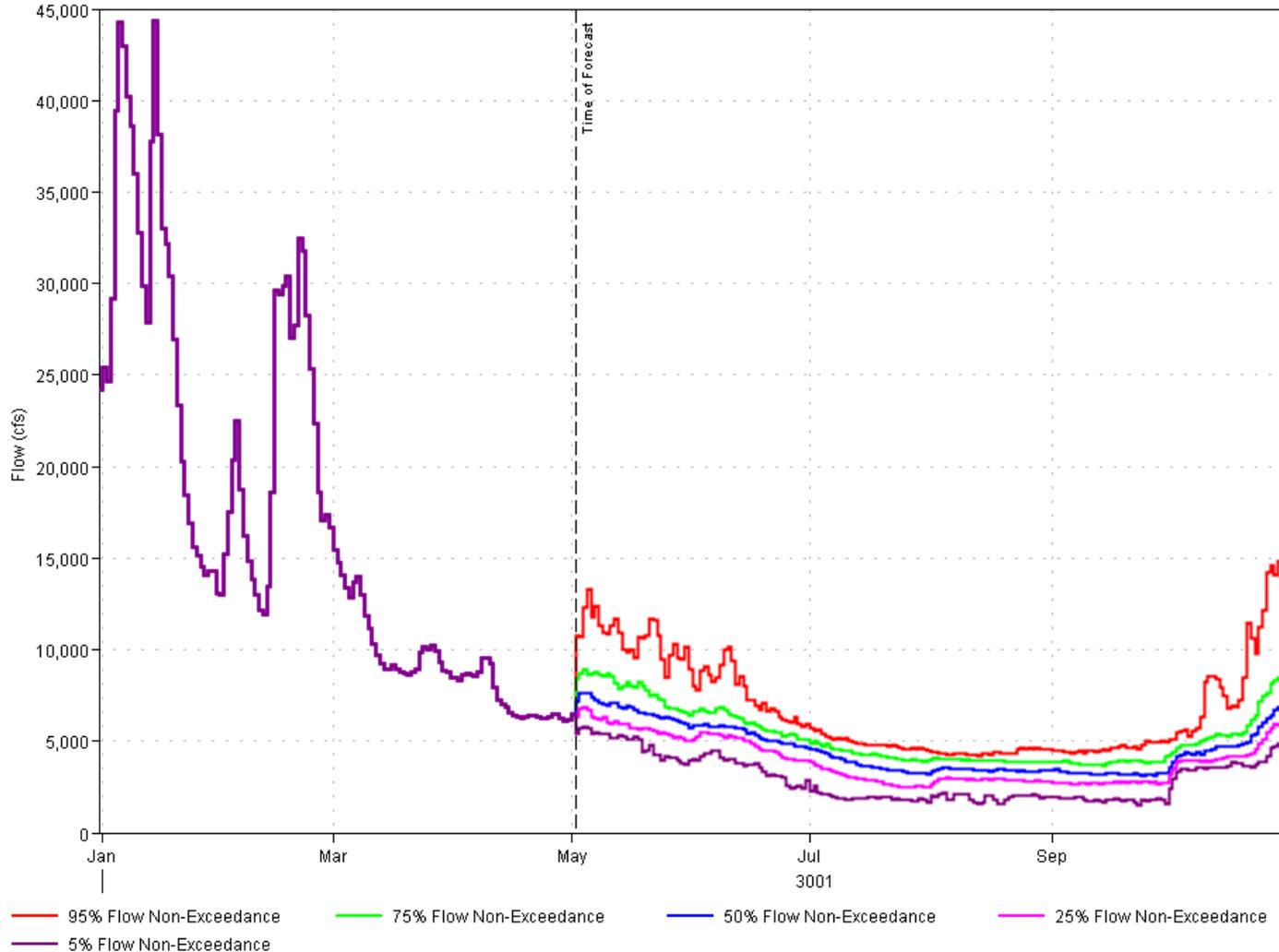
- 50% - Flows as low as ~3,500 cfs in late July.
- 25% - Flows as low as ~2,200 cfs in late July.



# ALBANY



**WILLAMETTE\_AT ALBANY**  
**NWRFC 4 May 2021 Forecast (Median)**



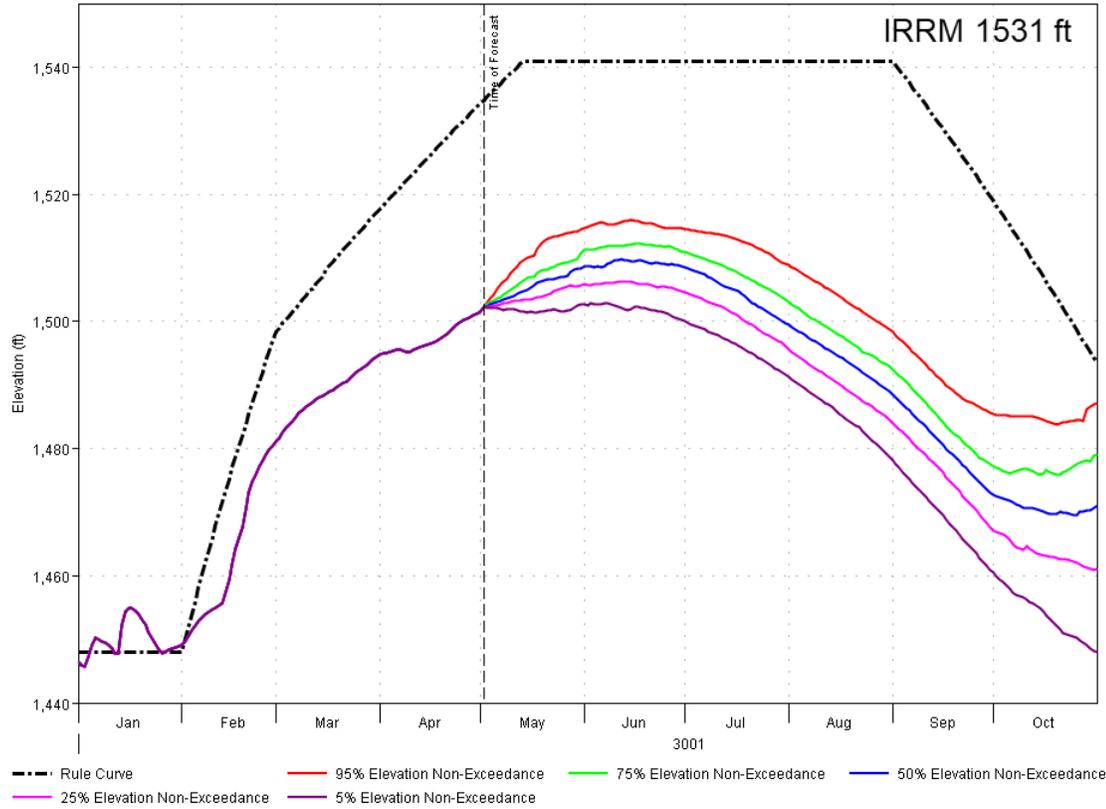
- 50% - Flows as low as ~3,100 cfs in late September.
- 25% - Flows as low as ~2,500 cfs in late July.



