BUREAU OF RECLAMATION

Crooked River Basin Monthly Report

January 8, 2025

State Park Webcam
Image 1-8-25

Crooked River Basin - Monthly Report

Data as of Jan 7, 2025

Prineville Reservoir - Bowman Dam

			Trends
Storage:	94,588	ac-ft (64 % Full)	▲ *ac-ft/day 7-day average*
Calculated Inflows:	1,694	cfs (7-day average)	*243 % of previous 30-year WY-to-date average*
Upstream Gage Flows:	1,779	cfs (7-day average)	
Outflow:	1,301	cfs (7-day average)	

Ochoco Reservoir & Dam

			Trends
Storage:	25,996	ac-ft (59 % Full)	▲ *ac-ft/day 7-day average*
Calculated Inflows:	243	cfs (7-day average)	*153 % of previous 30-year WY-to-date average*
Total Outflow:	123	cfs (7-day average)	

Snowpack

Derr:	14.1	inches (216 % of previous 30-year average)
Ochoco Meadows:	10.7	inches (206 % of previous 30-year average)
Snow Mountain:	13.2	inches (265 % of previous 30-year average)

Precipitation

Derr:	16.8	inches (158 % of previous 30-year average)
Ochoco Meadows:	17.0	inches (160 % of previous 30-year average)
Snow Mountain:	16.8	inches (174 % of previous 30-year average)

Temperatures 7-Day Min & Max

Above Prineville:	16.3 - 43.5	degrees Fahrenheit
Near Prineville:	17.9 - 52.3	degrees Fahrenheit
Ochoco Ranger Station:	13.4 - 42.1	degrees Fahrenheit

Water Accounting

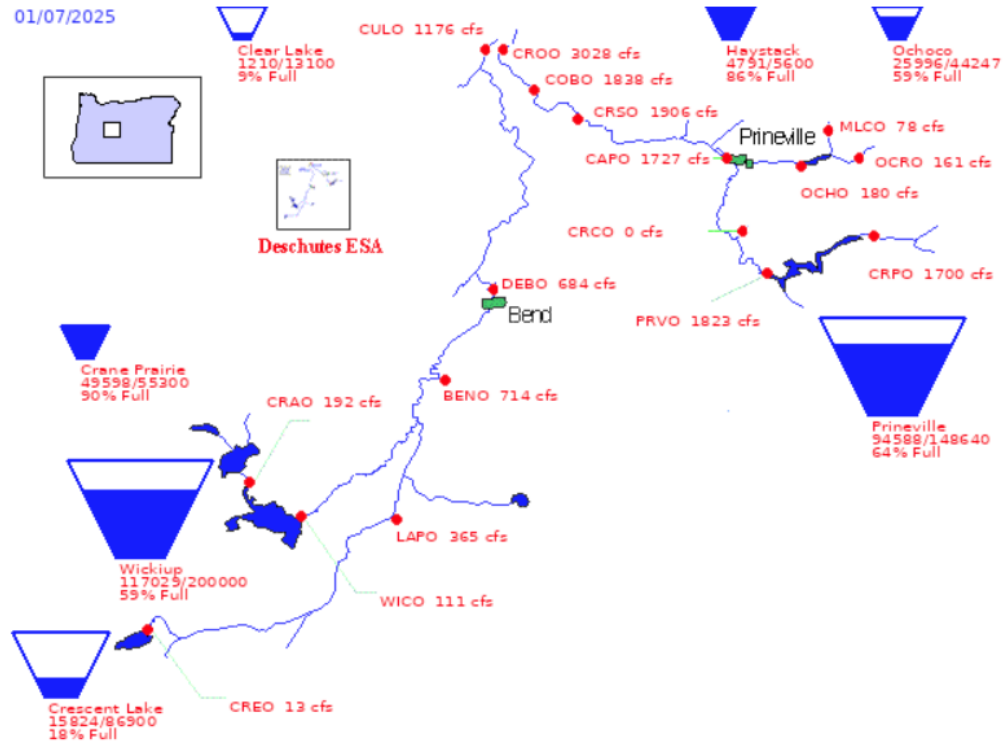
Day of Allocation was 5/28/2024 - WY2024 Allocations were distributed 6/17/2024
Data through 10/15/2024 - WY2024 Final and Carryover Calculations are in Process

	2024 Allocations (ac-ft)	Release-to-date (ac-ft) 10/15	Balance (ac-ft) 10/16
Contracted	68,213	44,179	24,035
Uncontracted	60,055	4,019	56,036
CoP	4,899	4,899	0
NUID	9,606	9,606	0
Total	142,773	62,703	80,070

Climate Projections & Forecasts

2-week outlook:	Below Normal Temperature & Below Normal Precipitation
1-month outlook:	Above Normal Temperature & Above Normal Precipitation
Seasonal outlook:	Below Normal Temperature & Above Normal Precipitation
Climatic:	Imminent transition to La Nina persisting through March 2025, ENSO-neutral through summer

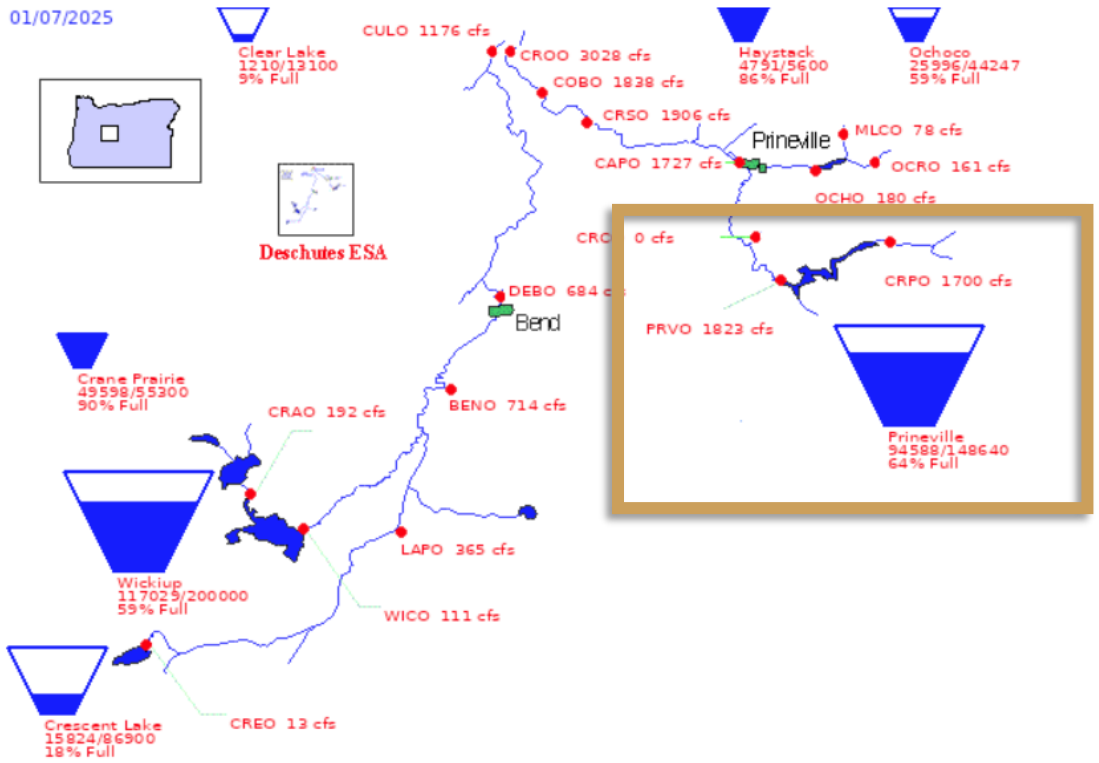
US Bureau of Reclamation, Pacific Northwest Region
Major Storage Reservoirs in the Deschutes River Basin

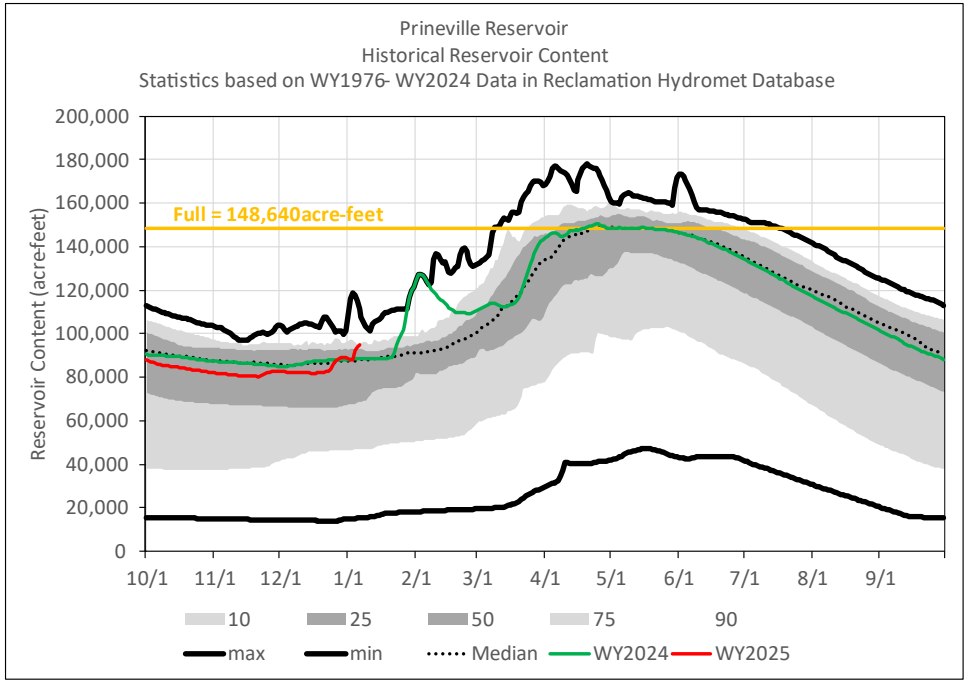


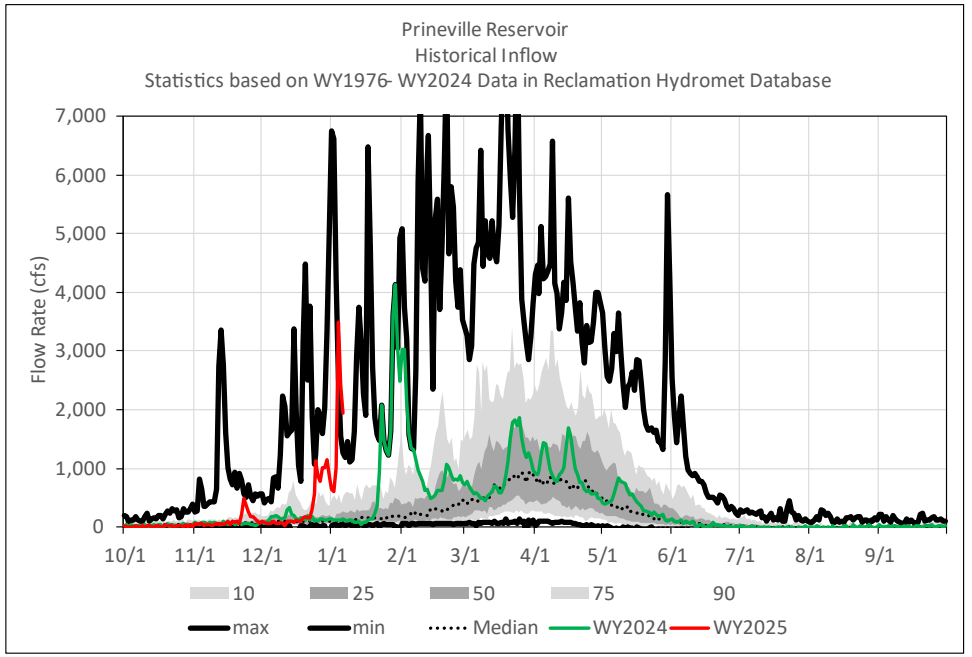
https://www.usbr.gov/pn/hydromet/destea.html

Prineville Reservoir

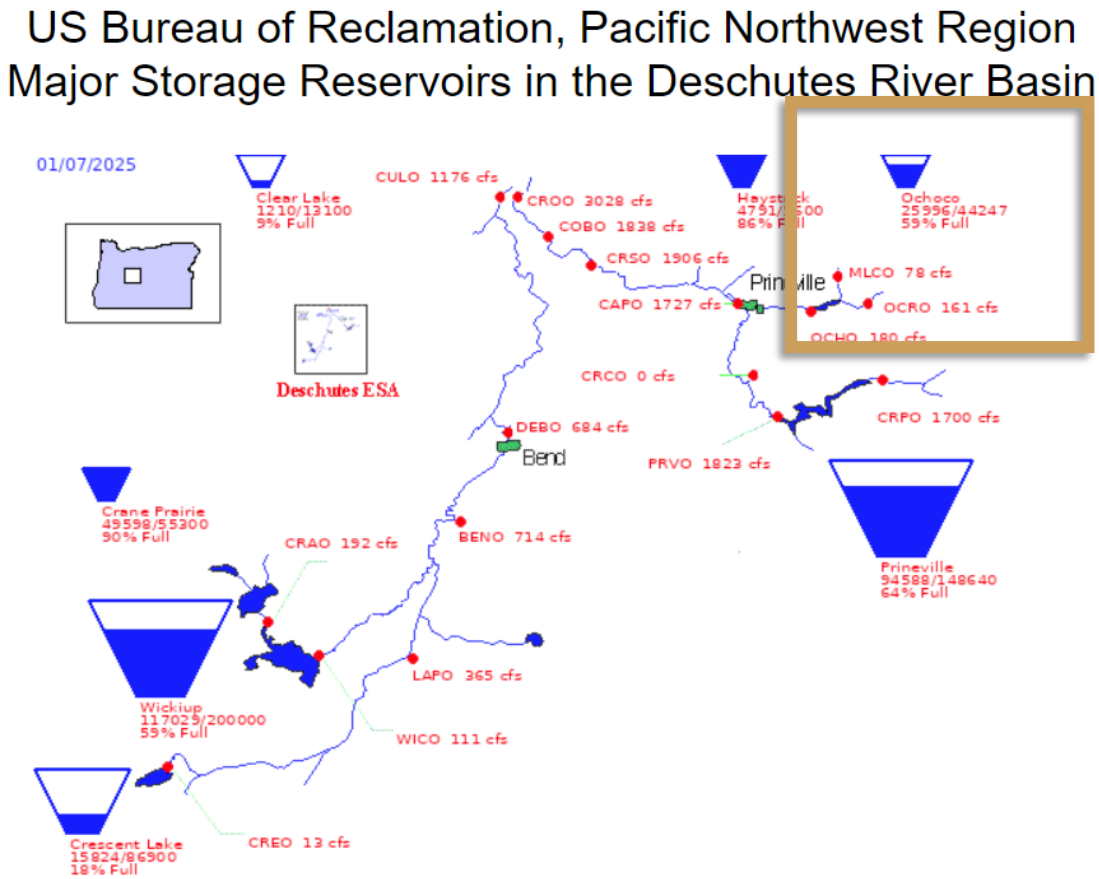
US Bureau of Reclamation, Pacific Northwest Region
Major Storage Reservoirs in the Deschutes River Basin

