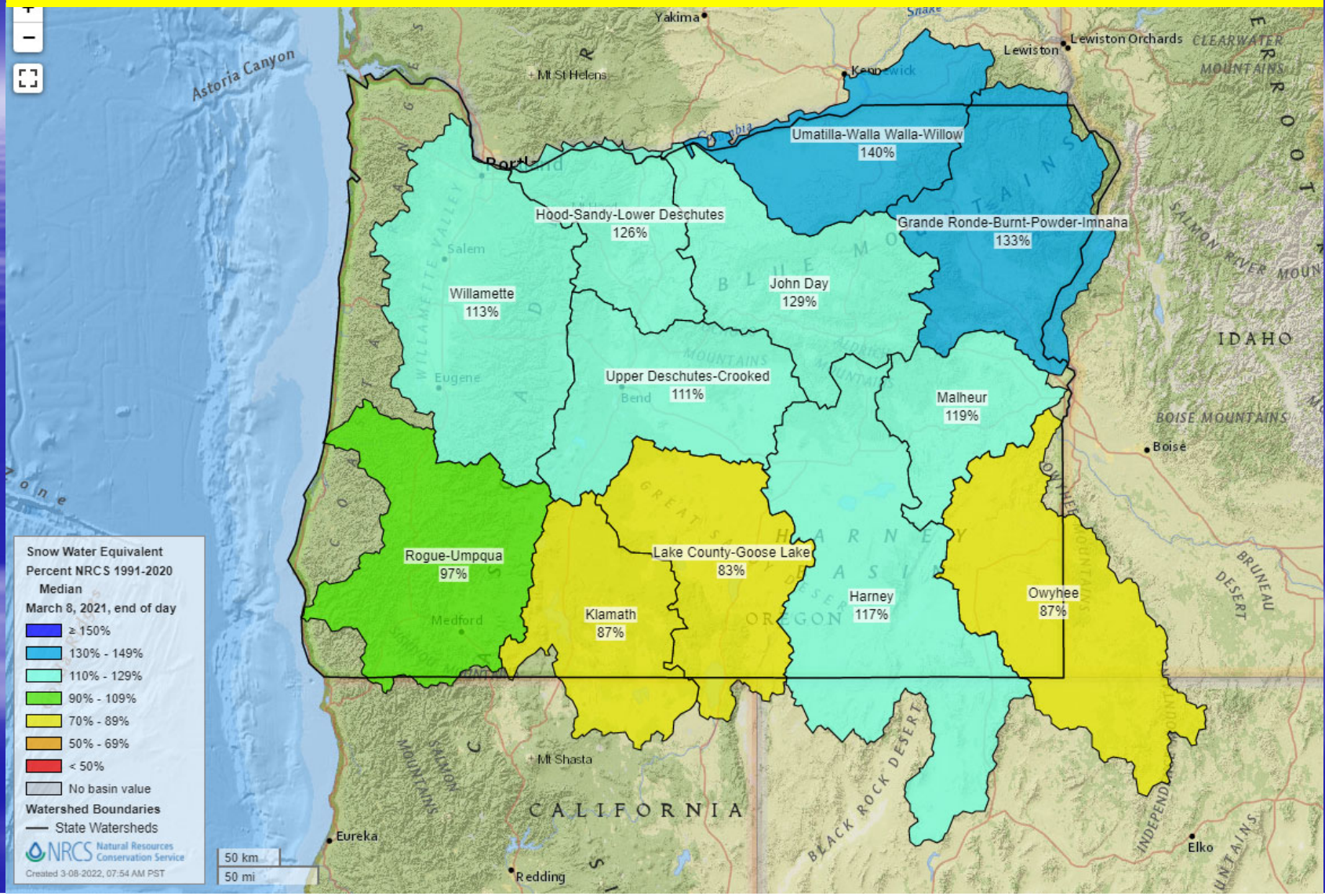
Oregon Water Supply Availability Committee March 9, 2022

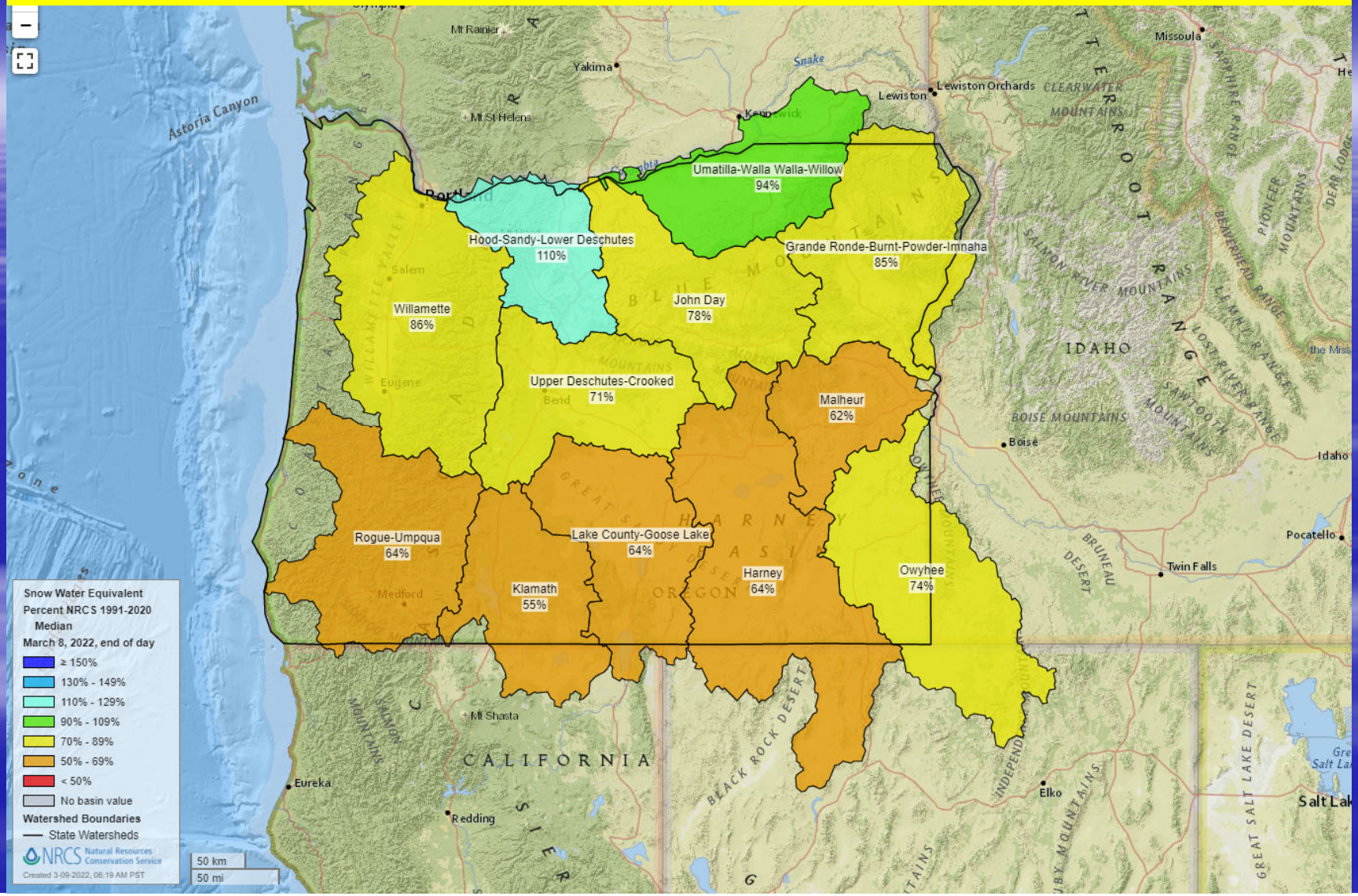
Hungry Flat Snow Course
February 25, 2022
Deschutes County
Elevation 4400’
SWE = 0.8” 80% median

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

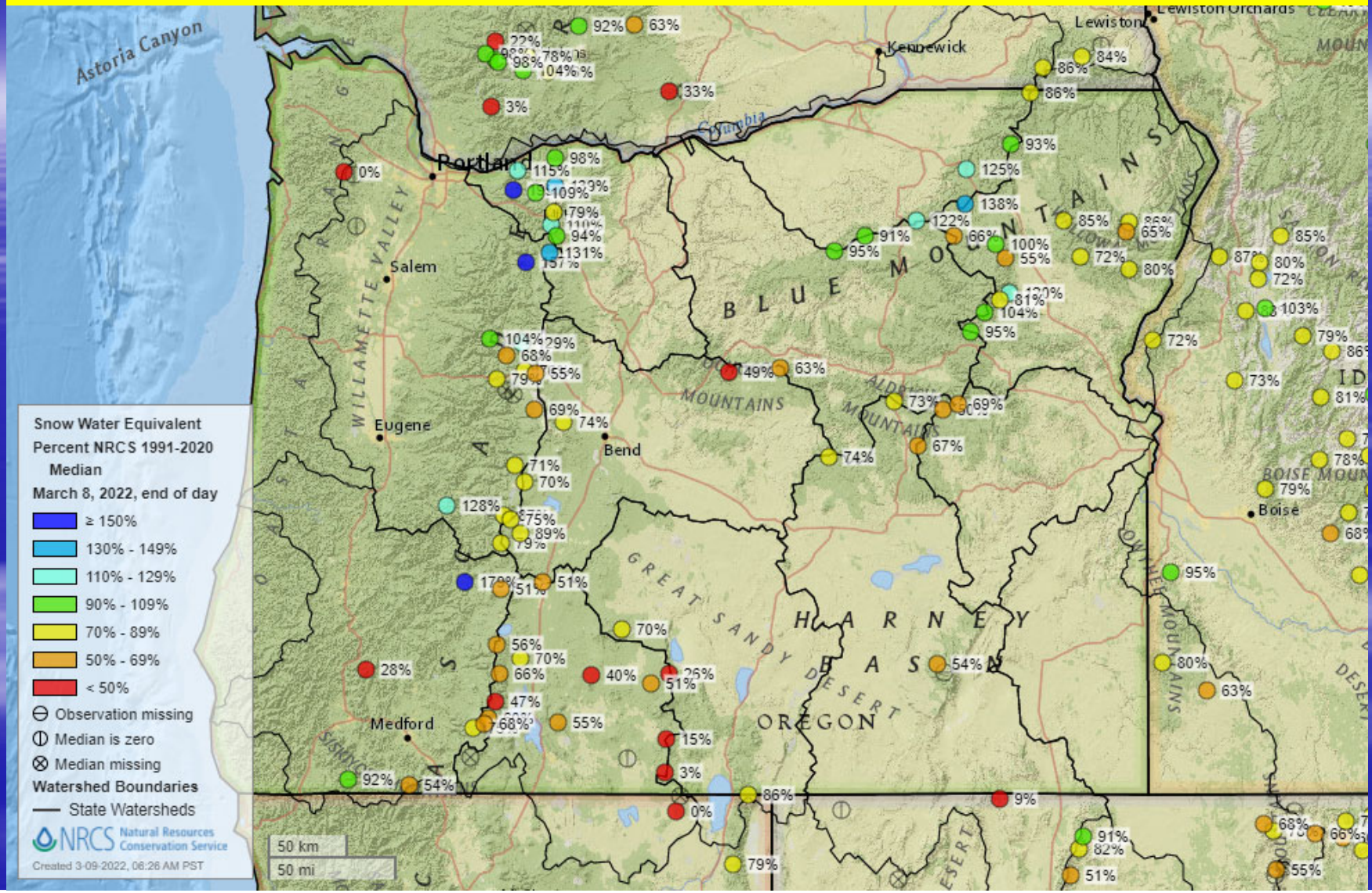
March 9, 2021, Statewide SNOTEL Snow Water Equivalent was 114% of 1991-2020 median



March 9, 2022, Statewide SNOTEL Snow Water Equivalent is 81% of 1991-2020 median

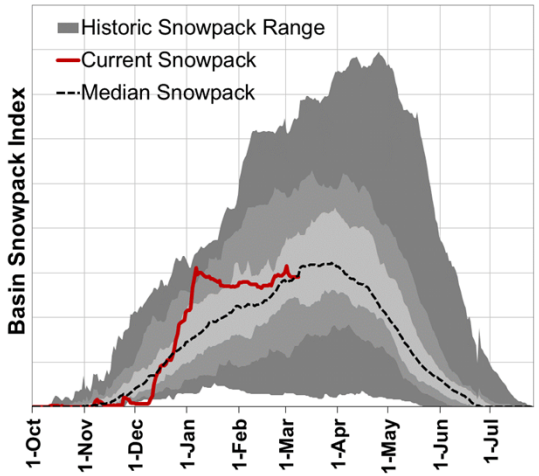


March 9, 2022, Statewide SNOTEL Snow Water Equivalent is 81% of 1991-2020 median

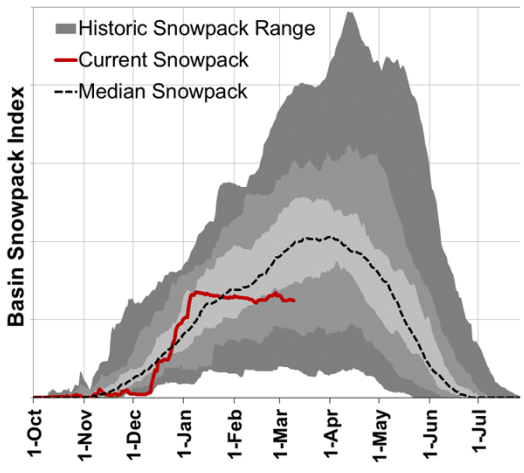


OREGON SNOWPACK GRAPHS – March 9, 2022

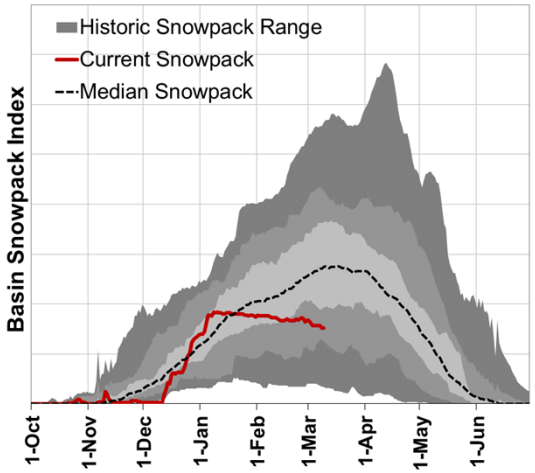
Willamette



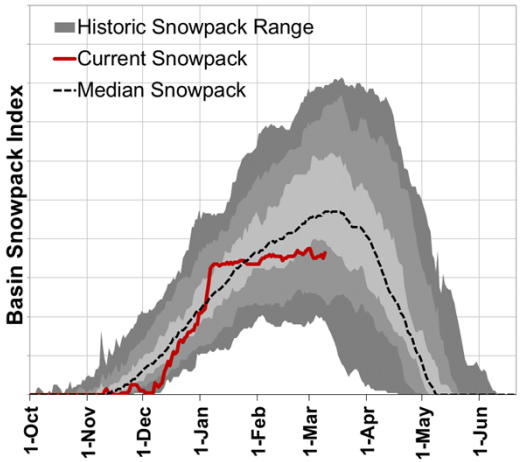
Rogue-Umpqua



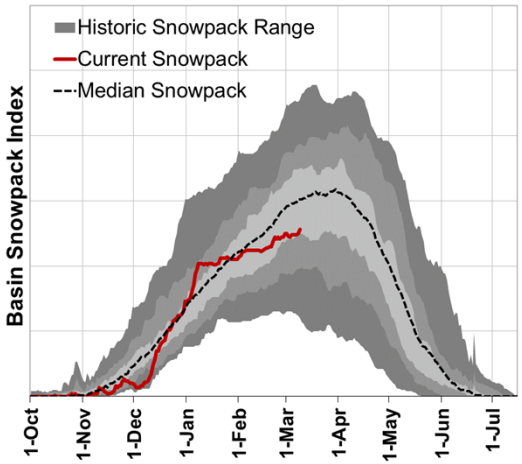
Klamath



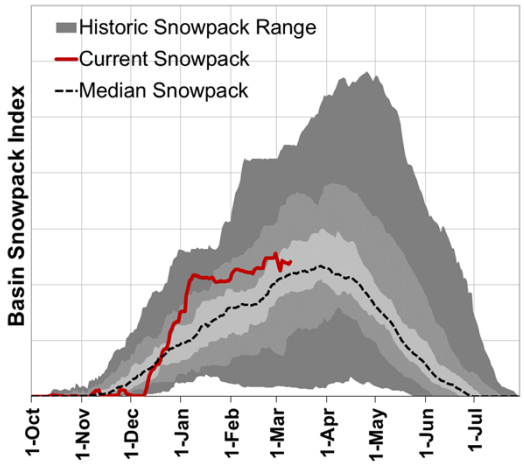
John Day



Grande Ronde-Burnt-Powder-Imnaha

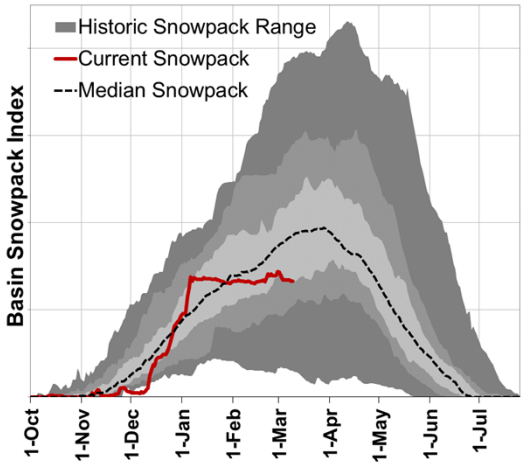


Hood-Sandy-Lower Deschutes

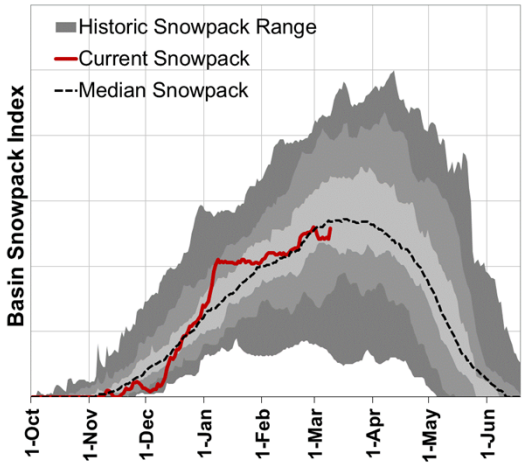


OREGON SNOWPACK GRAPHS – March 9, 2022

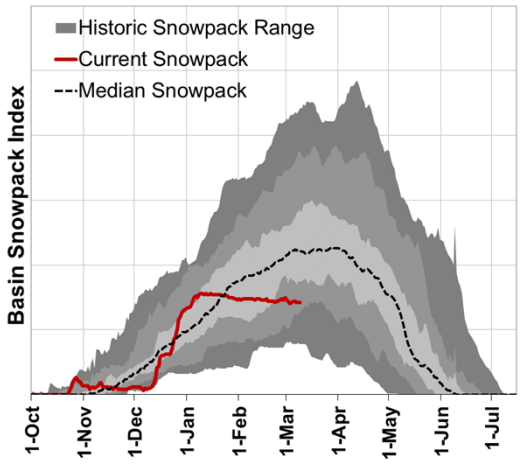
Upper Deschutes-Crooked



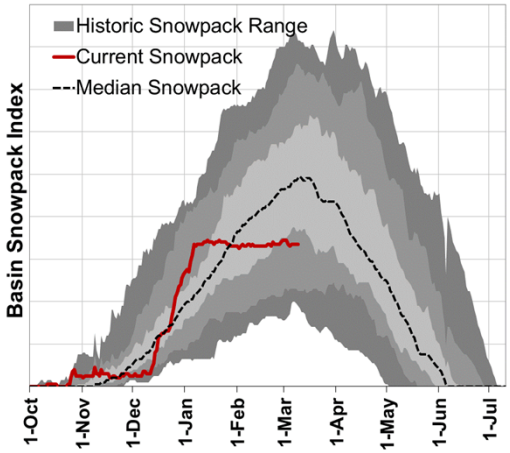
Umatilla-Walla Walla-Willow



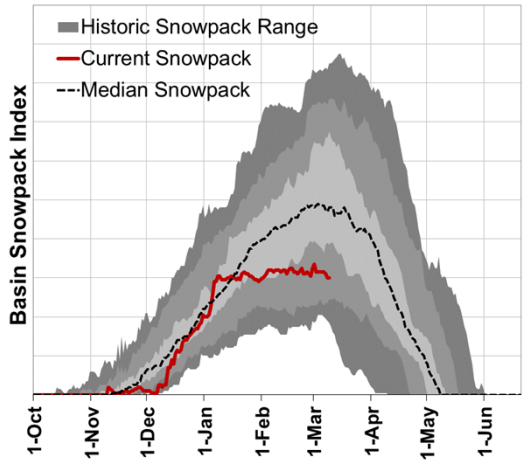
Lake County-Goose Lake



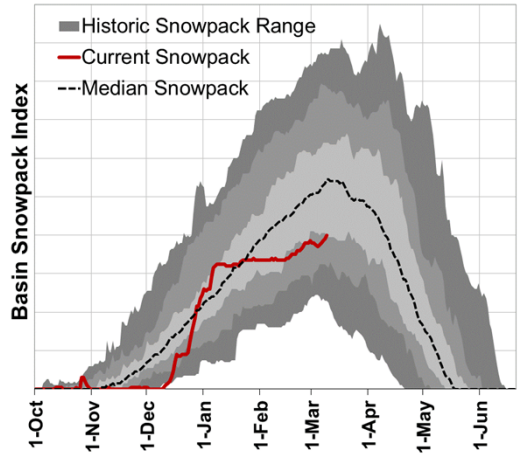
Harney



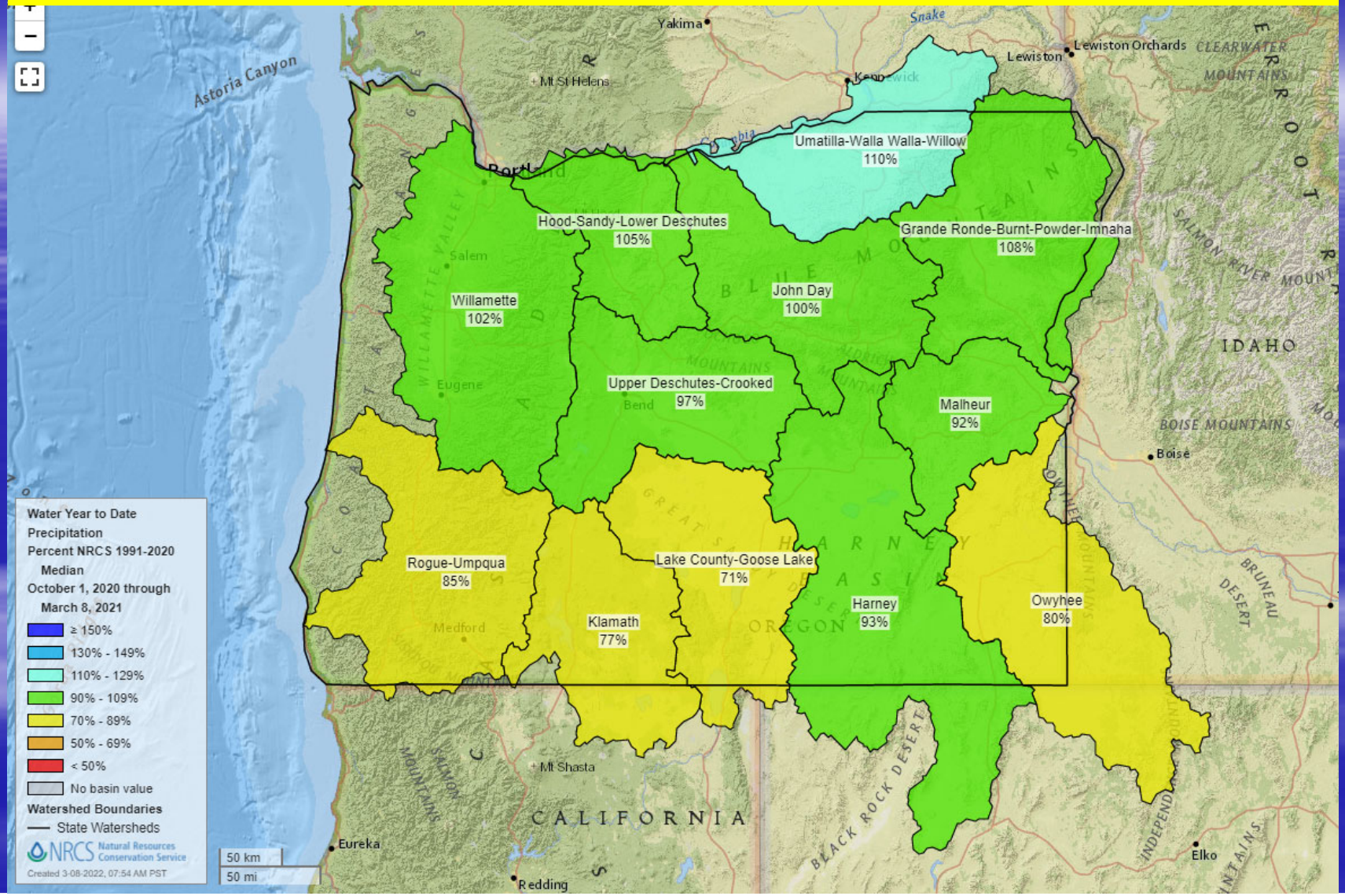
Malheur



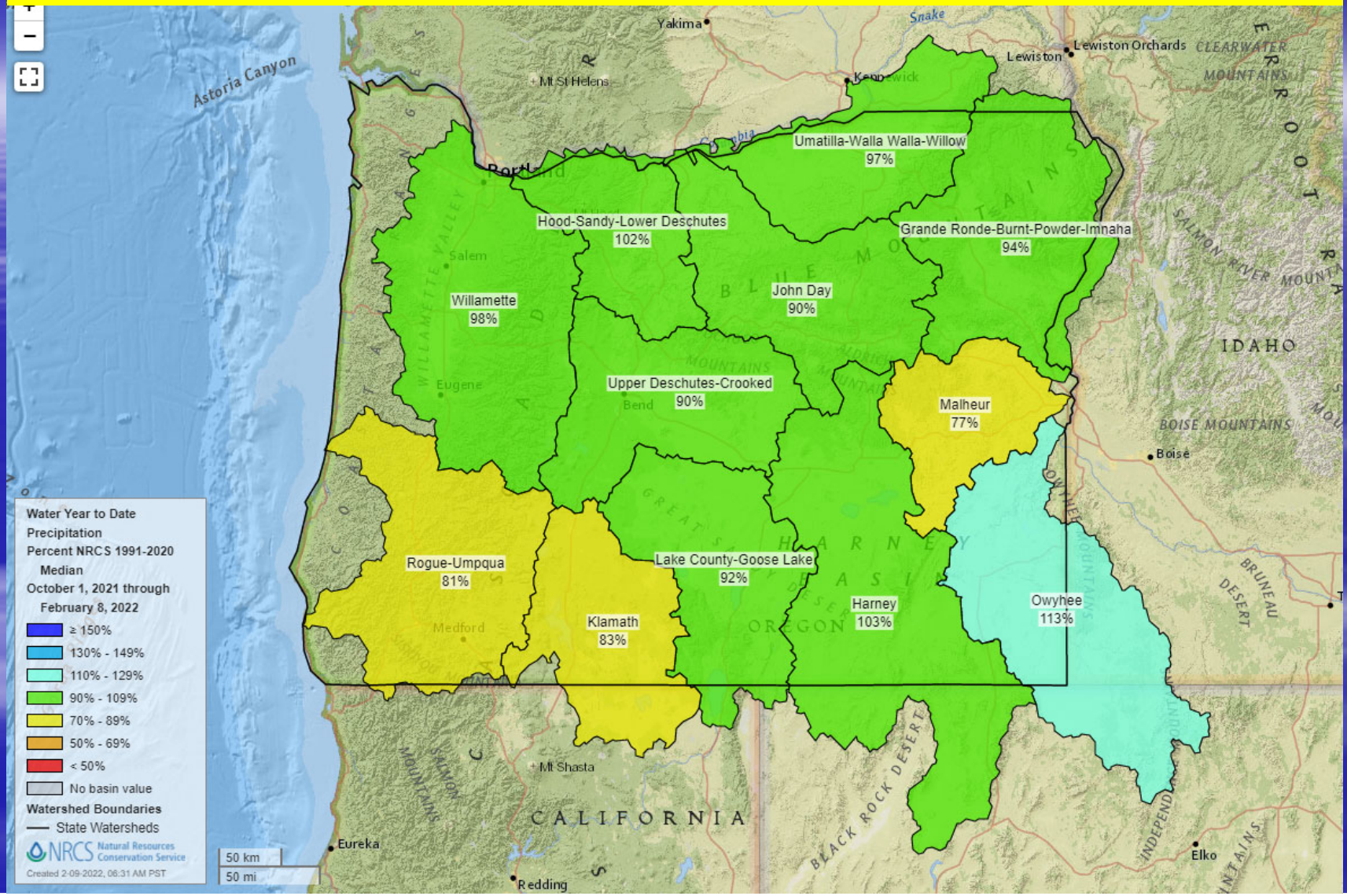
Owyhee



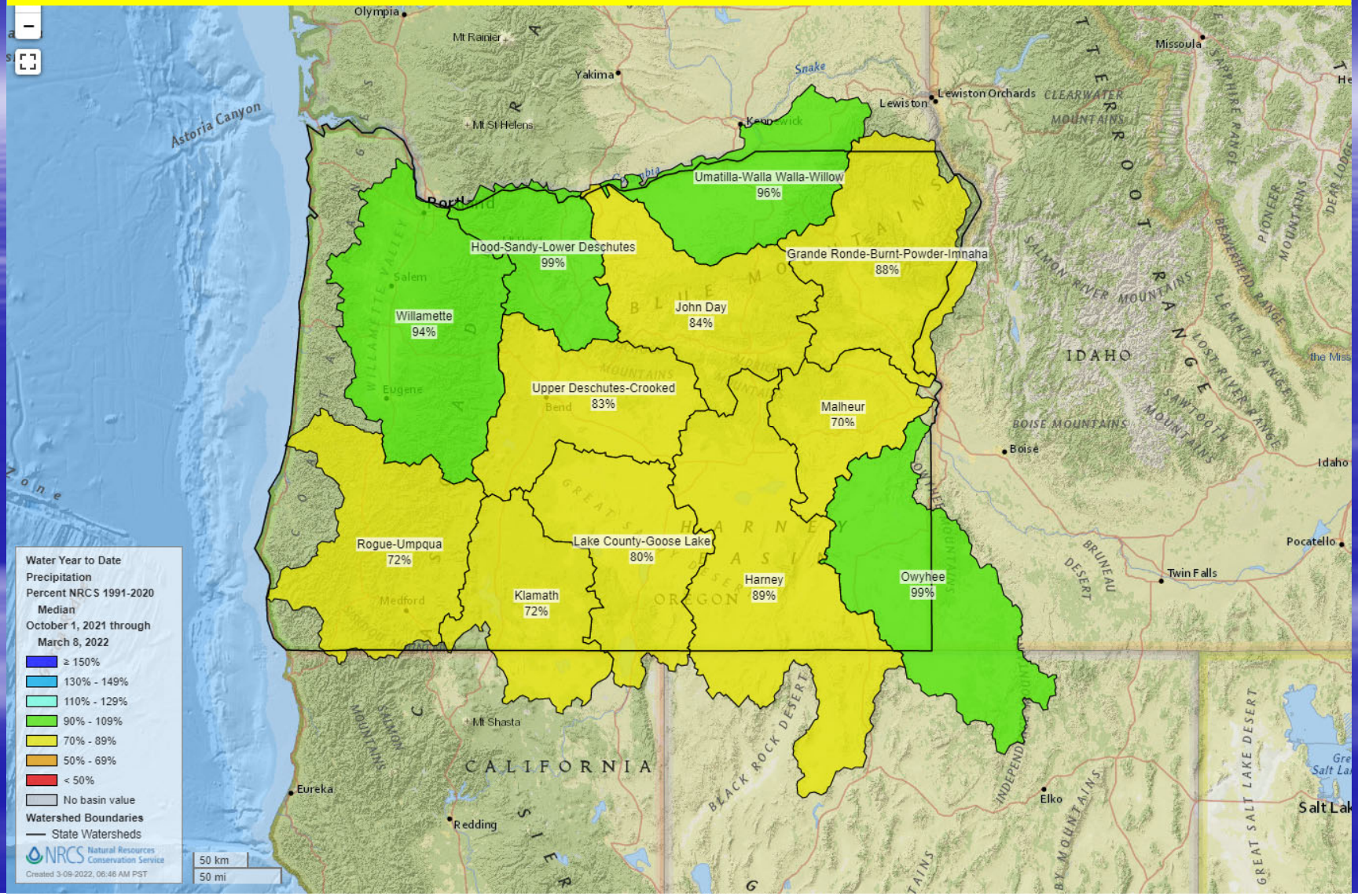
March 9, 2021, SNOTEL Water Year Precipitation was 98% of 1991-2020 median



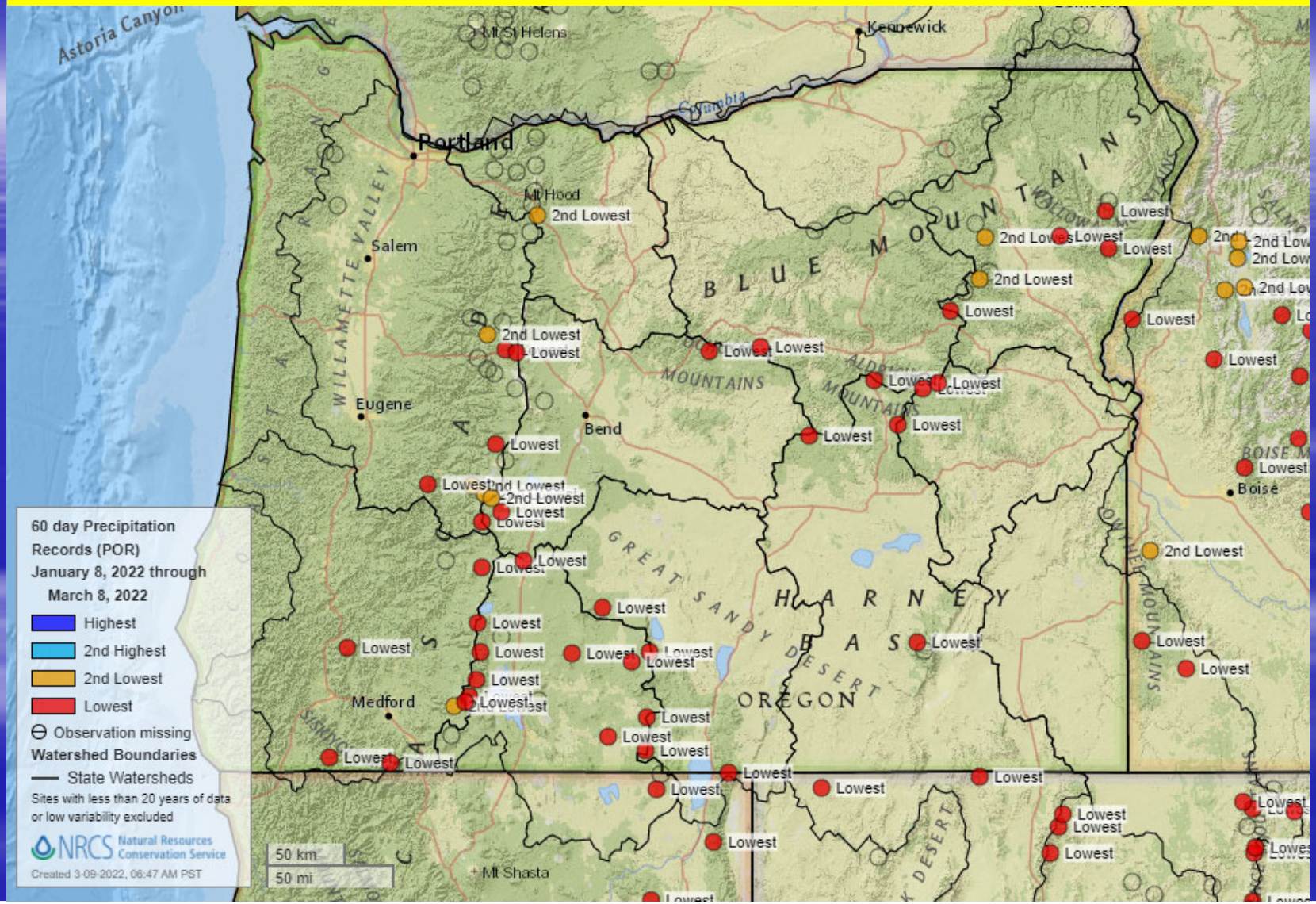
February 9, 2022, SNOTEL Water Year Precipitation is 94% of 1991-2020 median



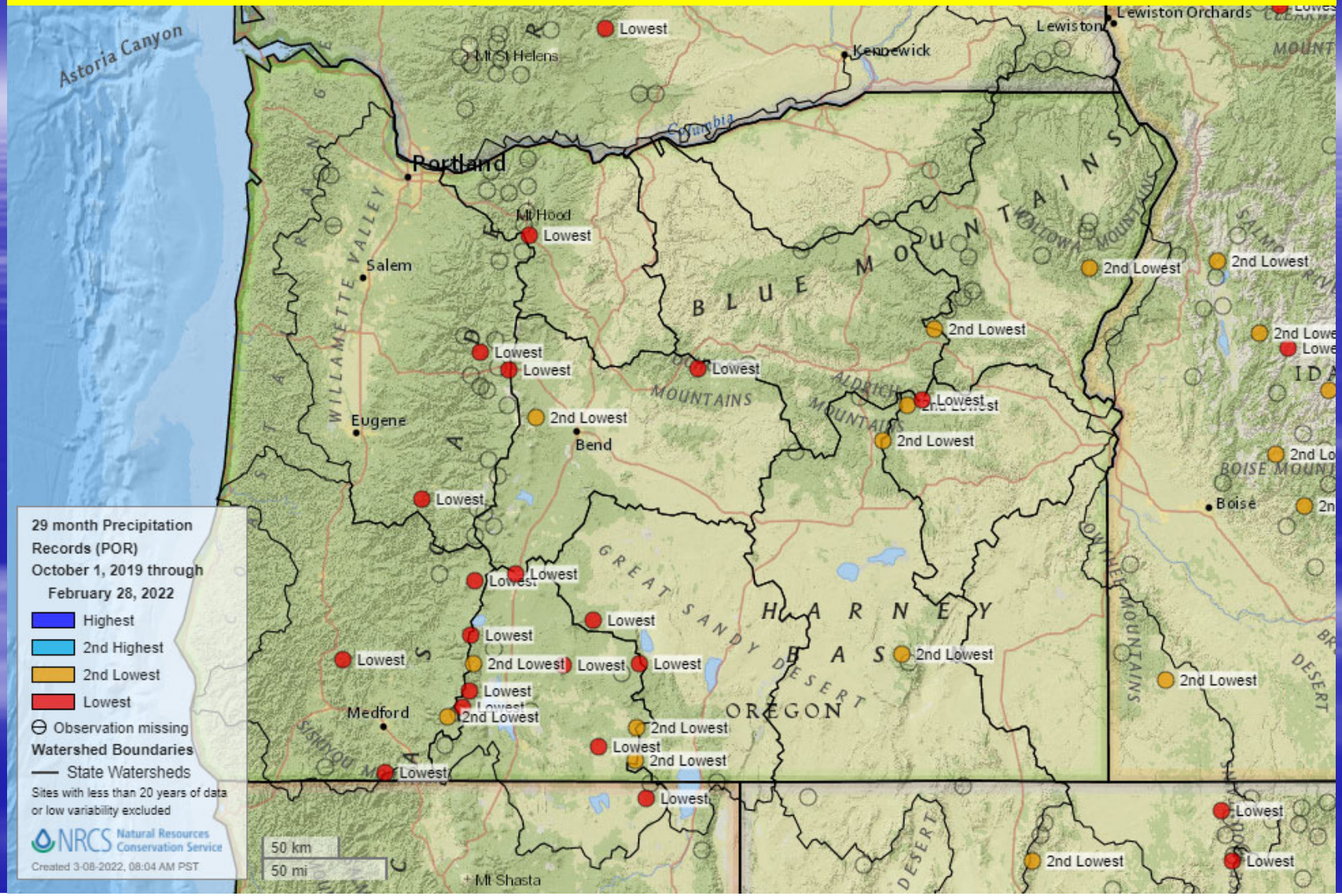
March 9, 2022, SNOTEL Water Year Precipitation is 88% of 1991-2020 median



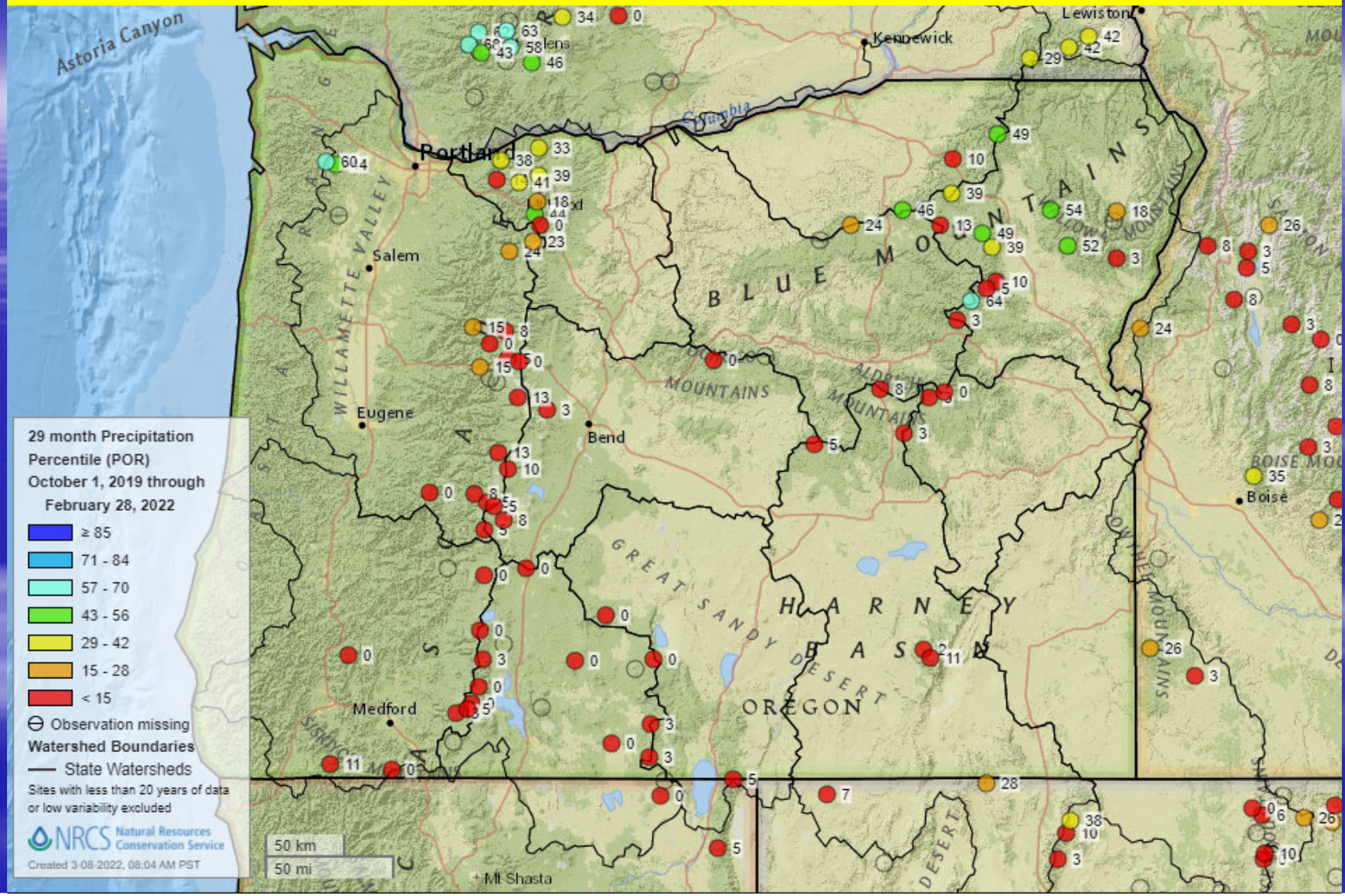
SNOTEL 60-Day Precipitation Records – January 8, 2022, through March 8, 2022



SNOTEL 29-Month Precipitation Records – October 1, 2019, through February 28, 2022



SNOTEL 29-Month Precipitation Percentile – October 1, 2019, through February 28, 2022

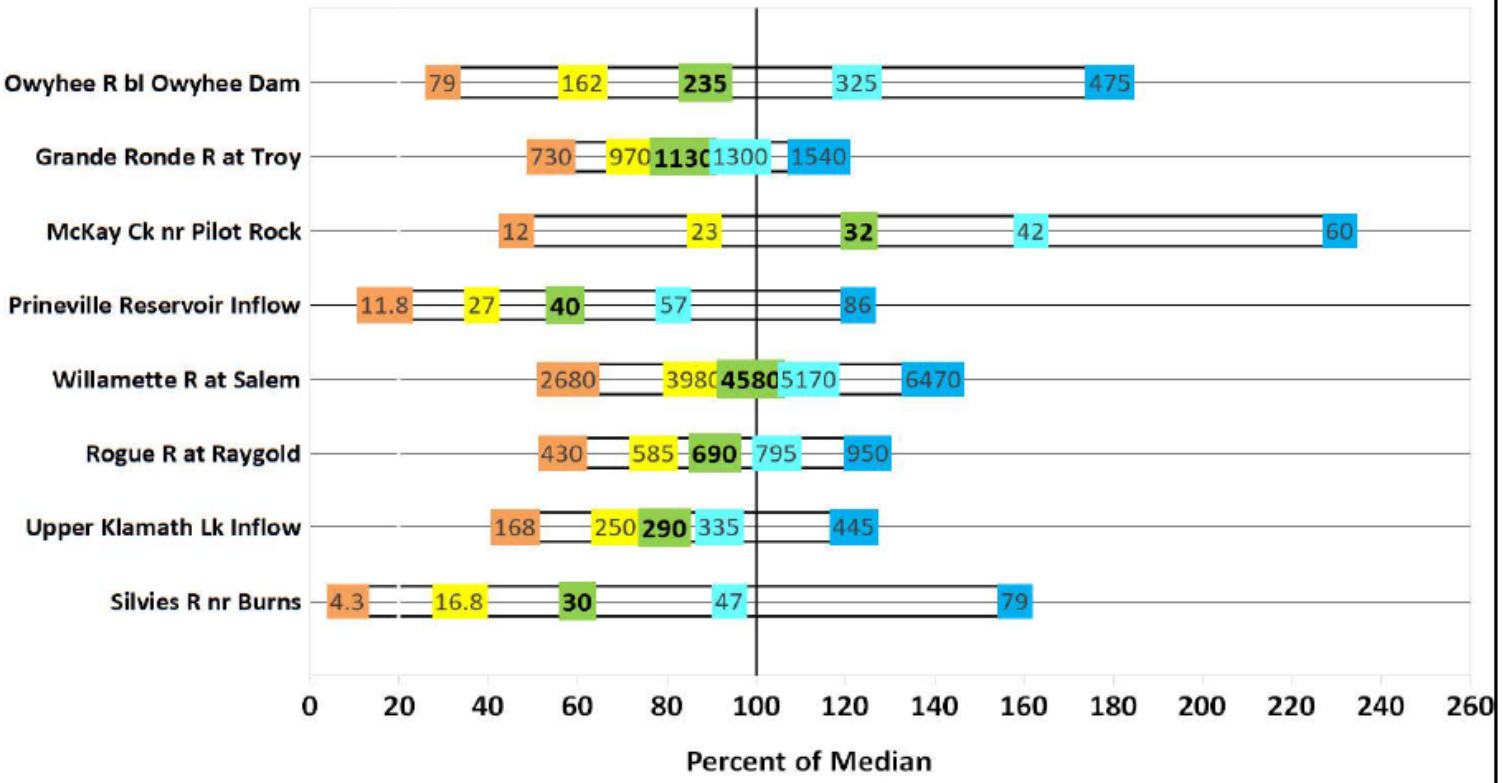


March 2022

Summary of Streamflow Forecasts across Oregon

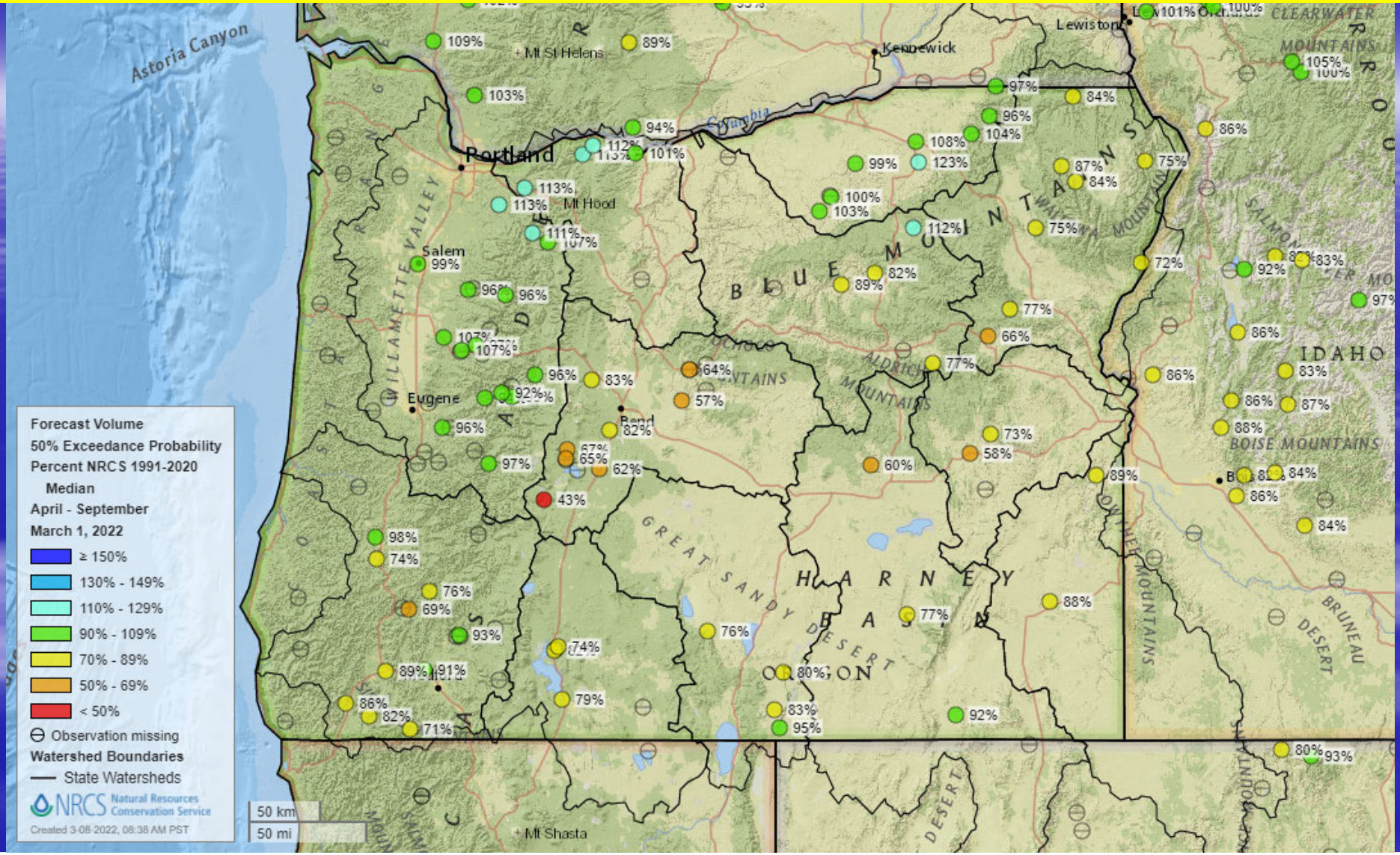
April through September Forecast Volumes at a Selection of Streamflow Points

(Volumes listed in KAF)

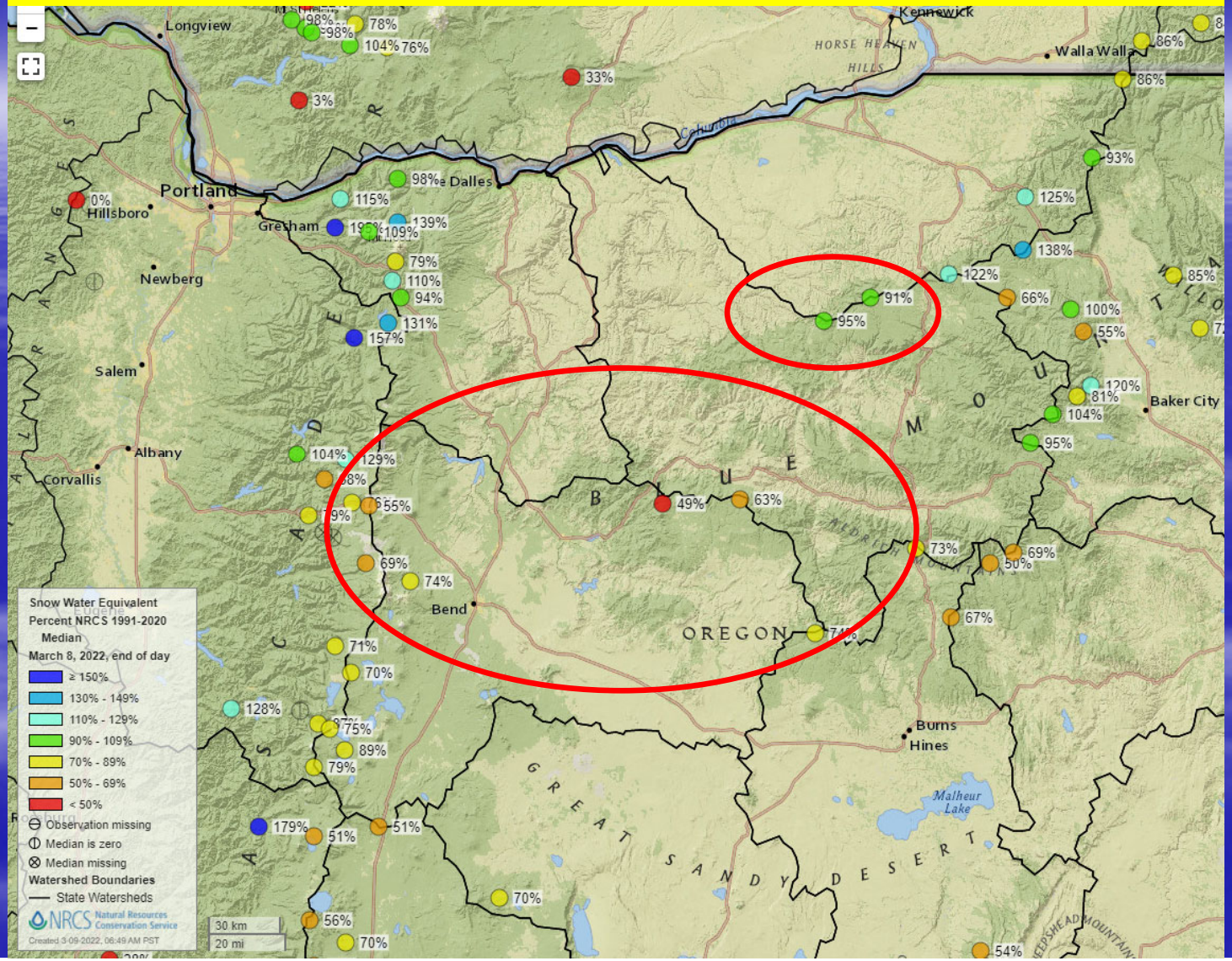


Legend:	←----------Drier----------**Future Conditions**----------Wetter----------→				
90% Exceedance Forecast (KAF)	**70% Exceedance Forecast (KAF)**	**50% Exceedance Forecast (KAF)**	**30% Exceedance Forecast (KAF)**	**10% Exceedance Forecast (KAF)**
There is a 90% chance that flows will exceed this volume.	There is a 70% chance that flows will exceed this volume.	There is a 50% chance that flows will exceed this volume.	There is a 30% chance that flows will exceed this volume.	There is a 10% chance that flows will exceed this volume.

