2455 Old Penitentiary Road
Boise, ID 83712 (Next to the Old Pen)

Current Hours
Museum Opens March 7th. Hours: 12-5 Friday & Saturday; 12:30-3:30 Sunday

Free Admission!
Tours and other programs available.

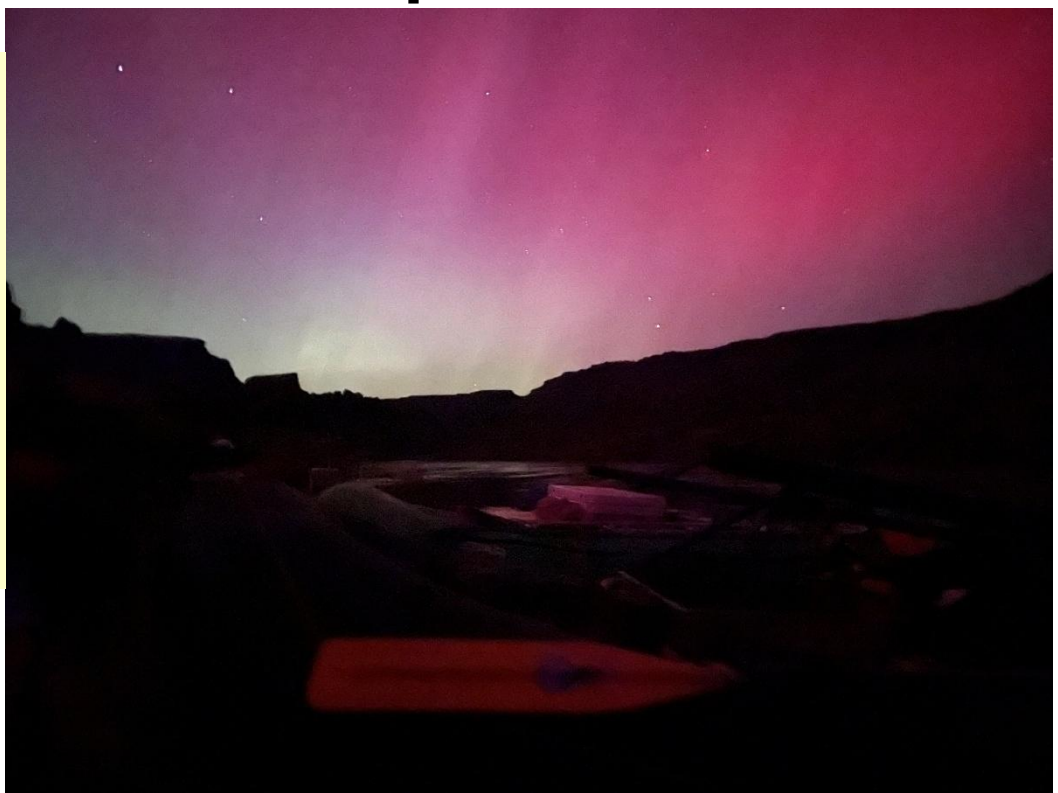
IDAHO MUSEUM OF MINING & GEOLOGY

Snowpack, Water and Drought: What's Up with the Weather

March 9, 20025

Idaho is a Pretty Amazing State

Northern Lights seen from Owyhee River Canyon May 11, 2024



By Ron Abramovich
Mostly Retired….

This talk & more posted here:
https://snowweatherandflow.blog/

Topics:

- **Current Ocean & Atmosphere Conditions & Teleconnections**
  - **Early Seasonal Outlooks for this Winter**
  - **How Analog Years are Selected and Used to Predict What May Happen This Year**
  - **2025 Analog Years and Years that Follow Strong El Nino Events like Last Year**

- **Conditions Leading to this Winter**
  - **Summer / Fall Precipitation & Drought Information**
  - **Idaho's & the Nation's Drought Status – last year and now**
  - **Idaho Acres Burned**

- **2024 Extreme Weather & Natural Disasters**
  - **Increases in US Natural Disasters**
  - **Temperature Trends**

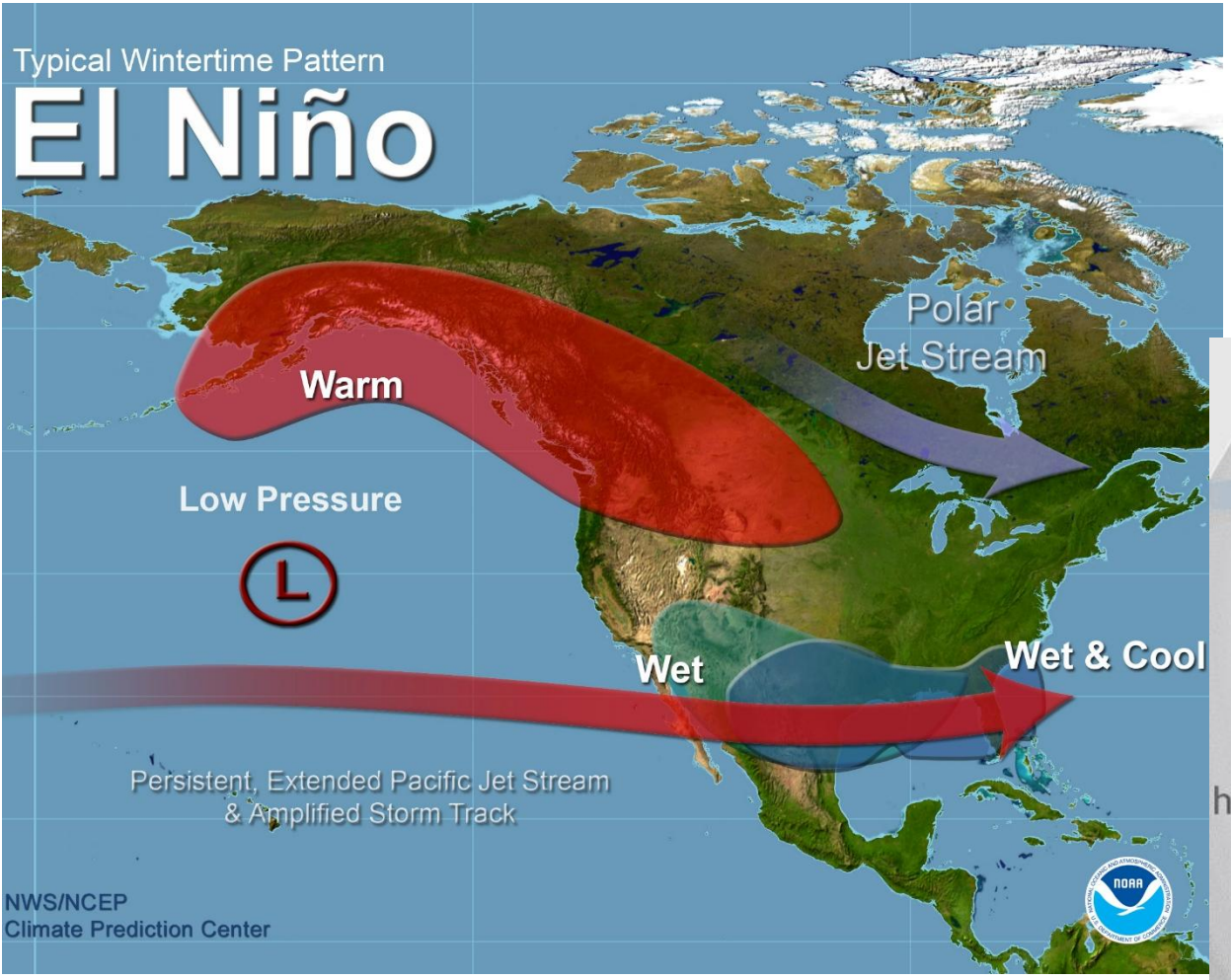
- **Current Conditions:**
  - **Streamflow, Snowpack & Water Supply Forecasts**
  - **Shortages or Surpluses Payette, Boise and Owyhee Basins**

- **Weather Outlooks – Short-Term and Long-Term**

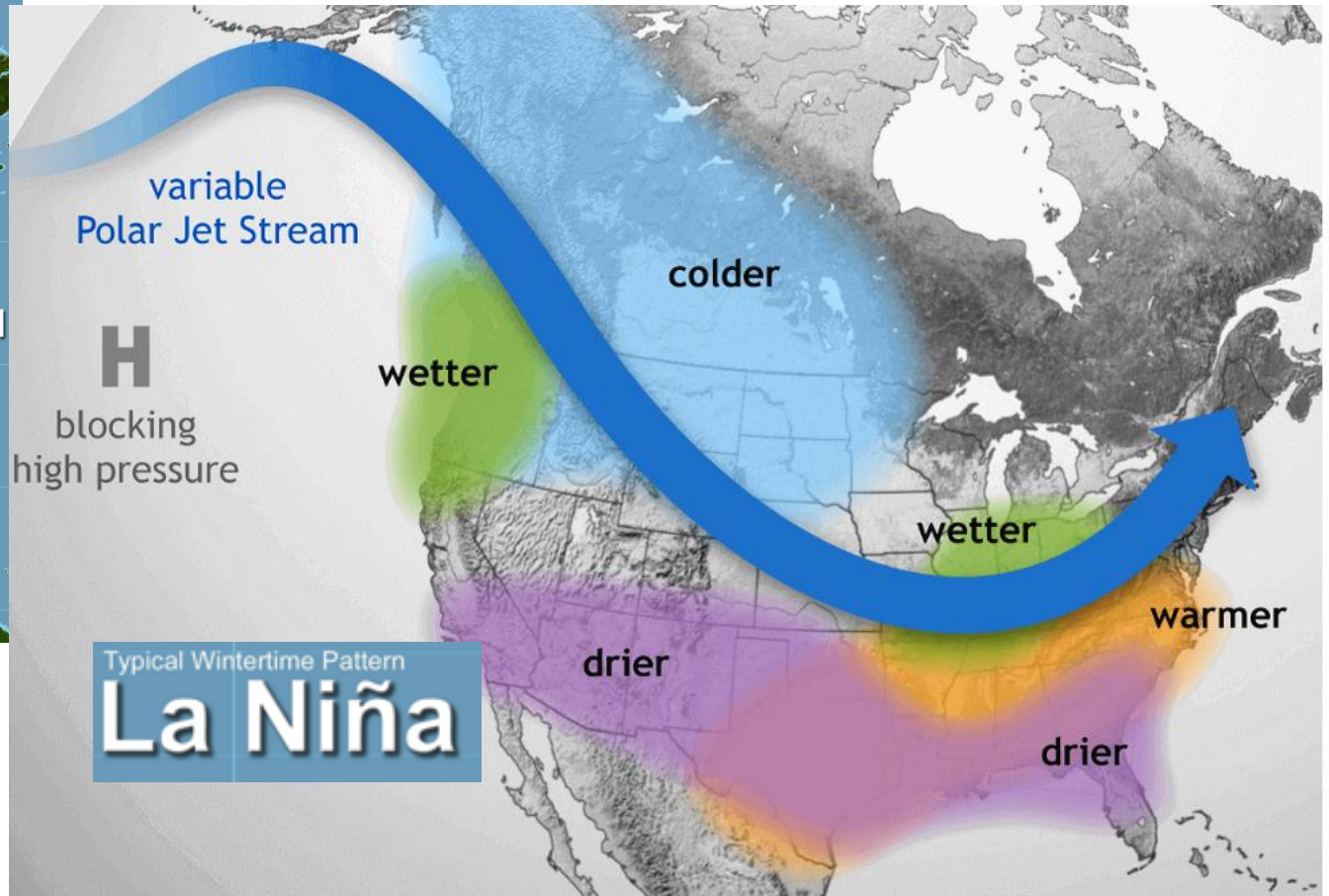
- **Discuss how Teleconnections are used and how Snow and Streamflow relationships are used to predict water supplies for this year. The key is if the past can still be used to predict the future in a changing climate with a greater degree of climatic variability that we are seeing.**

Quick Review

El Nino



La Nina



Background Information:
Three Primary Atmospheric Teleconnections or Drivers

ENSO – El Nino / La Nina – measure of Pacific Sea Surface Temperatures
=> Winter 24/24 - Cool temps - La Nina Conditions

Southern Oscillation Index (SOI) - measure of Pacific Atmosphere
=> Winter 24/24 - Neutral / Positive - La Nina Conditions

Pacific Decadal Oscillation (PDO) – measure of north Pacific Sea Surface Temperatures
=> Winter 24/24 - Cool Phase – very cold past few years

Many researchers, like Pete Parsons, look at these climate teleconnections that correlate with our wet season (winter) to better understand what the future may bring.

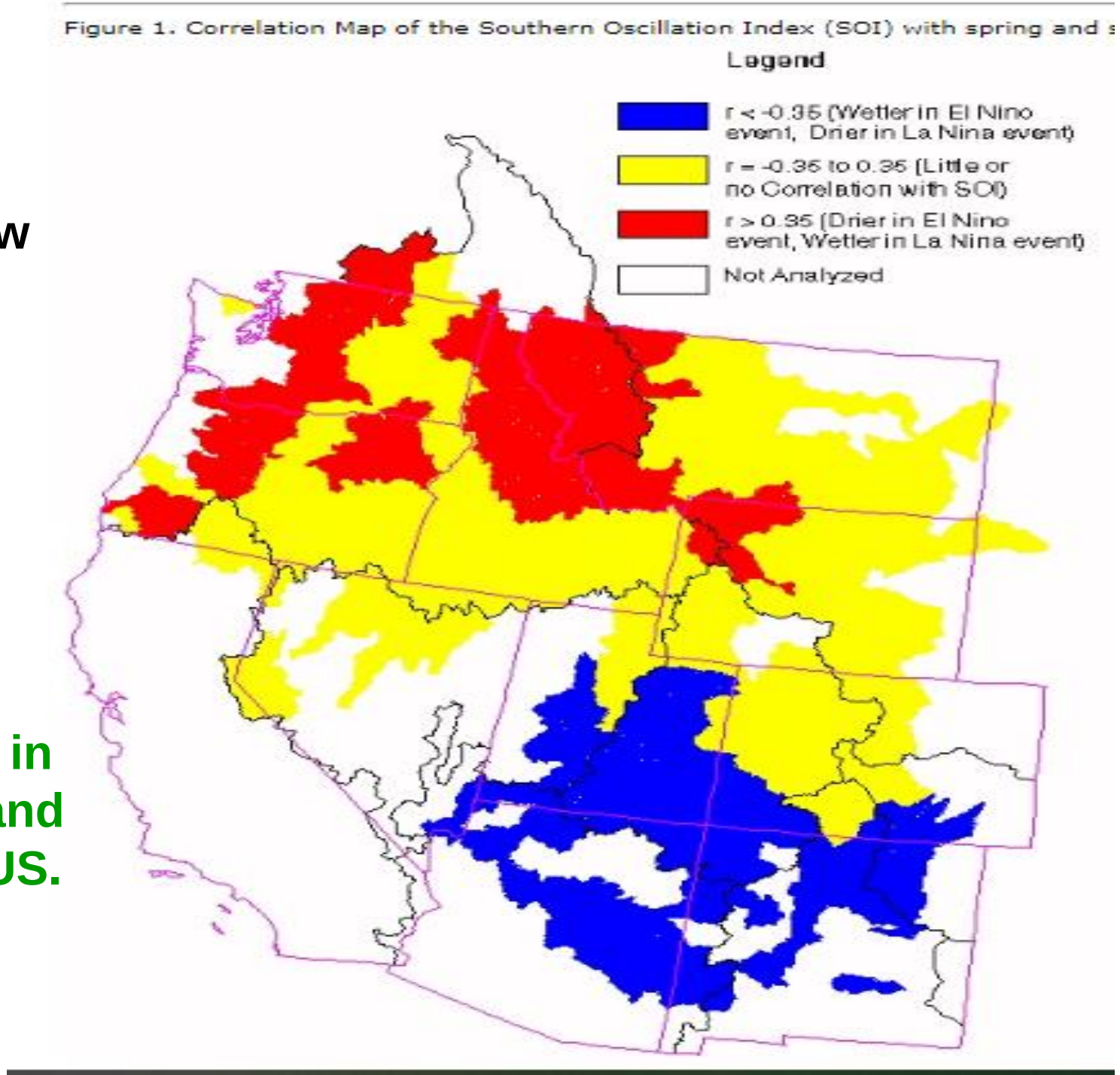
Key is if we can still use the past to predict the future in a changing climate.

Correlation Map of Southern Oscillation Index (SOI) with Spring-Summer Streamflow

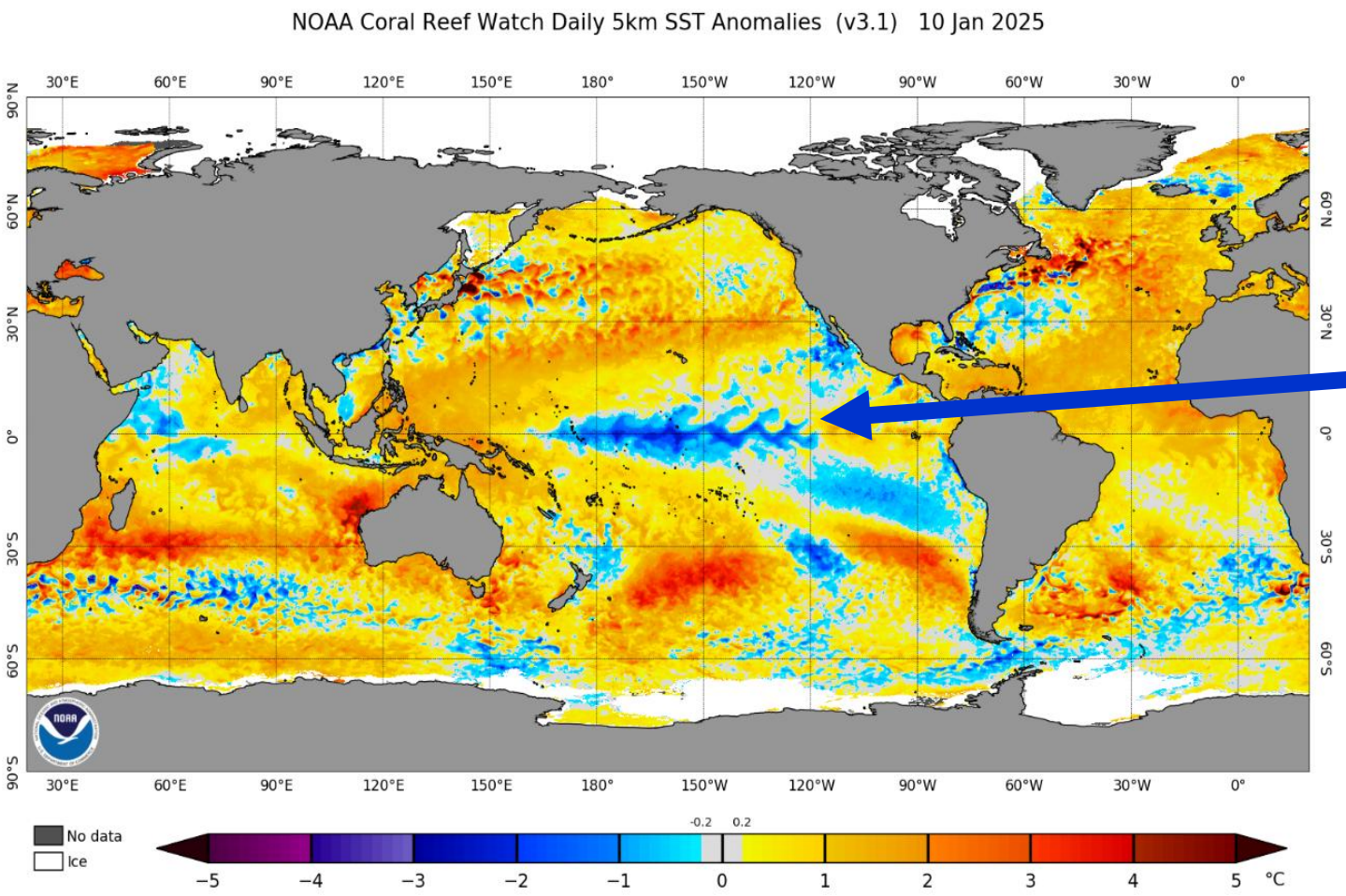
Red wetter in La Nina years.

Blue wetter in El Nino years.

Key is – what happens July-Nov in Pacific correlates with snowfall and summer streamflow in Western US.

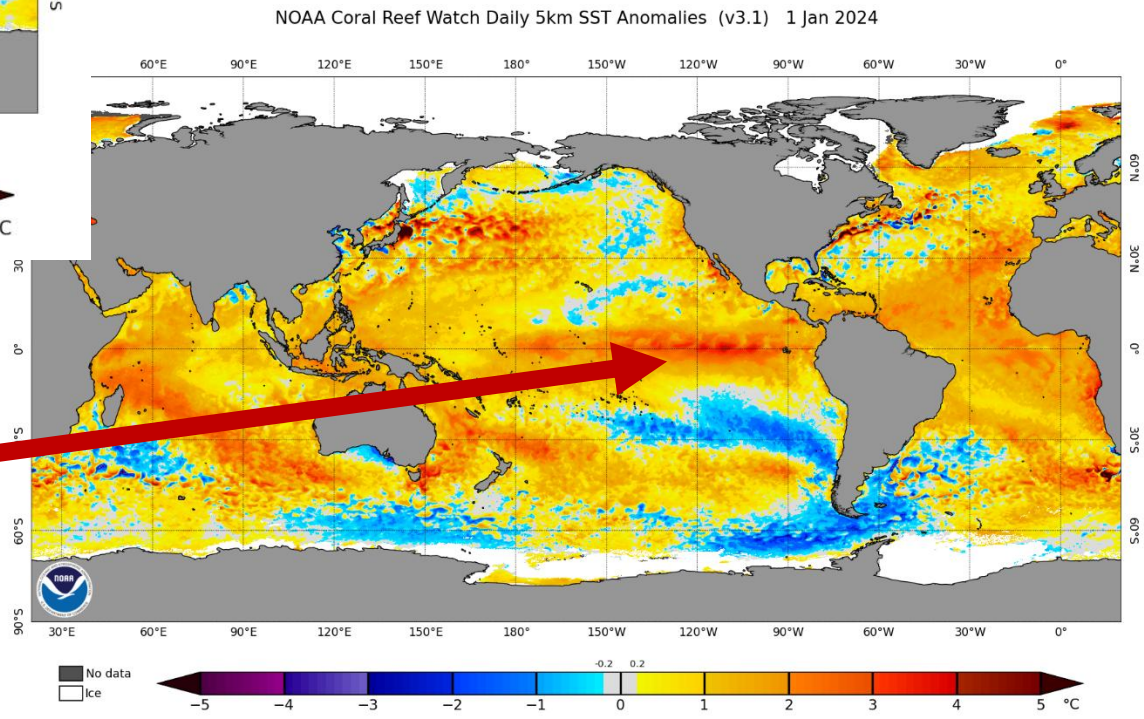


Sea Surface Temperatures

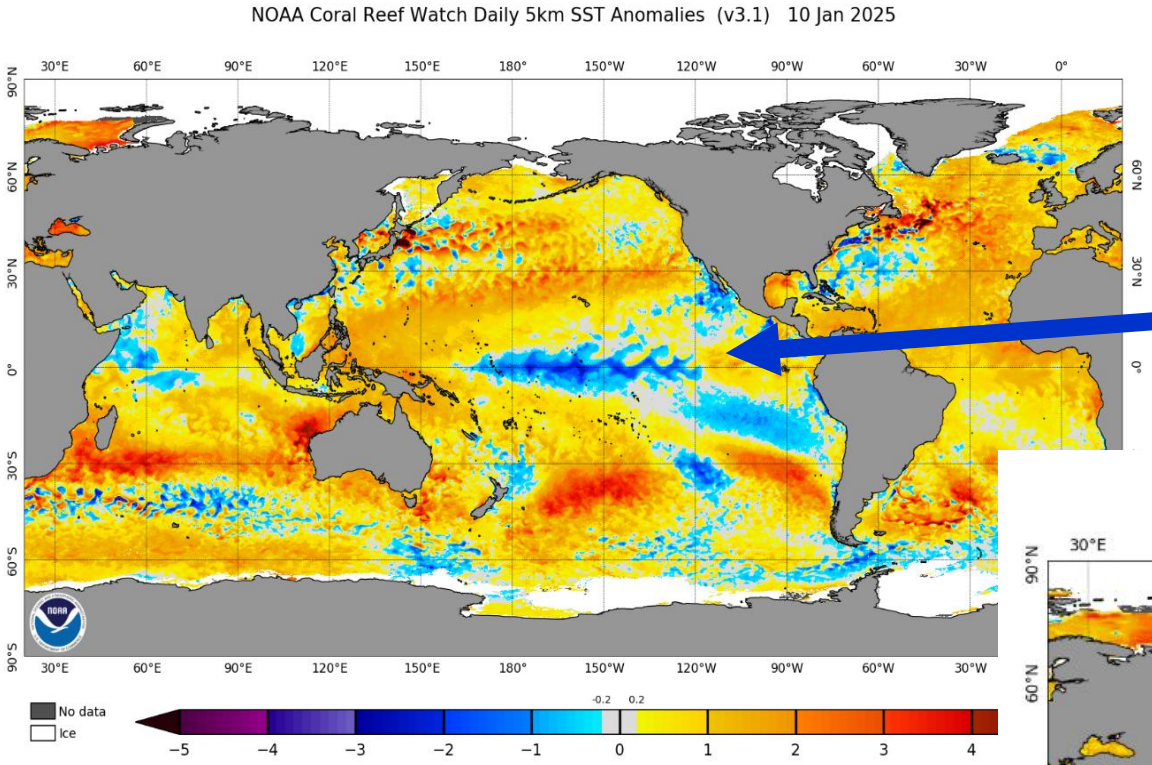


La Nina Conditions
Jan 10, 2025

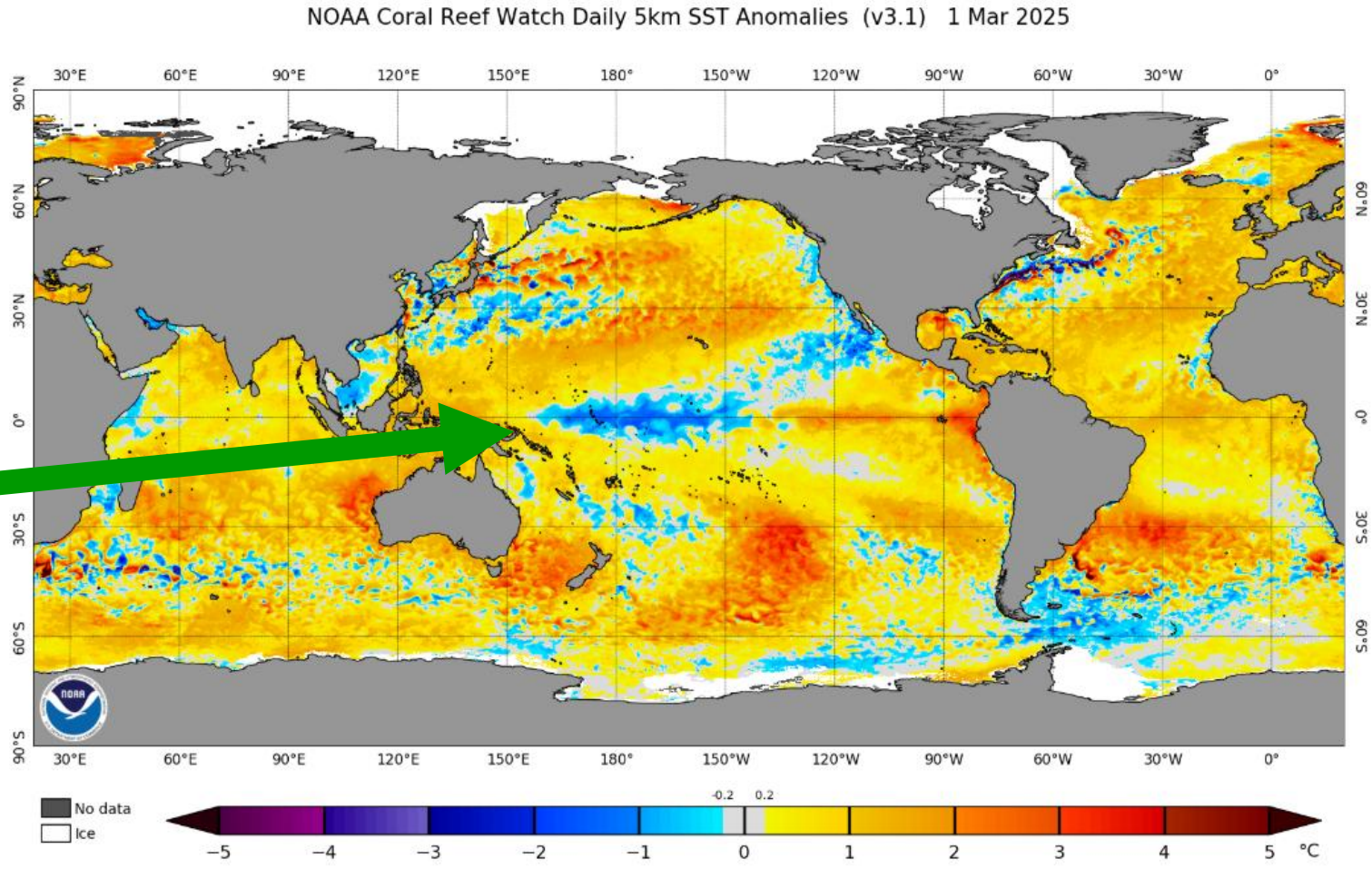
El Nino Conditions
Jan 1, 2024



Sea Surface Temperatures

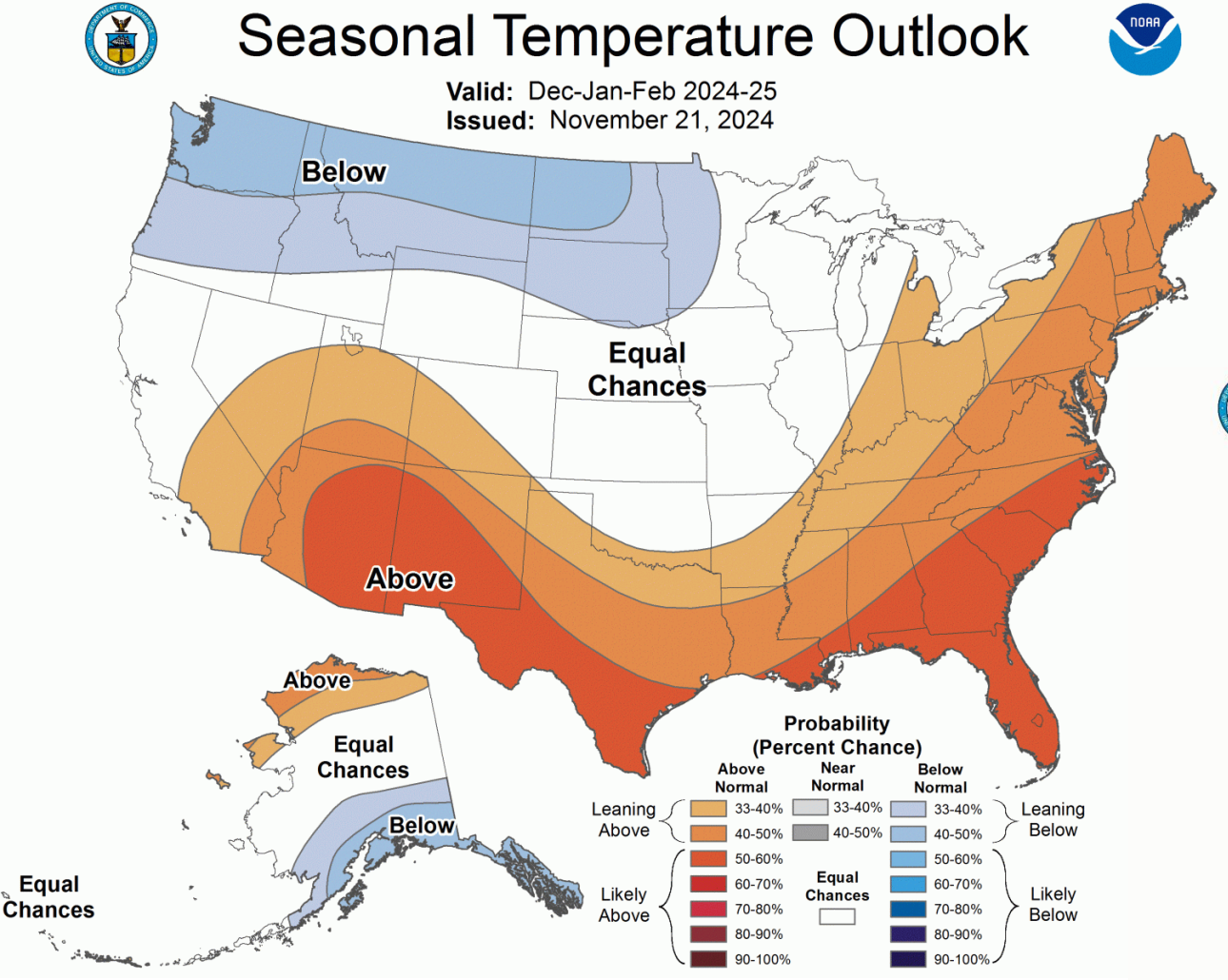


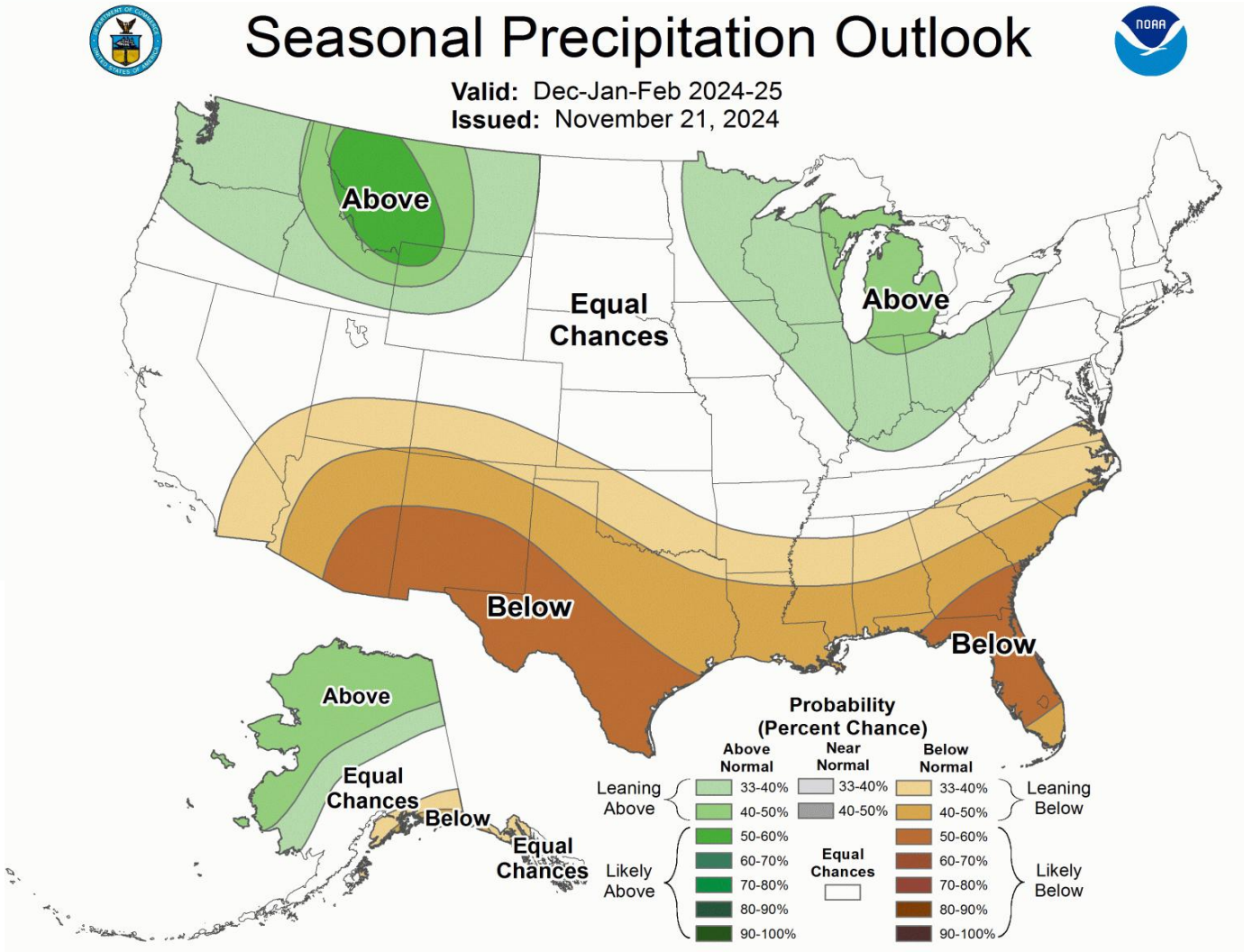
La Nina Conditions Jan 10, 2025



And Mar 1, 2025 fading towards Neutral Conditions

NOAA Nov 21, 2024
Winter Outlook for
Temperature & Precipitation





Seasonal Climate Forecast
March – May 2025
Issued: February 21, 2025

Contact: ODF Lead Meteorologist Pete Parsons
503-945-7448 or peter.gj.parsons@odf.oregon.gov