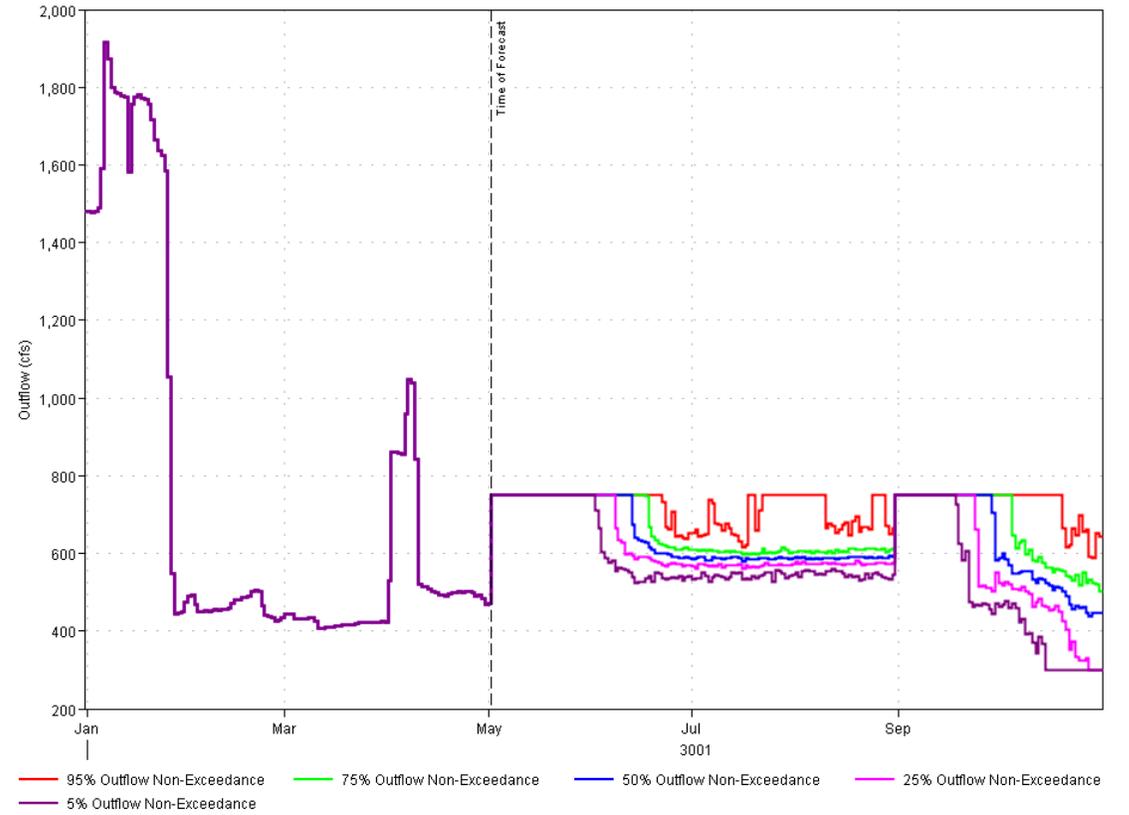
# HILLS CREEK



### HILLS CREEK LAKE Elevation NWRFC 4 May 2021 Forecast (Median)



### HILLS CREEK LAKE Outflow NWRFC 4 May 2021 Forecast (Median)

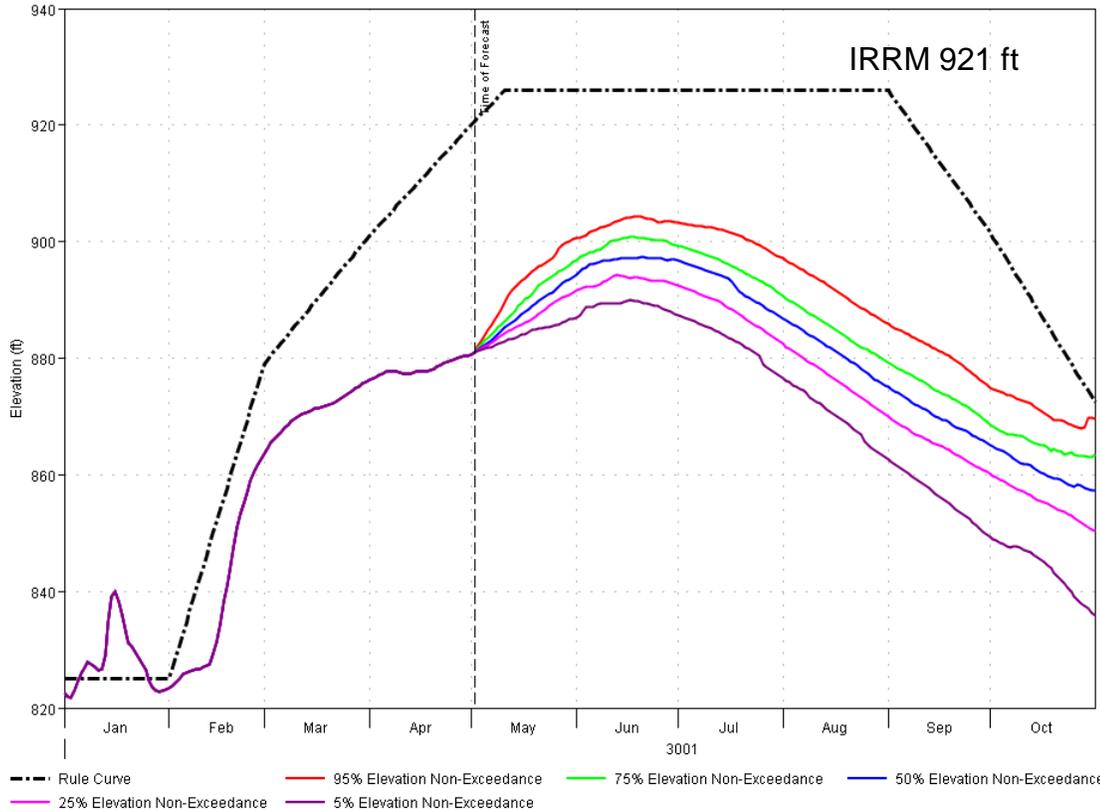




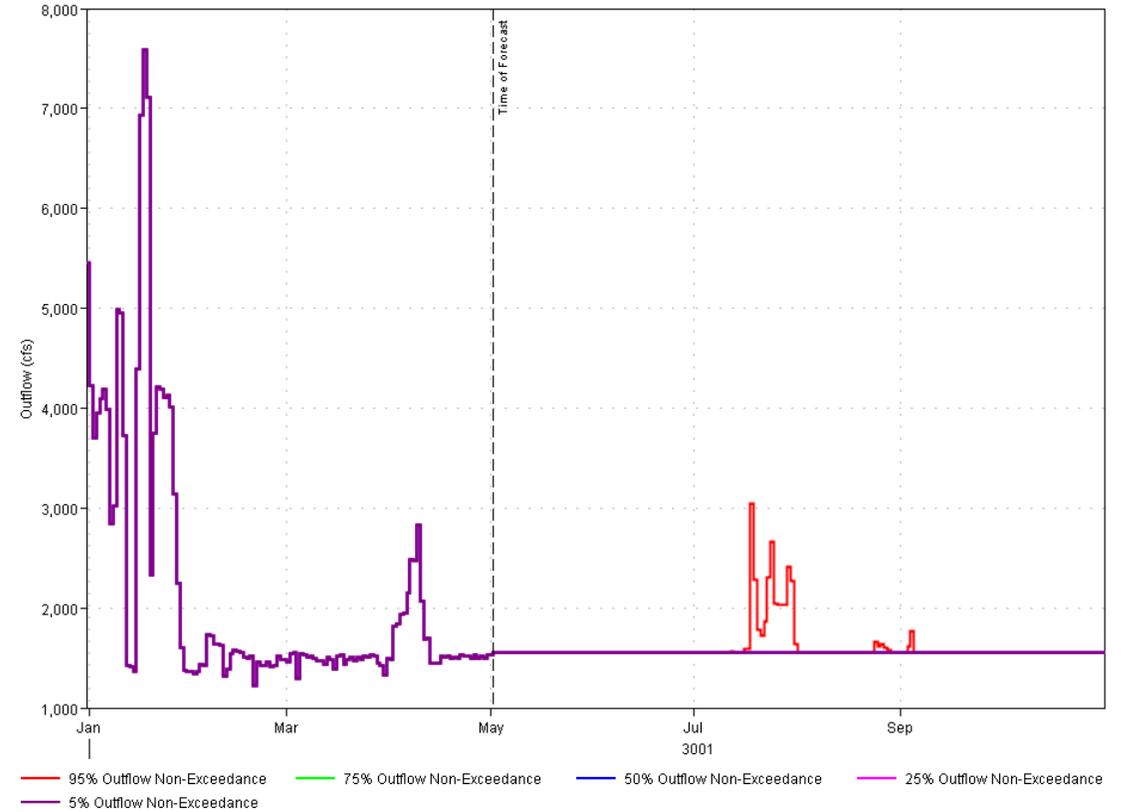
# LOOKOUT POINT



**LOOKOUT POINT LAKE Elevation**  
NWRFC 4 May 2021 Forecast (Median)