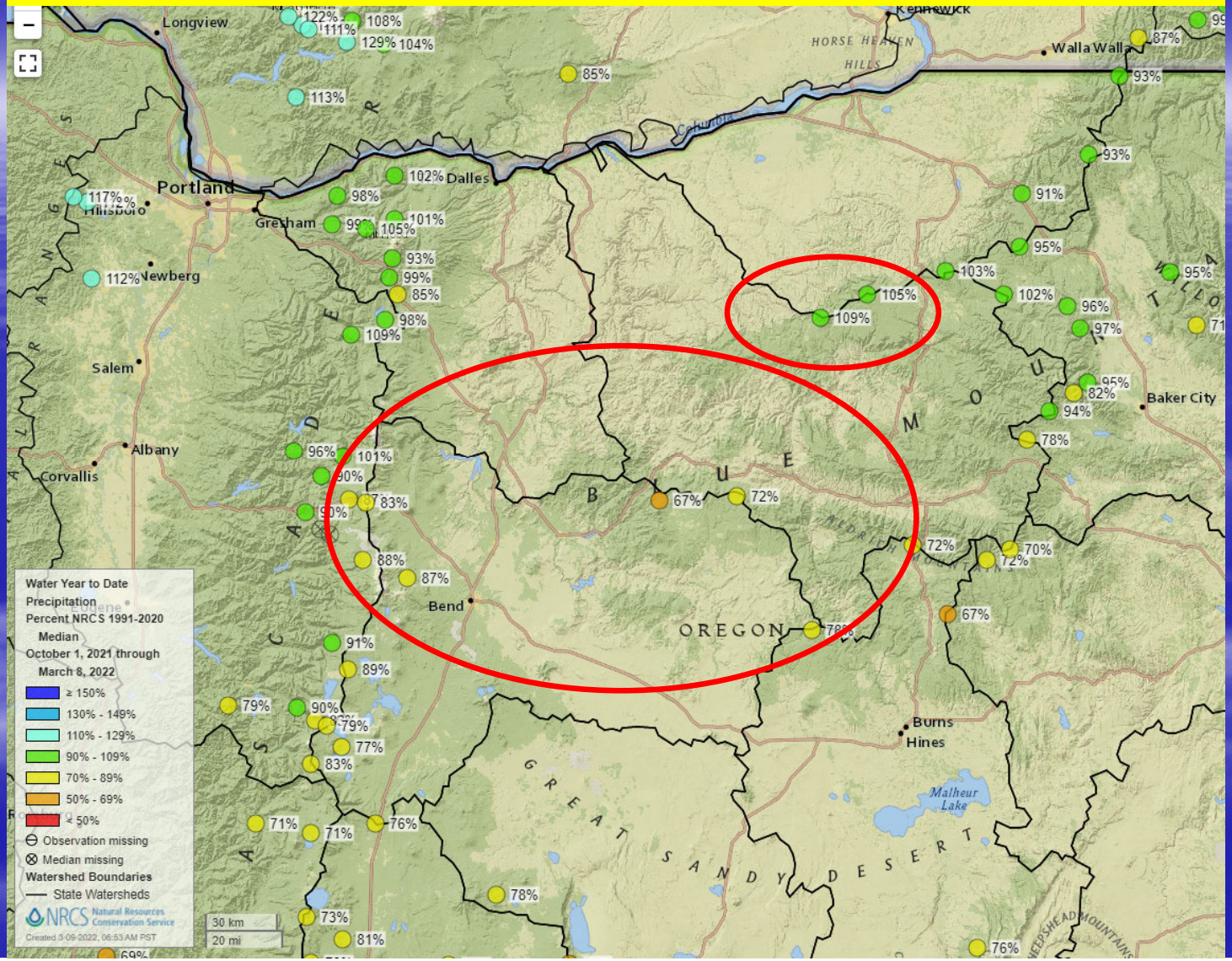
March 1, 2022, Streamflow Volume Forecast (Primary Period or April – September) % of 1991-2020 Median 50% Exceedance Probability



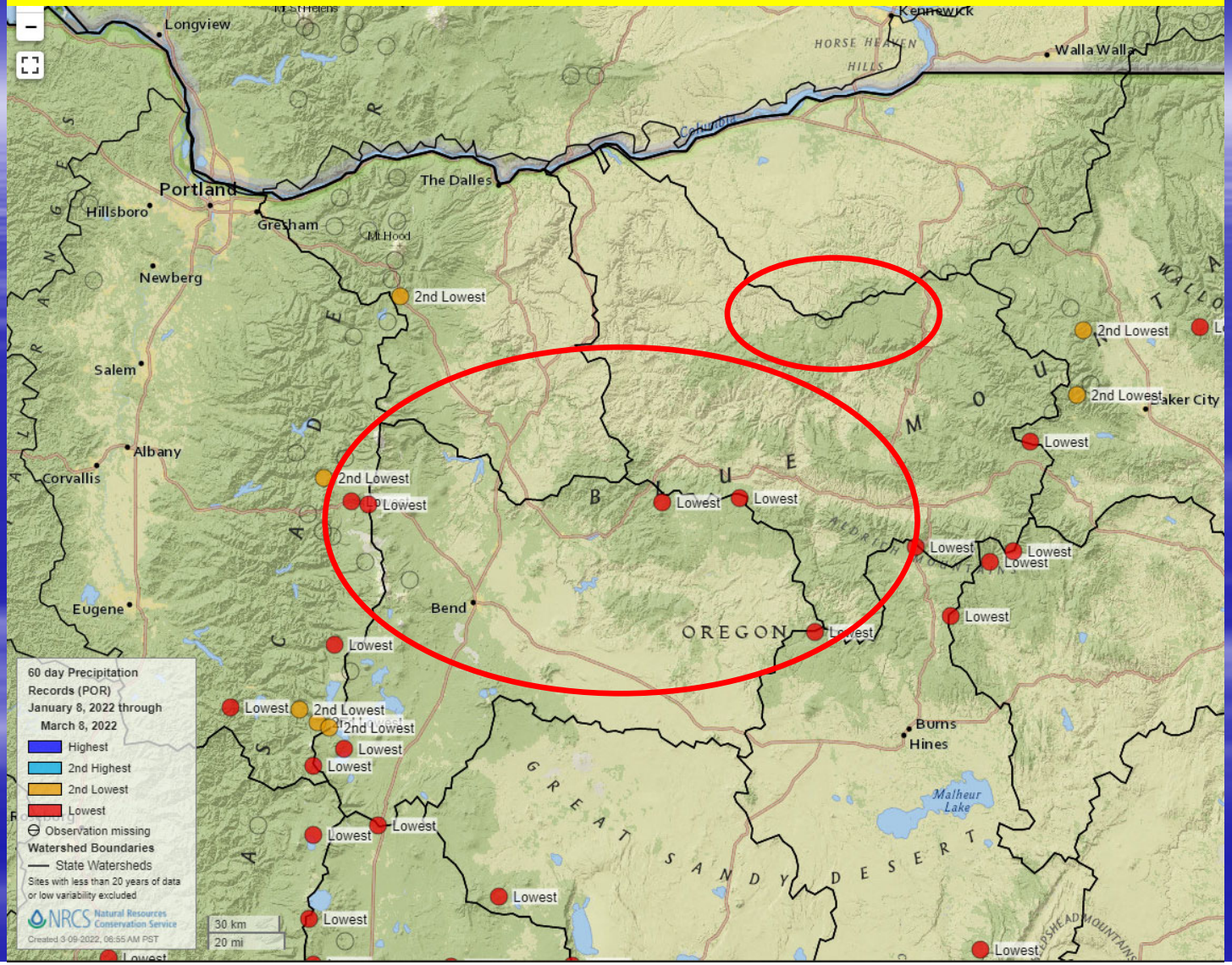
SNOTEL Snow Water Equivalent Percent 1991-202 Median – March 8, 2022



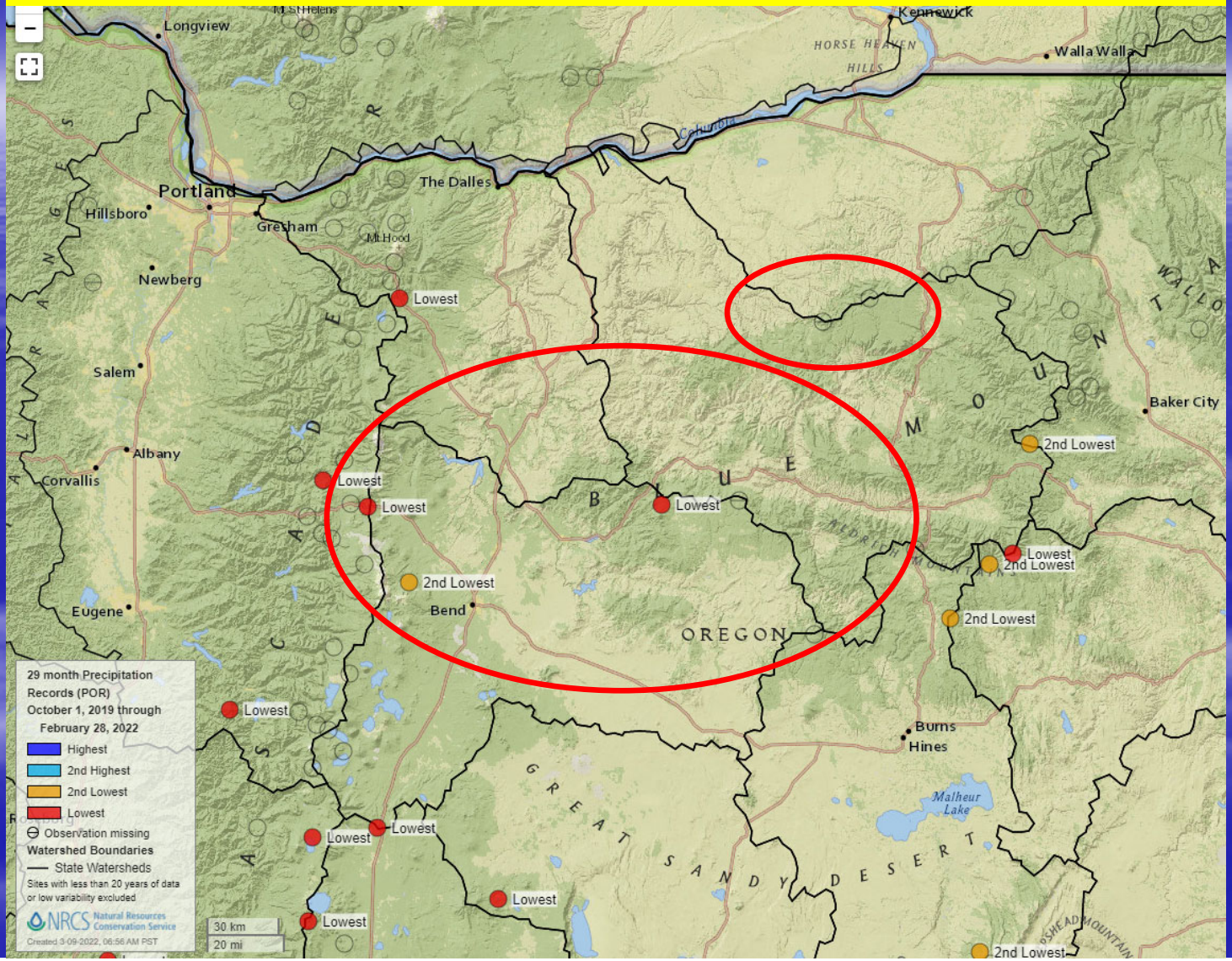
SNOTEL Water Year-to-Date Precipitation Percent 1991-202 Median – March 8, 2022



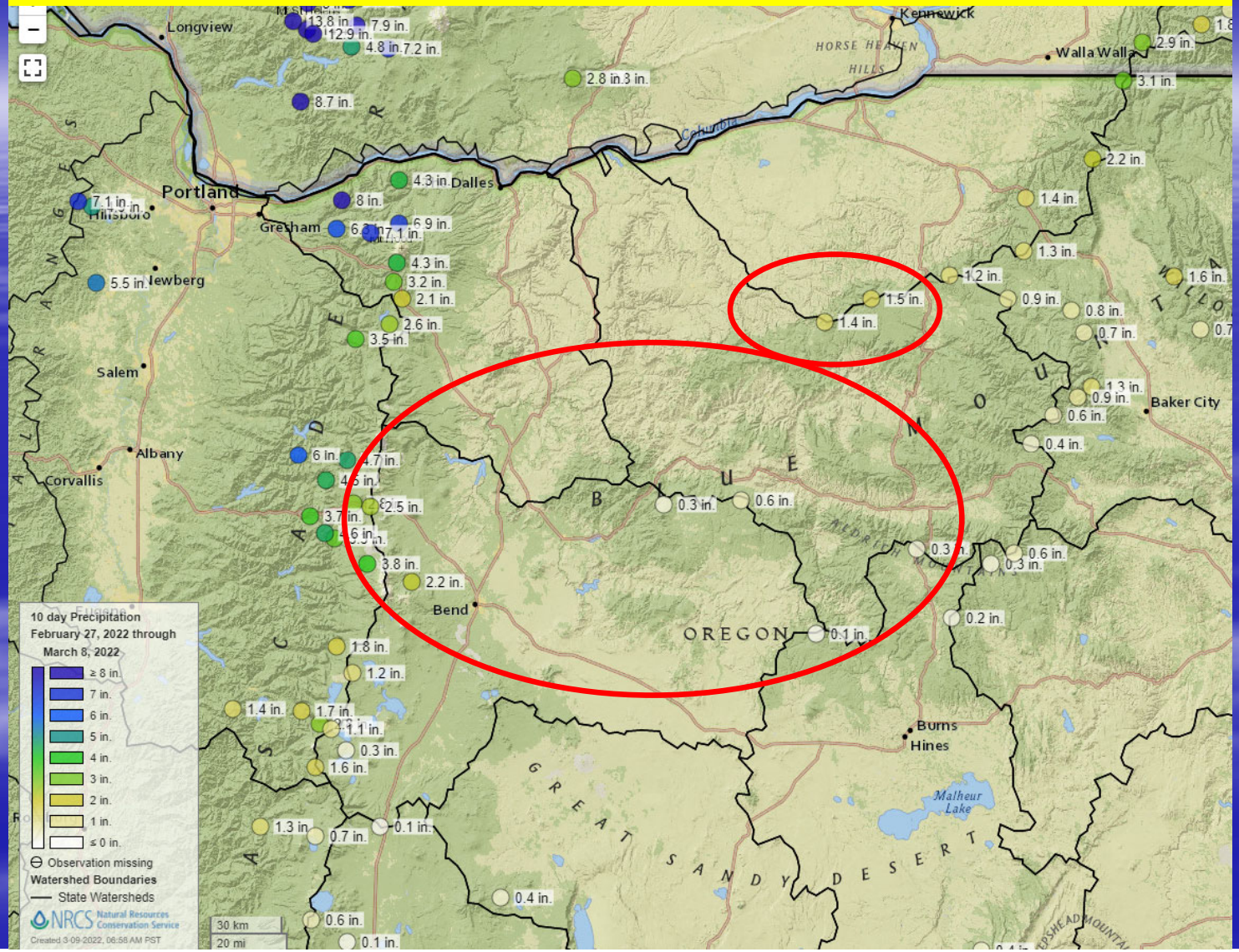
SNOTEL 60-Day Precipitation Records – January 8, 2022, through March 8, 2022



SNOTEL 29-Month Precipitation Records – January 8, 2022, through March 8, 2022



SNOTEL 10-Day Precipitation Amount (Inches) – February 27, 2022 - March 8, 2022



Thank you

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Oregon Water Supply Availability Committee March 9, 2022

Hungry Flat Snow Course
February 25, 2022
Deschutes County
Elevation 4400’
SWE = 0.8” 80% median

H. Scott Oviatt
USDA – Natural Resources Conservation Service
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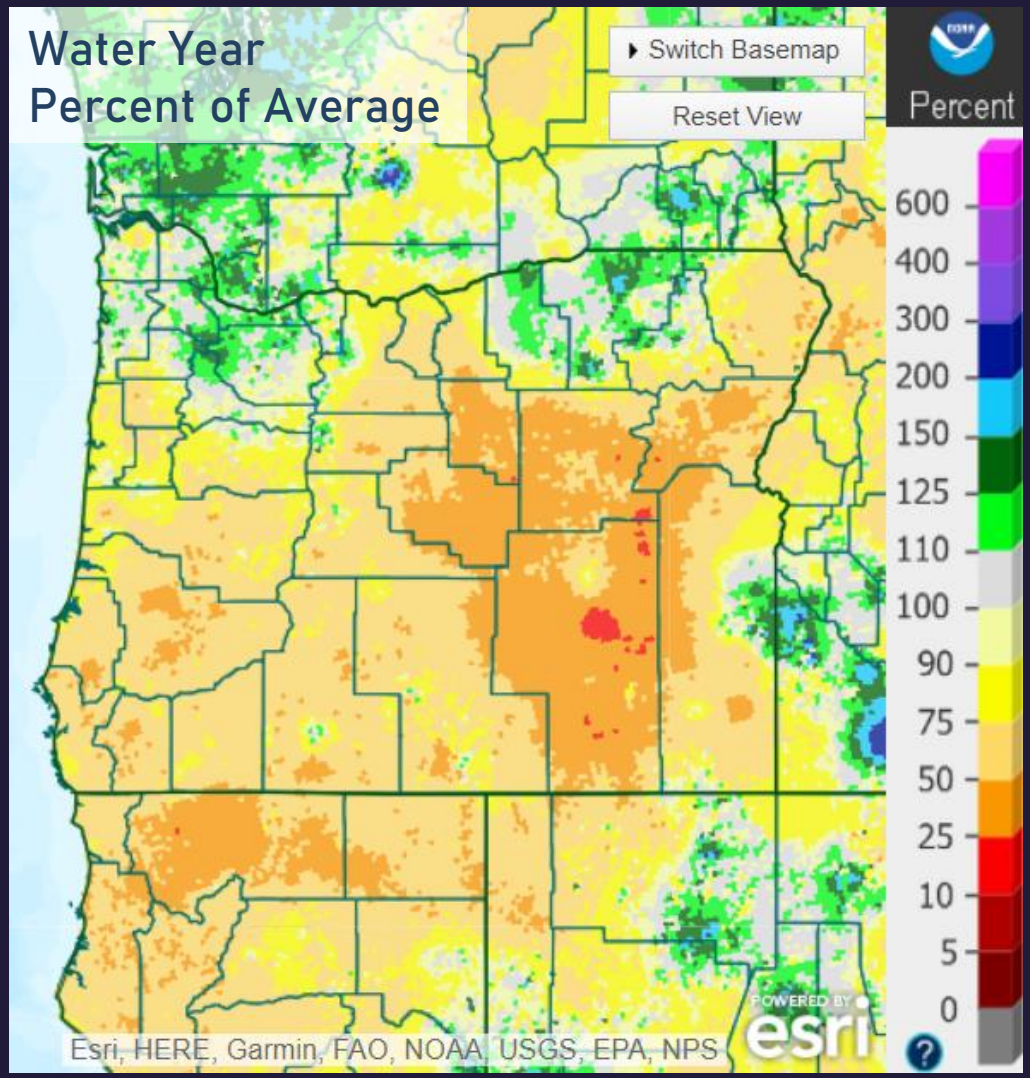
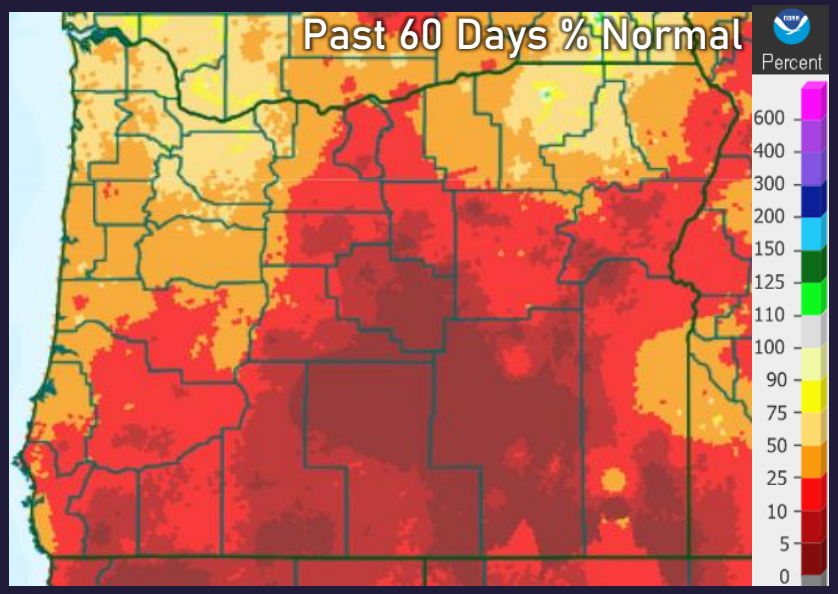
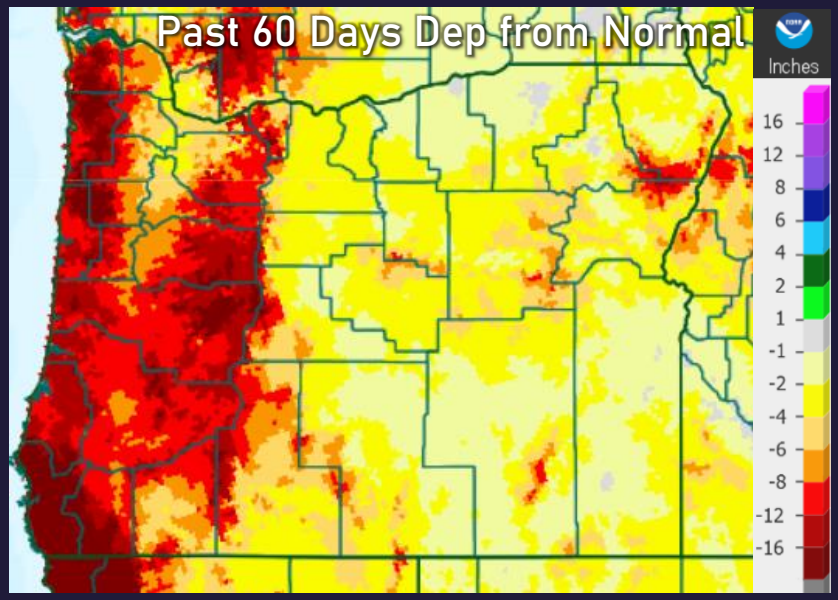
March 2022 Update for Precipitation, Temperatures, and Hydrological Conditions

Andy Bryant
Service Hydrologist
NOAA/NWS Portland
Weather Forecast Office

Precipitation





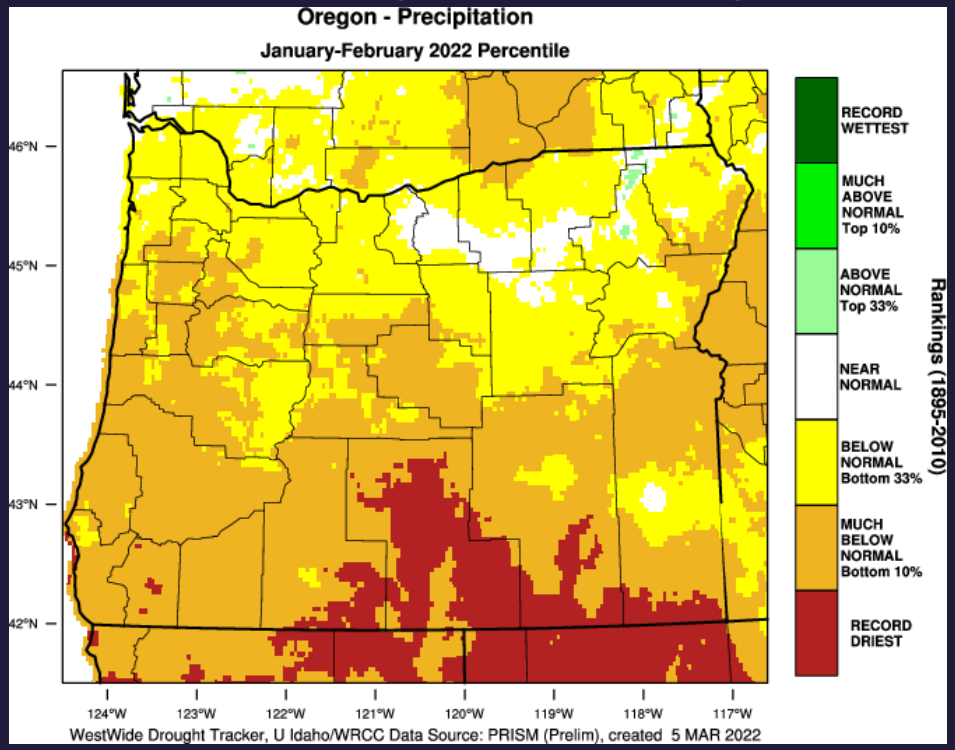


Precipitation Data as of March 8, 2022

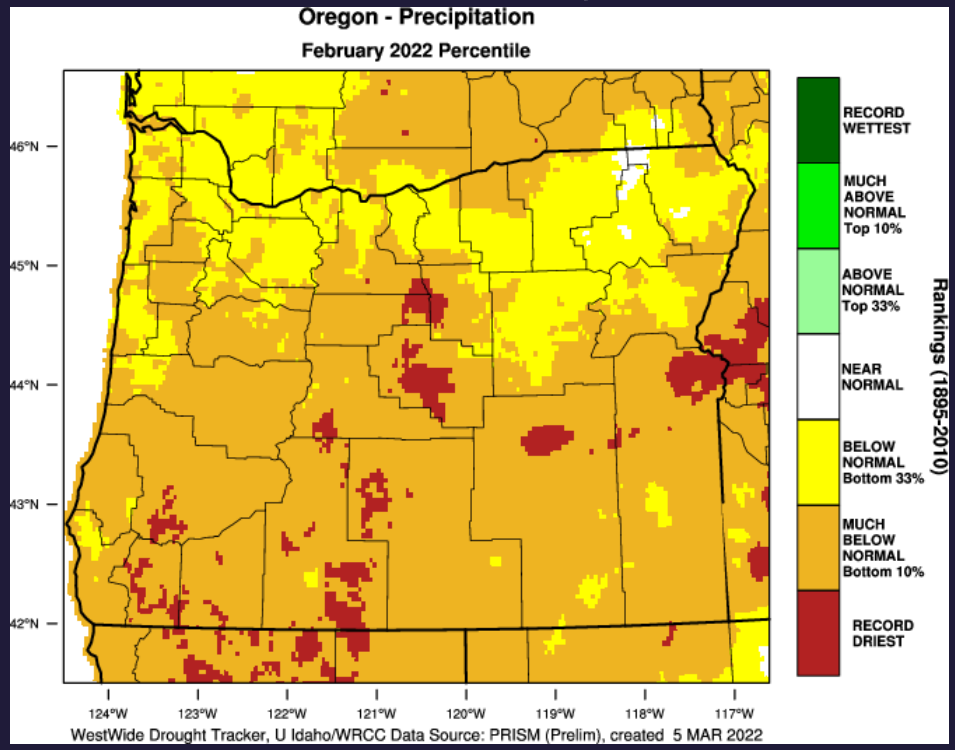
water.weather.gov/precip/index.php

Precipitation – Percentile / Ranking

January & February



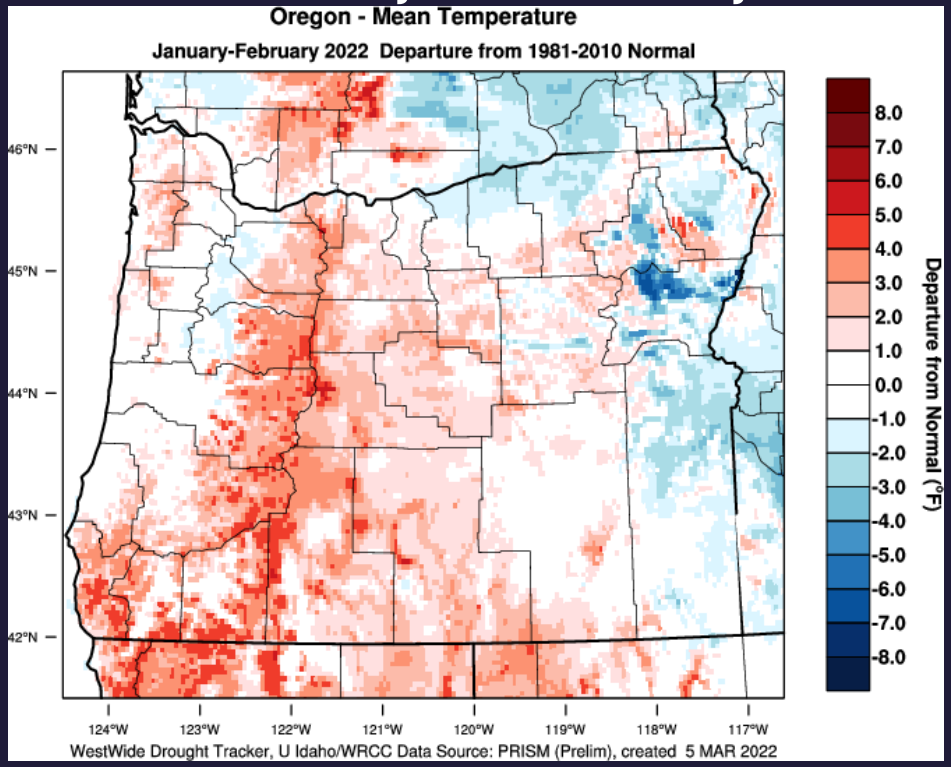
February



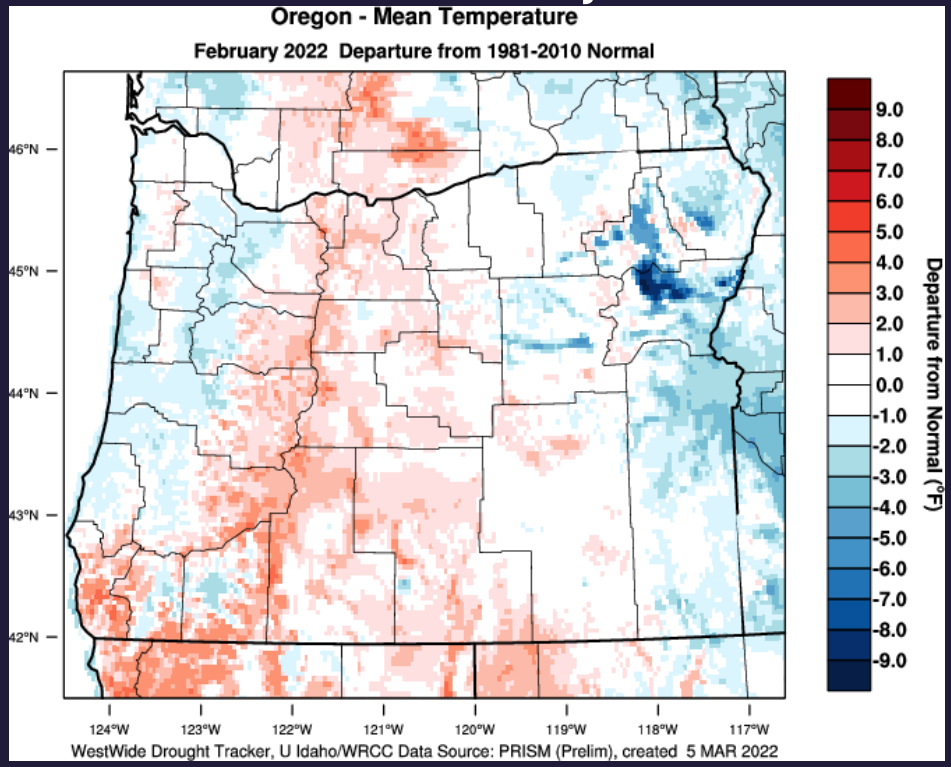
https://wrcc.dri.edu/wwdt/index.php?region=pnw

Recent Temperatures

January & February



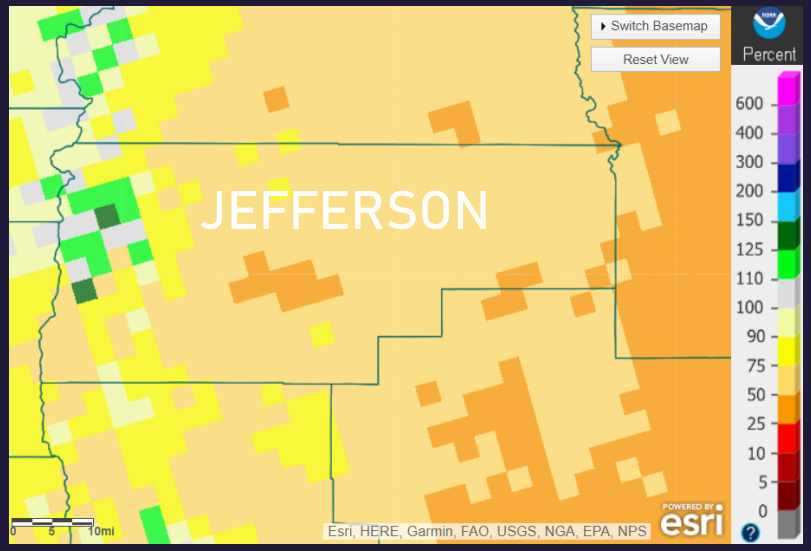
February

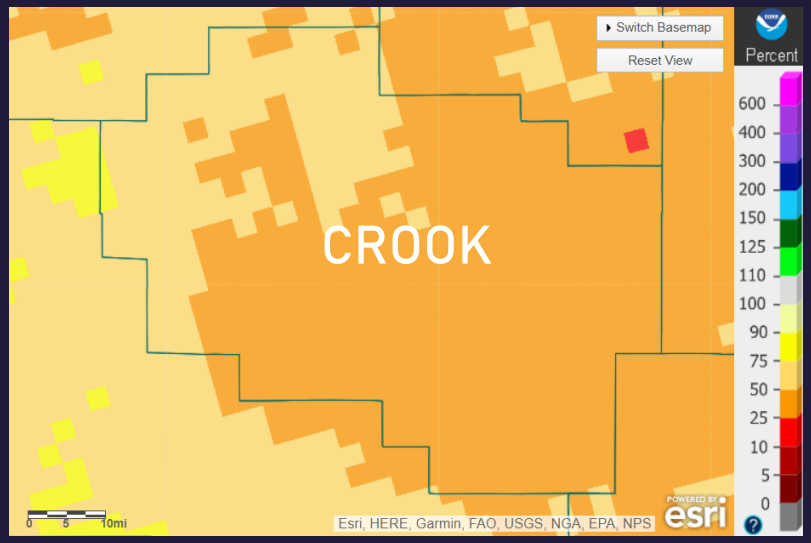


https://wrcc.dri.edu/wwdt/index.php?region=pnw

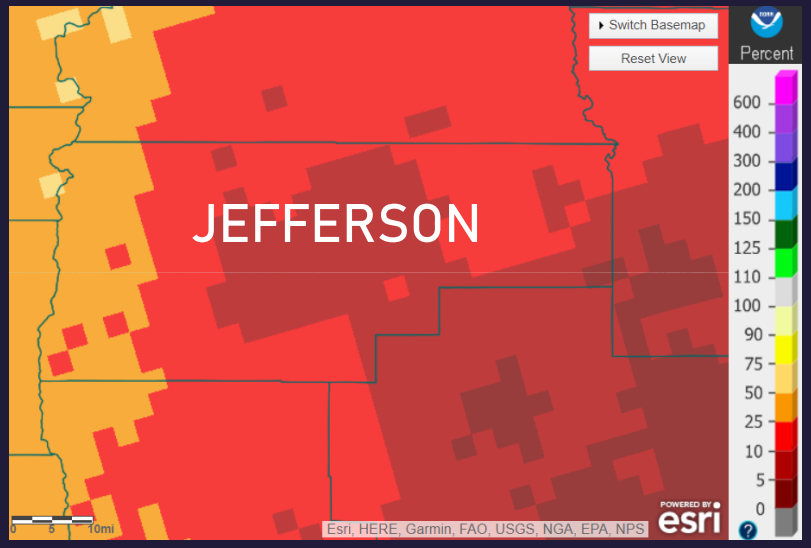
Precipitation – County Level

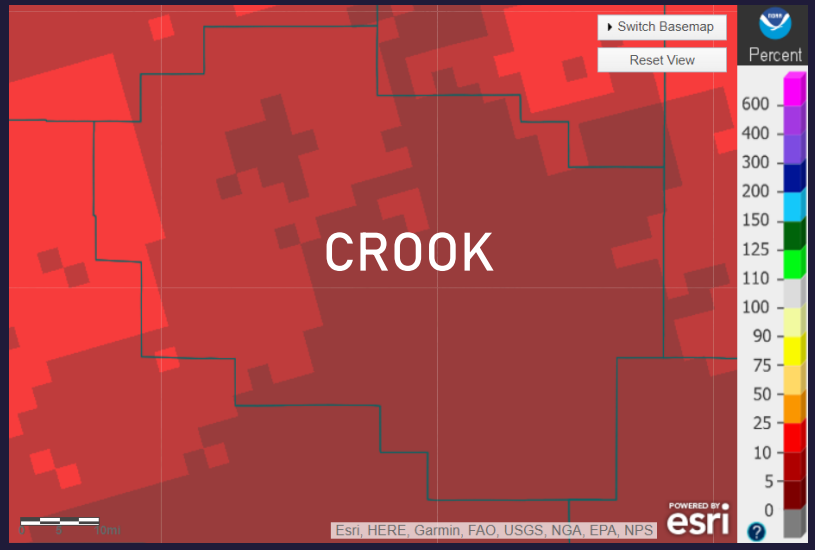
Water Year thus far





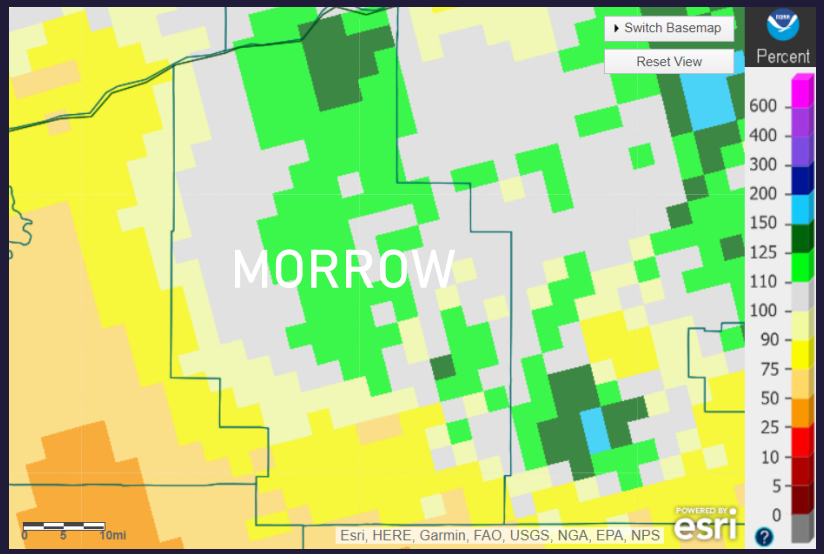
Past 60 Days



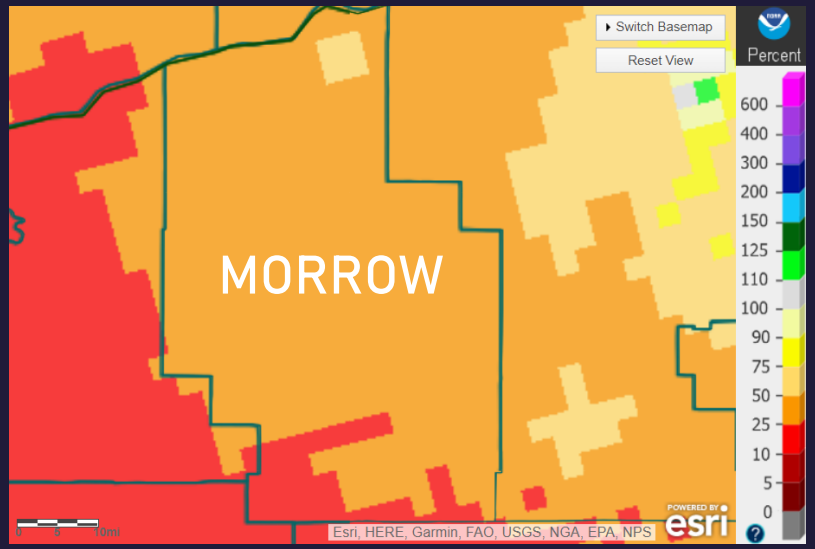


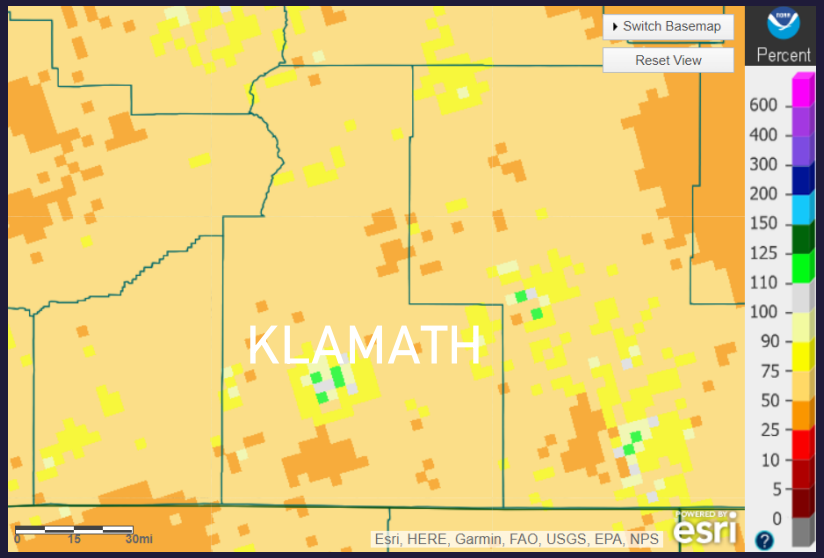
Precipitation – County Level

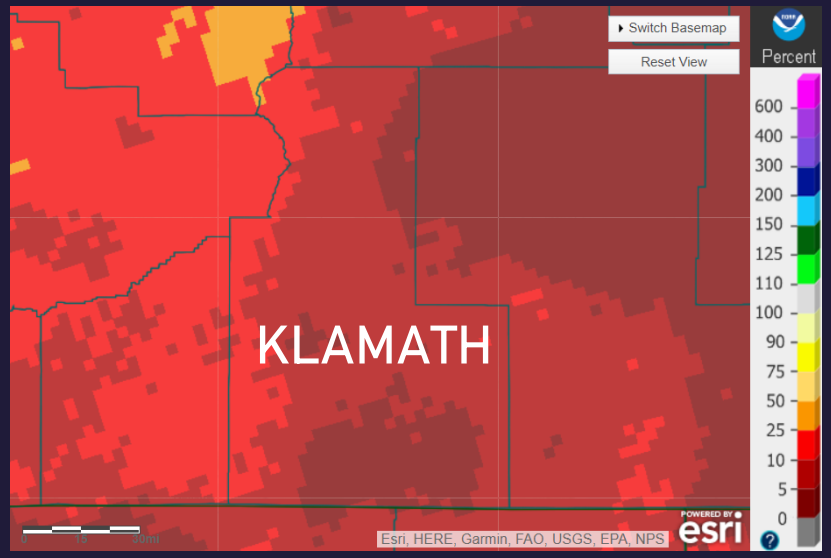
Water Year thus far



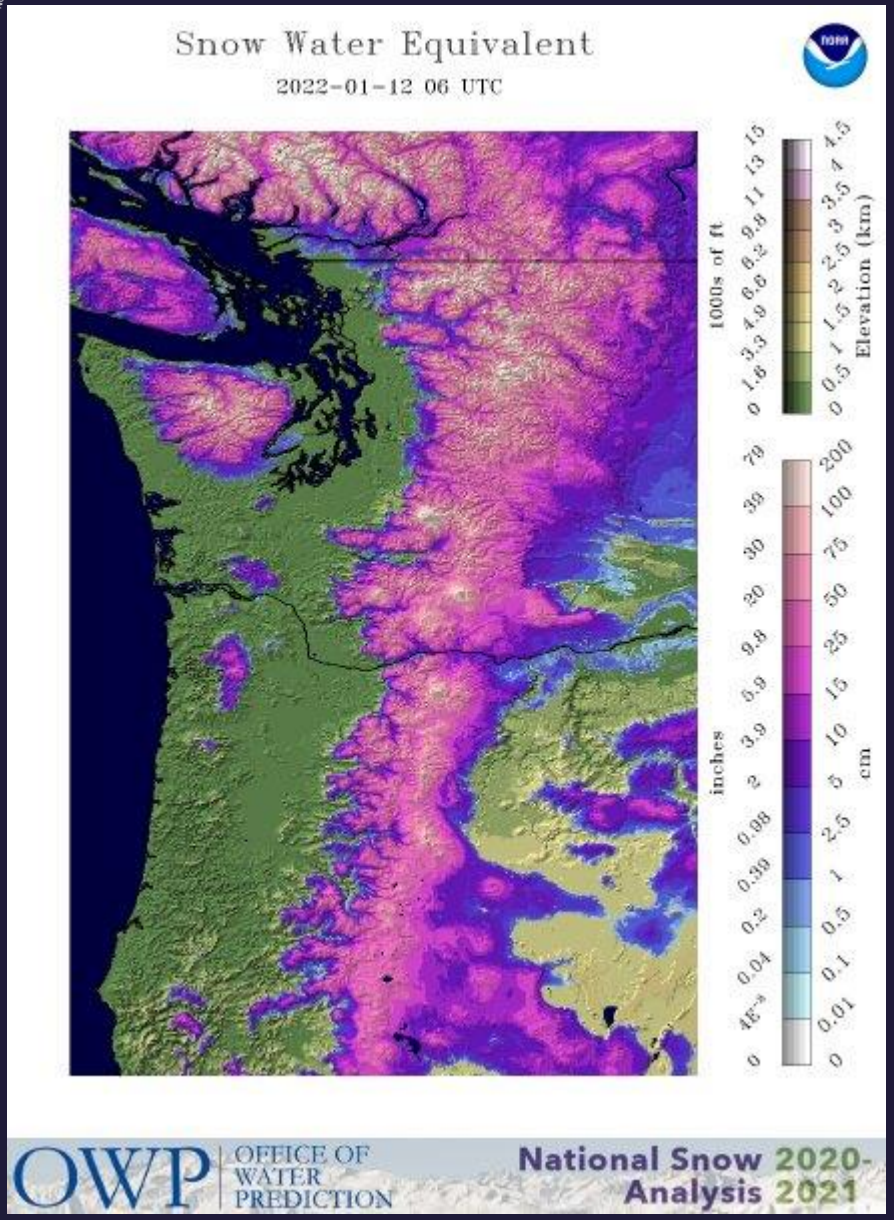
Past 60 Days

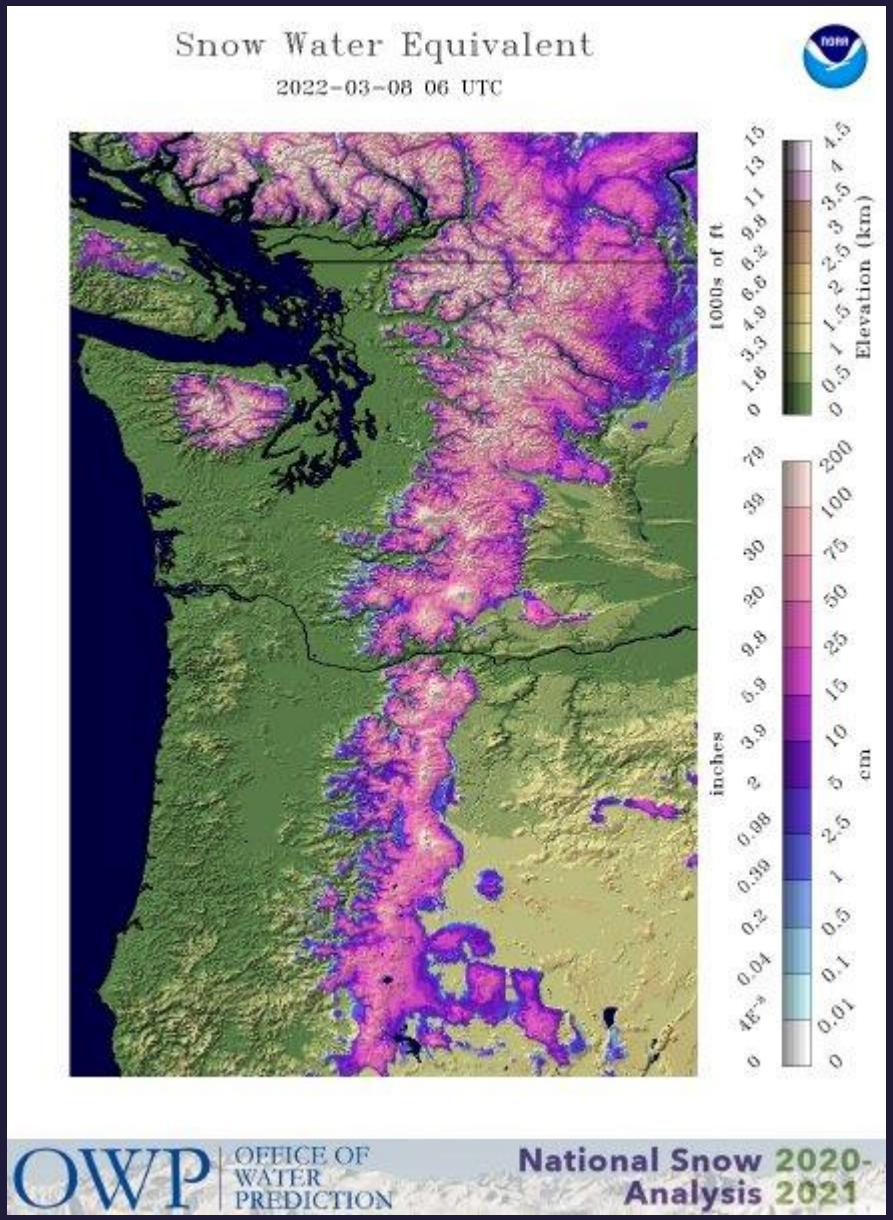






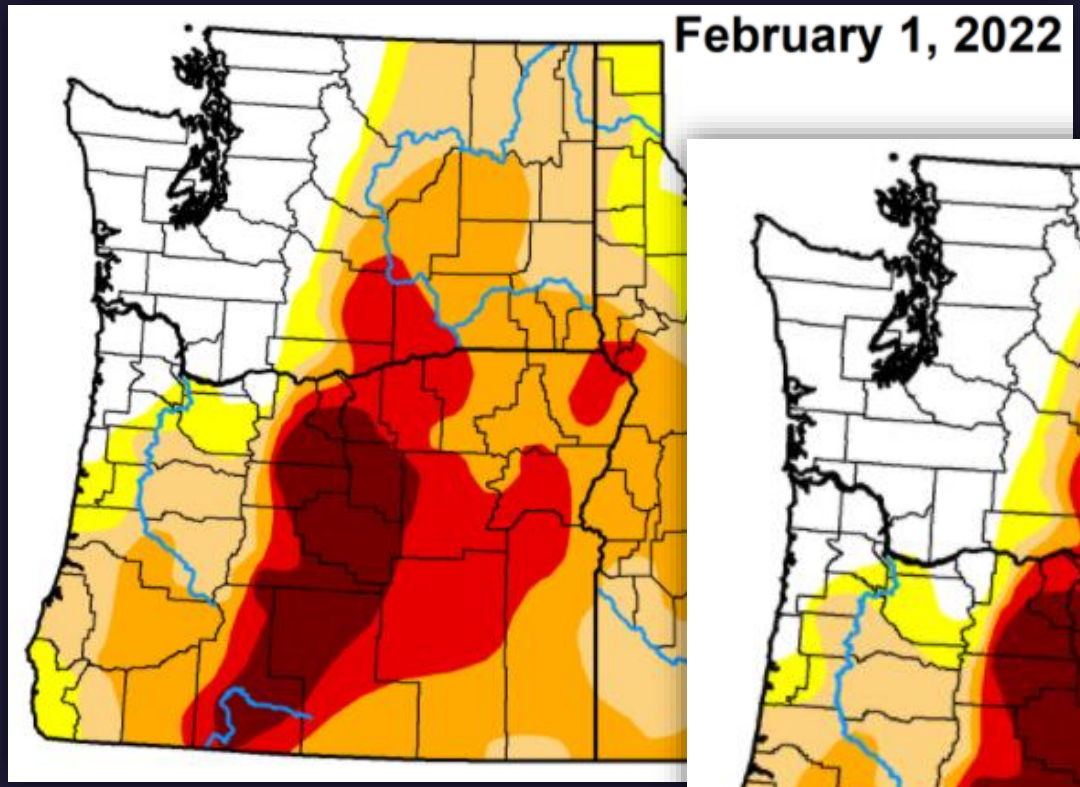
Snow Analysis from NOAA/NWS Remote Sensing Center