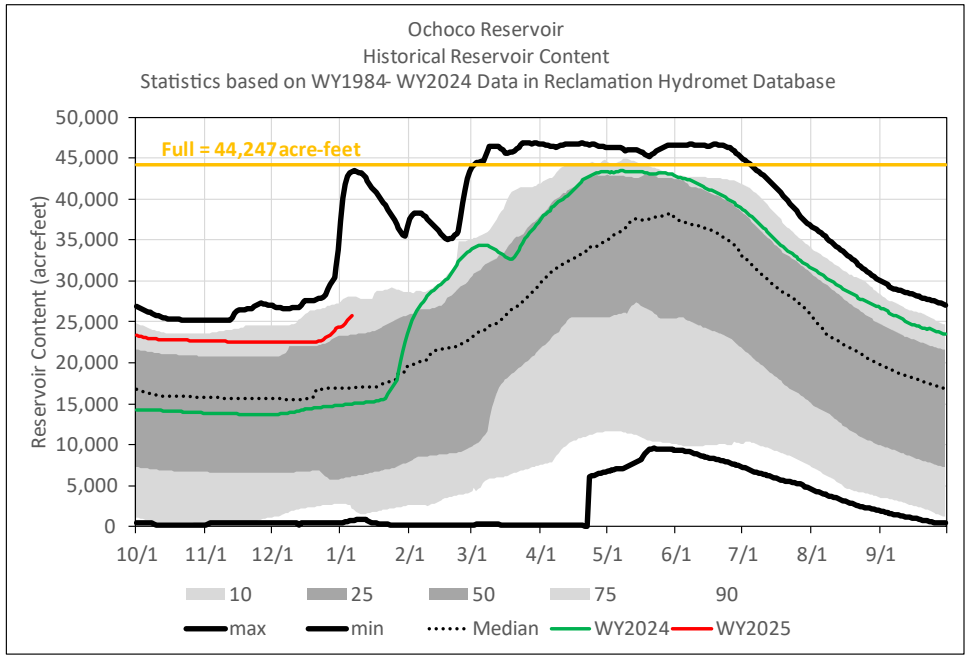


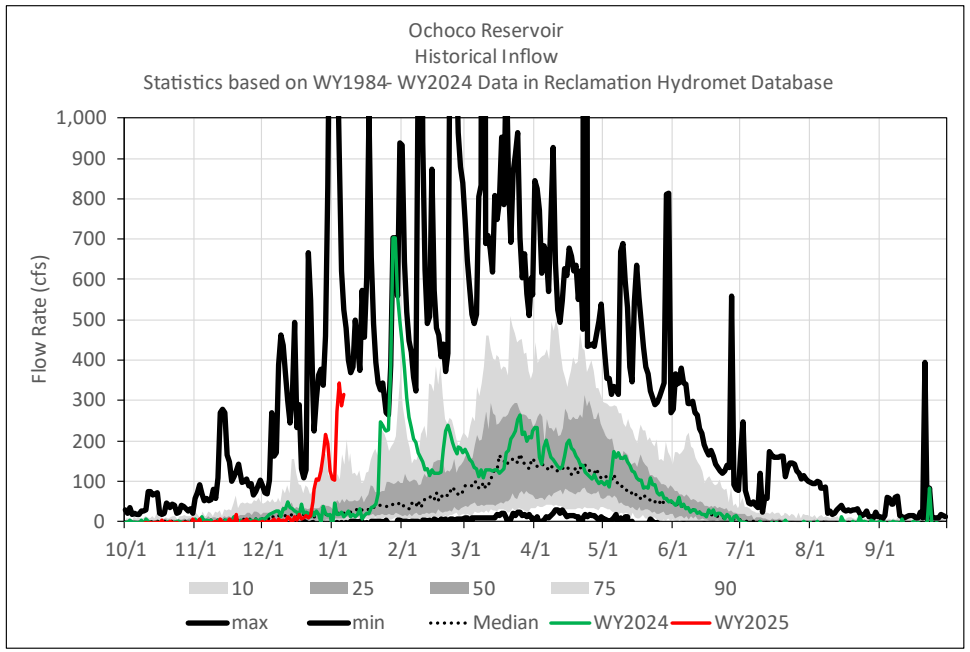




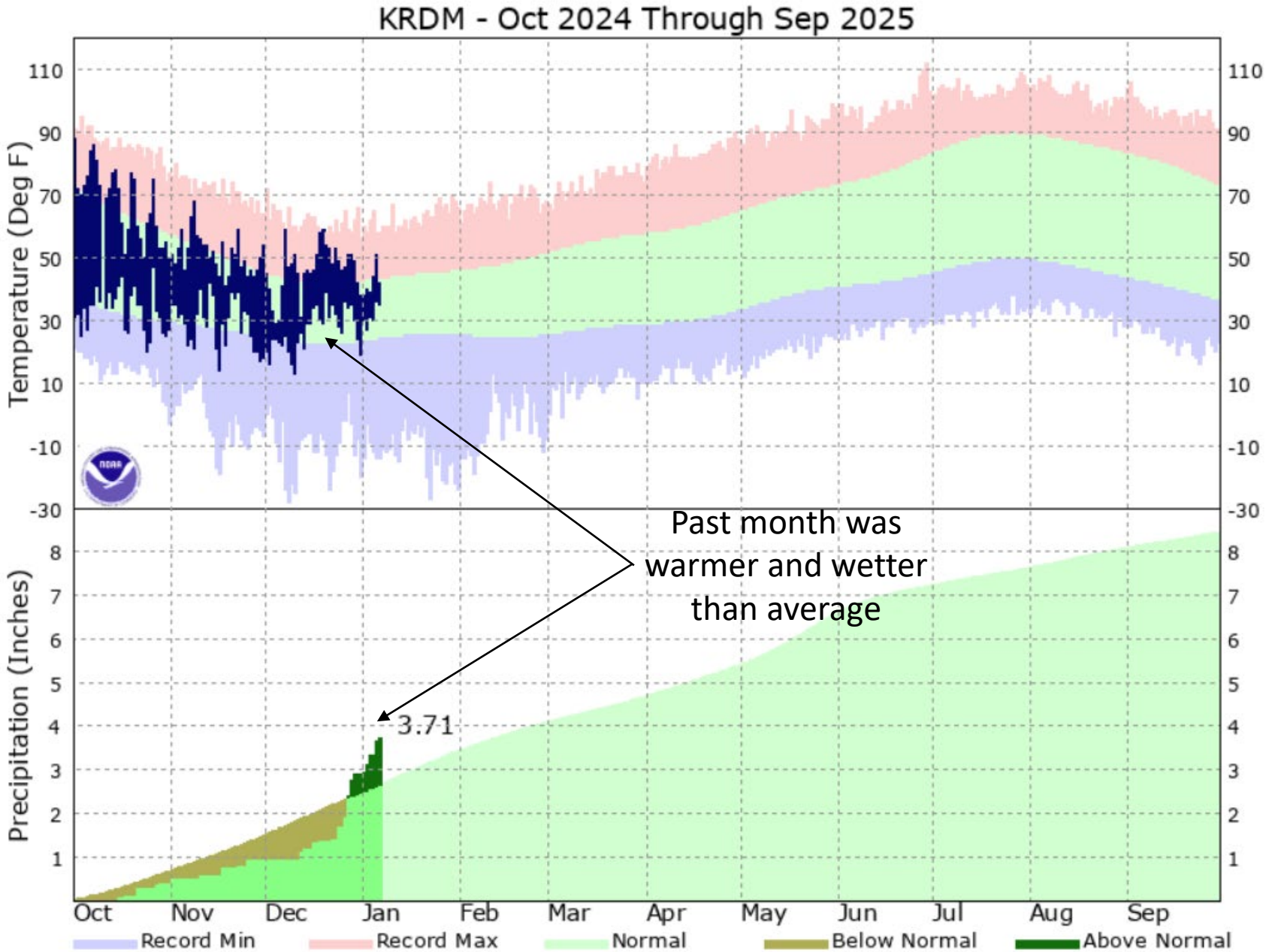
Ochoco Reservoir



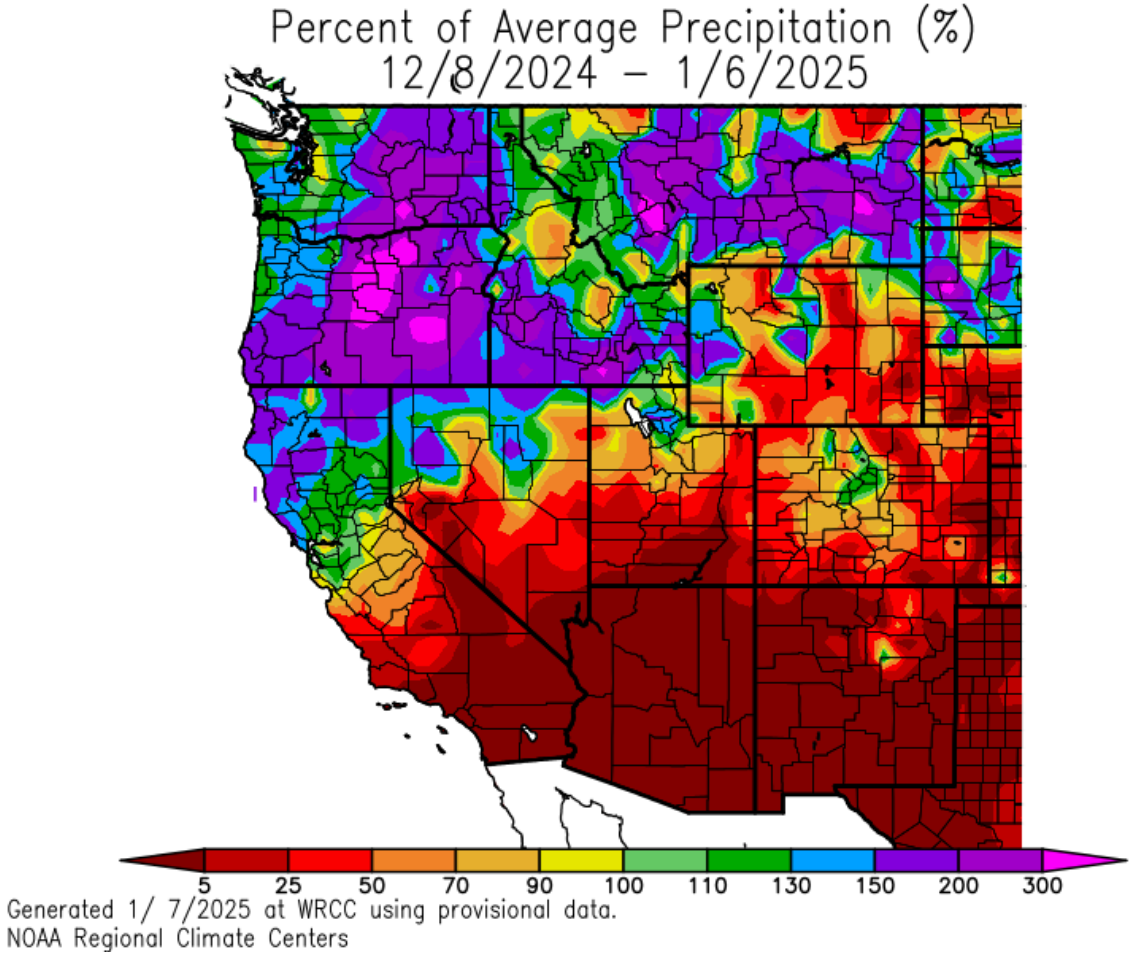




Redmond Airport



https://www.weather.gov/pdt/CliPlot



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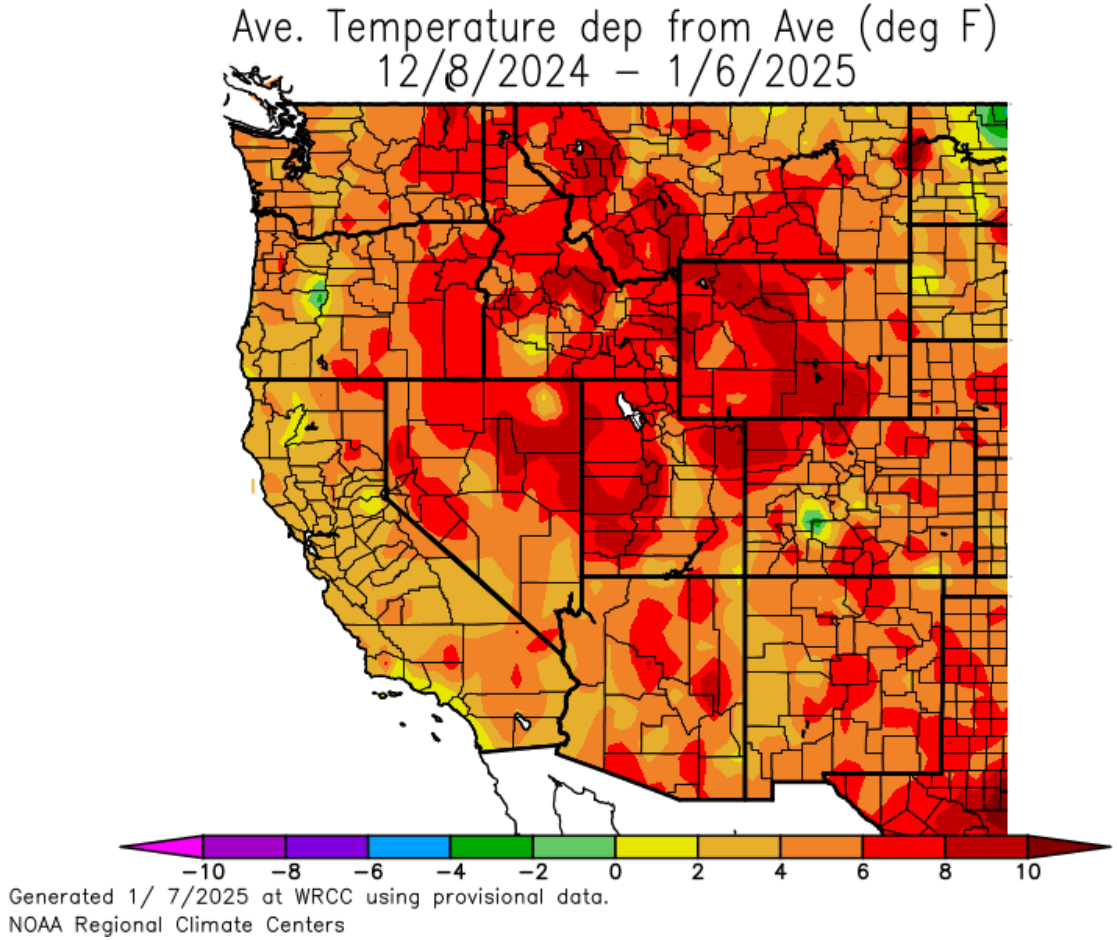

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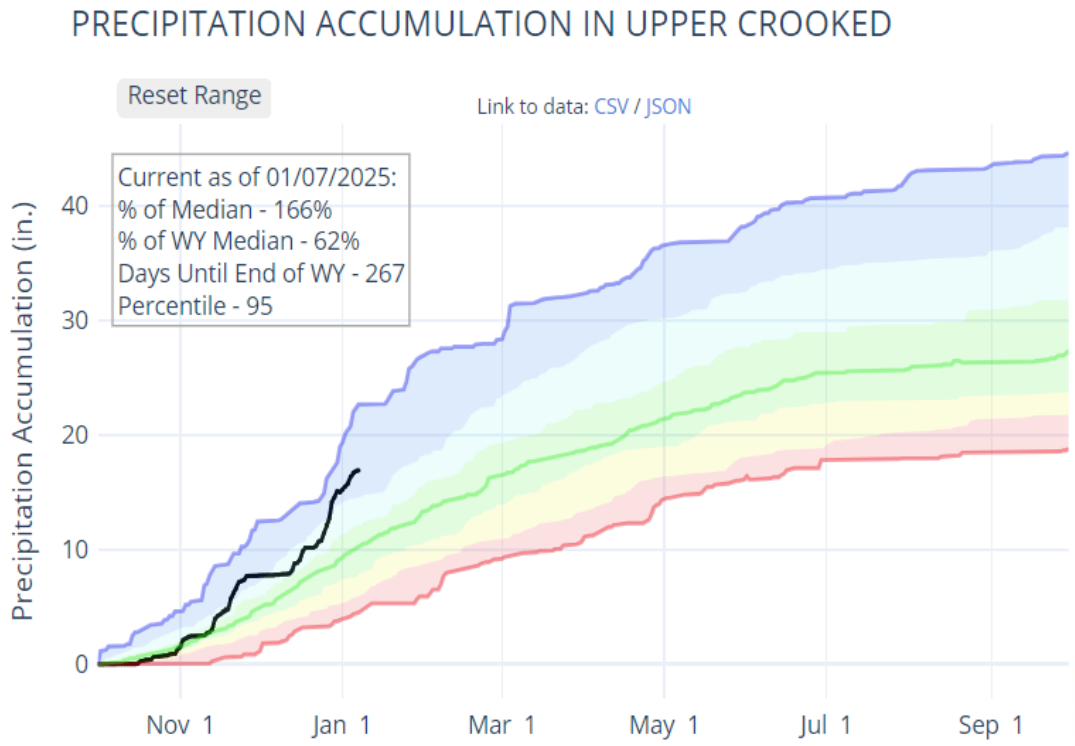
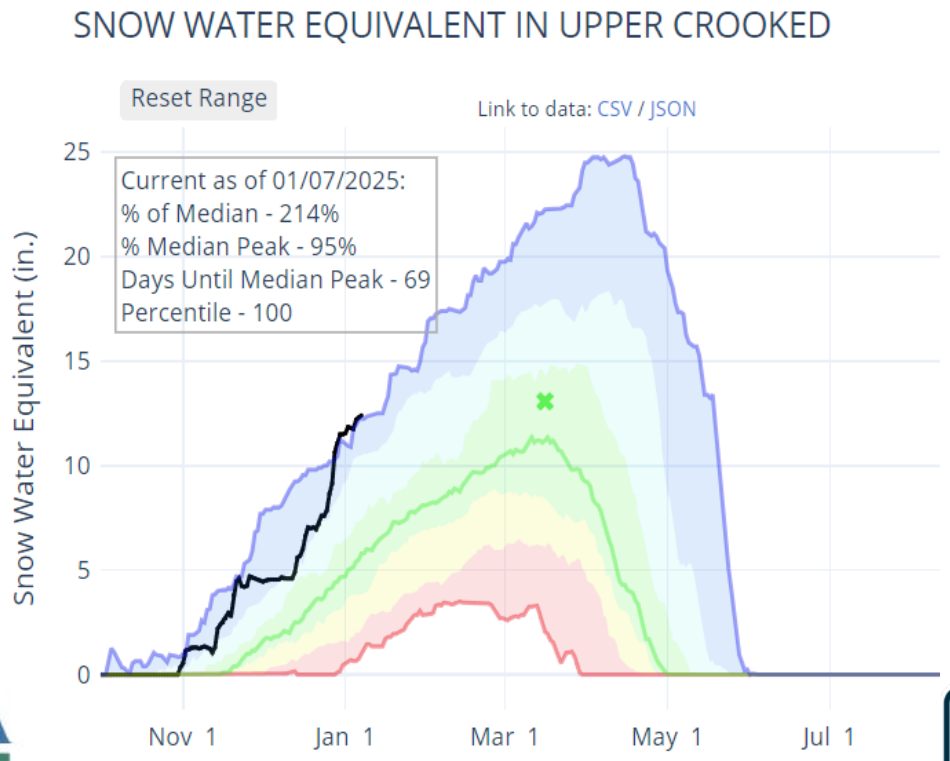
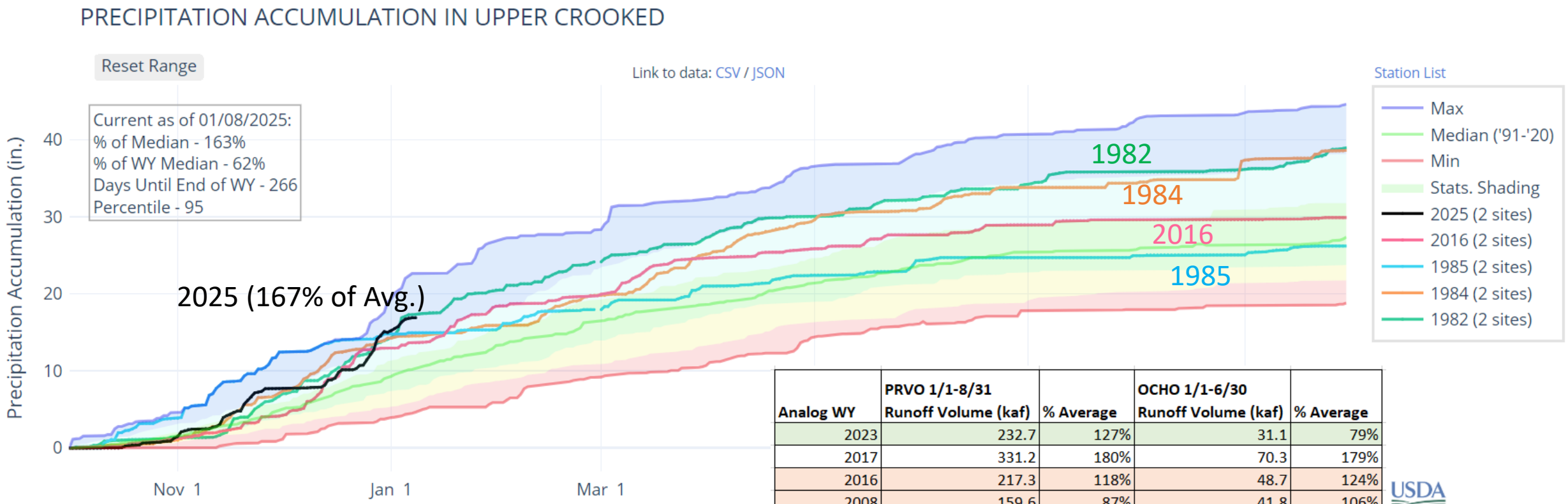
Past Month and Current Upper Crooked Basin Conditions