**LOOKOUT POINT LAKE Outflow**  
NWRFC 4 May 2021 Forecast (Median)

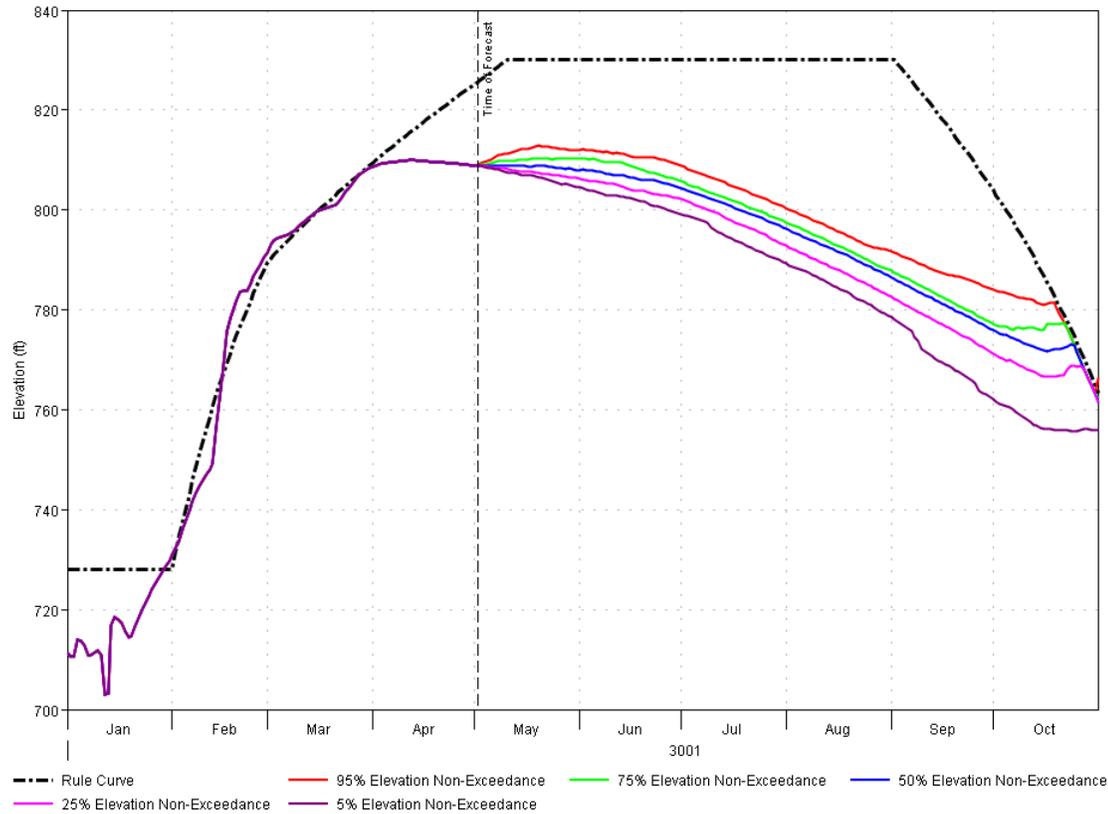




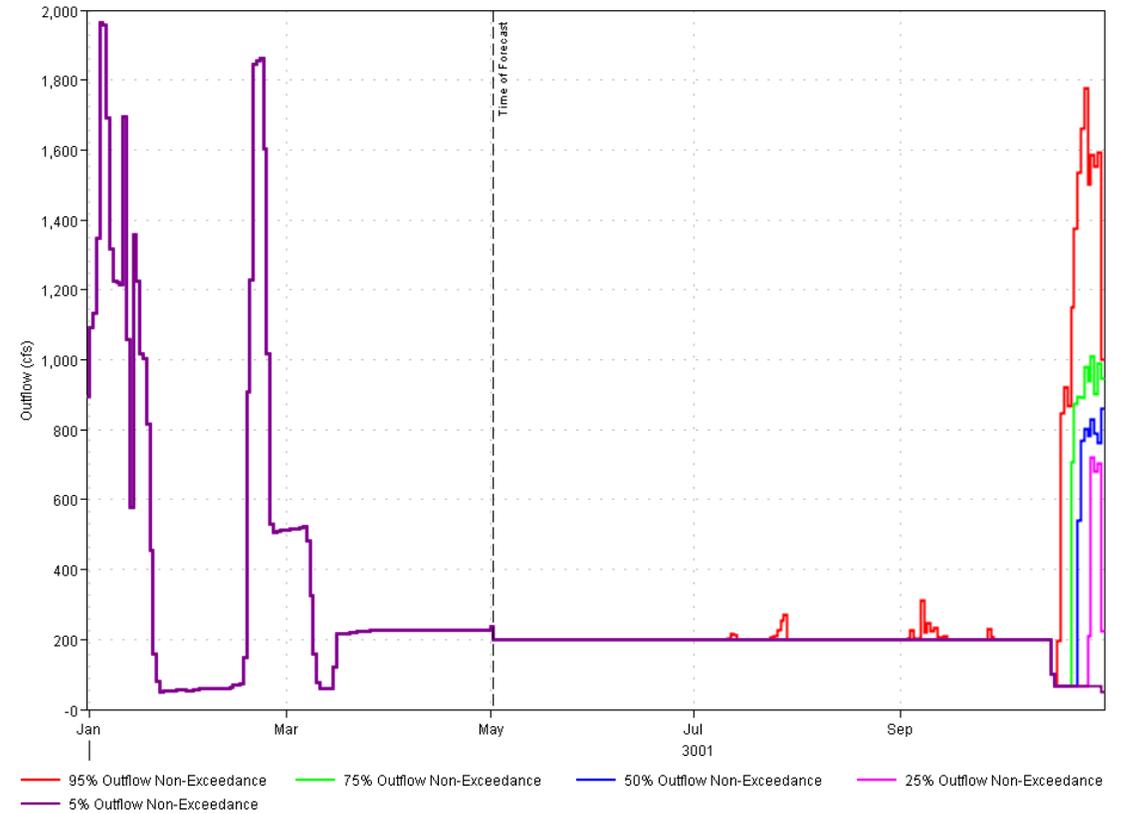
# FALL CREEK



**FALL CREEK LAKE Elevation**  
NWRFC 4 May 2021 Forecast (Median)



**FALL CREEK LAKE Outflow**  
NWRFC 4 May 2021 Forecast (Median)

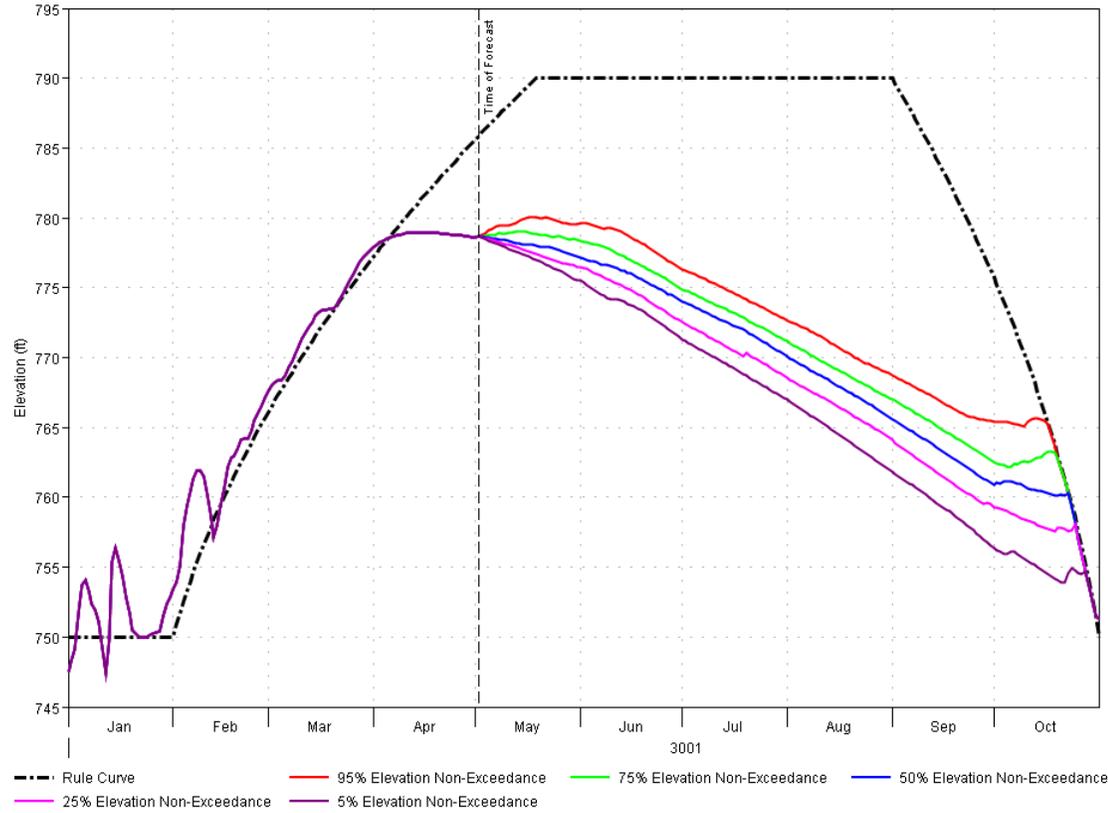