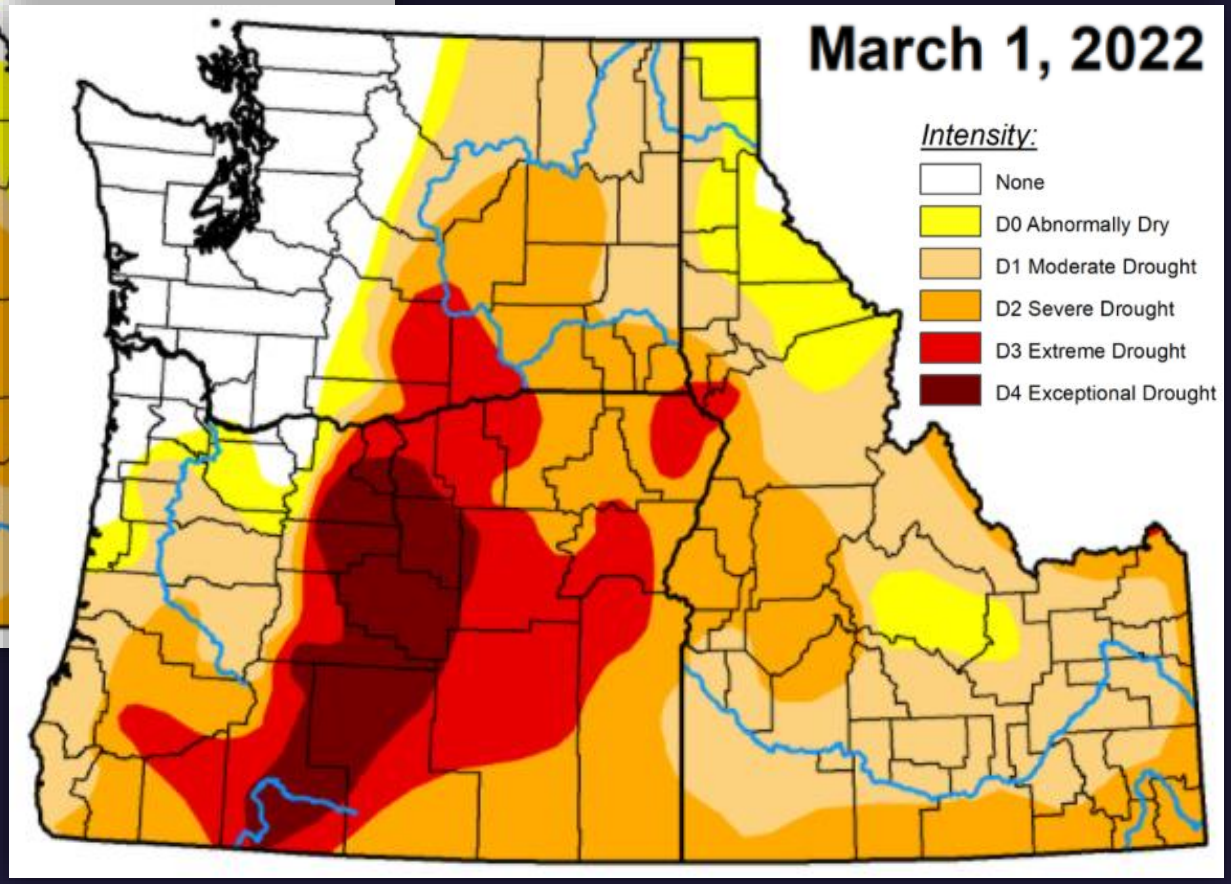




https://www.nohrsc.noaa.gov/nsa/index.html

Drought Monitor



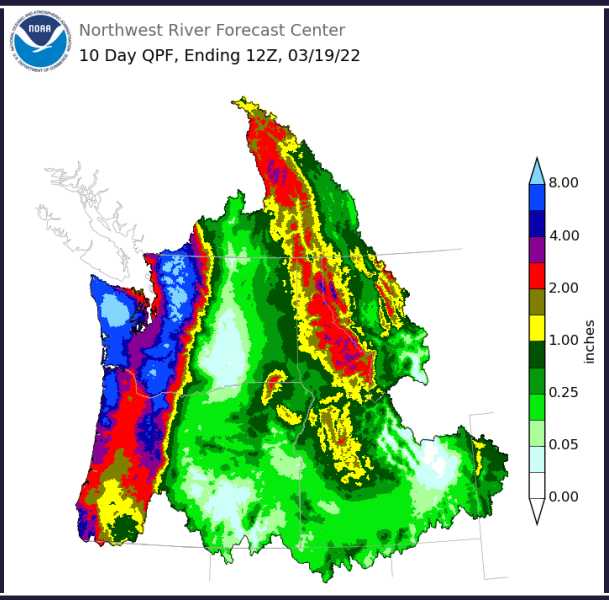


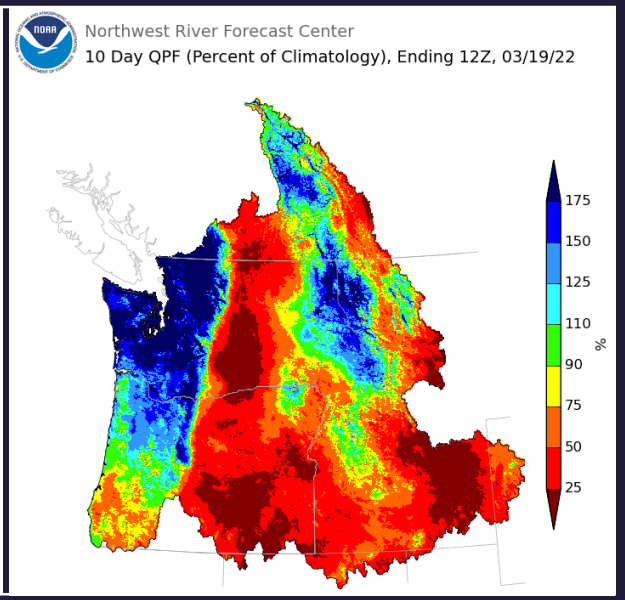
https://droughtmonitor.unl.edu

Mid March Outlook

NWRFC
10-DAY
PRECIPITATION
FORECAST

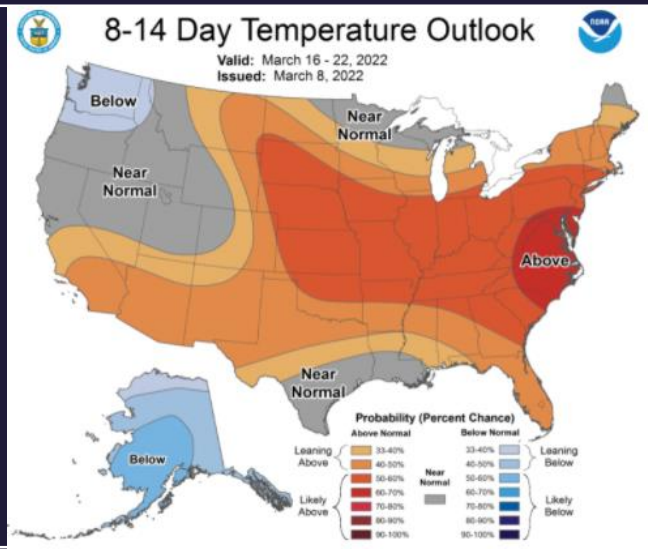
www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php

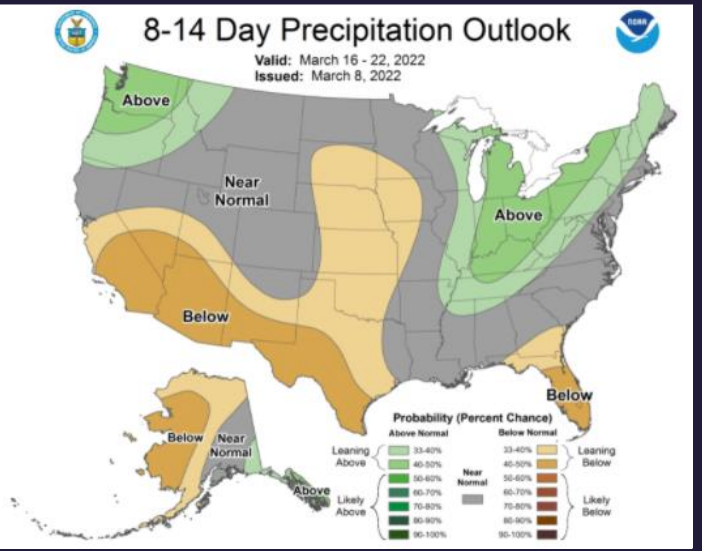




CPC
8 – 14 DAY
OUTLOOK

www.cpc.ncep.noaa.gov





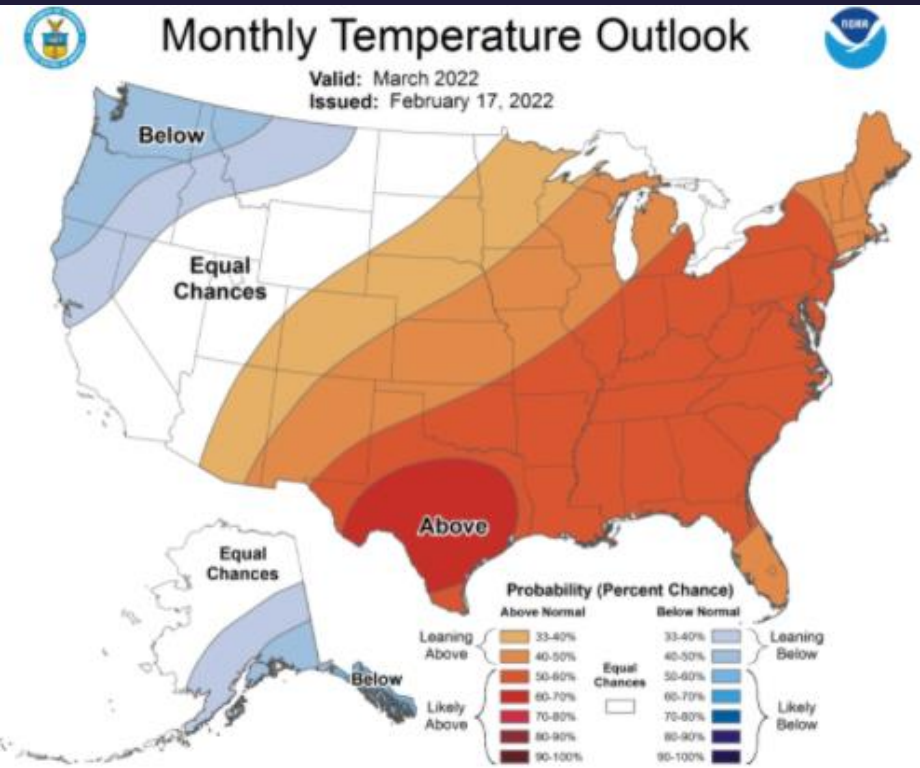
Monthly Precipitation Normals

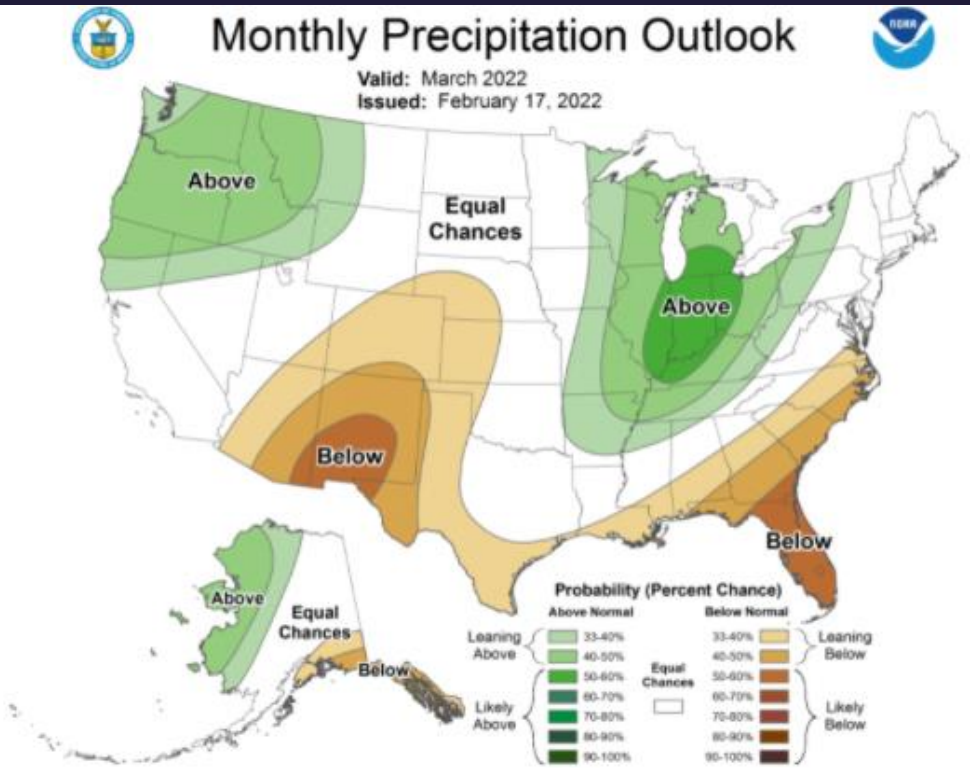
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ANNUAL
Seattle	3.9	6.3	5.7	5.8	3.8	4.2	3.2	1.9	1.5	0.6	1.0	1.6	39.3
% Annual Normal	*10%*	*16%*	*15%*	*15%*	*10%*	*11%*	*8%*	*5%*	*4%*	*2%*	*3%*	*4%*	
Portland	3.4	5.5	5.8	5.0	3.7	4.0	2.9	2.5	1.6	0.5	0.5	1.5	36.9
% Annual Normal	*9%*	*15%*	*16%*	*14%*	*10%*	*11%*	*8%*	*7%*	*4%*	*1%*	*1%*	*4%*	
Medford	1.2	2.6	3.5	2.7	2.0	1.8	1.5	1.3	0.7	0.2	0.3	0.5	18.4
% Annual Normal	*7%*	*14%*	*19%*	*15%*	*11%*	*10%*	*8%*	*7%*	*4%*	*1%*	*2%*	*3%*	
Spokane	1.4	2.1	2.3	2	1.4	1.8	1.3	1.6	1.2	0.4	0.5	0.6	16.5
% Annual Normal	*8%*	*13%*	*14%*	*12%*	*8%*	*11%*	*8%*	*10%*	*7%*	*2%*	*3%*	*4%*	
Pendleton	1.1	1.4	1.5	1.5	1.2	1.3	1.2	1.5	1.1	0.3	0.3	0.5	12.8
% Annual Normal	*9%*	*11%*	*12%*	*12%*	*9%*	*10%*	*9%*	*12%*	*9%*	*2%*	*2%*	*4%*	
Boise	0.8	1.2	1.5	1.4	1	1.3	1.2	1.5	0.8	0.2	0.2	0.4	11.5
% Annual Normal	*7%*	*10%*	*13%*	*12%*	*9%*	*11%*	*10%*	*13%*	*7%*	*2%*	*2%*	*3%*	

www.weather.gov/wrh/climate

Climate Prediction Center Outlook

March 2022

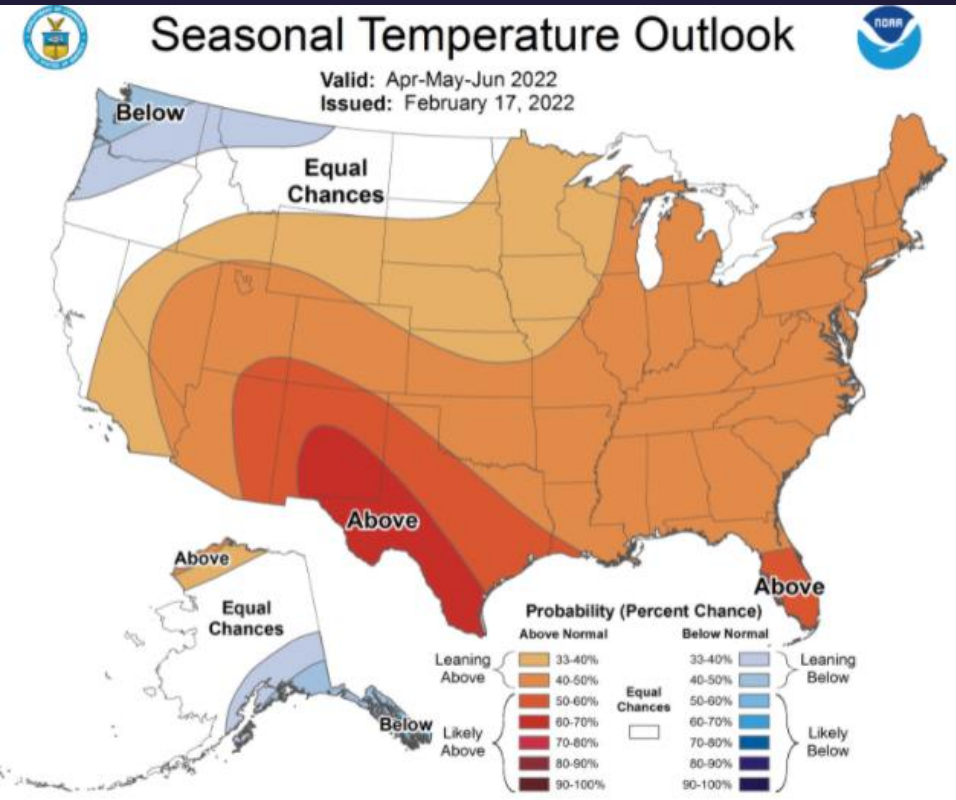


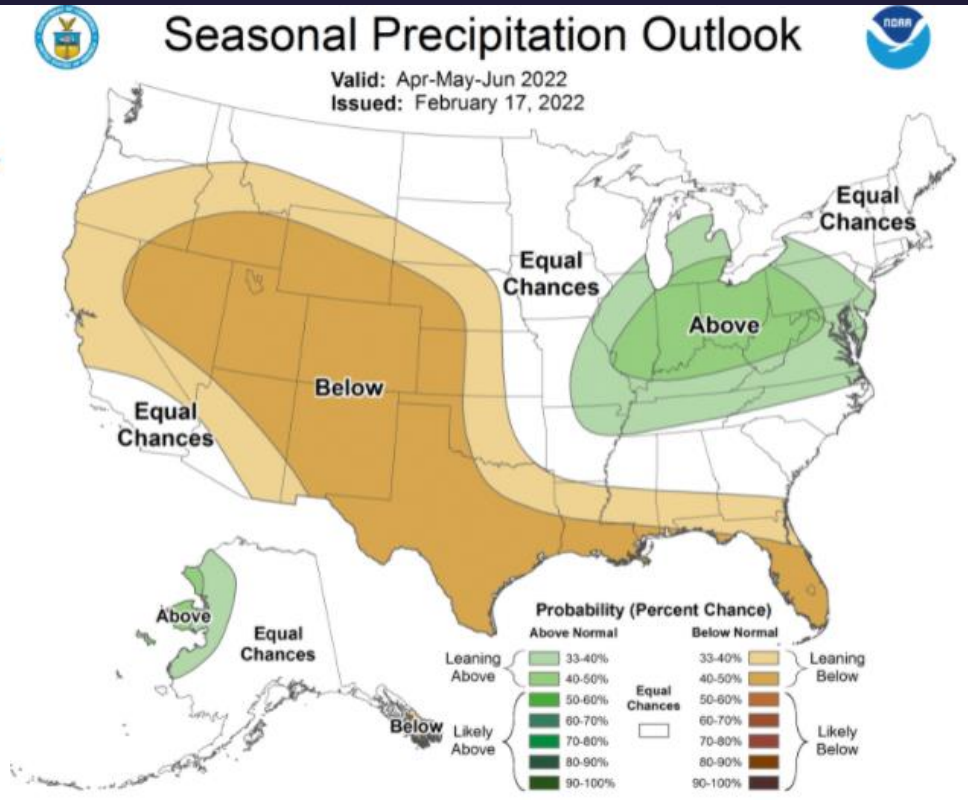


www.cpc.ncep.noaa.gov

Climate Prediction Center Outlook

April-May-June 2022

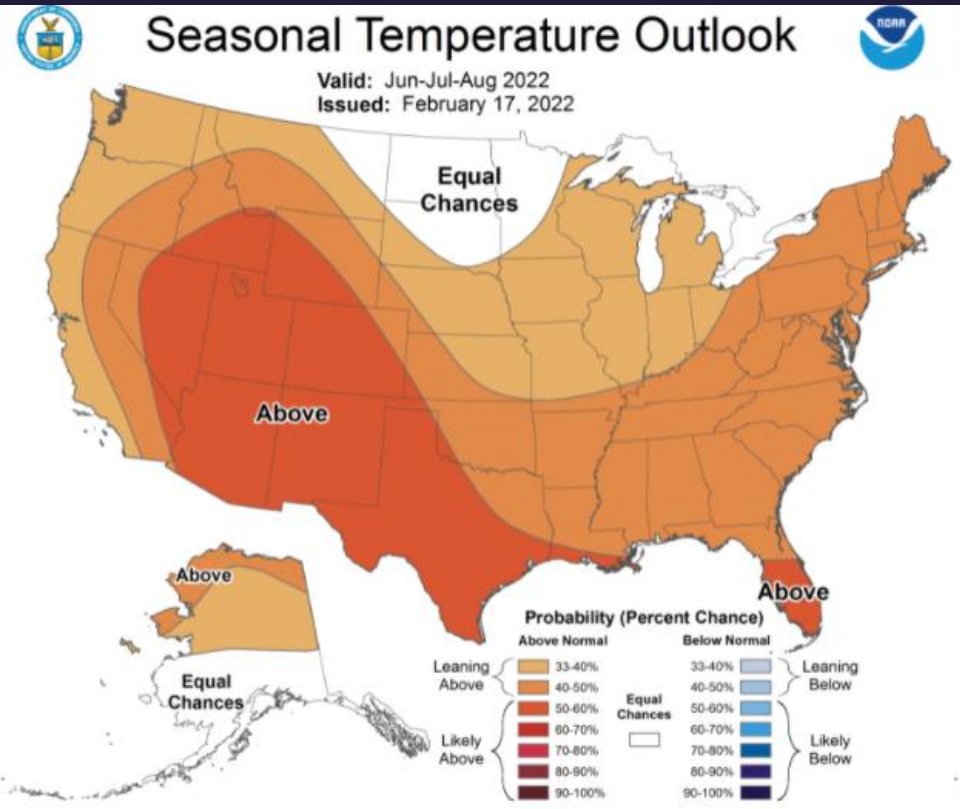


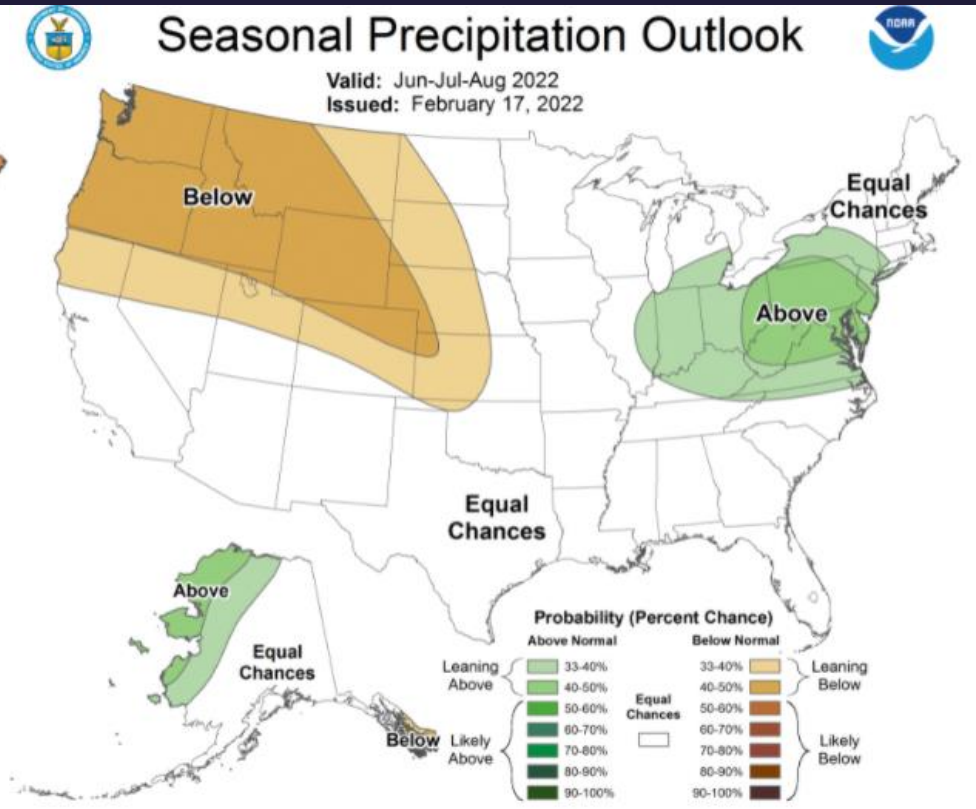


www.cpc.ncep.noaa.gov

Climate Prediction Center Outlook

June-July-August 2022

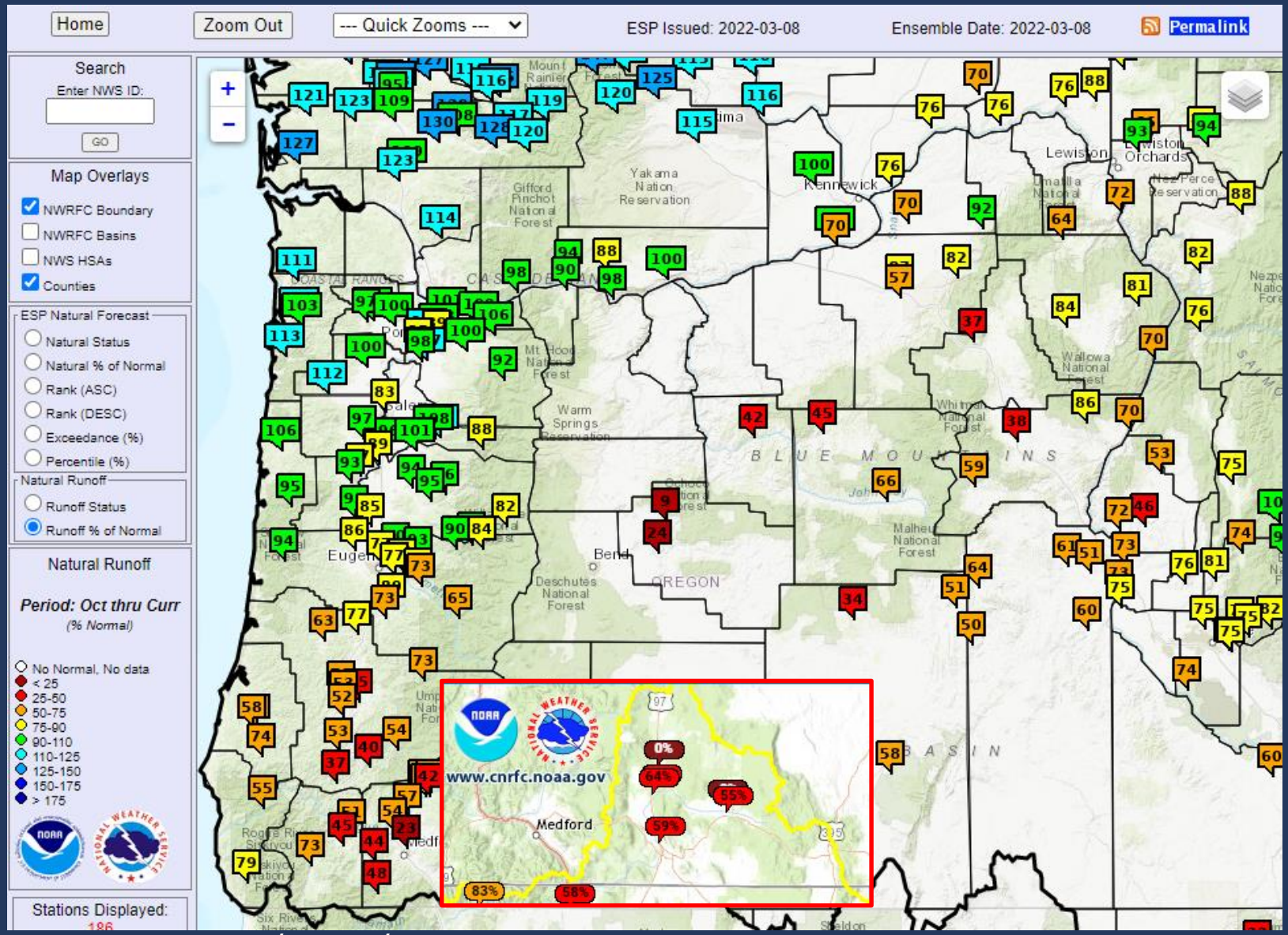




www.cpc.ncep.noaa.gov

Current WY Runoff

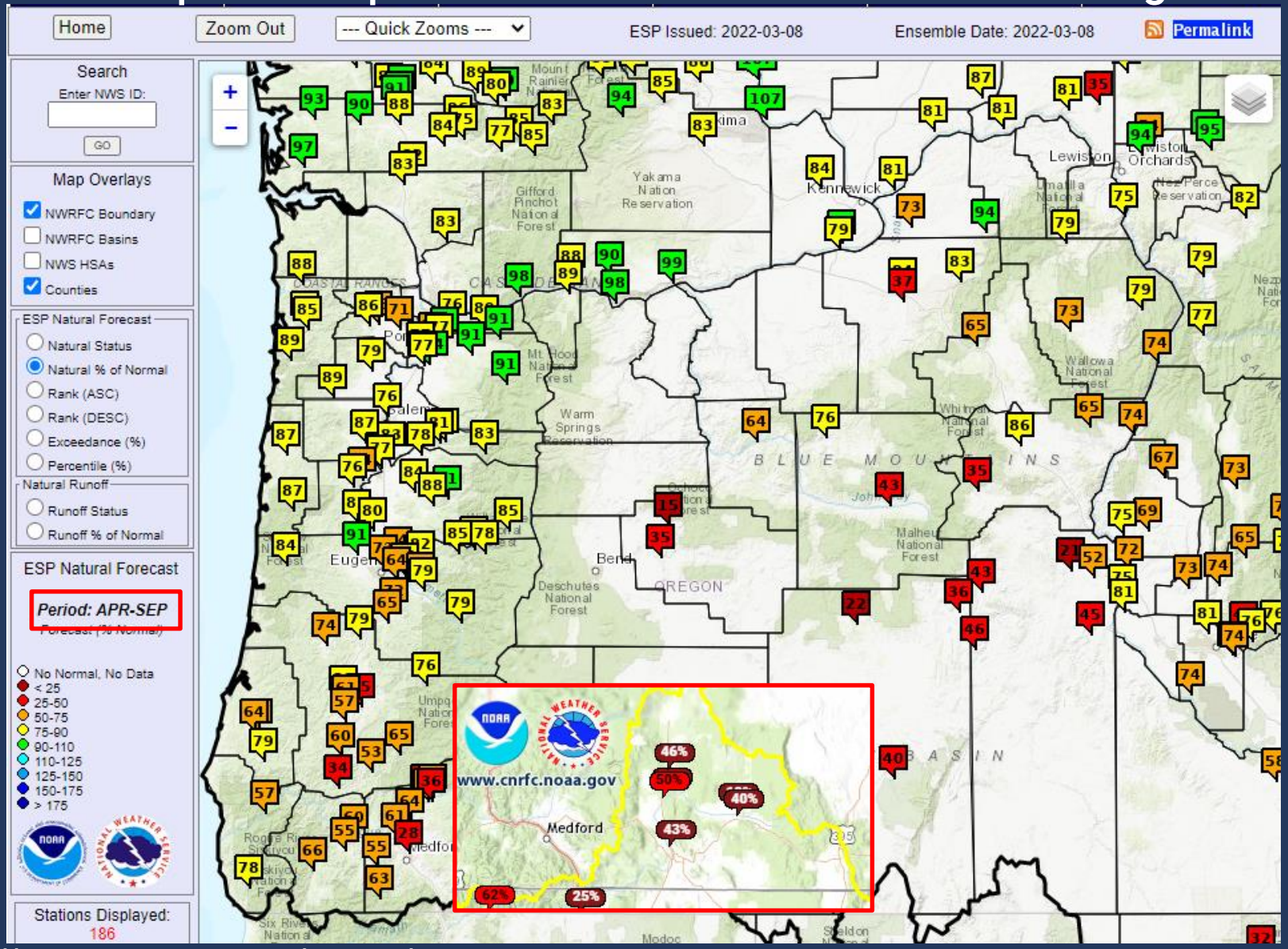
% of Average from Oct 1 – Mar 8



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

Seasonal Volume Forecast

April – September ESP Natural - % of Average



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

Streamflow WY Volume Forecast

Willamette at Salem

WILLAMETTE - AT SALEM (SLMO3)
Forecasts for Water Year 2022

Official Water Supply

ESP with 10 Days QPF ***Ensemble:*** 2022-03-08 ***Issued:*** 2022-03-08

Forecast Period	Forecasts Are in KAF 90 %	50 %	% Average	10 %	30 Year Average (1991-2020)
APR-SEP	2788	3905	76	5619	5119
APR-JUL	2458	3401	75	5164	4554
JAN-SEP	8245	9250	76	11677	12224
JAN-JUL	7911	8797	75	11180	11659
OCT-SEP	12228	13233	80	15660	16605

Experimental Water Supply

HEFS with 15 days EQPF ***Ensemble:*** 2022-03-08 ***Issued:*** 2022-03-08

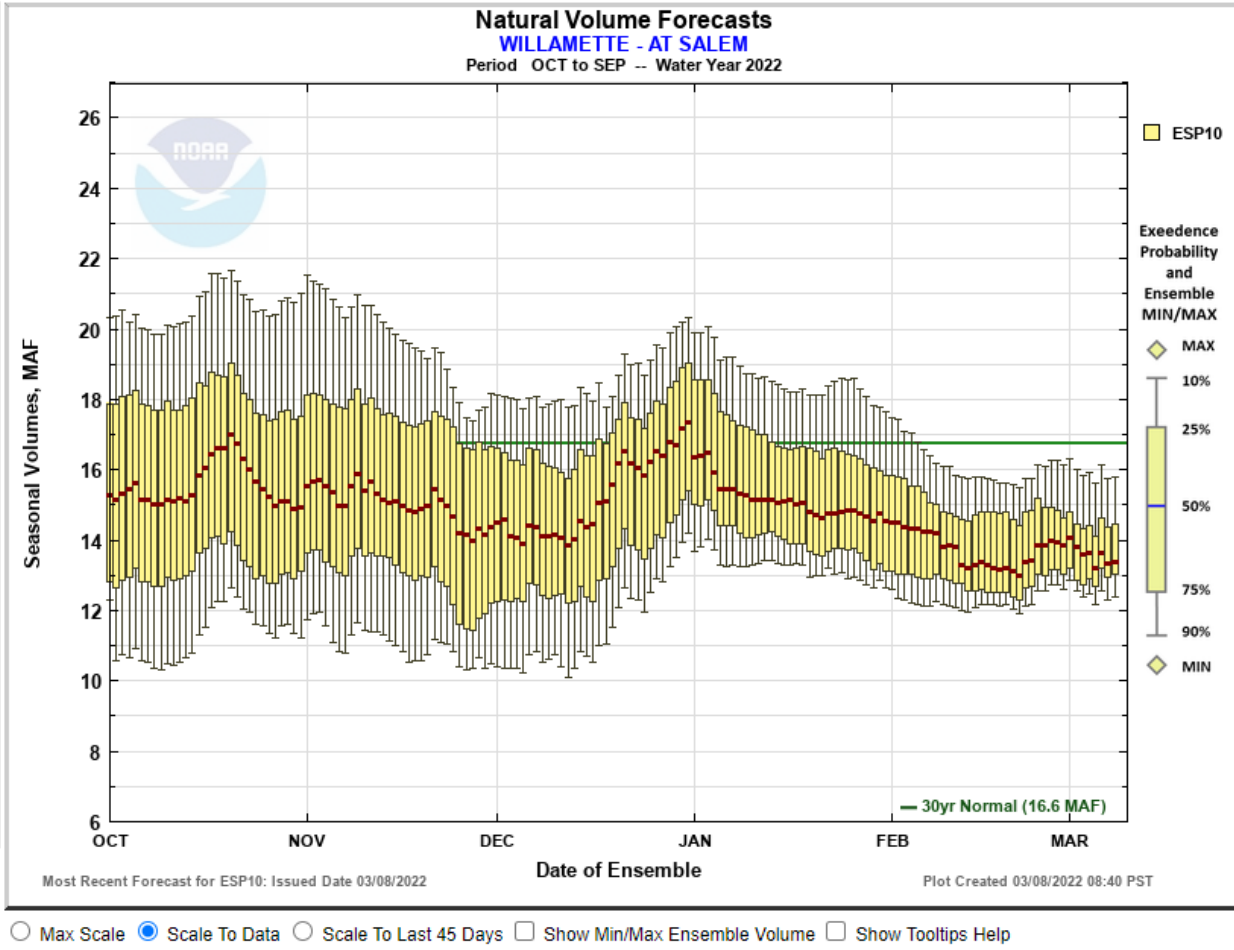
APR-SEP	3060	4098	80	5965	5119
APR-JUL	2705	3608	79	5440	4554
JAN-SEP	8544	9819	80	12072	12224
JAN-JUL	8165	9344	80	11507	11659
OCT-SEP	12527	13802	83	16055	16605

Reference

ESP with 0 Days QPF ***Ensemble:*** 2022-03-08 ***Issued:*** 2022-03-08

APR-SEP	2967	4033	79	5890	5119
APR-JUL	2619	3548	78	5363	4554
JAN-SEP	8343	9542	78	11900	12224
JAN-JUL	7995	9109	78	11376	11659
OCT-SEP	12327	13525	81	15883	16605

Move the mouse over the desired "Forecast Period" to display a graph.



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

Streamflow WY Volume Forecast

ESP 10-day vs last month (2/8/22) vs last year (3/8/21)

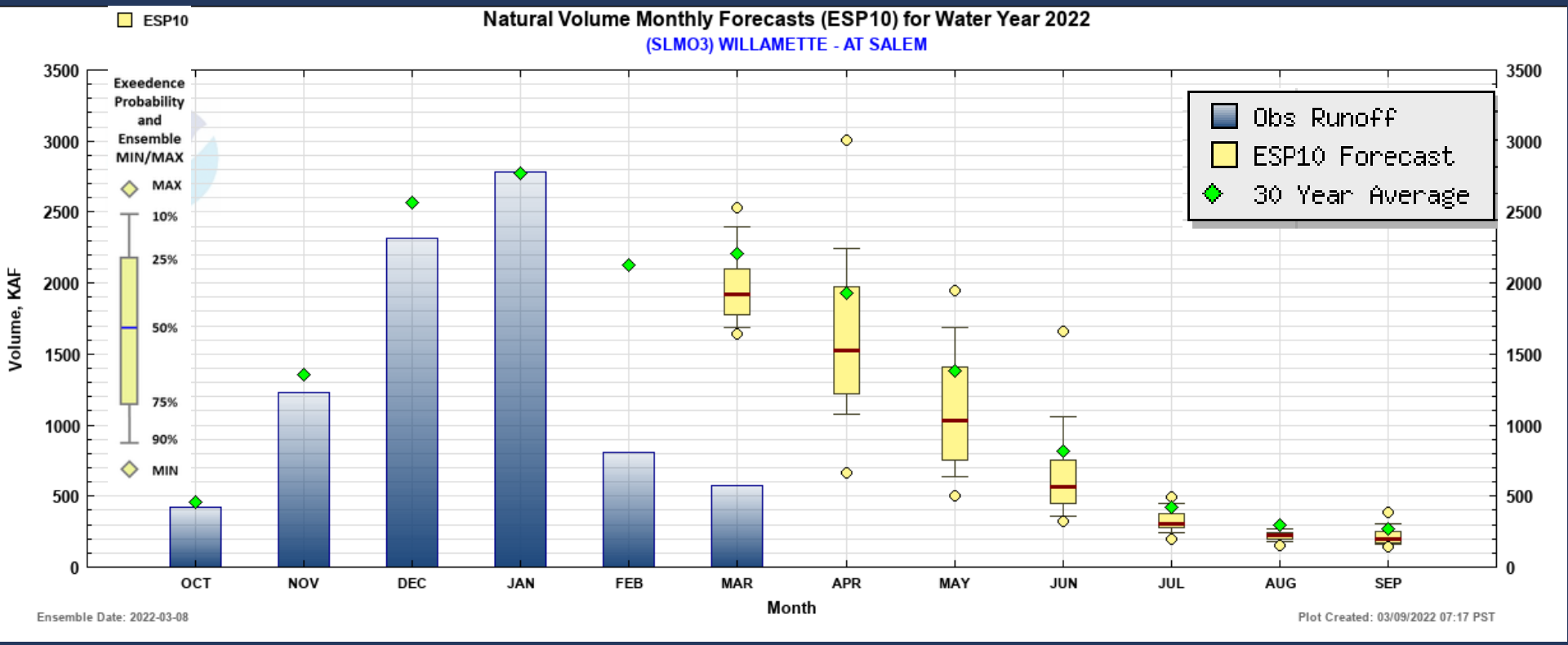
Site	Last month's 10-day forecast % normal	This month's 10-day forecast % normal	Last year's 10-day forecast % normal
Willamette R at Salem	85	80	82
Rogue R at Raygold	64	57	72
Umatilla R nr Umatilla	79	79	97
Owyhee Dam	69	52	47
Crooked R nr Prineville	41	47	67

Changes in water supply forecasts since last month are noticeable.

Conditions generally worse than or comparable to last year.

Streamflow WY Monthly Volume Forecast

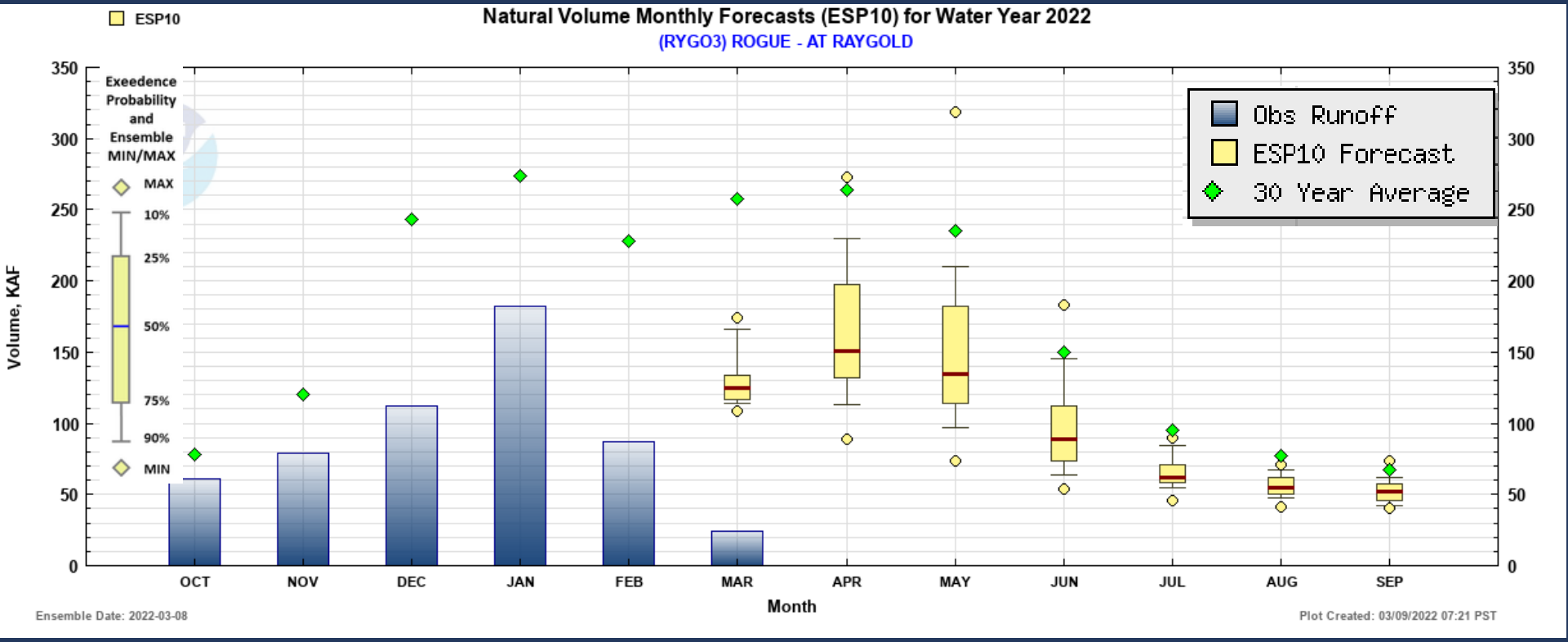
Willamette at Salem



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

Streamflow WY Monthly Volume Forecast

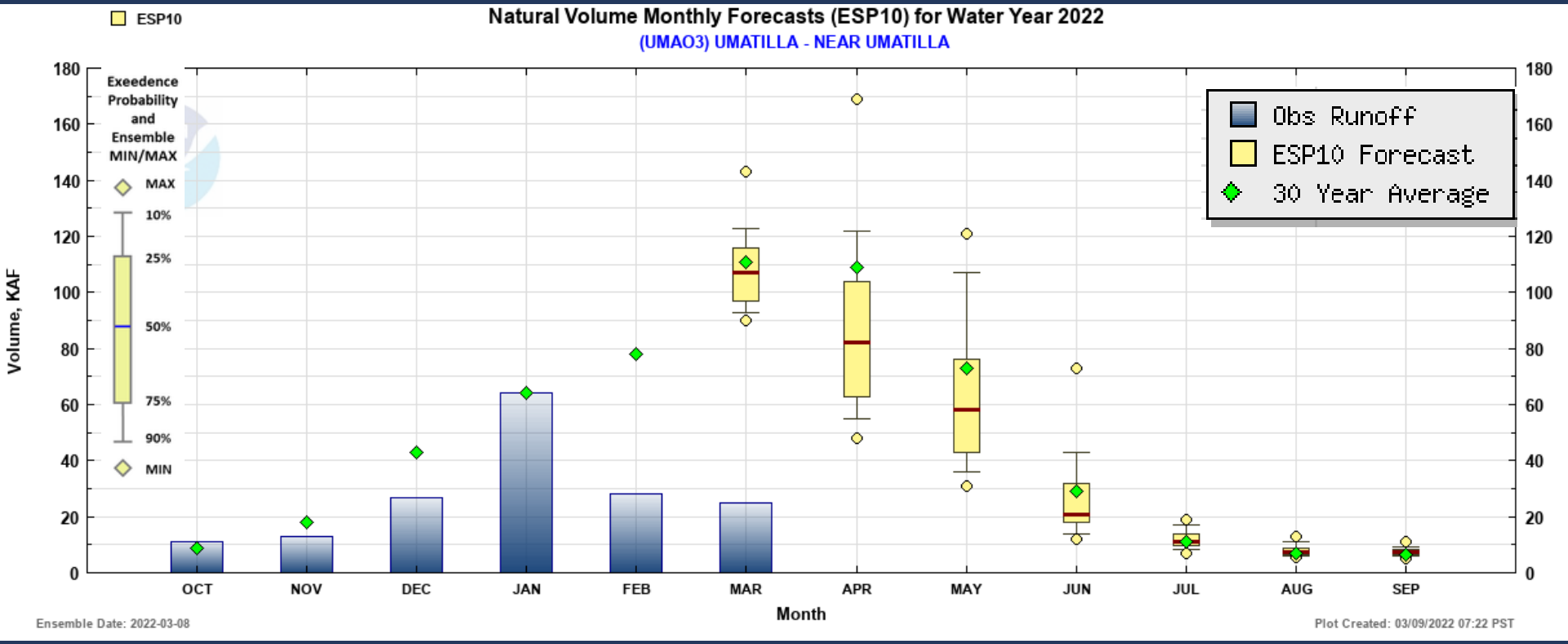
Rogue near Raygold



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

Streamflow WY Monthly Volume Forecast

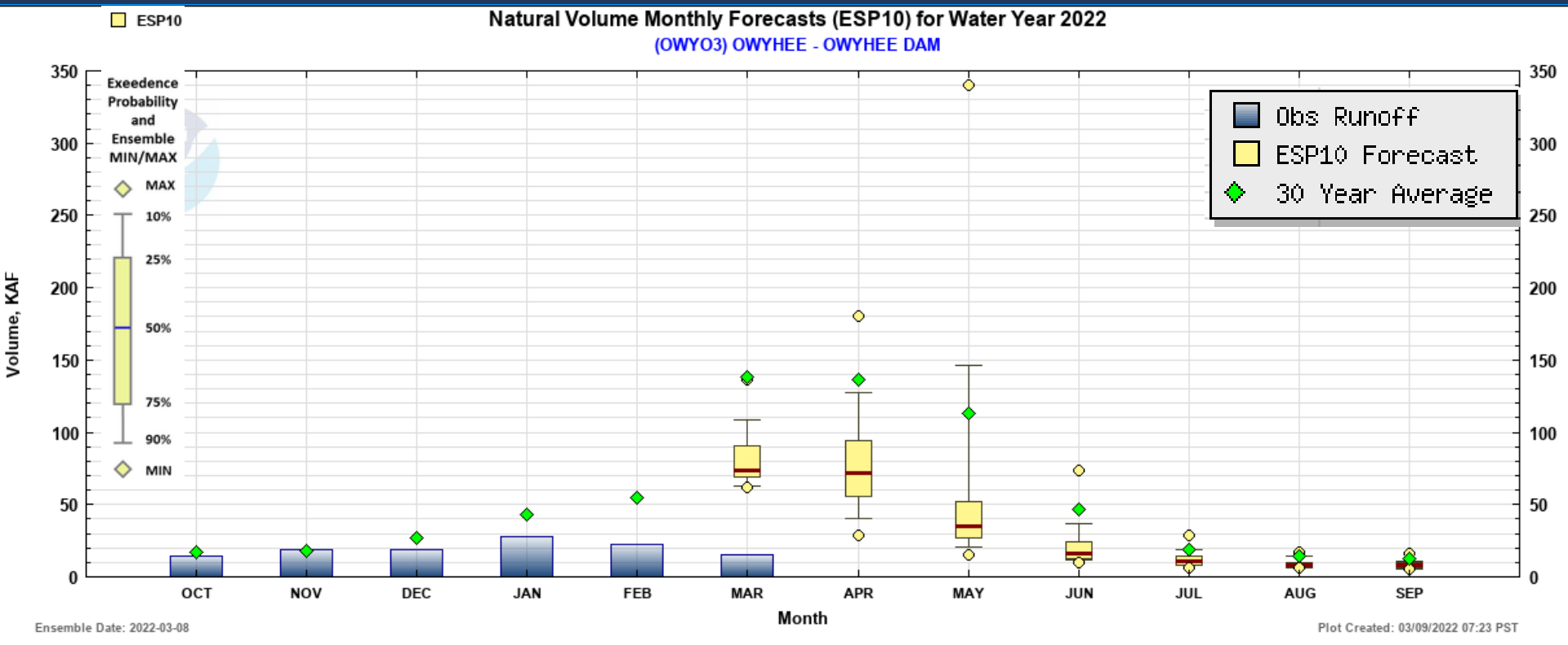
Umatilla near Umatilla



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

Streamflow WY Monthly Volume Forecast

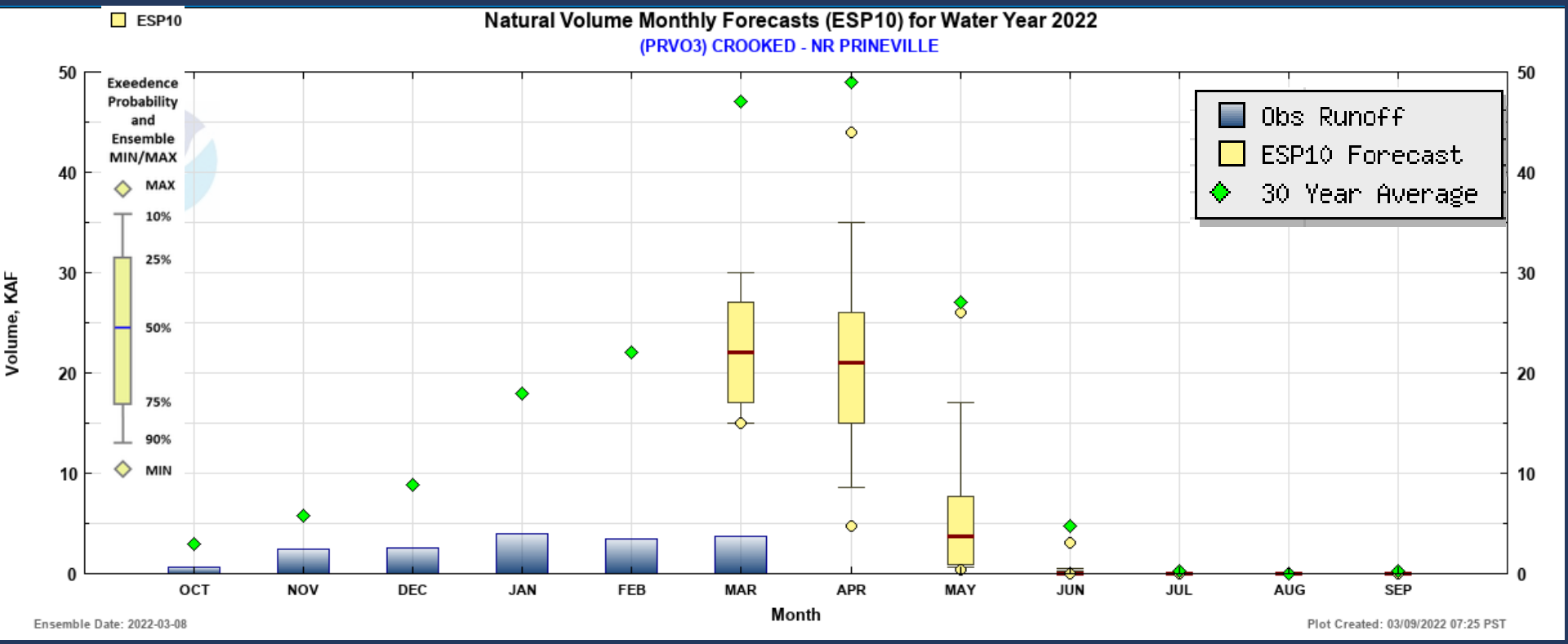
Owyhee Dam



https://www.nwrfc.noaa.gov/natural/plot/monthly/monthly_natural_forecasts.php?id=SLM03