Forecast Highlights

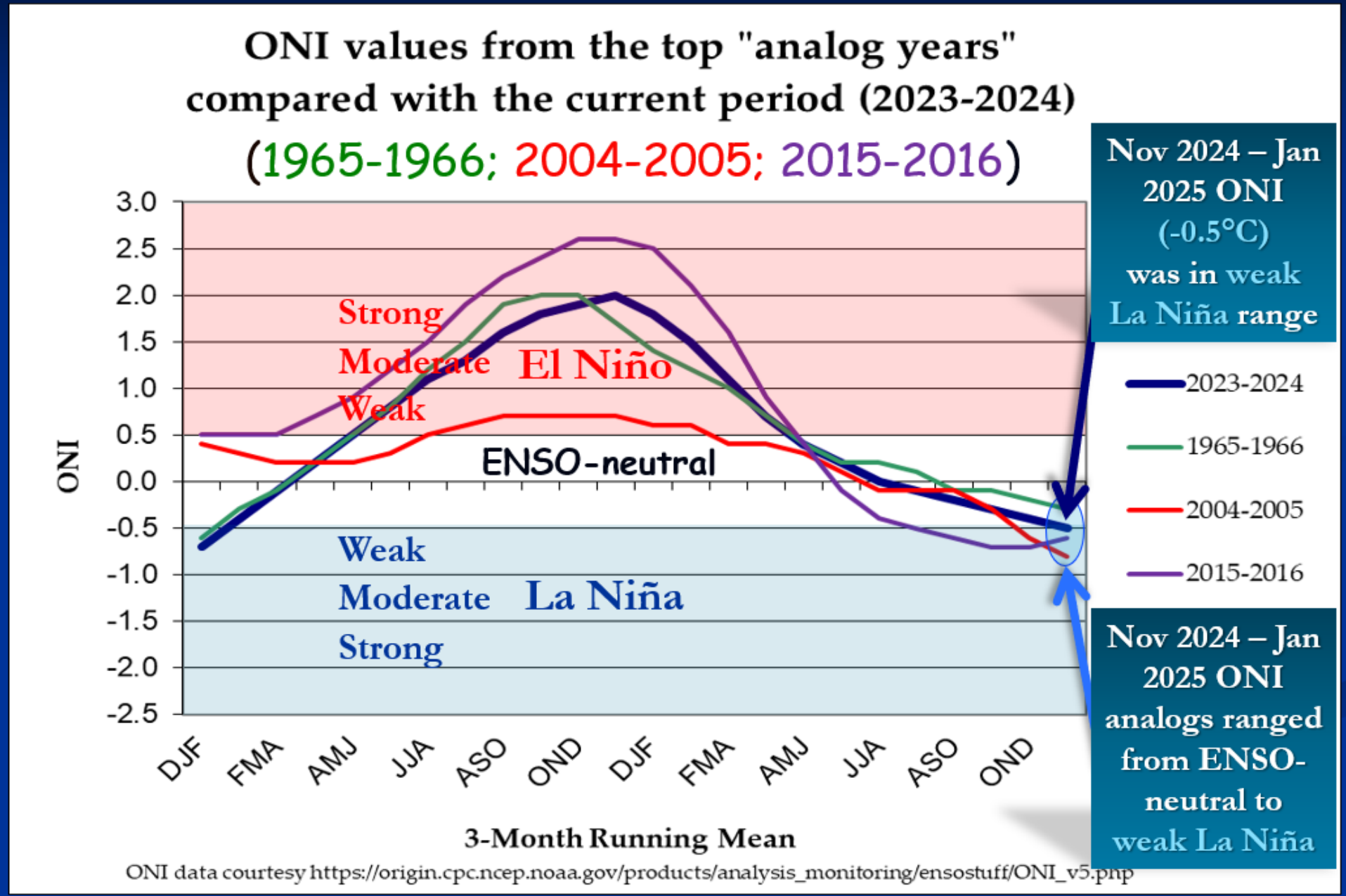
- This forecast is based on weather that occurred during the (1967; 2006; 2017) analog years (2017 replaced 1993 this month).

- La Niña conditions are present and should transition to ENSO-neutral during this forecast period.

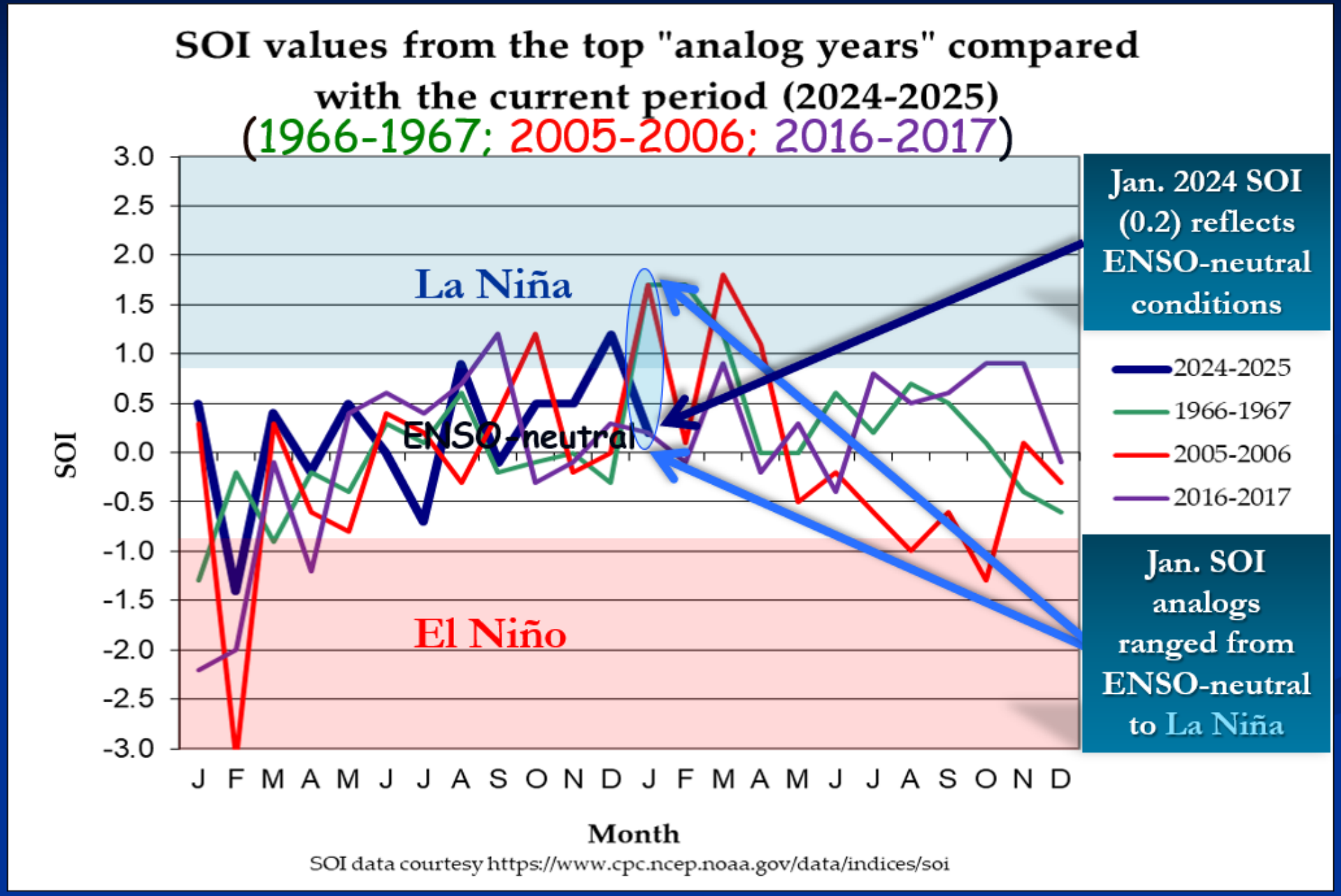
- Expect below-normal temperatures and above-normal precipitation and mountain snow in March and April. Mountain snowpacks should peak at above or well-above average.

- In stark contrast...May looks relatively warm and dry, which should quickly clear mountain snow at lower elevations. Expect dry stretches with 80°F+ temperatures in the valleys (a welcome sight for most).

Oceanic Niño Index (ONI)

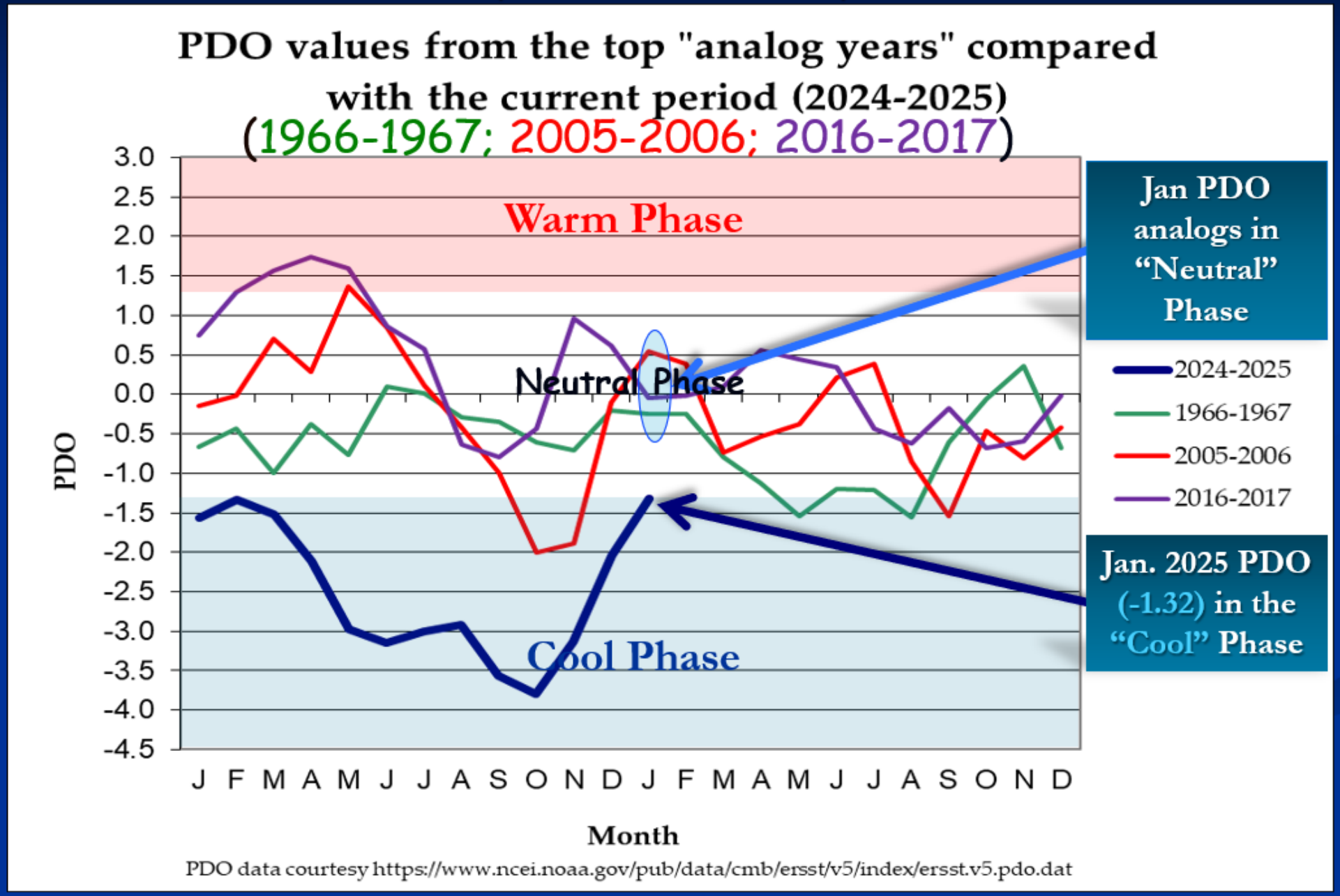


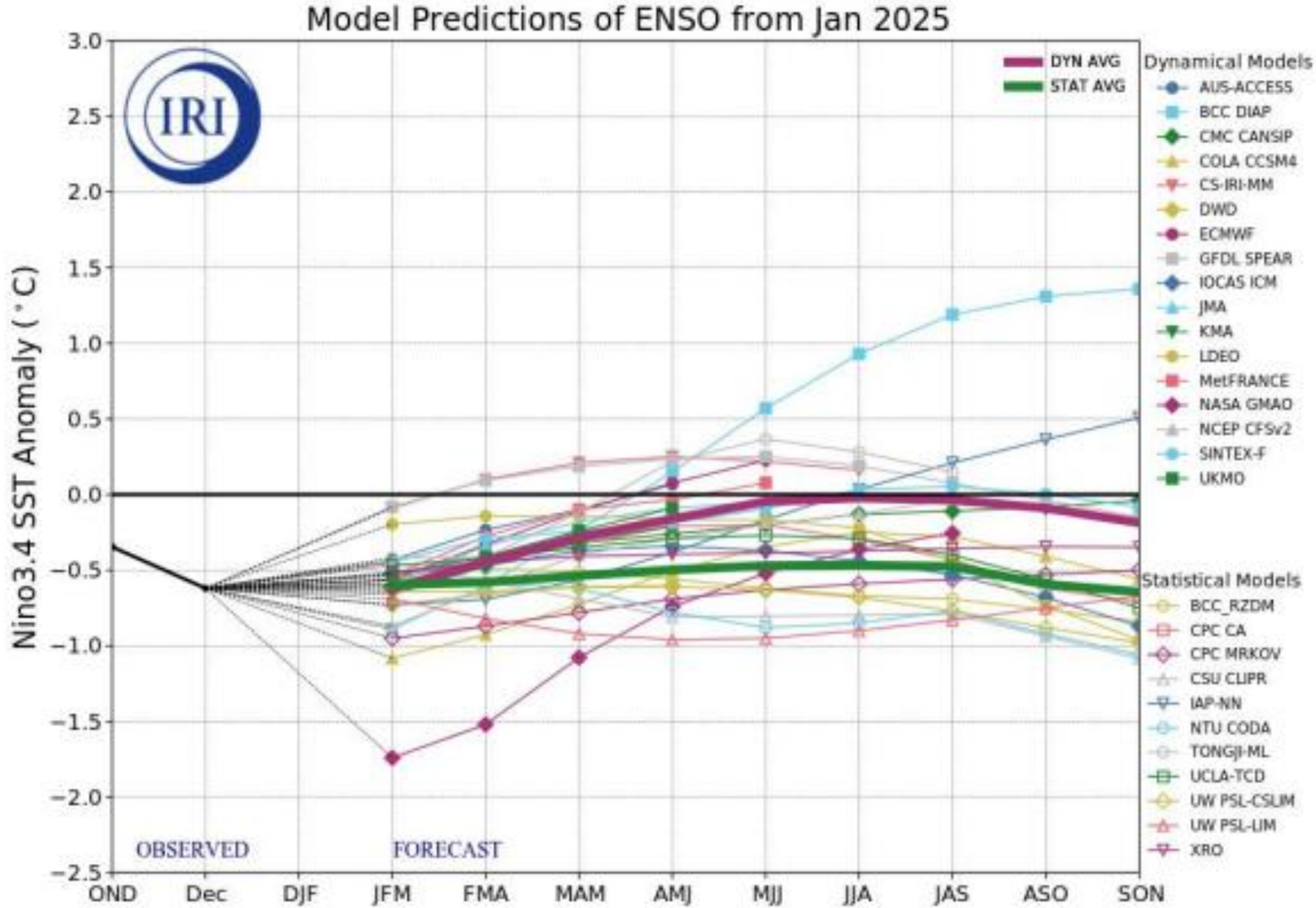
Southern Oscillation Index (SOI)



North Pacific Ocean

(Poleward of 20°N Latitude)




Model Predictions of ENSO from Jan 2025
IRI
Nino3.4 SST Anomaly (°C)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
OBSERVED
FORECAST
OND
Dec
DJF
JFM
FMA
MAM
AMJ
MJJ
JJA
JAS
ASO
SON
DYN AVG
STAT AVG
Dynamical Models
AUS-ACCESS
BCC DIAP
CMC CANSIP
COLA CCSM4
CS-IRI-MM
DWD
ECMWF
GFDL SPEAR
IOCAS ICM
JMA
KMA
LDEO
MetFRANCE
NASA GMAO
NCEP CFSv2
SINTEX-F
UKMO
Statistical Models
BCC_RZDM
CPC CA
CPC MRKOV
CSU CLIPR
IAP-NN
NTU CODA
TONGJI-ML
UCLA-TCD
UW PSL-CSLIM
UW PSL-LIM
XRO

New source found to track **Strong El Nino Years.**

SOI and Sea Surface Temps are not always in agreement because SOI is measure of atmosphere and others are based on Sea Surface Temps.

The Oceanic Niño Index (ONI) has become the de-facto standard that NOAA uses to classify El Niño and La Niña events and Pete uses too.

Let's use these 9 Strong and Very Strong El Nino years in this analysis.

https://ggweather.com/enso/oni.htm

El Niño - 27				La Niña - 25		
Weak - 11	Moderate - 7	Strong - 6	Very Strong - 3	Weak - 12	Moderate - 6	Strong - 7
1952-53	1951-52	1957-58	1982-83	1954-55	1955-56	1973-74
1953-54	1963-64	1965-66	1997-98	1964-65	1970-71	1975-76
1958-59	1968-69	1972-73	2015-16	1971-72	1995-96	1988-89
1969-70	1986-87	1987-88		1974-75	2011-12	1998-99
1976-77	1994-95	1991-92		1983-84	2020-21	1999-00
1977-78	2002-03	2023-24		1984-85	2021-22	2007-08
1979-80	2009-10			2000-01		2010-11
2004-05				2005-06		
2006-07				2008-09		
2014-15				2016-17		
2018-19				2017-18		
				2022-23		

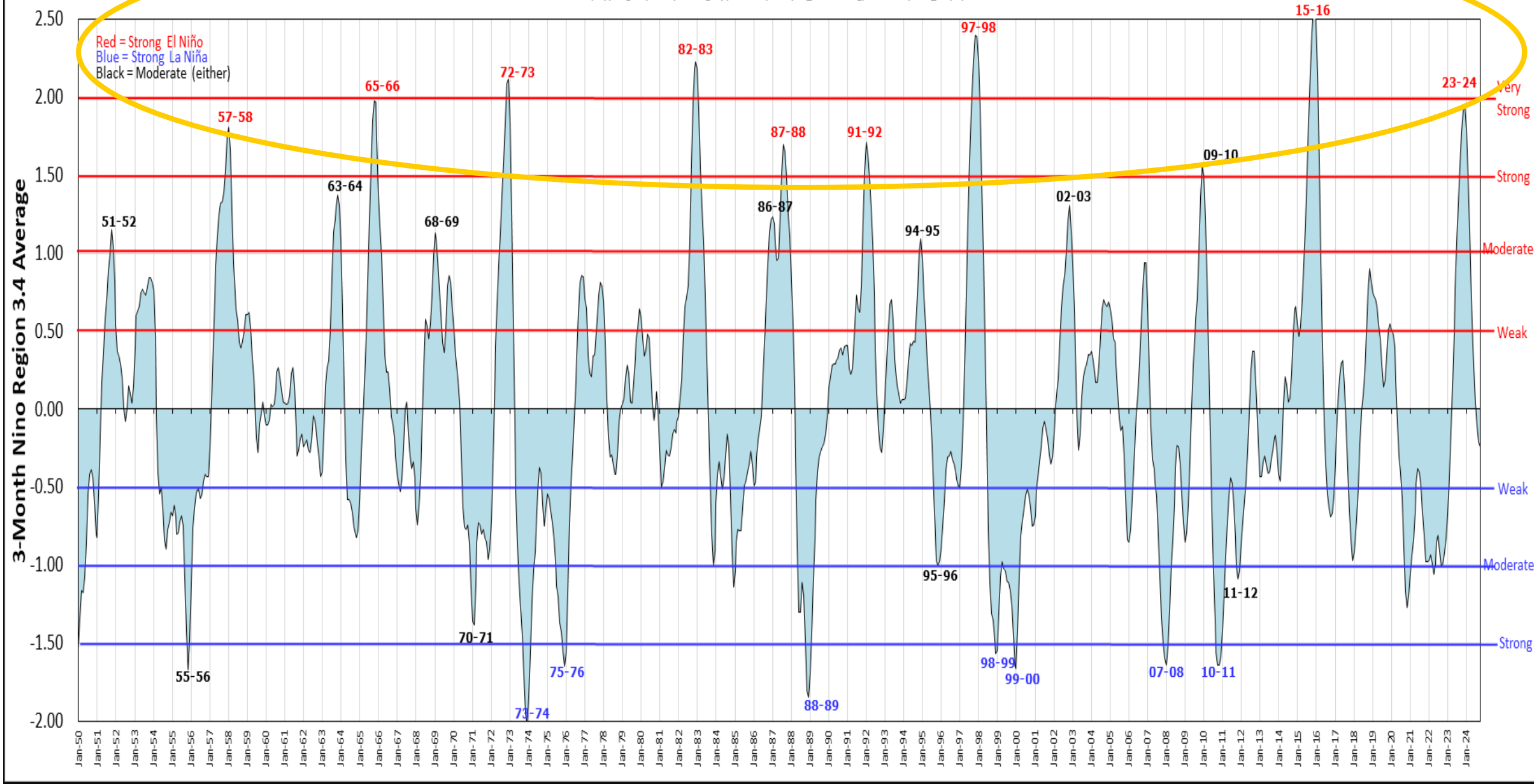
			Streamflow as % of 1991 - 2020 Average							
			Feb-Sep	Apr-Sep	Apr-Sep	Apr-Sep	Apr-Sep	Apr-Sep	Apr-Sep	Apr-Sep
					Sorted high to low					
Strong & Very Strong El Nino Years	Year Following a Strong & Very Strong El Nino Year		Owyhee River below Dam	Bruneau River	Boise R nr Boise	Payette River nr Horseshoe Bend	MF Salmon River at MF Lodge	Salmon River at White Bird	Selway River	Spokane River nr Post Falls
Very Strong		ENSO								
2015-16	2017	LA	155	182	184	164	180	148	104	110
1982-83	1984	LA	363	343	162	146	NA	144	126	109
1997-98	1999	LA	100	116	138	140	121	124	112	126
					Sorted high to low					
Strong										
1972-73	1974	LA	120	104	185	188	182	164	145	189
1991-92	1993	N	165	125	124	128	NA	107	94	114
1965-66	1967	N	69	93	107	111	NA	119	109	110
1987-88	1989	LA	145	103	99	91	NA	78	102	114
1957-58	1959	EL	20	50	89	99	NA	101	124	136
2023-24	2025	LA	?	?	?	?	?	?	?	?
Mar 5 NWS 50% Exceedance Forecast			131%	121%	112%	115%	117%	103%	90%	83%
Mar 1 NRCS 50% Exceedance Forecast			127%	107%	117%	112%	104%	90%	108%	75%
					Sorted high to low					

< 80%
80-110%
110-150%
> 150%

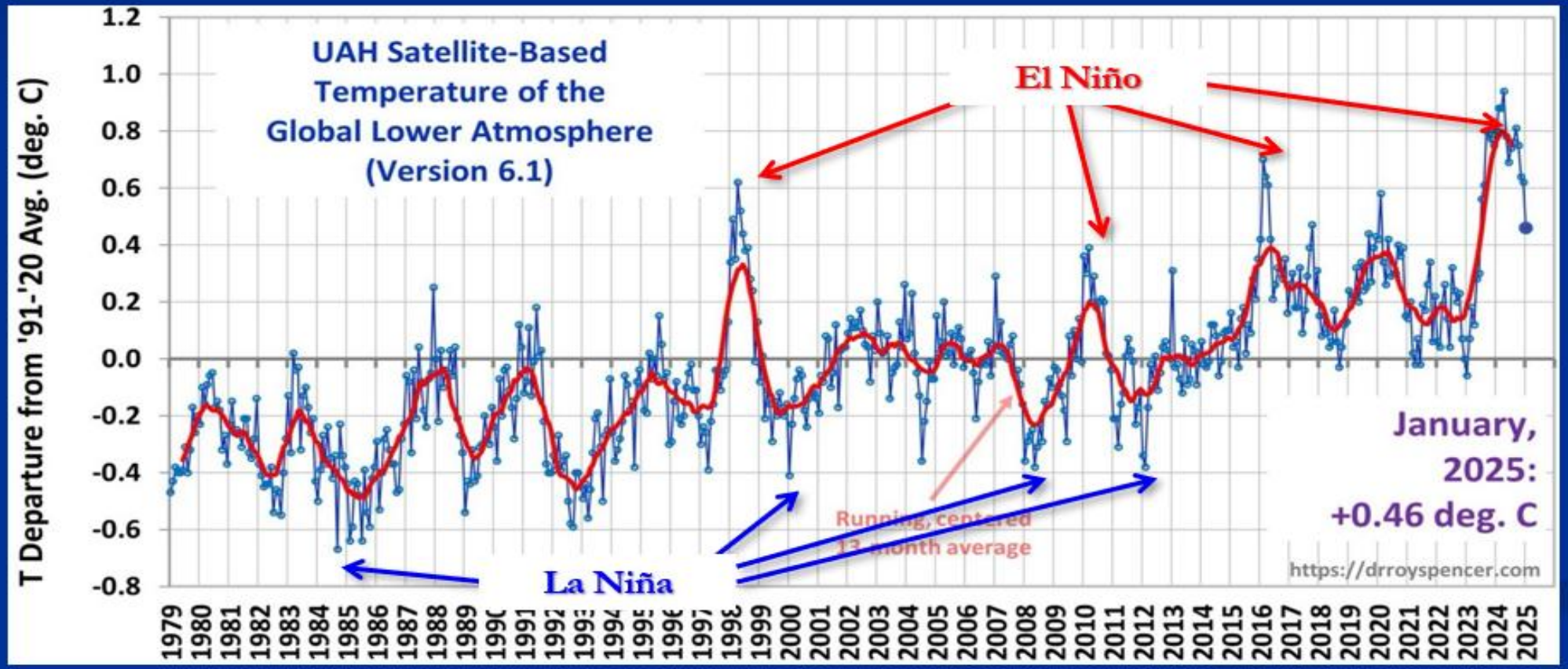
Color Code for Streamflow as % of Average

Oceanic Niño Index (ONI)

https://origin.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/ONI_v5.php

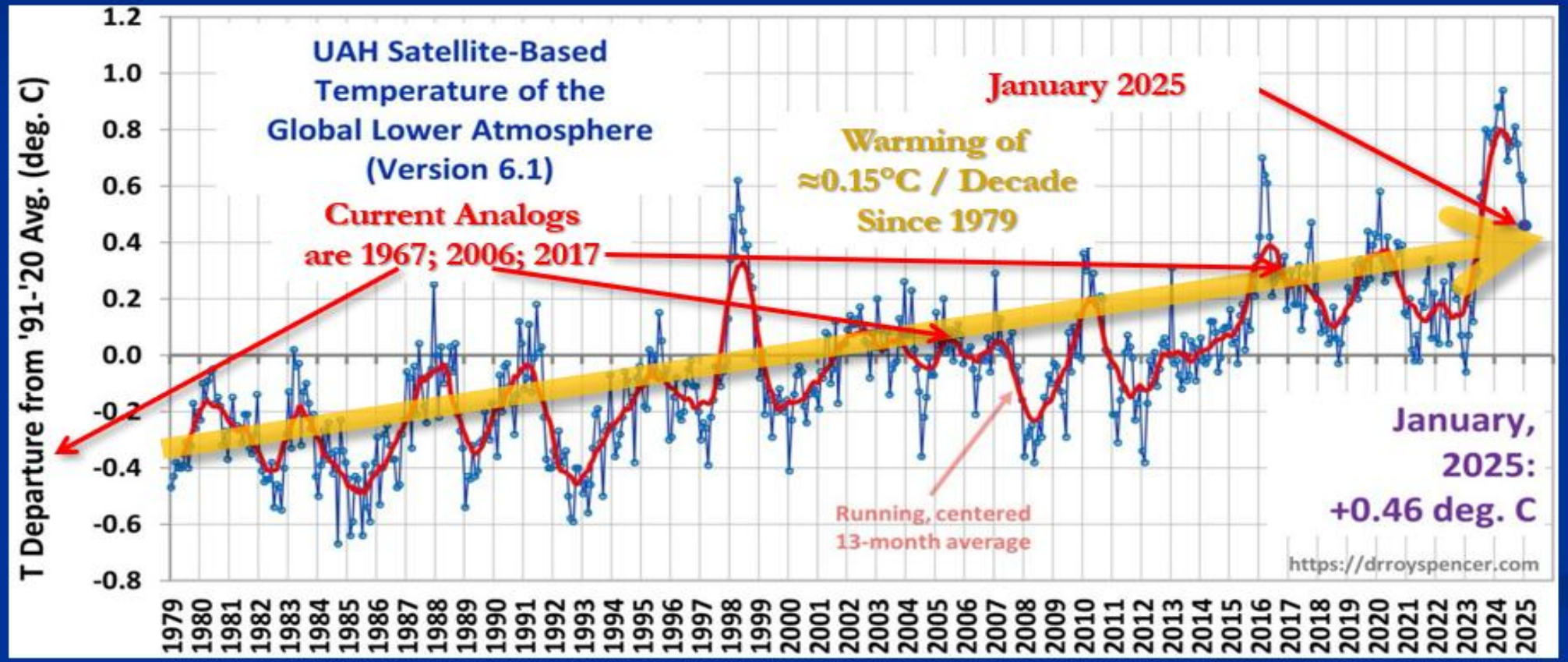


El Niño & La Niña Impact Global Temperatures...