- 46.6 kaf WYTD runoff for Prineville Reservoir (117% of 1991-2020 average)
- 5.0 kaf WYTD runoff for Ochoco Reservoir (138% of 1991-2020 average)
- Precipitation WYTD: 167% of 1991-2020 average
- Current Snow Water Equivalent (SWE): 221% of 1991-2020 average





Precipitation WY to Date



Analog WY	PRVO 1/1-8/31 Runoff Volume (kaf)	% Average	OCHO 1/1-6/30 Runoff Volume (kaf)	% Average
2023	232.7	127%	31.1	79%
2017	331.2	180%	70.3	179%
2016	217.3	118%	48.7	124%
2008	159.6	87%	41.8	106%
2006	418.6	228%	84.9	216%
1999	301.4	164%	65.6	167%
1997	252.6	138%	79.1	201%
1993	441.6	240%	77.2	197%
1985	276.7	151%	40.8	104%
1984	586.6	319%	101.7	259%
1983	514.9	280%	-	n/a
1982	395.6	215%	-	n/a

https://nwcc-apps.sc.egov.usda.gov/awdb/basin-plots/POR/PREC/assocHUC8/17070304_Upper_Crooked.html

Snow Water Equivalent (SWE)

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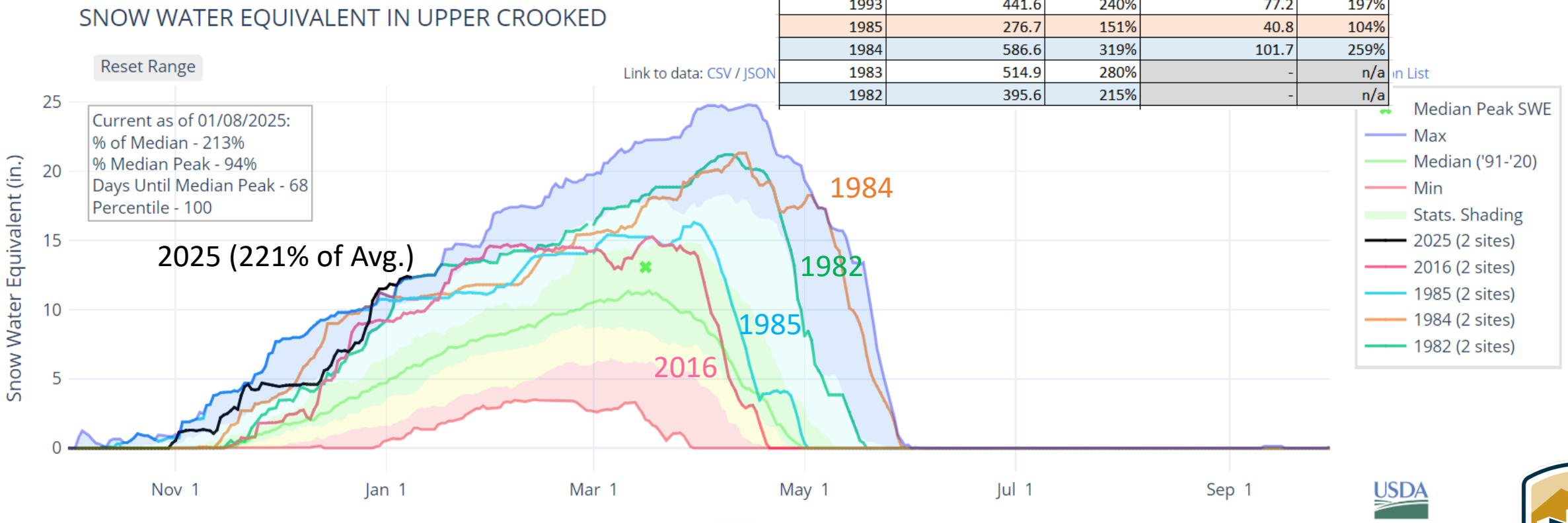
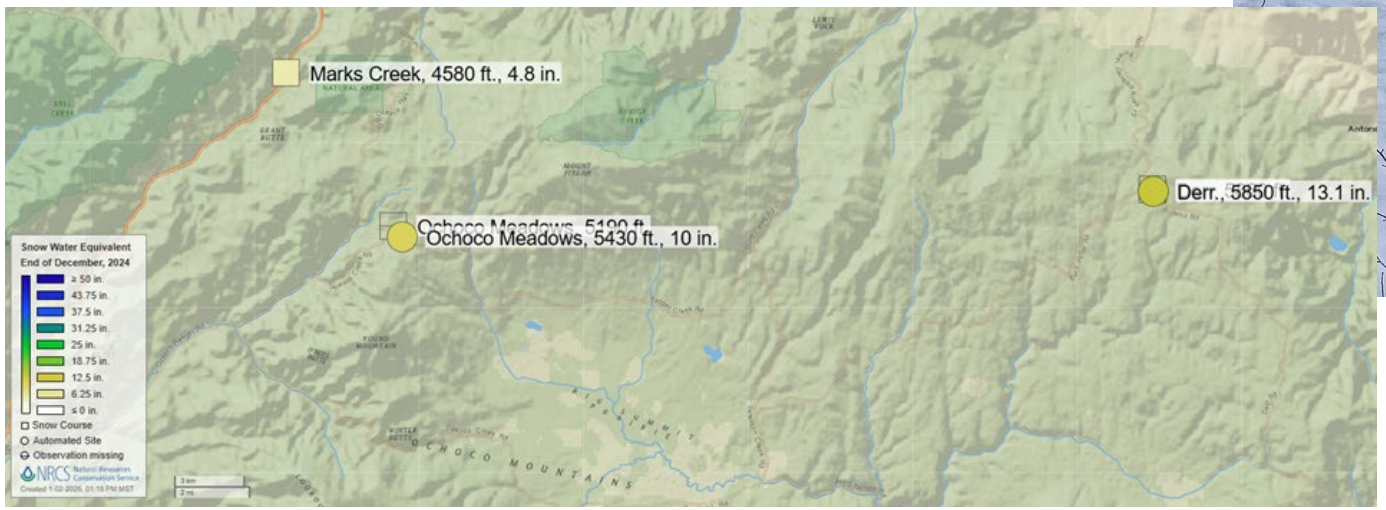


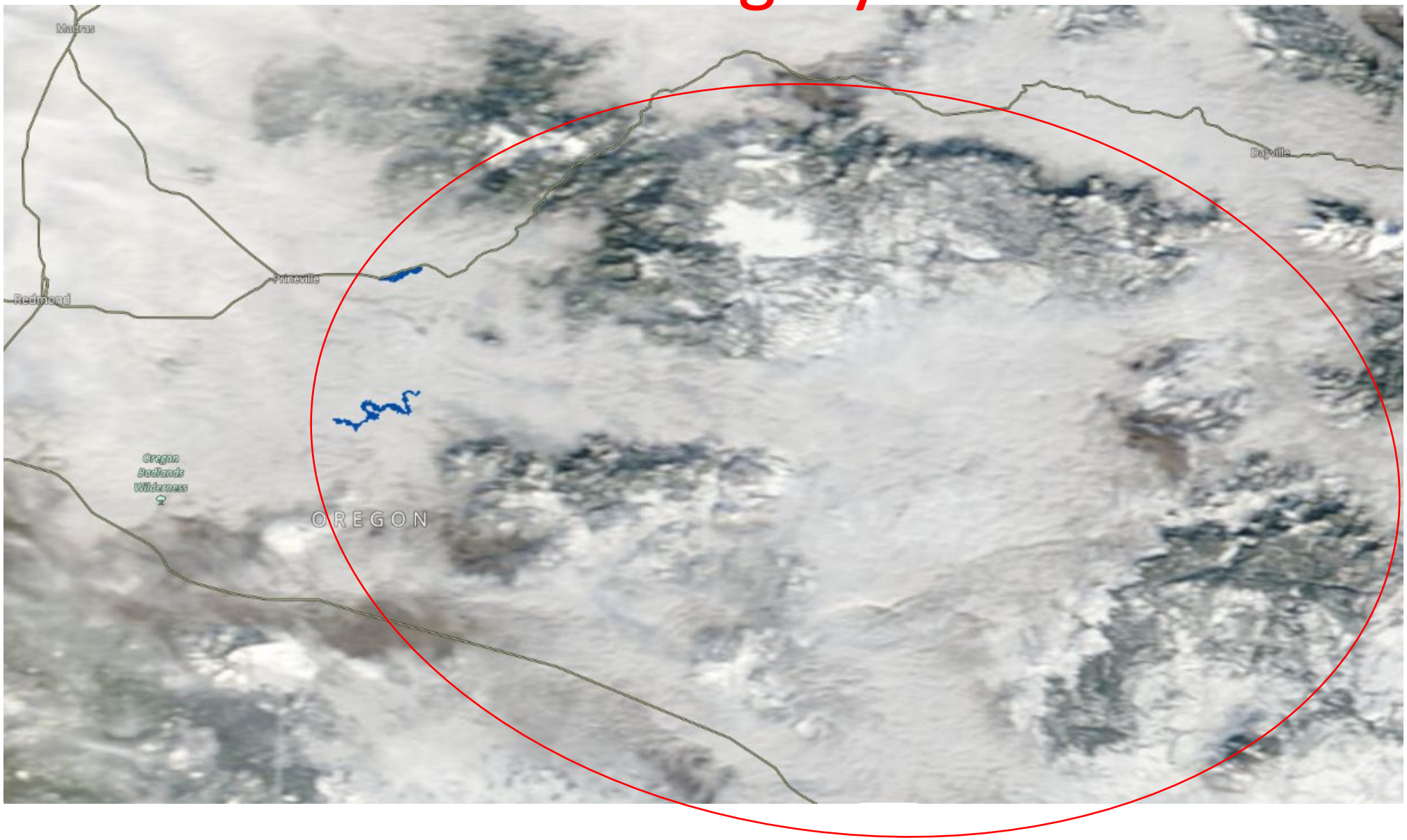
Snow Course Survey

December 30th Survey

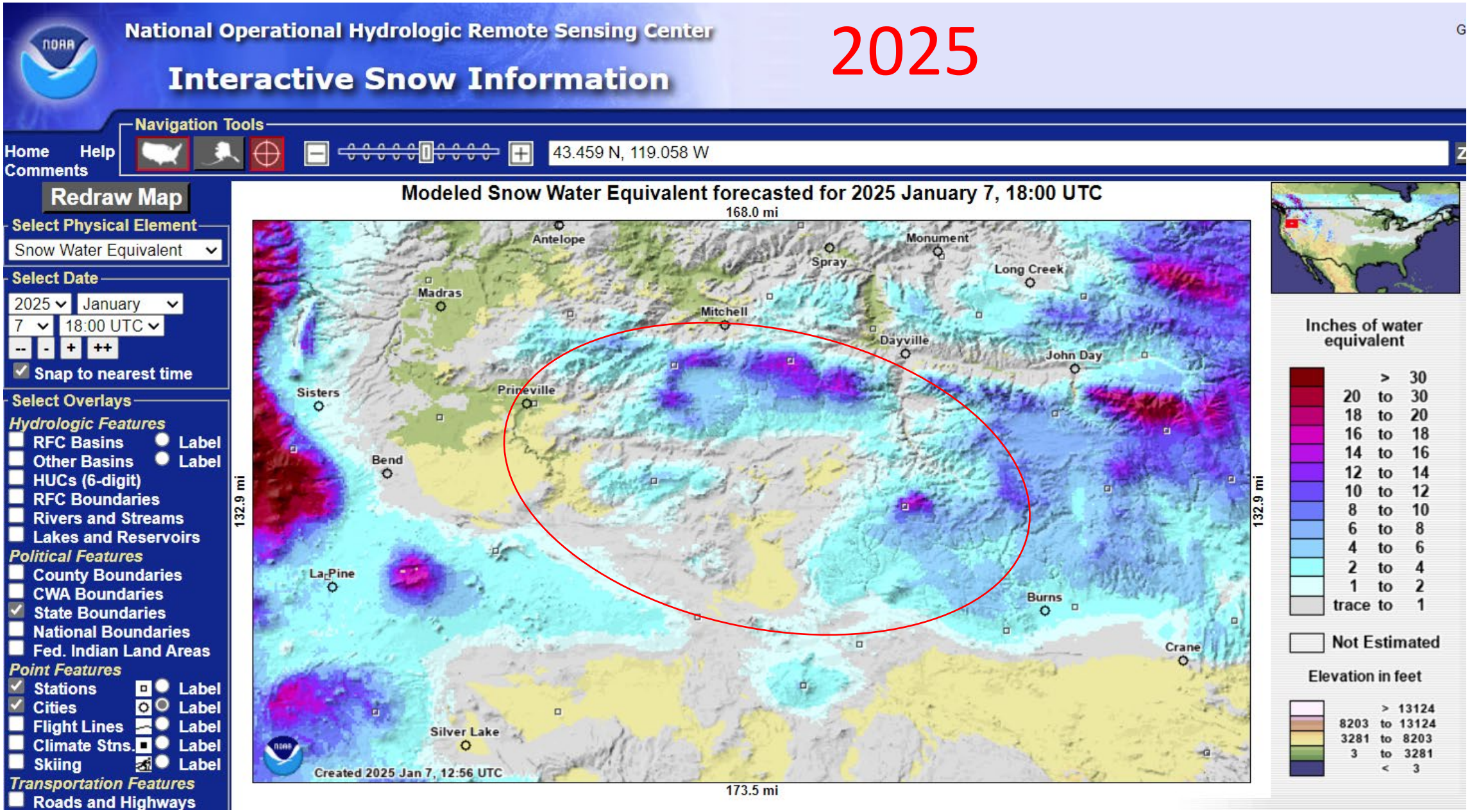
Marks Creek – EL 4580 ft	4.8” SWE
Ochoco Meadows – EL 5430 ft	10.0” SWE
Derr – EL 5850 ft	13.1” SWE