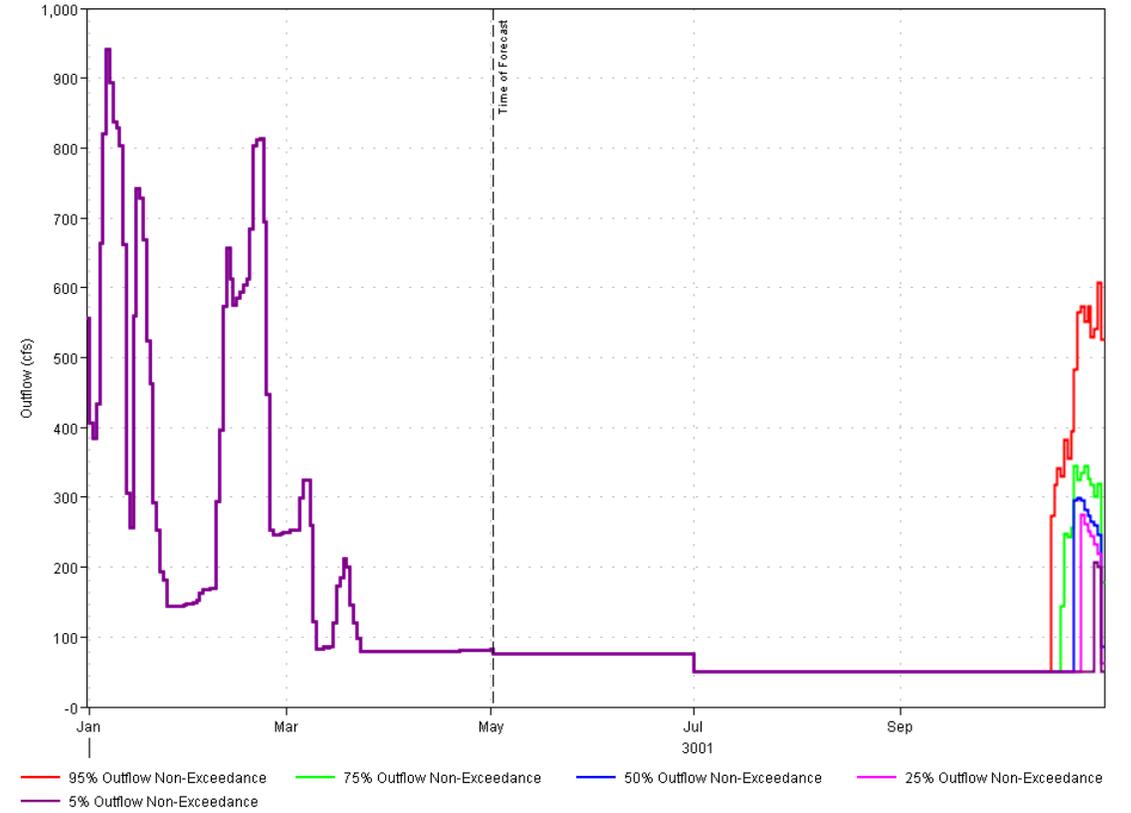
# COTTAGE GROVE



### COTTAGE GROVE LAKE Elevation NWRFC 4 May 2021 Forecast (Median)



### COTTAGE GROVE LAKE Outflow NWRFC 4 May 2021 Forecast (Median)

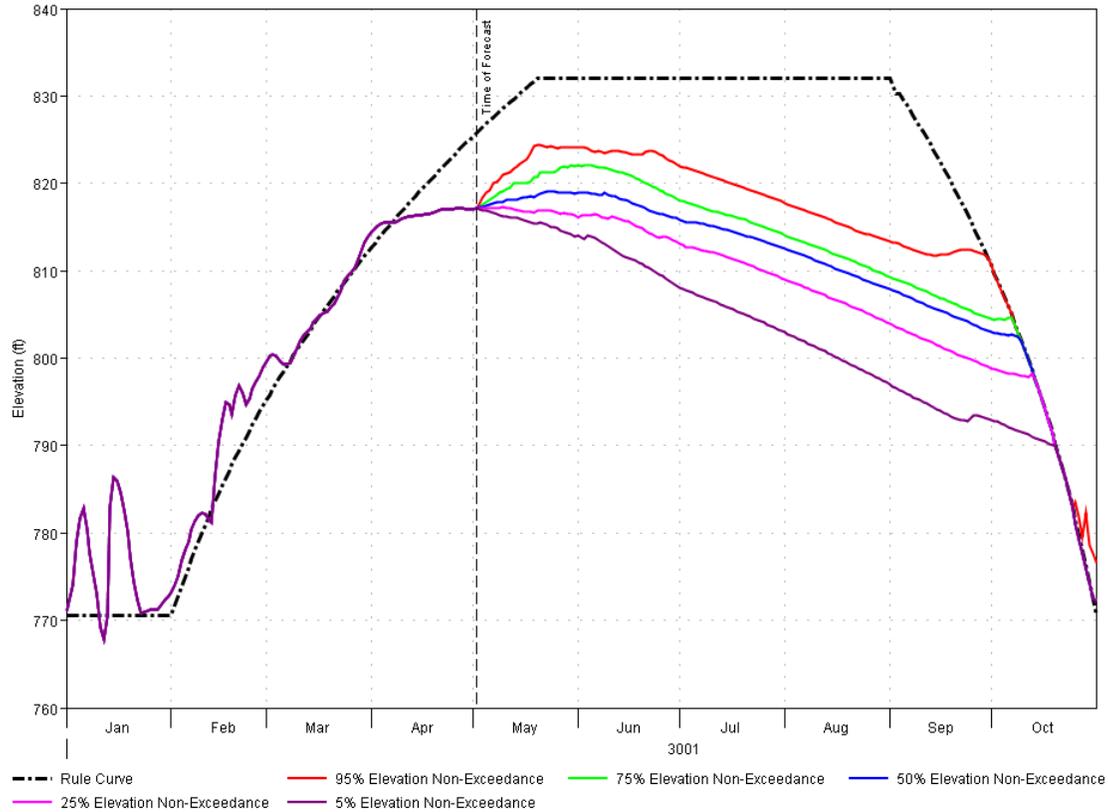




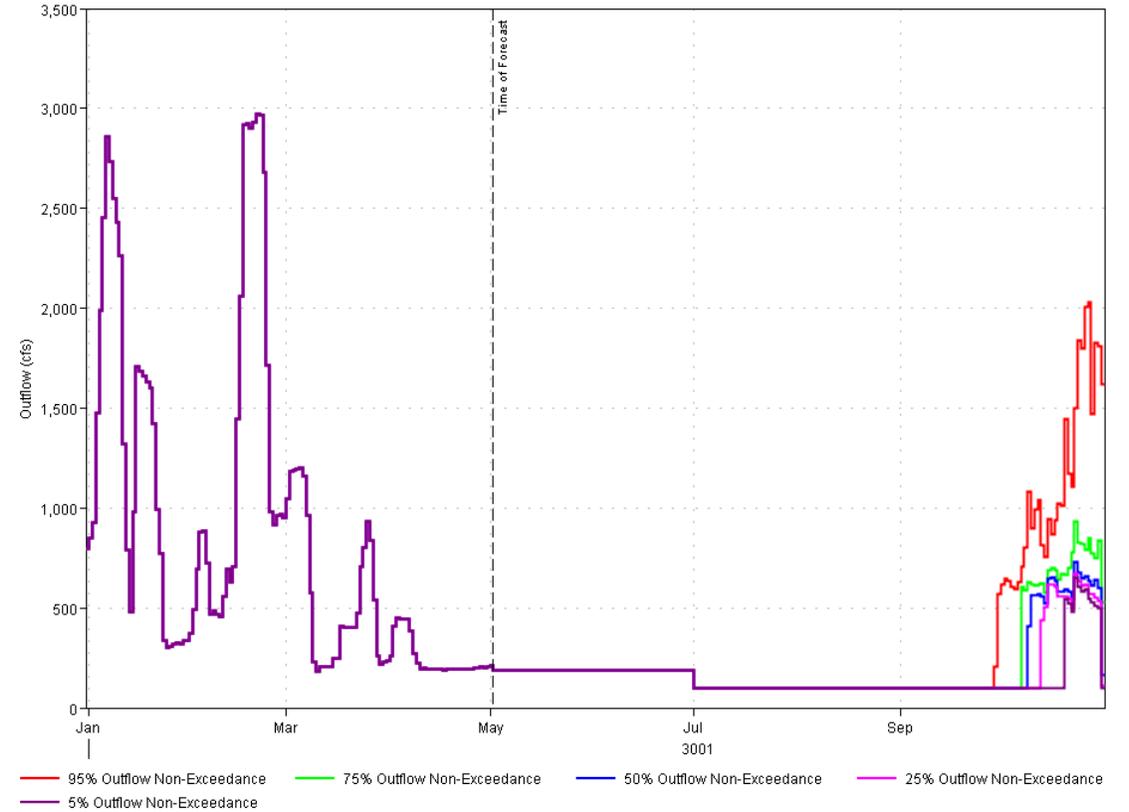
# DORENA



### DORENA LAKE Elevation NWRFC 4 May 2021 