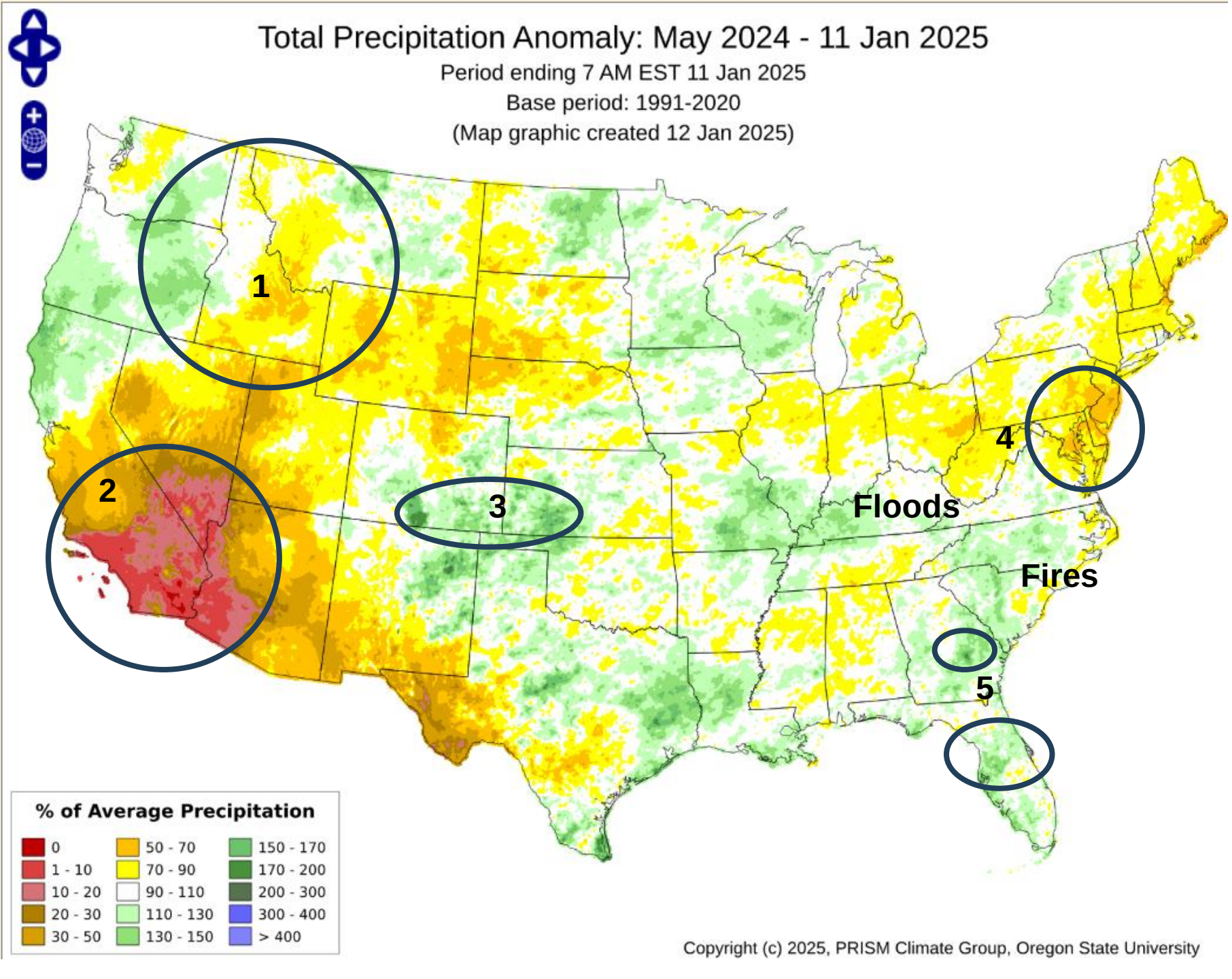


Courtesy: http://www.drroyspencer.com/latest-global-temperatures/

Global Temperature Trends
Increase Error in Analog Forecasts!



Courtesy: http://www.drroyspencer.com/latest-global-temperatures/



Let's look at the past weather /storms to see how we got here today.

Total Precipitation Since May 1, 2024

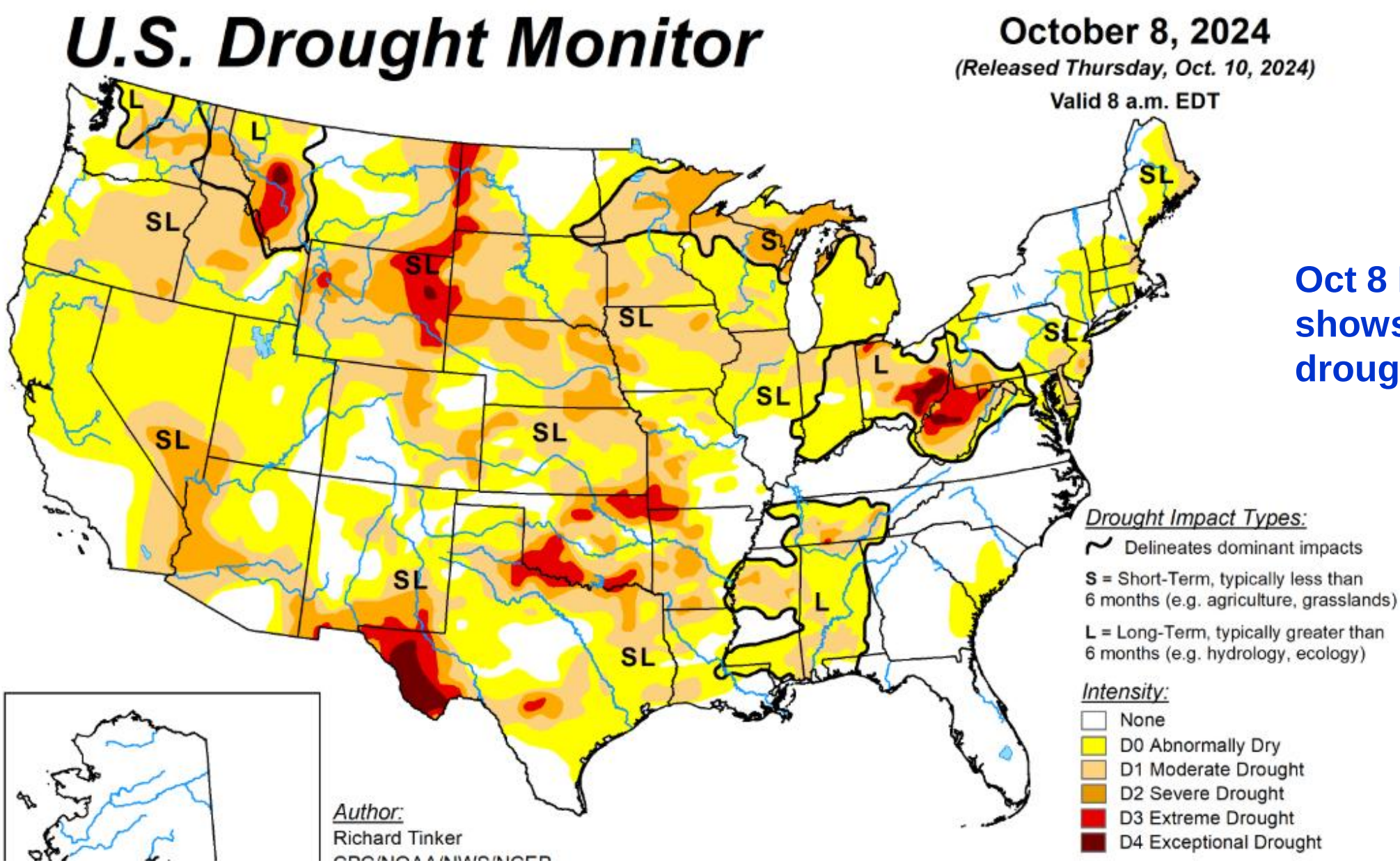
1. Idaho's Precip ranges from 50-130% Avg

2. Southern CA near 0%

3. CO Nov snowstorm

4. NY Fires

5. Back-to-Back Major Hurricanes in SE



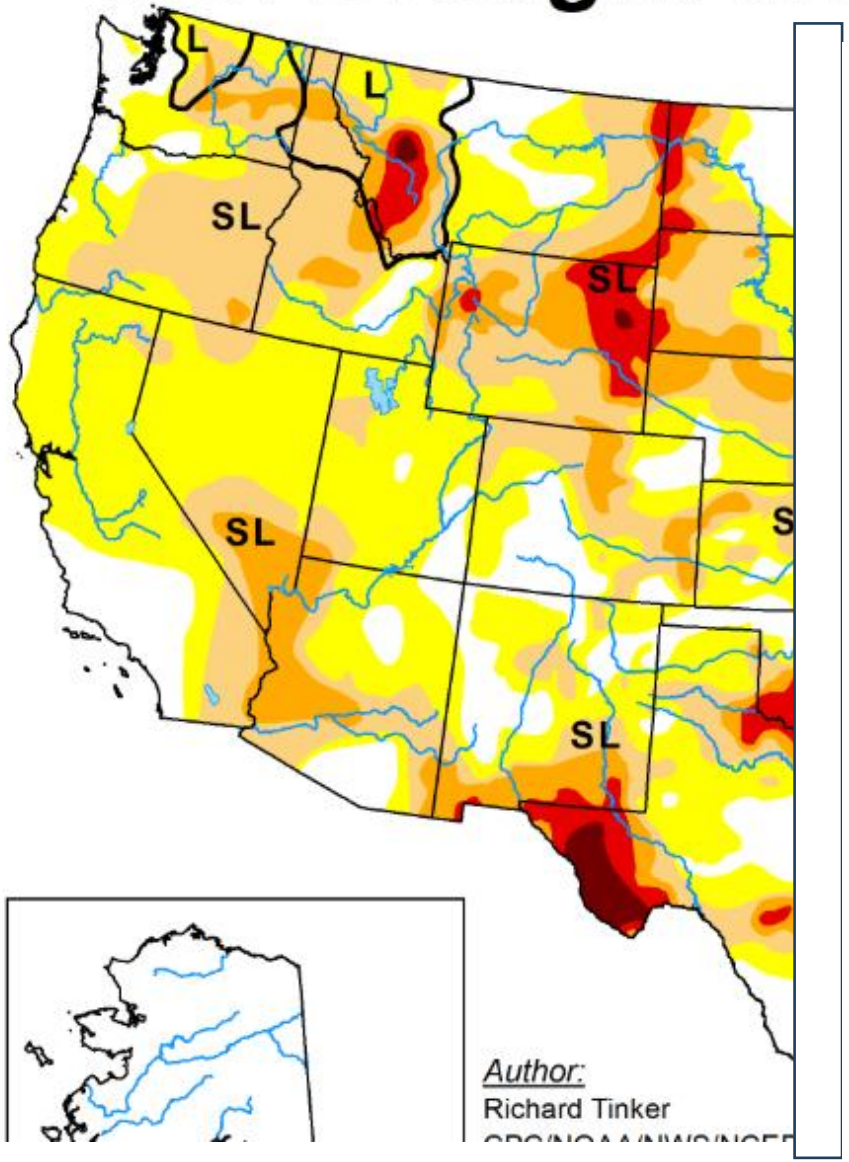
Oct 8 Drought Monitor shows some type of drought in most of West.

U.S. Drought Monitor

October 8, 2024

(Released Thursday, Oct. 10, 2024)

Valid 8 a.m. EDT



Author:
Richard Tinker

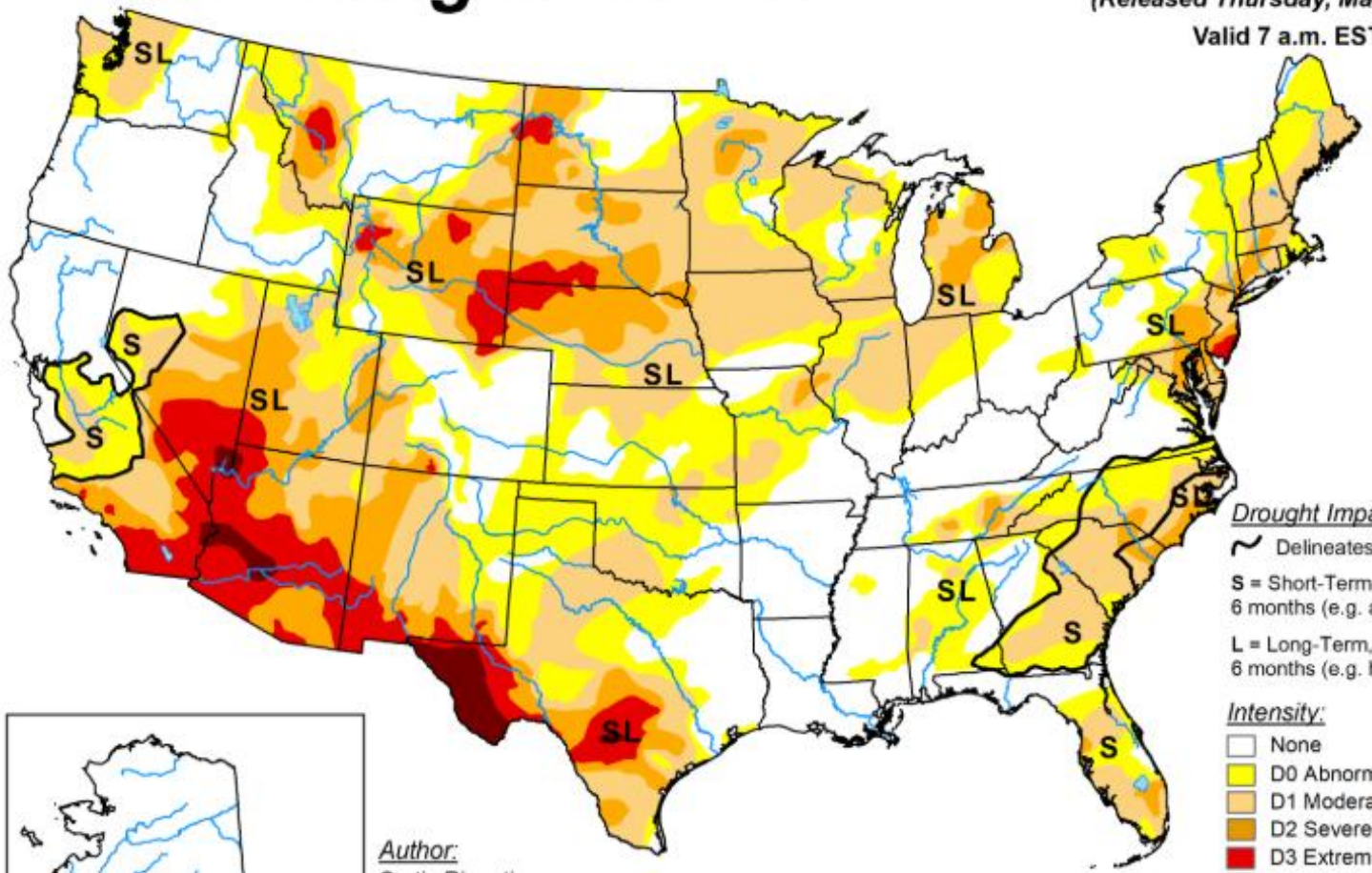
And Mar 4 Drought Monitor

U.S. Drought Monitor

March 4, 2025

(Released Thursday, Mar. 6, 2025)

Valid 7 a.m. EST



Drought Impact Types:

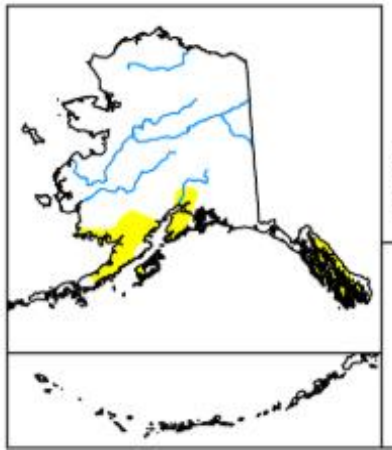
Delineates dominant impacts

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

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

Intensity:

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

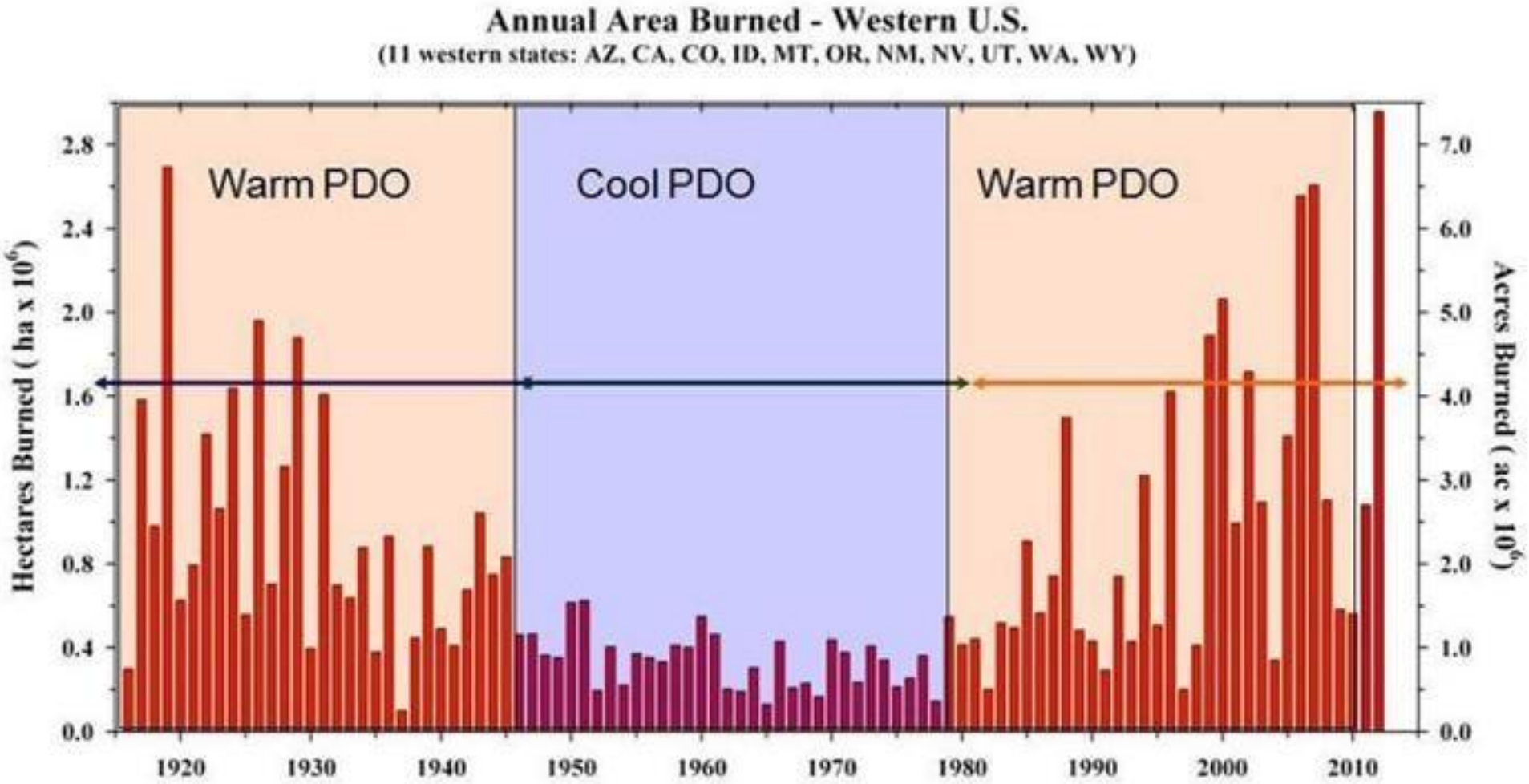


Author:
Curtis Riganti
National Drought Mitigation Center

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

droughtmonitor.unl.edu

Area burned in 11 Western states, 1916-2012

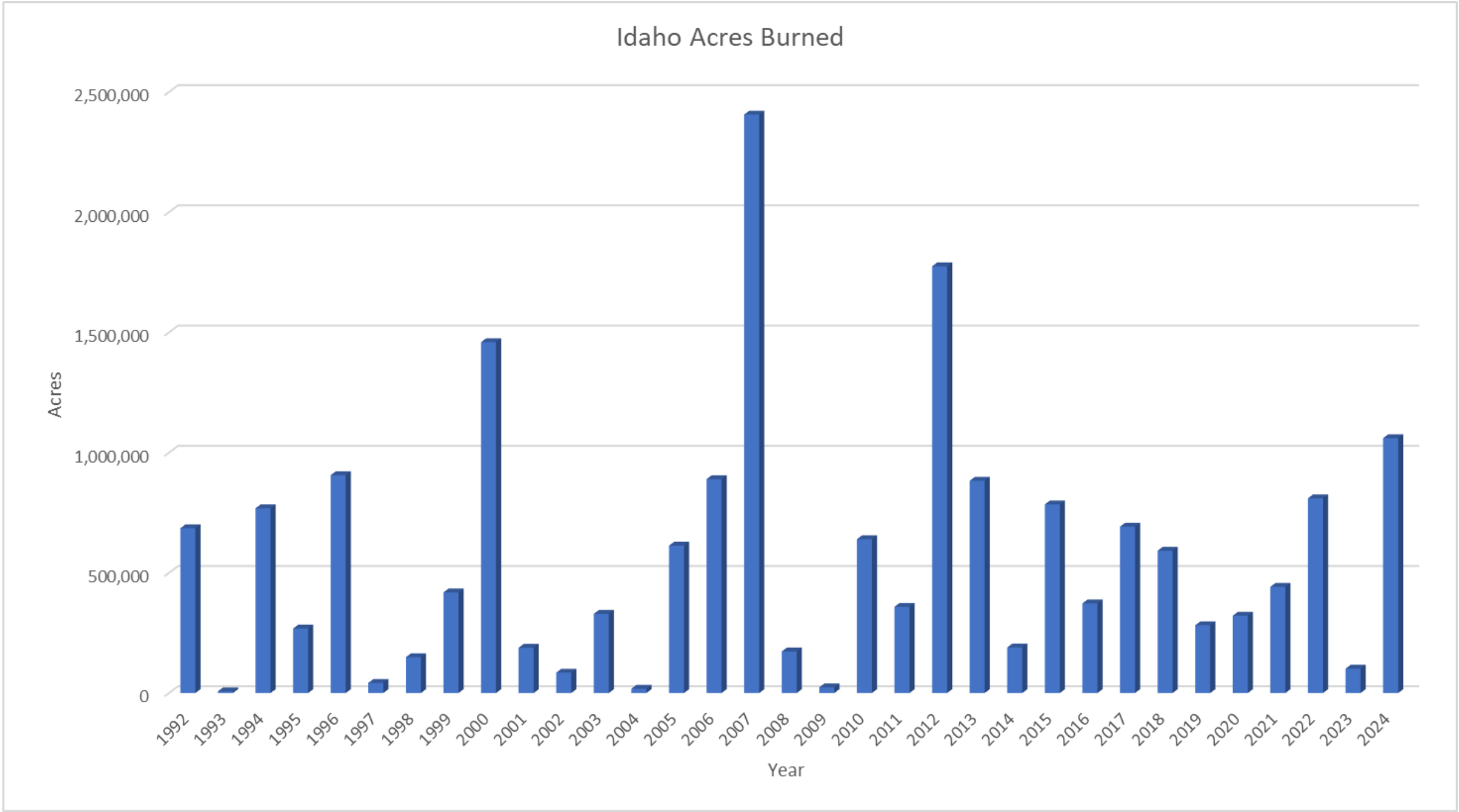


Period of post-settlement fire

Period of active fire suppression and fuel accumulation

Period of fire increase

Idaho Acres Burned 1992 - 2024



2024: An active year of U.S. billion-dollar weather and climate disasters

BY ADAM B. SMITH
PUBLISHED JANUARY 10, 2025
COMMENTS

NOAA's National Centers for Environmental Information (NCEI) has updated its 2024 Billion-dollar disaster analysis. In 2024, there were 27 individual weather and climate disasters with at least $1 billion in damages, trailing only the record-setting 28 events analyzed in 2023. These disasters caused at least **568 direct or indirect fatalities,** which is the eighth-highest for these billion-dollar disasters over the last 45 years (1980-2024). The cost was approximately $182.7 billion.

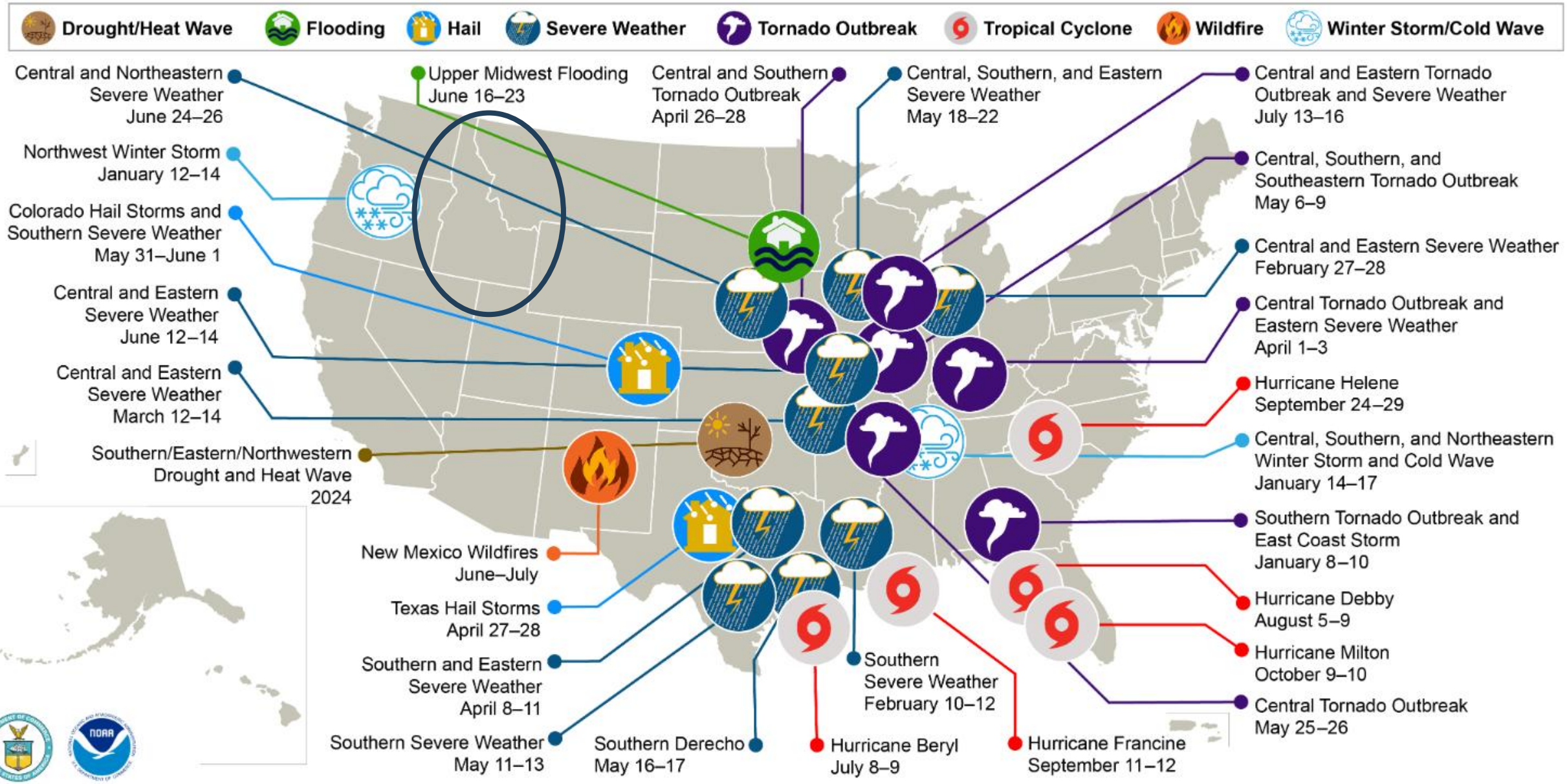
This total places 2024 as the fourth-costliest on record, trailing 2017 ($395.9 billion), 2005 ($268.5 billion) and 2022 ($183.6 billion). Adding the 27 events of 2024 to the record that begins in 1980, the U.S. has sustained **403 weather and climate disasters** for which the individual damage costs reached or exceeded $1 billion. The cumulative cost for these 403 events exceeds **$2.915 trillion**.