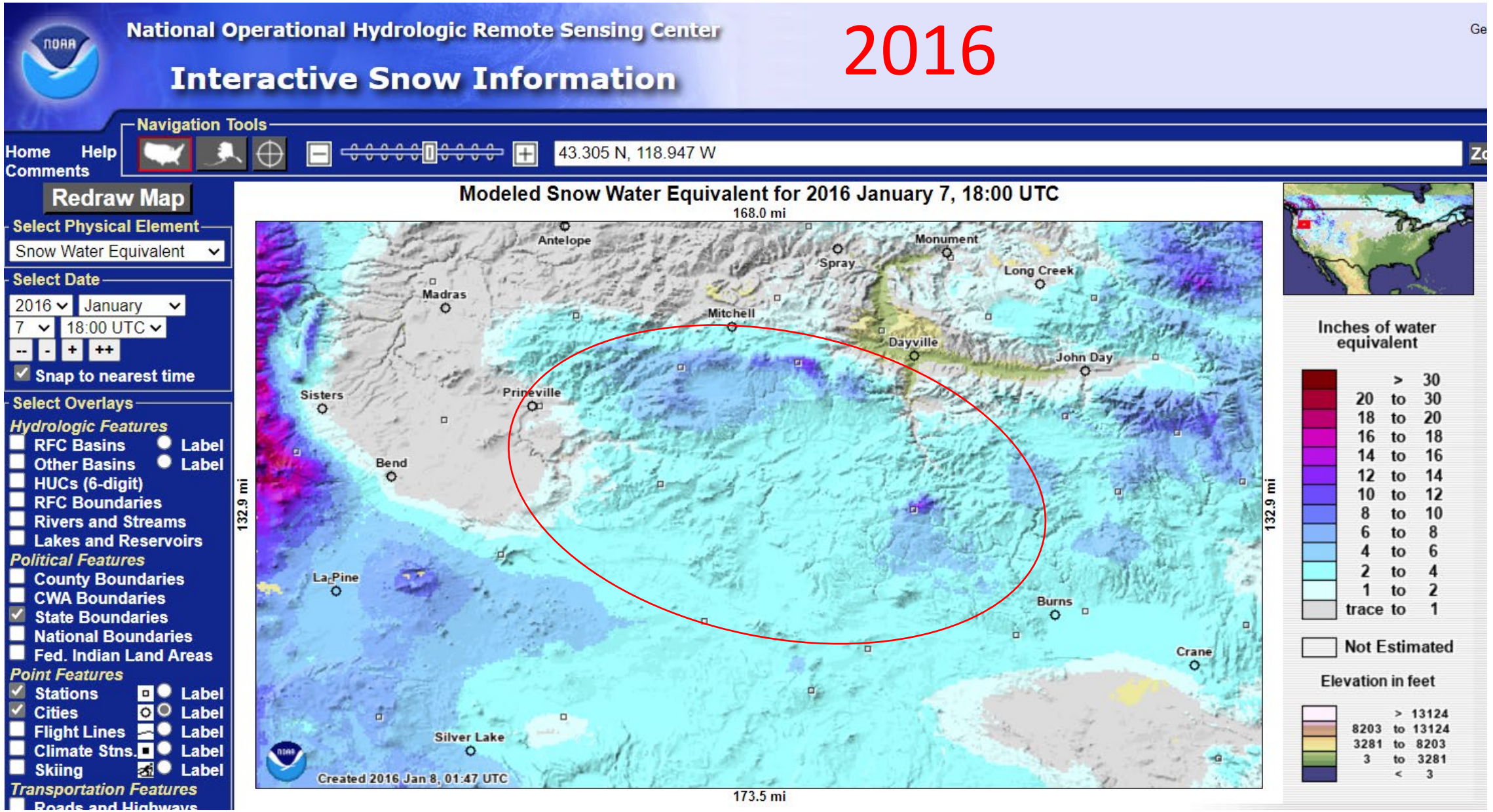
Satellite Imagery 1-7-2025



Modeled SWE 2025



https://www.nohrsc.noaa.gov/interactive/html/map.html



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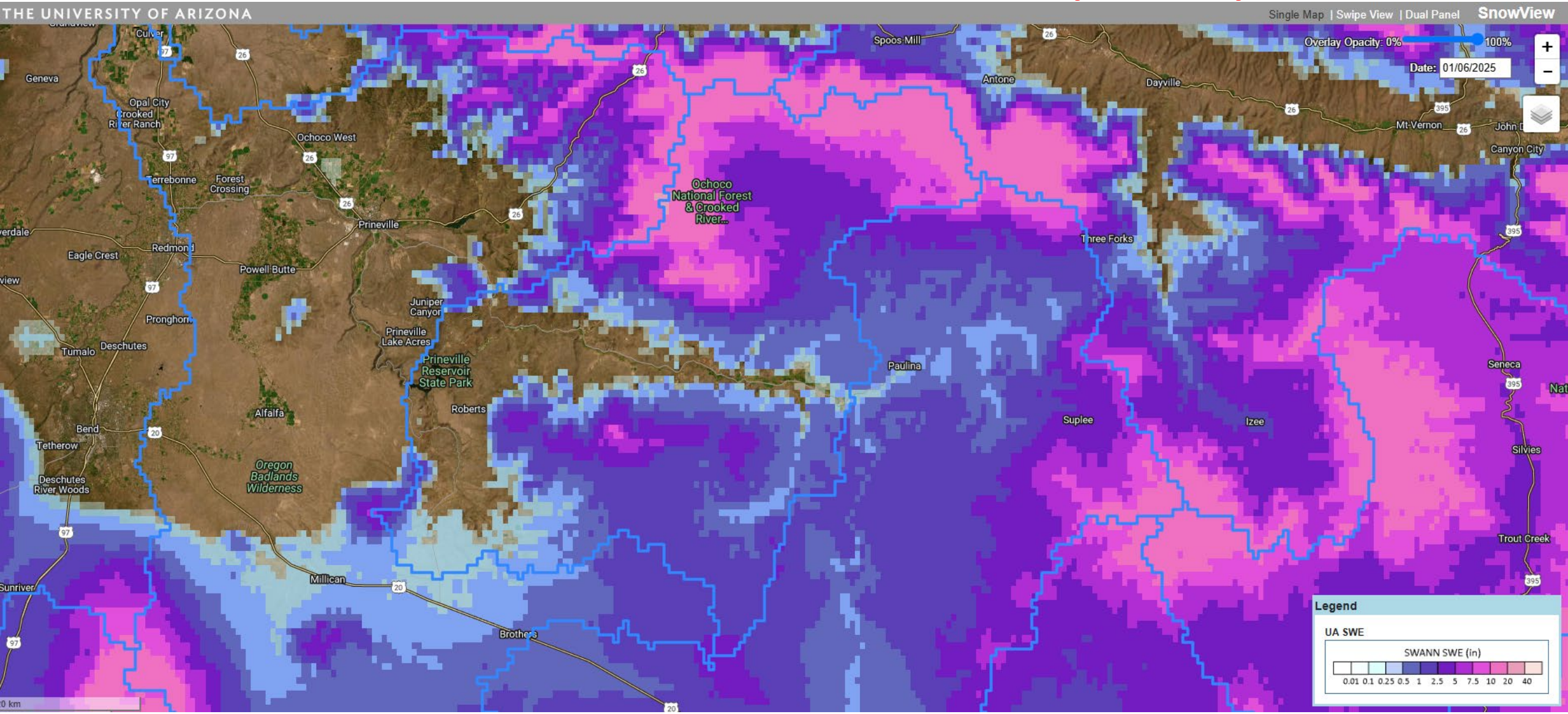
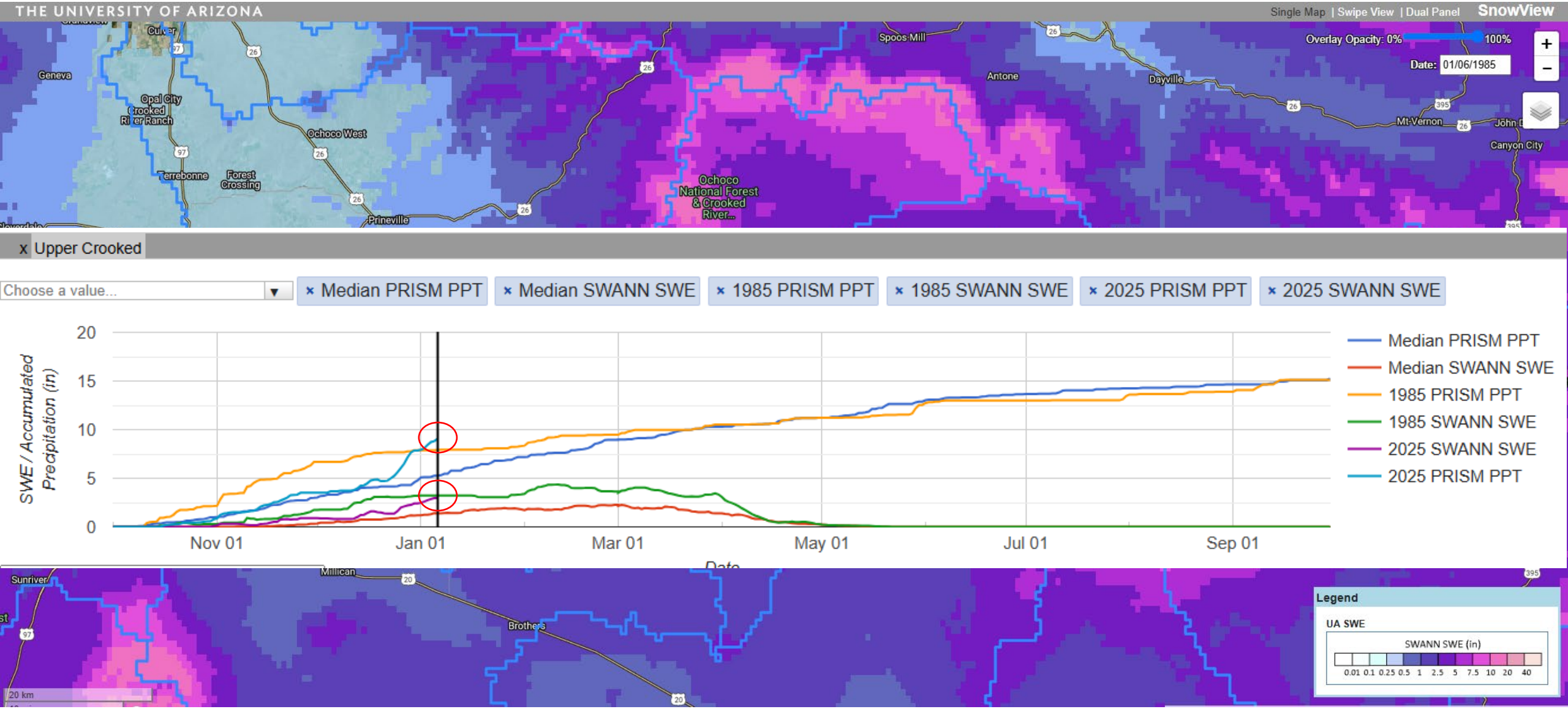
2025 (UofA)



https://snowview.arizona.edu/

1985 (UofA)



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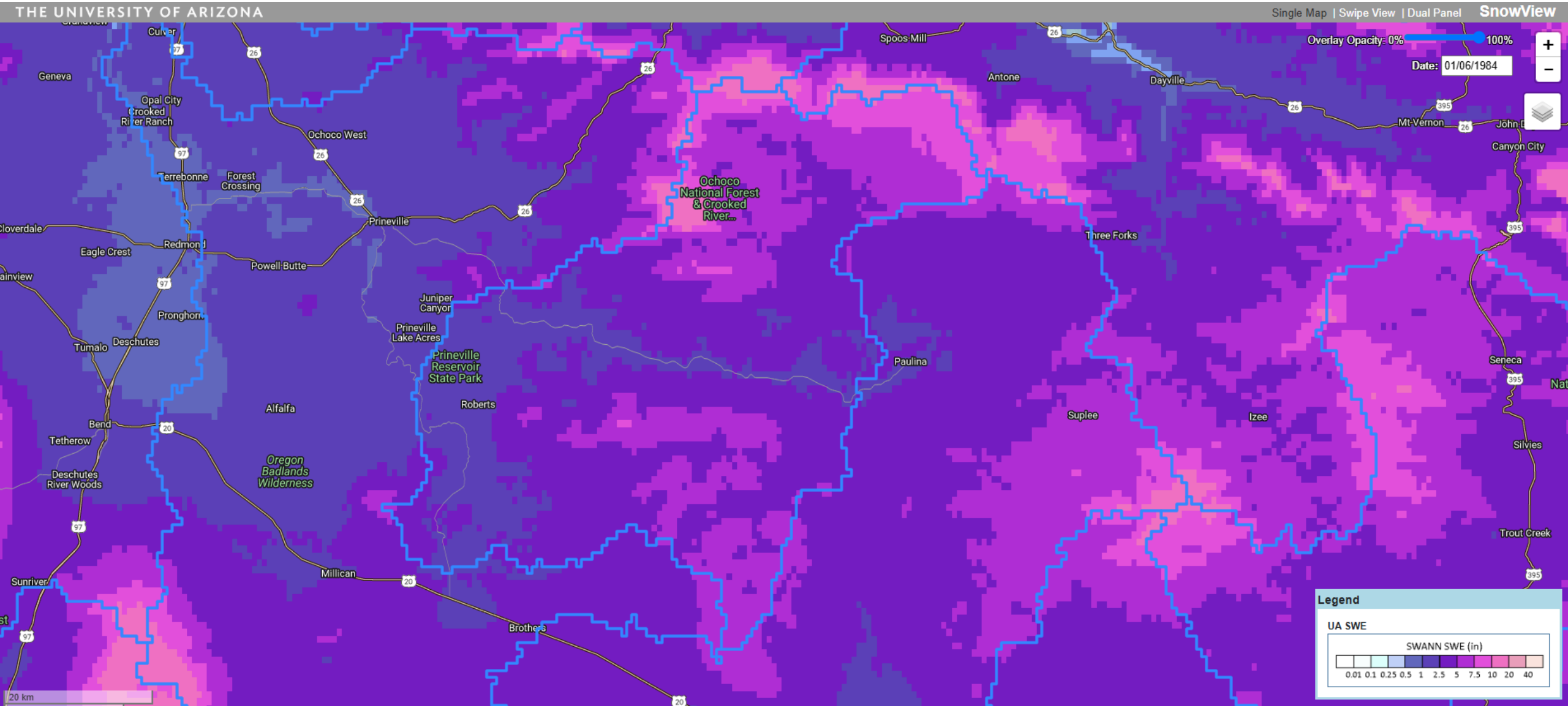

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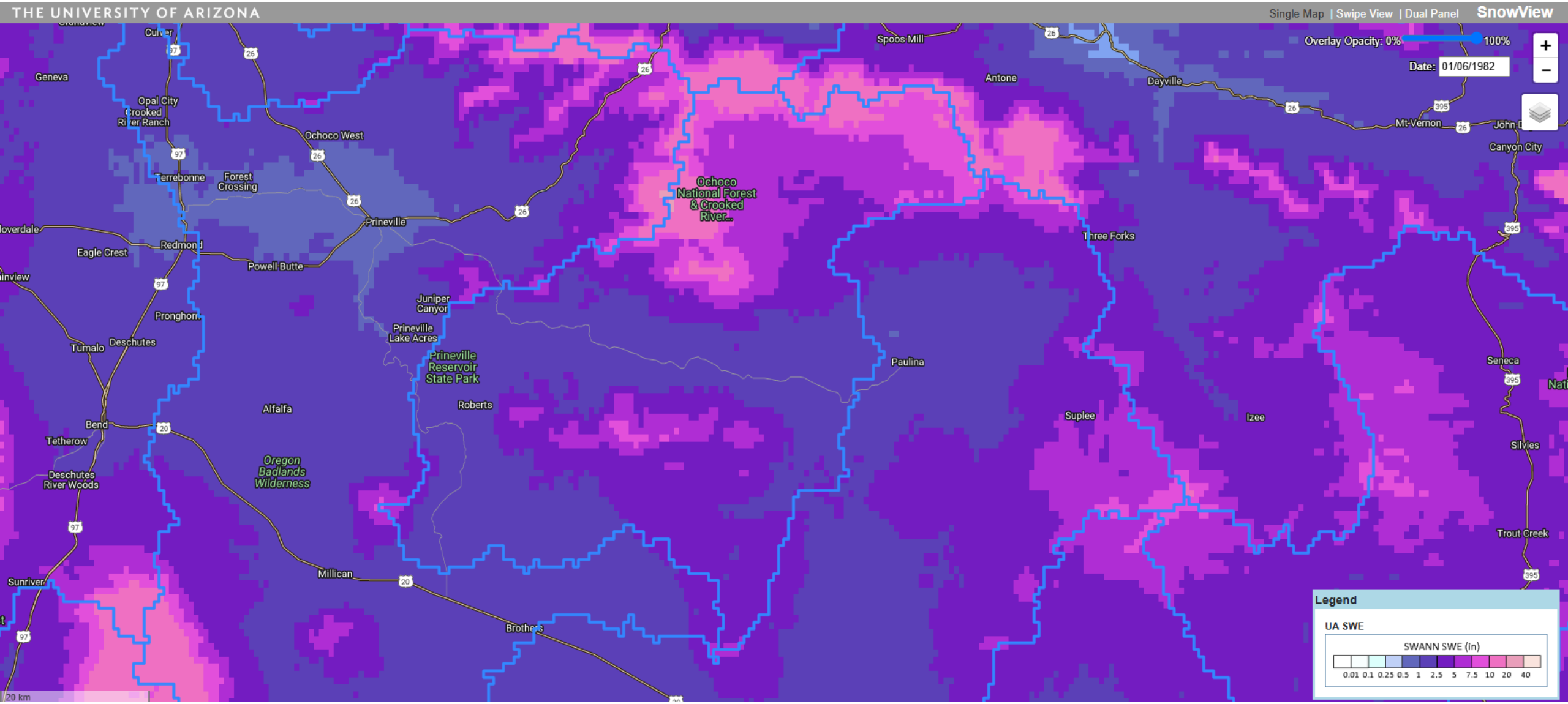