Forecast (Median)



### DORENA LAKE Outflow NWRFC 4 May 2021 Forecast (Median)

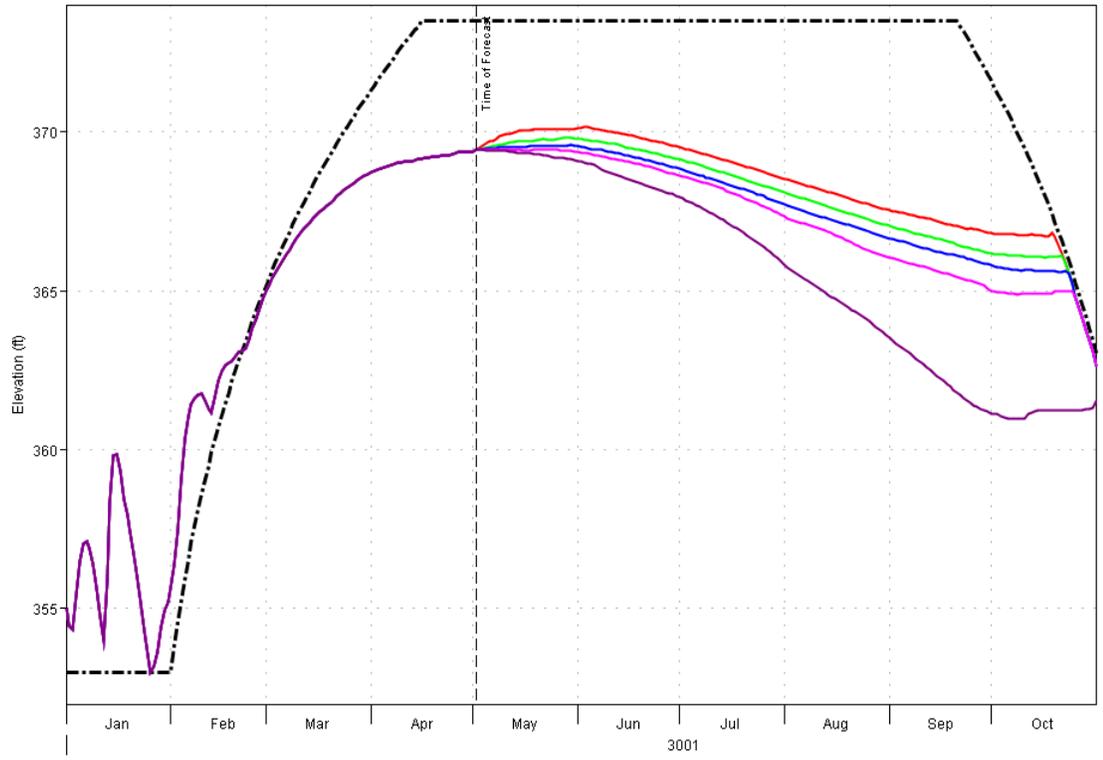




# FERN RIDGE

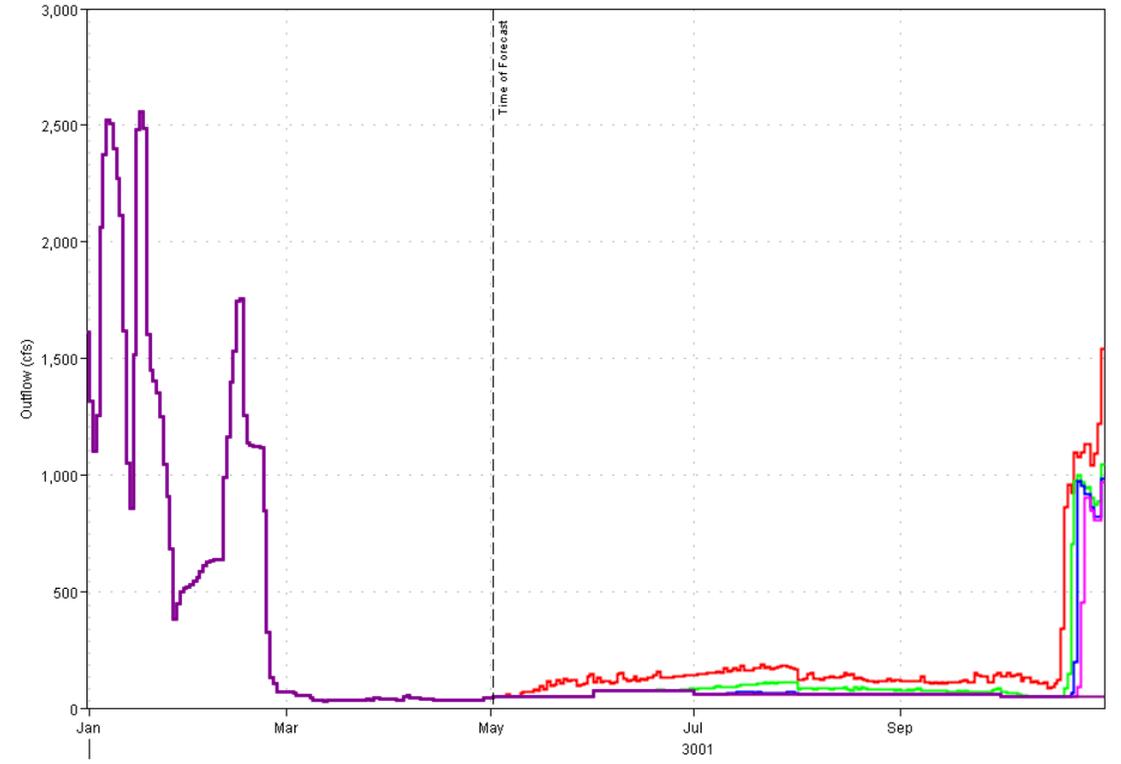


### FERN RIDGE LAKE Elevation NWRFC 4 May 2021 Forecast (Median)



--- Rule Curve      — 95% Elevation Non-Exceedance      — 75% Elevation Non-Exceedance      — 50% Elevation Non-Exceedance  