Streamflow WY Monthly Volume Forecast

Crooked R nr Prineville



https://www.nwrfc.noaa.gov/natural/plot/monthly/monthly_natural_forecasts.php?id=PRVO3

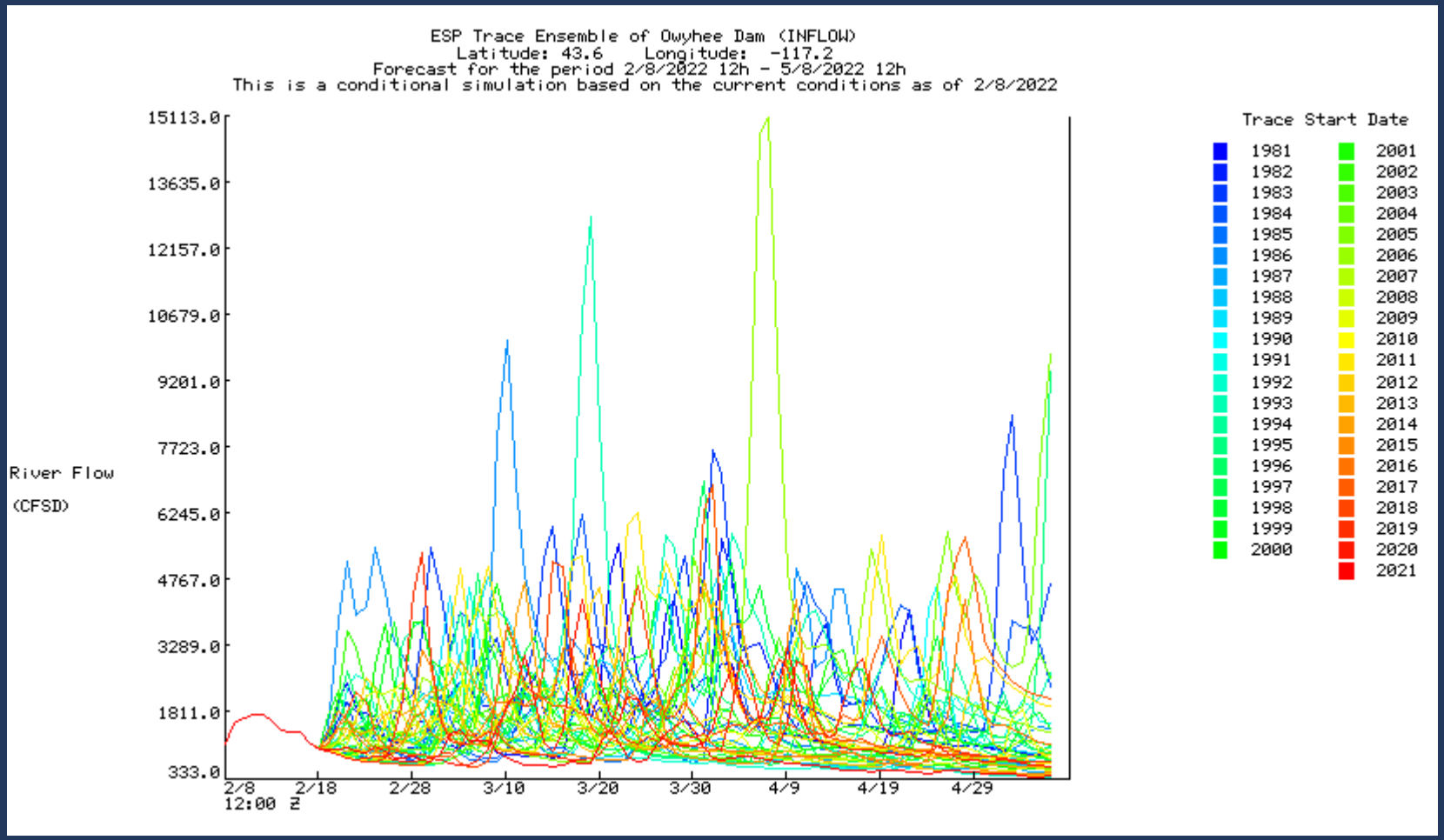
NWRFC Water Supply Briefings Schedule

2022 Schedule for *Live* Water Supply Briefings					
Jan	Feb	Mar	Apr	May	June
6	*3*	*3*	*7*	*5*	*TBD*
All presentations held at 10:00am PDT/PST, unless noted otherwise					
Click here for Registration Information					

https://www.nwrfc.noaa.gov/water_supply/ws_schd.cgi?version=20190204v1

Extra slide- NWRFC ESP Traces

Owyhee Dam



https://www.nwrfc.noaa.gov/espadp/espadp.cgi

Oregon WSAC/DRC Drought Status and Climate Updates March 2022

Larry O'Neill

CEOAS Oregon State University

Oregon Climate Service

Wednesday, March 9, 2022

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

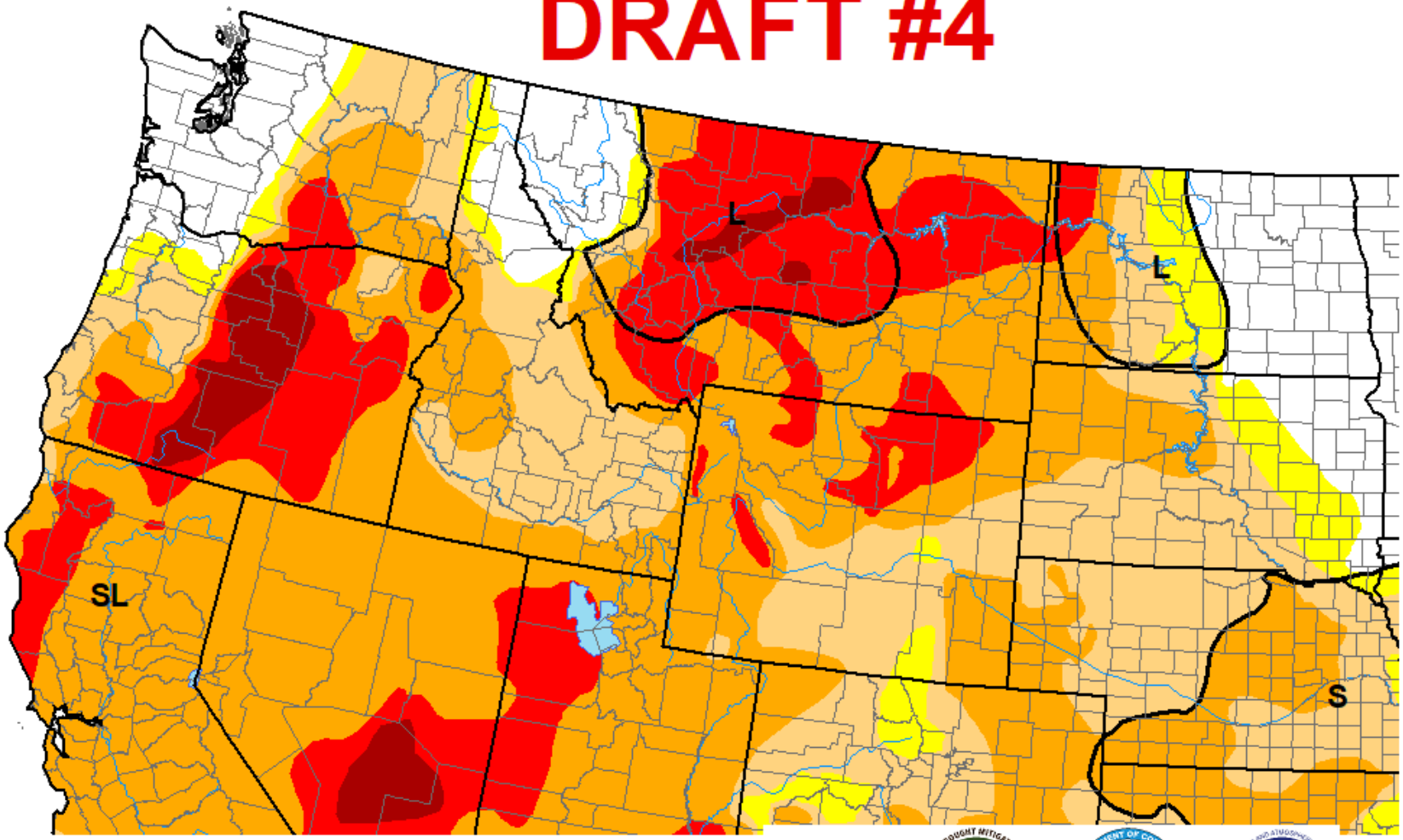
CCCRI

OCS Oregon Climate Service

U.S. Drought Monitor

March 8, 2022
Valid 8 a.m. EST

DRAFT #4



Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:
- Delineates dominant impacts

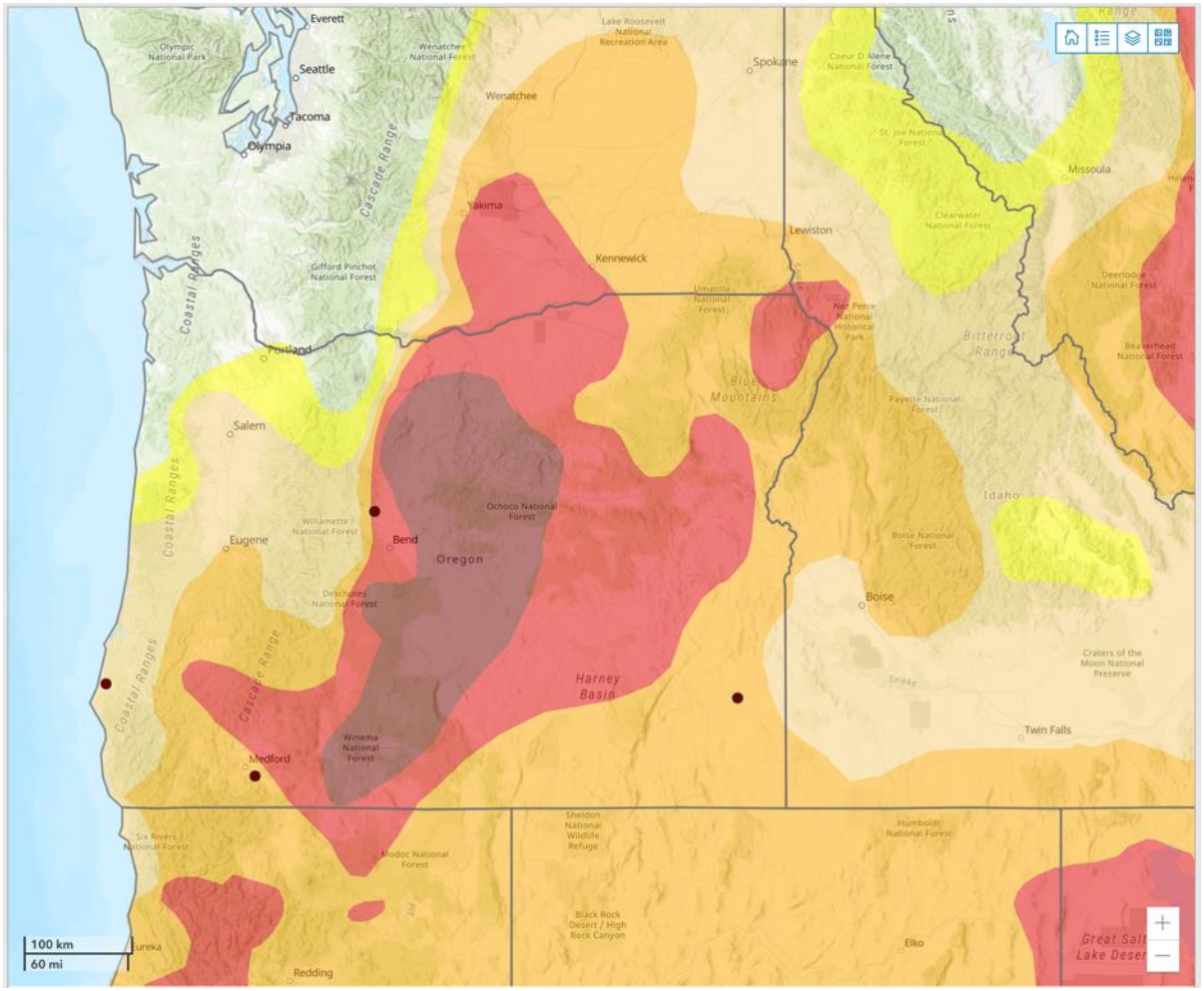
S = Short-Term, typically <6 months (e.g. agriculture, grasslands)

L = Long-Term, typically >6 months (e.g. hydrology, ecology)

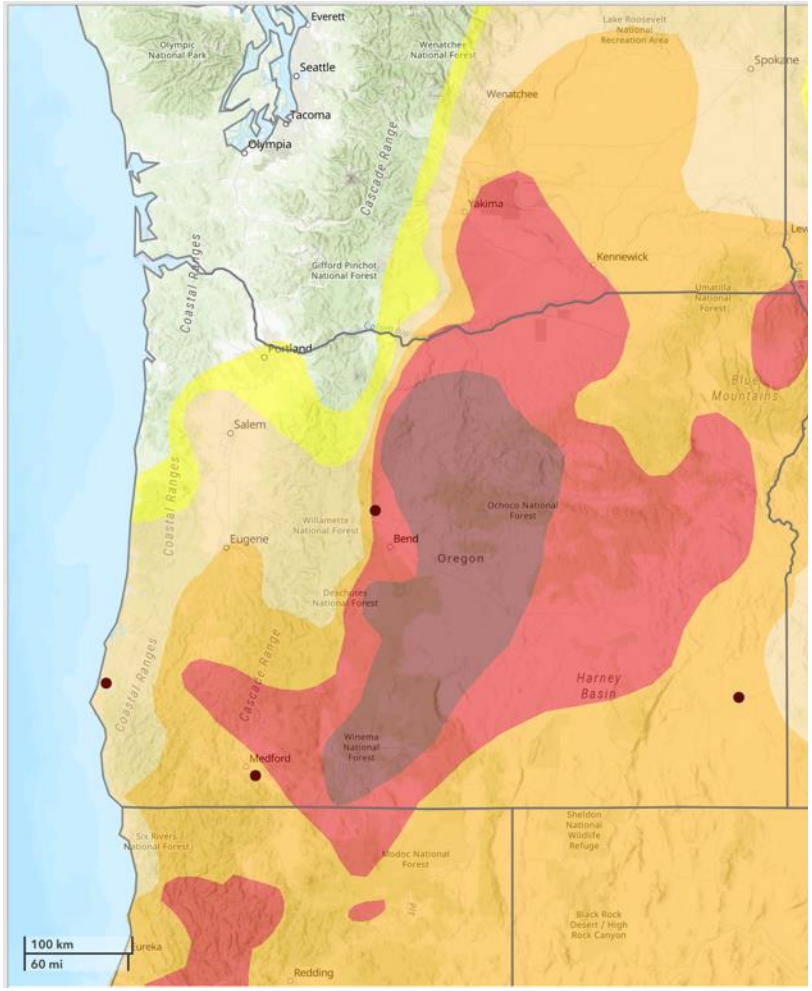
Released Thursday March 10, 2022

Author: Brian Fuchs
National Drought Mitigation Center

Condition Observer Monitoring Reports (CMOR) – Year-to-date 2022



Condition Observer Monitoring Reports (CMOR) – Year-to-date 2022



Report Detail: 3/7/2022

When was it like this in the past?
2021

How localized or widespread are the conditions you are reporting?
25 mile radius of my location

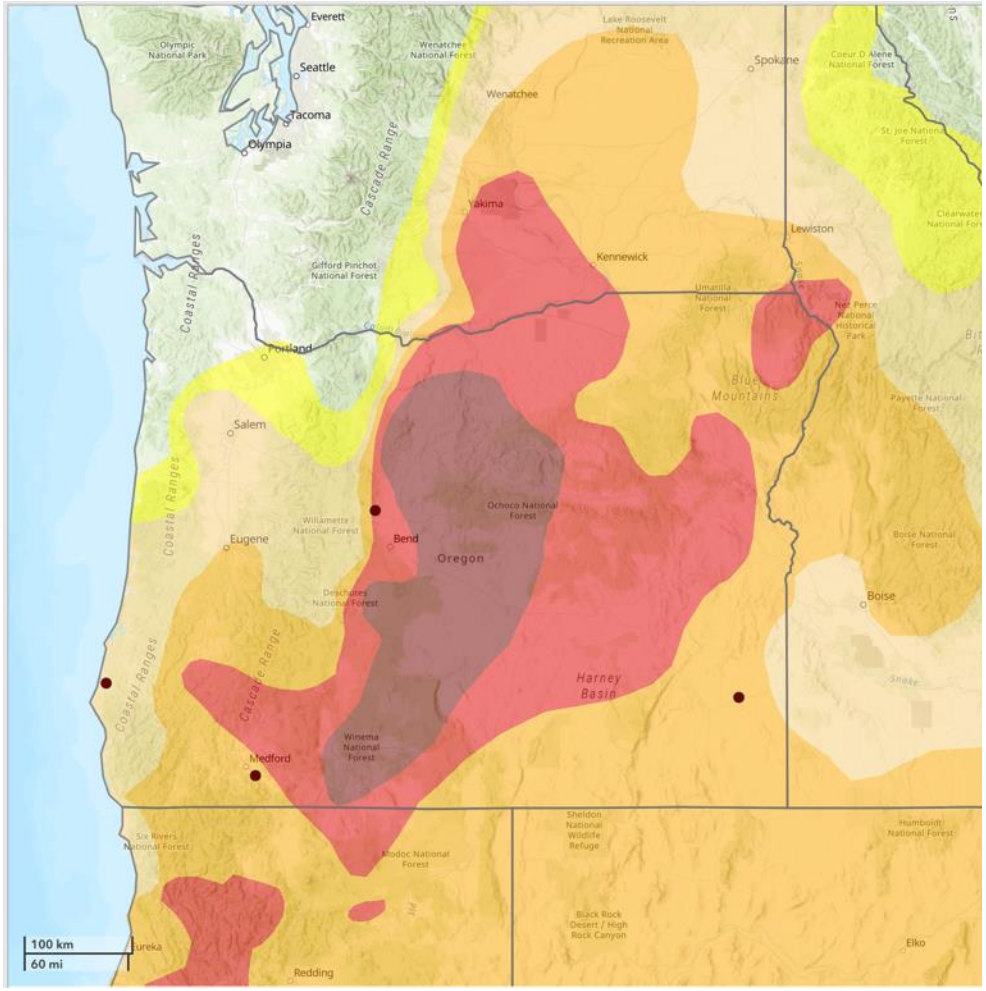
How are crop conditions at this time?
Poor - Heavy degree of loss of yield potential which can be caused by excess soil moisture, drought, disease, etc.

Harvest Status:
Earlier than normal

Crop production:
less_water_for_irrigation,reduced_yield,insect_infestation,plant_stress,less_water_in_ponds_creeks_etc

How are range conditions at this time?
Poor - Pastures are providing marginal feed; supplemental feeding required.

Condition Observe
Reports (CMOR) – Ye



Report Detail: 2/12/2022

State/Territory: Oregon
County: Jackson

Date: 2/12/2022

How dry or wet is it? Severely Dry

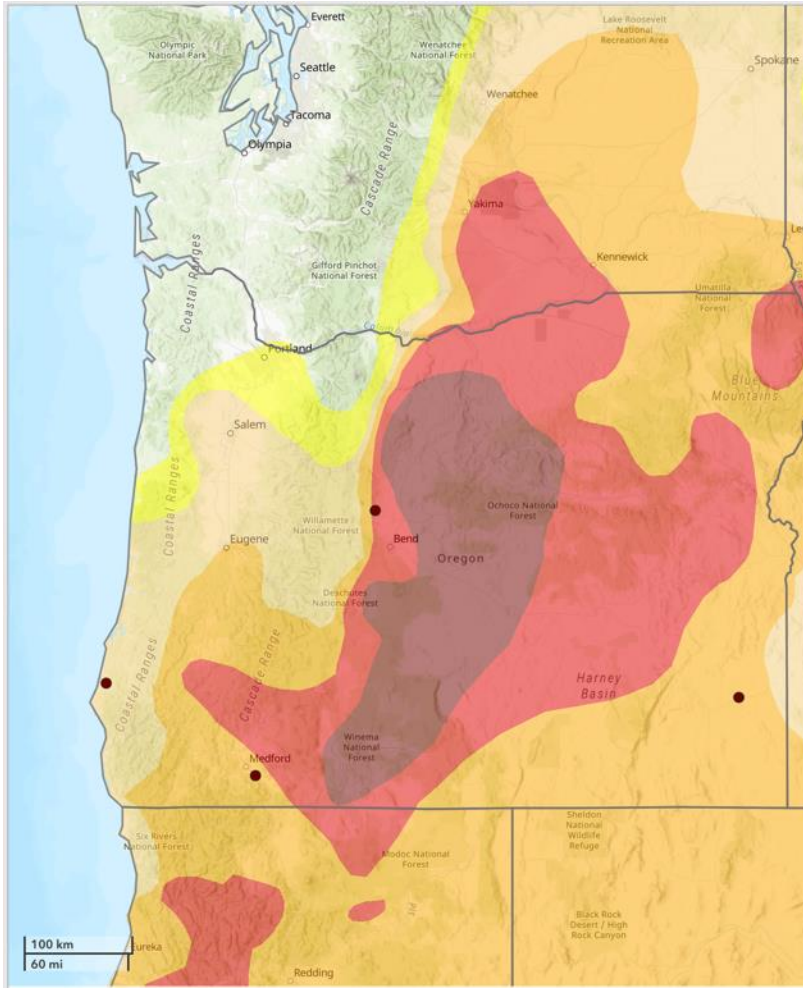
How much experience do you have with conditions there?
20 or more years

How many times in the past have you seen it like this?
Never

How localized or widespread are the conditions you are reporting?
widespread. lakes and ponds at record low level for this time of season. dryness
greatest at and below 3000 ft msl. southern half of the county drier than north.
forests in the lower elevation are very dry for this time of season most likely would
support fire in the lower fuel moisture ranges. at this time with present water supply
first cutting of hay very low production. IF we get irrigation second cutting of hay
will be below normal. I feel southern half of Jackson county is more like Klamath county
and Siskiyou county in Ca. for drought conditions

How are crop conditions at this time?
Very Poor - Extreme degree of loss to yield potential, complete or near crop failure.

Condition Observer Monitoring Reports (CMOR)



How are crop conditions at this time?
Poor - Heavy degree of loss of yield potential which can be caused by excess soil moisture, drought, disease, etc.

Harvest Status:
Earlier than normal

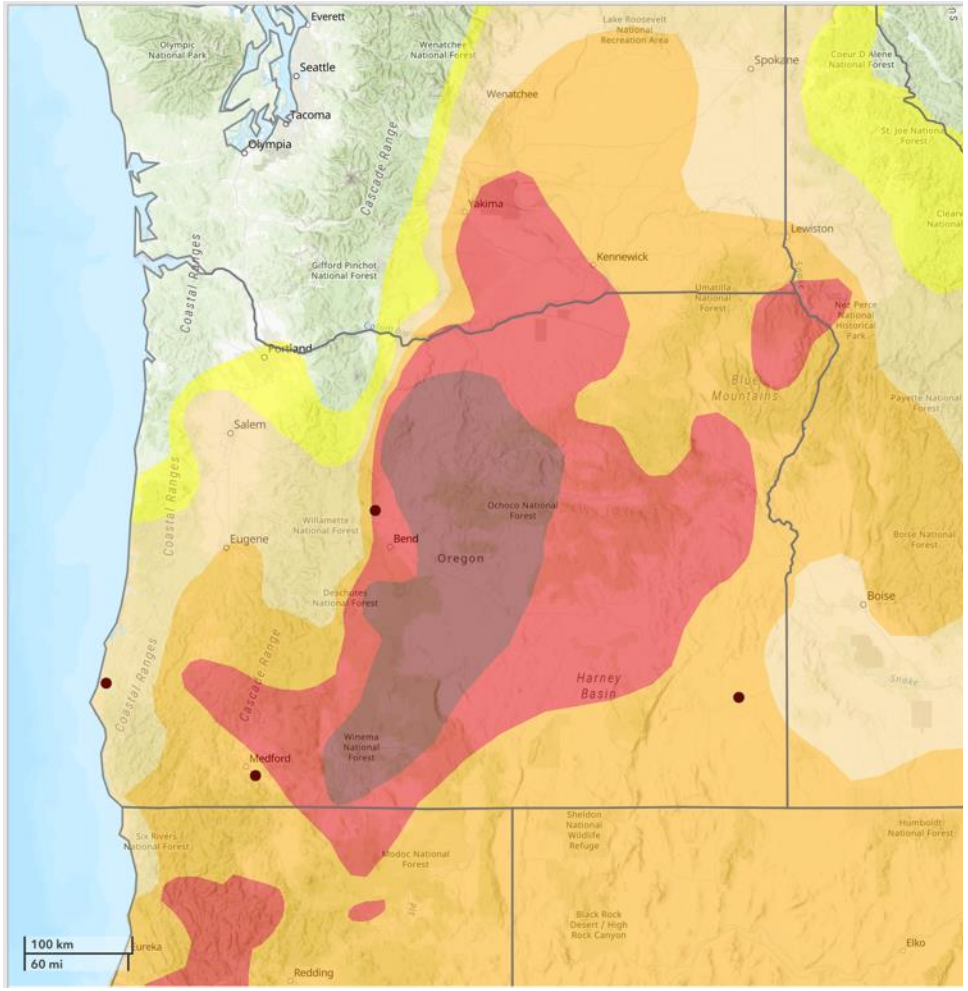
Crop production:
less_water_for_irrigation,reduced_yield,insect_infestation,plant_stress,less_water_in_ponds_creeks_etc

How are range conditions at this time?
Poor - Pastures are providing marginal feed; supplemental feeding required.

Livestock production:
reduced_pasture_forage,supplemental_feed,purchased_hay,more_invasive_species_plants,reduced_grazing_on_public_lands,less_water_in_ponds_creeks_etc,sold_livestock

Description and/or caption information:
We are very dry here. We haven't received any precipitation since early in January. Our hay fields are dusty. Our irrigation reservoir will not fill unless the mountains receive a significant amount of snow.

Condition Observ
Reports (CMOR) – Y



Report Detail: 2/14/2022

State/Territory: Oregon
County: Deschutes

Date: 2/14/2022

How dry or wet is it? Severely Dry

How much experience do you have with conditions there?
20 or more years

How many times in the past have you seen it like this?
Twice or more

When was it most recently like this?
2014

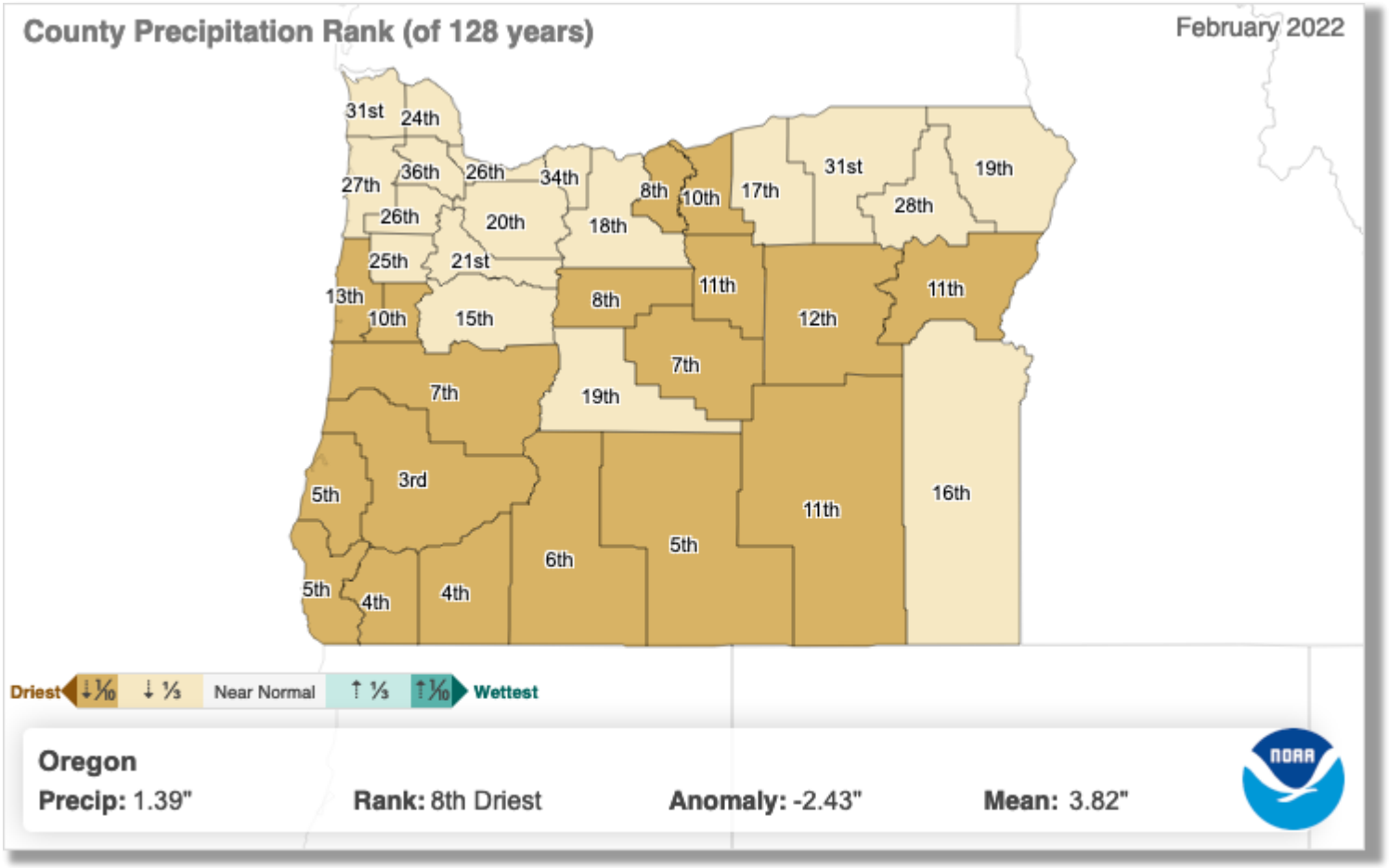
How localized or widespread are the conditions you are reporting?
Private wells are going dry - people who have lived here for decades are now have major water shortage issues. No more golf courses/resorts should be allowed in these areas!

Municipal water supply:
low_or_dry_well,water_quality_issues,hauling_water

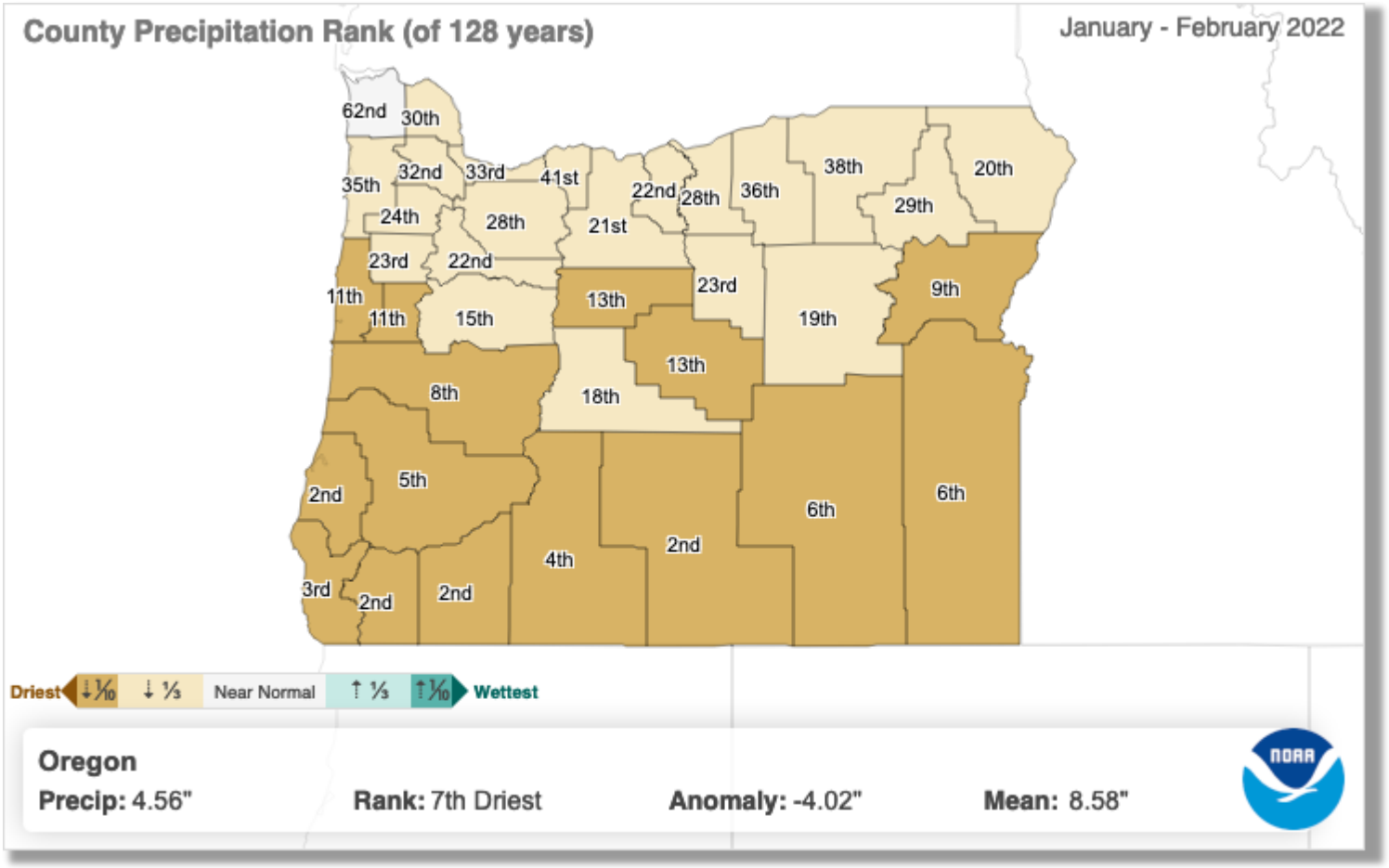
Recreation or tourism impact:
park_or_lake_closed,reduced_boating_rafting,less_appealing_landscape,hunting_or_fishing_reduced

Fire impact:
more_fires_than_usual,more_intense_fires,more_fire_risk,property_damage,smoke_from_distant_fire

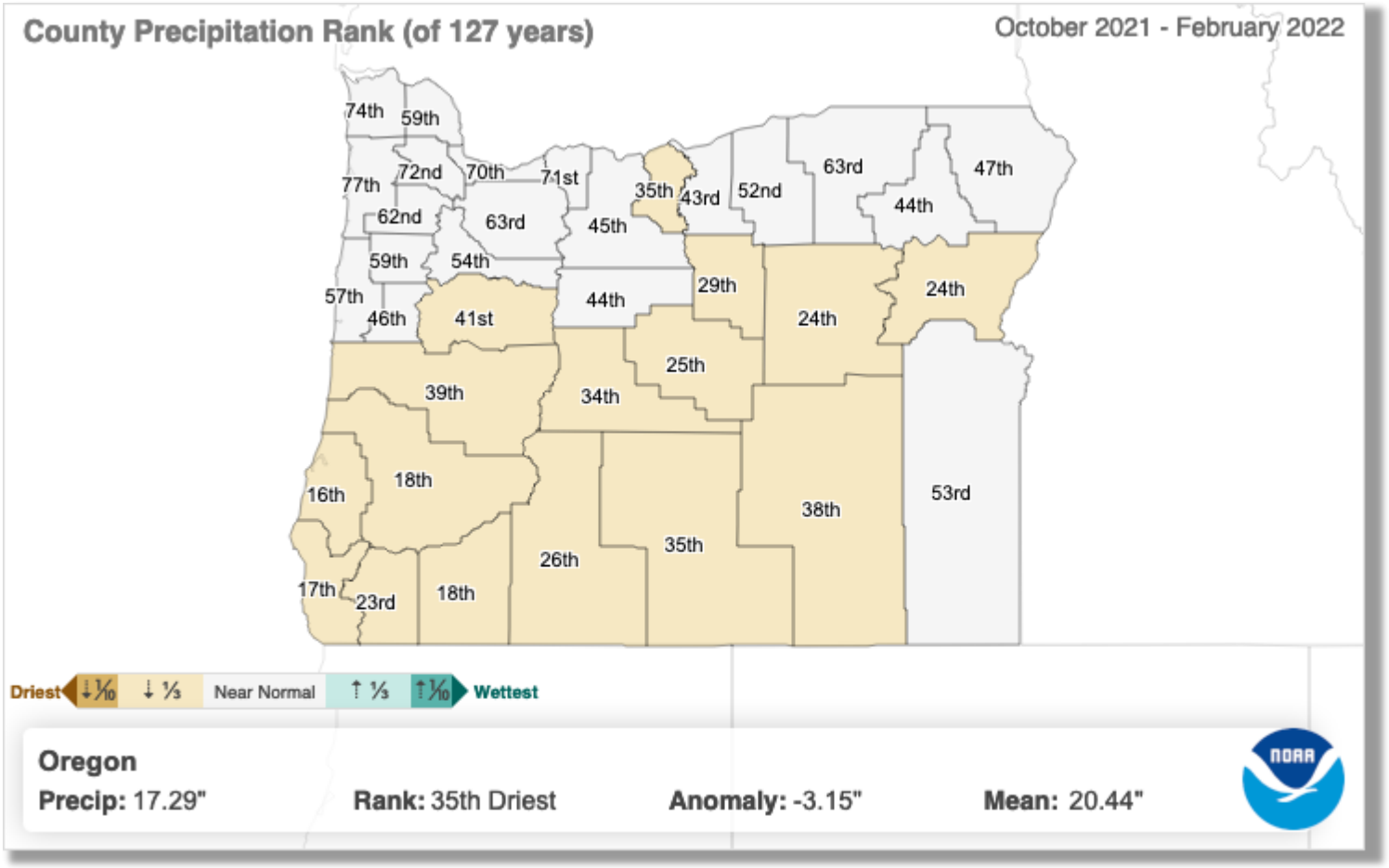
Feb 2022 County Precipitation Rankings



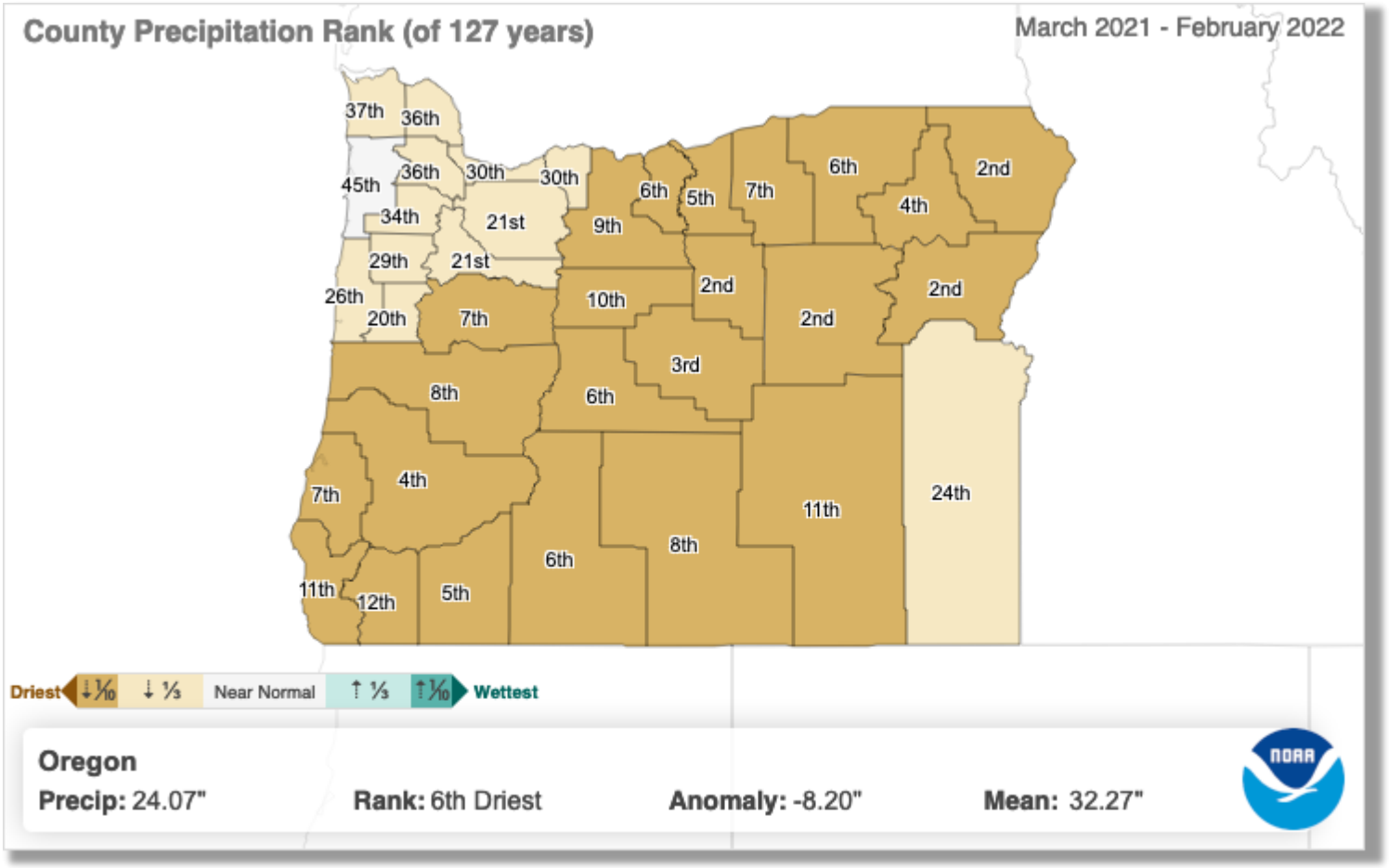
Jan-Feb 2022 County Precipitation Rankings



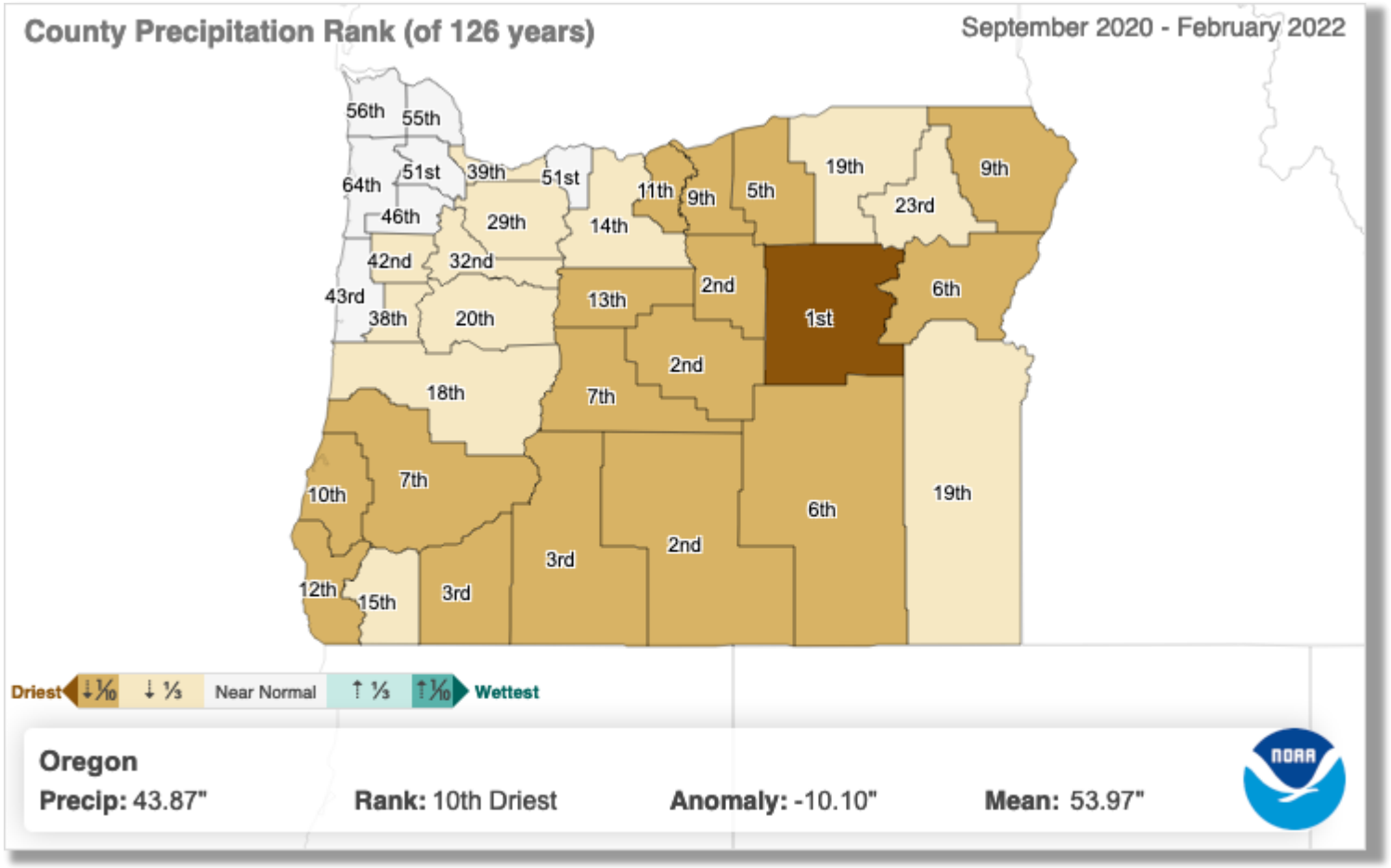
Water Year 2022 County Precipitation Rankings



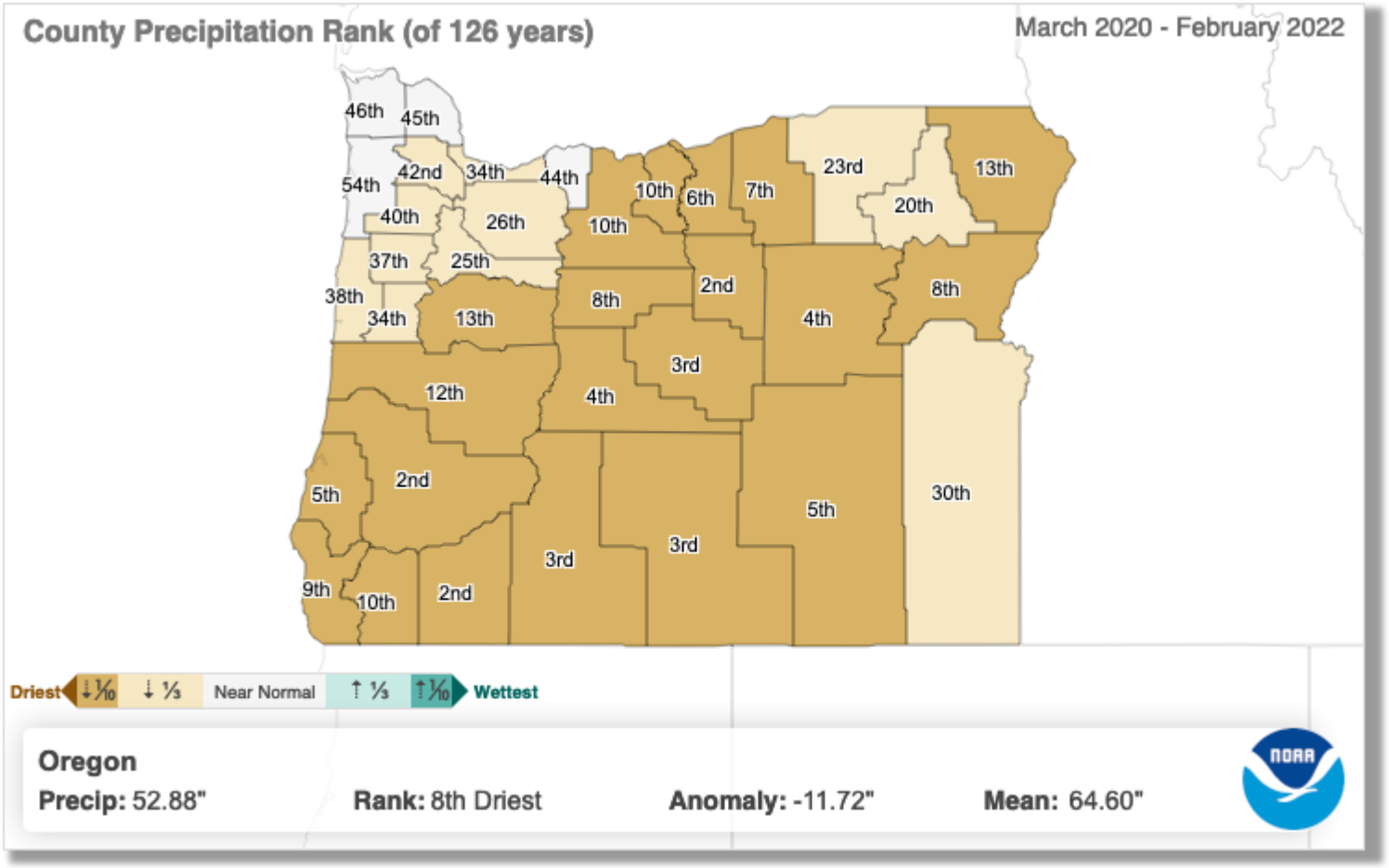
12-month County Precipitation Rankings



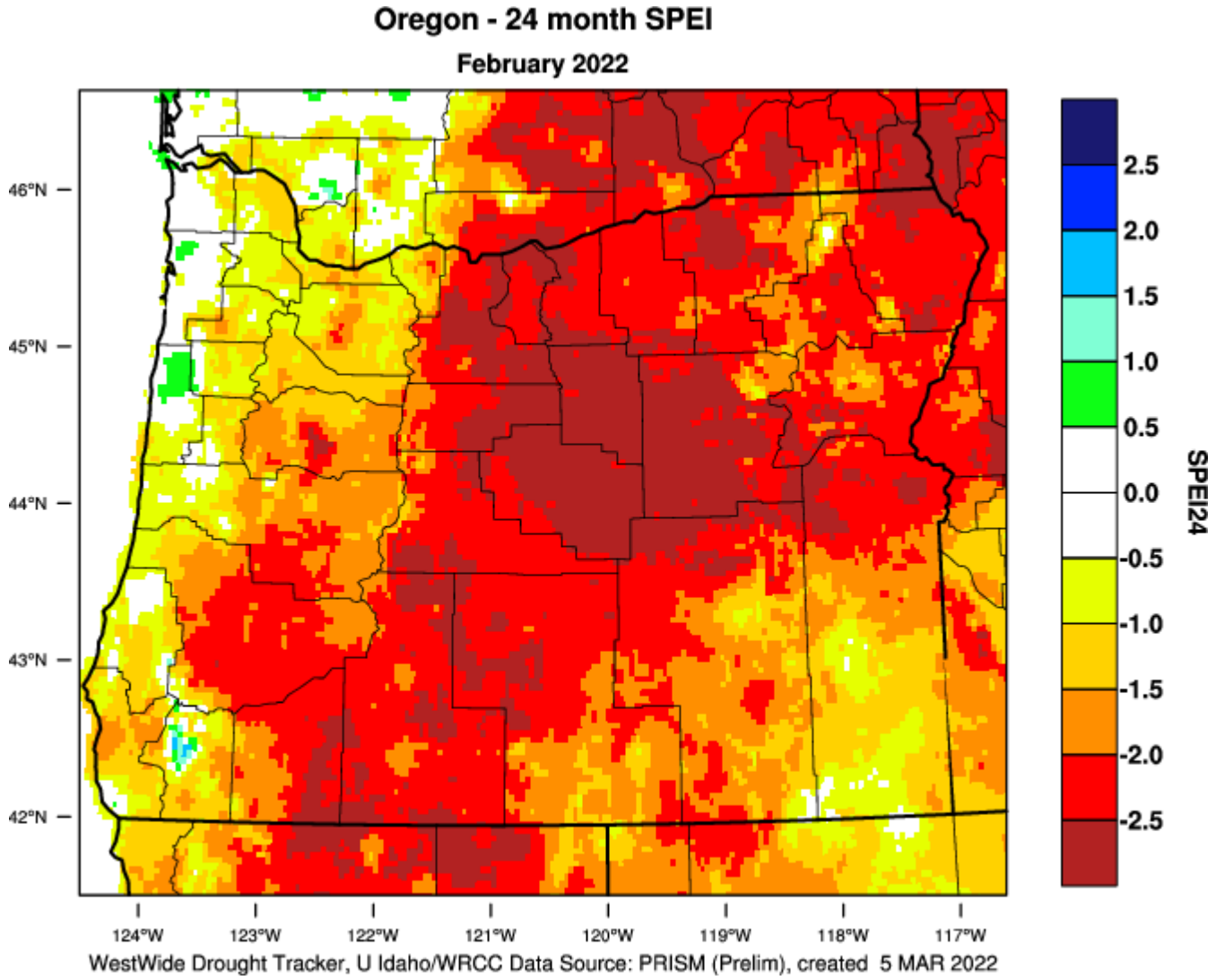
18-month County Precipitation Rankings



24-month County Precipitation Rankings



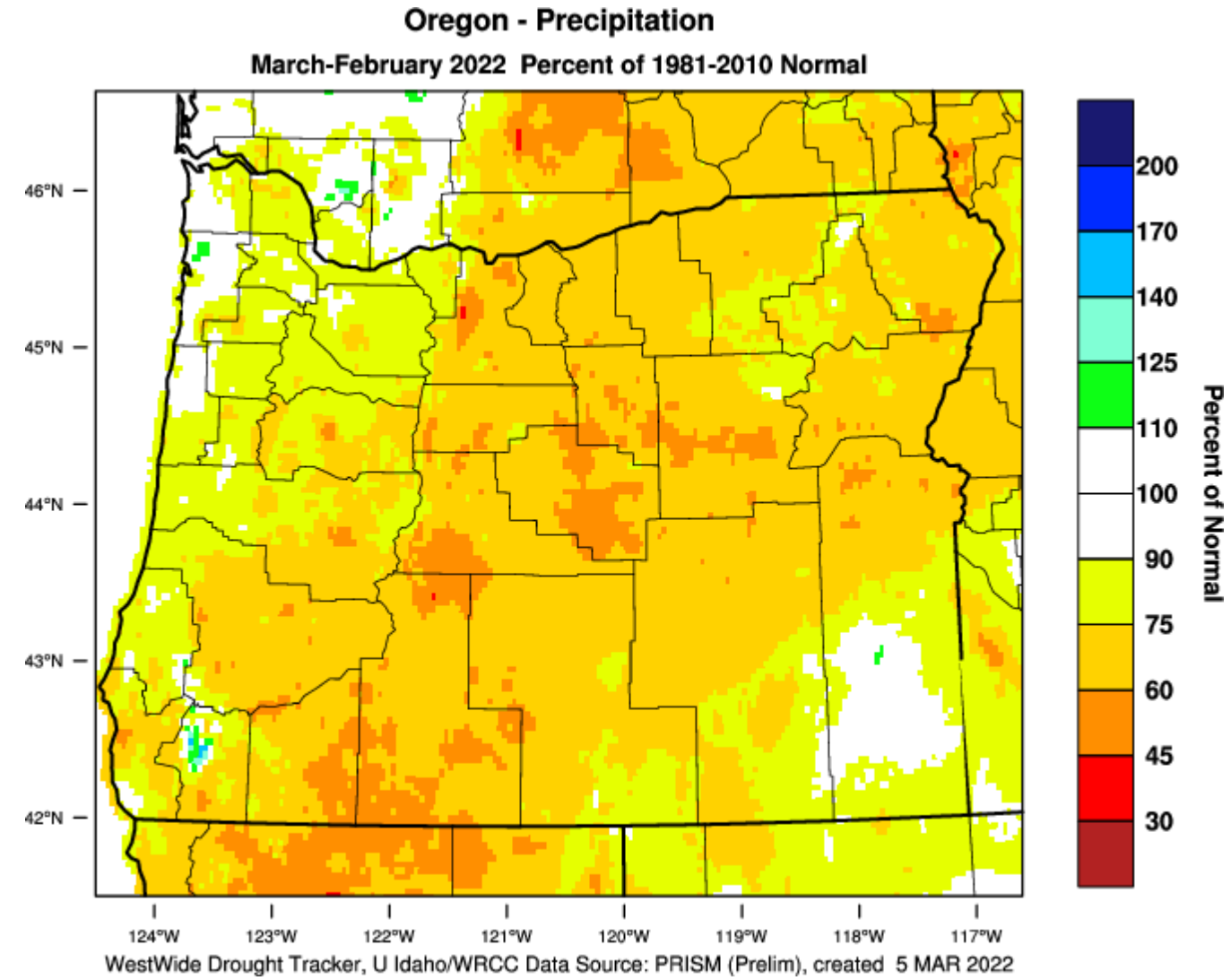
24-month SPEI



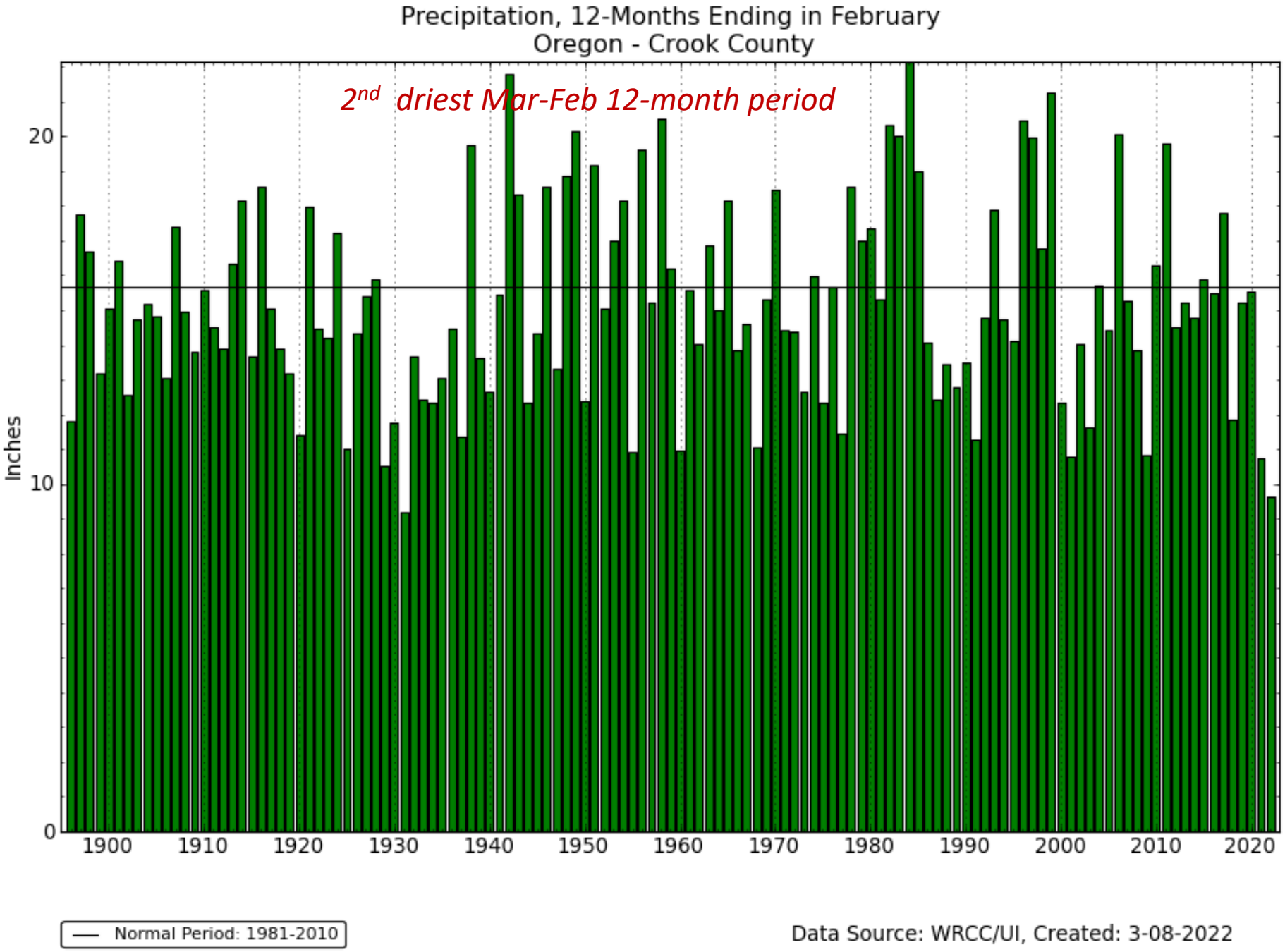
For most of Oregon, 24-months is closest to the timescale of the current drought