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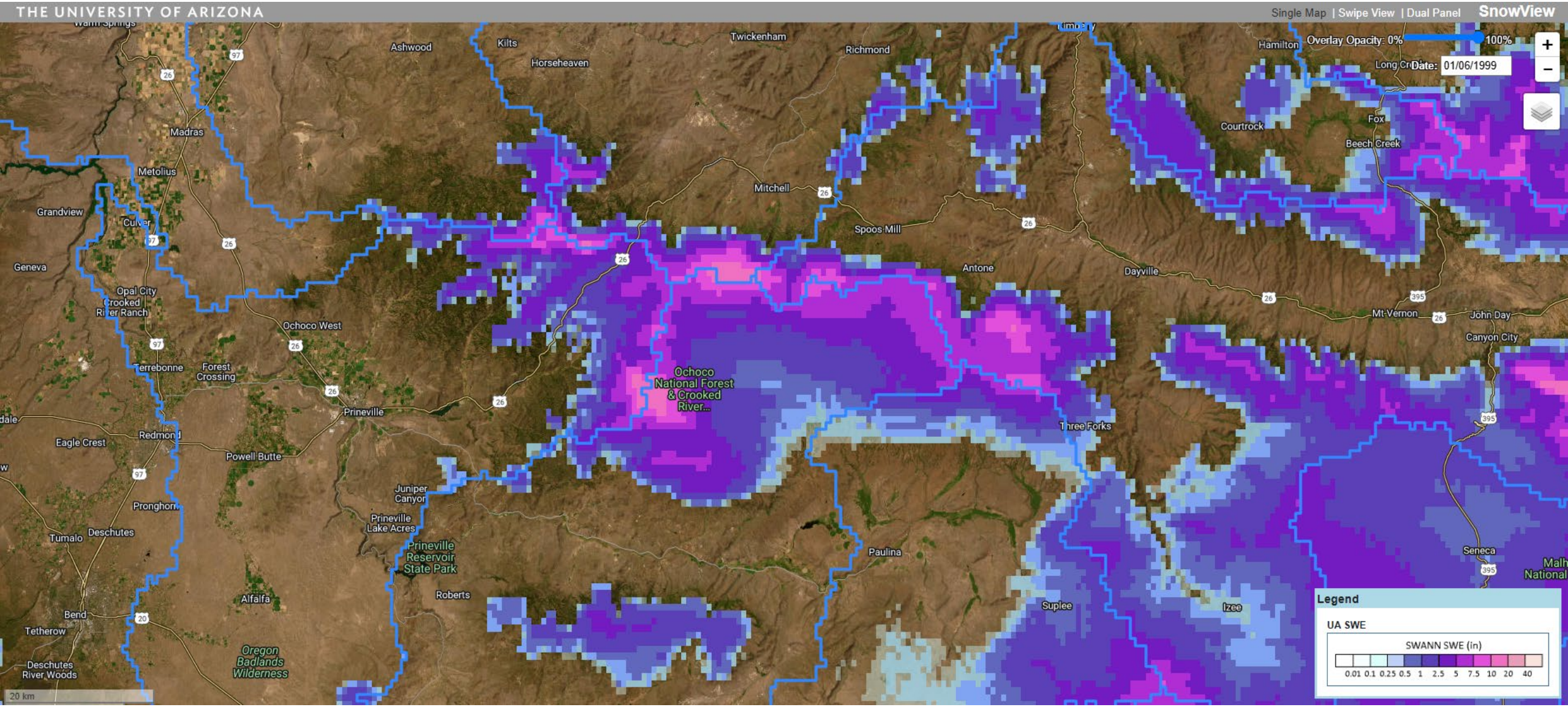

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November 30

National Weather Service
Climate Prediction Center

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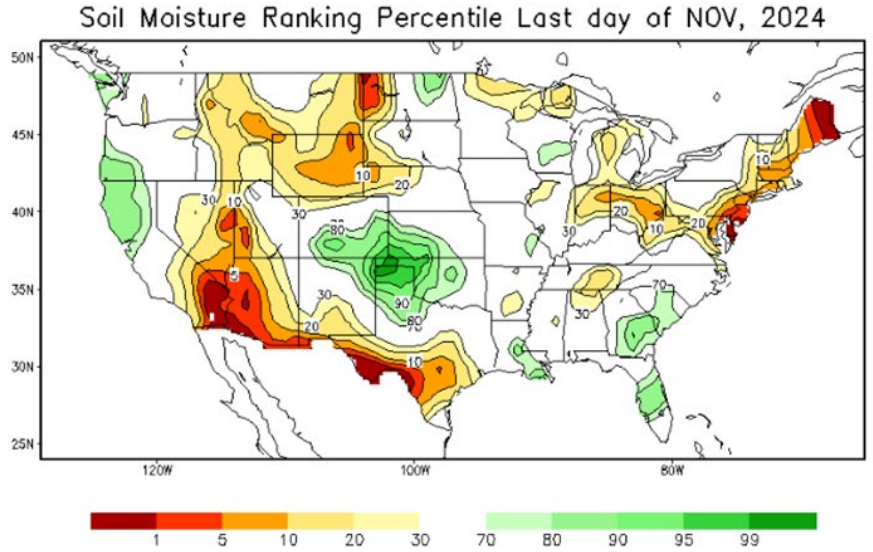
Soil Moisture (mm)

Move cursor over product parameter name to display the graphic.

Total			Anomaly			Percentile			Change	
Daily	Monthly	Last Day of Month	Daily	Monthly	Last Day of Month	Daily	Monthly	Last Day of Month	Monthly	Seasonal



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December 31

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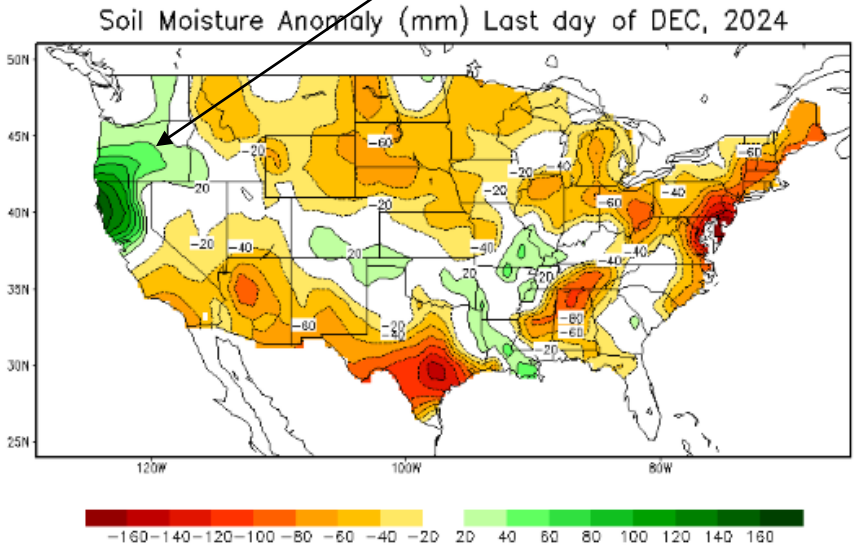
Soil Moisture (mm)

Move cursor over product parameter name to display the graphic.

Total										ge
Daily	Monthly									Seasonal

Snow Mountain Snotel Soil Moisture: 53% of avg.



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https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Soilmst/Soilmst.shtml#

December 5

U.S. Drought Monitor

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Crook County, OR

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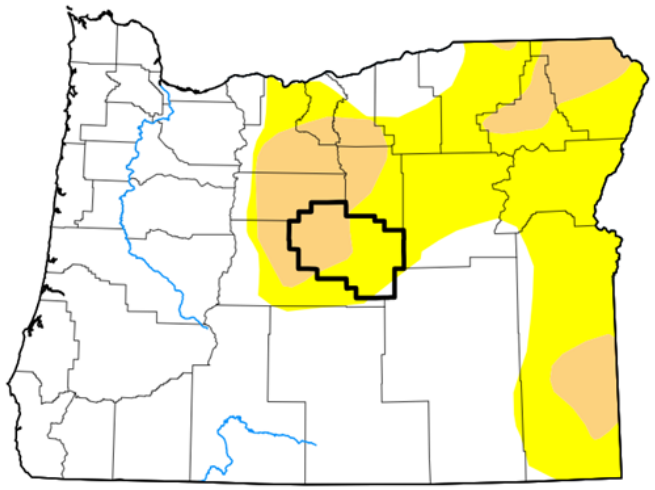

Map released: Thurs. December 5, 2024

Data valid: December 3, 2024 at 7 a.m. EST

Intensity

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

Authors

United States and Puerto Rico Author(s):
David Simeral, Western Regional Climate Center

Pacific Islands and Virgin Islands Author(s):
Denise Gutzmer, National Drought Mitigation Center

January 1

U.S. Drought Monitor

Current | Maps | Data | Summary | About | Conditions & Outlooks | Ag in Drought | En Español | NADM

Crook County, OR

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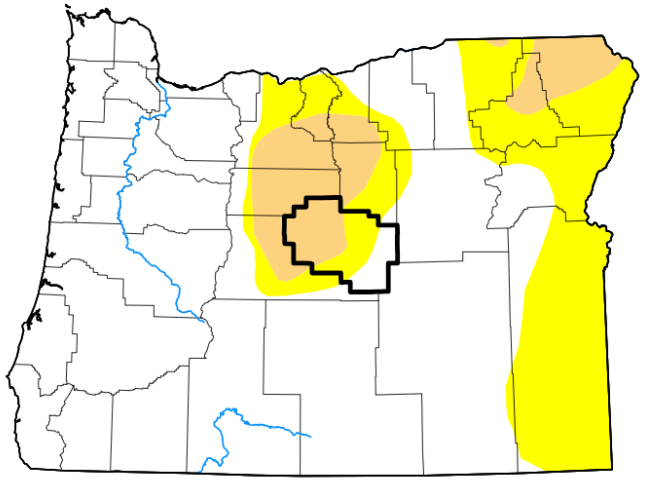

Map released: Weds. January 1, 2025

Data valid: December 31, 2024 at 7 a.m. EST

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Authors

United States and Puerto Rico Author(s):
Rocky Bilotta, NOAA/NCEI

Pacific Islands and Virgin Islands Author(s):
Brad Rippey, U.S. Department of Agriculture

https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?fips_41013

IRI Pacific Niño 3.4 SST Model Outlook

The majority of dynamical models indicate an imminent transition to La Niña, lasting through January-March 2025, while the average of statistical models predicts ENSO-neutral through summer 2025.

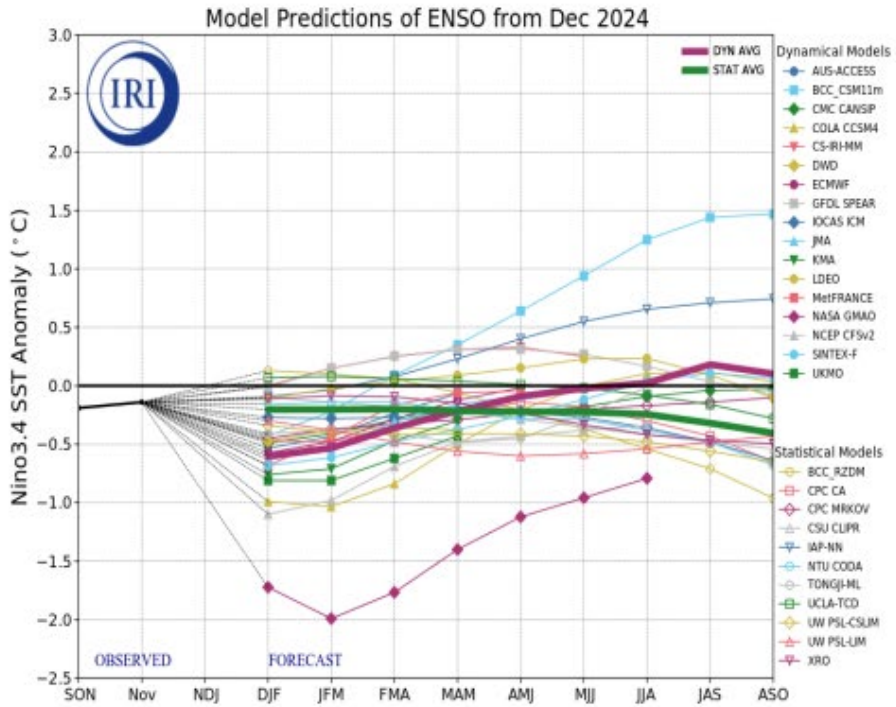
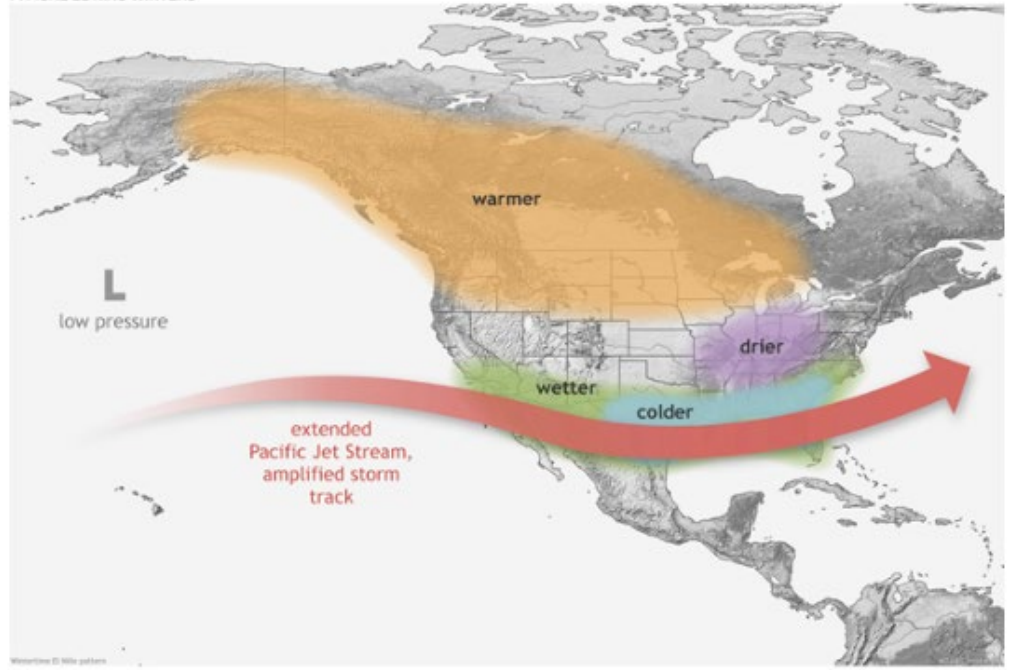


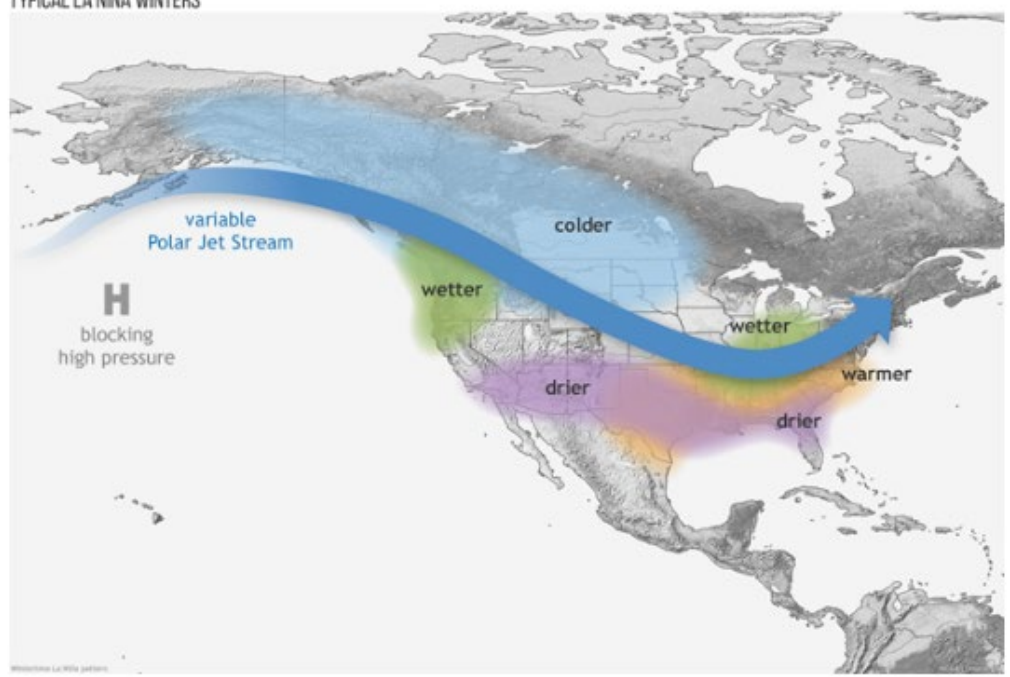
Figure provided by the International Research Institute (IRI) for Climate and Society (updated 19 December 2024).