— 25% Elevation Non-Exceedance      — 5% Elevation Non-Exceedance

### FERN RIDGE LAKE Outflow NWRFC 4 May 2021 Forecast (Median)



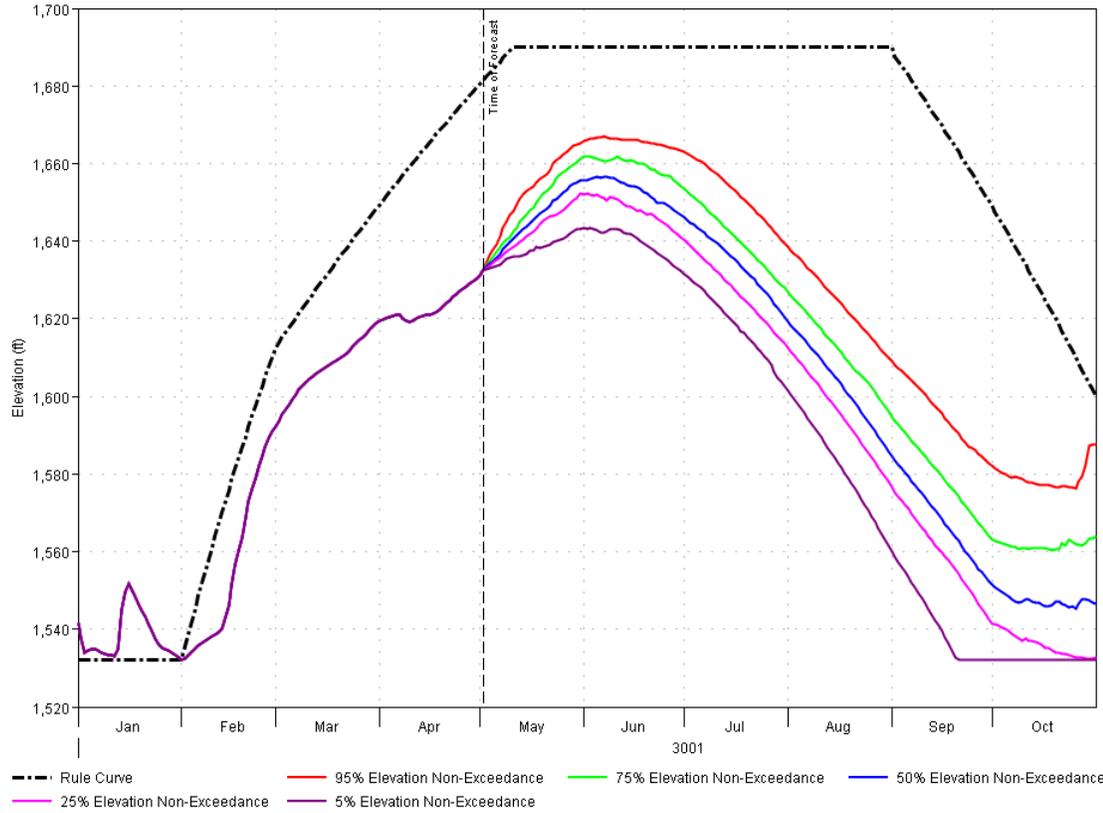
— 95% Outflow Non-Exceedance      — 75% Outflow Non-Exceedance      — 50% Outflow Non-Exceedance      — 25% Outflow Non-Exceedance  
— 5% Outflow Non-Exceedance