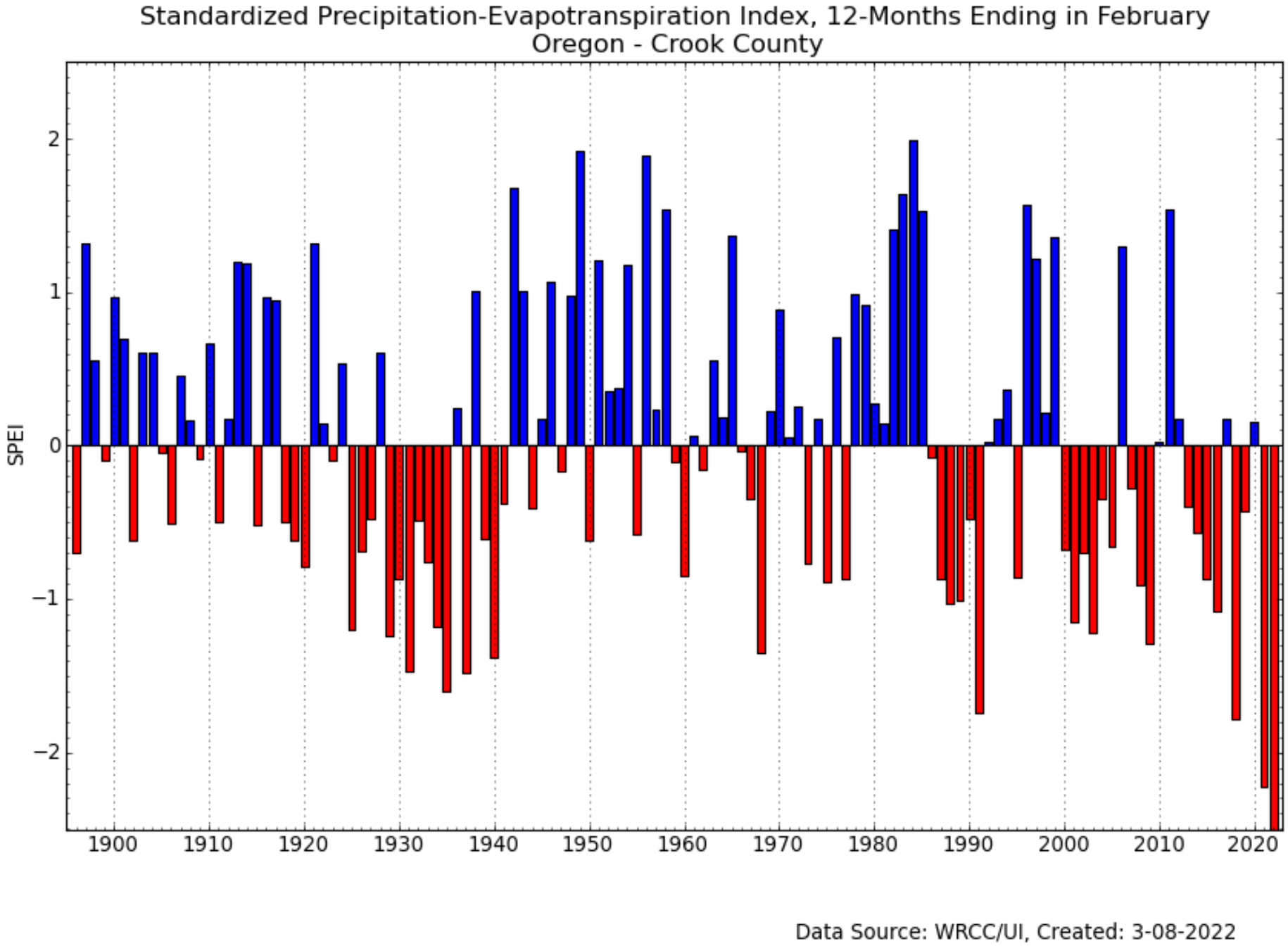
D4, or exceptional drought, corresponds to SPEI less than -2

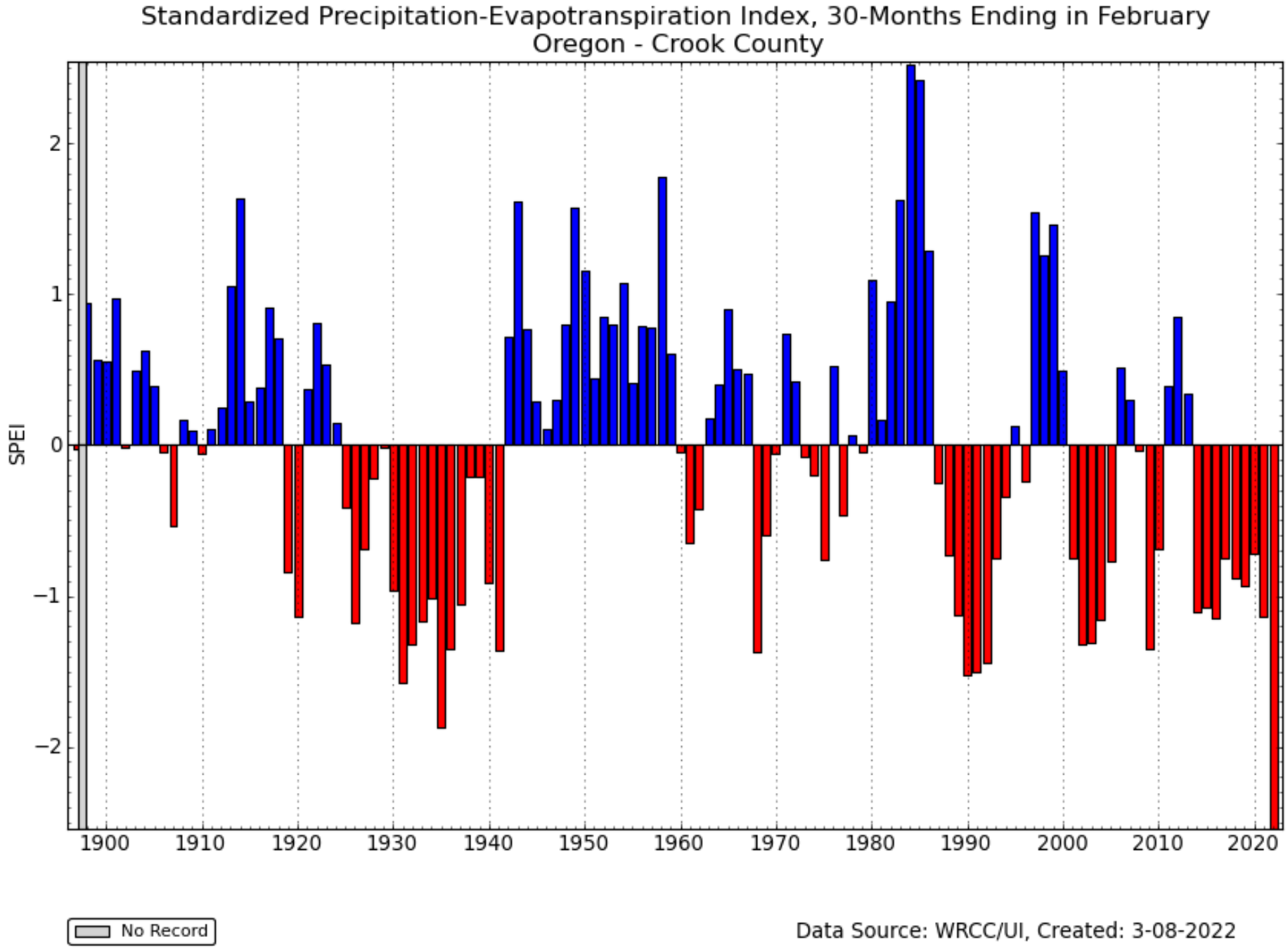
12-month total precipitation
Percent of 1981-2010 average

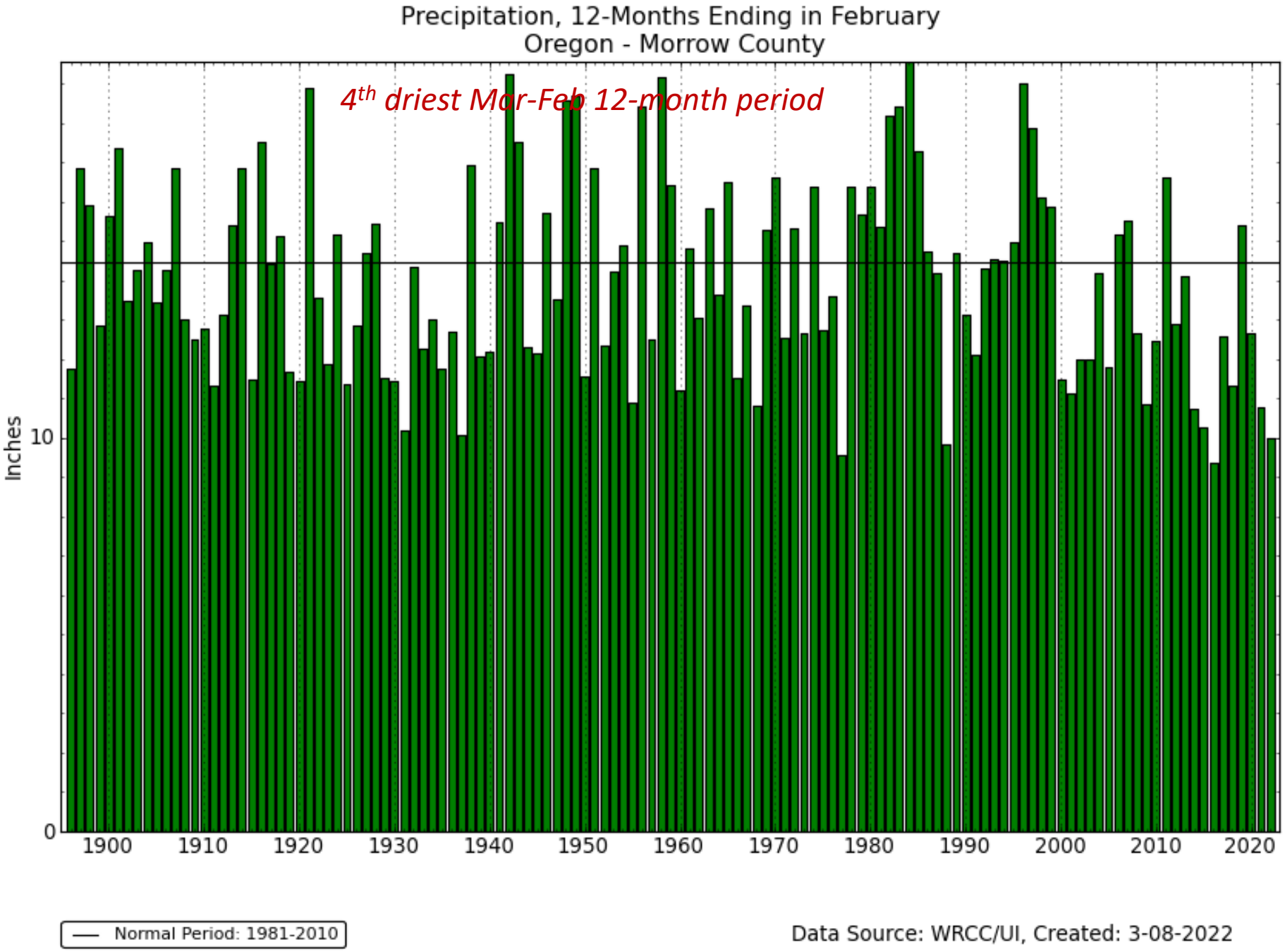


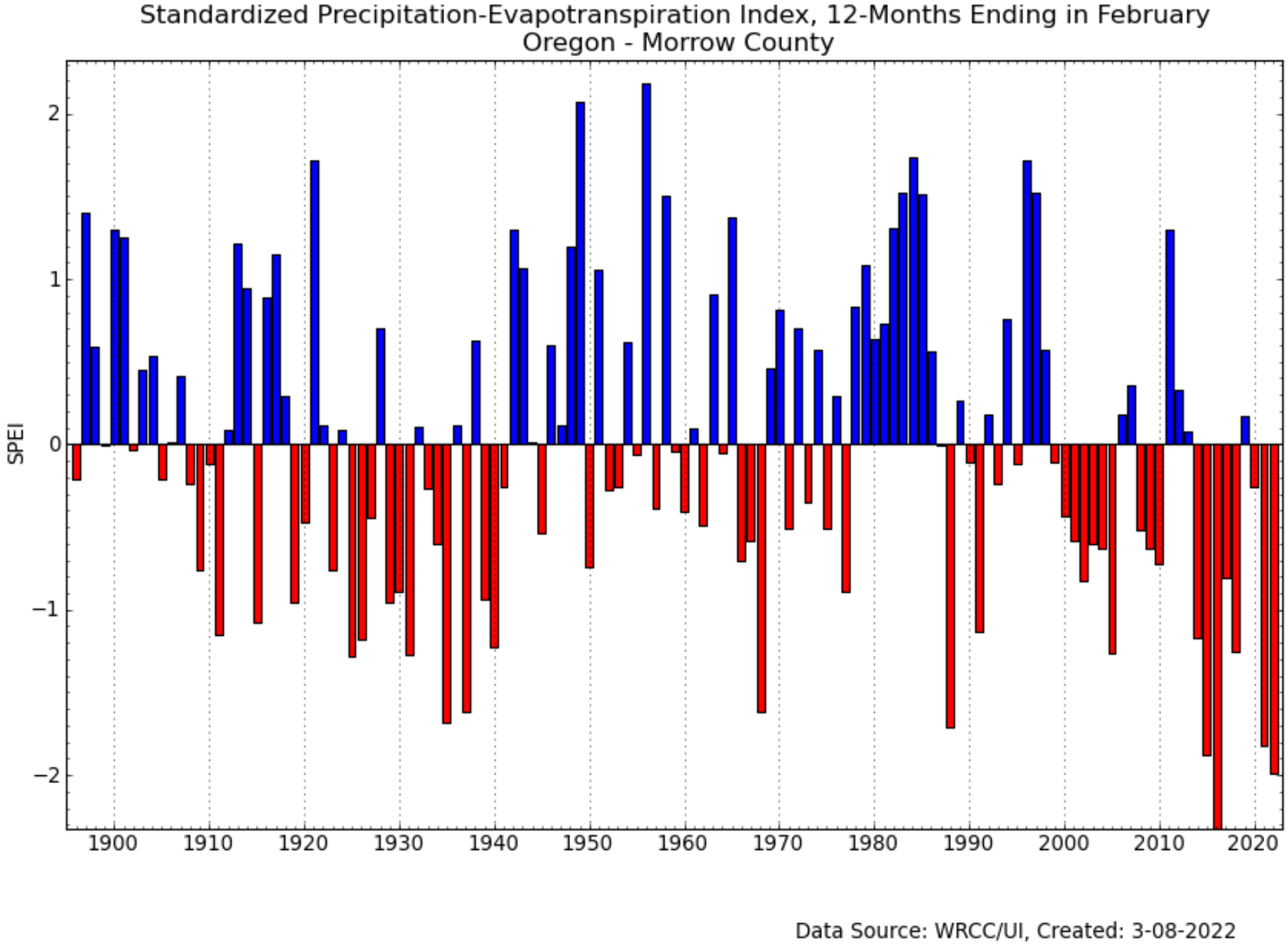
A recurring theme over the last decade or so is strengthening of the rain shadow effect between the windward and leeward side of the Cascades, Wallowa, and Blue Mtns

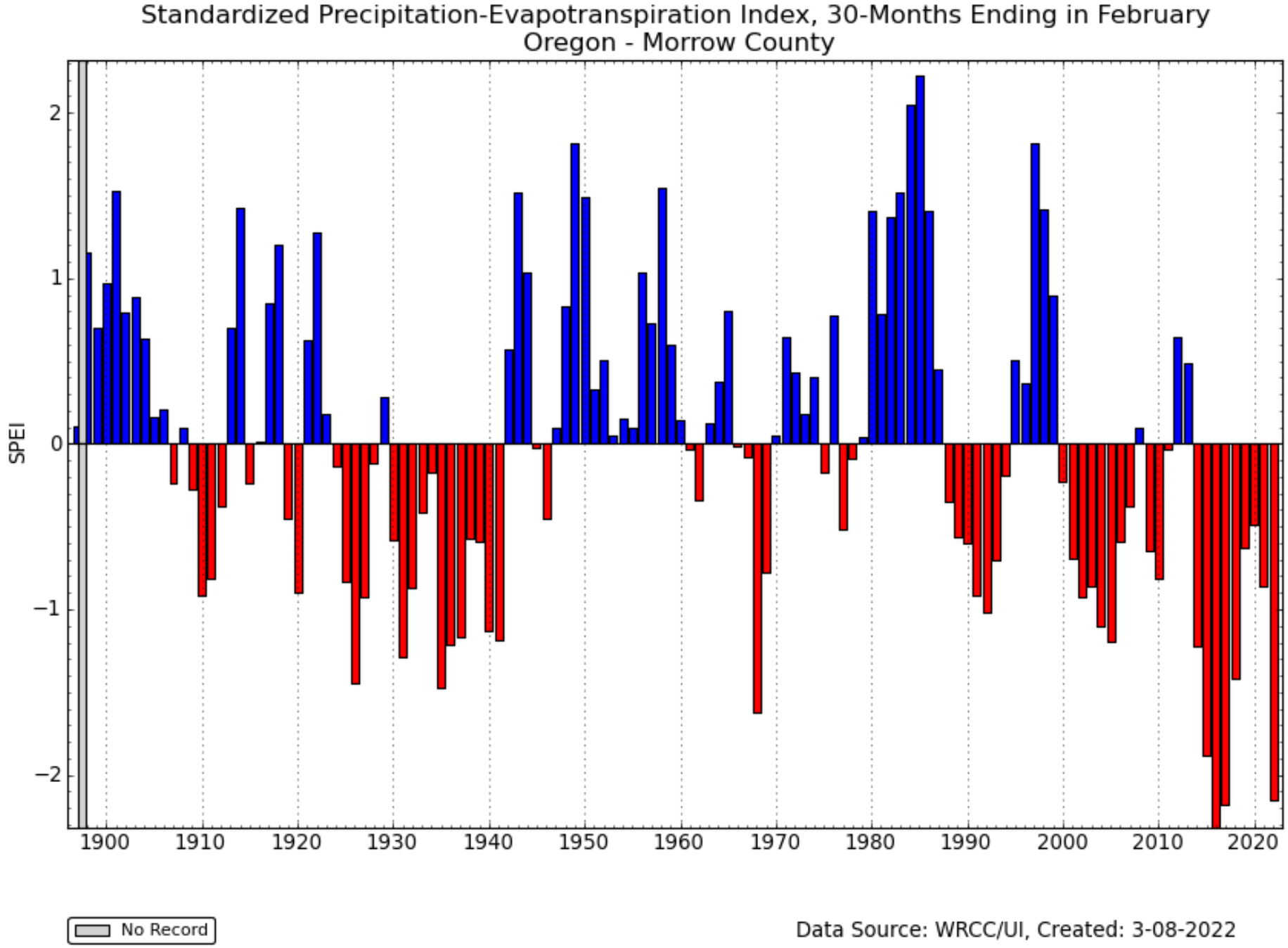

Precipitation, 12-Months Ending in February
Oregon - Crook County
2nd driest Mar-Feb 12-month period
Inches
0
10
20
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Normal Period: 1981-2010
Data Source: WRCC/UI, Created: 3-08-2022

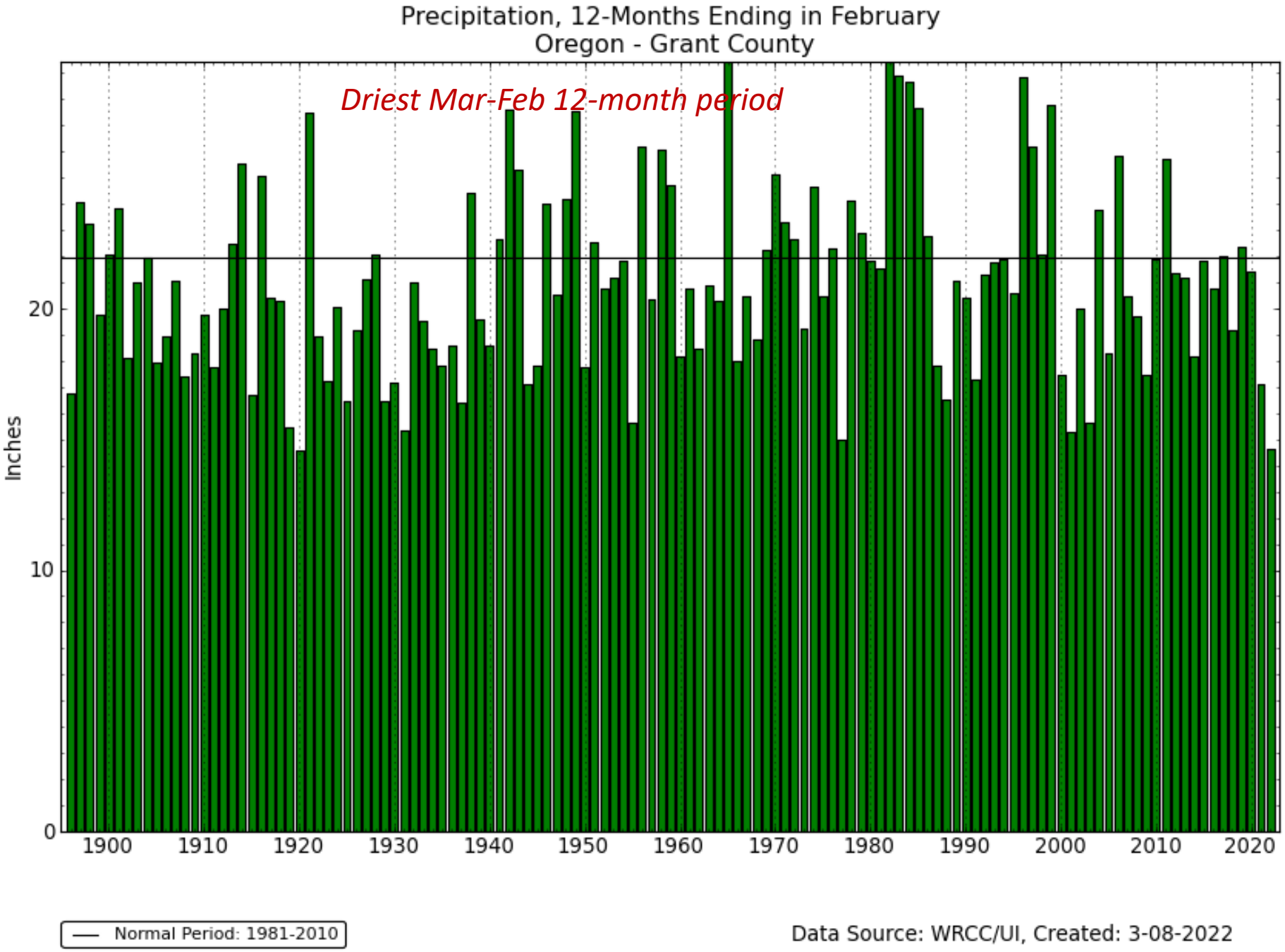

Standardized Precipitation-Evapotranspiration Index, 12-Months Ending in February
Oregon - Crook County
SPEI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Data Source: WRCC/UI, Created: 3-08-2022

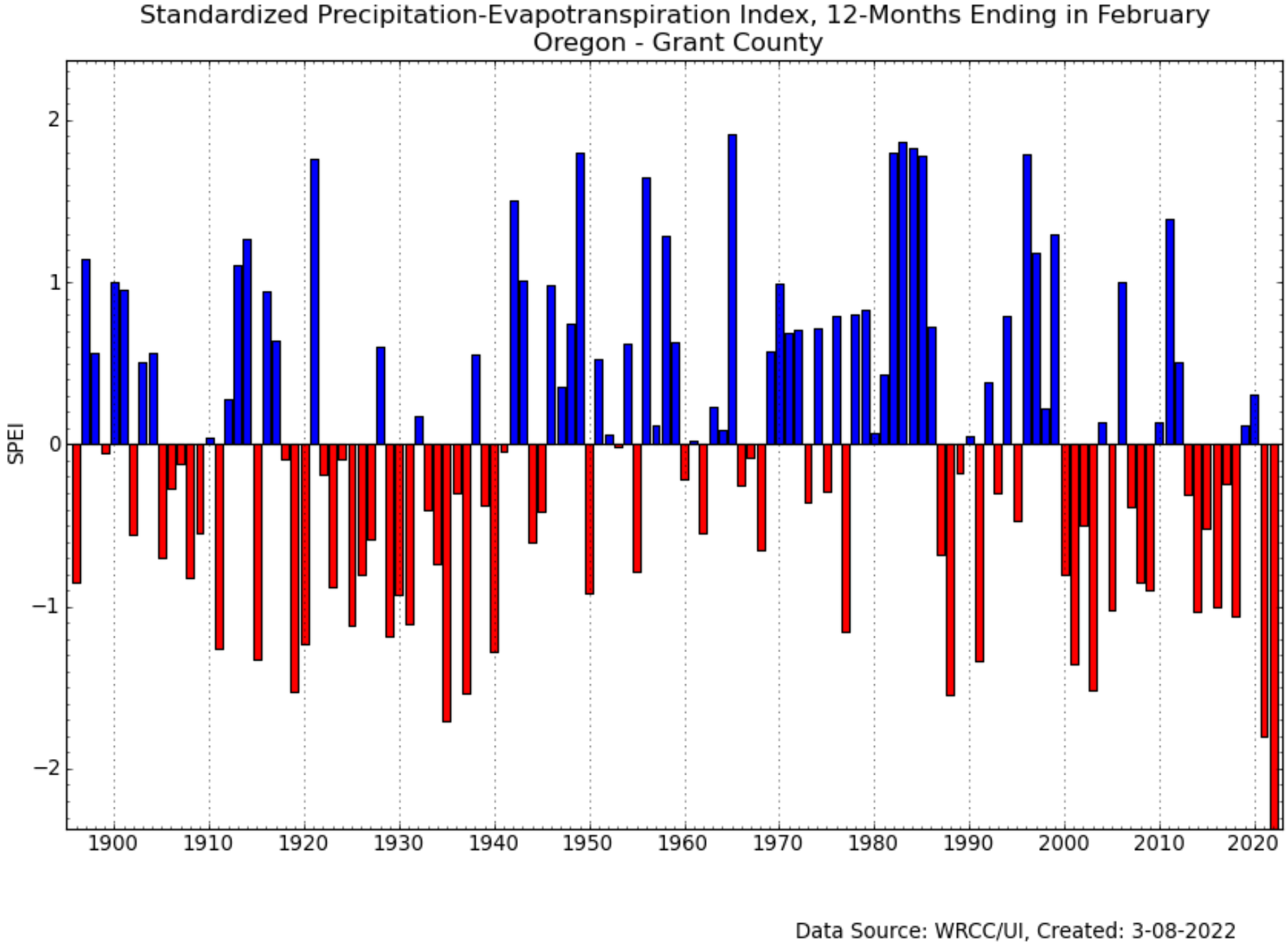

Standardized Precipitation-Evapotranspiration Index, 30-Months Ending in February
Oregon - Crook County
SPEI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
No Record
Data Source: WRCC/UI, Created: 3-08-2022

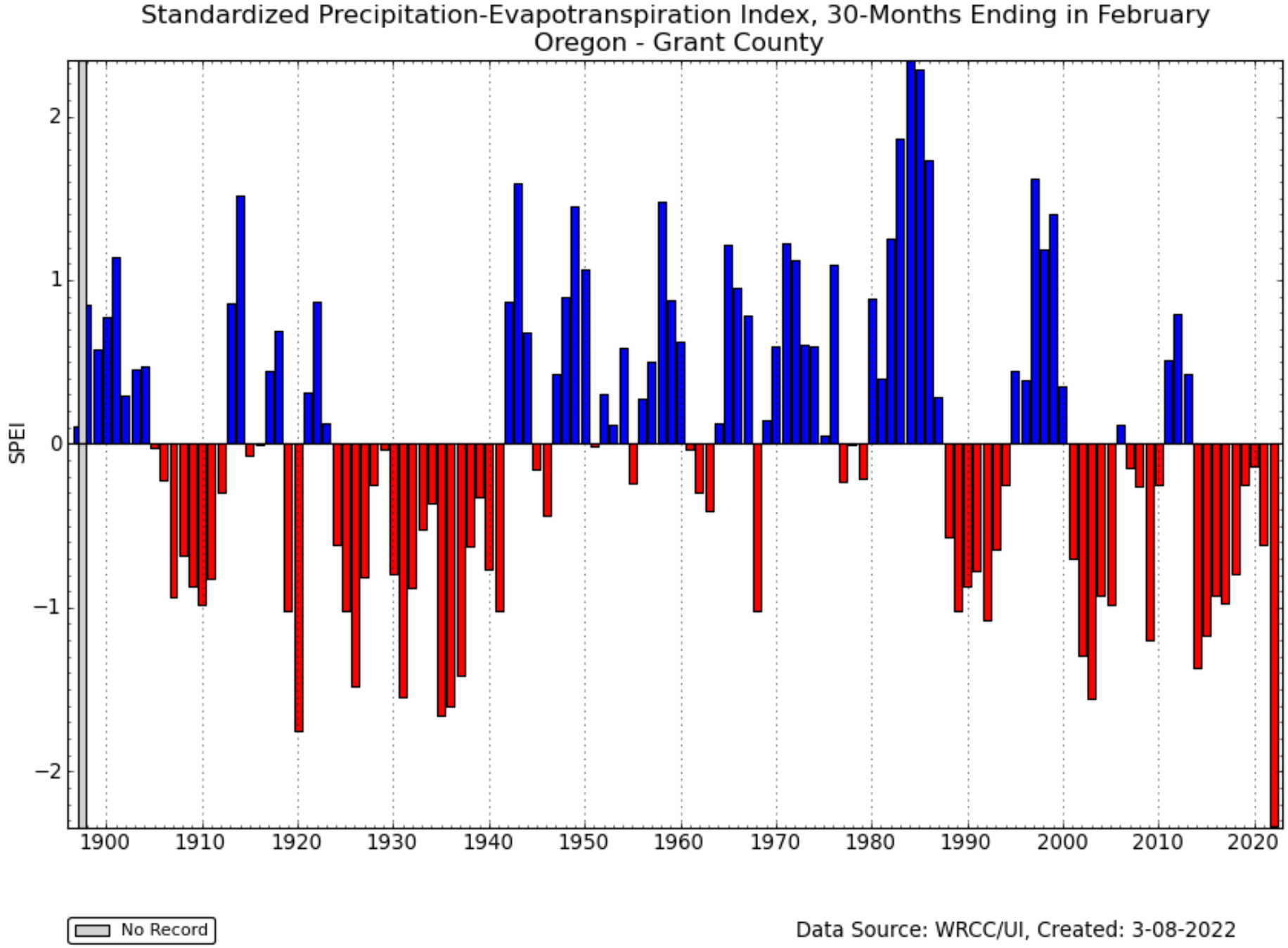

Precipitation, 12-Months Ending in February
Oregon - Morrow County
4th driest Mar-Feb 12-month period
Inches
0
10
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Normal Period: 1981-2010
Data Source: WRCC/UI, Created: 3-08-2022

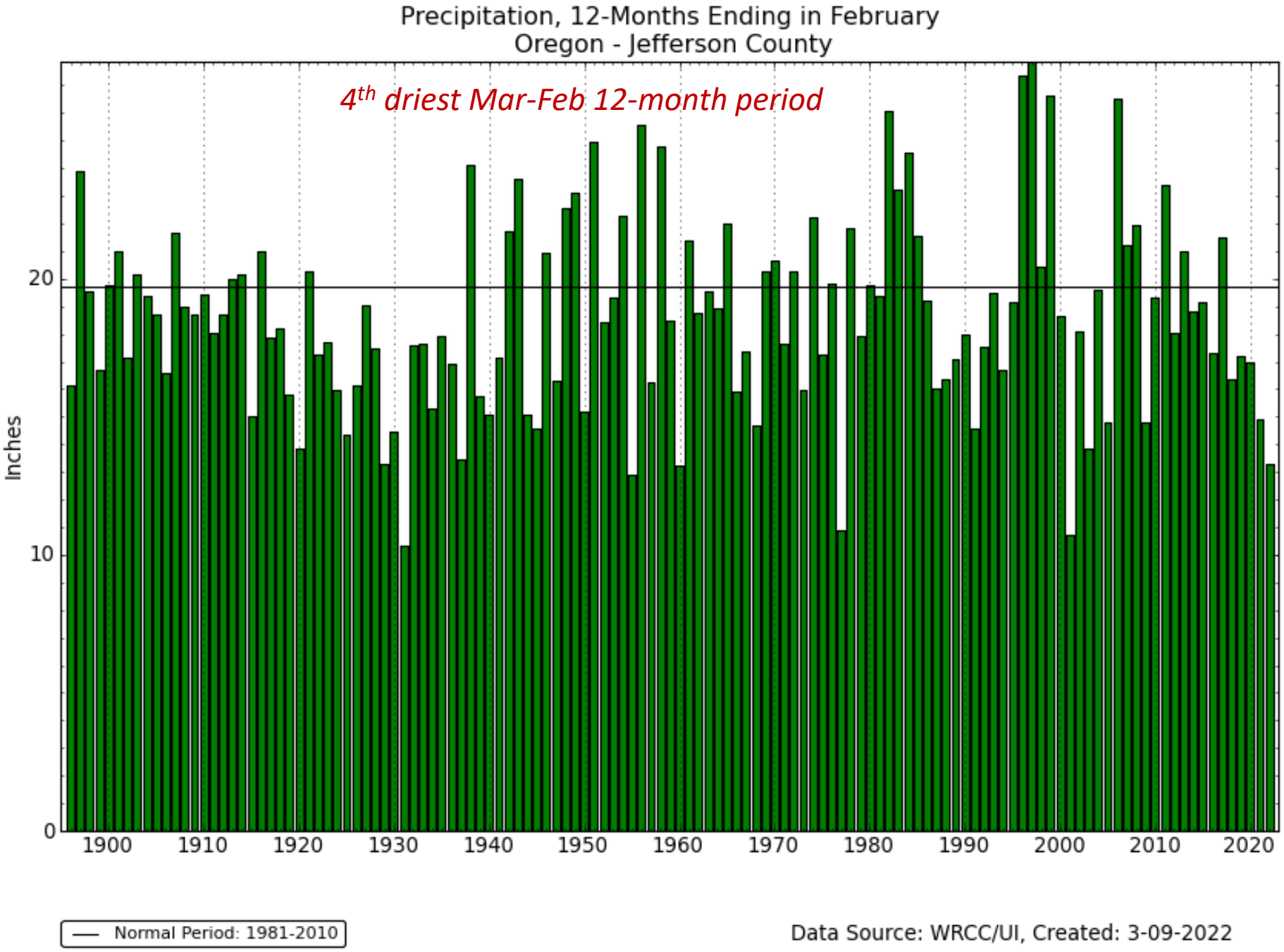

Standardized Precipitation-Evapotranspiration Index, 12-Months Ending in February
Oregon - Morrow County
SPEI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Data Source: WRCC/UI, Created: 3-08-2022

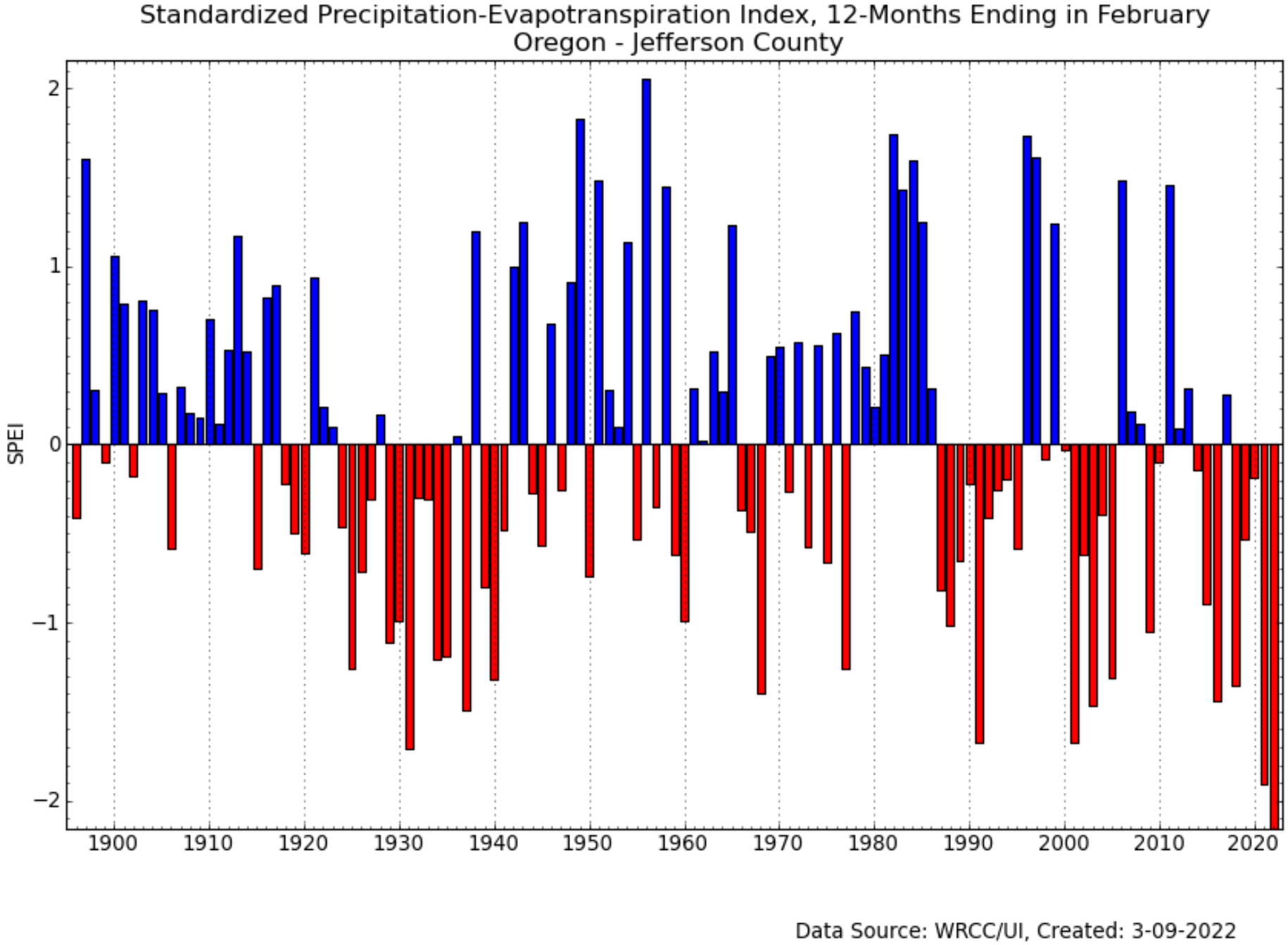

Standardized Precipitation-Evapotranspiration Index, 30-Months Ending in February
Oregon - Morrow County
SPEI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
No Record
Data Source: WRCC/UI, Created: 3-08-2022

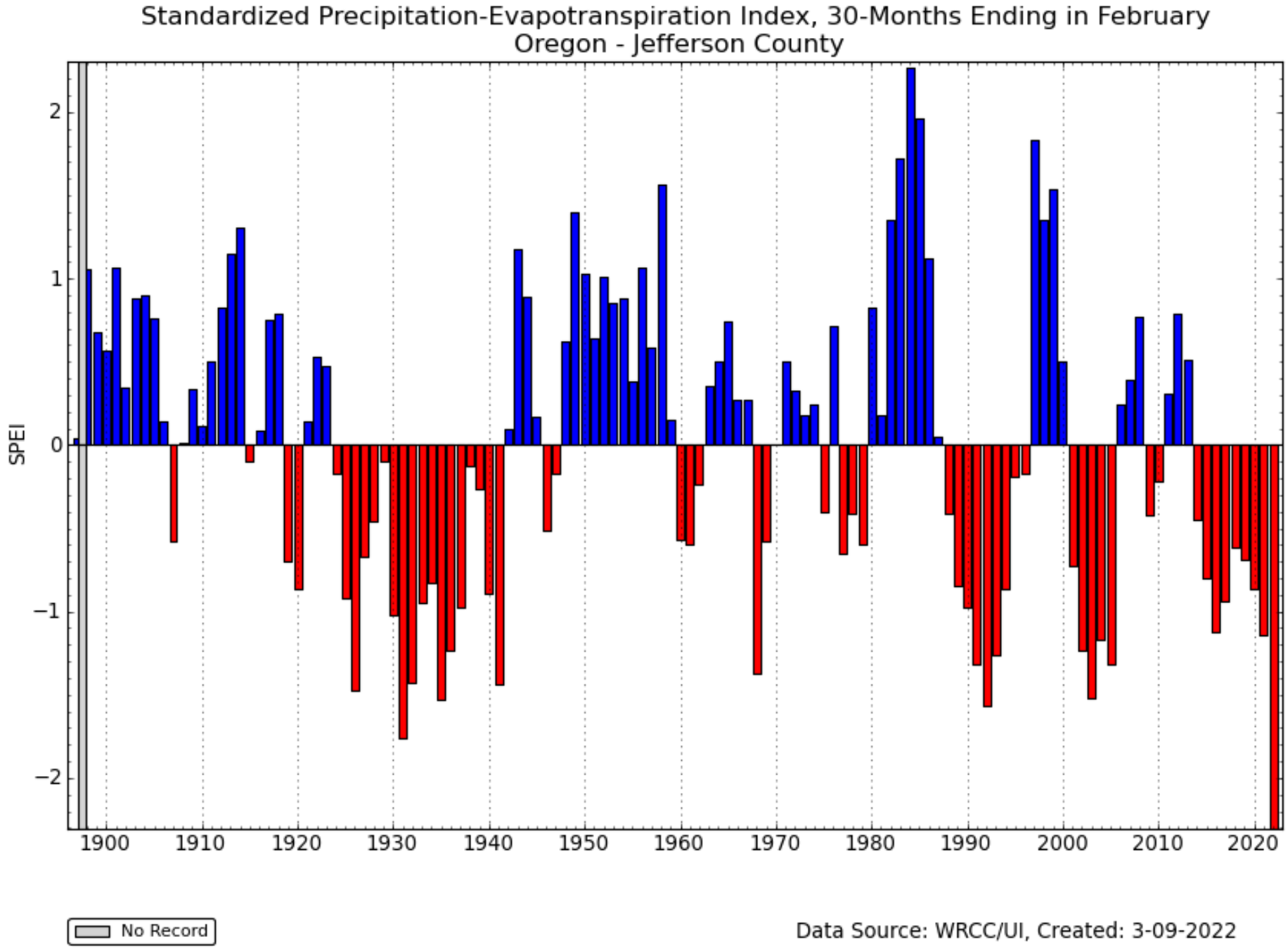

Precipitation, 12-Months Ending in February
Oregon - Grant County
Driest Mar-Feb 12-month period
Inches
0
10
20
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Normal Period: 1981-2010
Data Source: WRCC/UI, Created: 3-08-2022

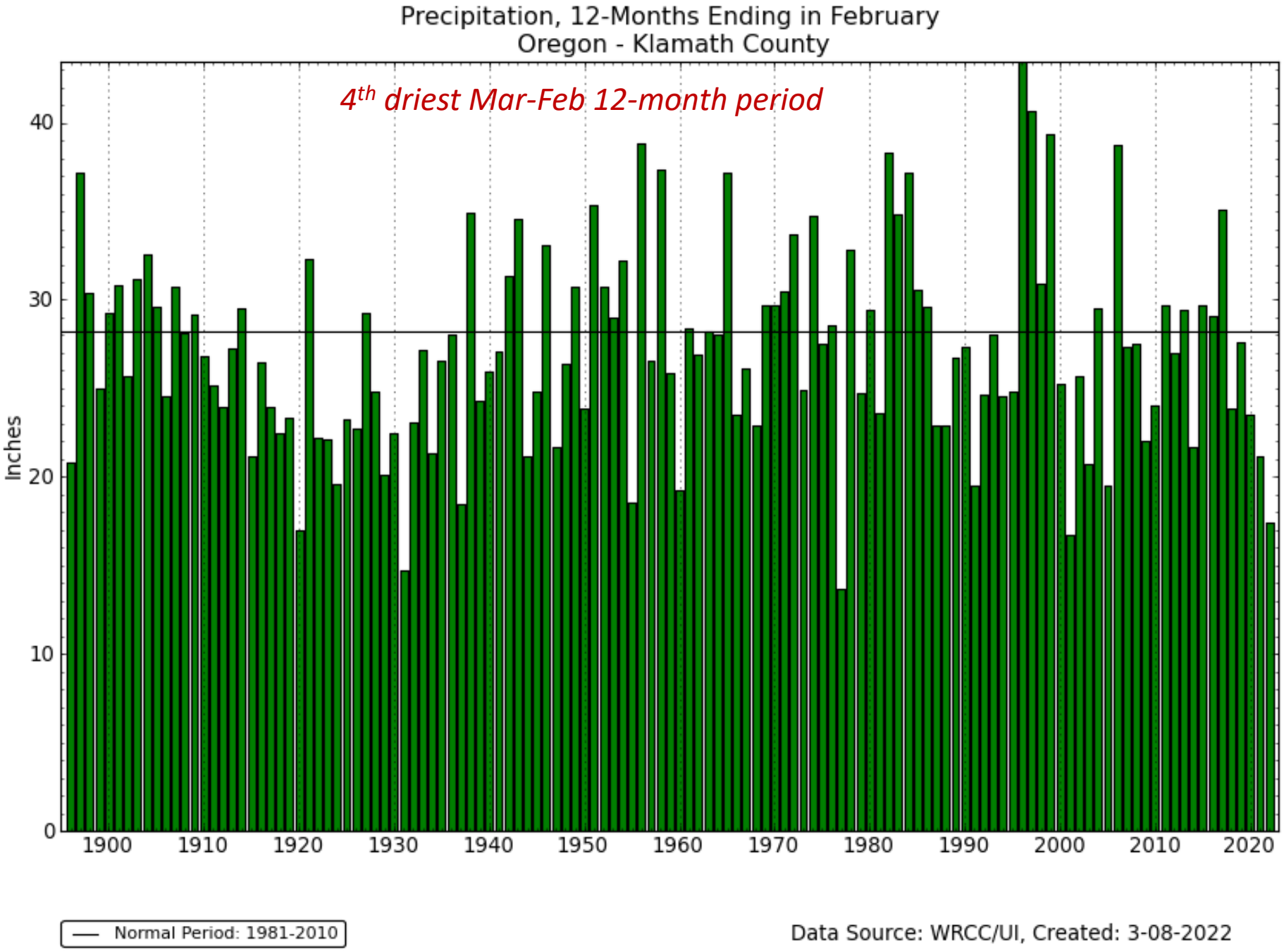

Standardized Precipitation-Evapotranspiration Index, 12-Months Ending in February
Oregon - Grant County
SPEI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Data Source: WRCC/UI, Created: 3-08-2022