Climate.gov
SCIENCE & INFORMATION FOR A CLIMATE-SMART NATION

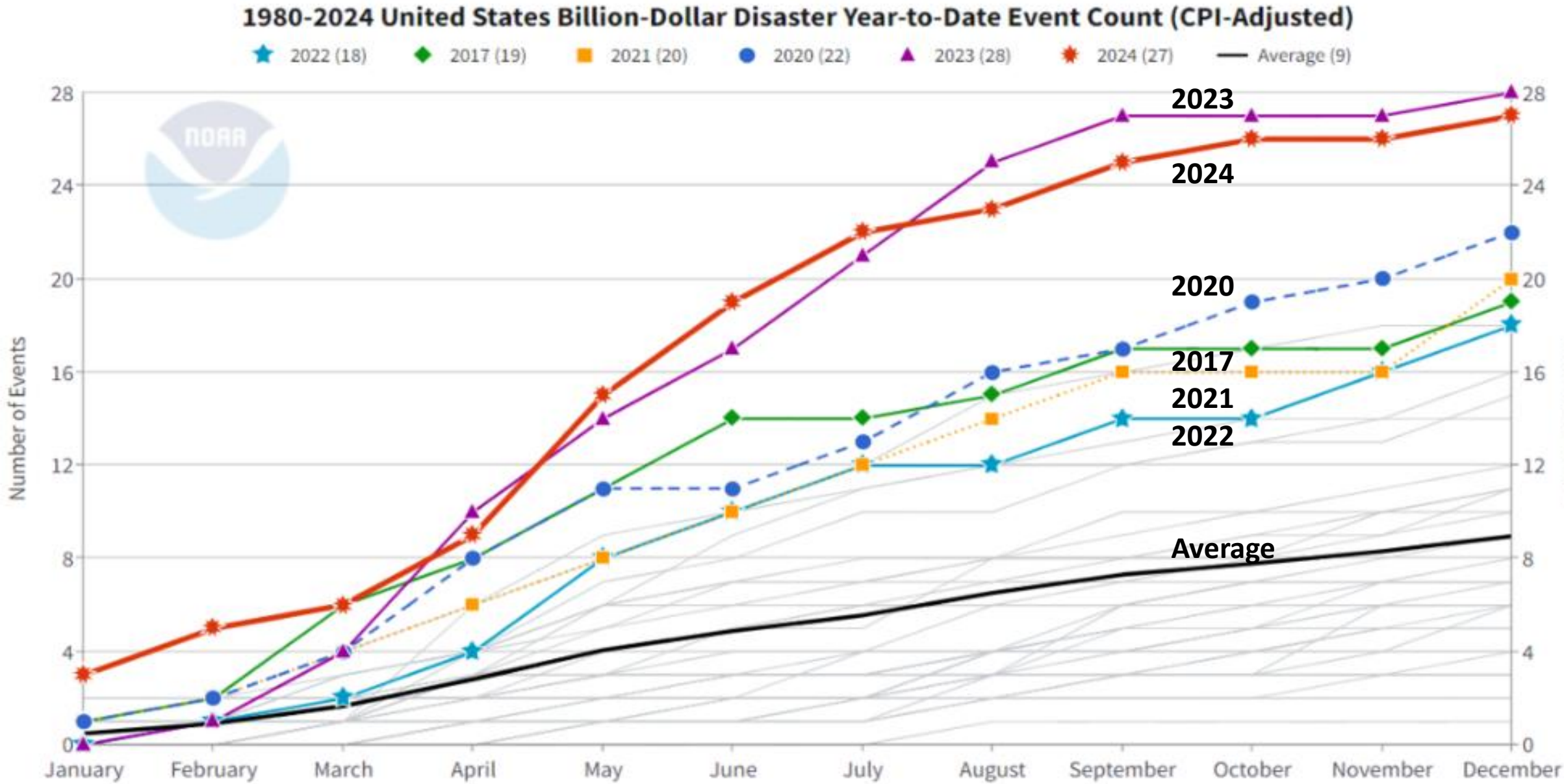
The billion-dollar disasters of 2024 came from multiple categories:

- **2 winter storm/cold wave events (across the Northwest and central/southern U.S. in mid-January).**
- **1 wildfire event (the South Fork Fire in New Mexico that destroyed many homes, vehicles, businesses and other infrastructure).**
- **1 drought and heat wave event (causing impacts across the southern, eastern and northwestern U.S.).**
- **1 flooding event (the Upper Midwest Flooding in mid-June across several states).**
- **6 tornado outbreaks (across the central and southeastern U.S.).**
- **5 tropical cyclones (Beryl, Debby, Francine, Helene and Milton – the final two were the costliest U.S. disasters of 2024).**
- **11 severe weather/hail events (across many parts of the country).**

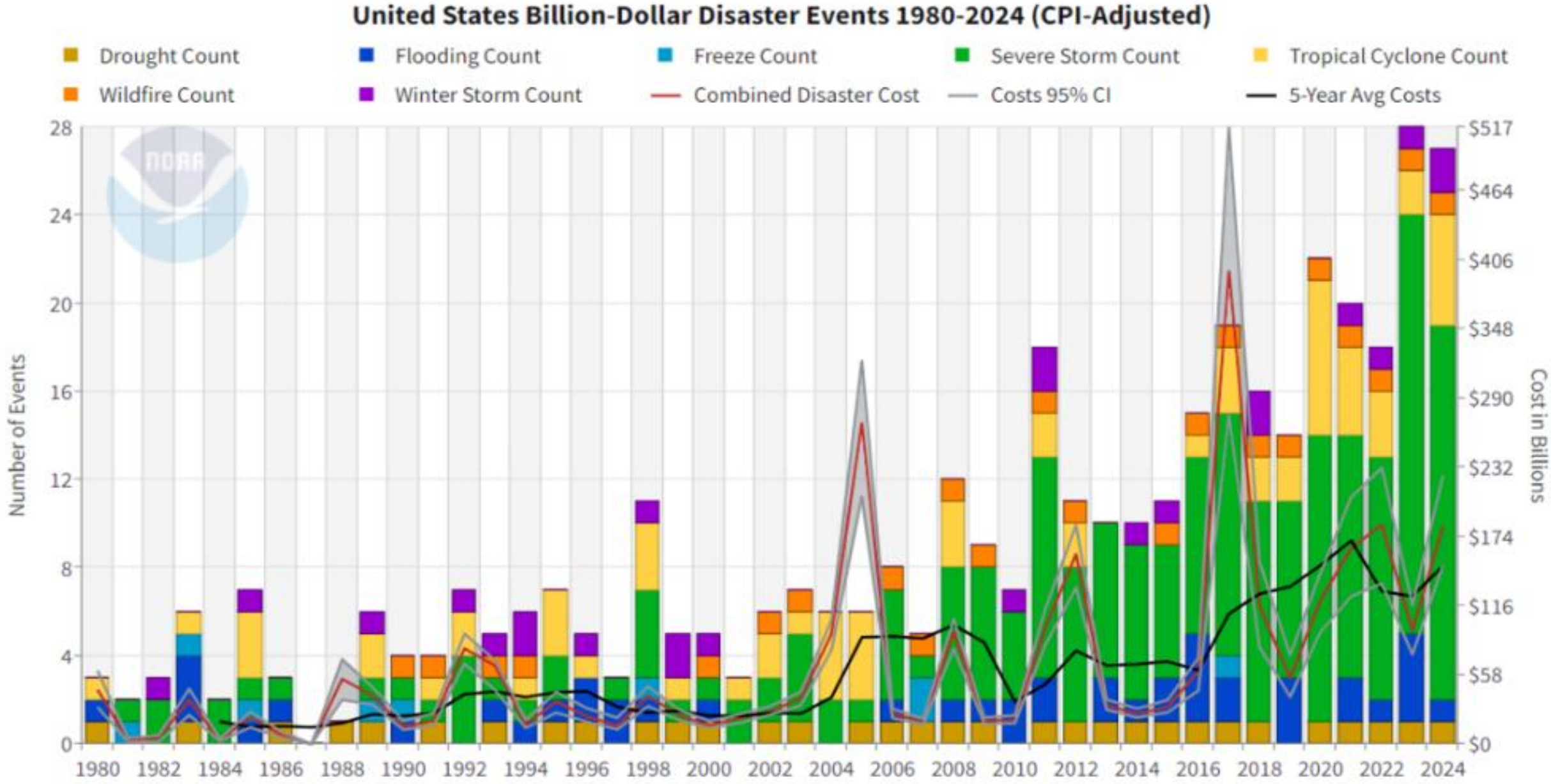
U.S. 2024 Billion-Dollar Weather and Climate Disasters



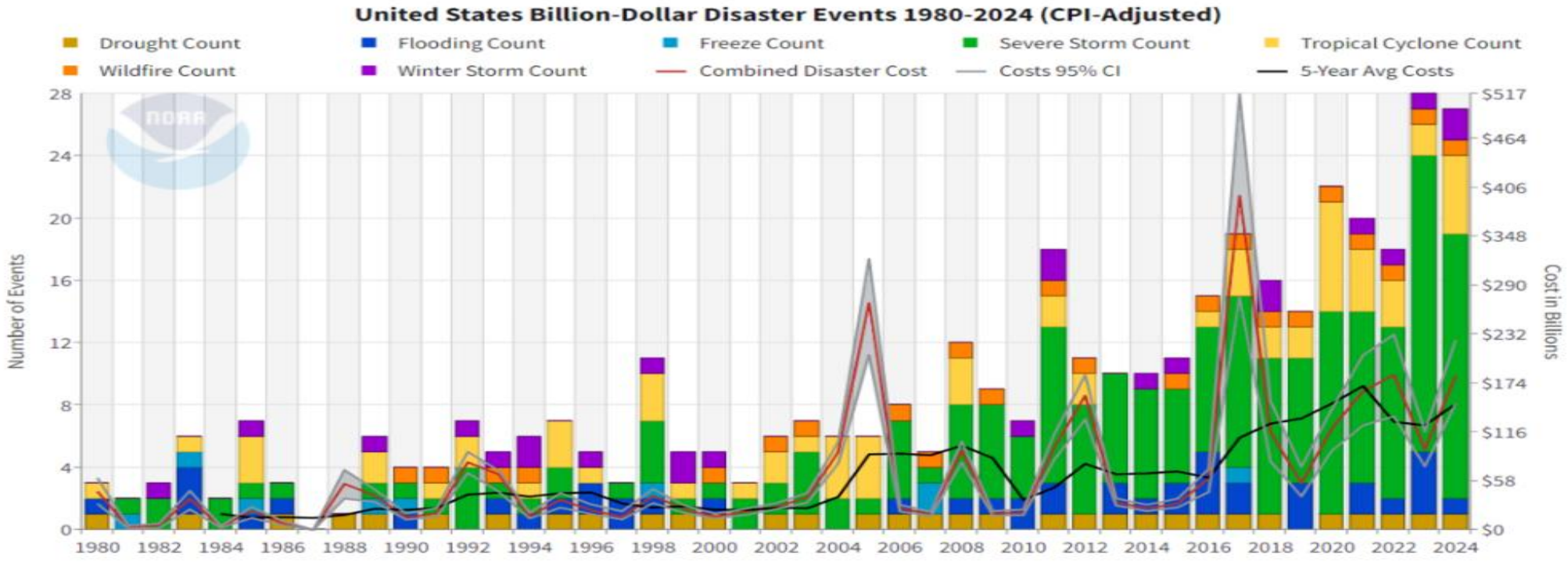
*This map denotes the approximate location for each of the **27 separate billion-dollar weather and climate disasters that impacted the United States in 2024.***

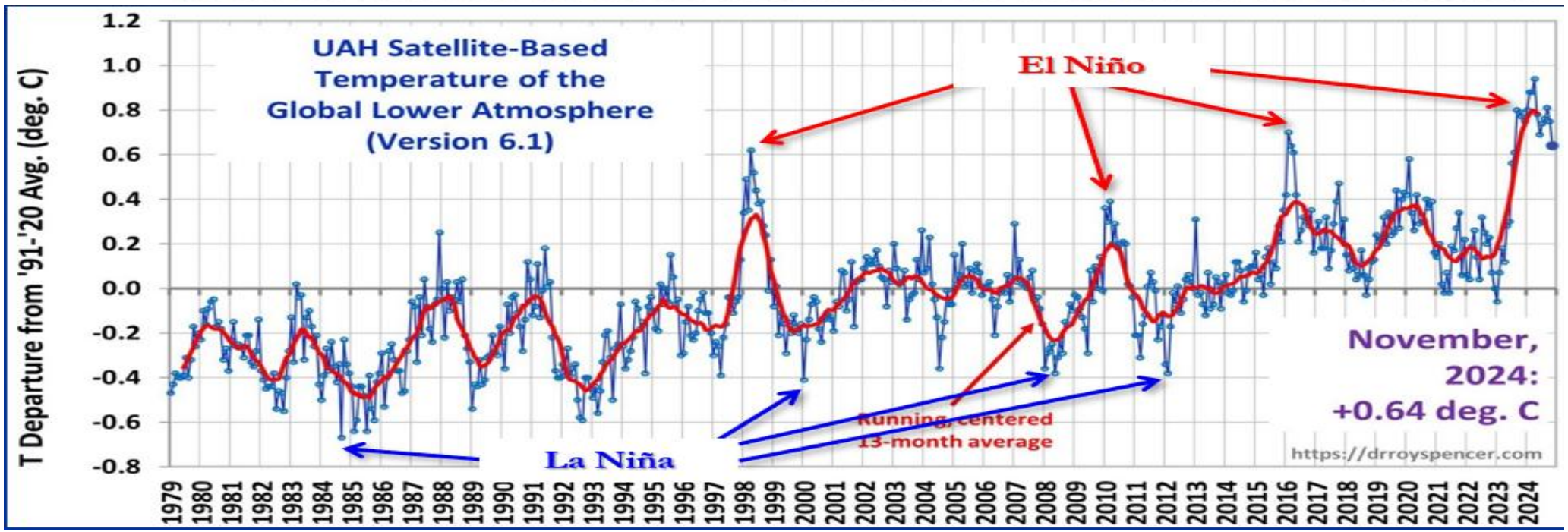


Month-by-month accumulation of billion-dollar disasters for each year on record. The colored lines represent the top 6 years for most billion-dollar disasters. The dark gray line shows the average. All other years are colored light gray. NOAA NCEI Billion-dollar Disasters webpage.



The history of billion-dollar disasters in the United States each year from 1980 to 2024, showing event type (colors), frequency (left-hand vertical axis), and cost (right-hand vertical axis) adjusted for inflation to 2024 dollars. NOAA NCEI Billion-dollar Disasters webpage.


United States Billion-Dollar Disaster Events 1980-2024 (CPI-Adjusted)
Drought Count
Flooding Count
Freeze Count
Severe Storm Count
Tropical Cyclone Count
Wildfire Count
Winter Storm Count
Combined Disaster Cost
Costs 95% CI
5-Year Avg Costs
Number of Events
Cost in Billions
0
4
8
12
16
20
24
28
$0
$58
$116
$174
$232
$290
$348
$406
$464
$517
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024

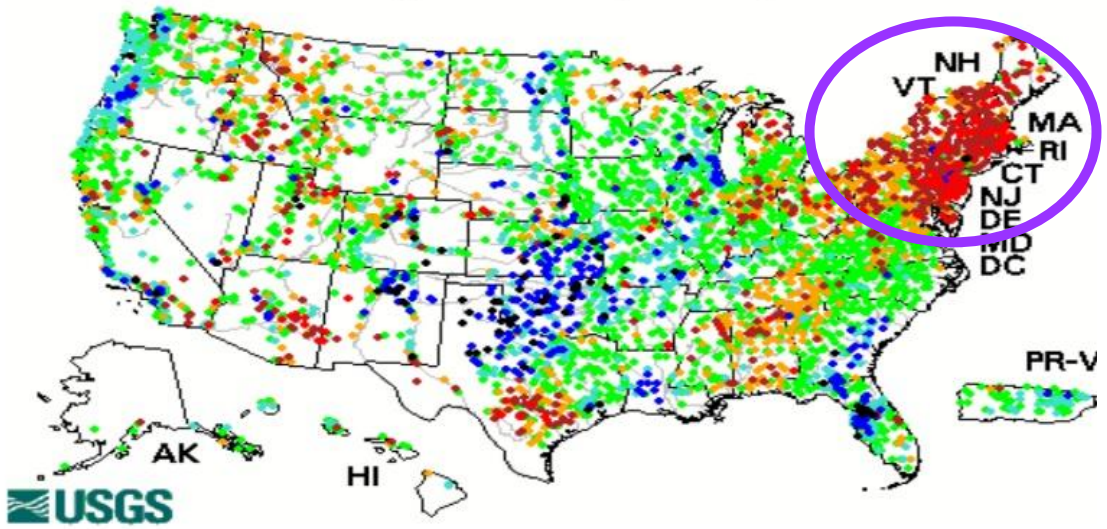

UAH Satellite-Based
Temperature of the
Global Lower Atmosphere
(Version 6.1)
El Niño
La Niña
Running, centered
13-month average
November,
2024:
+0.64 deg. C
https://drroyspencer.com
T Departure from '91-'20 Avg. (deg. C)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

Let's look at the past to see how we get here ?

Fall Streamflow Conditions

Daily Streamflow Conditions

Tuesday, November 19, 2024 03:30ET



The colored dots on this map depict streamflow conditions as a percentile, which is computed from the period of record for the current day of the year. Only stations with at least 30 years of record are used.

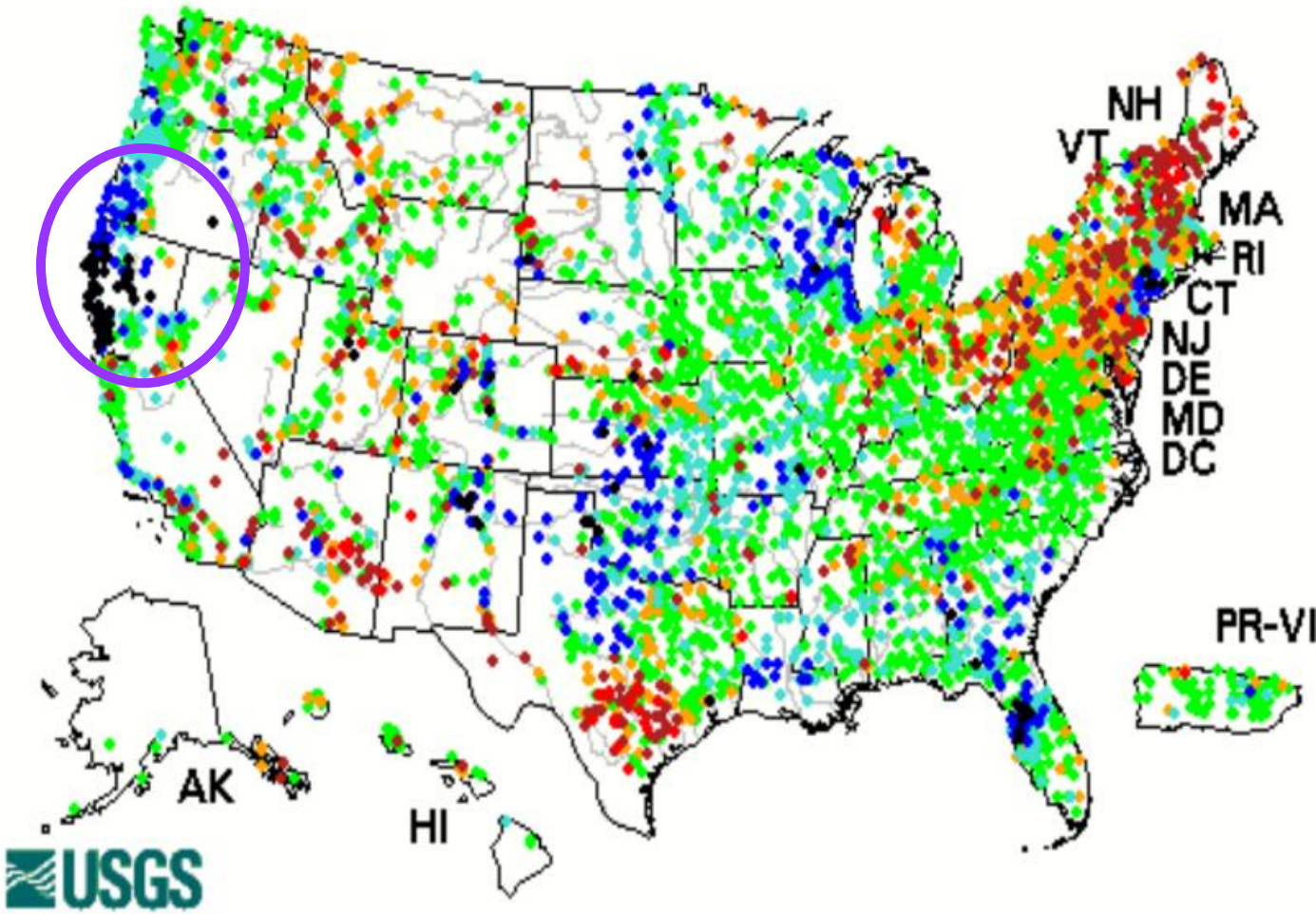
The **gray circles** indicate other stations that were not ranked in percentiles either because they have fewer than 30 years of record or because they

Explanation

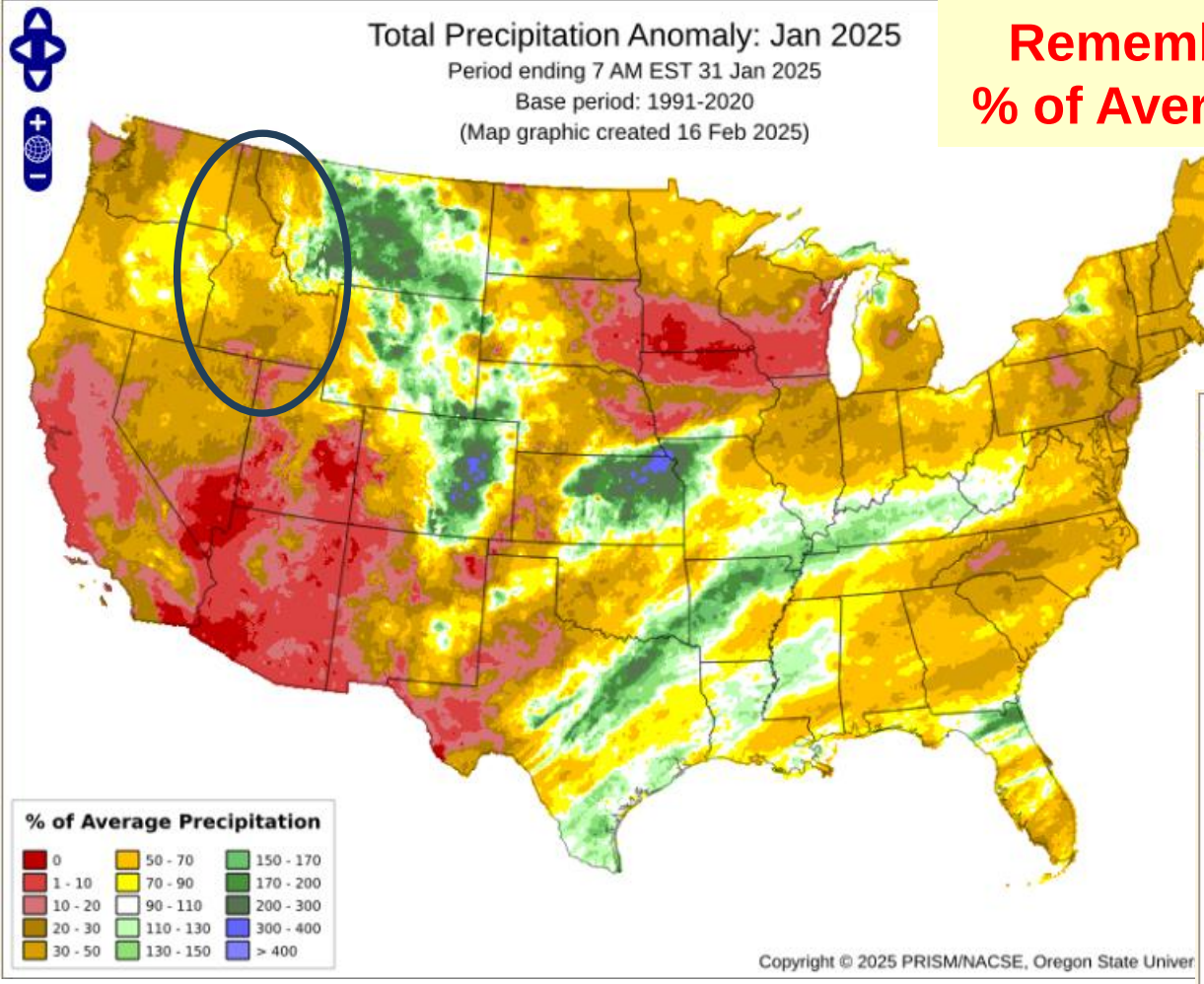
- High
- > 90th percentile
- 76th - 90th percentile
- 25th - 75th percentile
- 10th - 24th percentile
- < 10th percentile
- Low
- Not ranked

Daily Streamflow Conditions

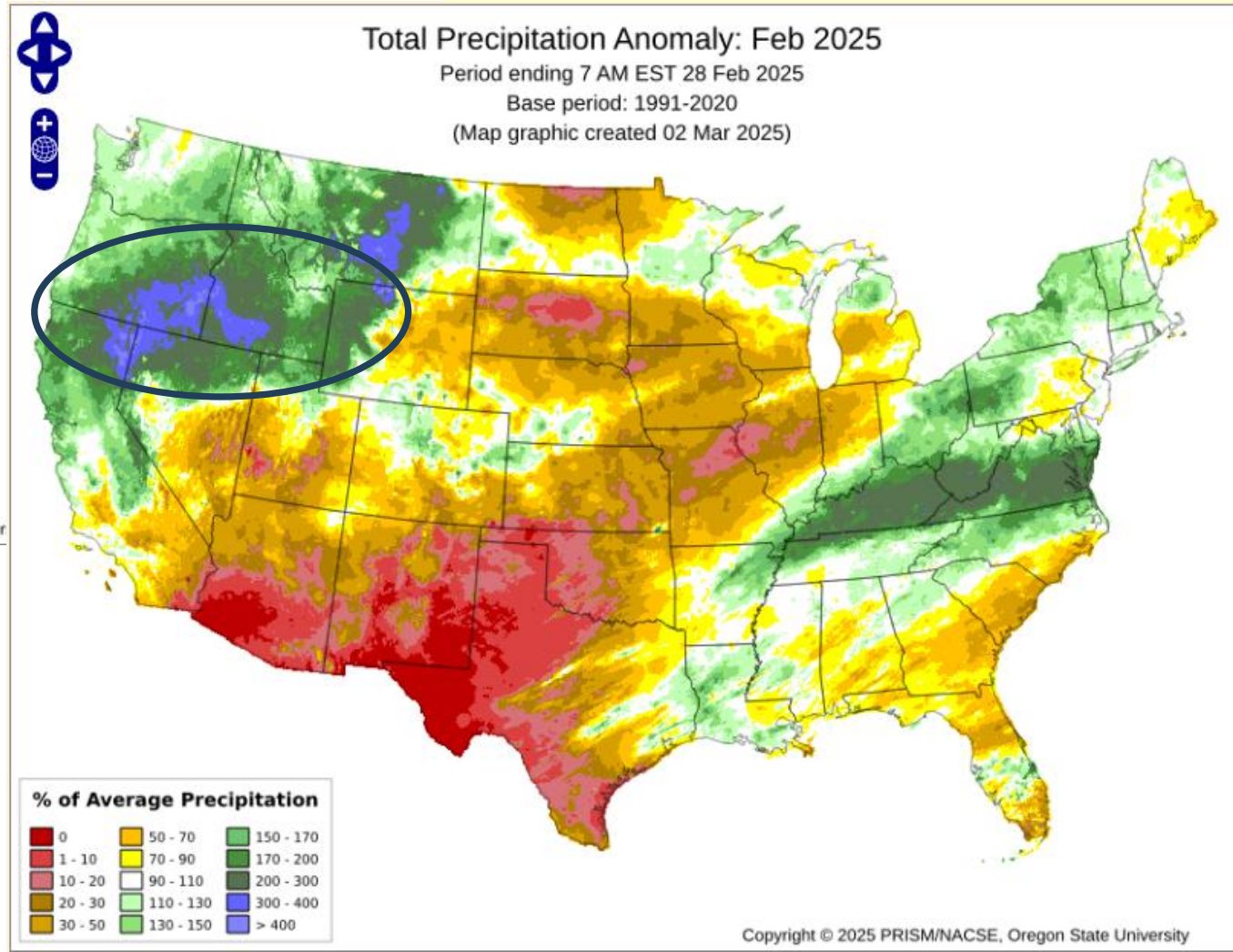
Friday, November 22, 2024 08:30ET



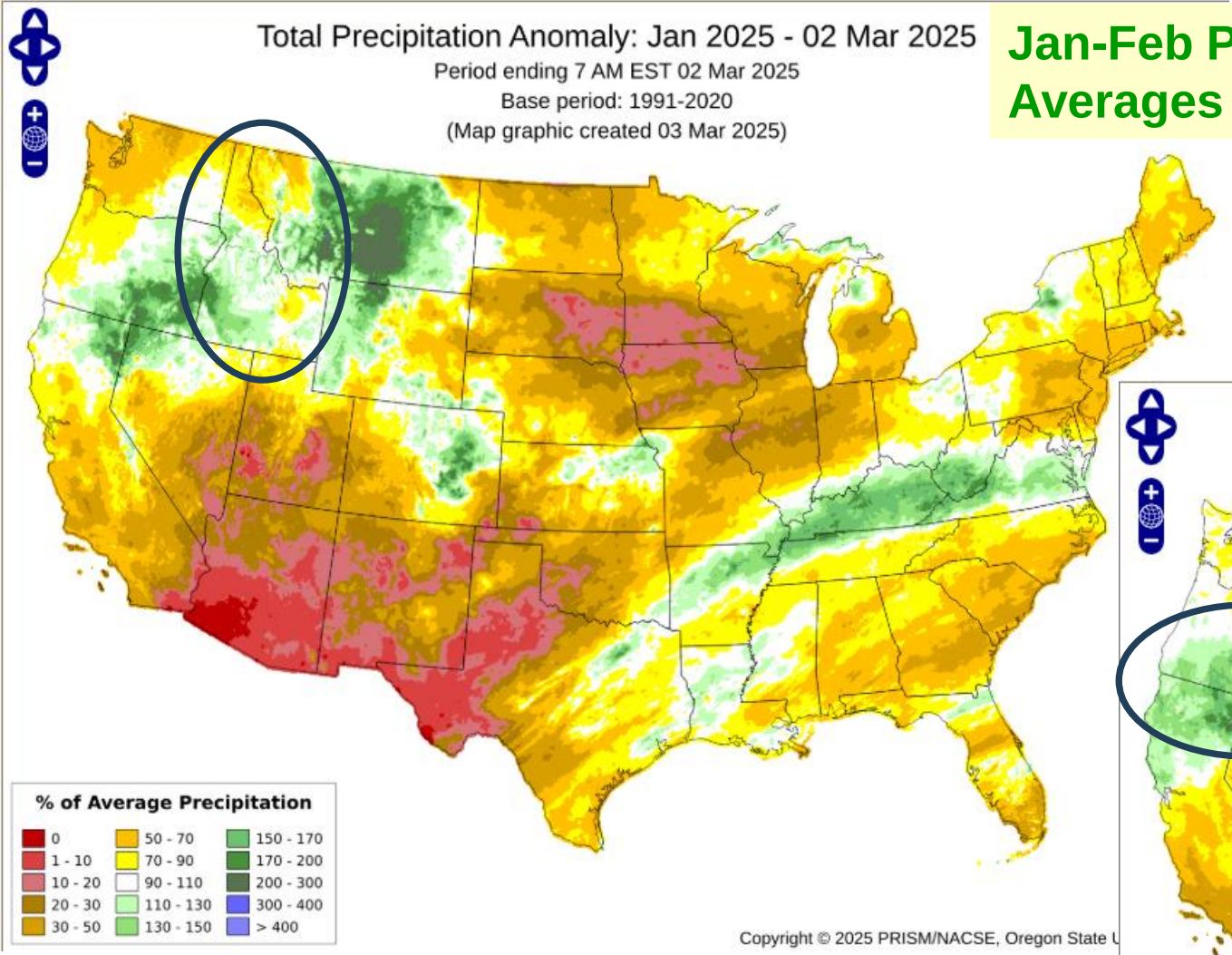
Remember Dry January
% of Average Precipitation