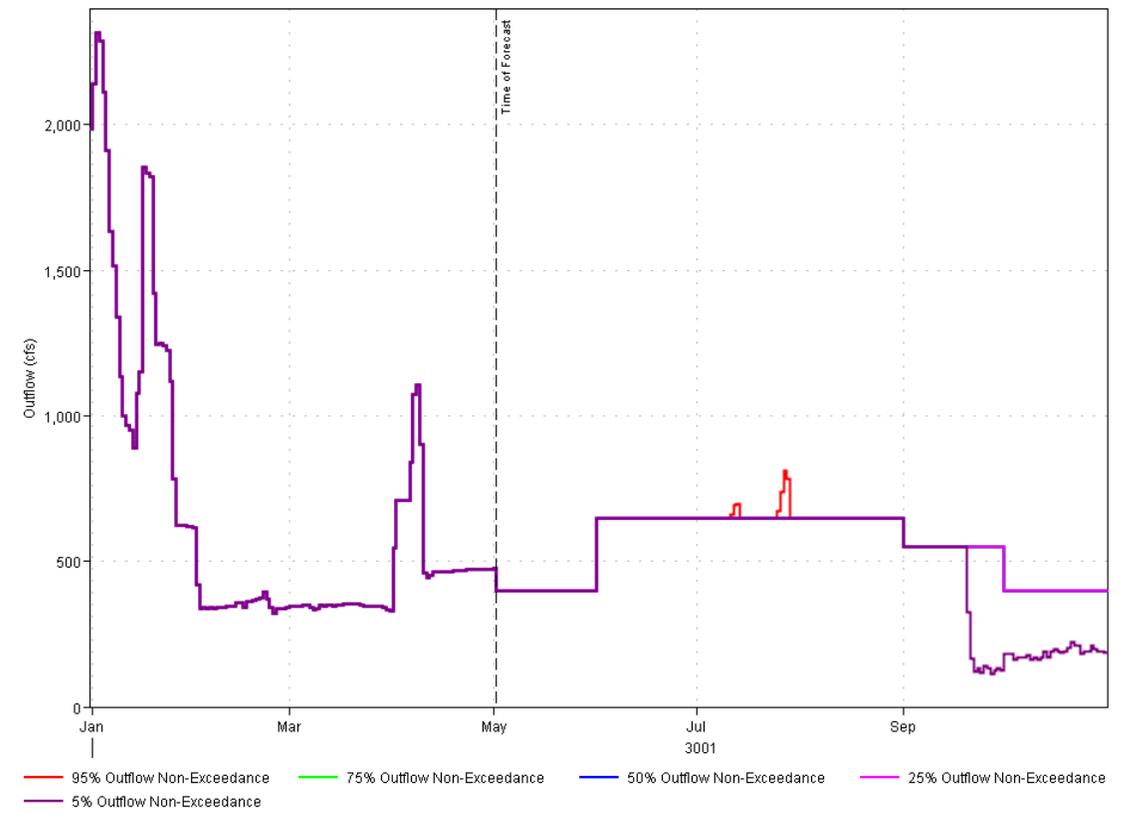
# COUGAR



**COUGAR LAKE Elevation**  
NWRFC 4 May 2021 Forecast (Median)



**COUGAR LAKE Outflow**  
NWRFC 4 May 2021 Forecast (Median)

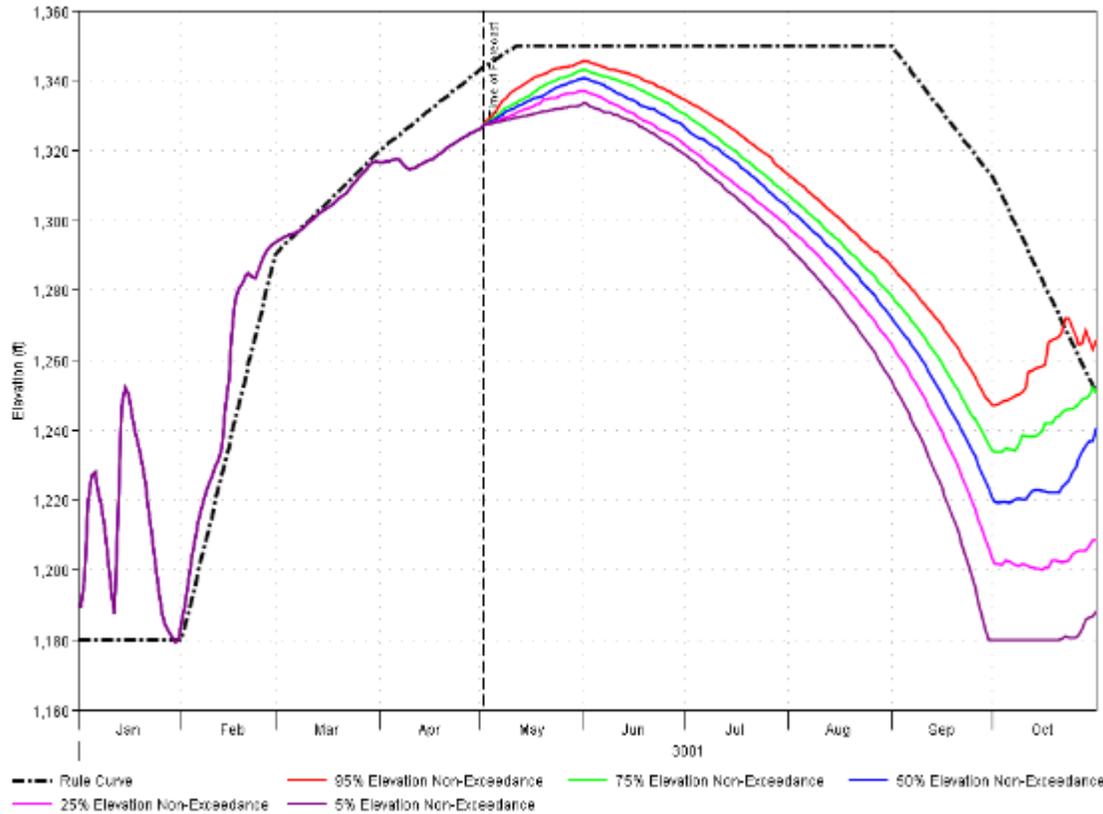




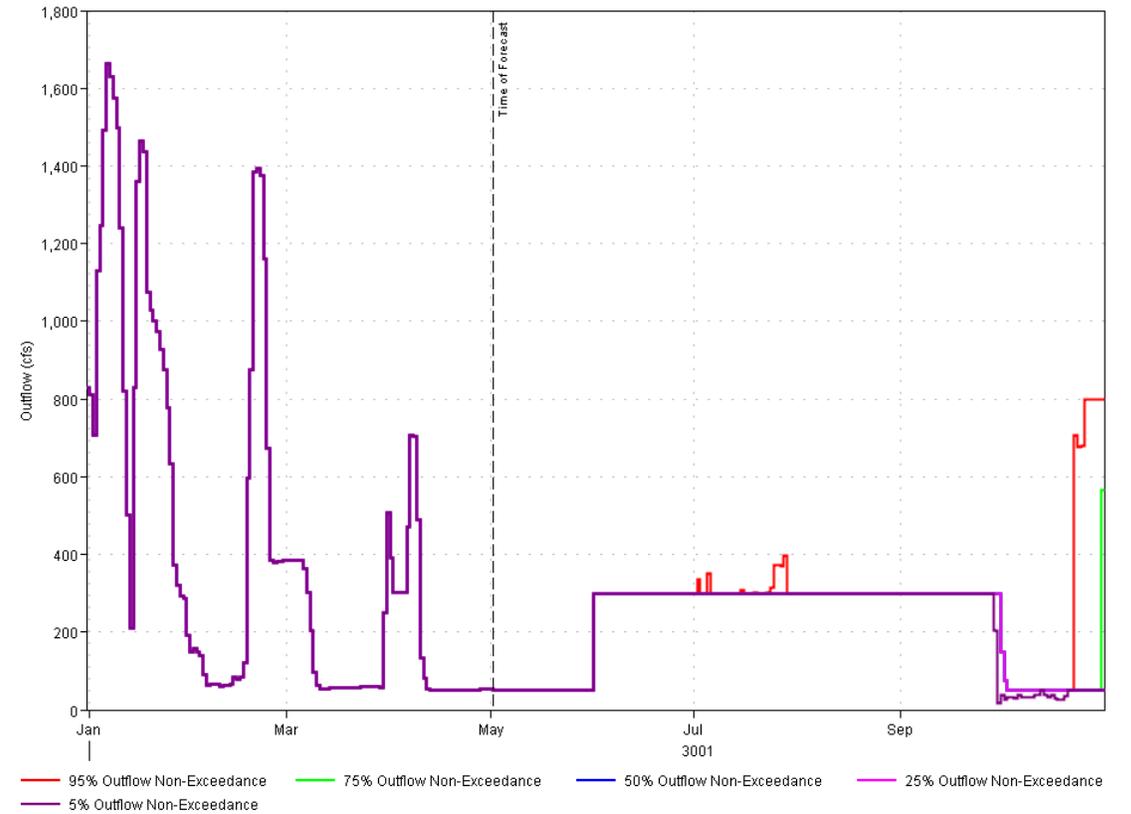
# BLUE RIVER



**BLUE RIVER LAKE Elevation**  
NWRFC 4 May 2021 Forecast (Median)



**BLUE RIVER LAKE Outflow**  
NWRFC 4 May 2021 Forecast (Median)

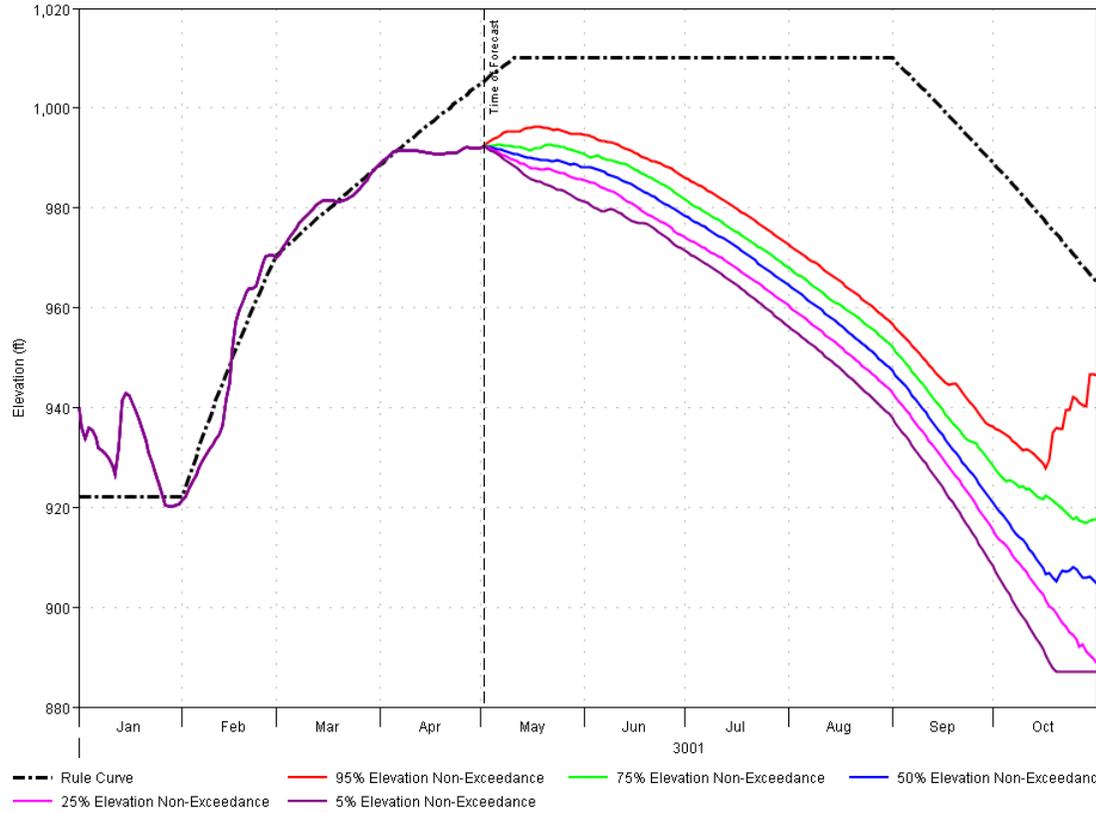




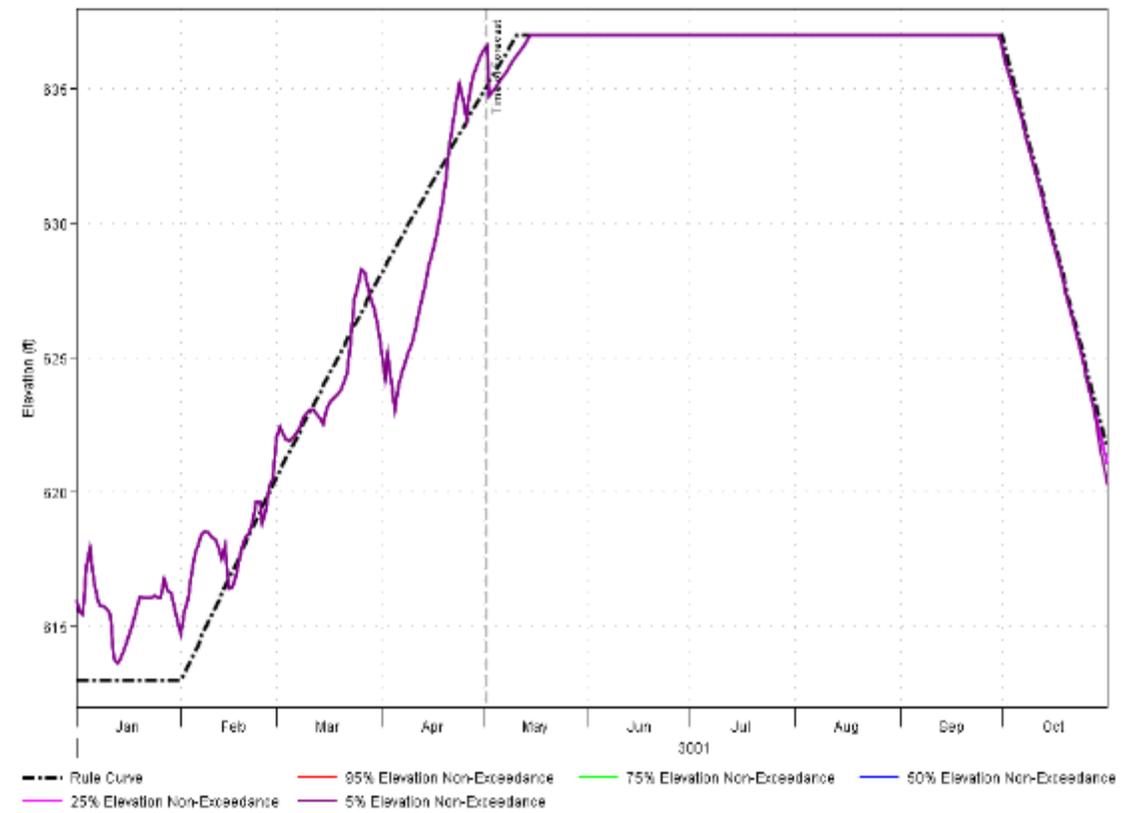