https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf

TYPICAL EL NIÑO WINTERS

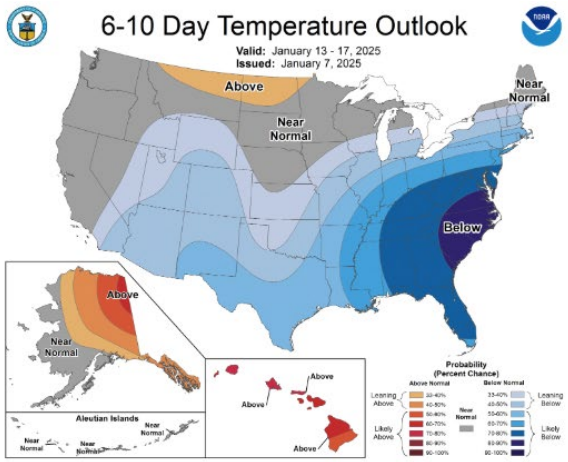


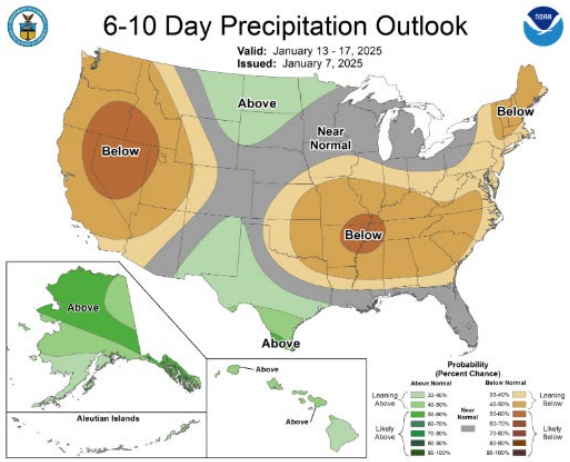
TYPICAL LA NIÑA WINTERS

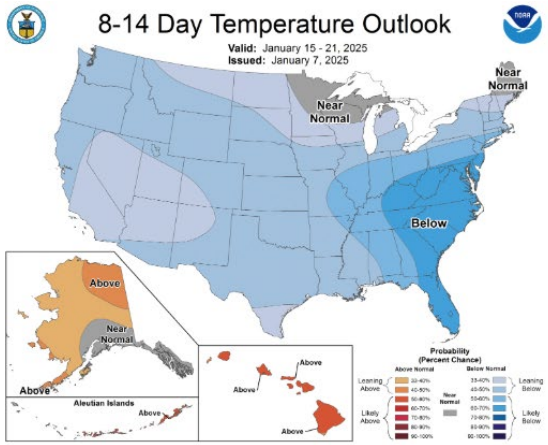


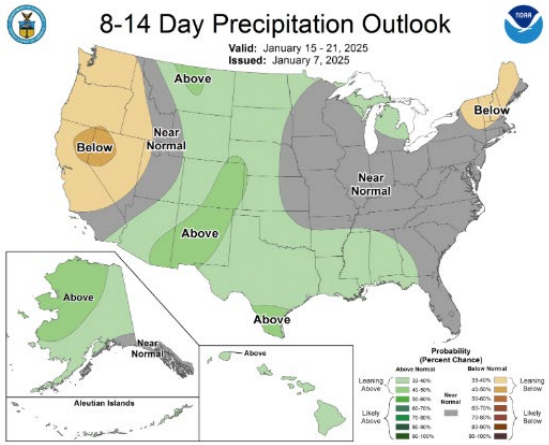
FIONA MARTIN/NOAA/CLIMATE.GOV

Short-term Outlook

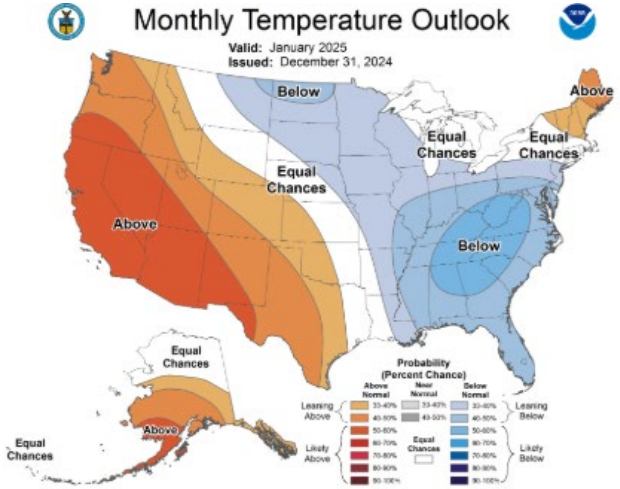


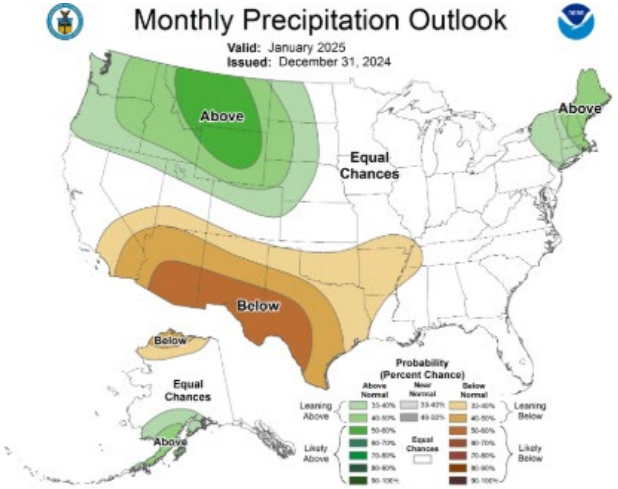


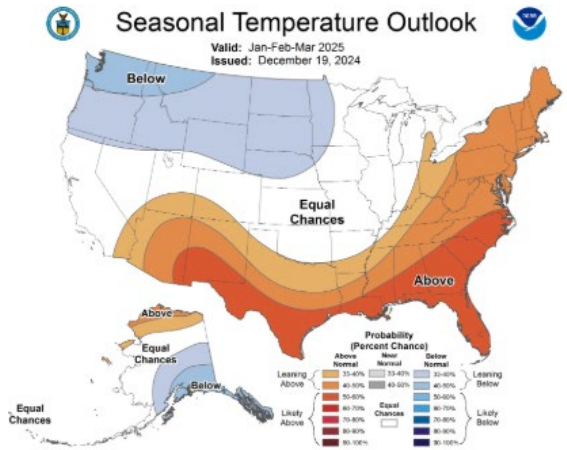


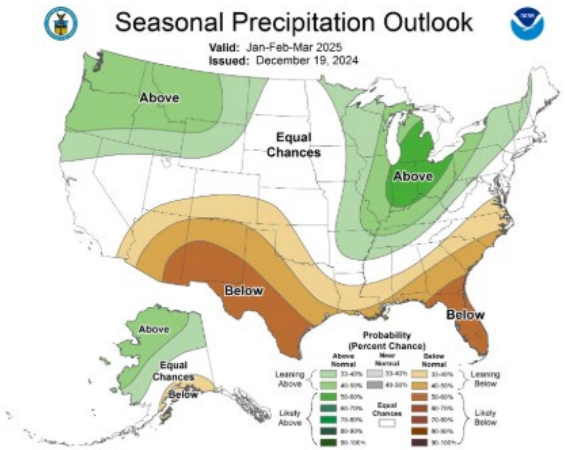


Long-term Outlook



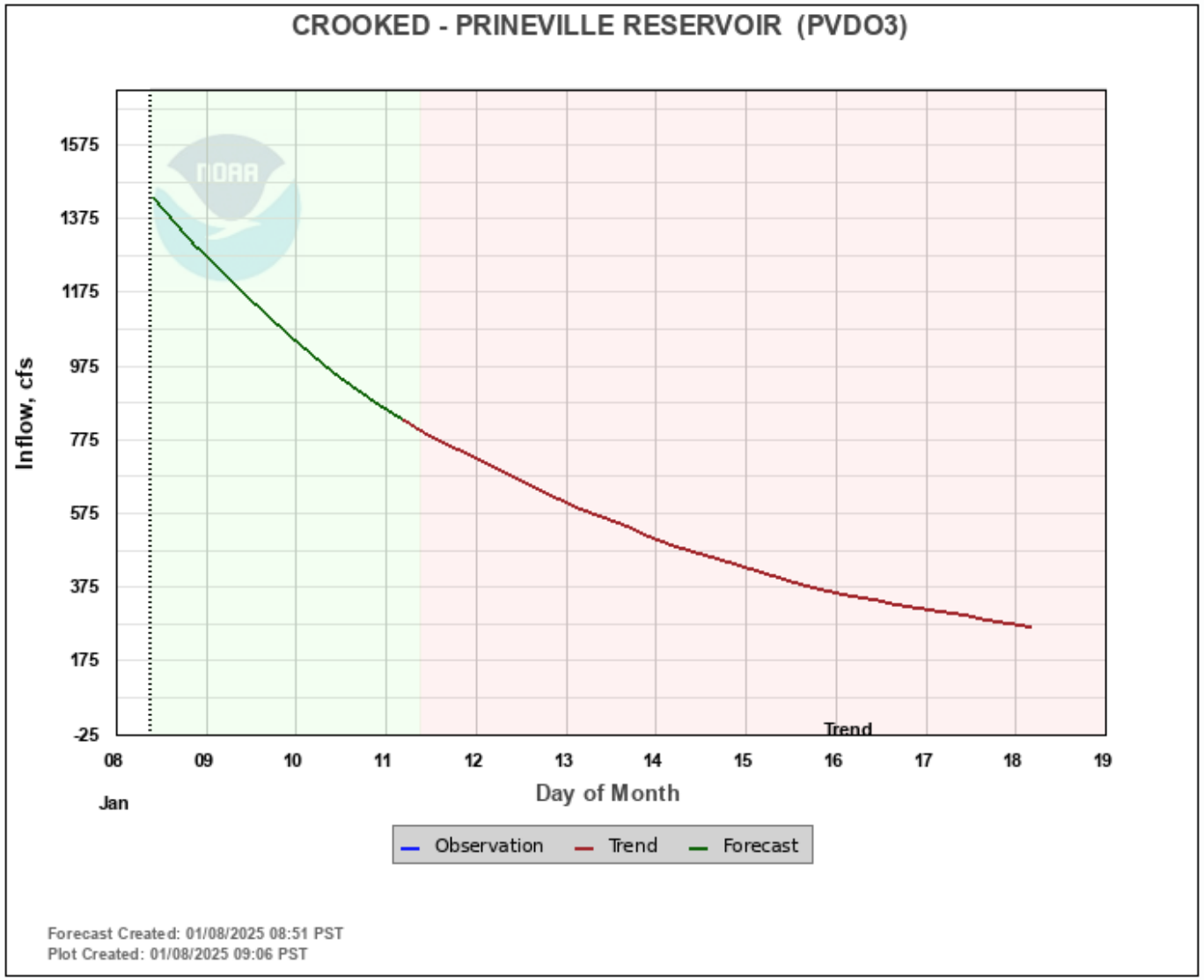


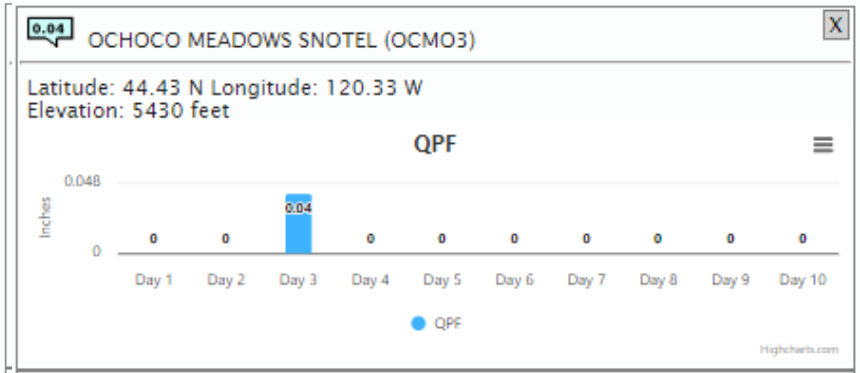


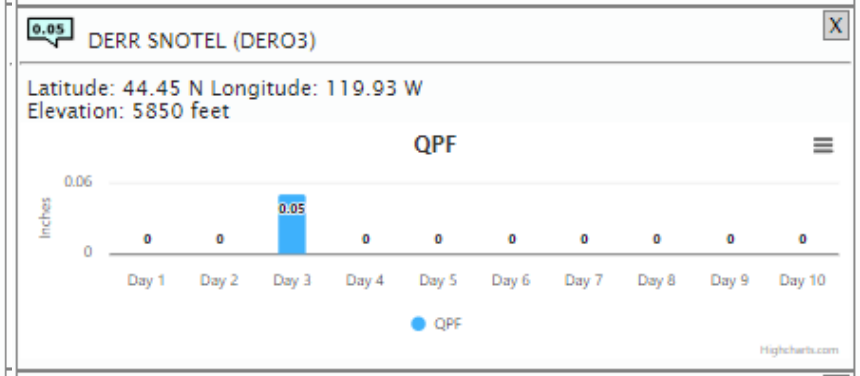


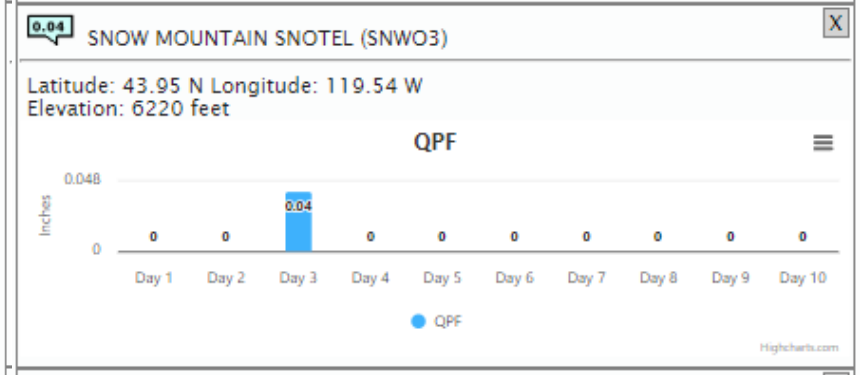
https://www.cpc.ncep.noaa.gov/

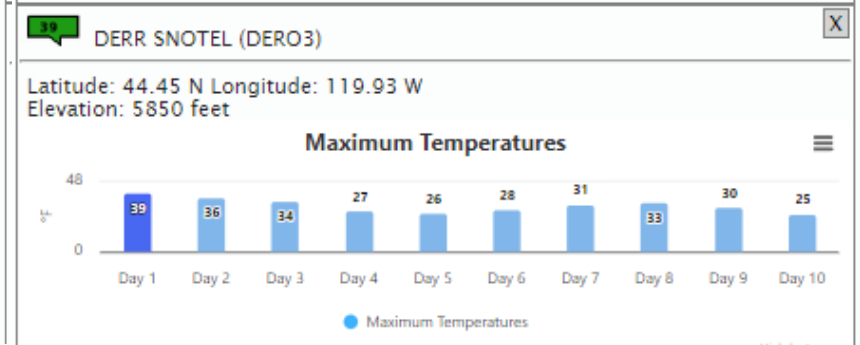
RFC Forecast



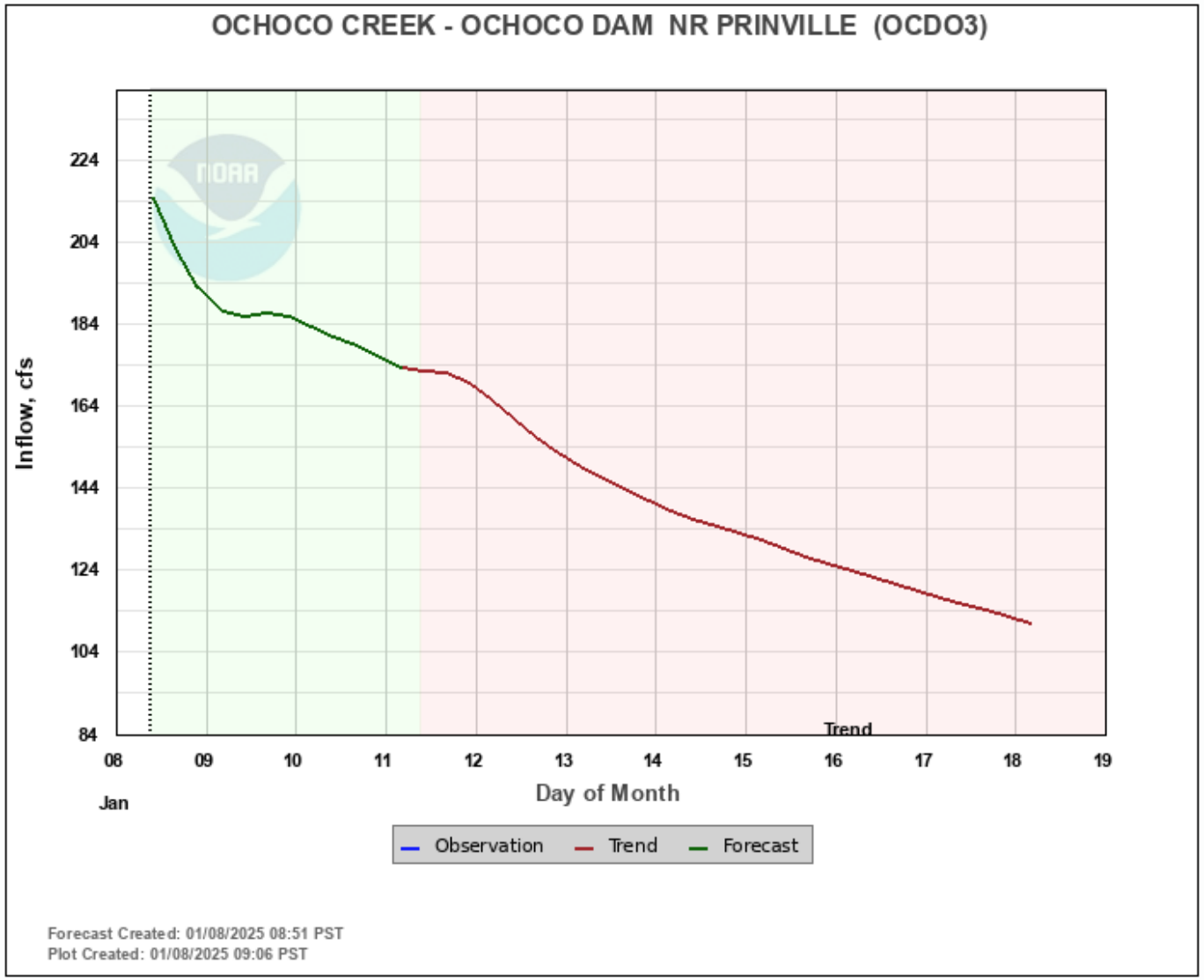


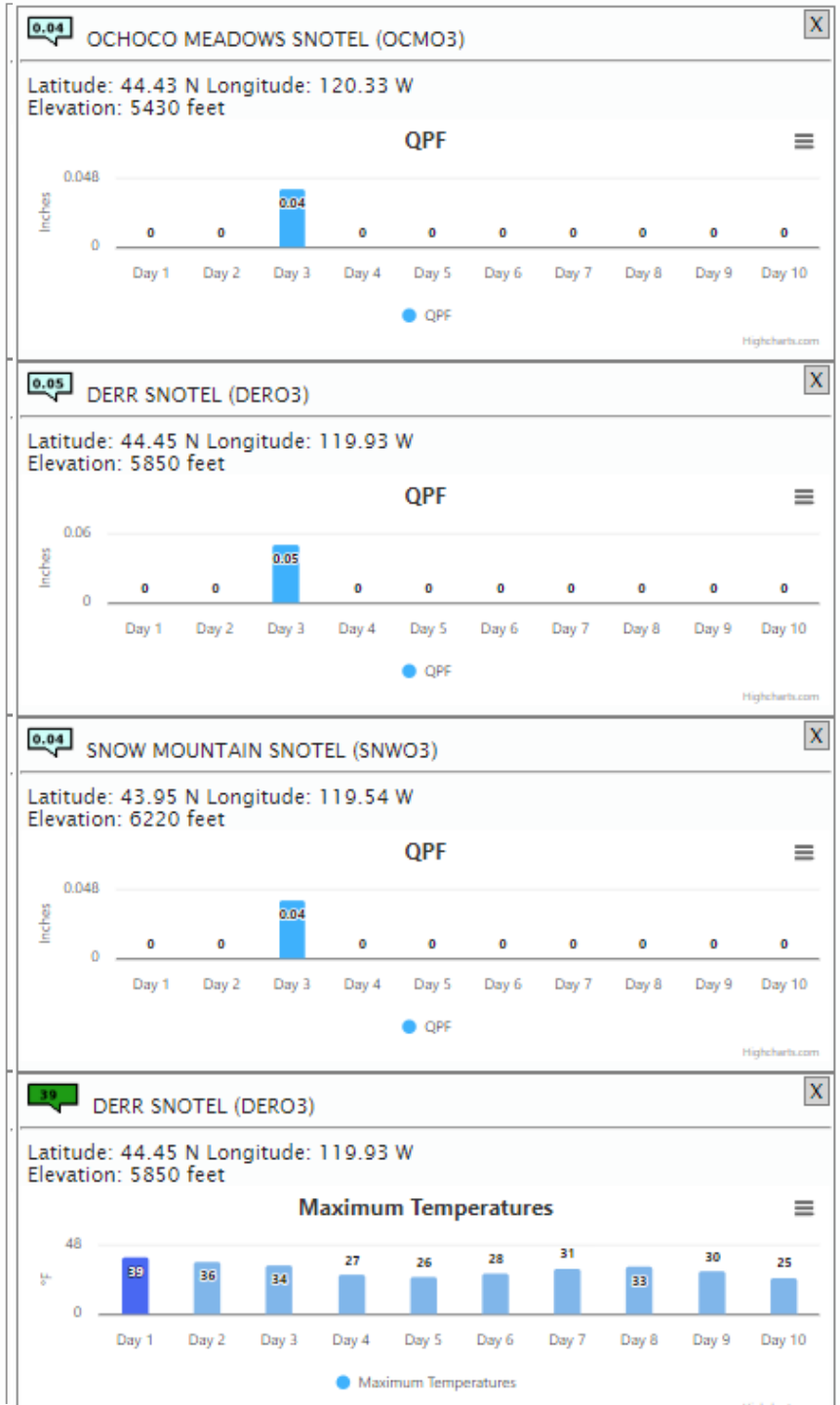


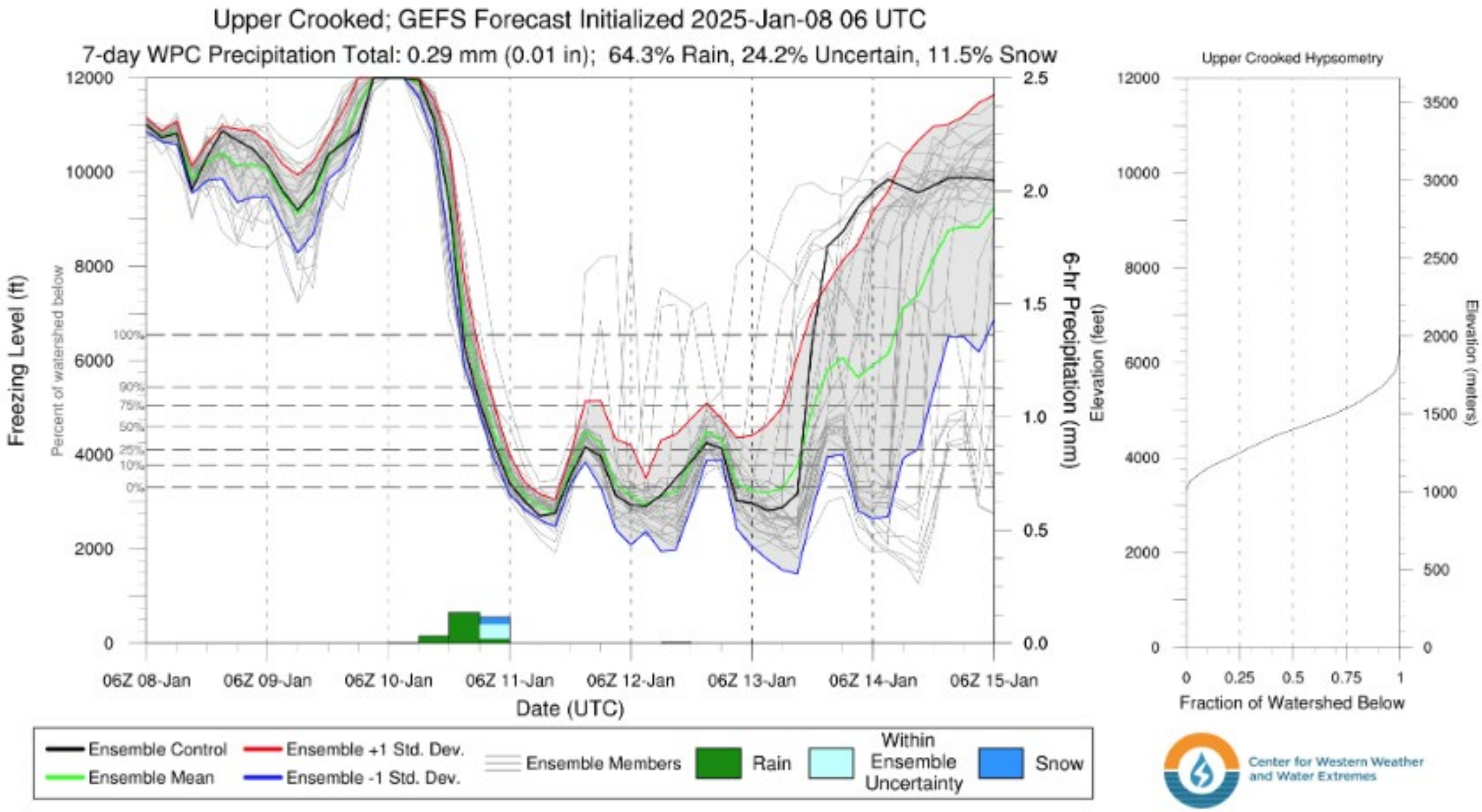




RFC Forecast






Upper Crooked; GEFS Forecast Initialized 2025-Jan-08 06 UTC