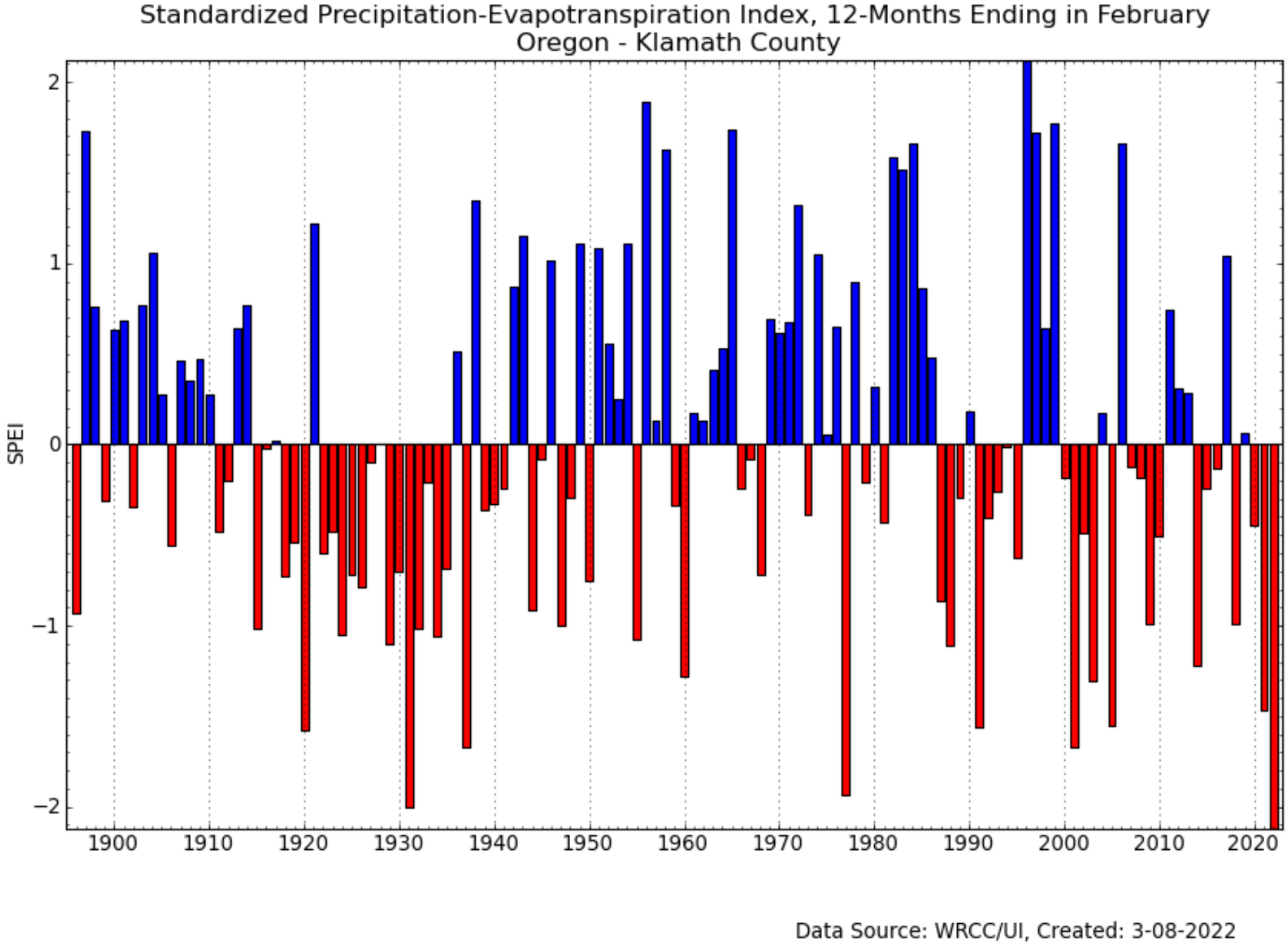

Standardized Precipitation-Evapotranspiration Index, 30-Months Ending in February
Oregon - Grant County
SPEI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
No Record
Data Source: WRCC/UI, Created: 3-08-2022

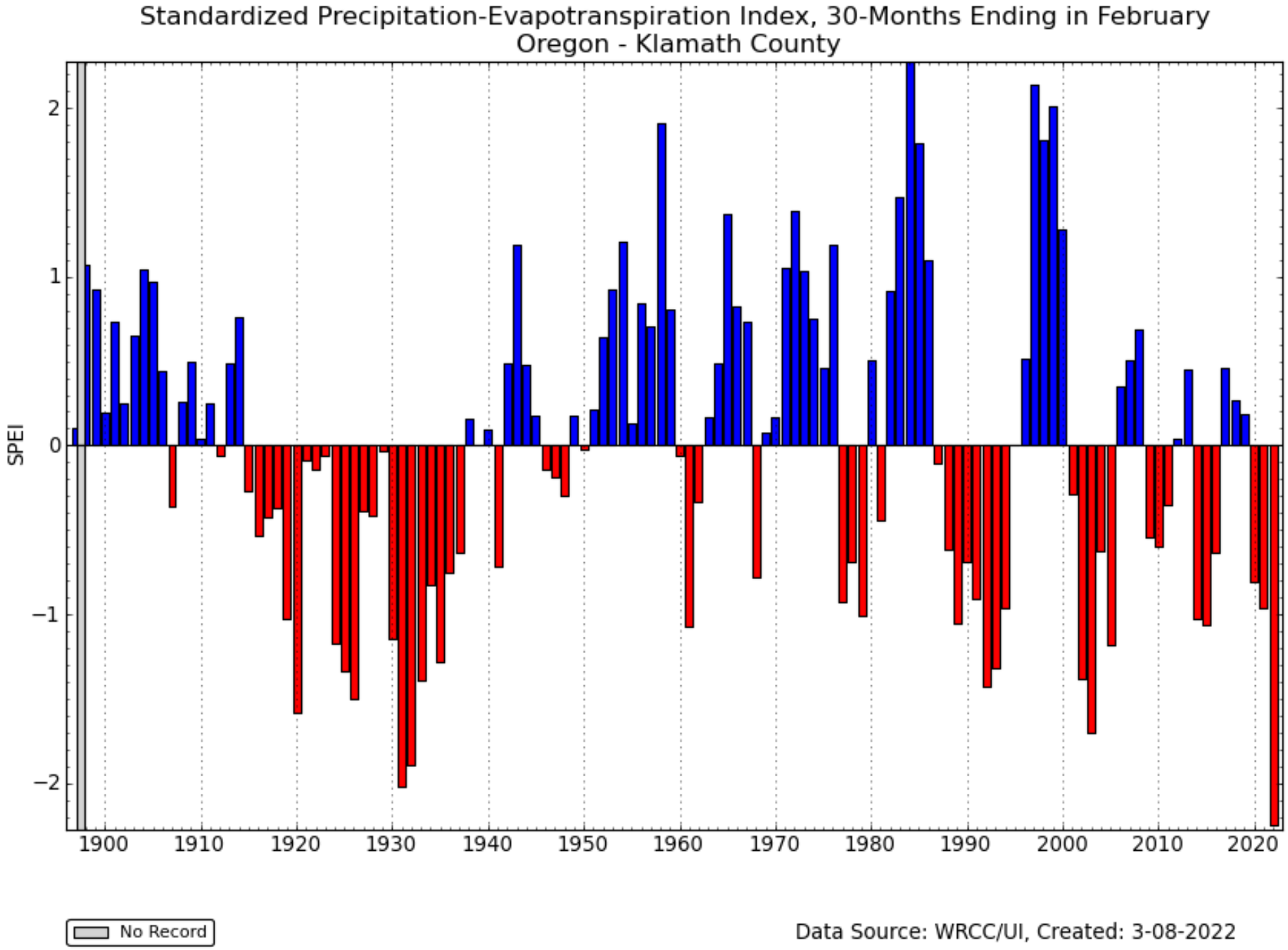

Precipitation, 12-Months Ending in February
Oregon - Jefferson County
4th driest Mar-Feb 12-month period
Inches
0
10
20
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Normal Period: 1981-2010
Data Source: WRCC/UI, Created: 3-09-2022


Standardized Precipitation-Evapotranspiration Index, 12-Months Ending in February
Oregon - Jefferson County
SPEI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Data Source: WRCC/UI, Created: 3-09-2022


Standardized Precipitation-Evapotranspiration Index, 30-Months Ending in February
Oregon - Jefferson County
SPEI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
No Record
Data Source: WRCC/UI, Created: 3-09-2022


Precipitation, 12-Months Ending in February
Oregon - Klamath County
4th driest Mar-Feb 12-month period
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: 3-08-2022


Standardized Precipitation-Evapotranspiration Index, 12-Months Ending in February
Oregon - Klamath County
SPEI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
Data Source: WRCC/UI, Created: 3-08-2022


Standardized Precipitation-Evapotranspiration Index, 30-Months Ending in February
Oregon - Klamath County
SPEI
2
1
0
−1
−2
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020
No Record
Data Source: WRCC/UI, Created: 3-08-2022

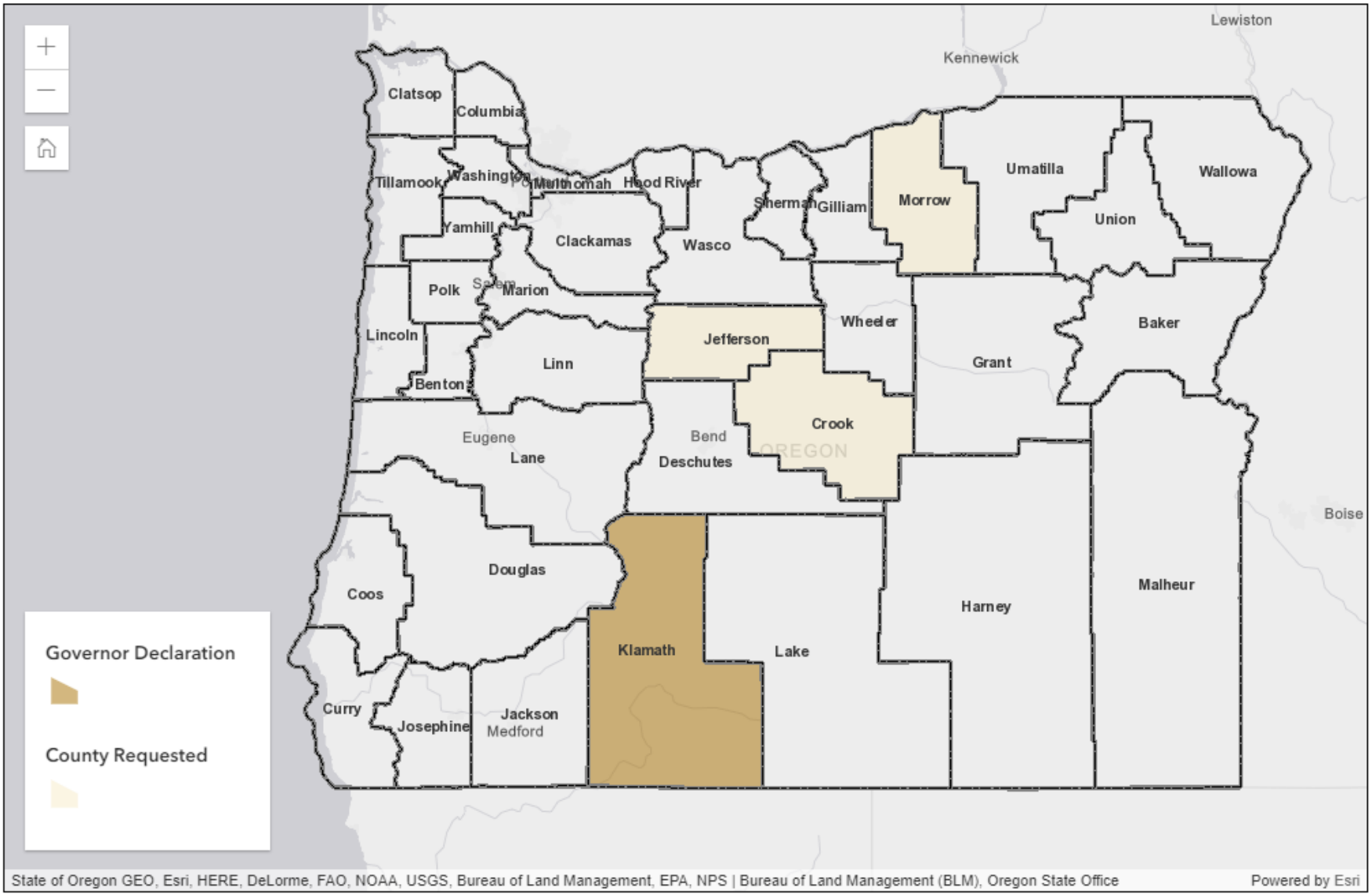
Water Supply Availability Committee
Oregon Water Resources Department

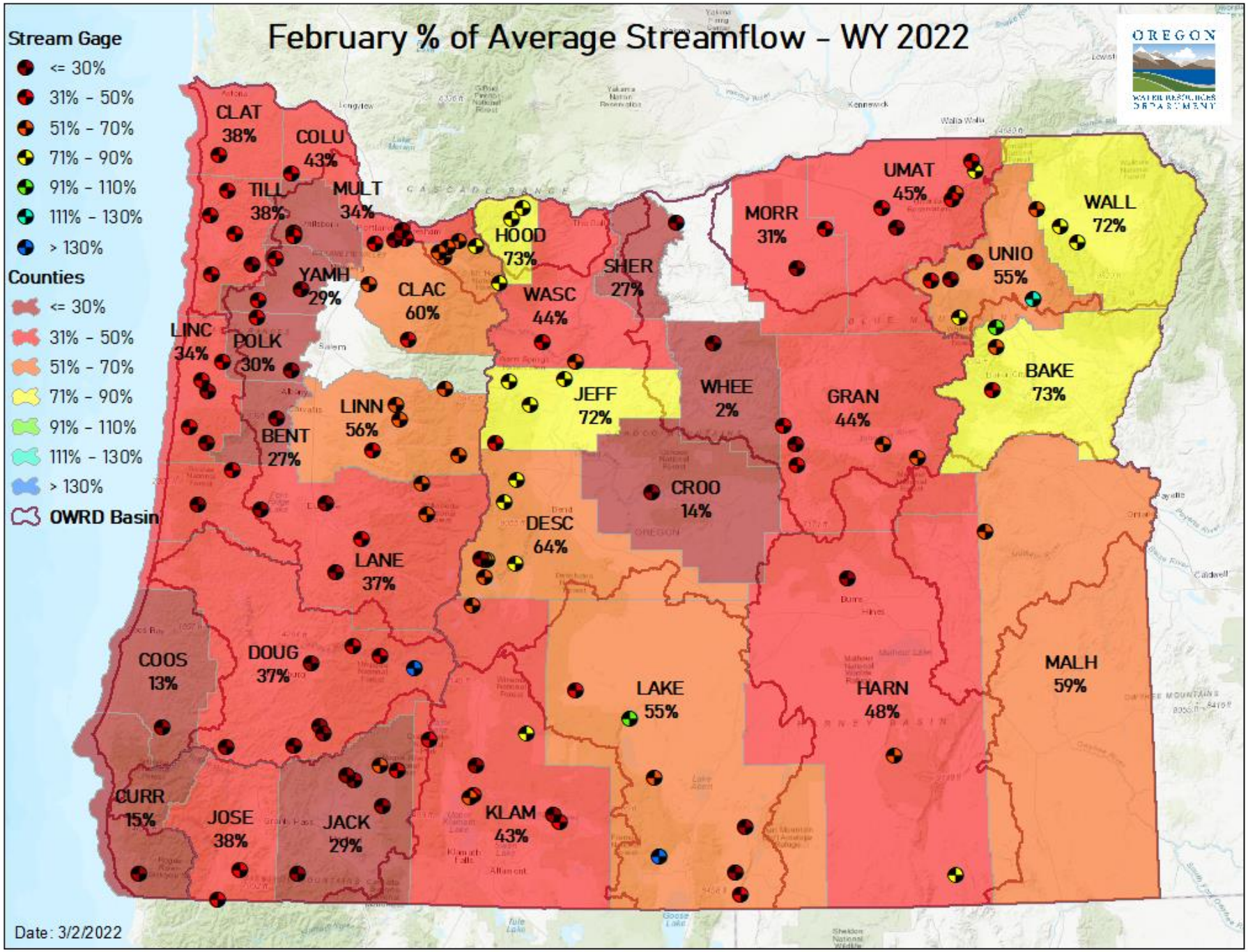
Ryan Andrews

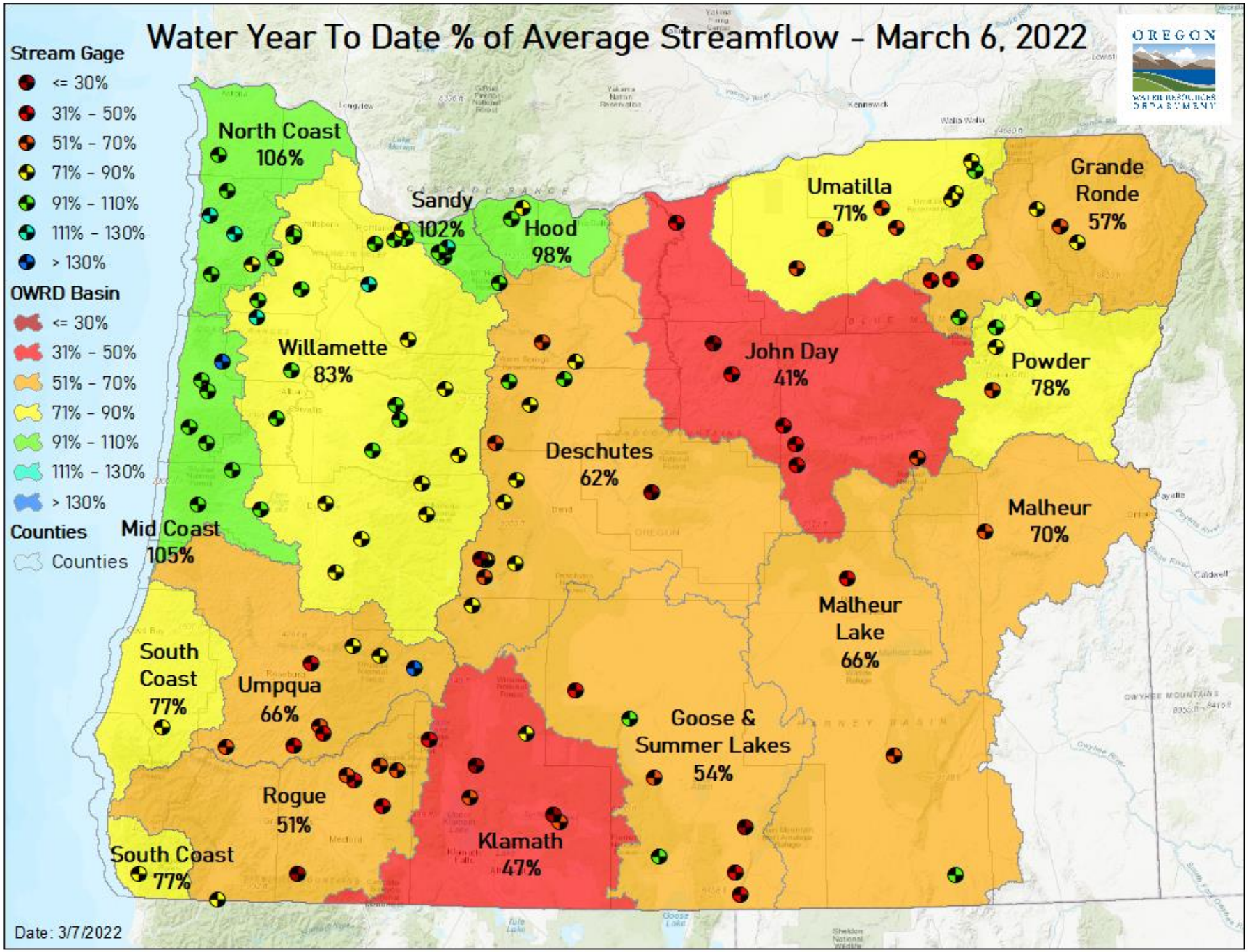
March 9th, 2022

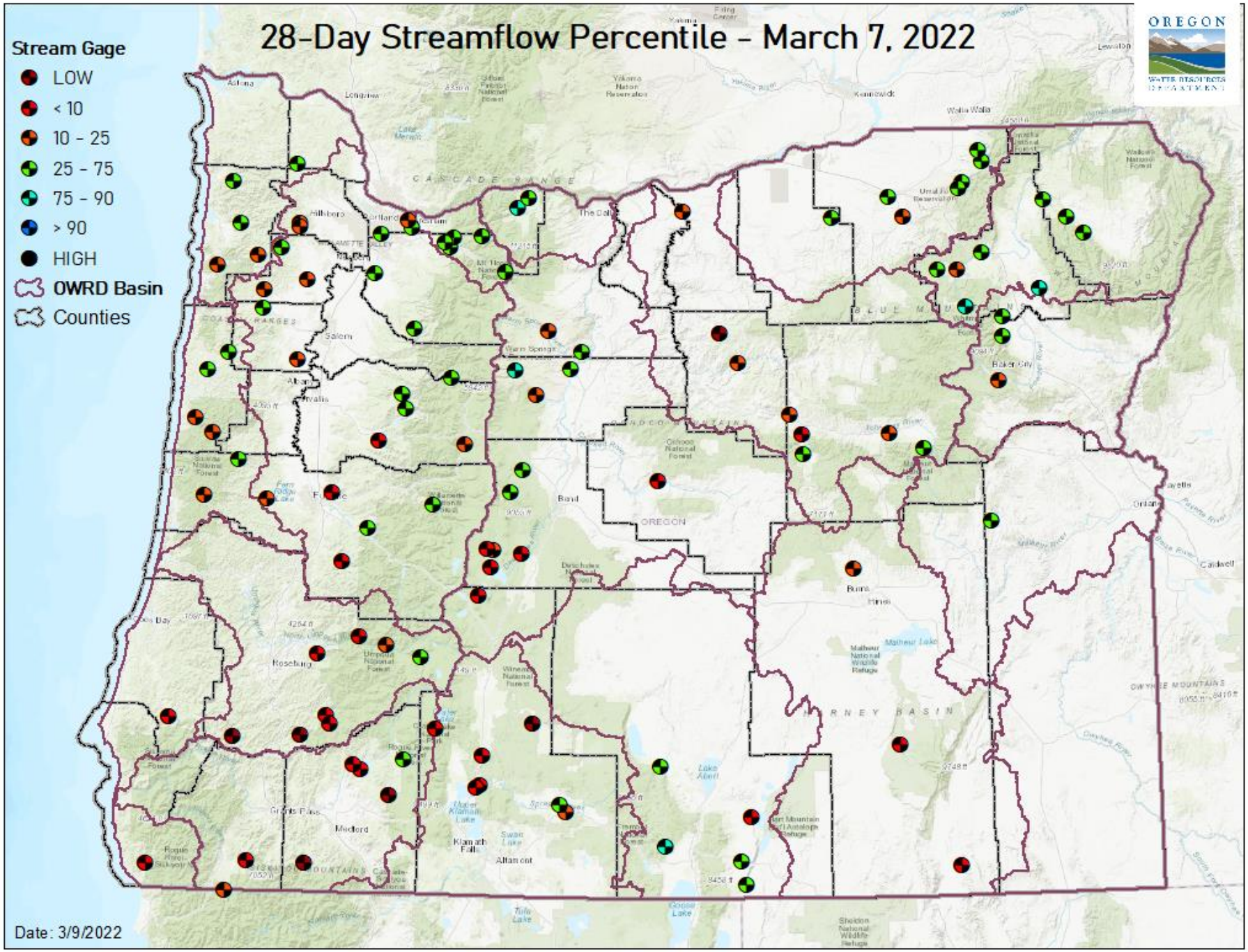
Drought Declaration Status Map

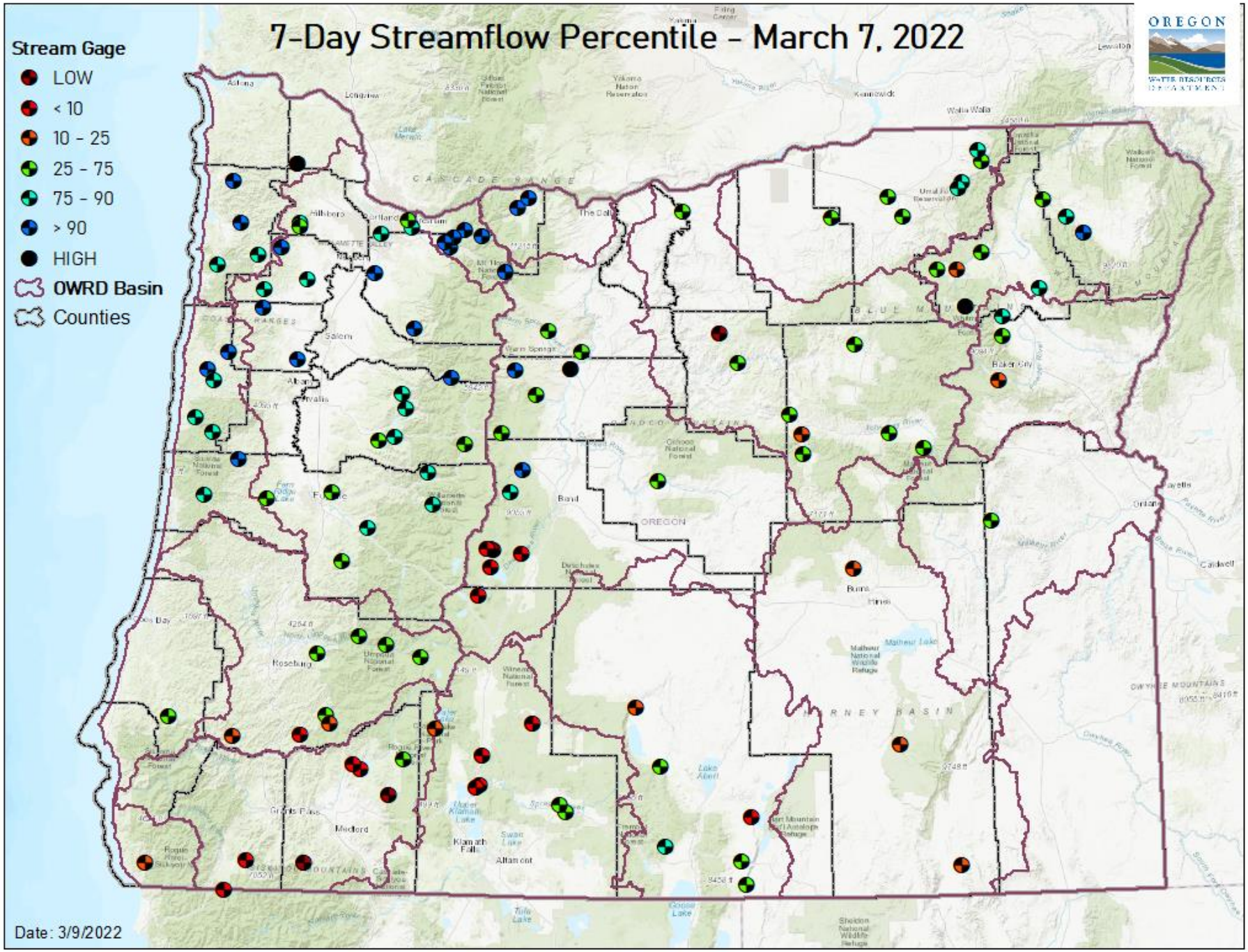
Select Year: 2022 Search Clear

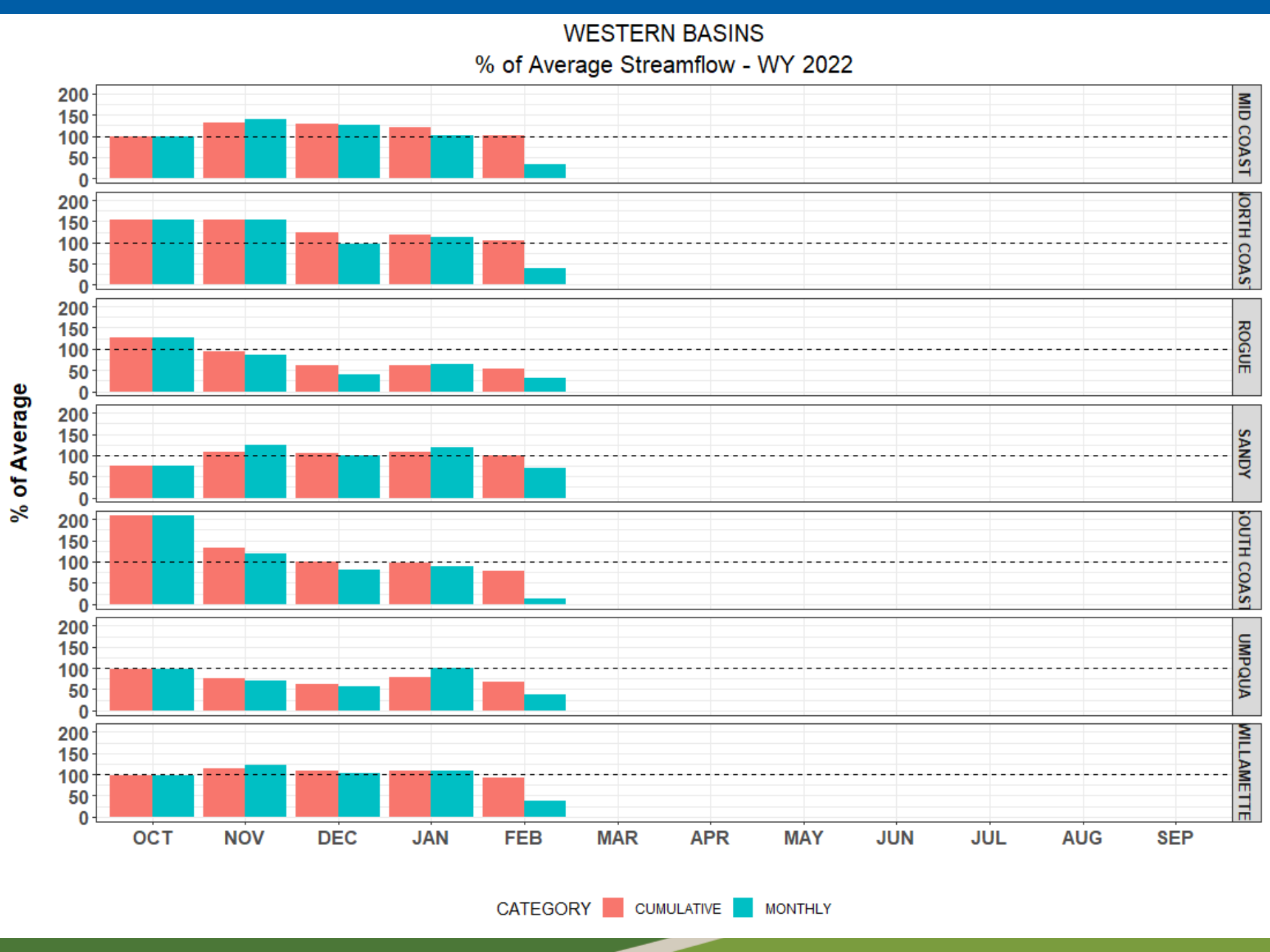


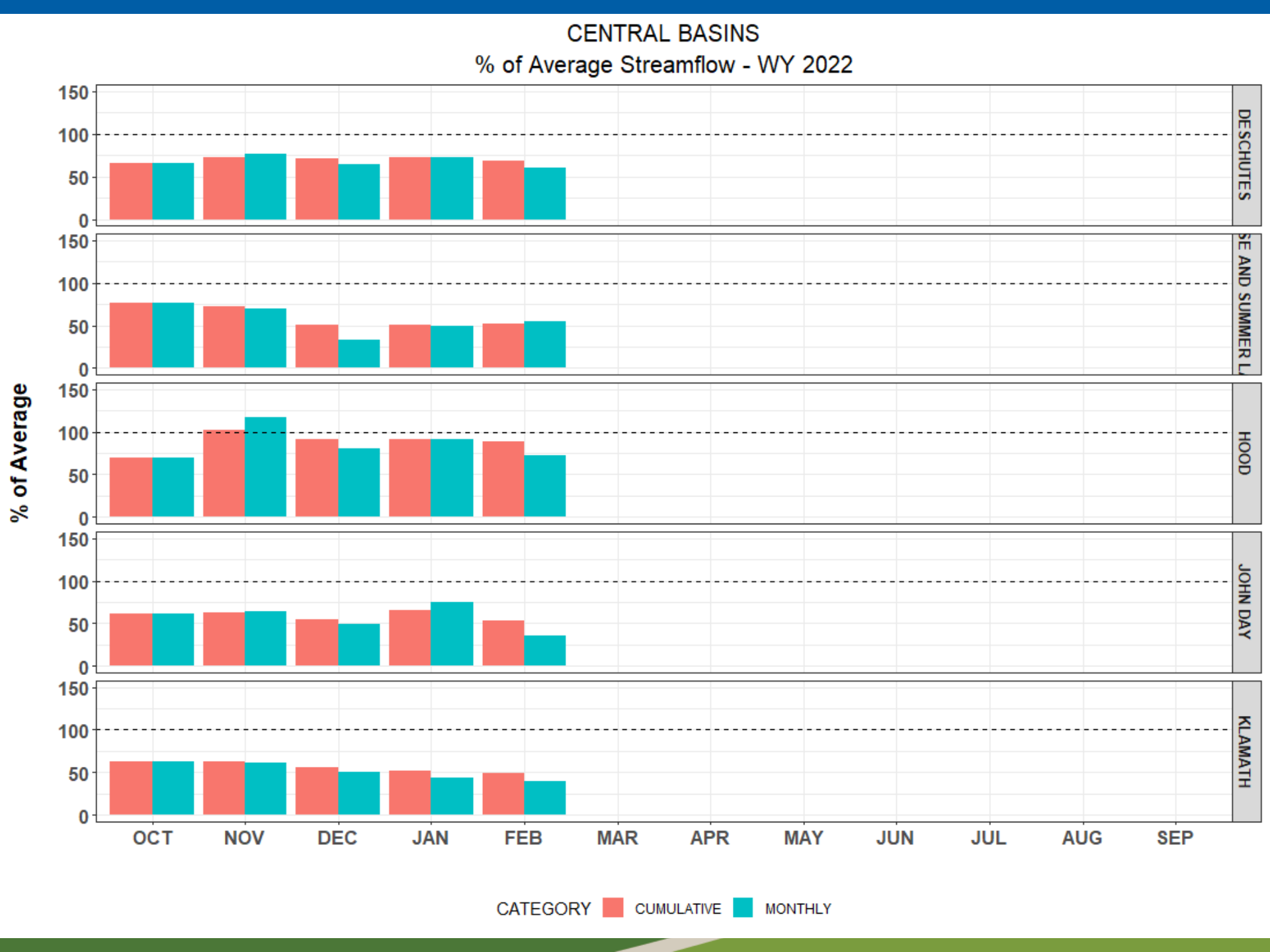

February % of Average Streamflow - WY 2022
Stream Gage
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
111% - 130%
> 130%
Counties
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
111% - 130%
> 130%
OWRD Basin
OREGON
WATER RESOURCES DEPARTMENT
CLAT 38%
COLU 43%
TILL 38%
MULT 34%
HOOD 73%
SHER 27%
MORR 31%
UMAT 45%
WALL 72%
UNIO 55%
YAMH 29%
CLAC 60%
WASC 44%
LINC 34%
POLK 30%
JEFF 72%
WHEE 2%
GRAN 44%
BAKE 73%
LINN 56%
BENT 27%
CROO 14%
DESC 64%
LANE 37%
COOS 13%
DOUG 37%
LAKE 55%
HARN 48%
MALH 59%
CURR 15%
JOSE 38%
JACK 29%
KLAM 43%
Date: 3/2/2022

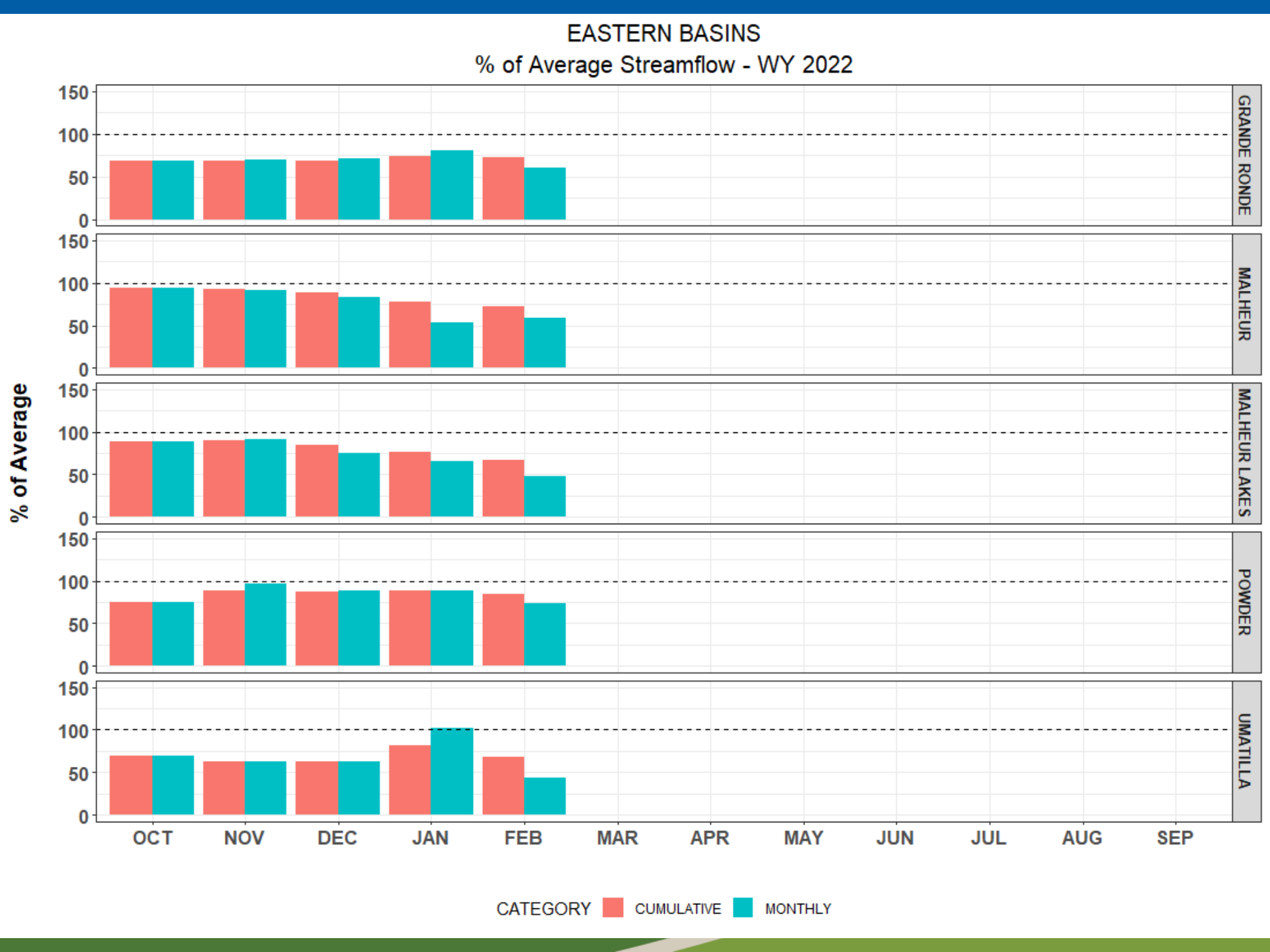

Water Year To Date % of Average Streamflow - March 6, 2022
Stream Gage
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
111% - 130%
> 130%
OWRD Basin
<= 30%
31% - 50%
51% - 70%
71% - 90%
91% - 110%
111% - 130%
> 130%
Counties
Counties
OREGON
WATER RESOURCES DEPARTMENT
North Coast 106%
Sandy 102%
Hood 98%
Umatilla 71%
Grande Ronde 57%
Willamette 83%
John Day 41%
Powder 78%
Deschutes 62%
Malheur 70%
Mid Coast 105%
Malheur Lake 66%
South Coast 77%
Umpqua 66%
Goose & Summer Lakes 54%
Rogue 51%
Klamath 47%
South Coast 77%
Date: 3/7/2022

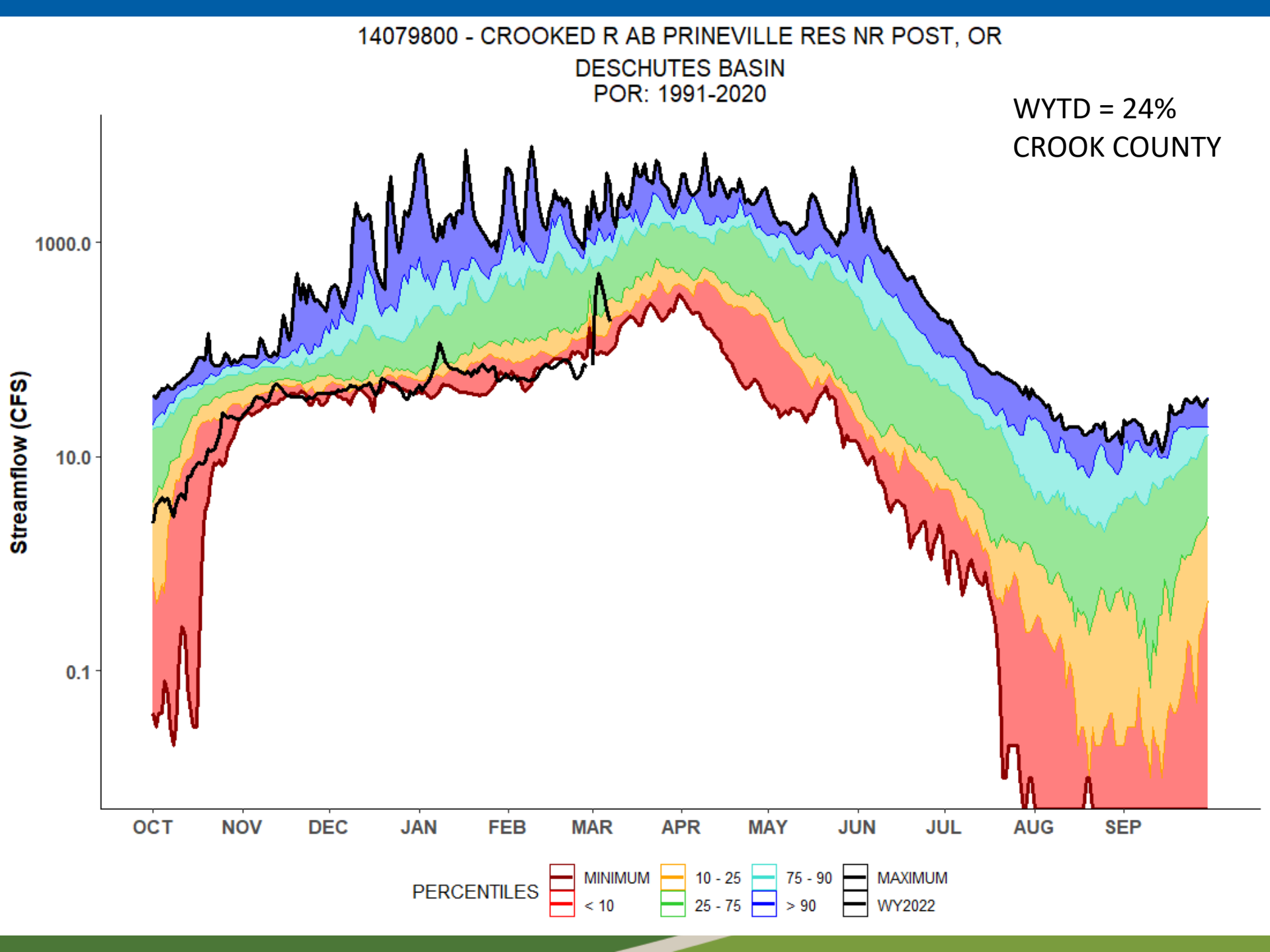

28-Day Streamflow Percentile - March 7, 2022
Stream Gage
LOW
< 10
10 - 25
25 - 75
75 - 90
> 90
HIGH
OWRD Basin
Counties
OREGON
WATER RESOURCES DEPARTMENT
Date: 3/9/2022

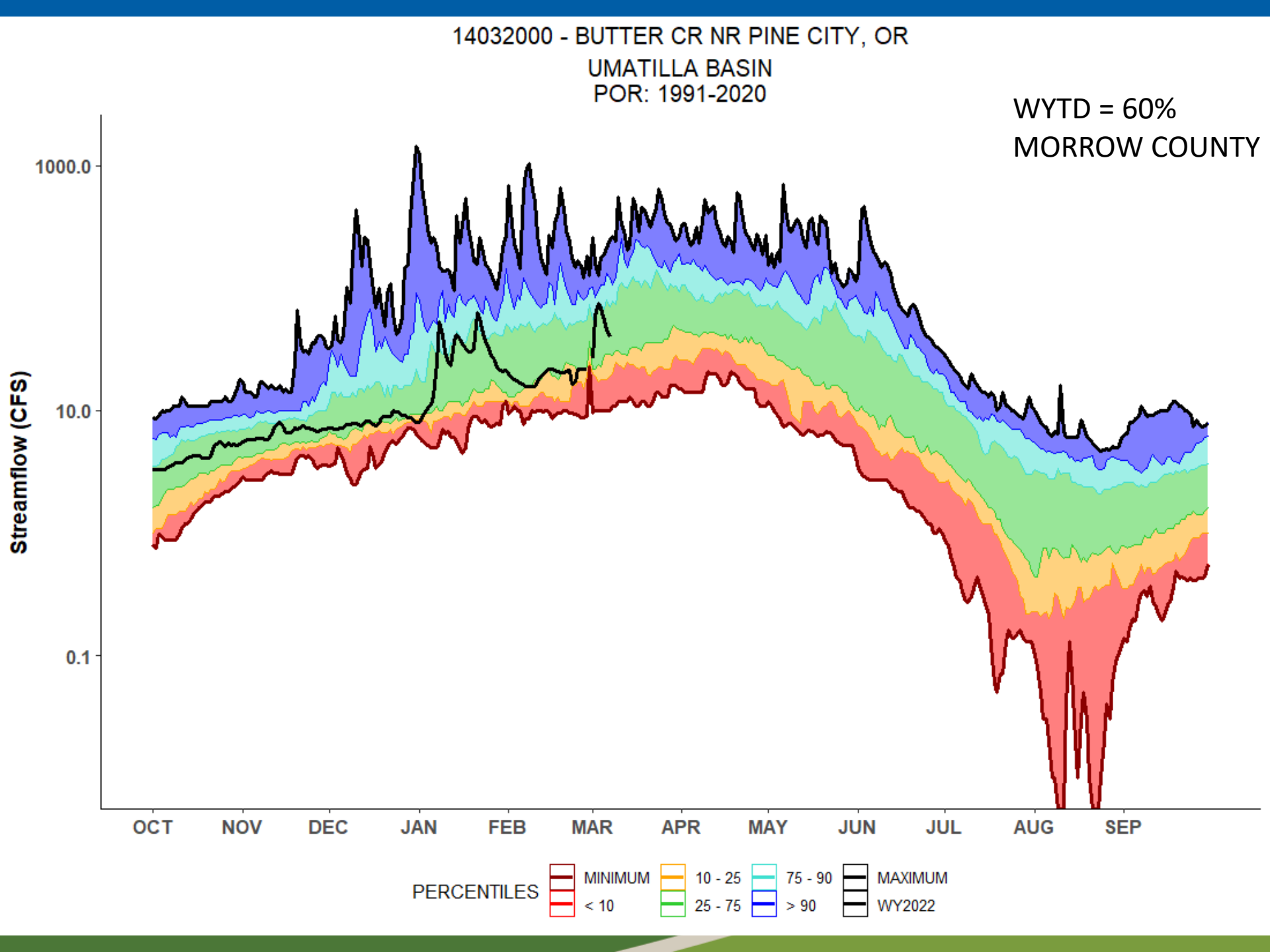

7-Day Streamflow Percentile - March 7, 2022
Stream Gage
LOW
< 10
10 - 25
25 - 75
75 - 90
> 90
HIGH
OWRD Basin
Counties
OREGON
WATER RESOURCES DEPARTMENT
Date: 3/9/2022

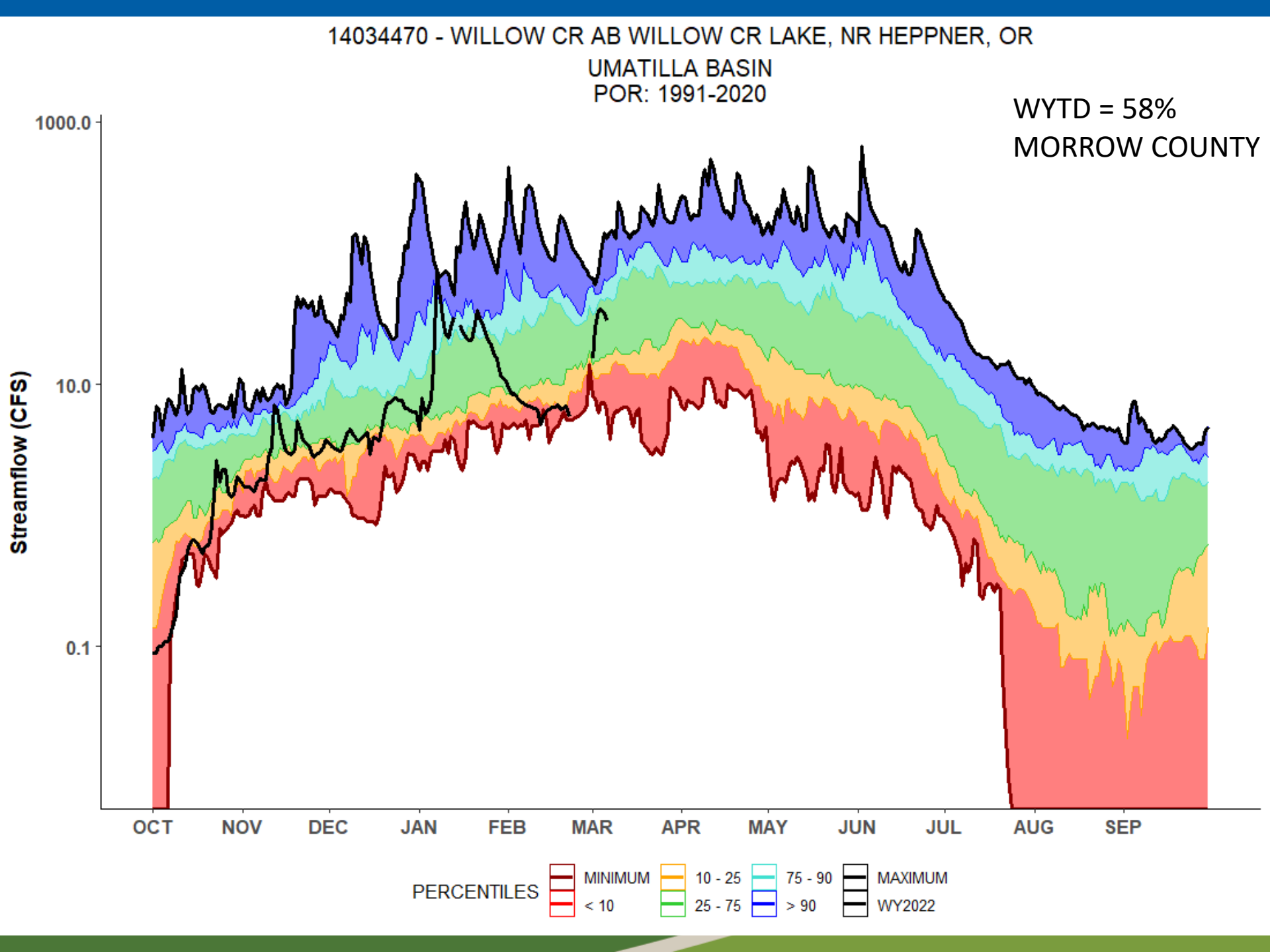

WESTERN BASINS
% of Average Streamflow - WY 2022
% of Average
200
150
100
50
0
MID COAST
NORTH COAST
ROGUE
SANDY
SOUTH COAST
UMPQUA
WILLAMETTE
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
CATEGORY
CUMULATIVE
MONTHLY

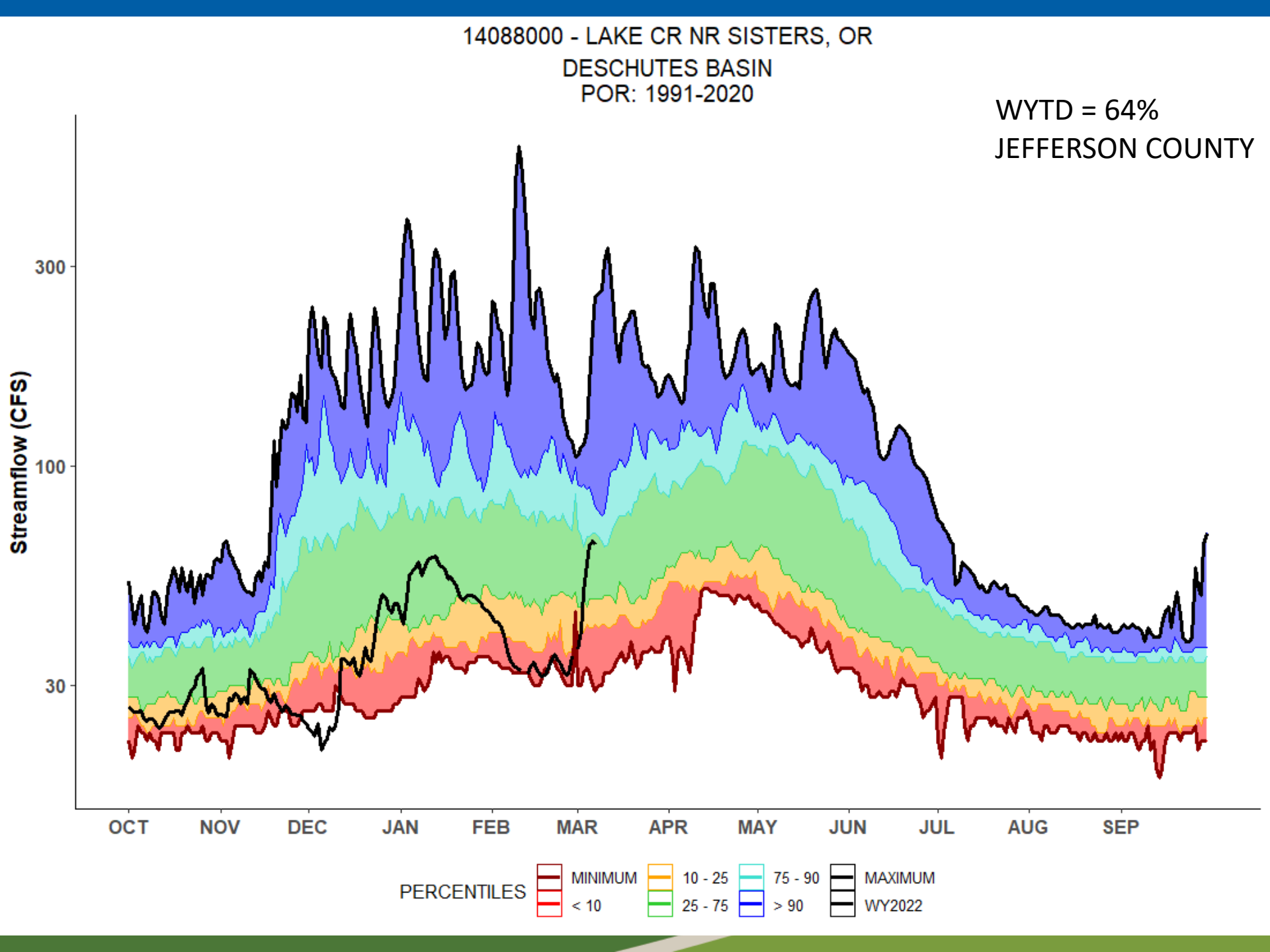

CENTRAL BASINS
% of Average Streamflow - WY 2022
% of Average
150
100
50
0
DESCHUTES
SE AND SUMMER L
HOOD
JOHN DAY
KLAMATH
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
CATEGORY
CUMULATIVE
MONTHLY