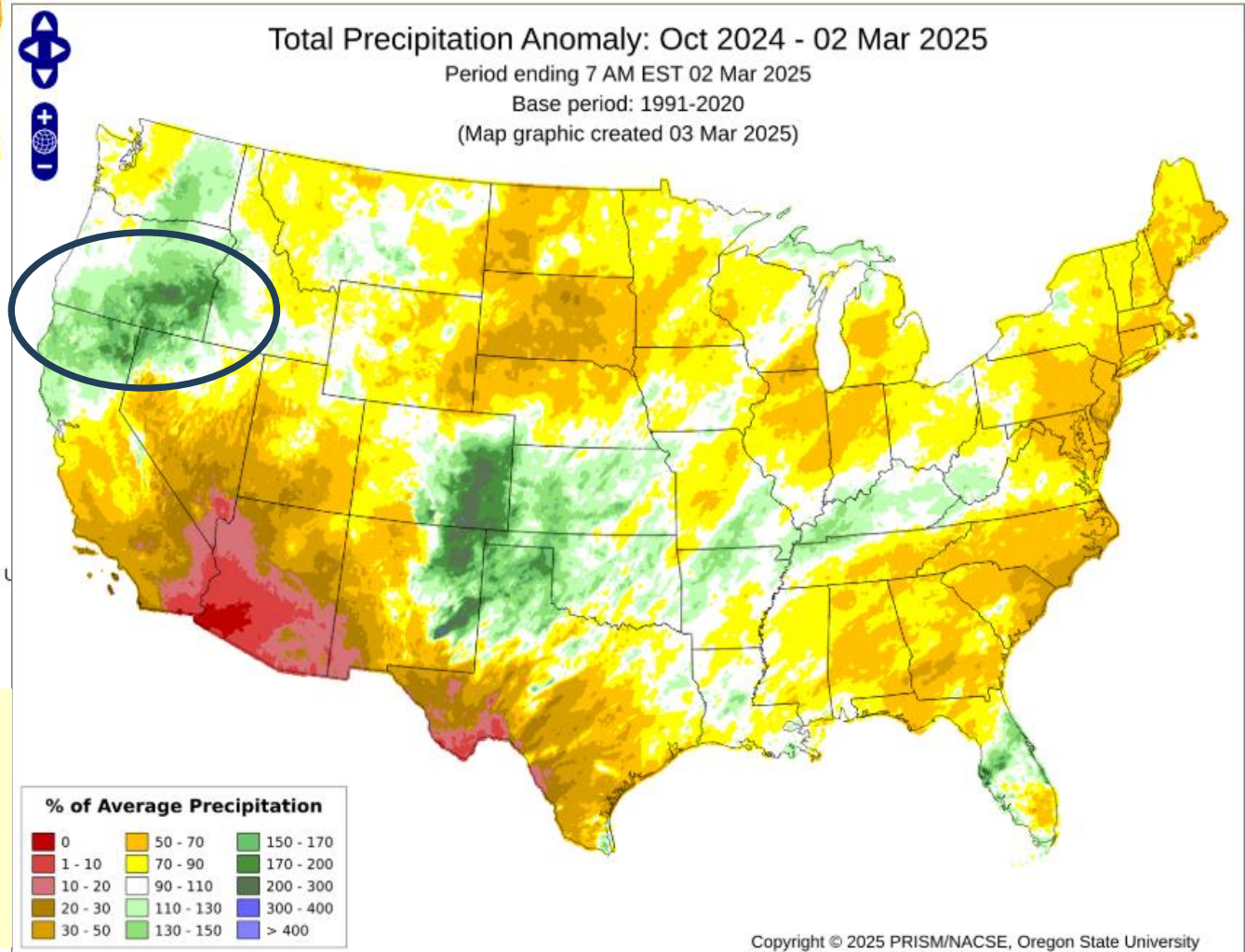


Followed by a Wet February
% of Average Precipitation



Jan-Feb Precipitation
Averages to near Normal for Idaho

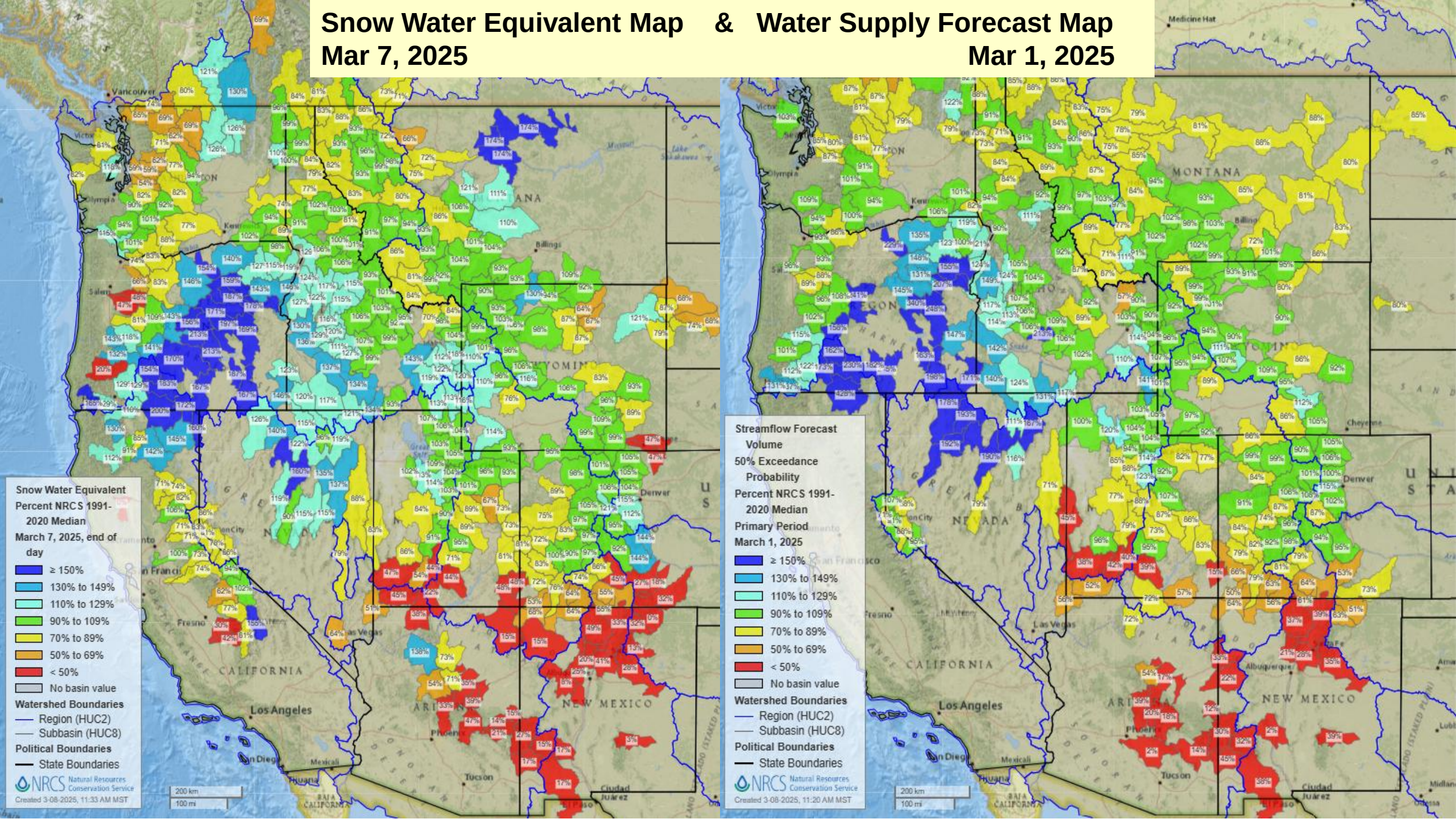




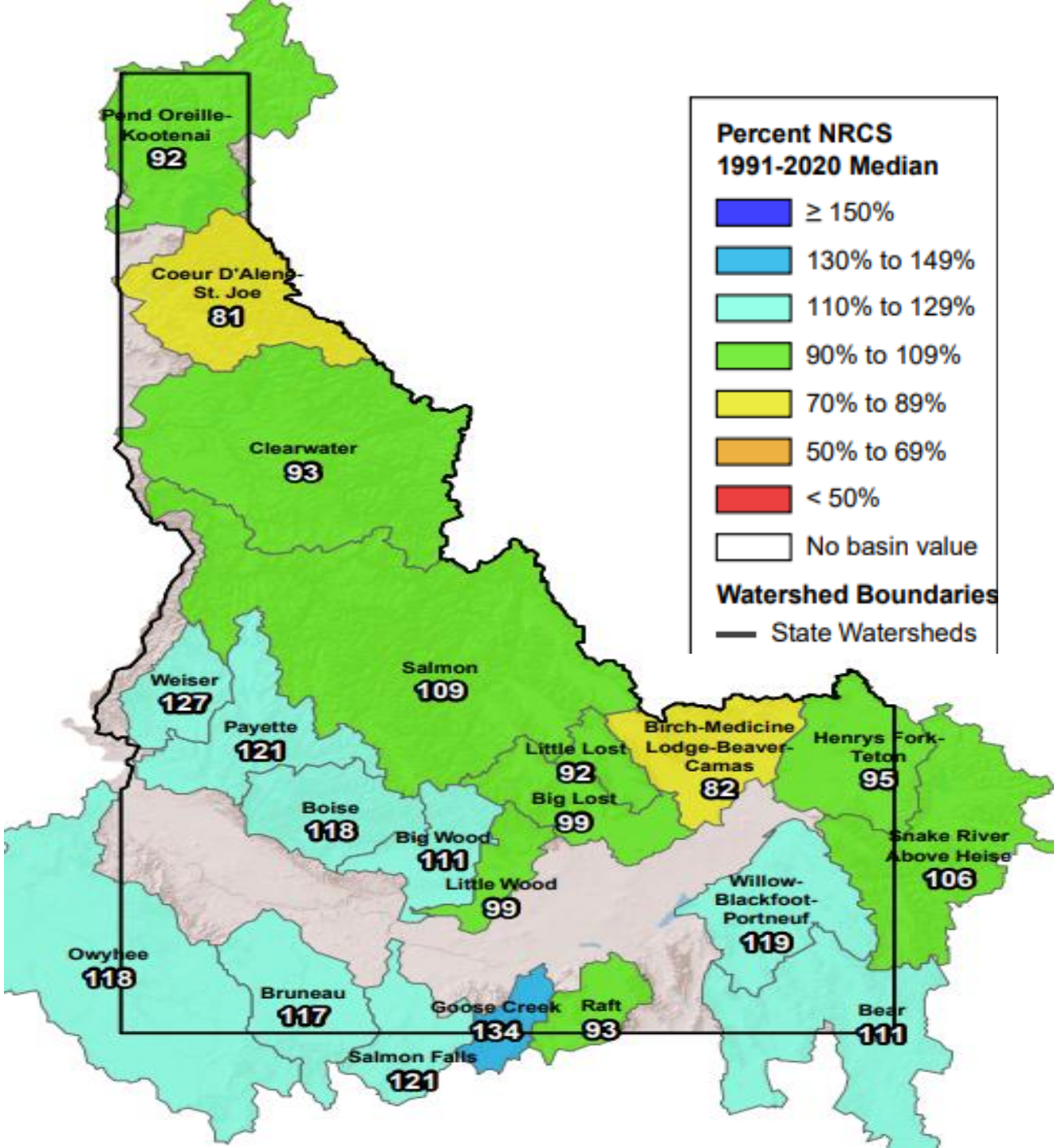
Oct-Feb Total Precipitation as % of Average
This Map really shows this winter's storm track.

Snow Water Equivalent Map & Water Supply Forecast Map

Mar 7, 2025 **Mar 1, 2025**



Idaho Snow Water Equivalent Map
Mar 7, 2025

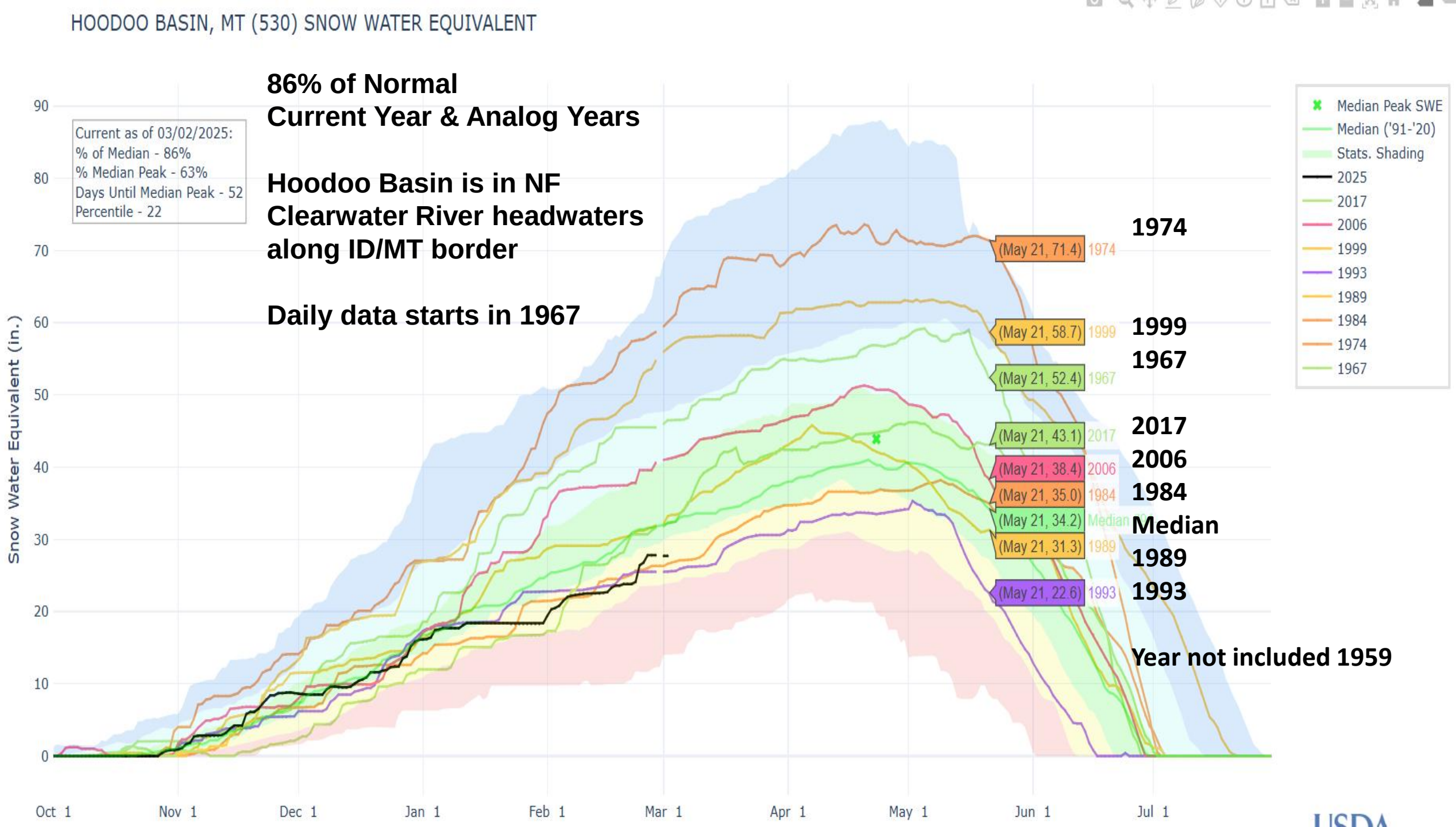


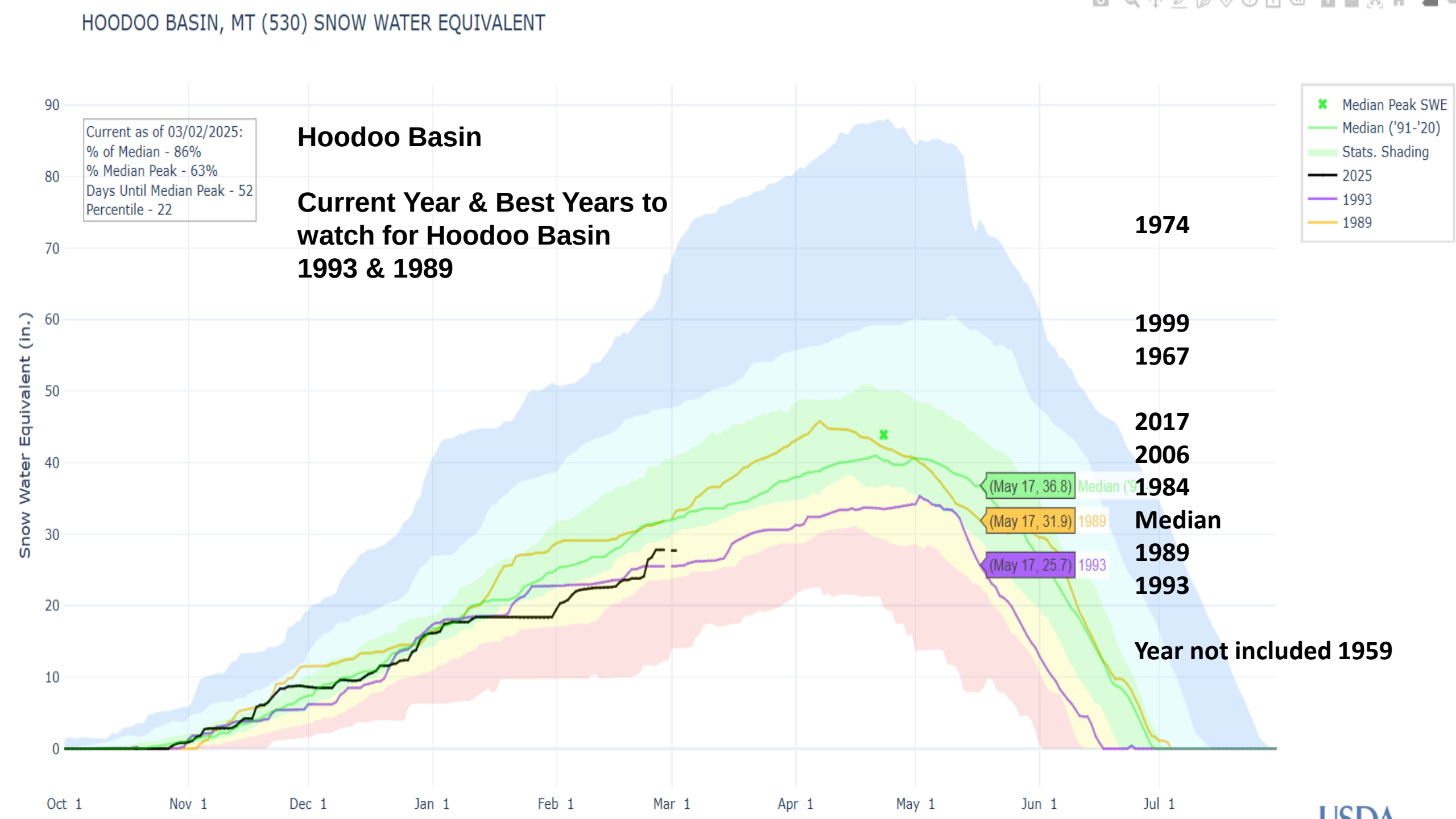
Pete's Analog Years

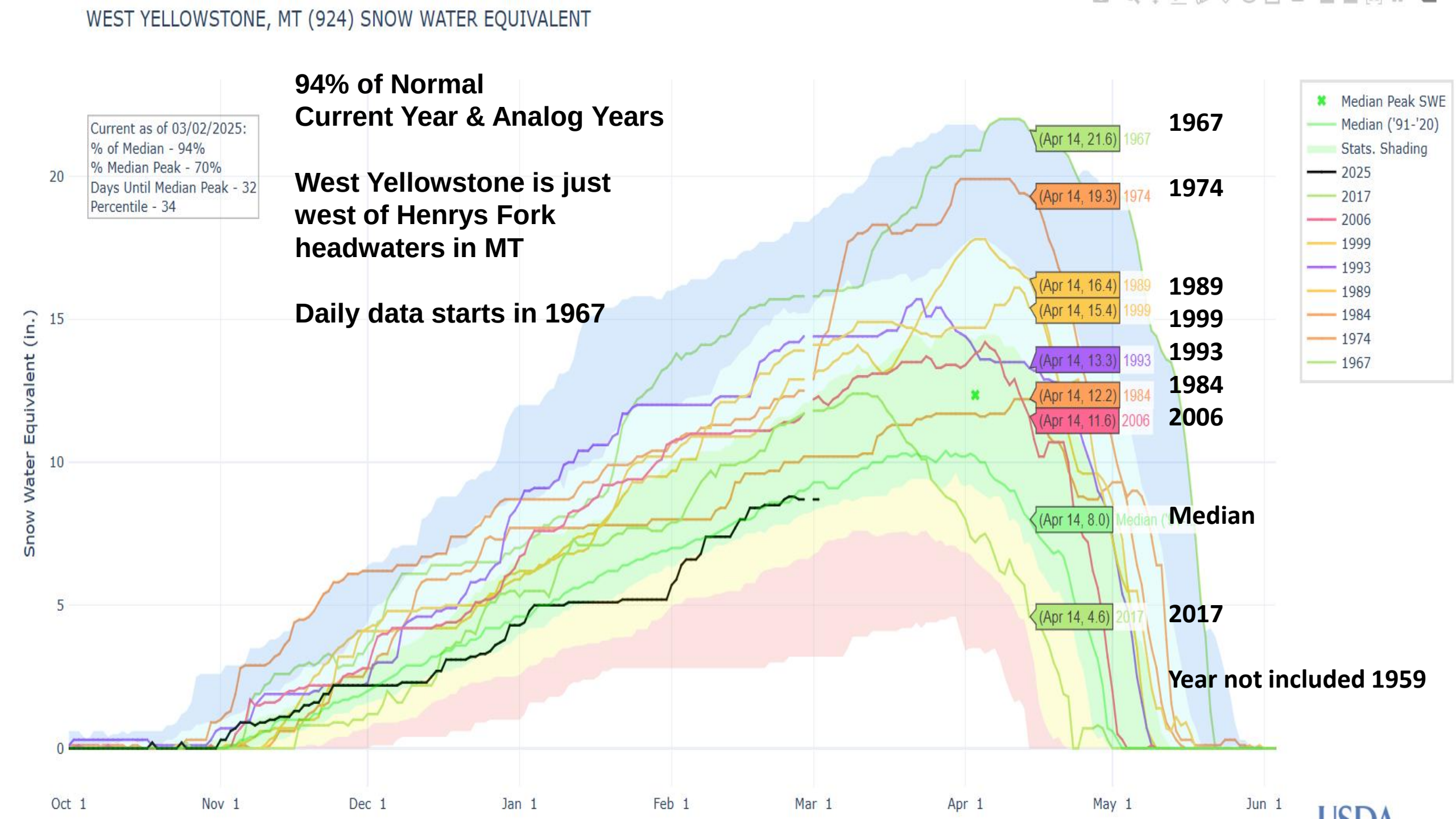
1966-1967
2005-2006
2016-2017

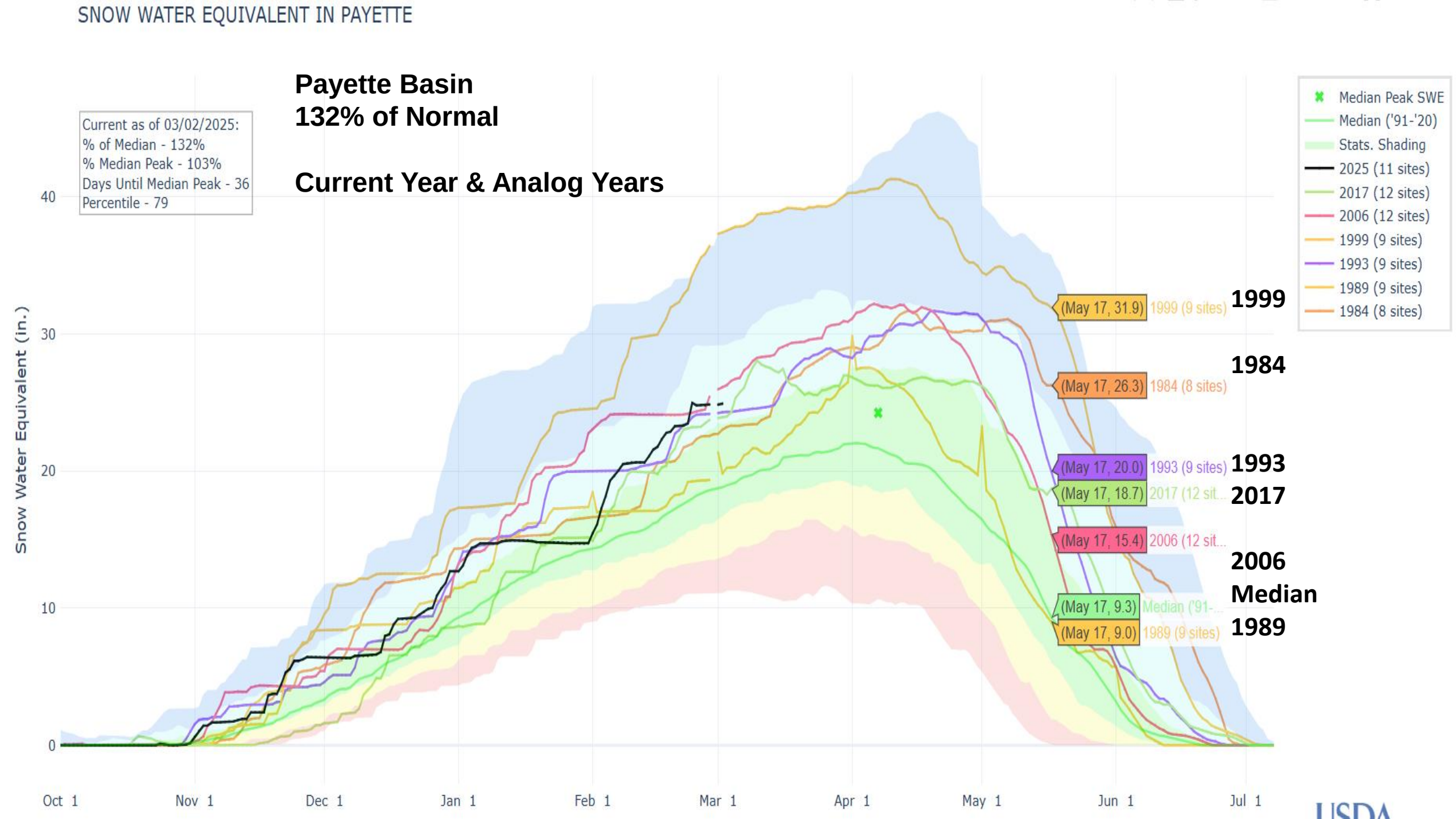
Strong & Very Strong El Nino Years	Year Following a Strong & Very Strong El Nino Year		Streamflow as % of 1991 - 2020 Average							
			Feb-Sep	Apr-Sep	Apr-Sep	Apr-Sep	Apr-Sep	Apr-Sep	Apr-Sep	Apr-Sep
					Sorted high to low					
Very Strong		ENSO	Owyhee River below Dam	Bruneau River	Boise R nr Boise	Payette River nr Horseshoe Bend	MF Salmon River at MF Lodge	Salmon River at White Bird	Selway River	Spokane River nr Post Falls
2015-16	2017	LA	155	182	184	164	180	148	104	110
1982-83	1984	LA	363	343	162	146	NA	144	126	109
1997-98	1999	LA	100	116	138	140	121	124	112	126
					Sorted high to low					
Strong										
1972-73	1974	LA	120	104	185	188	182	164	145	189
1991-92	1993	N	165	125	124	128	NA	107	94	114
1965-66	1967	N	69	93	107	111	NA	119	109	110
1987-88	1989	LA	145	103	99	91	NA	78	102	114
1957-58	1959	EL	20	50	89	99	NA	101	124	136
2023-24	2025	LA	?	?	?	?	?	?	?	?
Mar 5 NWS 50% Exceedance Forecast			131%	121%	112%	115%	117%	103%	90%	83%
Mar 1 NRCS 50% Exceedance Forecast			127%	107%	117%	112%	104%	90%	108%	75%

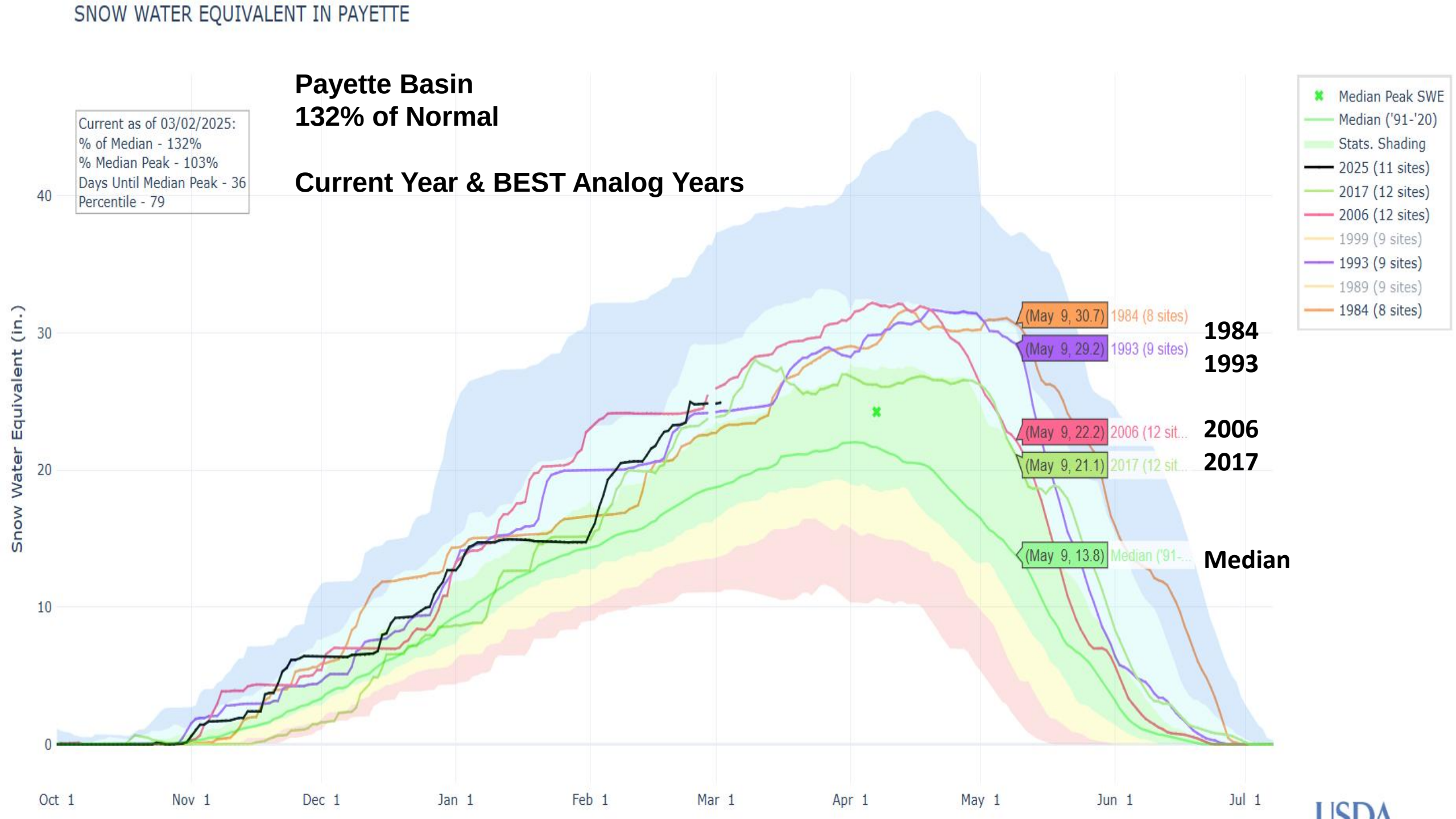
Sorted high to low	
< 80%	
80-110%	Color Code for Streamflow as % of Average
110-150%	
> 150%	

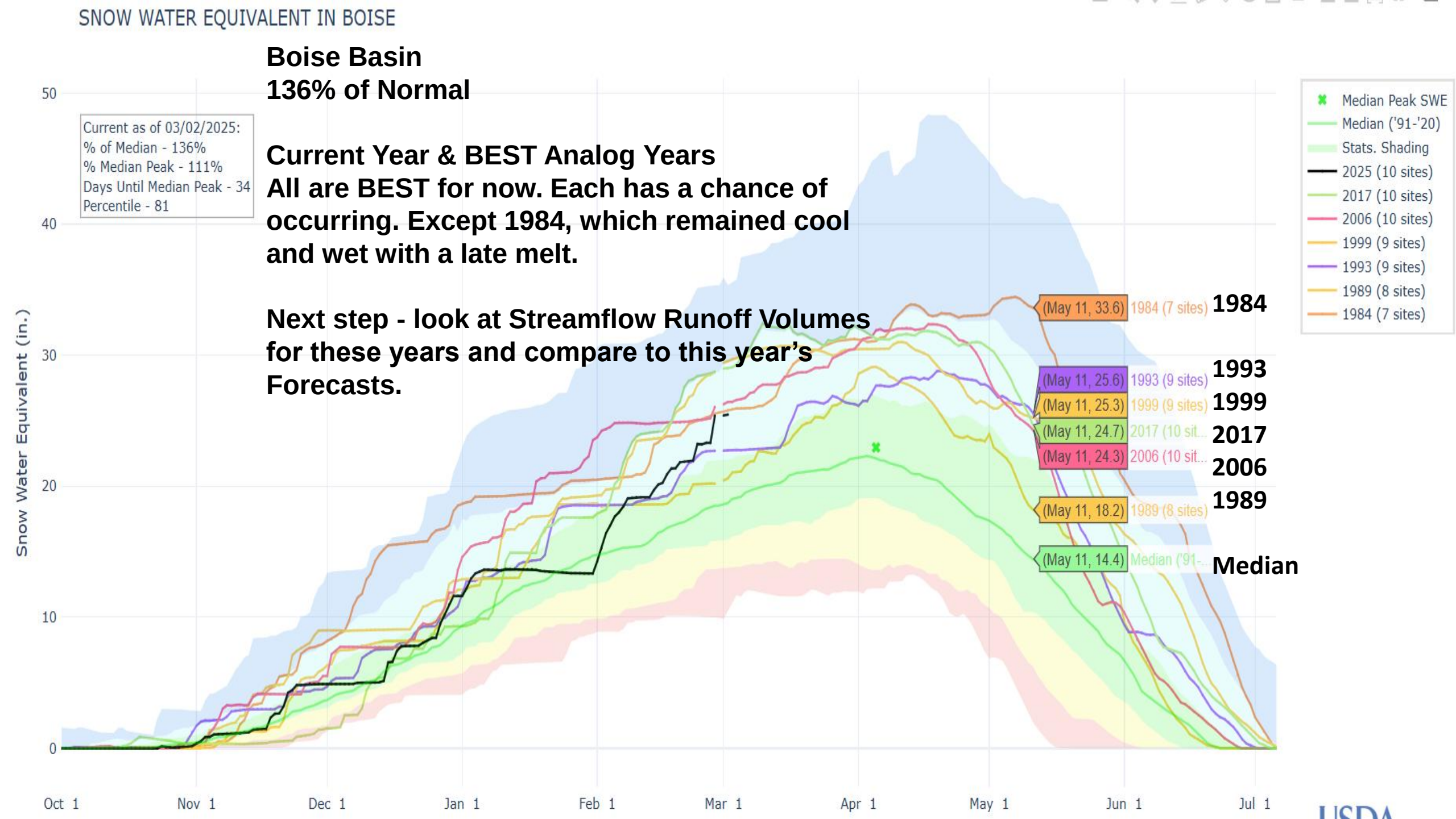

HOODOO BASIN, MT (530) SNOW WATER EQUIVALENT
86% of Normal
Current Year & Analog Years
Hoodoo Basin is in NF Clearwater River headwaters along ID/MT border
Daily data starts in 1967
Current as of 03/02/2025:
% of Median - 86%
% Median Peak - 63%
Days Until Median Peak - 52
Percentile - 22
Snow Water Equivalent (in.)
90
80
70
60
50
40
30
20
10
0
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Median Peak SWE
Median ('91-'20)
Stats. Shading
2025
2017
2006
1999
1993
1989
1984
1974
1967
(May 21, 71.4) 1974
(May 21, 58.7) 1999
(May 21, 52.4) 1967
(May 21, 43.1) 2017
(May 21, 38.4) 2006
(May 21, 35.0) 1984
(May 21, 34.2) Median
(May 21, 31.3) 1989
(May 21, 22.6) 1993
1974
1999
1967
2017
2006
1984
Median
1989
1993
Year not included 1959