7-day WPC Precipitation Total: 0.29 mm (0.01 in); 64.3% Rain, 24.2% Uncertain, 11.5% Snow
Freezing Level (ft)
Percent of watershed below
100%
90%
75%
50%
25%
10%
0%
6-hr Precipitation (mm)
Elevation (feet)
06Z 08-Jan
06Z 09-Jan
06Z 10-Jan
06Z 11-Jan
06Z 12-Jan
06Z 13-Jan
06Z 14-Jan
06Z 15-Jan
Date (UTC)
Upper Crooked Hypsometry
Elevation (meters)
Fraction of Watershed Below
Ensemble Control
Ensemble Mean
Ensemble +1 Std. Dev.
Ensemble -1 Std. Dev.
Ensemble Members
Rain
Within Ensemble Uncertainty
Snow
Center for Western Weather and Water Extremes

Forecasts

PRVO
Jan 1 Forecast

Adopted Forecast= 381 kaf Jan-Aug (207% of Average)

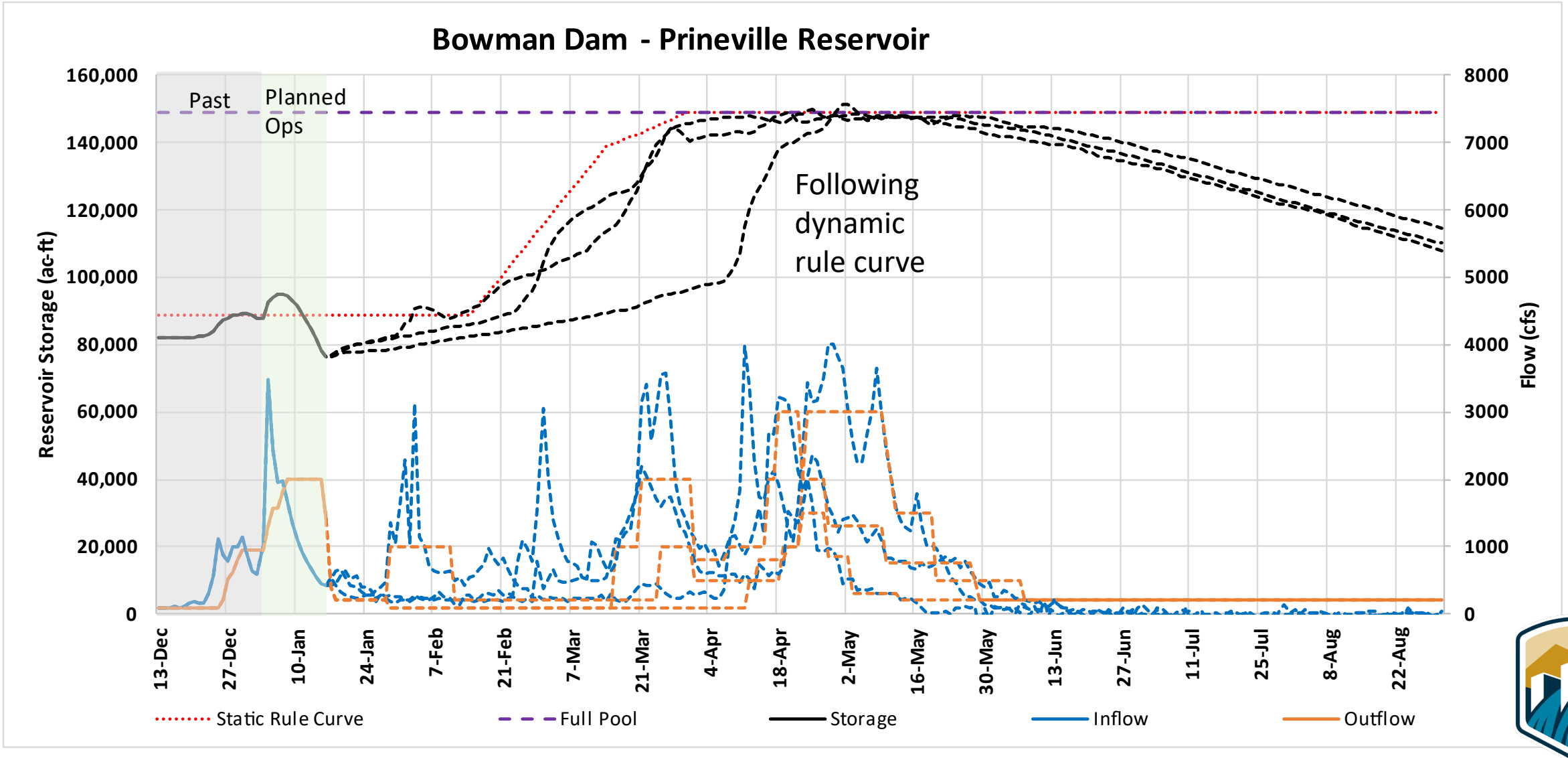
Forecasts:	Volume (kaf)	% 9120 Ave
9120 Average	183.7	100%
MLR	317.8	173%
Py Forced PCA	429.8	234%
Py Forced Z	432.9	236%
Py Top PCA	443.6	241%
Py Top Z	426.4	232%
NWRFC ESP10	216	118%
NWRFC HEFS	201	109%
NWRFC ESP0	204	111%

OCHO
Jan 1 Forecast

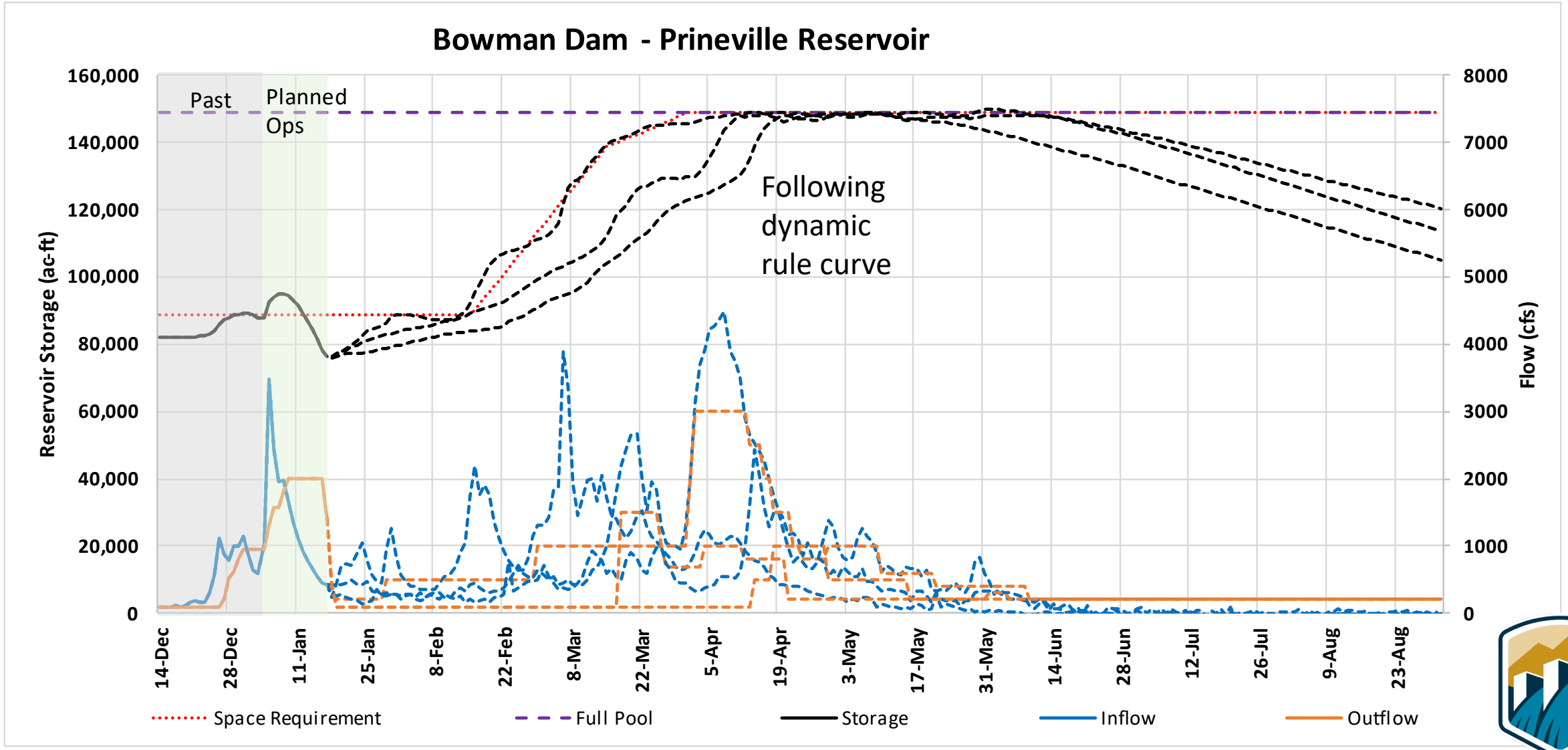
Adopted Forecast= 83.2 kaf Jan-Jun (209% of Average)