# GREEN PETER



**GREEN PETER LAKE Elevation**  
NWRFC 4 May 2021 Forecast (Median)



**FOSTER LAKE Elevation**  
NWRFC 4 May 2021 Forecast (Median)



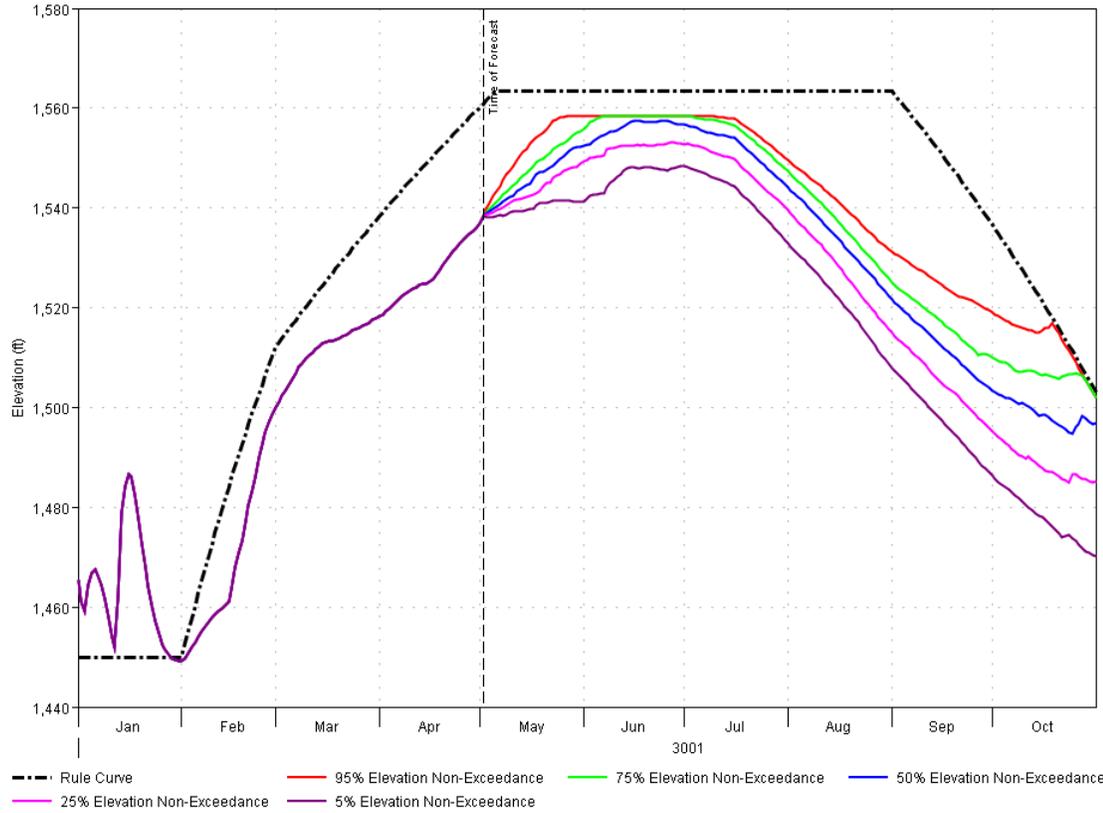
S. Santiam Targets			
Period	May 16 - June 30	July 1 - August 31	September 1 - October 15
<b>BiOp</b>	1,100 cfs	800	1,500
<b>Modeled</b>	1,000 cfs	800	1,100



# DETROIT



### DETROIT LAKE Elevation NWRFC 4 May 2021 Forecast (Median)



### DETROIT LAKE Outflow NWRFC 4 May 2021 Forecast (Median)