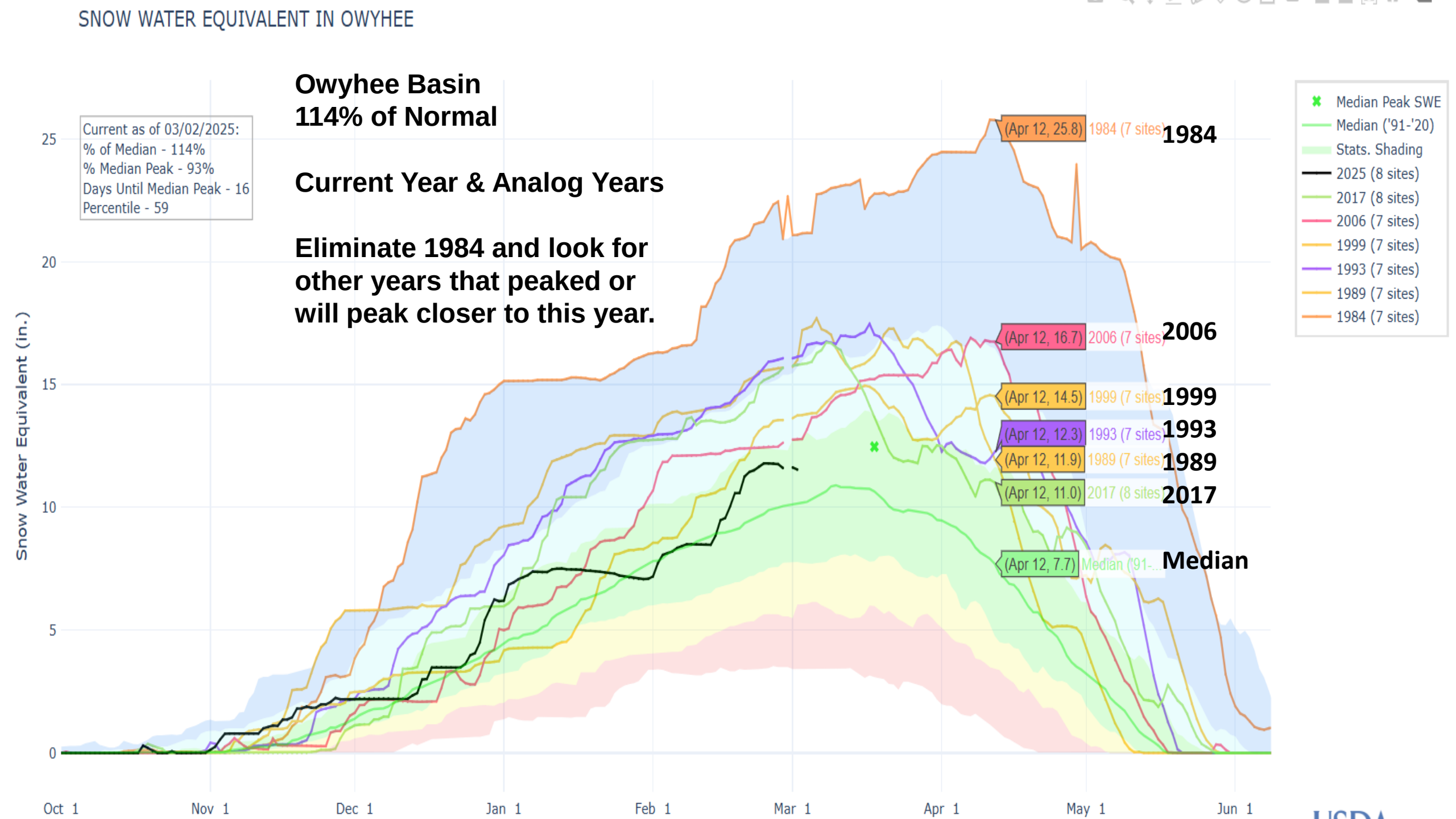

HOODOO BASIN, MT (530) SNOW WATER EQUIVALENT
Current as of 03/02/2025:
% of Median - 86%
% Median Peak - 63%
Days Until Median Peak - 52
Percentile - 22
Hoodoo Basin
Current Year & Best Years to watch for Hoodoo Basin
1993 & 1989
Median Peak SWE
Median ('91-'20)
Stats. Shading
2025
1993
1989
Snow Water Equivalent (in.)
90
80
70
60
50
40
30
20
10
0
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
(May 17, 36.8) Median ('9
(May 17, 31.9) 1989
(May 17, 25.7) 1993
1974
1999
1967
2017
2006
1984
Median
1989
1993
Year not included 1959


WEST YELLOWSTONE, MT (924) SNOW WATER EQUIVALENT
94% of Normal
Current Year & Analog Years
West Yellowstone is just west of Henrys Fork headwaters in MT
Daily data starts in 1967
Current as of 03/02/2025:
% of Median - 94%
% Median Peak - 70%
Days Until Median Peak - 32
Percentile - 34
Snow Water Equivalent (in.)
0
5
10
15
20
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Median Peak SWE
Median ('91-'20)
Stats. Shading
2025
2017
2006
1999
1993
1989
1984
1974
1967
(Apr 14, 21.6) 1967
(Apr 14, 19.3) 1974
(Apr 14, 16.4) 1989
(Apr 14, 15.4) 1999
(Apr 14, 13.3) 1993
(Apr 14, 12.2) 1984
(Apr 14, 11.6) 2006
(Apr 14, 8.0) Median
(Apr 14, 4.6) 2017
1967
1974
1989
1999
1993
1984
2006
Median
2017
Year not included 1959


SNOW WATER EQUIVALENT IN PAYETTE
Payette Basin
132% of Normal
Current Year & Analog Years
Current as of 03/02/2025:
% of Median - 132%
% Median Peak - 103%
Days Until Median Peak - 36
Percentile - 79
Median Peak SWE
Median ('91-'20)
Stats. Shading
2025 (11 sites)
2017 (12 sites)
2006 (12 sites)
1999 (9 sites)
1993 (9 sites)
1989 (9 sites)
1984 (8 sites)
(May 17, 31.9) 1999 (9 sites)
(May 17, 26.3) 1984 (8 sites)
(May 17, 20.0) 1993 (9 sites)
(May 17, 18.7) 2017 (12 sit...
(May 17, 15.4) 2006 (12 sit...
(May 17, 9.3) Median ('91-...
(May 17, 9.0) 1989 (9 sites)
1999
1984
1993
2017
2006
Median
1989
Snow Water Equivalent (in.)
0
10
20
30
40
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1

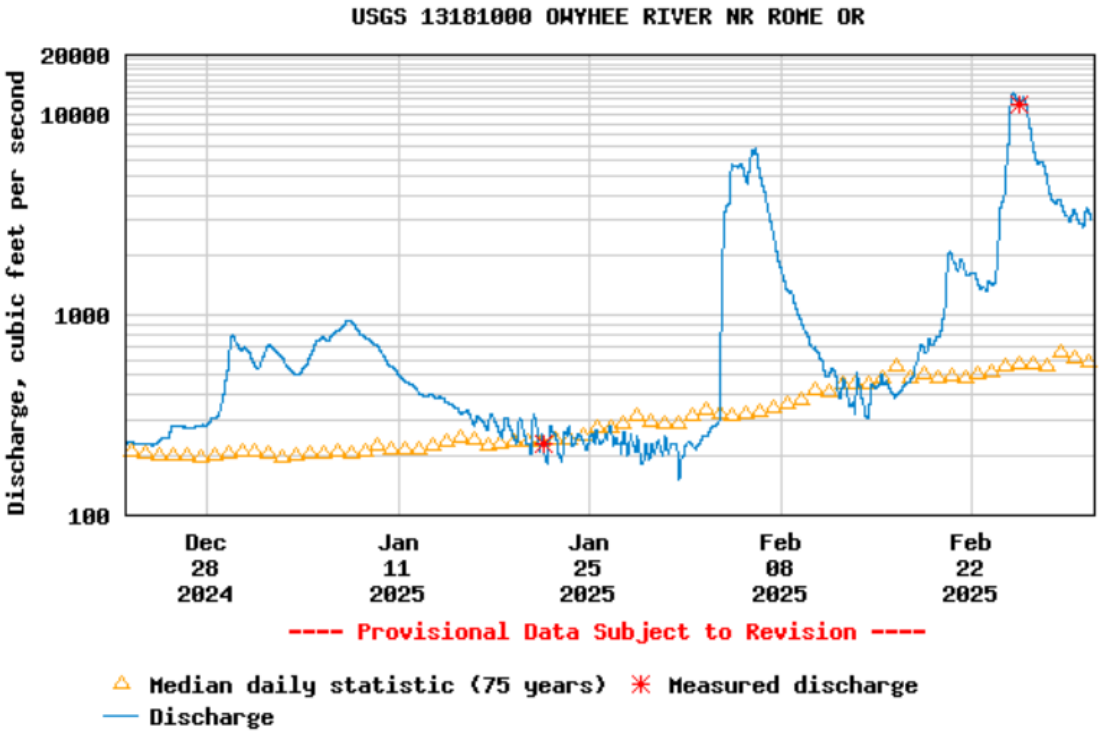

SNOW WATER EQUIVALENT IN PAYETTE
Payette Basin
132% of Normal
Current Year & BEST Analog Years
Current as of 03/02/2025:
% of Median - 132%
% Median Peak - 103%
Days Until Median Peak - 36
Percentile - 79
Median Peak SWE
Median ('91-'20)
Stats. Shading
2025 (11 sites)
2017 (12 sites)
2006 (12 sites)
1999 (9 sites)
1993 (9 sites)
1989 (9 sites)
1984 (8 sites)
(May 9, 30.7) 1984 (8 sites)
(May 9, 29.2) 1993 (9 sites)
(May 9, 22.2) 2006 (12 sit...
(May 9, 21.1) 2017 (12 sit...
(May 9, 13.8) Median ('91-...
1984
1993
2006
2017
Median
Snow Water Equivalent (in.)
0
10
20
30
40
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1


SNOW WATER EQUIVALENT IN BOISE
Boise Basin
136% of Normal
Current Year & BEST Analog Years
All are BEST for now. Each has a chance of occurring. Except 1984, which remained cool and wet with a late melt.
Next step - look at Streamflow Runoff Volumes for these years and compare to this year's Forecasts.
Current as of 03/02/2025:
% of Median - 136%
% Median Peak - 111%
Days Until Median Peak - 34
Percentile - 81
Snow Water Equivalent (in.)
50
40
30
20
10
0
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Median Peak SWE
Median ('91-'20)
Stats. Shading
2025 (10 sites)
2017 (10 sites)
2006 (10 sites)
1999 (9 sites)
1993 (9 sites)
1989 (8 sites)
1984 (7 sites)
(May 11, 33.6) 1984 (7 sites)
(May 11, 25.6) 1993 (9 sites)
(May 11, 25.3) 1999 (9 sites)
(May 11, 24.7) 2017 (10 sit...
(May 11, 24.3) 2006 (10 sit...
(May 11, 18.2) 1989 (8 sites)
(May 11, 14.4) Median ('91-...
1984
1993
1999
2017
2006
1989
Median


SNOW WATER EQUIVALENT IN OWYHEE
Owyhee Basin
114% of Normal
Current Year & Analog Years
Eliminate 1984 and look for other years that peaked or will peak closer to this year.
Current as of 03/02/2025:
% of Median - 114%
% Median Peak - 93%
Days Until Median Peak - 16
Percentile - 59
Median Peak SWE
Median ('91-'20)
Stats. Shading
2025 (8 sites)
2017 (8 sites)
2006 (7 sites)
1999 (7 sites)
1993 (7 sites)
1989 (7 sites)
1984 (7 sites)
(Apr 12, 25.8) 1984 (7 sites)
1984
(Apr 12, 16.7) 2006 (7 sites)
2006
(Apr 12, 14.5) 1999 (7 sites)
1999
(Apr 12, 12.3) 1993 (7 sites)
1993
(Apr 12, 11.9) 1989 (7 sites)
1989
(Apr 12, 11.0) 2017 (8 sites)
2017
(Apr 12, 7.7) Median ('91-...
Median
Snow Water Equivalent (in.)
0
5
10
15
20
25
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1

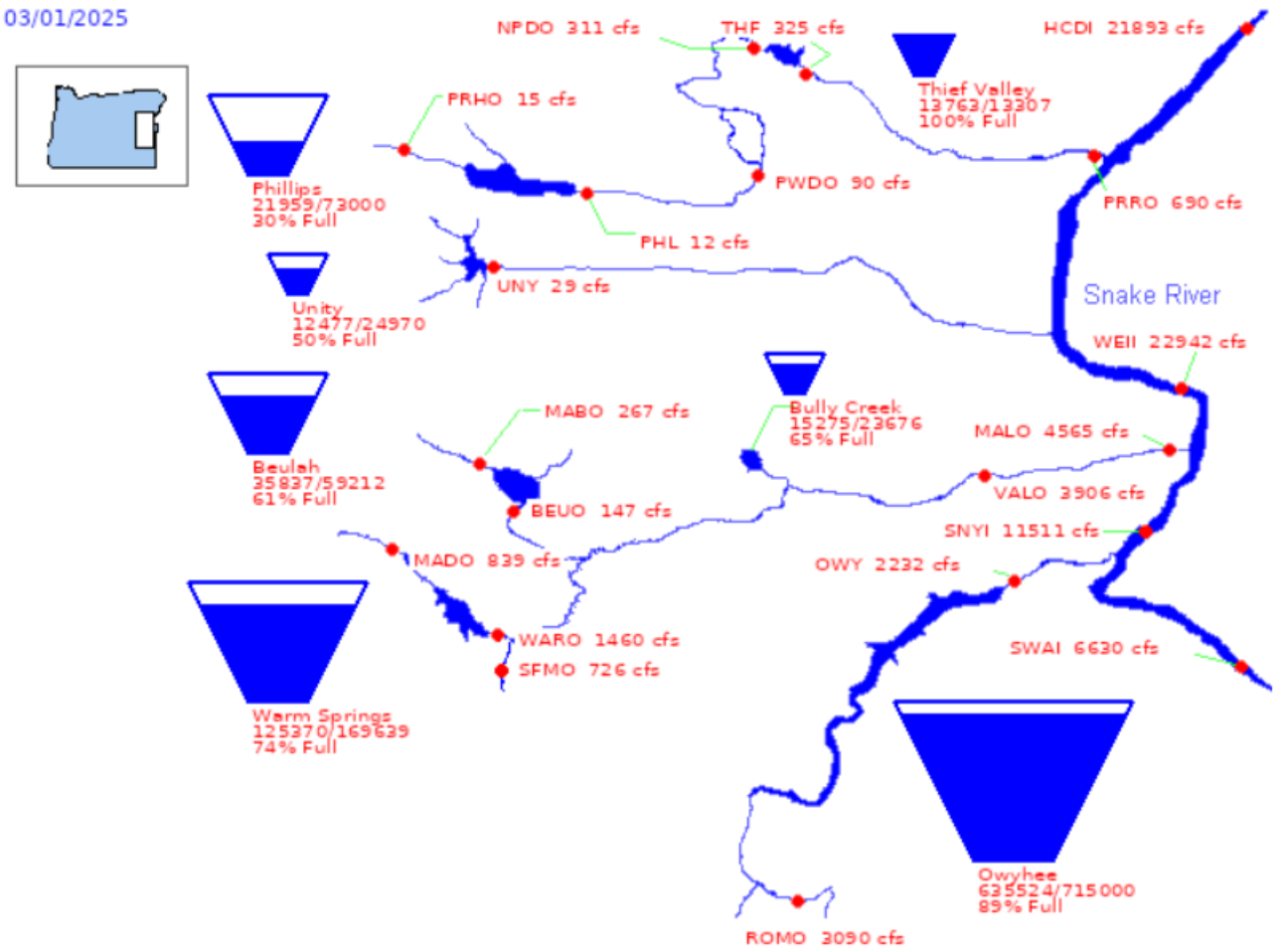
Discharge, cubic feet per second

Most recent instantaneous value: 3040 03-02-2025 18:30 MST



Owyhee River near Rome had 3 peaks since late Dec, so you know soils are primed and saturated. Has the snowmelt peak occurred?

US Bureau of Reclamation, Pacific Northwest Region
Major Storage Reservoirs in Southeastern Oregon



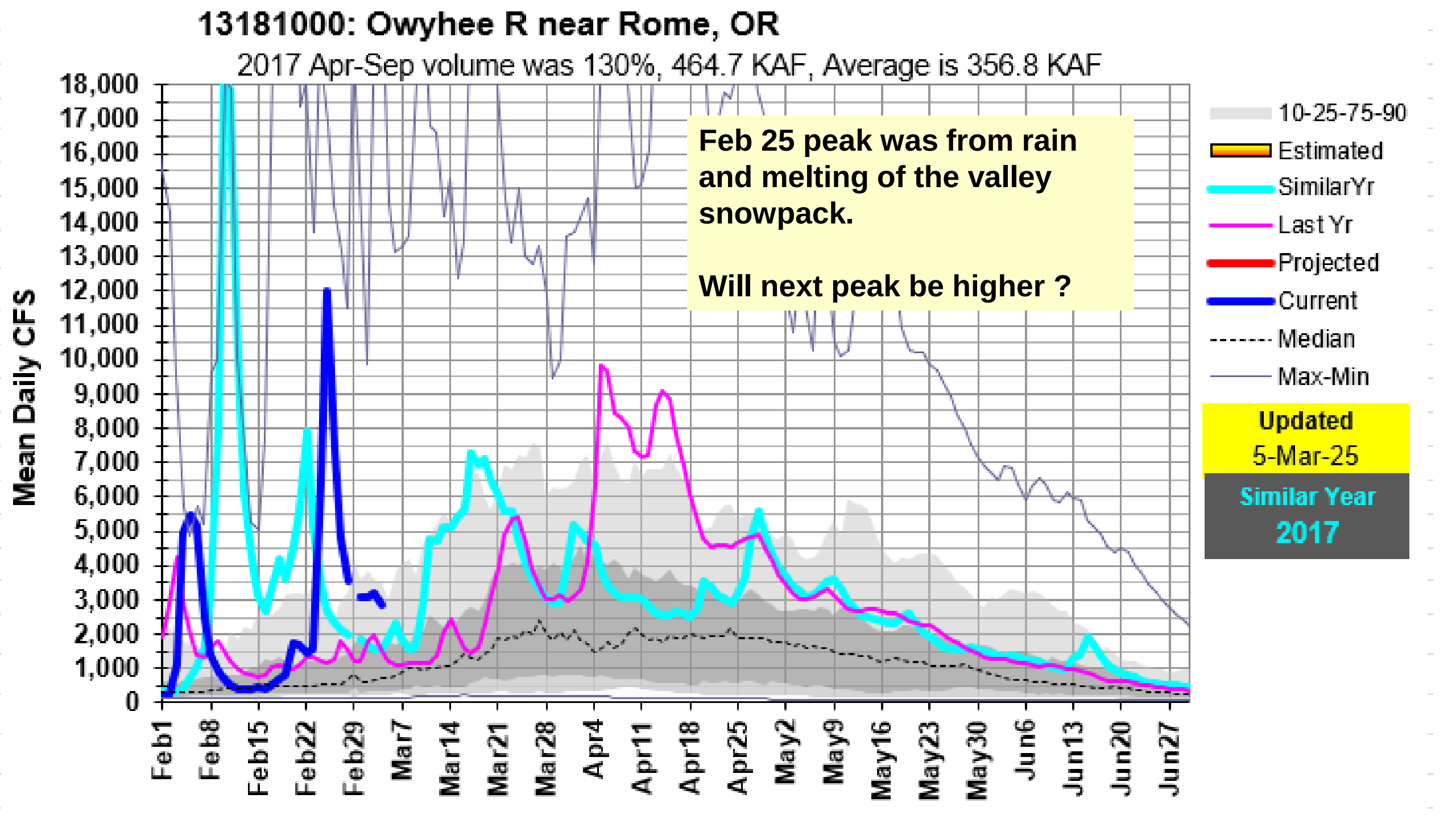
Owhyee Reservoir 89% of Capacity

Reservoir will fill. Flood control releases are being made increasing to 3700 CFS this week.

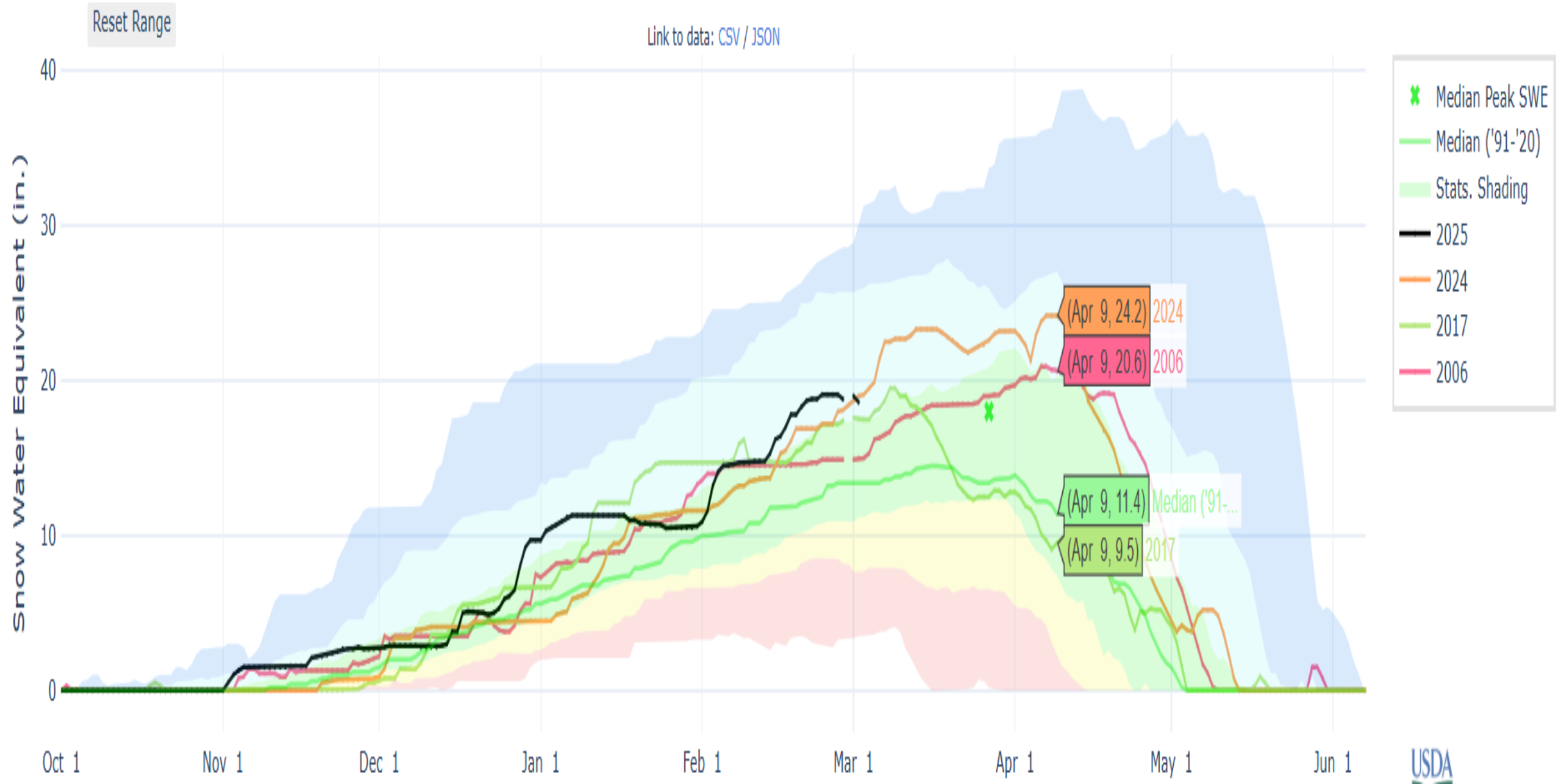
Time for a Road Trip to see the Glory Hole

This was April 7, 2006

Another analog year to this year


13181000: Owyhee R near Rome, OR
2017 Apr-Sep volume was 130%, 464.7 KAF, Average is 356.8 KAF
Mean Daily CFS
18,000
17,000
16,000
15,000
14,000
13,000
12,000
11,000
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Feb1
Feb8
Feb15
Feb22
Feb29
Mar7
Mar14
Mar21
Mar28
Apr4
Apr11
Apr18
Apr25
May2
May9
May16
May23
May30
Jun6
Jun13
Jun20
Jun27
Feb 25 peak was from rain and melting of the valley snowpack.
Will next peak be higher ?
10-25-75-90
Estimated
SimilarYr
Last Yr
Projected
Current
Median
Max-Min
Updated
5-Mar-25
Similar Year
2017

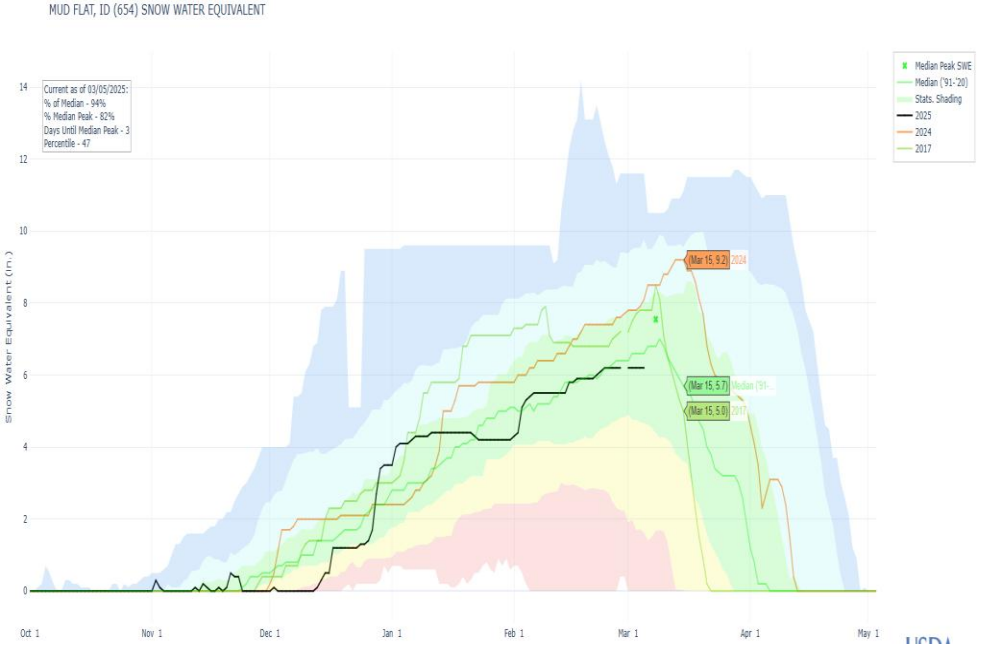
SOUTH MTN., ID (774) SNOW WATER EQUIVALENT



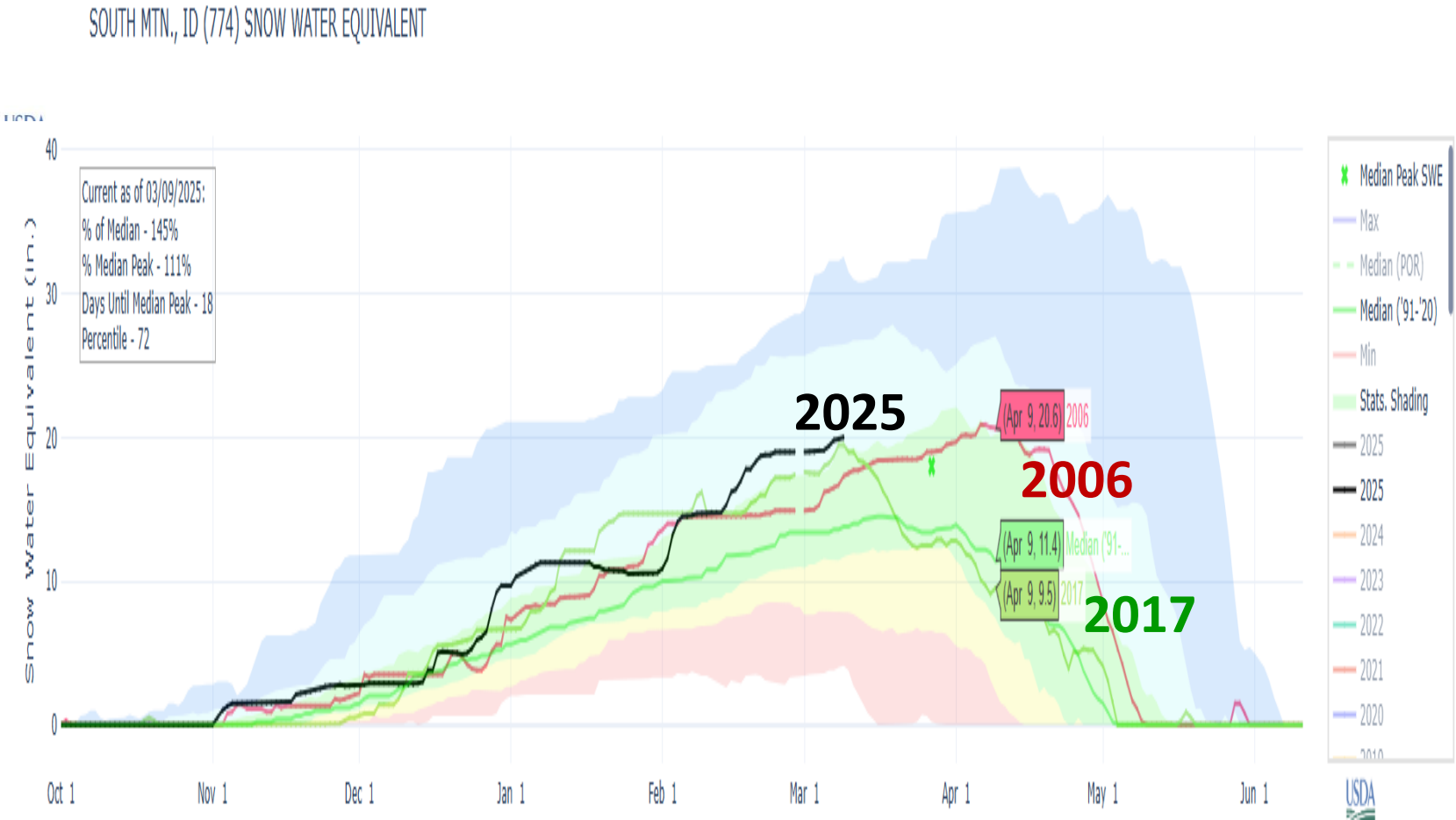
From Kara Ferguson BSU Thesis

Owyhee River snowmelt peak occurs when:

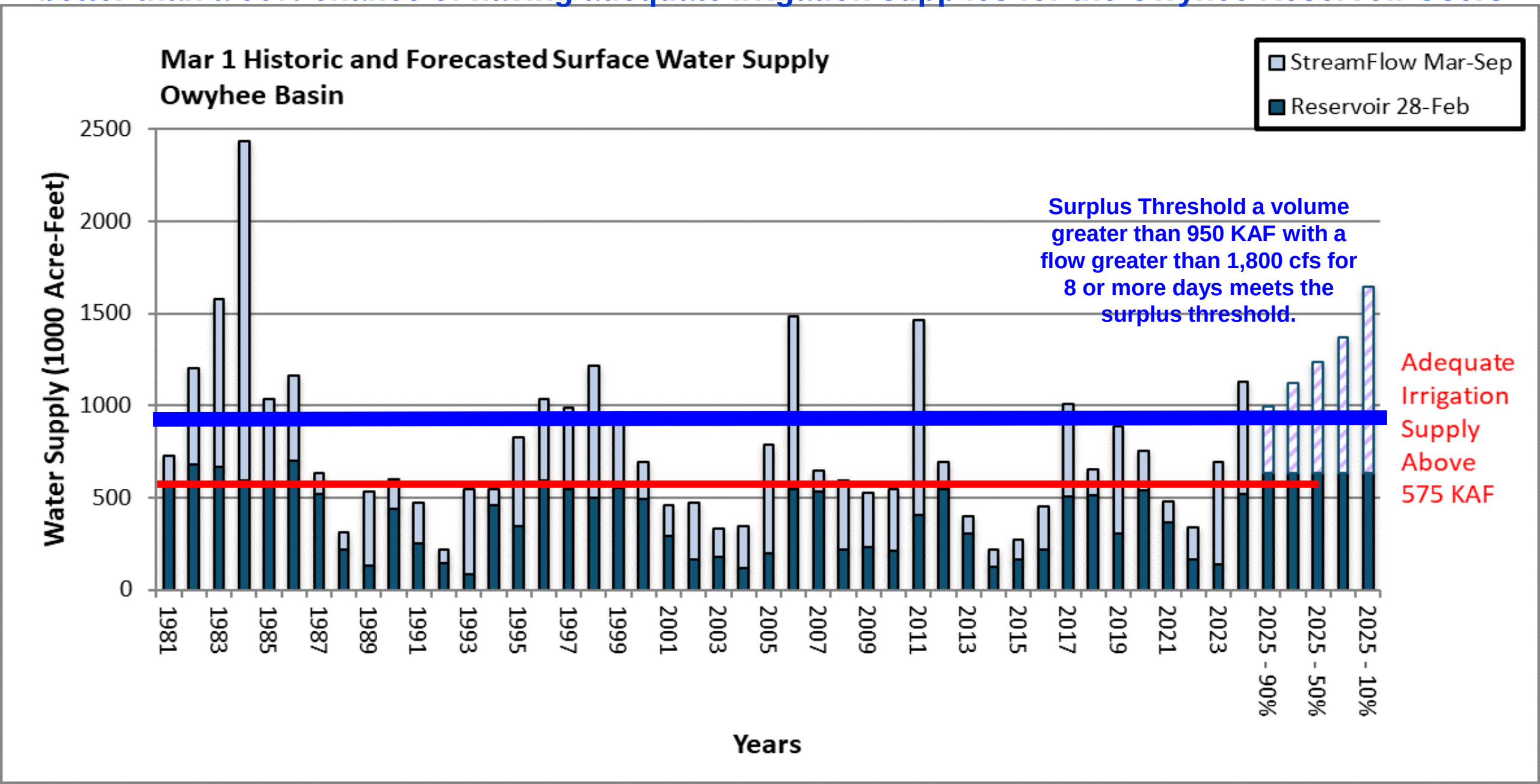
- **Mud Flat is ~15% melted (canopy changed) and / or**
- **South Mnt is ~30% melted (BETTER to USE)**