Forecasts:	Volume (kaf)	% 9120 Ave
9120 Average	39.9	100%
MLR	64.7	162%
Py Forced PCA	83.4	209%
Py Forced Z	83.4	209%
Py Top PCA	83.8	210%
Py Top Z	82.2	206%
NWRFC ESP10	64	161%
NWRFC HEFS	62	156%
NWRFC ESP0	61	153%

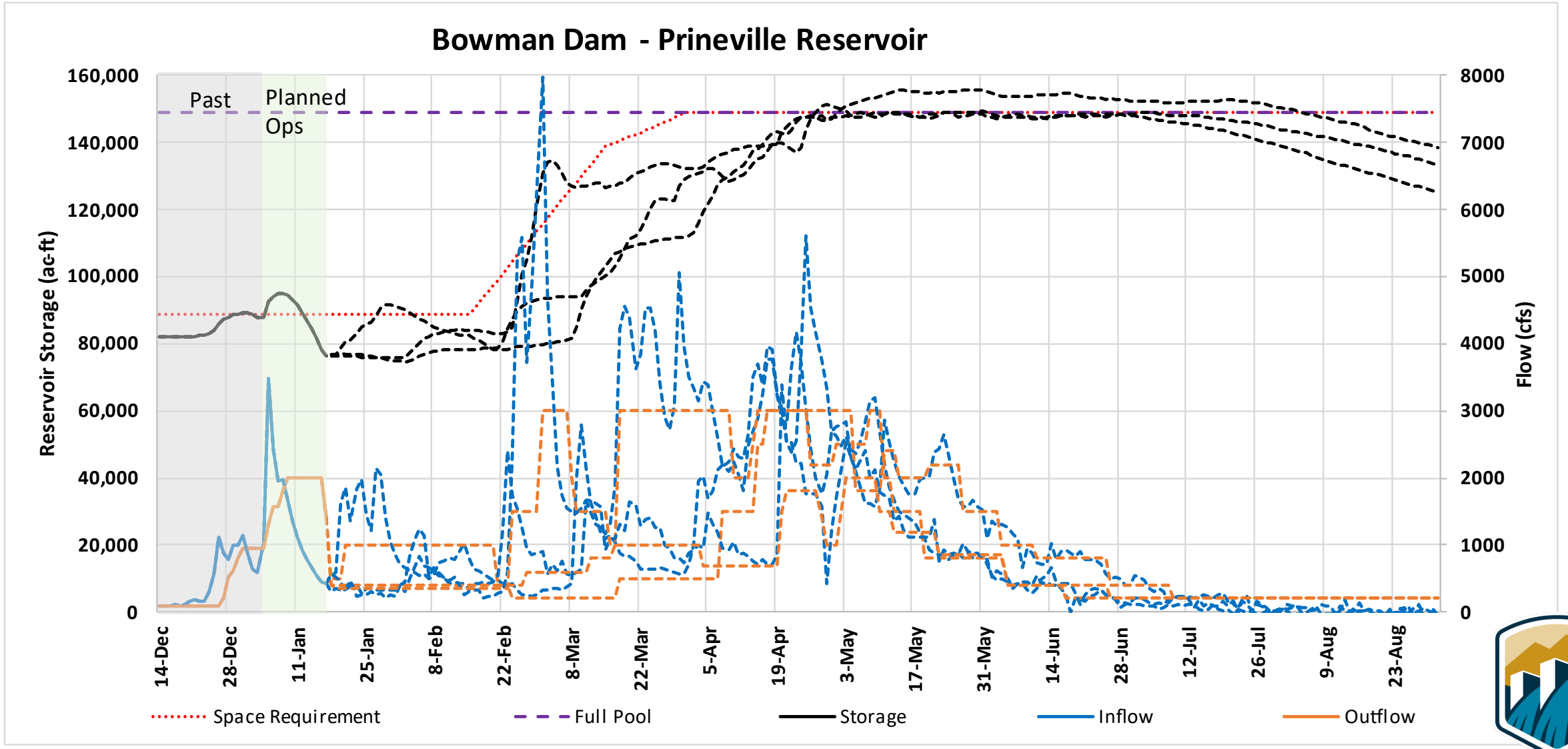
Current Basin Conditions + Normal Future Weather Conditions Likely Resulting in Near Normal Runoff Scenarios



Current Basin Conditions + Dry Future Weather Conditions Likely Resulting in Near Normal Runoff Scenarios

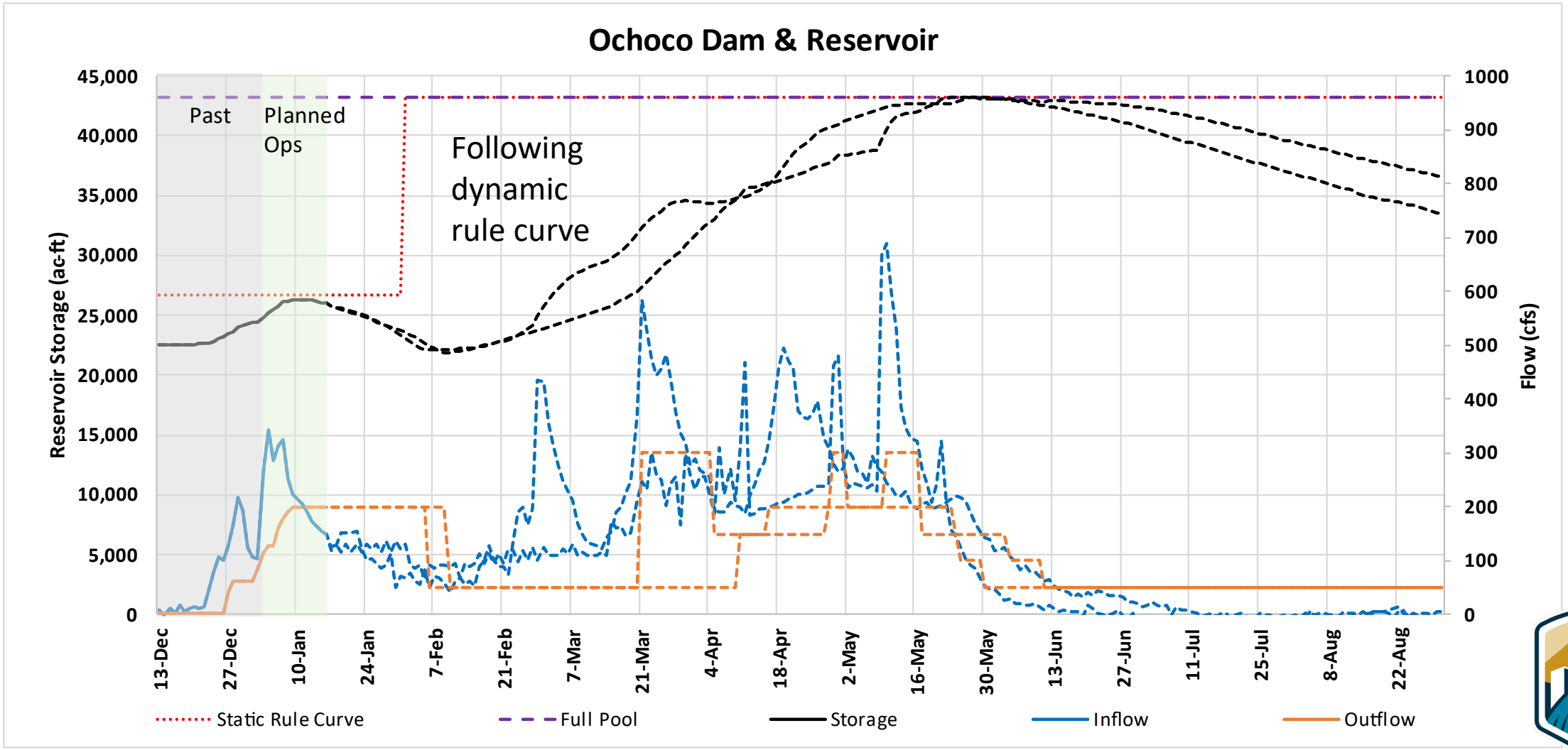


Current Basin Conditions + Wet Future Weather Conditions Likely Resulting in Above Normal Runoff Scenarios



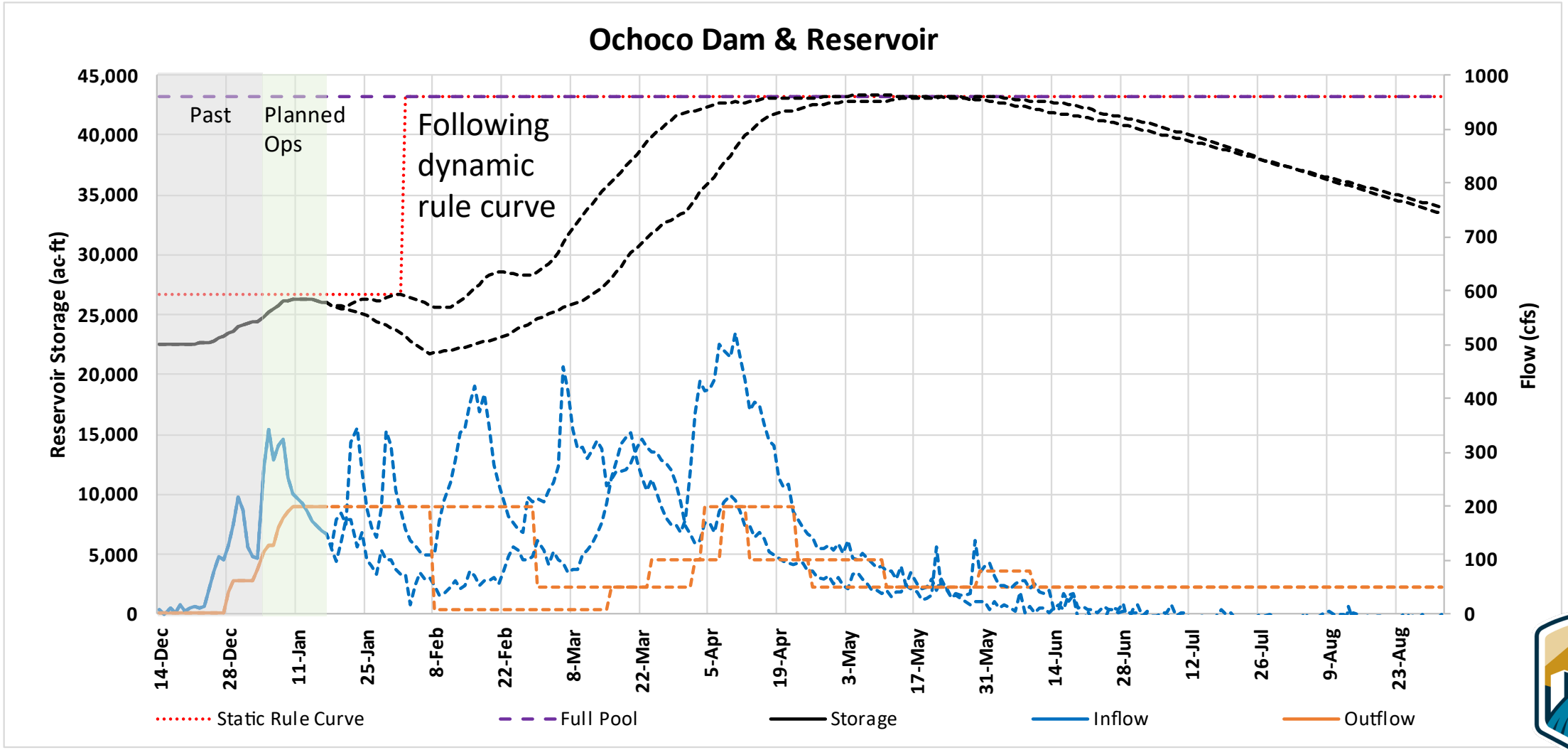
Ochoco Reservoir Possible Projections

Normal Future



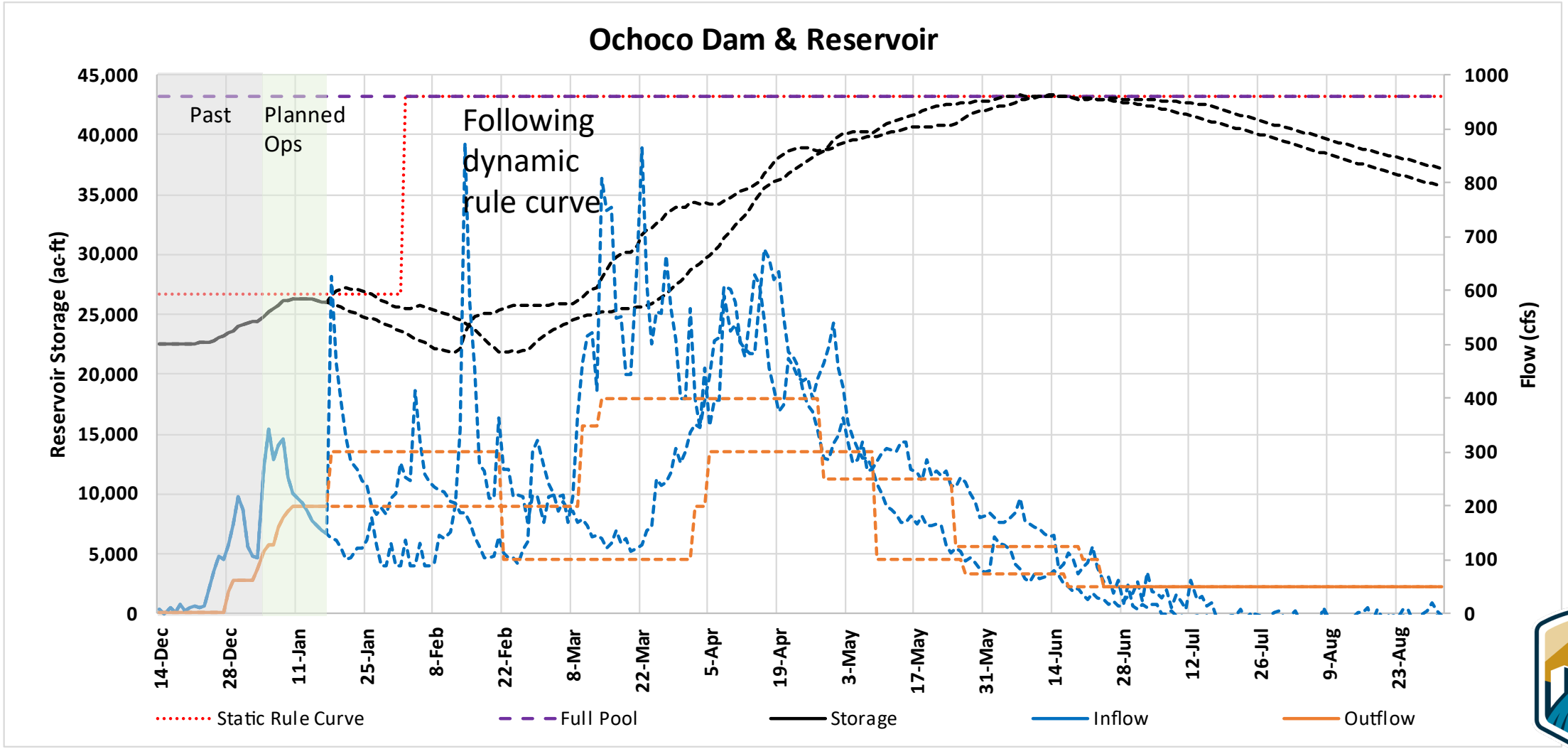
Ochoco Reservoir Possible Projections

Dry Future



Ochoco Reservoir Possible Projections

Wet Future



Takeaways

- Precipitation WYTD: 167%, Current SWE: 221% of 1991-2020 average
- Prineville Jan 1 forecast is 381 kaf (Jan-Aug) 207% of normal
  - Currently 5.6 kaf above rule curve
  - Planning to evacuate storage above the rule curve and create 10 kaf additional space below curve
  - Dry and Average Futures: with a runoff ranging from 85-150% of normal and 10 kaf hole PRV refills
  - Wet Future: with a runoff around 200%-300%or normal, we may benefit from a >10 kaf hole
- Ochoco Jan 1 forecast is 83.2 kaf (Jan-Jun) 209% of normal
  - Currently 1.9 kaf below rule curve
  - Planning to work toward an additional 5 kaf additional space below curve
  - Dry and Average Futures: with a runoff ranging from 80-200% of normal and 5 kaf hole OCH refills
  - Wet Future: with a runoff around 200%-250% of normal, we may benefit from a >5 kaf hole

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BUREAU OF RECLAMATION

A.R. Bowman Dam - Prineville Reservoir
July 2, 1999