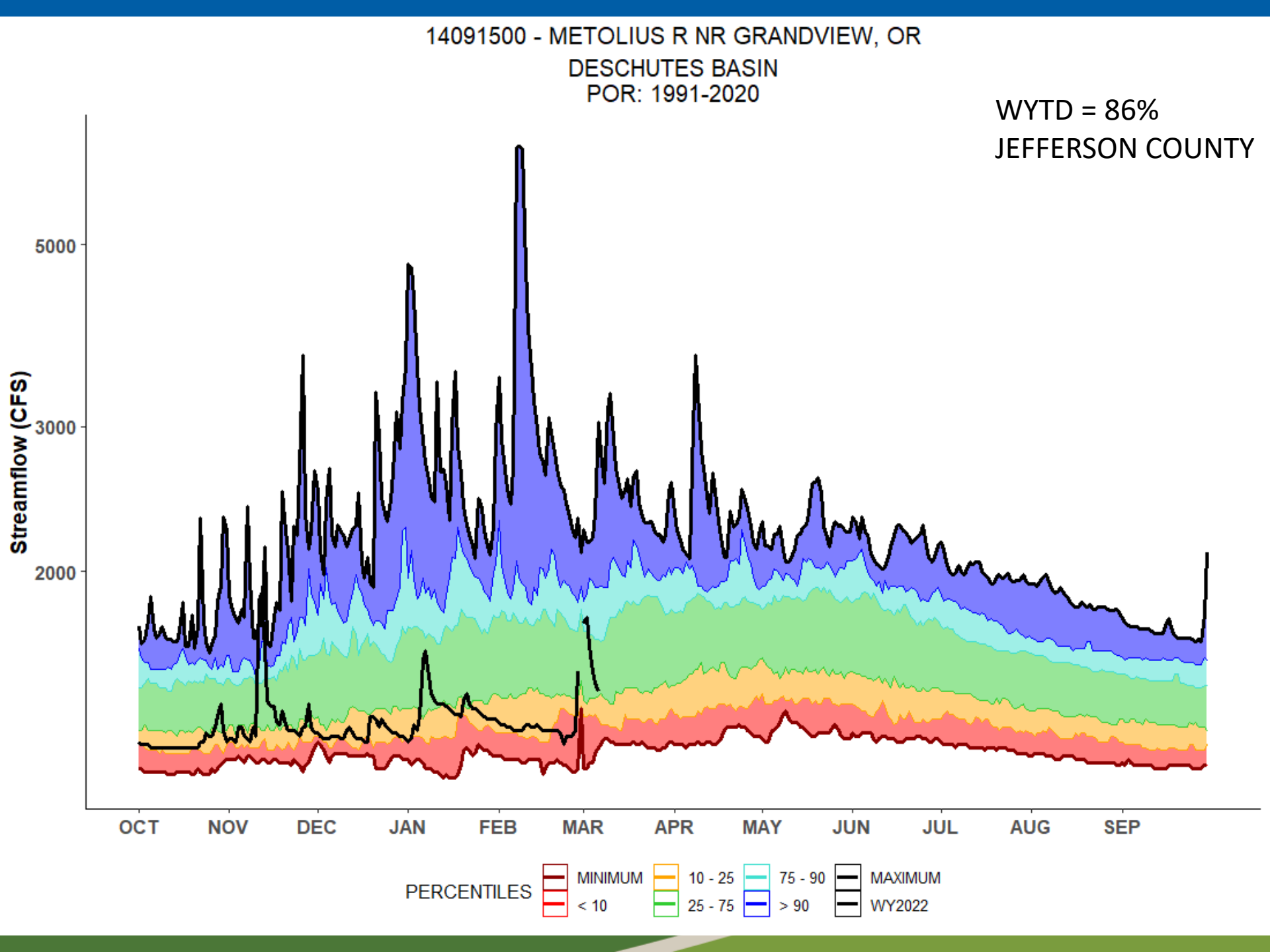

EASTERN BASINS
% of Average Streamflow - WY 2022
% of Average
150
100
50
0
GRANDE RONDE
MALHEUR
MALHEUR LAKES
POWDER
UMATILLA
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
CATEGORY
CUMULATIVE
MONTHLY

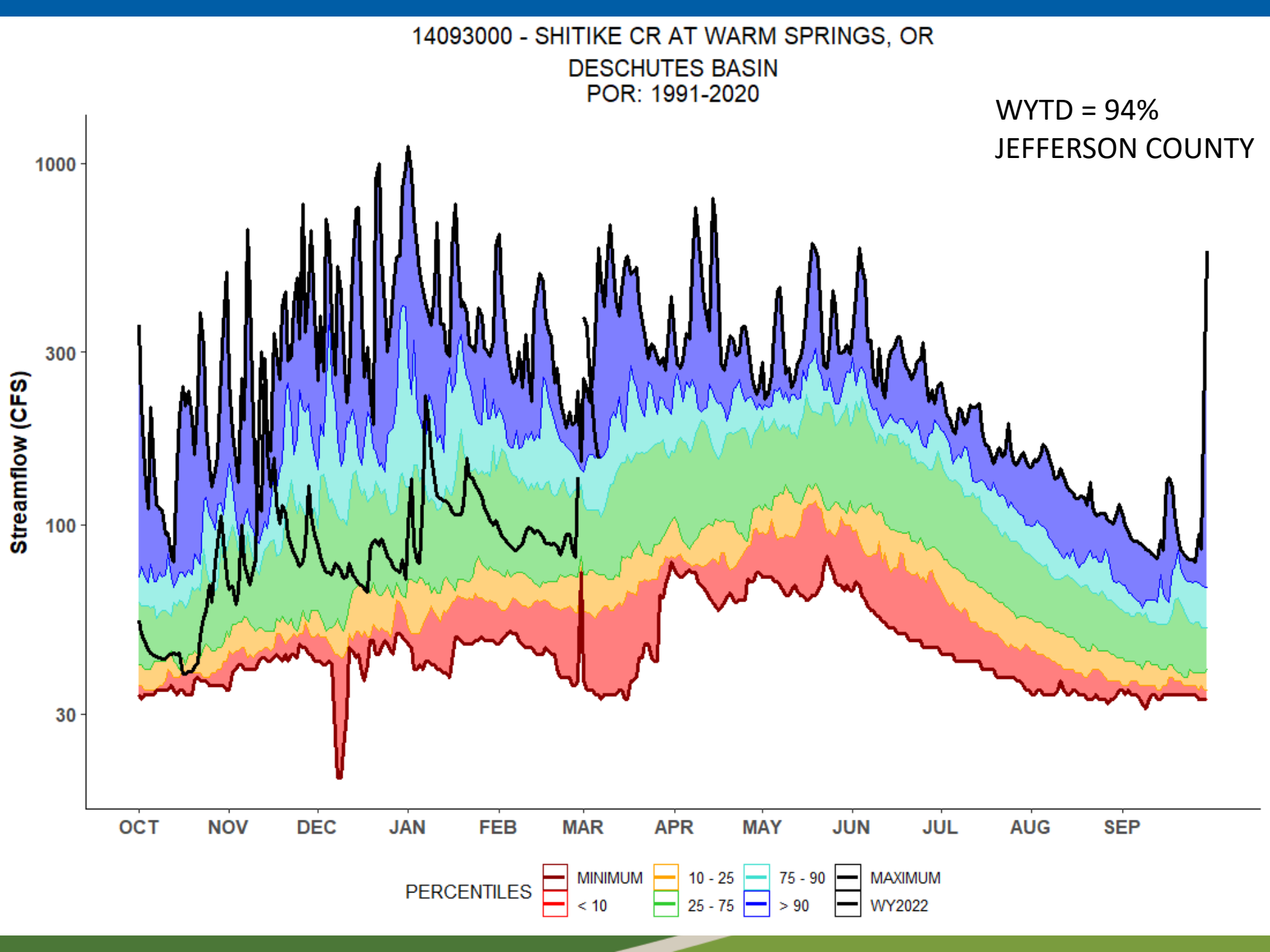

14079800 - CROOKED R AB PRINEVILLE RES NR POST, OR
DESCHUTES BASIN
POR: 1991-2020
WYTD = 24%
CROOK COUNTY
Streamflow (CFS)
1000.0
10.0
0.1
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
PERCENTILES
MINIMUM
< 10
10 - 25
25 - 75
75 - 90
> 90
MAXIMUM
WY2022


14032000 - BUTTER CR NR PINE CITY, OR
UMATILLA BASIN
POR: 1991-2020
WYTD = 60%
MORROW COUNTY
Streamflow (CFS)
1000.0
10.0
0.1
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
PERCENTILES
MINIMUM
< 10
10 - 25
25 - 75
75 - 90
> 90
MAXIMUM
WY2022


14034470 - WILLOW CR AB WILLOW CR LAKE, NR HEPPNER, OR
UMATILLA BASIN
POR: 1991-2020
WYTD = 58%
MORROW COUNTY
1000.0
10.0
0.1
Streamflow (CFS)
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
PERCENTILES
MINIMUM
< 10
10 - 25
25 - 75
75 - 90
> 90
MAXIMUM
WY2022


14088000 - LAKE CR NR SISTERS, OR
DESCHUTES BASIN
POR: 1991-2020
WYTD = 64%
JEFFERSON COUNTY
Streamflow (CFS)
300
100
30
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
PERCENTILES
MINIMUM
< 10
10 - 25
25 - 75
75 - 90
> 90
MAXIMUM
WY2022


14091500 - METOLIUS R NR GRANDVIEW, OR
DESCHUTES BASIN
POR: 1991-2020
WYTD = 86%
JEFFERSON COUNTY
Streamflow (CFS)
5000
3000
2000
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
PERCENTILES
MINIMUM
< 10
10 - 25
25 - 75
75 - 90
> 90
MAXIMUM
WY2022


14093000 - SHITIKE CR AT WARM SPRINGS, OR
DESCHUTES BASIN
POR: 1991-2020
WYTD = 94%
JEFFERSON COUNTY
Streamflow (CFS)
1000
300
100
30
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
PERCENTILES
MINIMUM
< 10
10 - 25
25 - 75
75 - 90
> 90
MAXIMUM
WY2022

Summary

- Klamath County received drought declaration; three others requested
- Well below average water year streamflow statewide
- Poor momentum heading into spring in eastern and southern Oregon

OREGON
WATER RESOURCES DEPARTMENT

QUESTIONS?

BUREAU OF RECLAMATION

Reclamation Storage Update

Oregon Water Supply Availability Committee Meeting

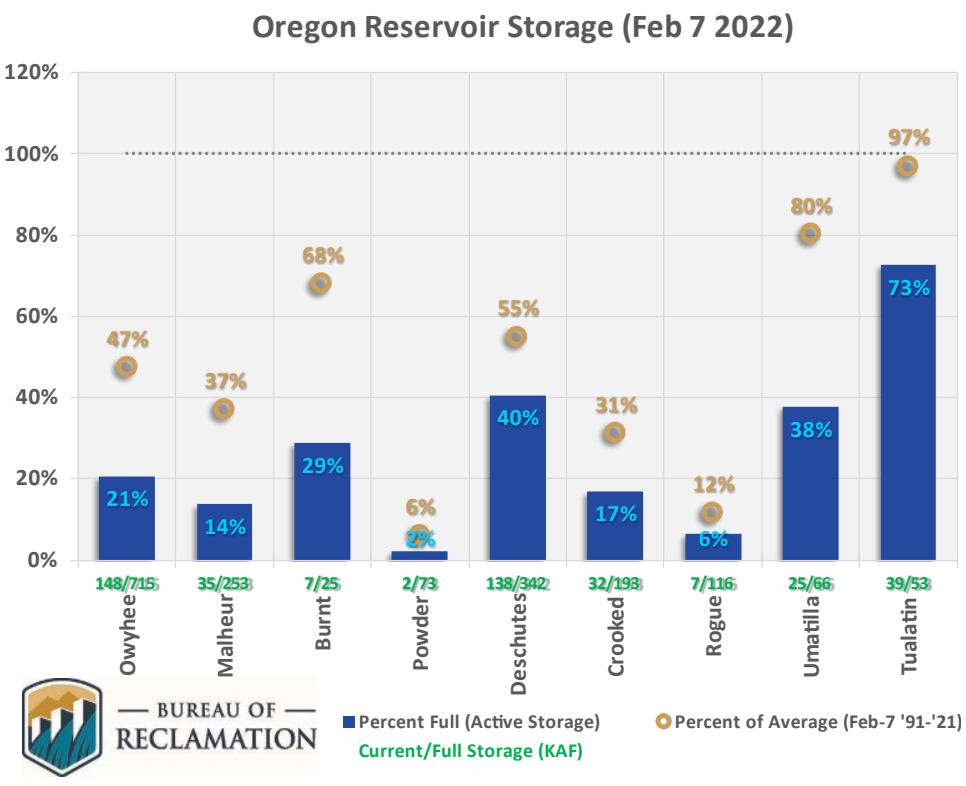
March 9, 2022

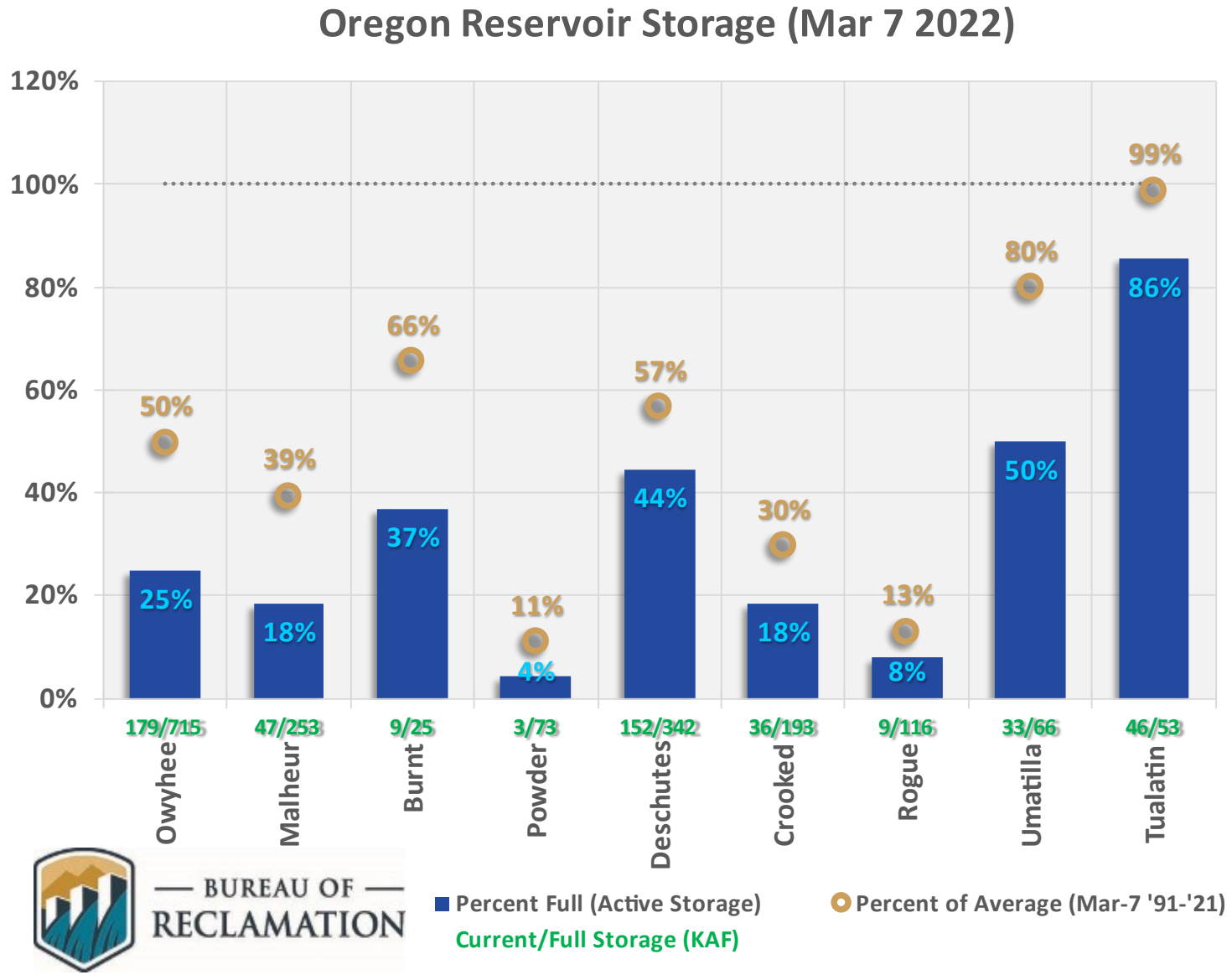
Basin Operations Summary

- Operations Activities:
  - Reclamation storage reservoirs in Oregon continue with typical winter fill operations
  - No Flood Risk Management or Irrigation operations occurring
  - Irrigation Districts indicate start up dates are TBD depending on water supply

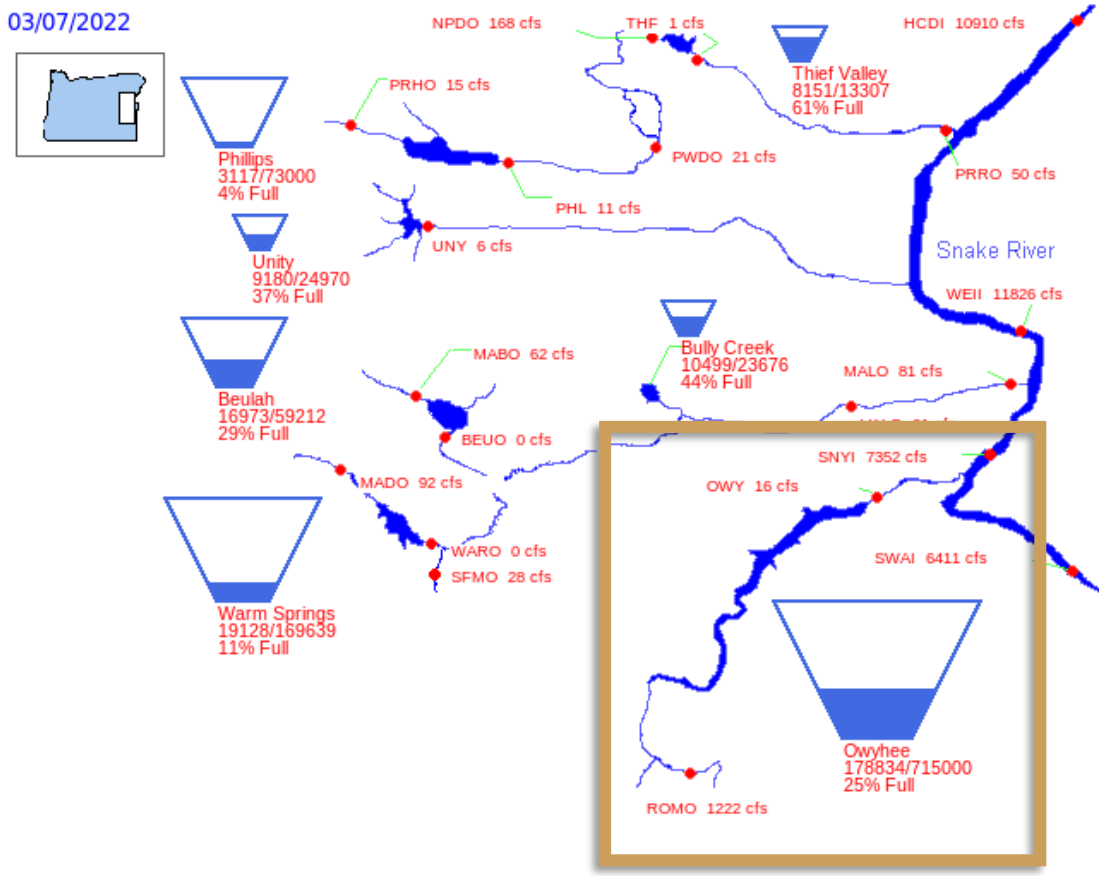
- Water Supply Notes
  - Below Average reservoir content continues at Reclamation Oregon reservoirs (except Scoggins)
  - Most reservoirs have much lower content than at this same time in WY2021
  - Reclamation's March 1 runoff forecasts decreased by around 5-25% as compared to February 1 forecasts due to dry conditions
  - Most reservoirs are very unlikely to refill fully this season (exceptions Scoggins, McKay, Unity) and based on current forecast are likely to reach lower peak content than in WY2021
  - Irrigation supply reductions are anticipated
  - Reservoir conditions and runoff forecasts support to-date drought declarations:
    - Crook, Jefferson, Klamath Counties

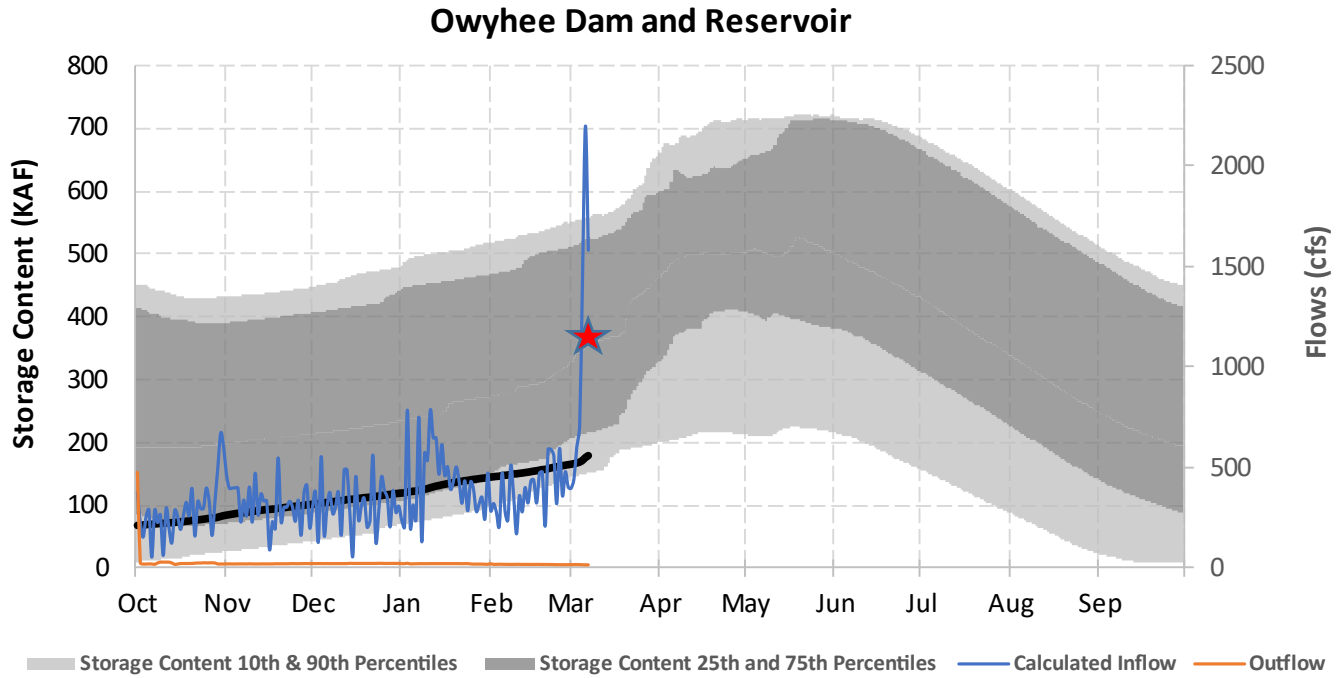
Storage Conditions





Owyhee River Basin





Reclamation January 1 Runoff Forecast
Jan-Jun: 610 kaf (115% 91-20 Ave)

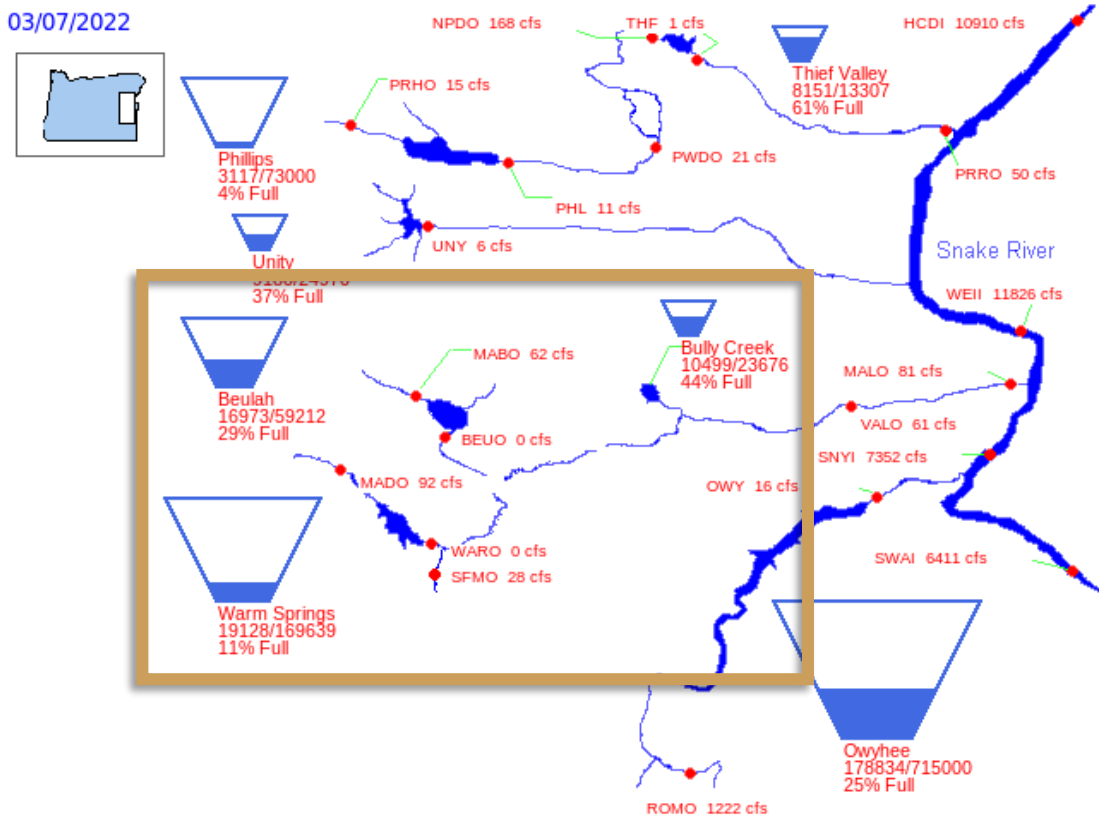
Reclamation February 1 Runoff Forecast
Feb-Jun: 458 kaf (94% 91-20 Ave)

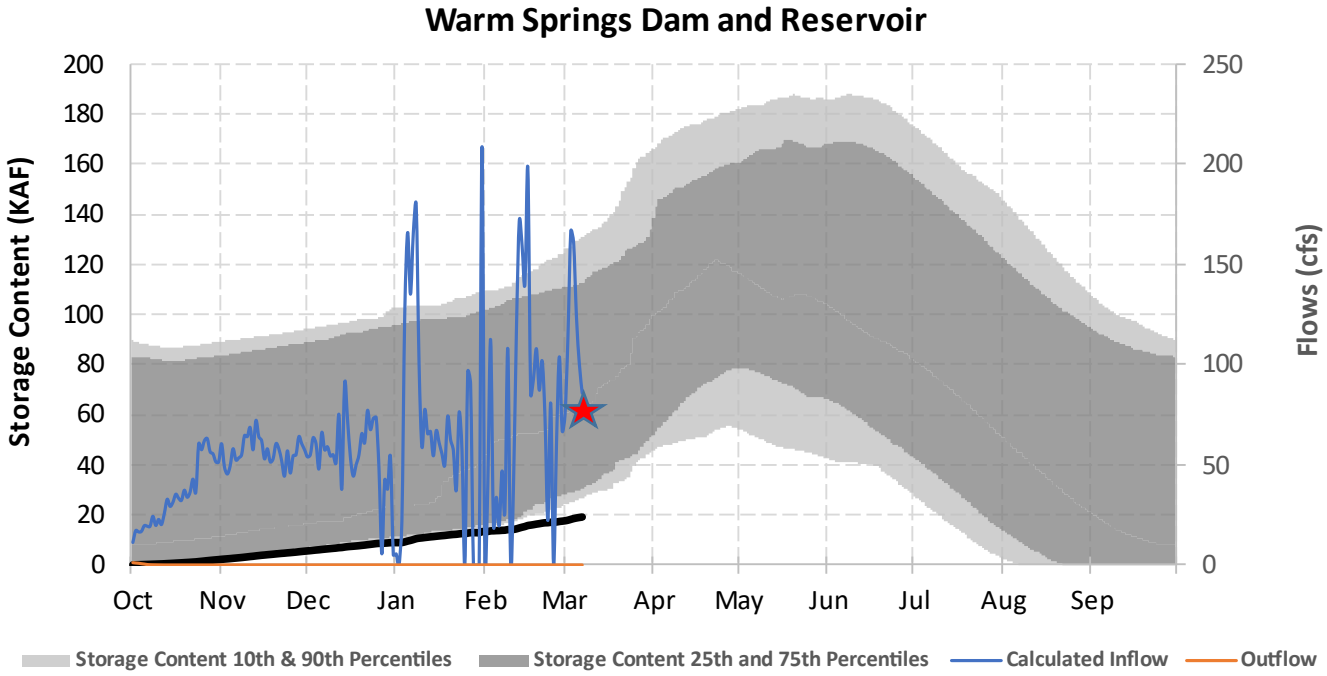
Reclamation March 1 Runoff Forecast
Mar-Jun: 348 kaf (81% 91-20 Ave)

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

★ WY2021 Elevation

Malheur River Basin





Reclamation January 1 Runoff Forecast
Jan-Jun: 100 kaf (86% 91-20 Ave)

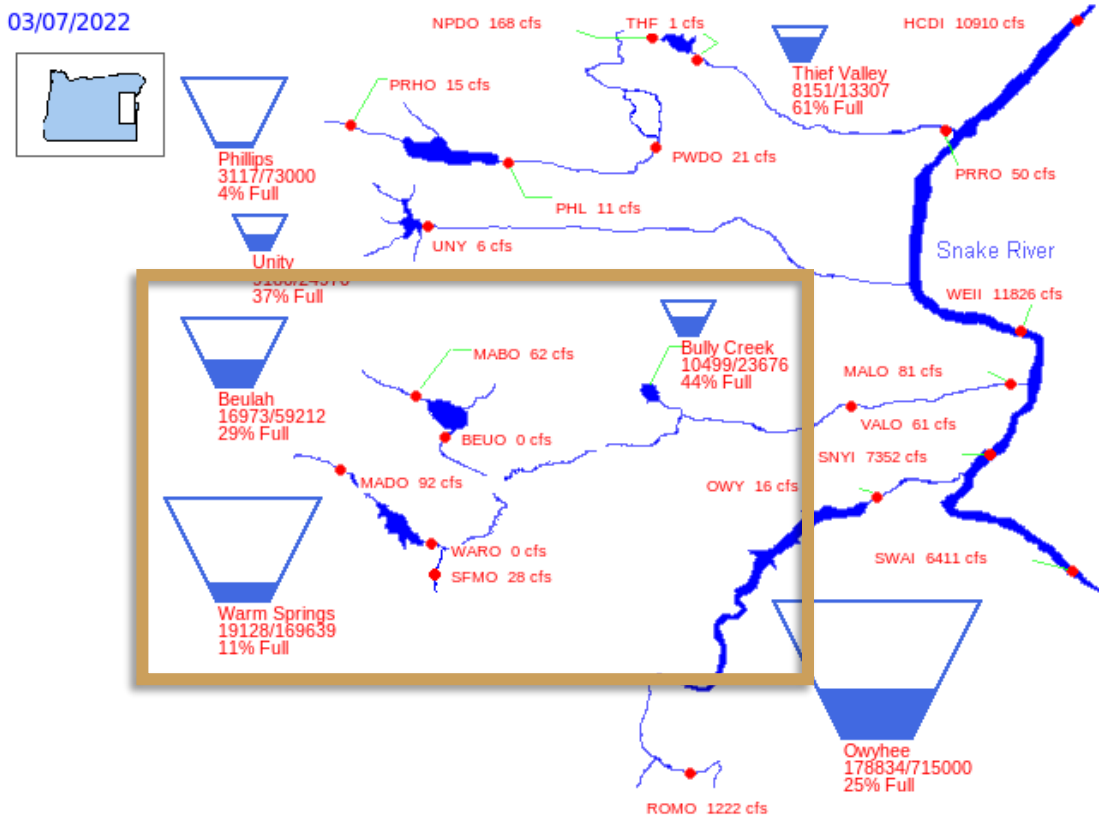
Reclamation February 1 Runoff Forecast
Feb-Jun: 79 kaf (74% 91-20 Ave)

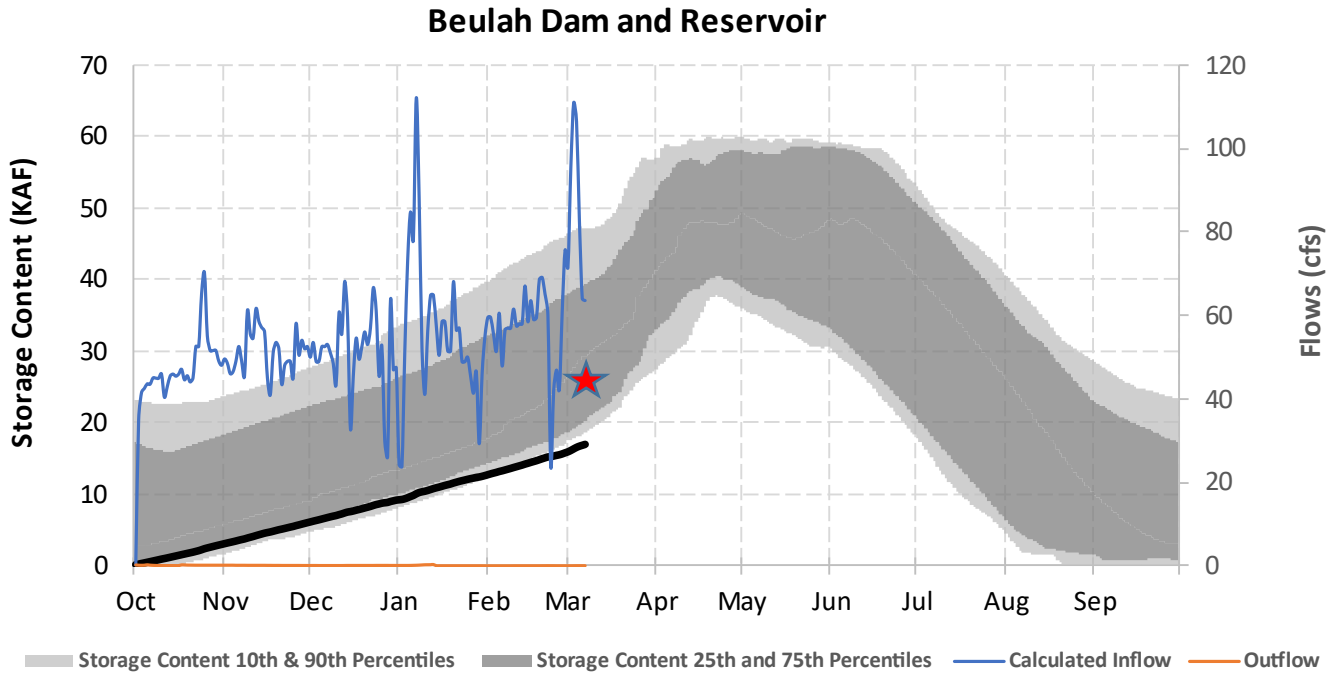
Reclamation March 1 Runoff Forecast
Mar-Jun: 60 kaf (64% 91-20 Ave)

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

★ WY2021 Elevation

Malheur River Basin





Reclamation January 1 Runoff Forecast
Jan-Jun: 70 kaf (88% 91-20 Ave)

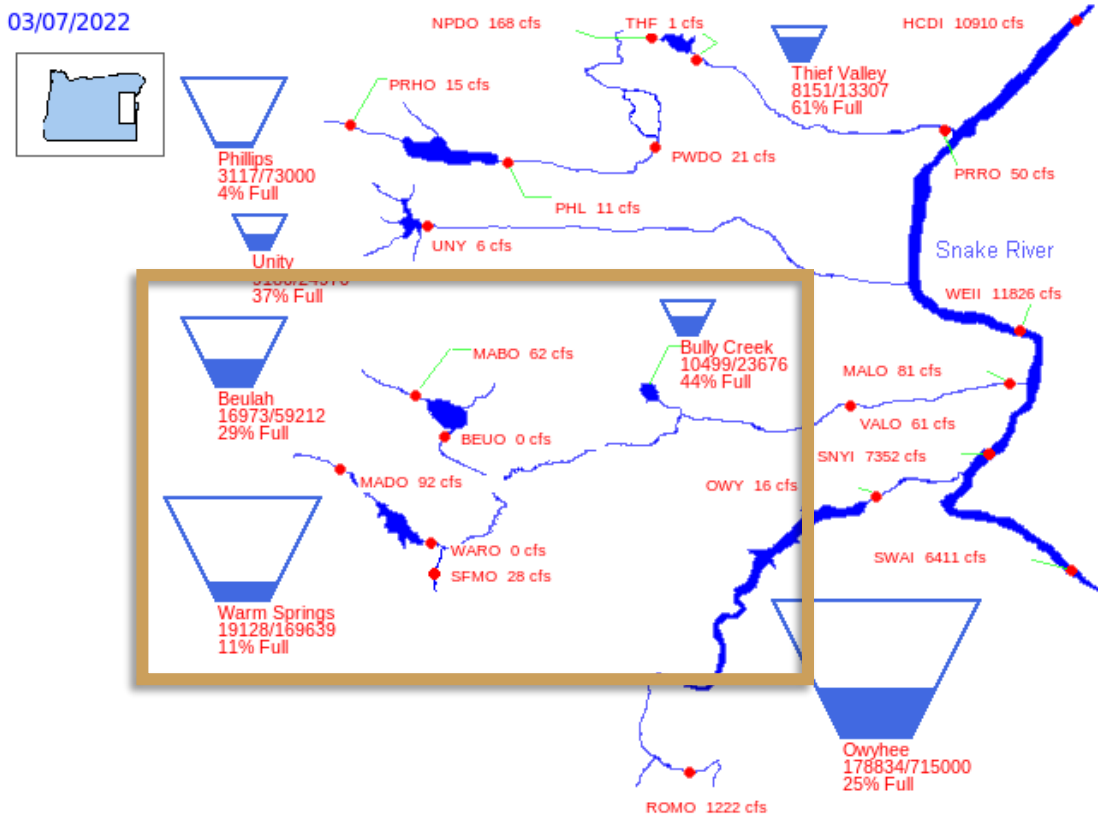
Reclamation February 1 Runoff Forecast
Feb-Jun: 53 kaf (71% 91-20 Ave)

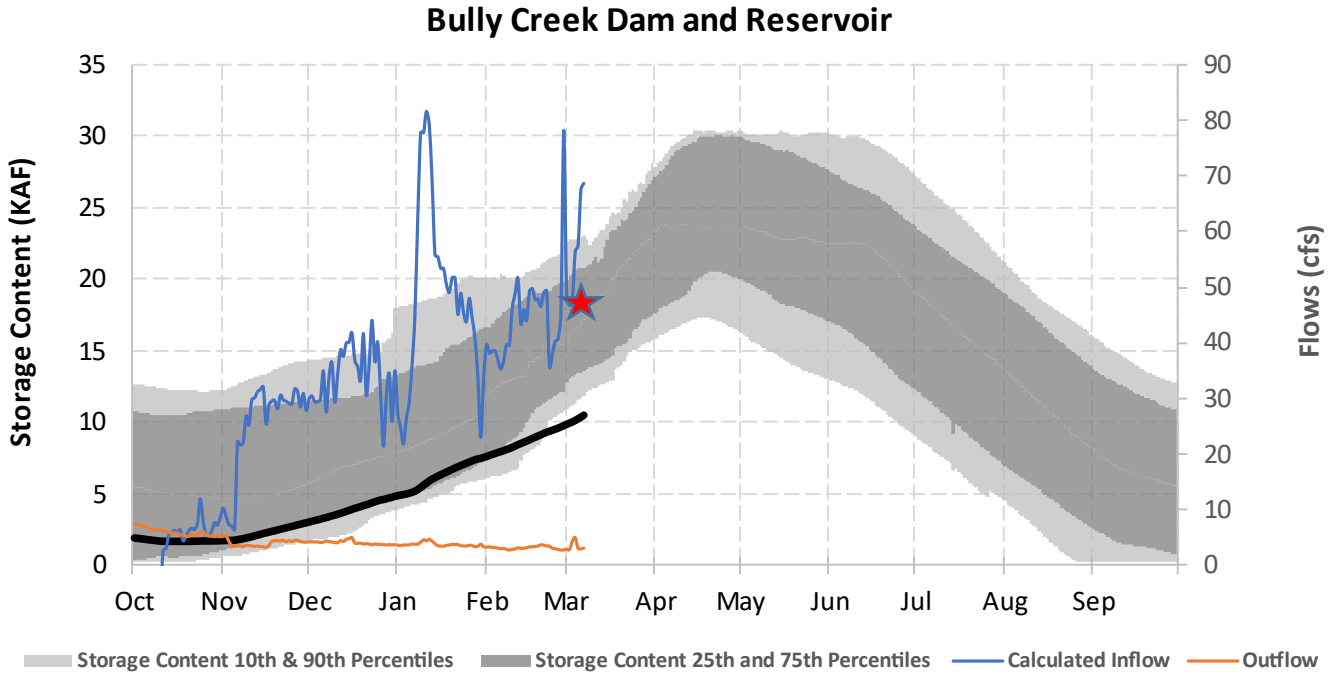
Reclamation March 1 Runoff Forecast
Mar-Jun: 45 kaf (67% 91-20 Ave)

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

★ WY2021 Elevation

Malheur River Basin





Reclamation January 1 Runoff Forecast
Jan-Jun: 24 kaf (81% 91-20 Ave)

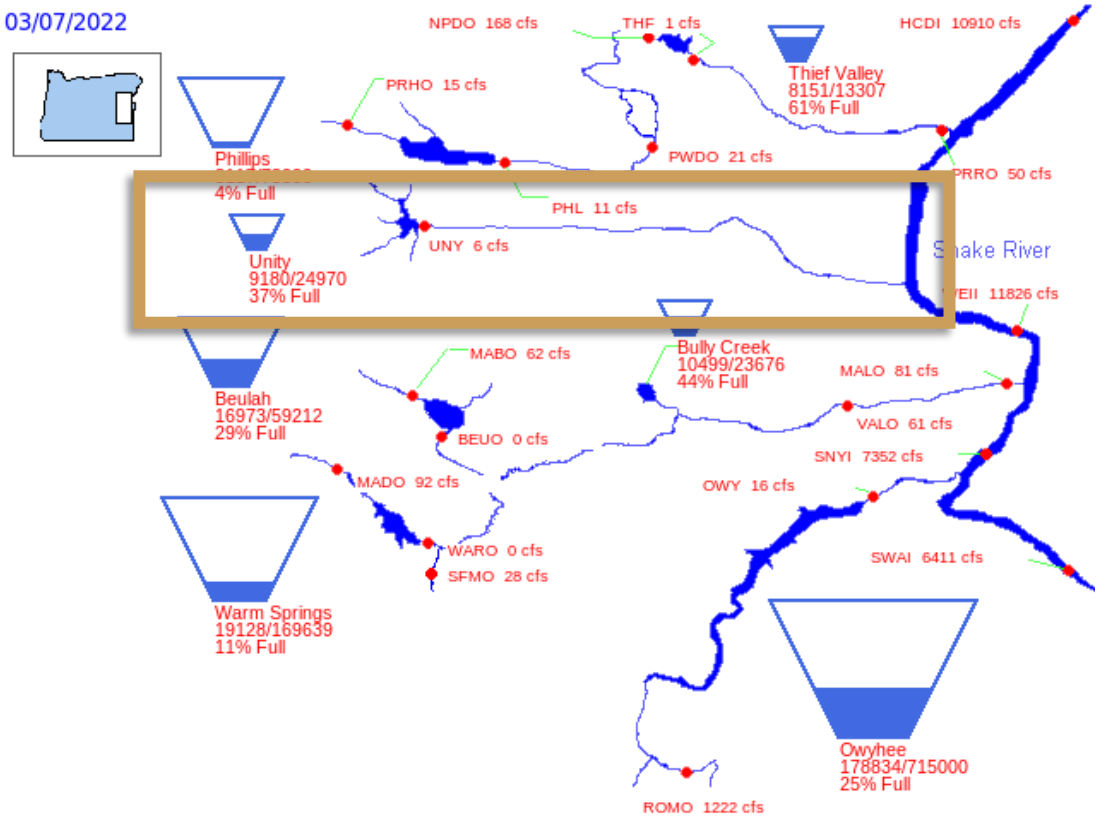
Reclamation February 1 Runoff Forecast
Feb-Jun: 19 kaf (73% 91-20 Ave)

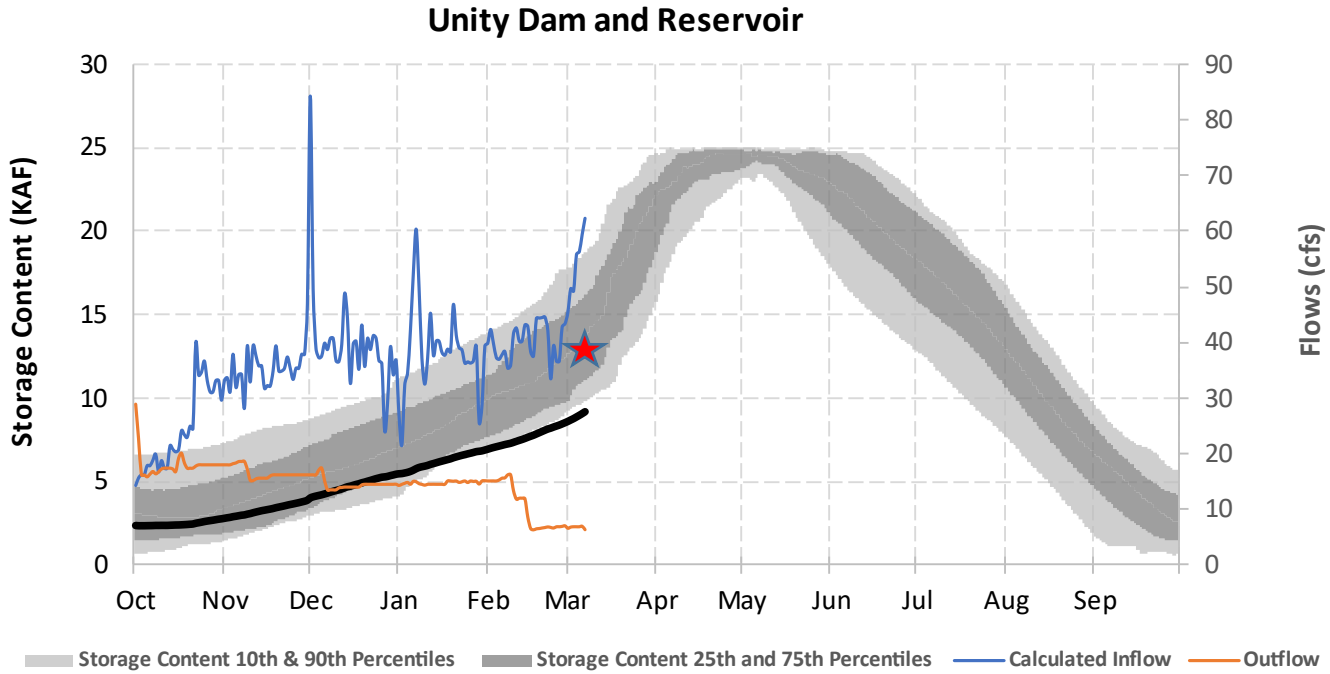
Reclamation March 1 Runoff Forecast
Mar-Jun: 10 kaf (47% 91-20 Ave)

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

★ WY2021 Elevation

Burnt River Basin





Reclamation January 1 Runoff Forecast
Jan-Jun: 45 kaf (89% 91-20 Ave)

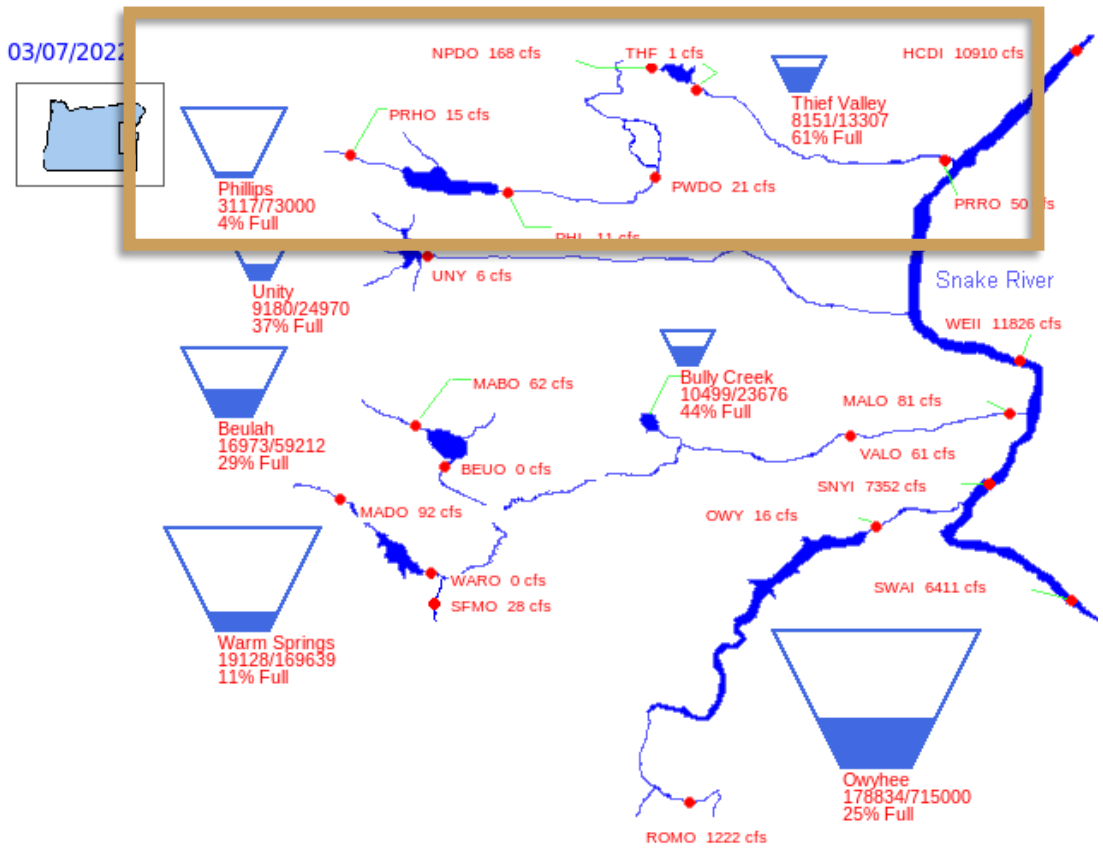
Reclamation February 1 Runoff Forecast
Feb-Jun: 41 kaf (87% 91-20 Ave)

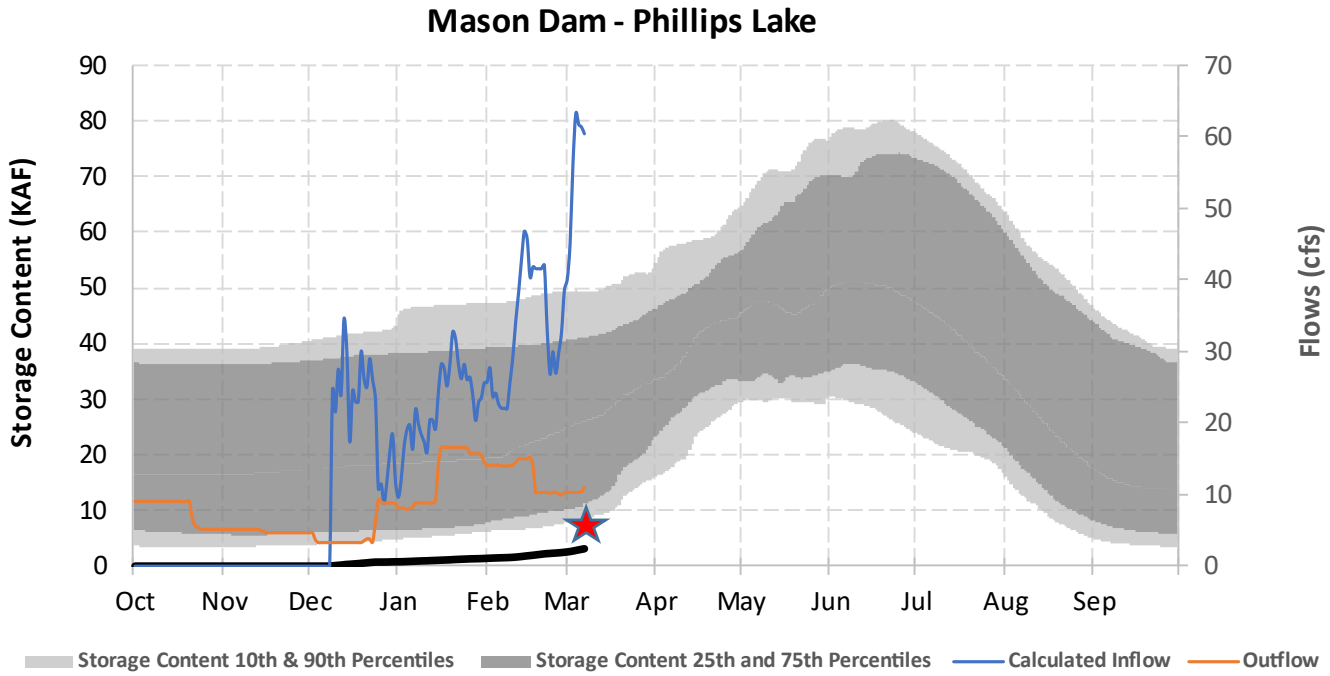
Reclamation March 1 Runoff Forecast
Mar-Jun: 29 kaf (68% 91-20 Ave)

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

★ WY2021 Elevation

Powder River Basin





Reclamation January 1 Runoff Forecast
Jan-Jul: 69 kaf (97% 91-20 Ave)