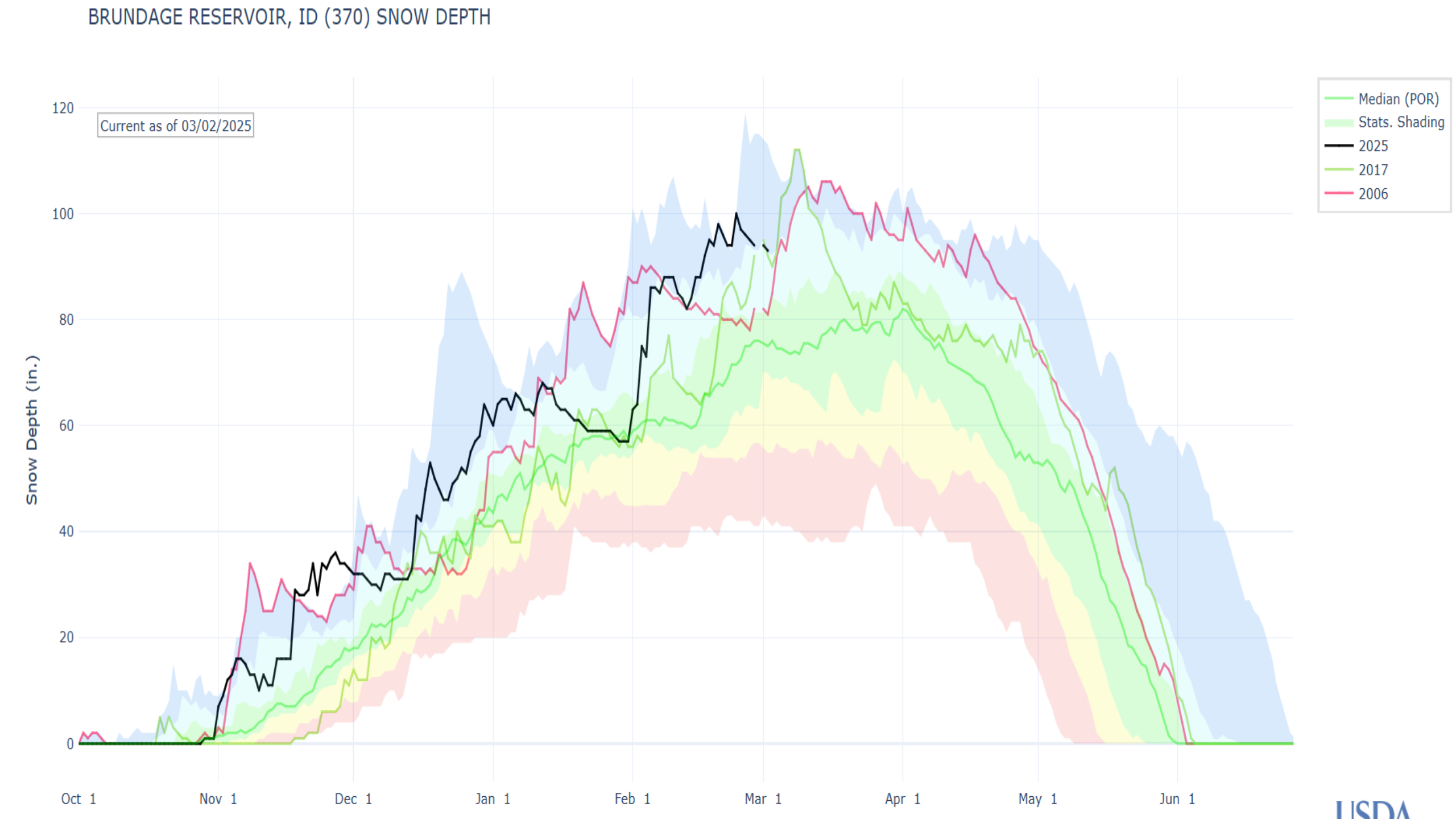


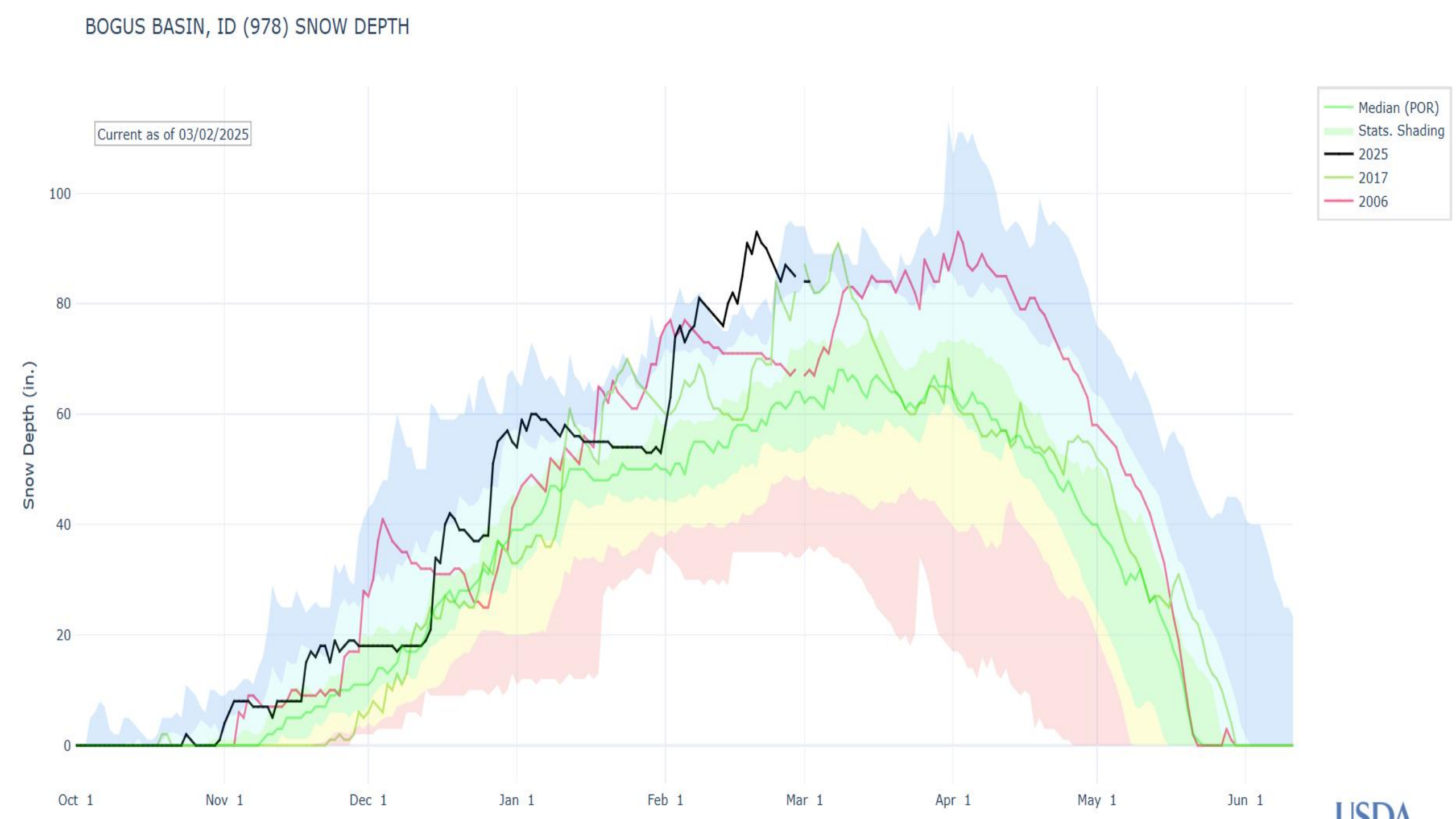
Neither site is melting yet, and up coming March storms may add more water to the pack.

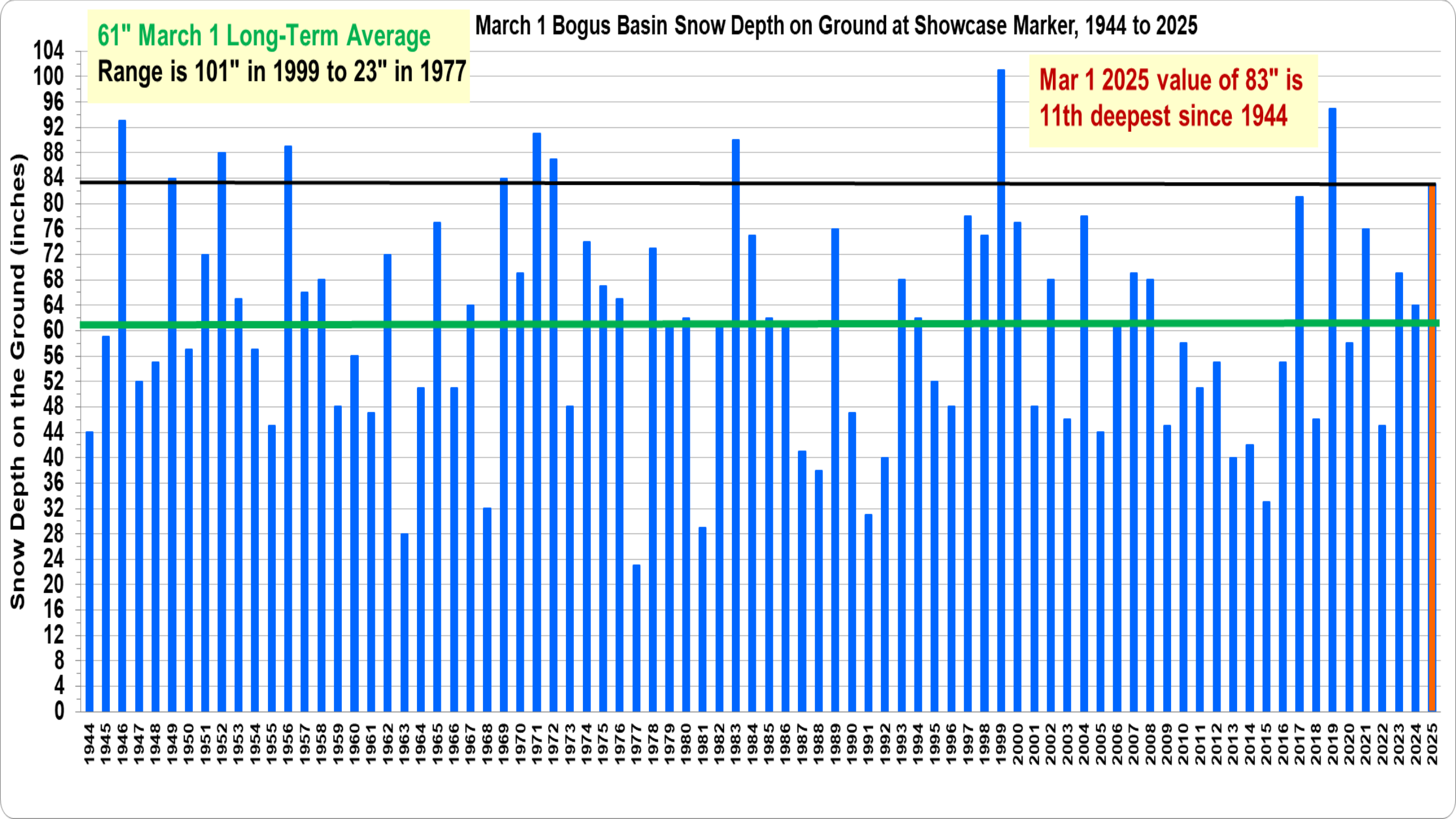


Based upon NRCS Feb 1 Streamflow Forecasts and current reservoir storage shows there's better than a 90% chance of having adequate irrigation supplies for the Owyhee Reservoir Users.



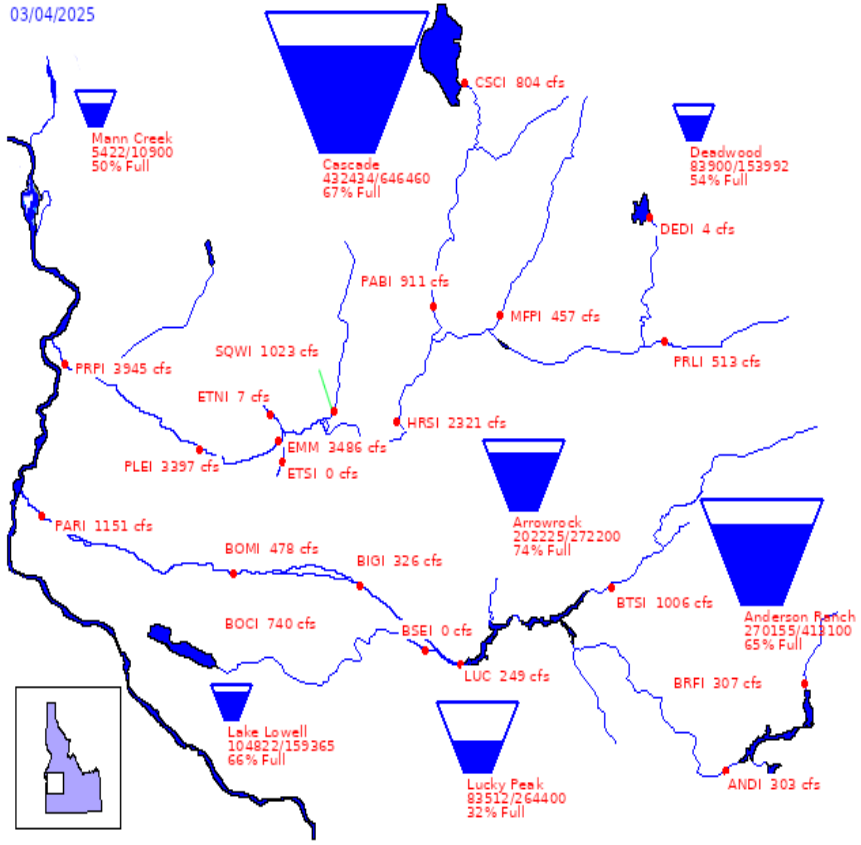

BRUNDAGE RESERVOIR, ID (370) SNOW DEPTH
Current as of 03/02/2025
Median (POR)
Stats. Shading
2025
2017
2006
Snow Depth (in.)
120
100
80
60
40
20
0
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1


BOGUS BASIN, ID (978) SNOW DEPTH
Current as of 03/02/2025
Median (POR)
Stats. Shading
2025
2017
2006
Snow Depth (in.)
100
80
60
40
20
0
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1


61" March 1 Long-Term Average
Range is 101" in 1999 to 23" in 1977
March 1 Bogus Basin Snow Depth on Ground at Showcase Marker, 1944 to 2025
Mar 1 2025 value of 83" is
11th deepest since 1944
Snow Depth on the Ground (inches)
0
4
8
12
16
20
24
28
32
36
40
44
48
52
56
60
64
68
72
76
80
84
88
92
96
100
104
1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025

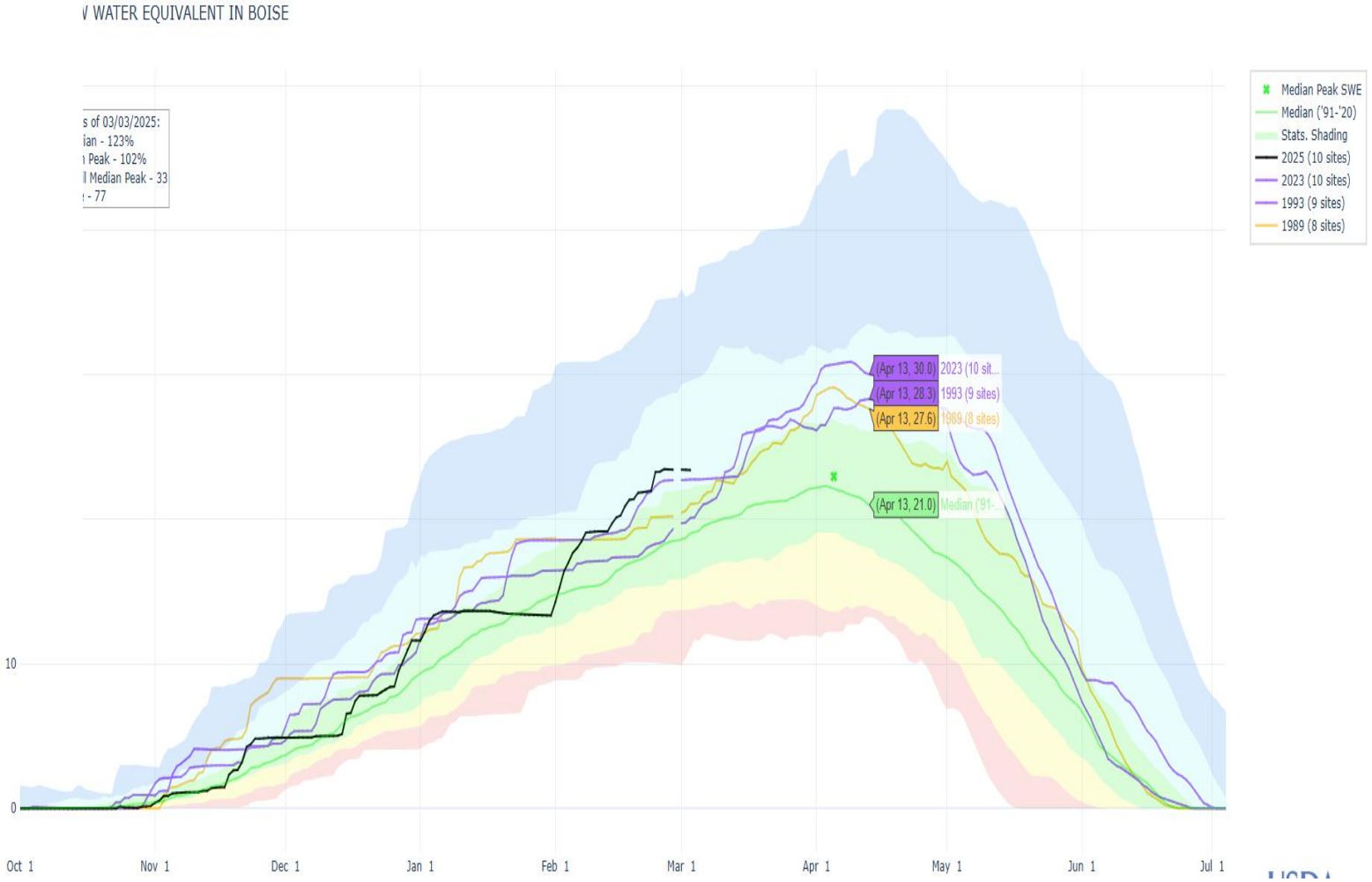
65% of Capacity Payette System
59% of Capacity Boise System

Bureau of Reclamation, Pacific Northwest Region
Major Storage Reservoirs in the Boise & Payette River Basins

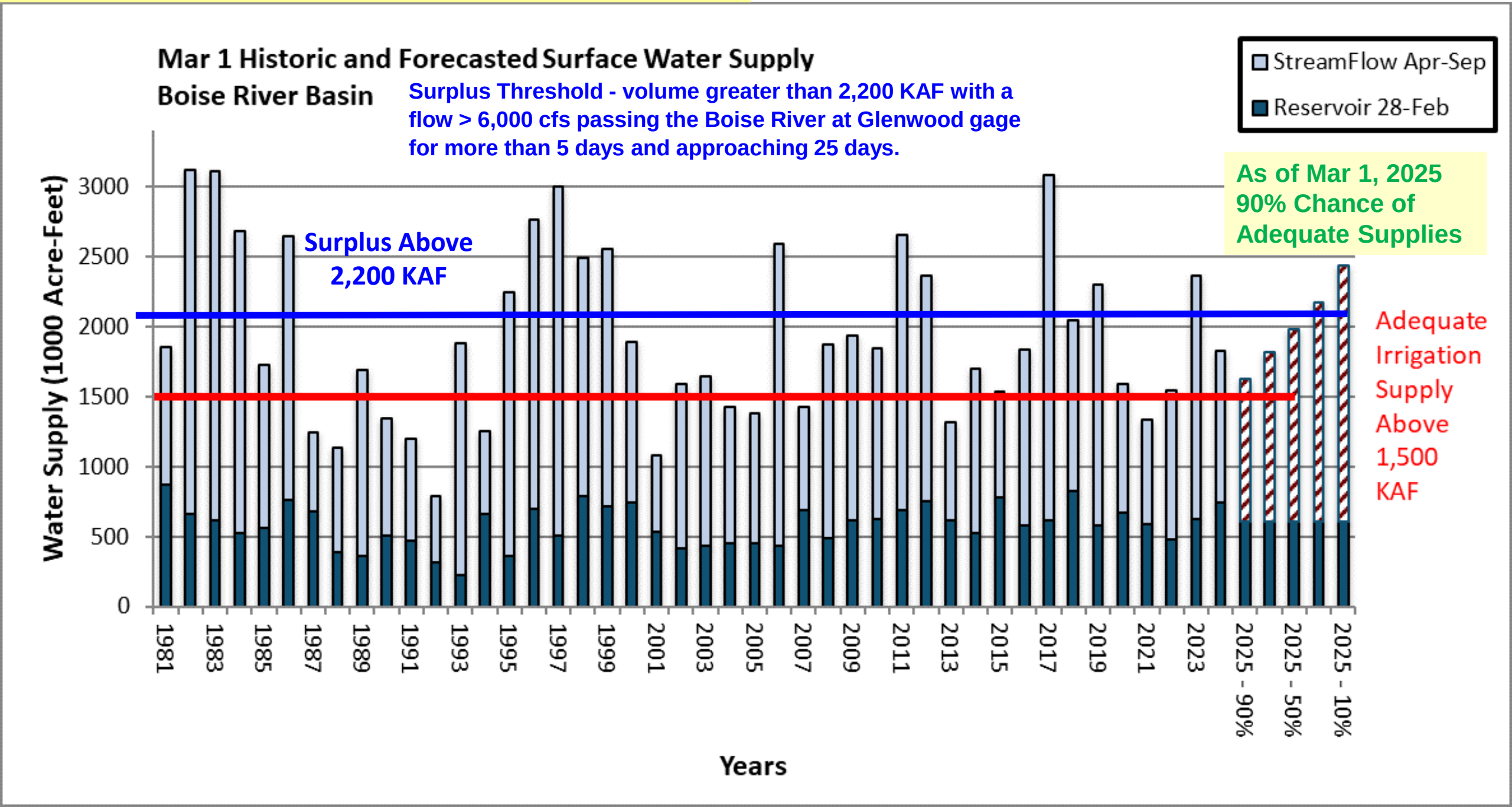


Boise Basin 123% of Normal

Tracking similar to 2023, 1993 & 1989.



2025 Mar 1 Boise Basin Surface Water Supply Index



Let's talk about future weather…

Seasonal Climate Forecast
March – May 2025
Issued: February 21, 2025

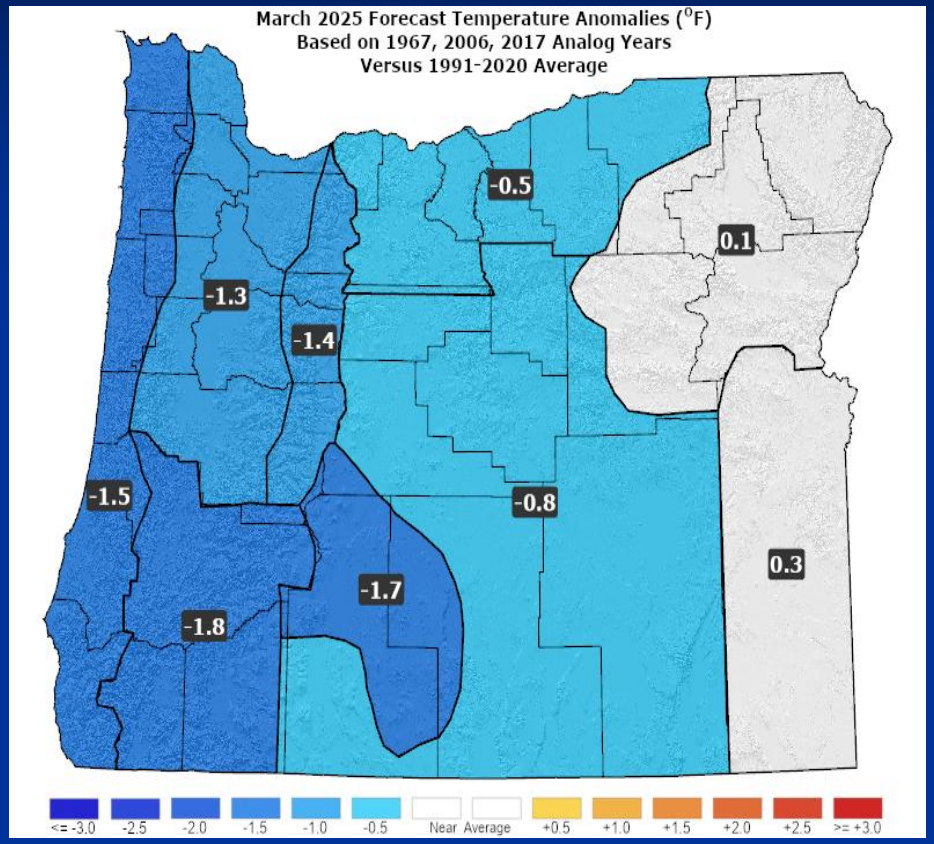
Contact: ODF Lead Meteorologist Pete Parsons
503-945-7448 or peter.gj.parsons@odf.oregon.gov

Forecast Highlights

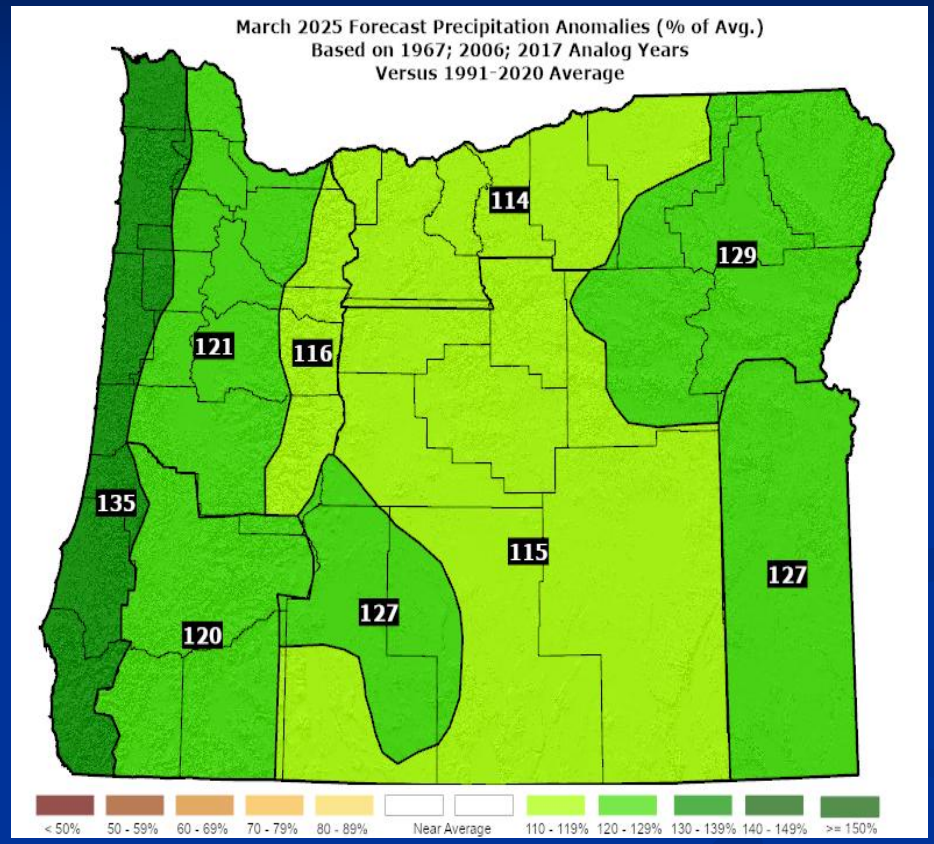
- This forecast is based on weather that occurred during the (1967; 2006; 2017) analog years (2017 replaced 1993 this month).
- La Niña conditions are present and should transition to ENSO-neutral during this forecast period.
- Expect below-normal temperatures and above-normal precipitation and mountain snow in March and April. Mountain snowpacks should peak at above or well-above average.
- In stark contrast...May looks relatively warm and dry, which should quickly clear mountain snow at lower elevations. Expect dry stretches with 80°F+ temperatures in the valleys (a welcome sight for most).

March 2025 Forecast

Temperatures



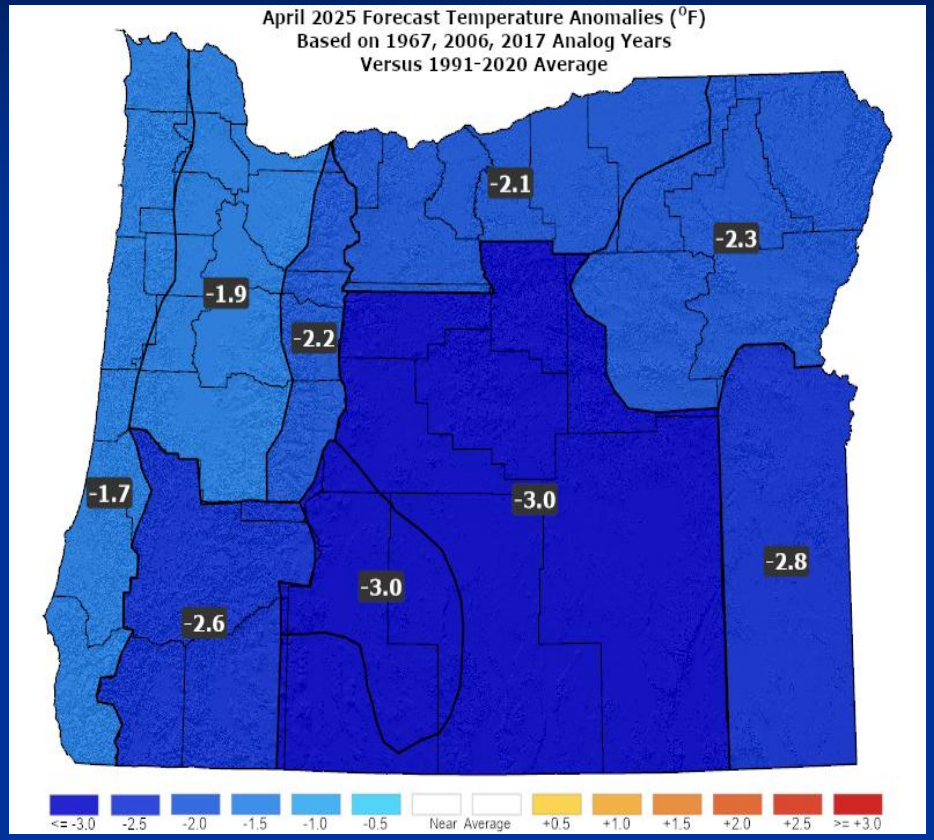
Precipitation



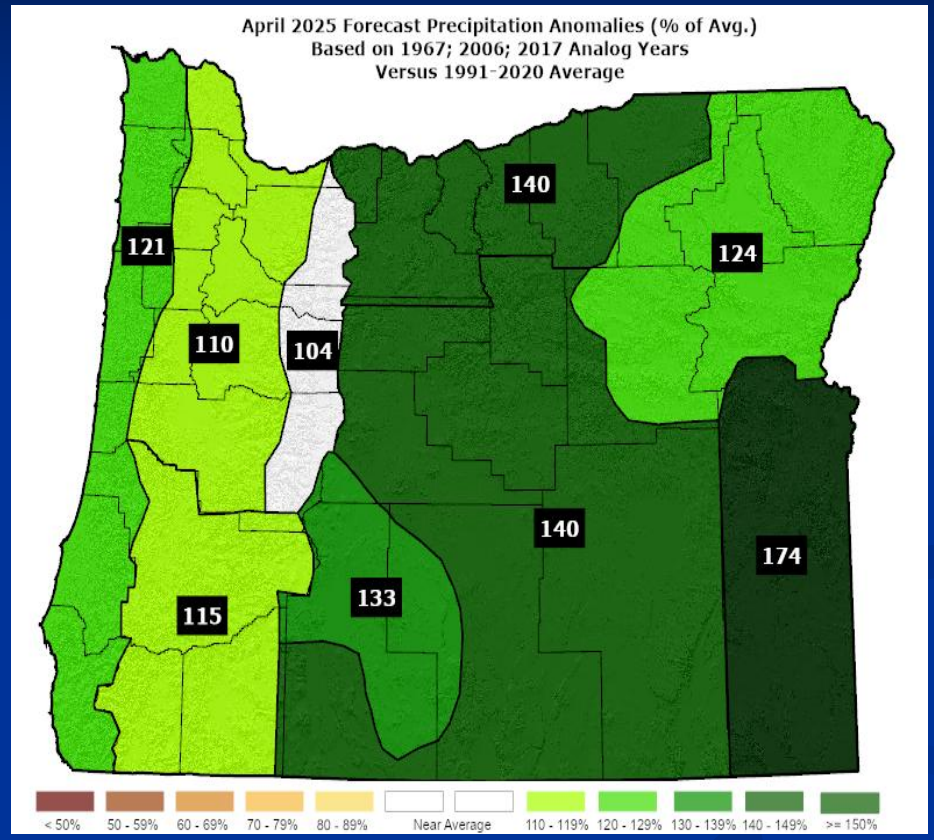
- Relatively cool conditions are favored with the potential for widespread periods with freezing minimum temperatures in the western valleys.
- Above-average storminess, precipitation, and mountain snowpacks likely. Very low snow levels likely at times.

April 2025 Forecast

Temperatures



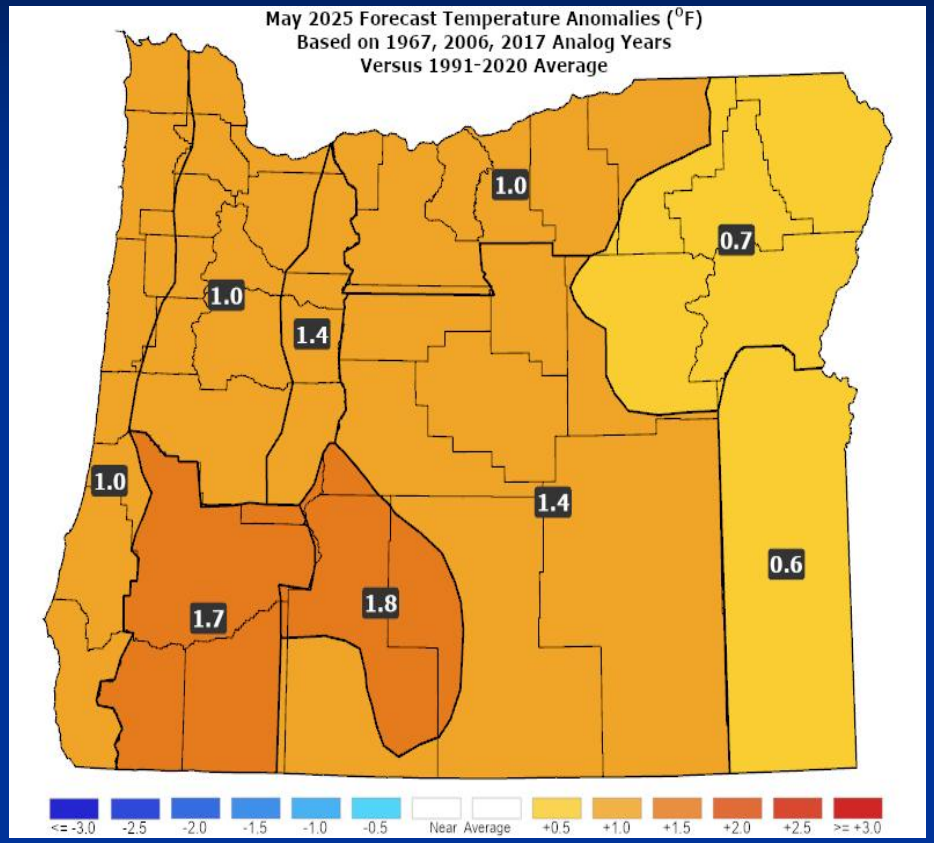
Precipitation



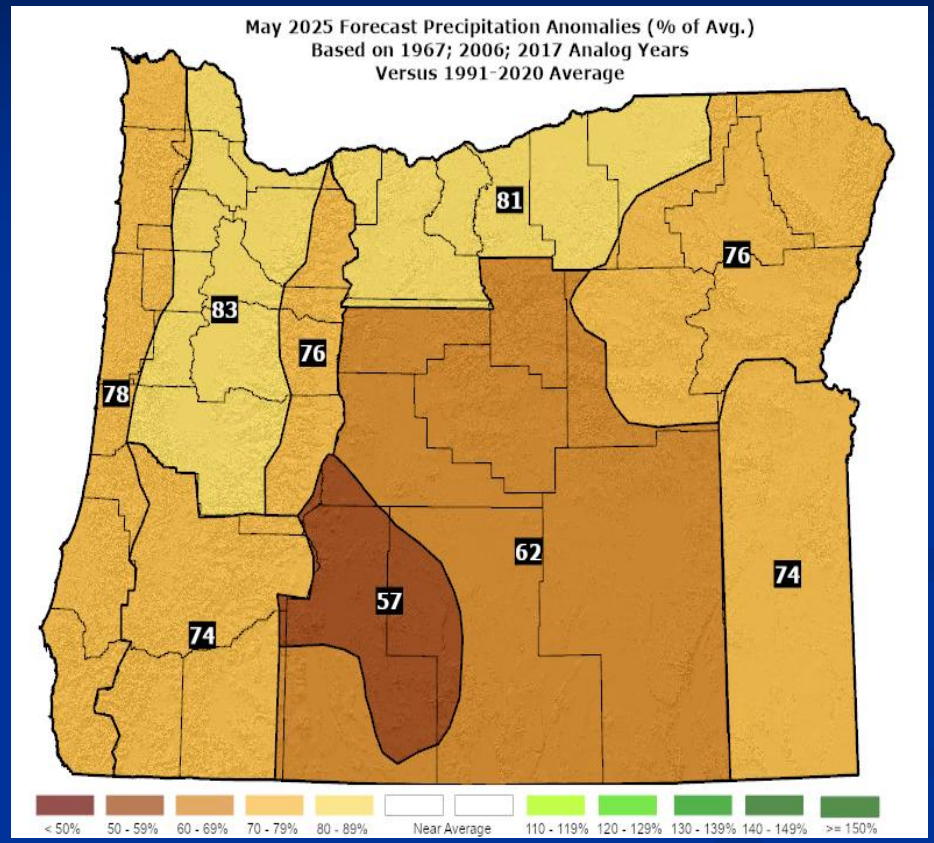
- Analogs were consistent on maintaining stormy/cool weather. Most days will have precipitation with low snow levels at times.
- Mountain snowpacks should peak at above or well-above average with excellent snow retention through the month.

May 2025 Forecast

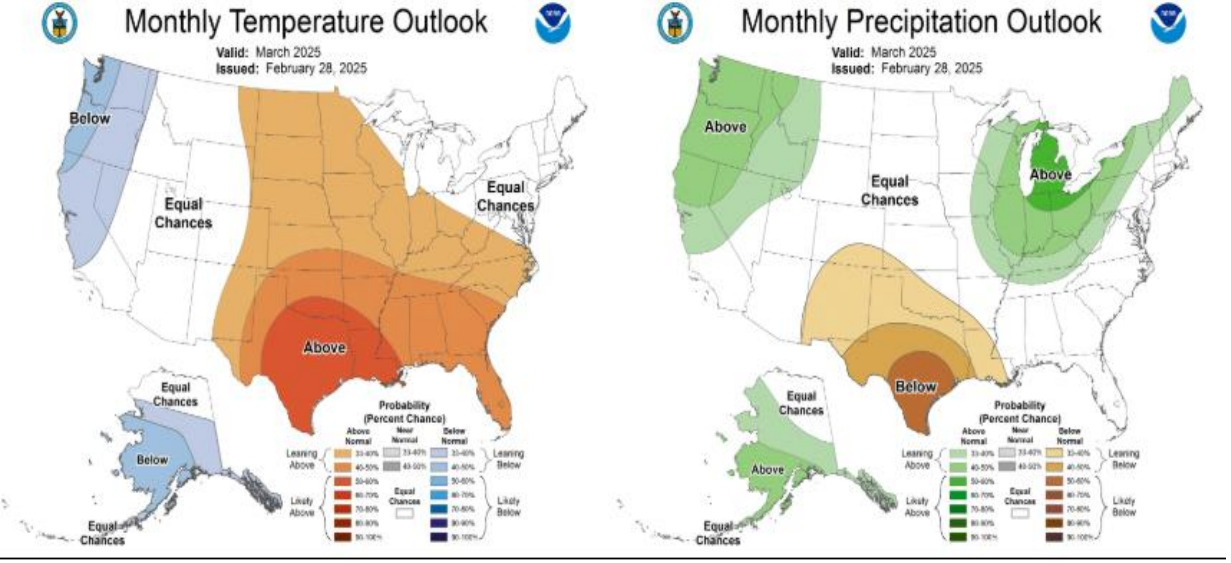
Temperatures



Precipitation

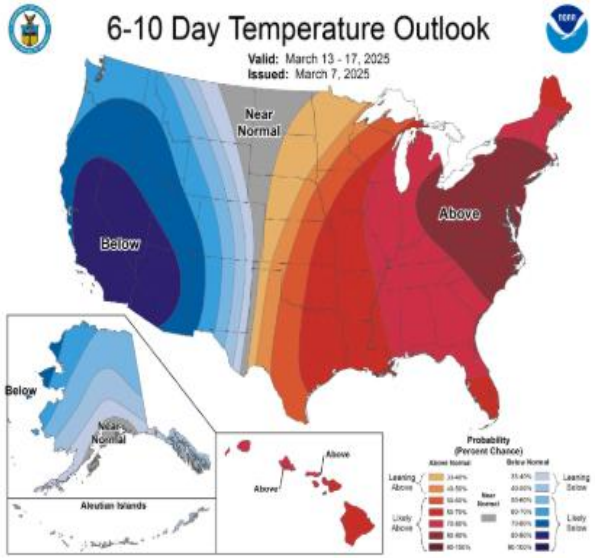


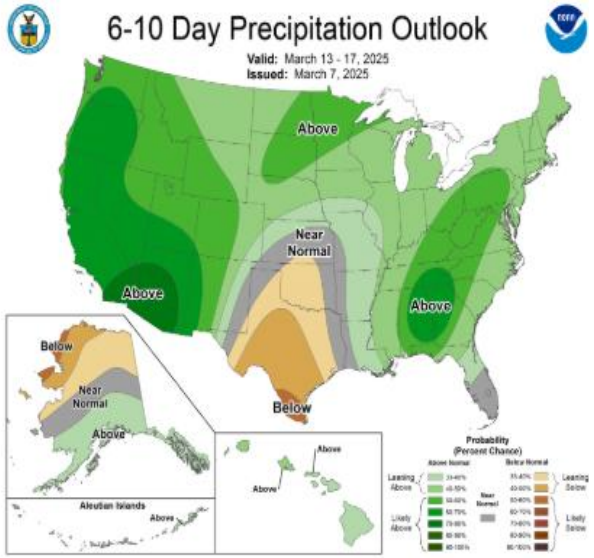
- Confidence is high for a transition to above-average temperatures, which would be in stark contrast to the preceding April.
- Despite below-average precipitation, mountain snowpacks should remain above average at the highest elevations (i.e., Crater Lake).

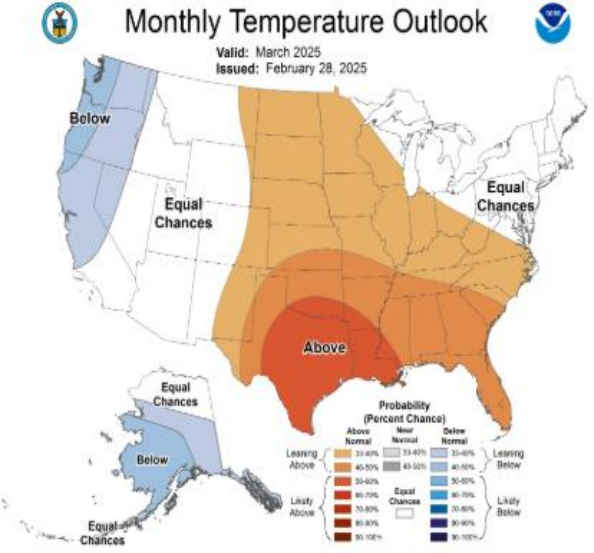


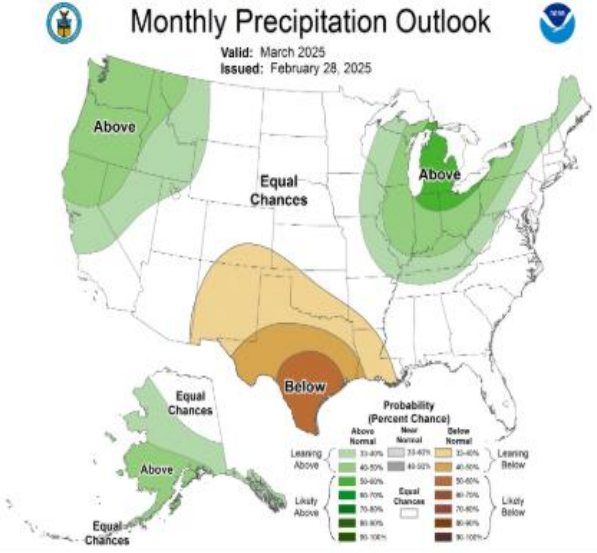
March Forecast from Feb 28

Mar 13-17 Forecast from Mar 7

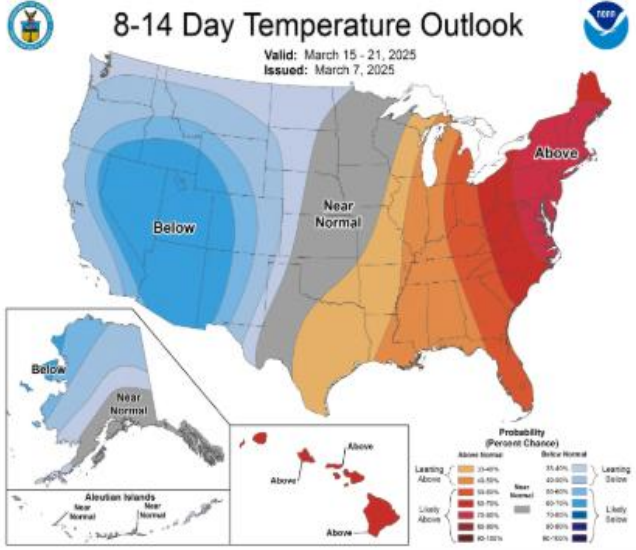


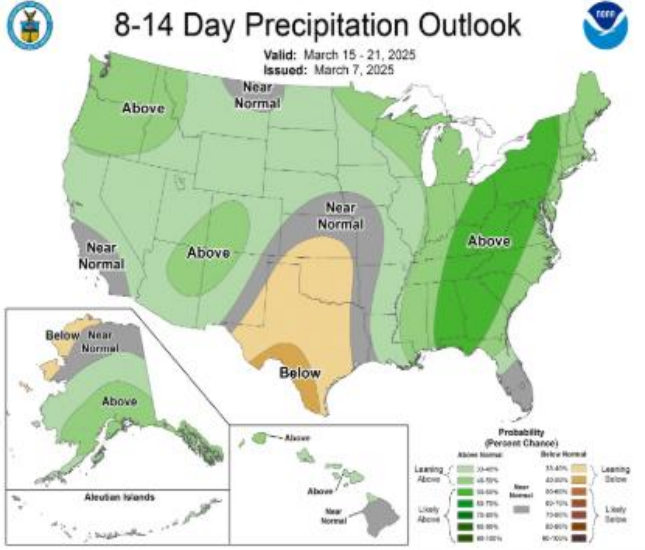






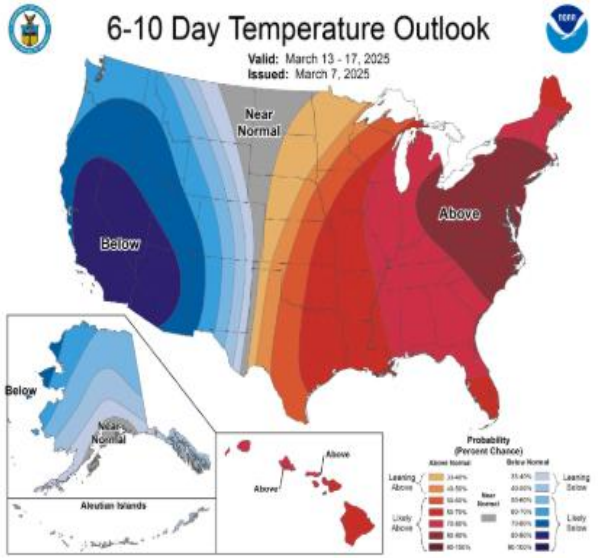
March Forecast from Feb 28

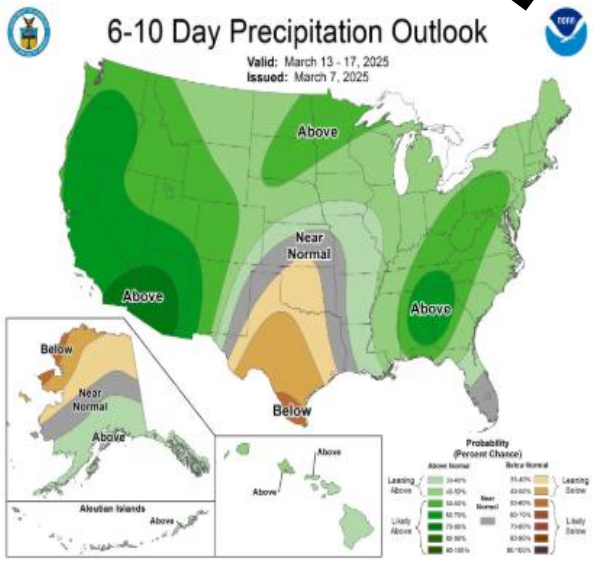




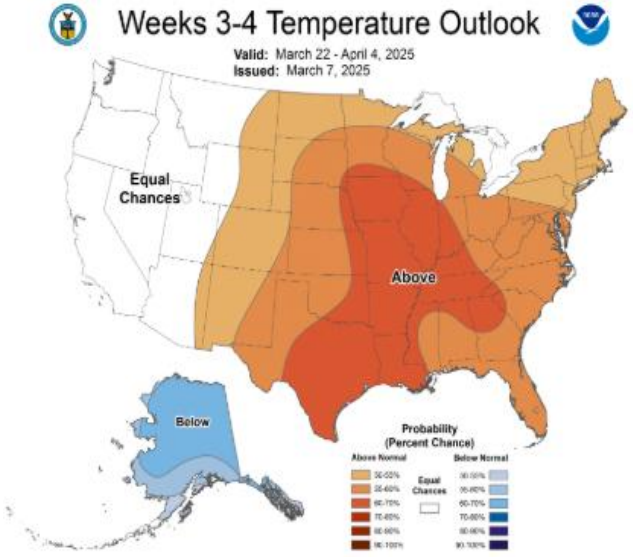
March 15-21 Forecast Mar 7

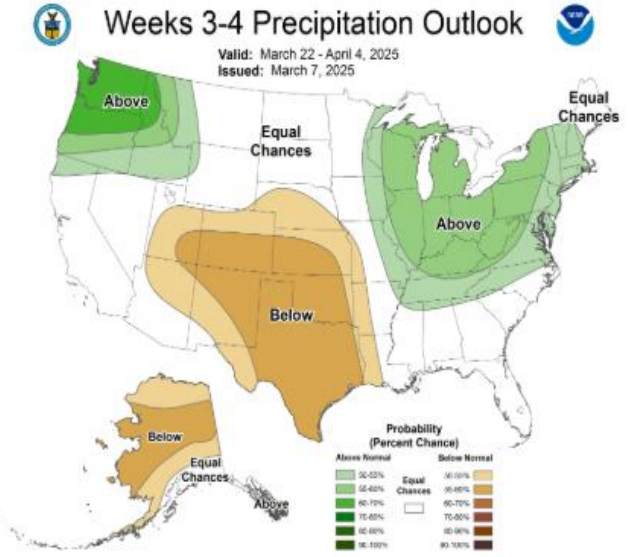
Mar 13-17 Forecast from Mar 7



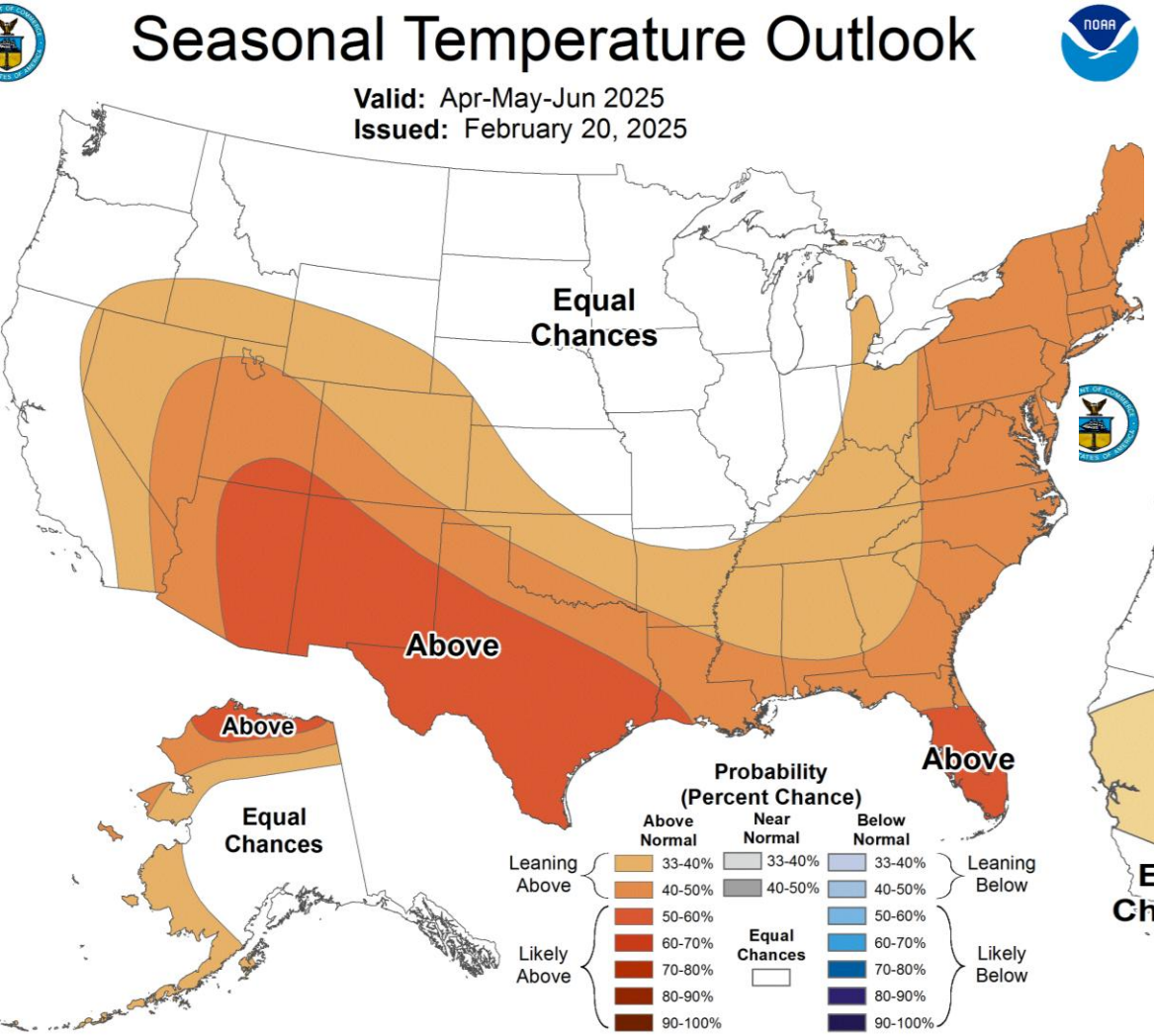


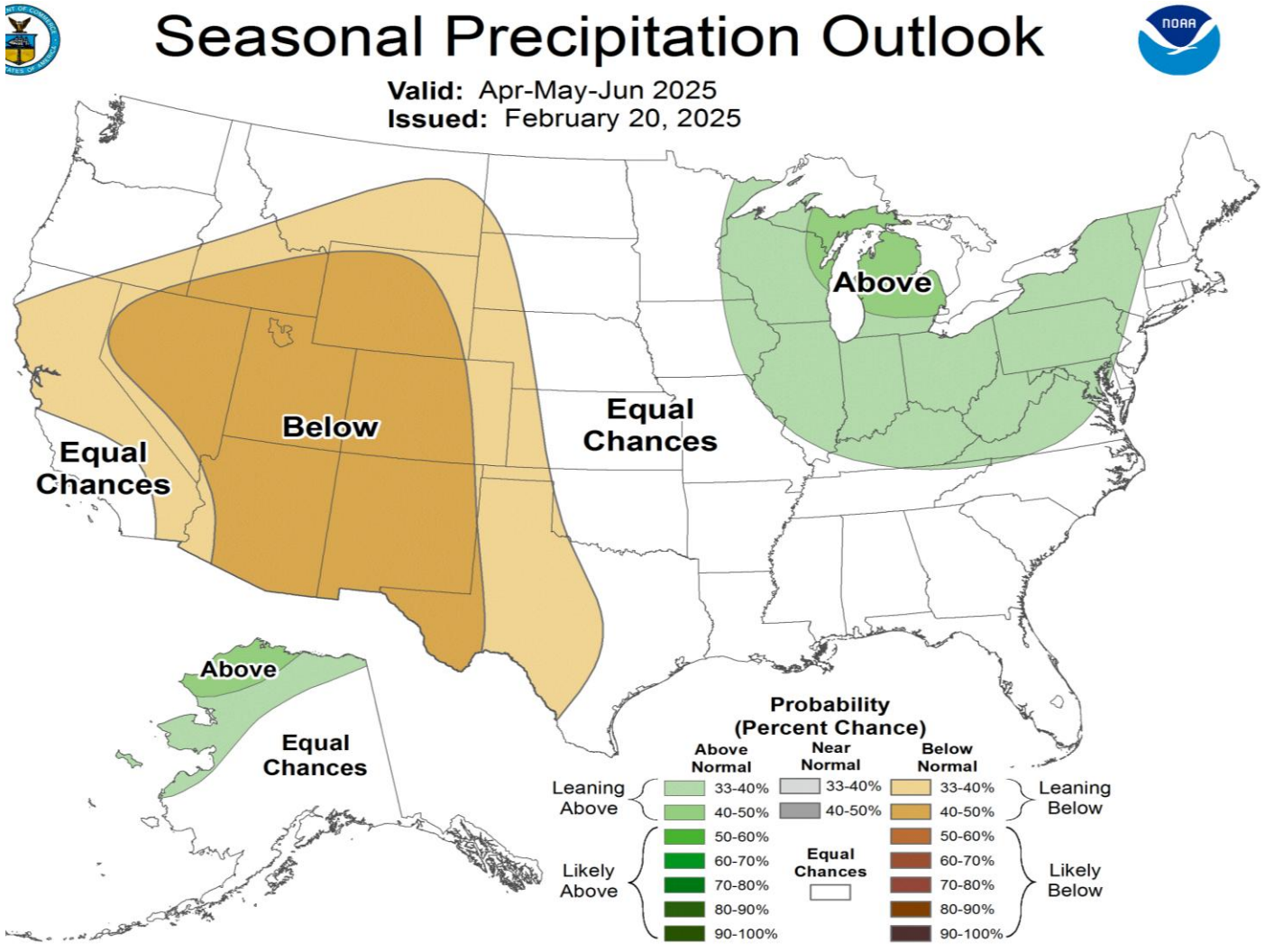
Mar 22-Apr 4 Forecast from Mar 7





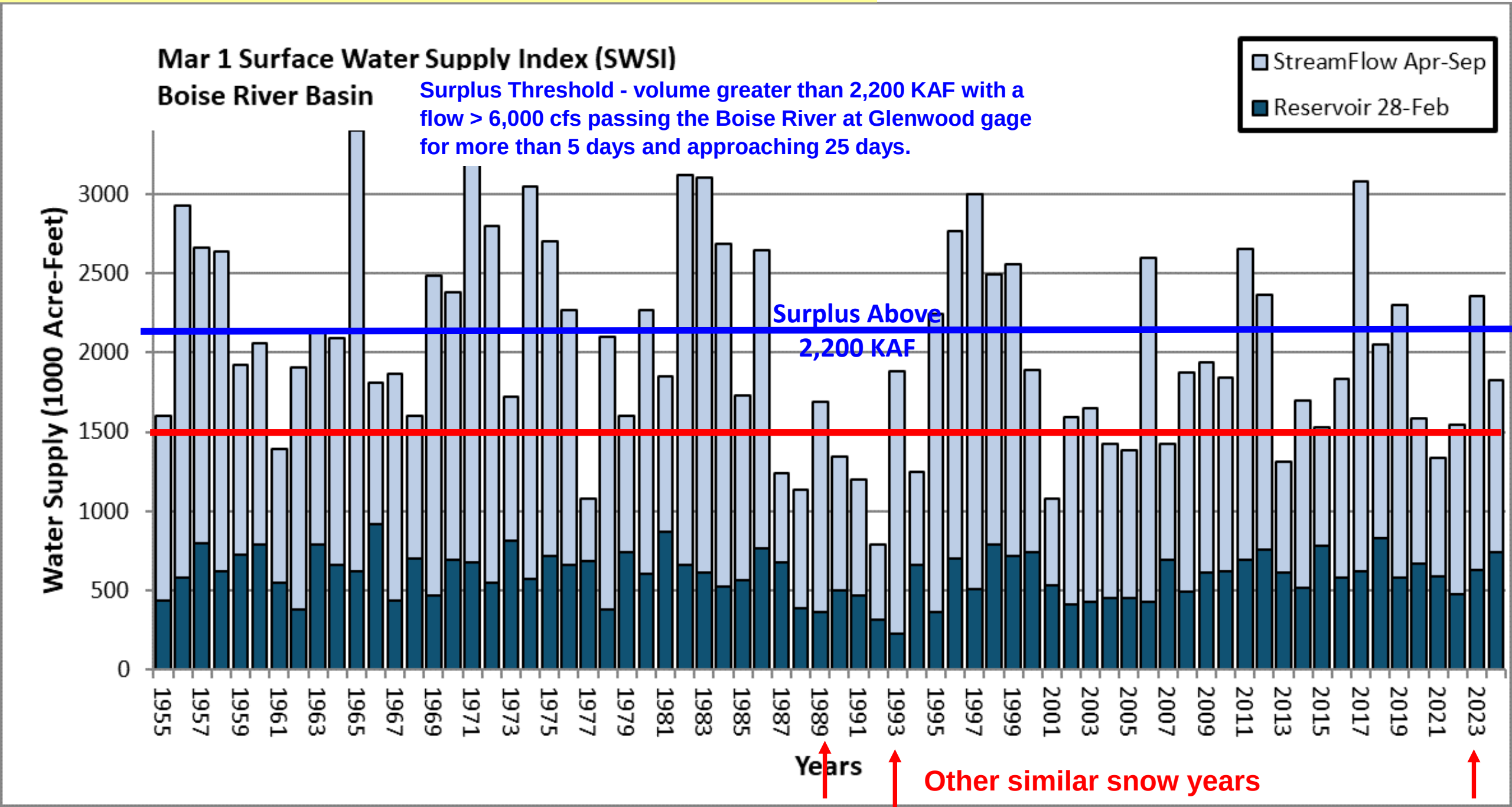
Temp & Precip Seasonal Outlook
Apr – May - Jun






Northern Lights seen from
Owyhee River Canyon
May 11, 2024 at 12:12AM

2025 Mar 1 Boise Basin Surface Water Supply Index All Years



Current Streamflow Conditions
Mar 2, 2025