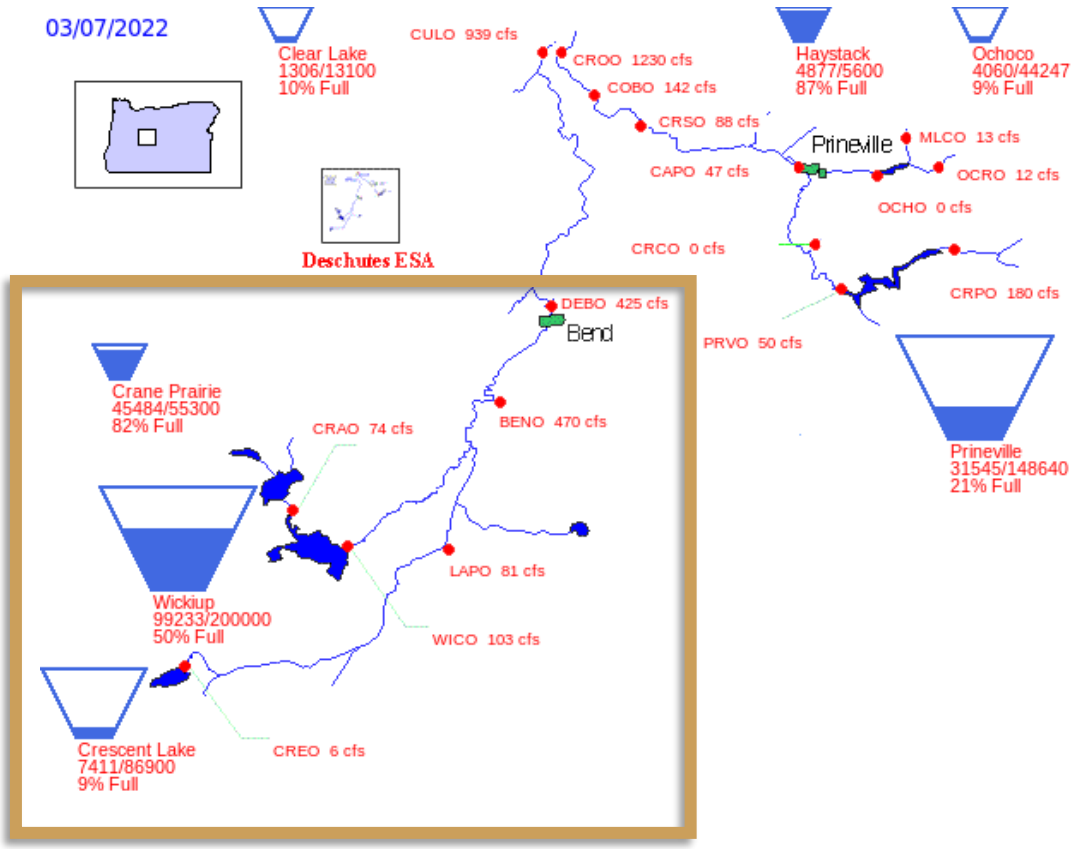
Reclamation February 1 Runoff Forecast
Feb-Jul: 55 kaf (80% 91-20 Ave)

Reclamation March 1 Runoff Forecast
Mar-Jul: 41 kaf (64% 91-20 Ave)

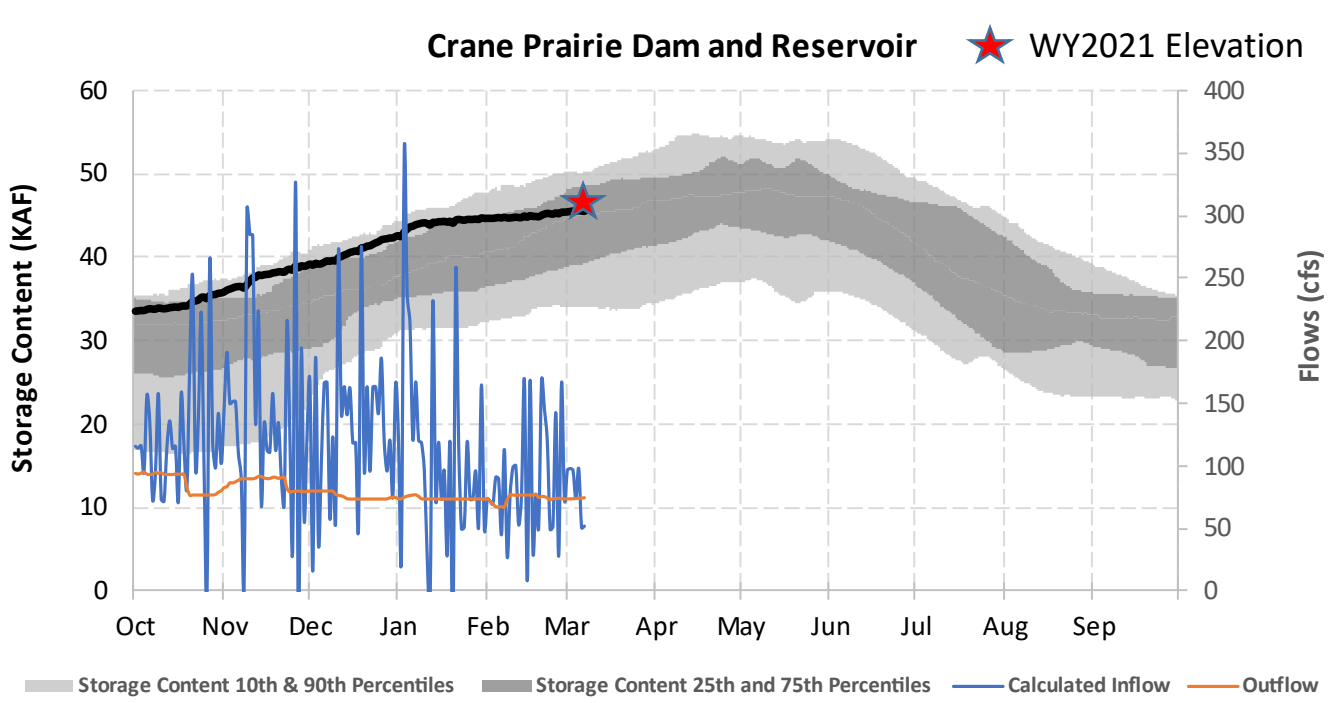
★ WY2021 Elevation

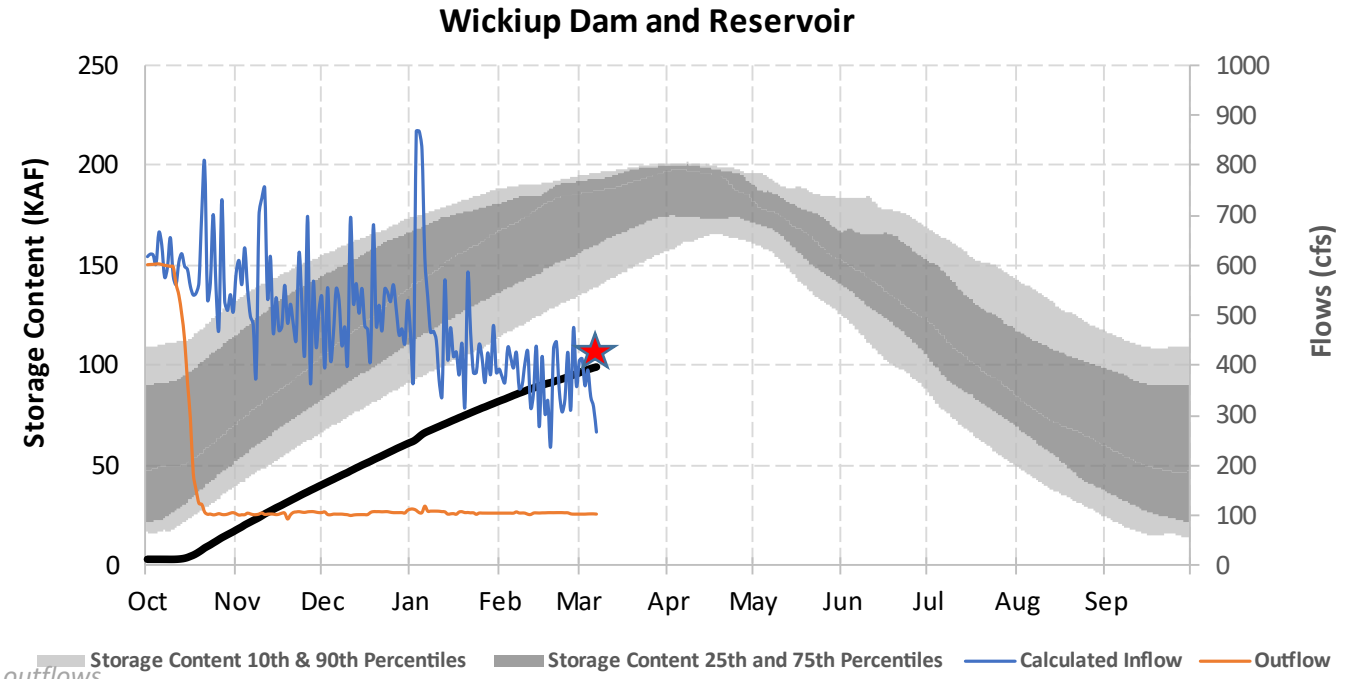
*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Deschutes River Basin



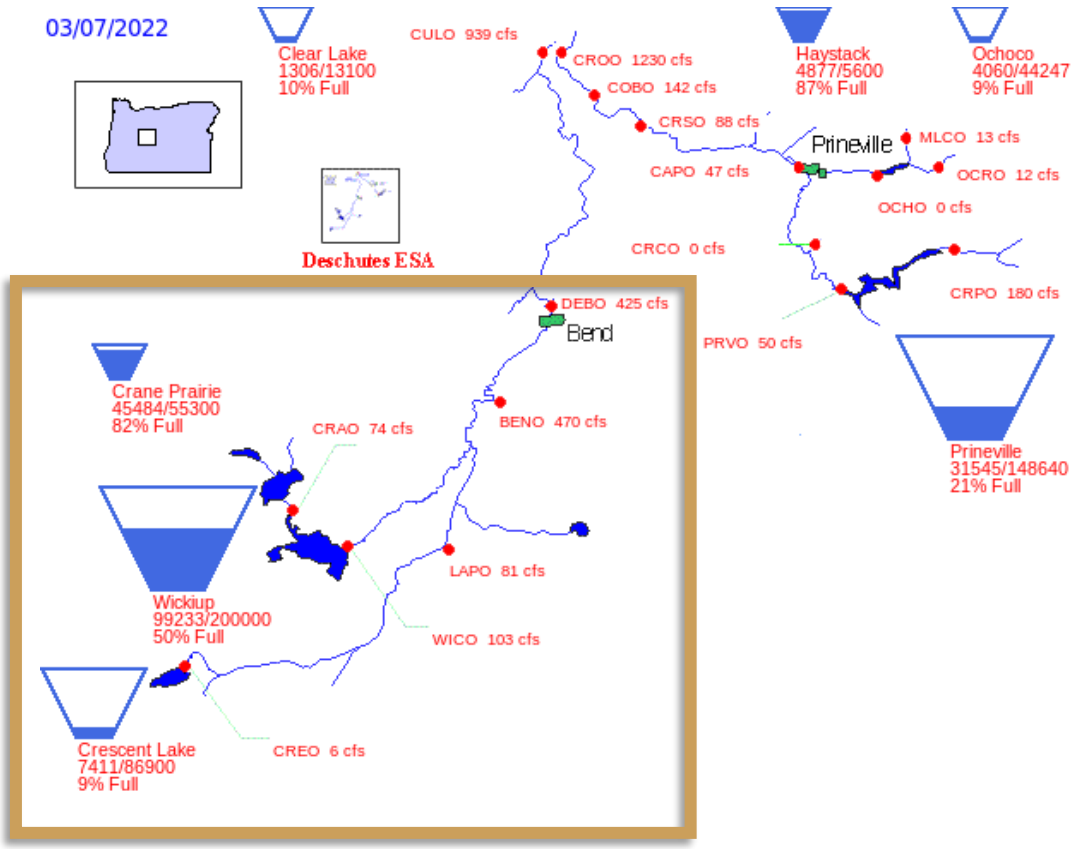
Supports Crook and Jefferson County Drought Declarations

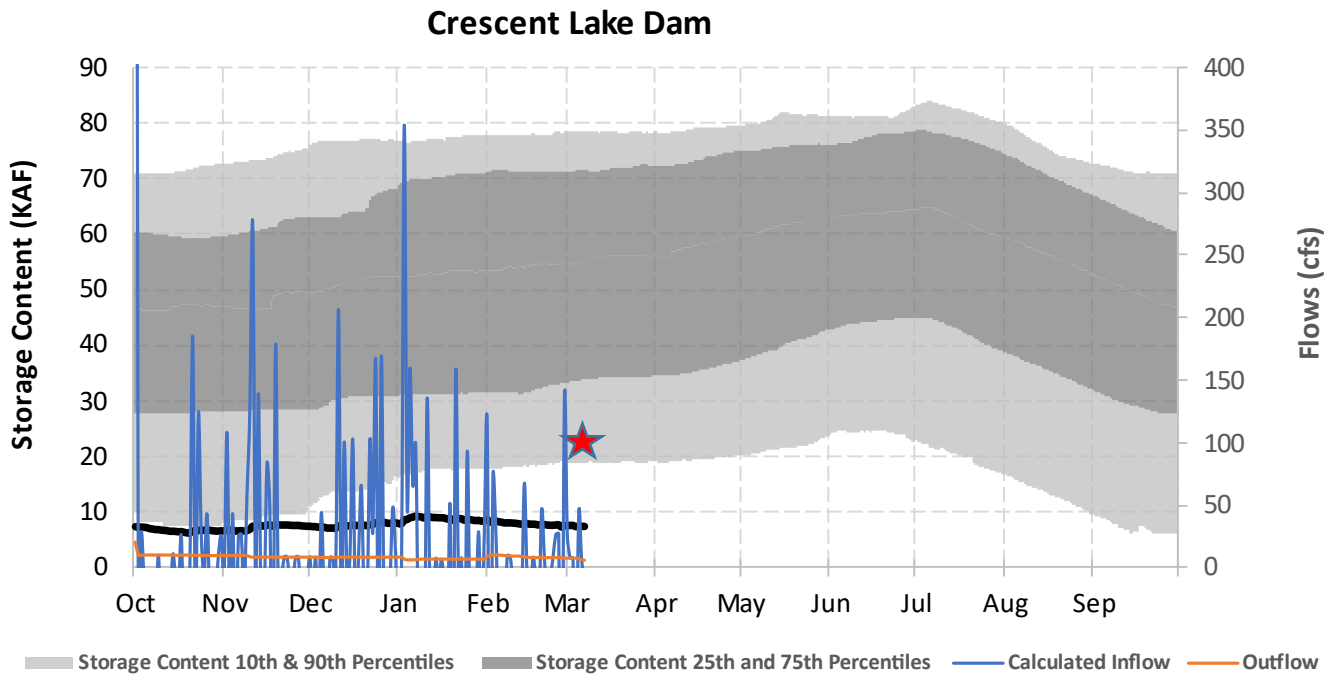




*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Deschutes River Basin

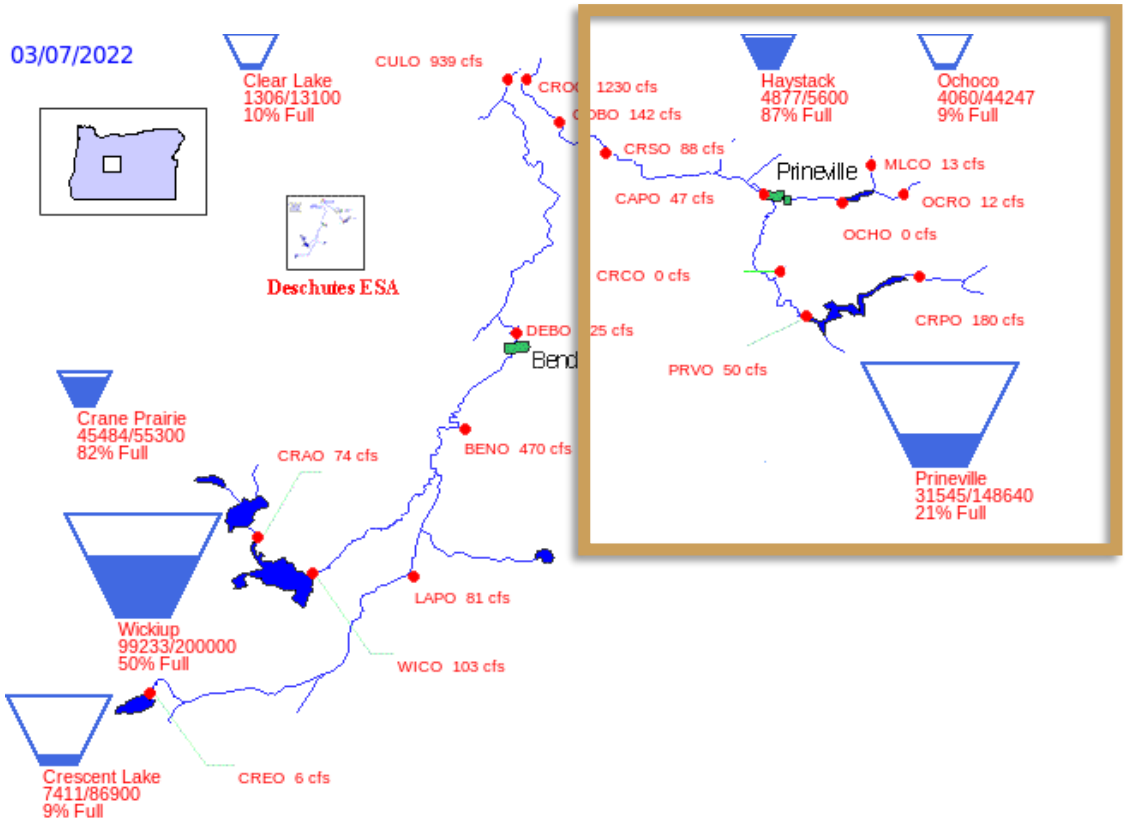


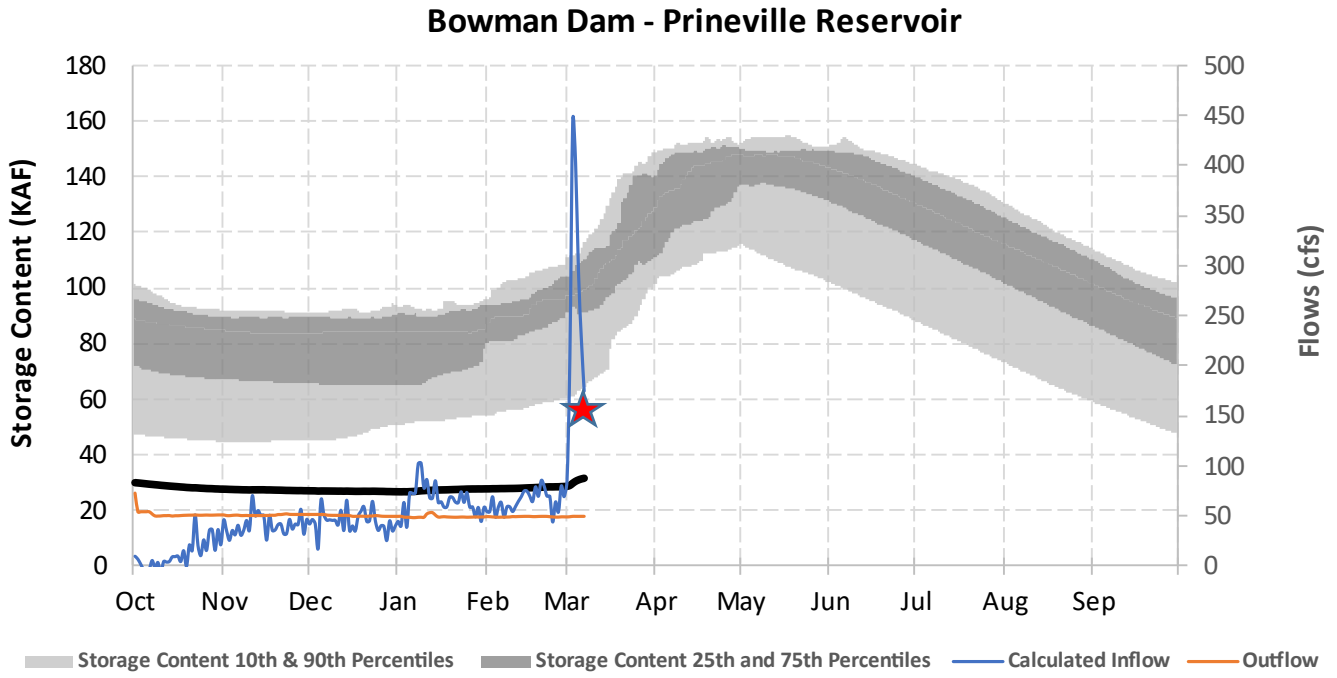


*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

★ WY2021 Elevation

Crooked River Basin





Reclamation January 1 Runoff Forecast
Jan-Aug: 166 kaf (91% 91-20 Ave)

Reclamation February 1 Runoff Forecast
Feb-Aug: 99 kaf (60% 91-20 Ave)

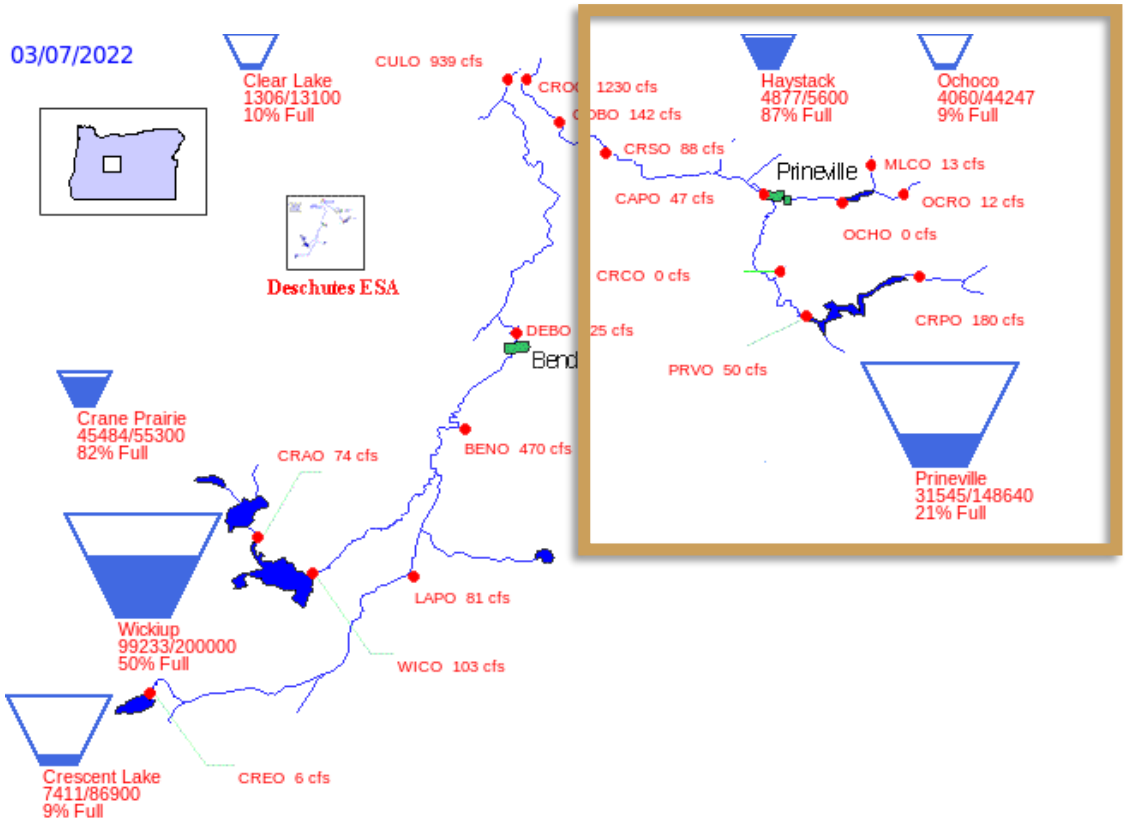
Reclamation March 1 Runoff Forecast
Mar-Aug: 67 kaf (48% 91-20 Ave)

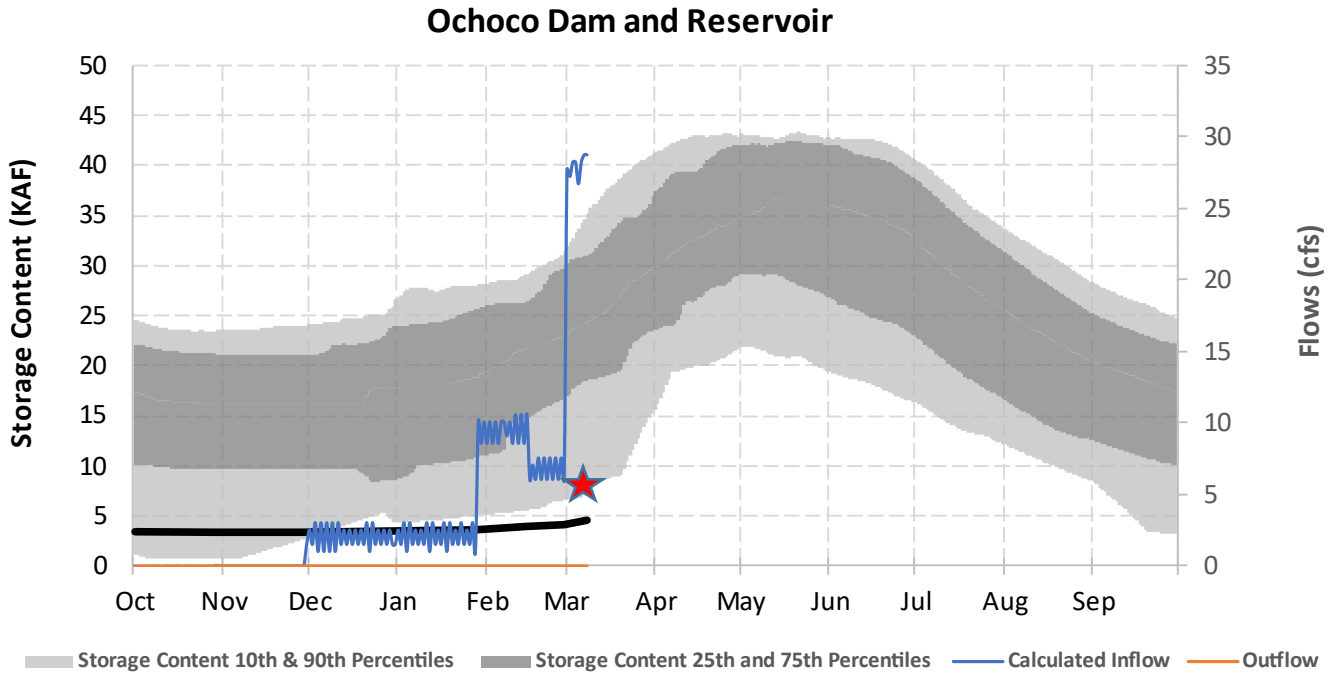
Supports Crook and Jefferson County Drought Declarations

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

★ WY2021 Elevation

Crooked River Basin





Reclamation January 1 Runoff Forecast
Jan-Jun: 35 kaf (88% 91-20 Ave)

Reclamation February 1 Runoff Forecast
Feb-Jun: 20 kaf (57% 91-20 Ave)

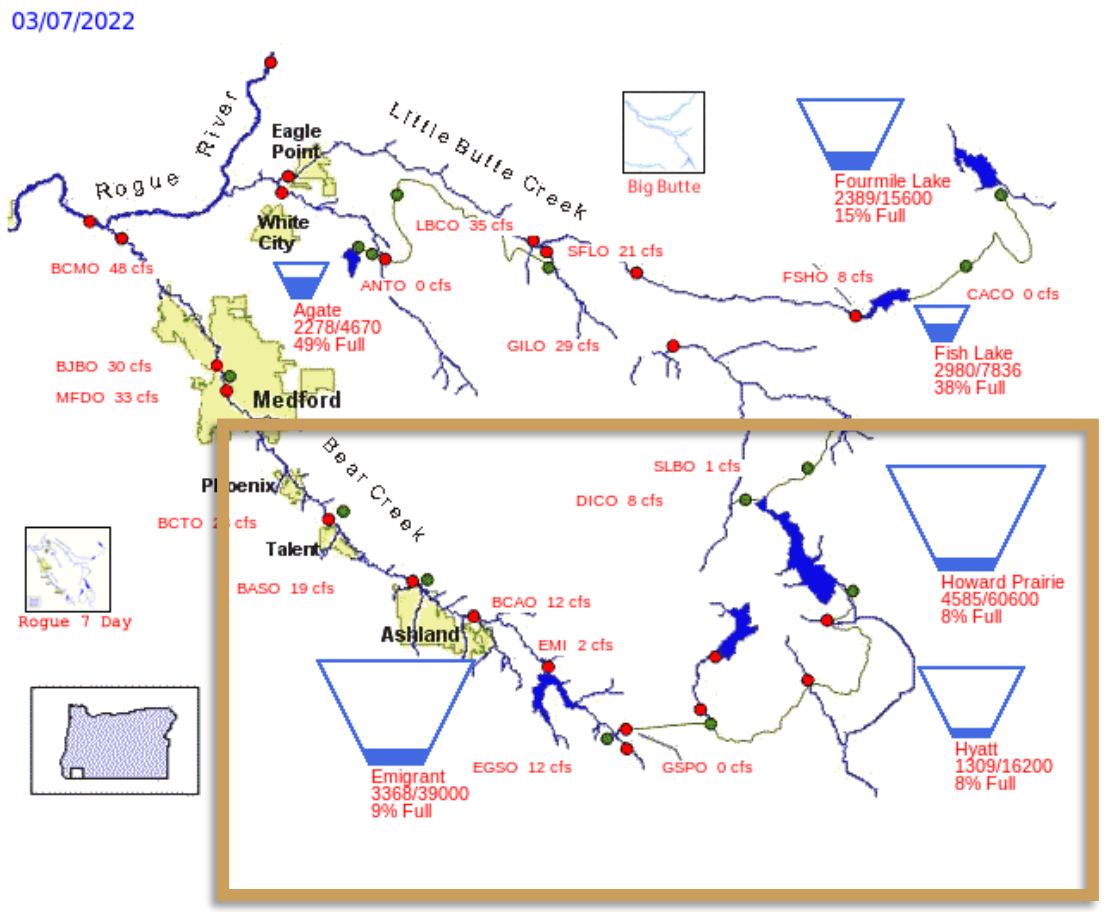
Reclamation March 1 Runoff Forecast
Mar-Jun: 16 kaf (53% 91-20 Ave)

Supports Crook County Drought Declaration

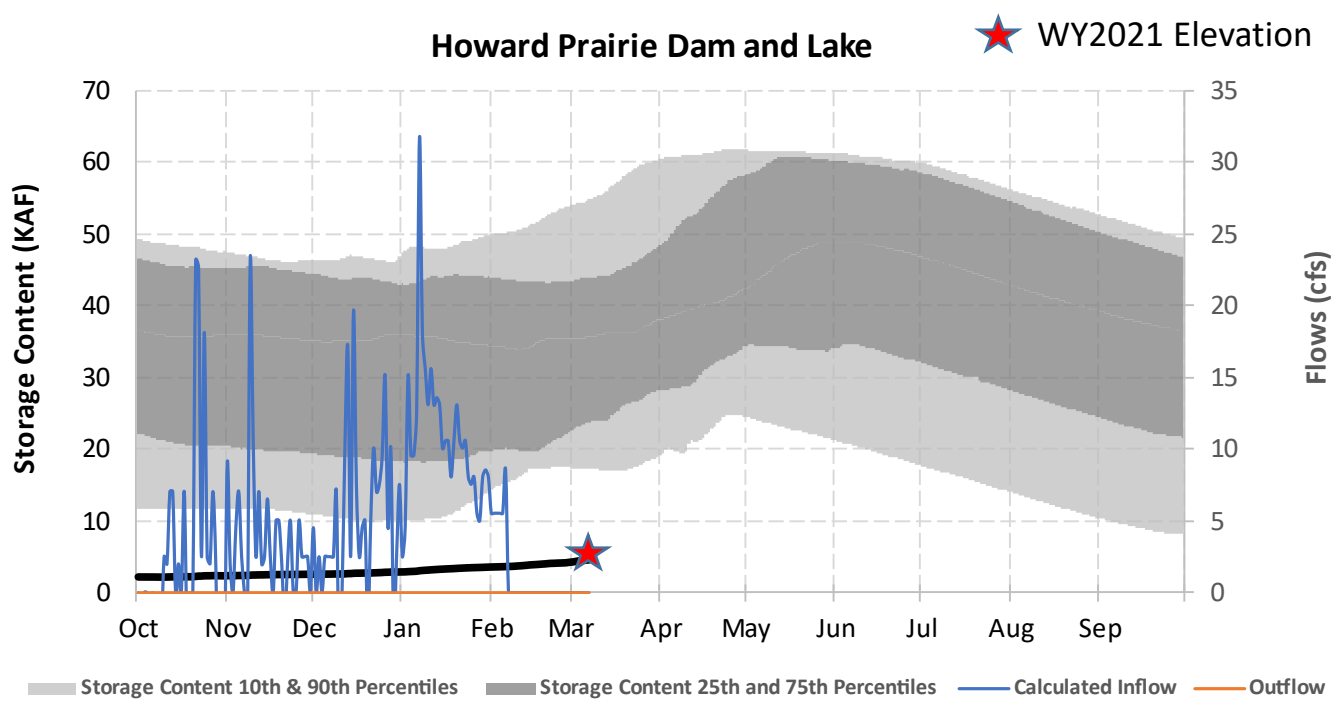
*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

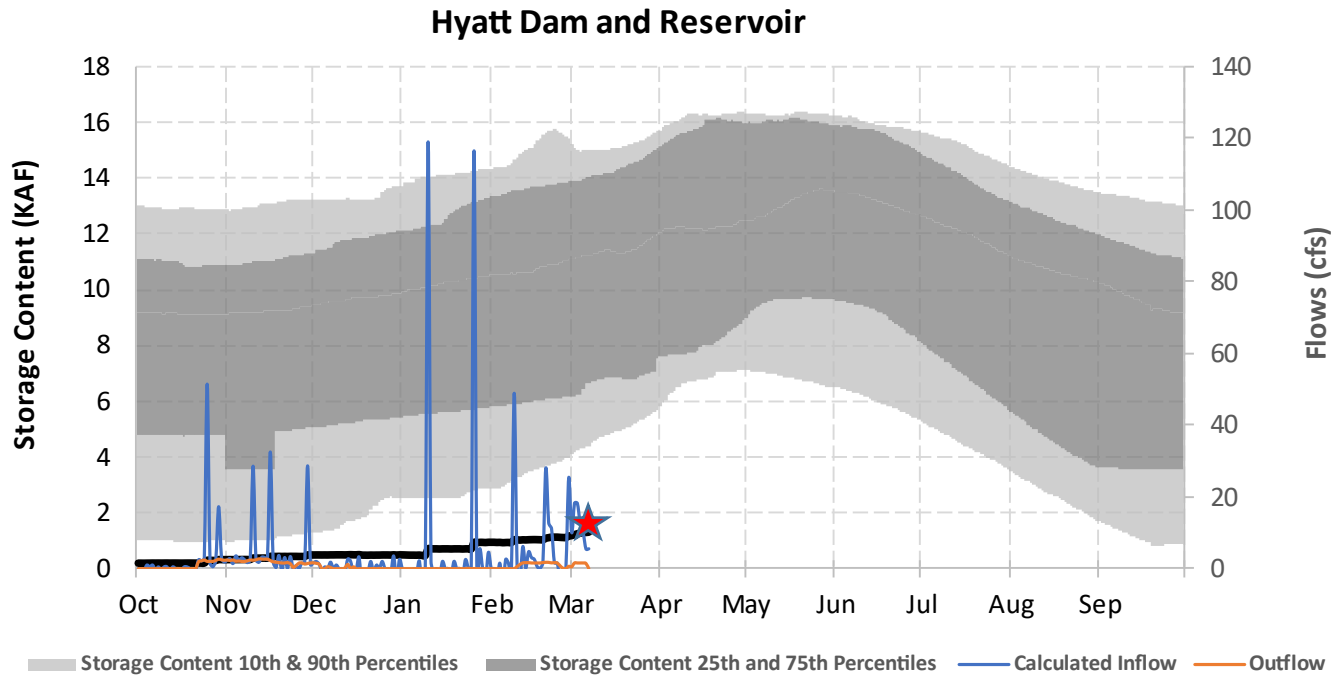
★ WY2021 Elevation

Rogue River Basin



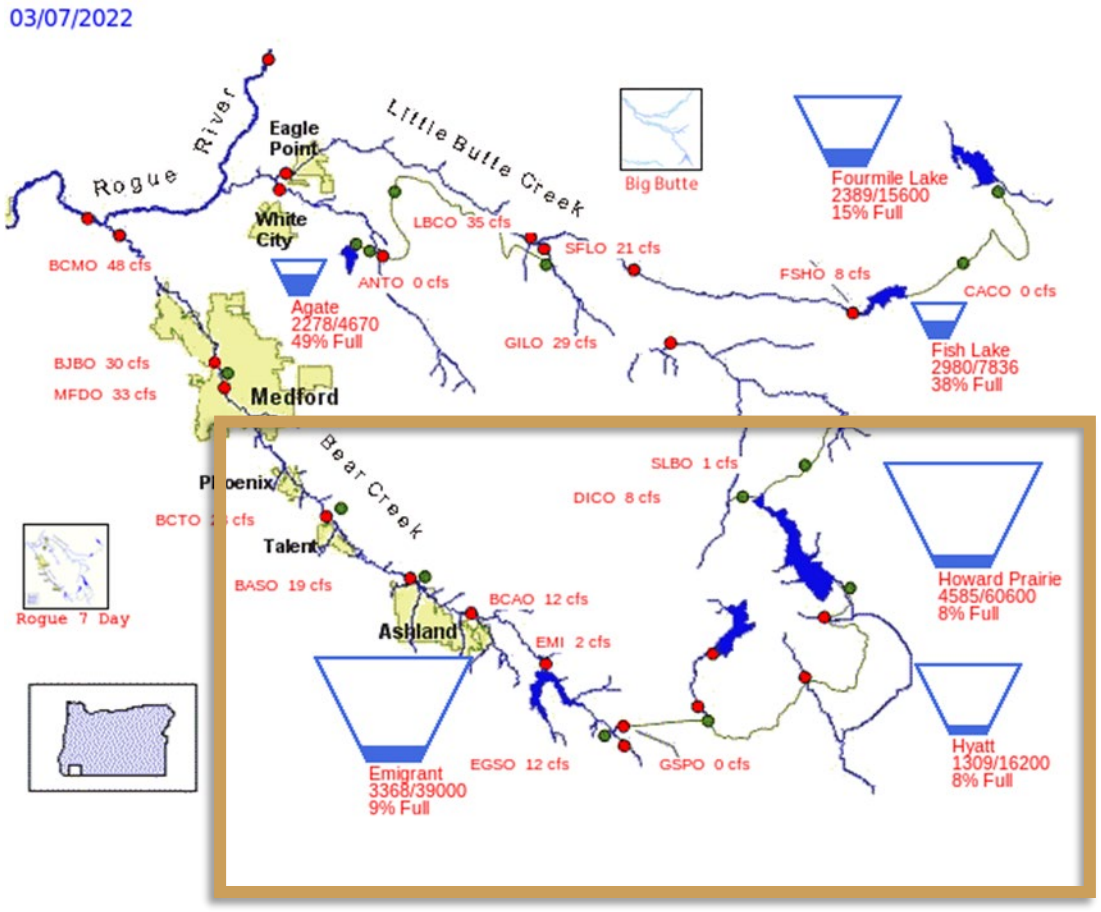
Supports Klamath County Drought Declaration

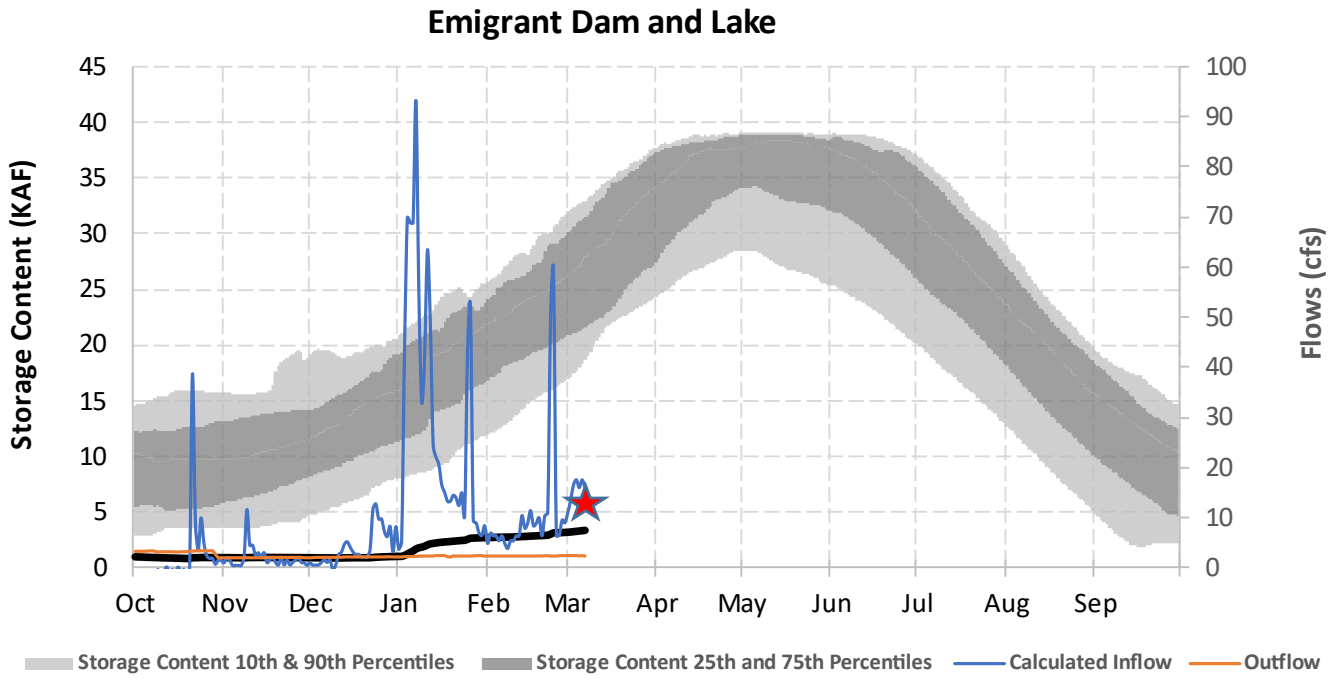




*Graphed projections are the 10th, 50th, and 90th percentile storage values based on historical inflows and outflows

Rogue River Basin



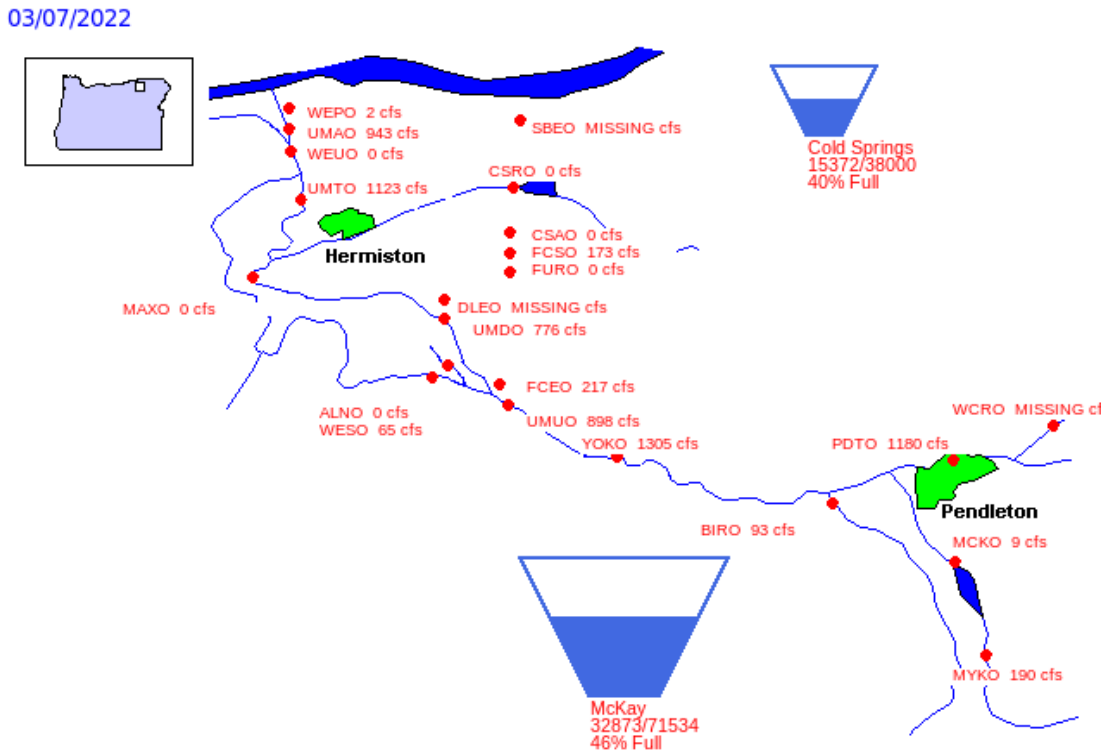


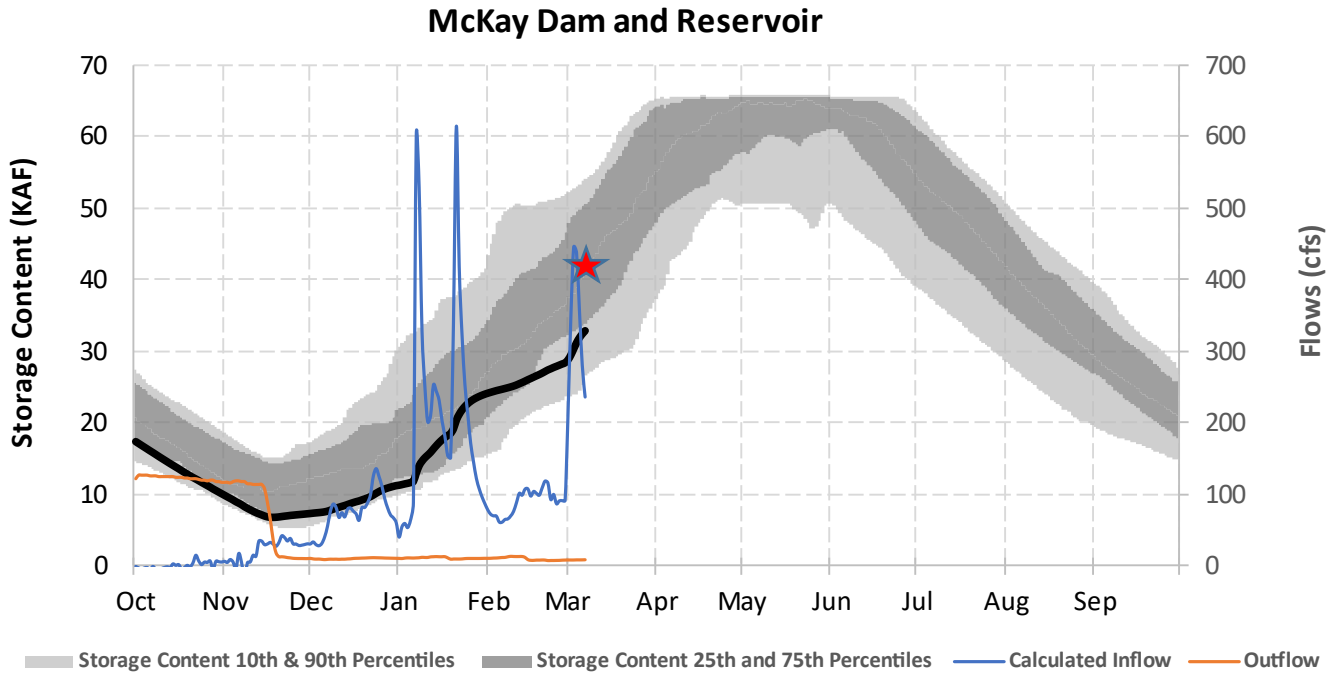
Supports Klamath County Drought Declaration

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

★ WY2021 Elevation

Umatilla River Basin





Neighboring Morrow County Drought Declaration

Reclamation January 1 Runoff Forecast
Jan-Jun: 75 kaf (107% 91-20 Ave)

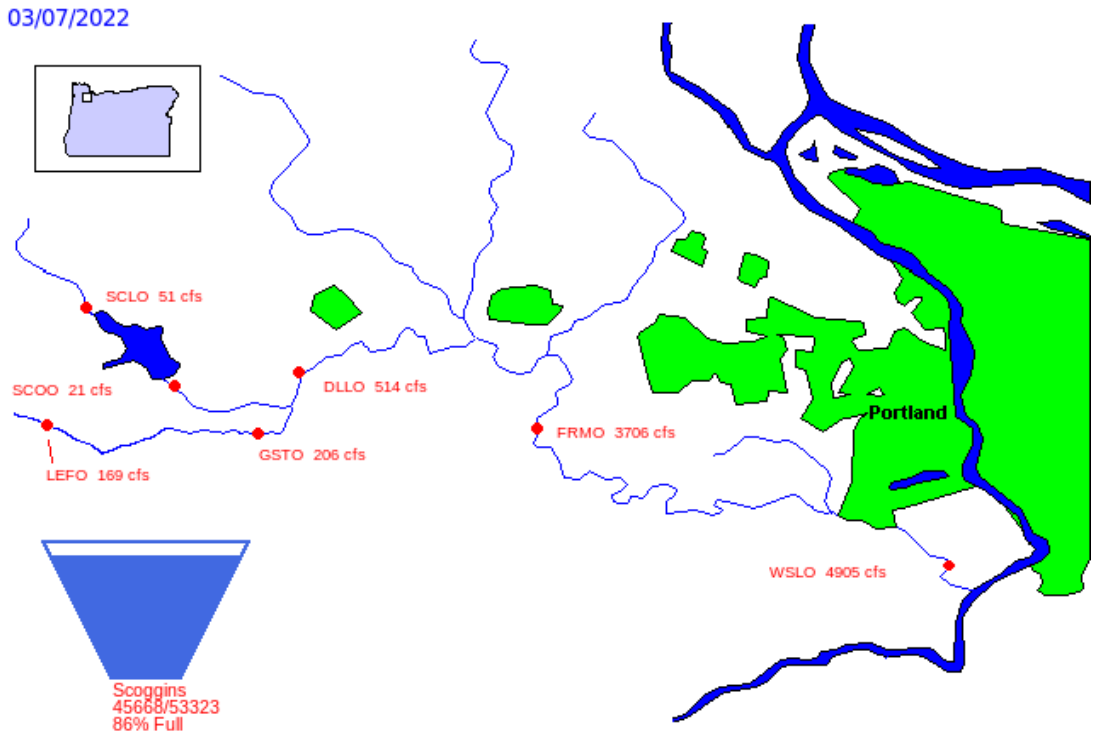
Reclamation February 1 Runoff Forecast
Feb-Jun: 61 kaf (103% 91-20 Ave)

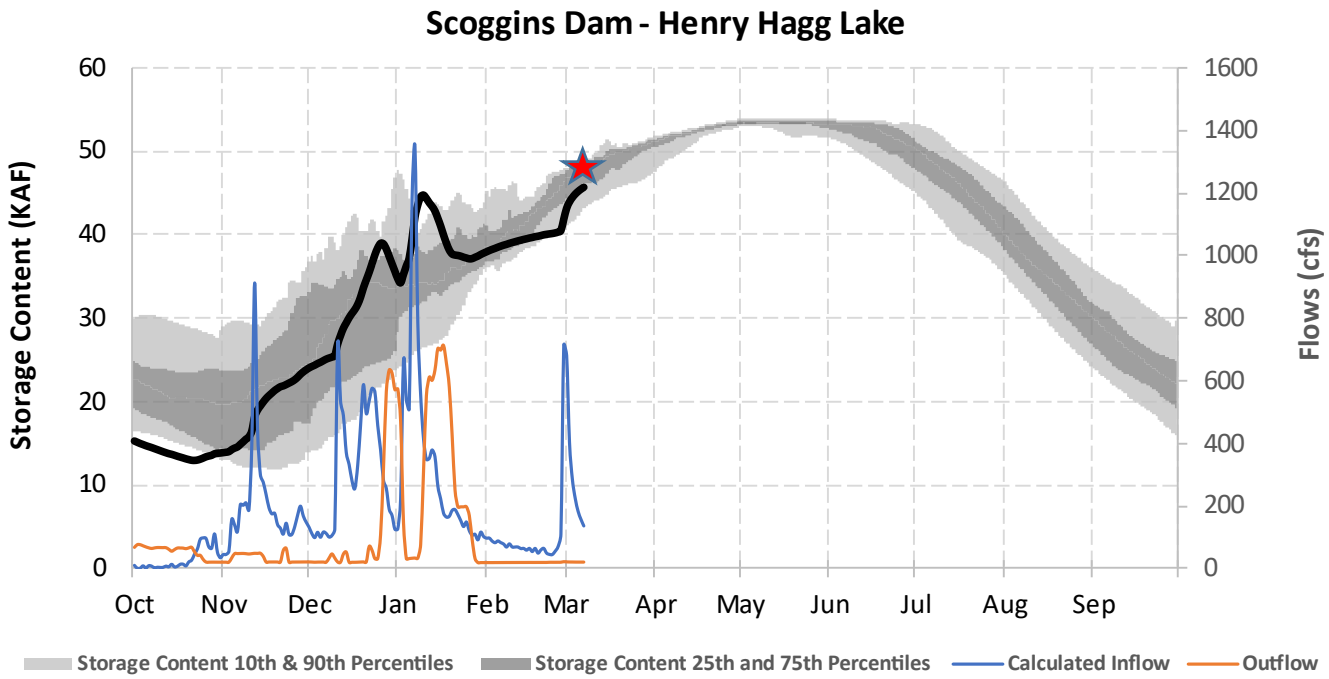
Reclamation March 1 Runoff Forecast
Mar-Jun: 46 kaf (98% 91-20 Ave)

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

★ WY2021 Elevation

Tualatin River Basin





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

★ WY2021 Elevation

Peter Cooper – Columbia Pacific Northwest Regional Office

pcooper@usbr.gov

208.378.5037

BUREAU OF RECLAMATION