WINTER 2024-'25

Mark Nelsen



WINTER 2024-'25

Mark Nelsen

A MILD (LA NIÑA) WINTER



Winter 2024-25

- Near normal temps and precipitation
- Just two weeks with typical "La Niña" conditions (early February)
- No major windstorms + no arctic blast this year
- North/central Cascade snowfall near average
- Huge snowpack in southern/southeast Oregon

An example of a harassing viewer voice mail

(Late January)



WAS IT "THE END OF THE WORLD AS WE KNOW IT"?

FORECASTS FROM THURSDAY, FEBRUARY 6TH

ALL THIS DRAMA...FOLLOWED BY A TRACE OF SNOW











OFFICIAL SNOW TOTAL:

3.0"

at PQR (NWS Office)

3.5" Downtown (KGW-TV)

(1.7" & 1.8" Feb 13th-14th)

FIRST ALERT PORTLAND SNOWFALL

SINTER 2024-25

SINTER 2024-25

SINCHES

WINTER
SNOWFALL

1 measurable snow event

SNOW

FRZ RAIN/ICE

Trace Feb 5th
Trace Feb 10th
1.3" Feb 13th
1.7" Feb 14th

Trace Feb. 13th

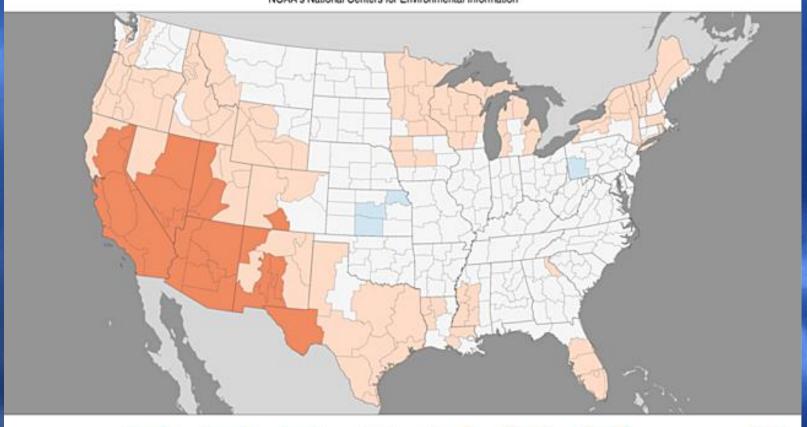
Winter Temperature Anomaly

Divisional Average Temperature Ranks

December 2024-February 2025

Ranking Period: 1895-2025

NOAA's National Centers for Environmental Information



Record Coldest

Much Below Average Below Average

Nea e Avera

lear erage Above Average Much Above

Record Warmest



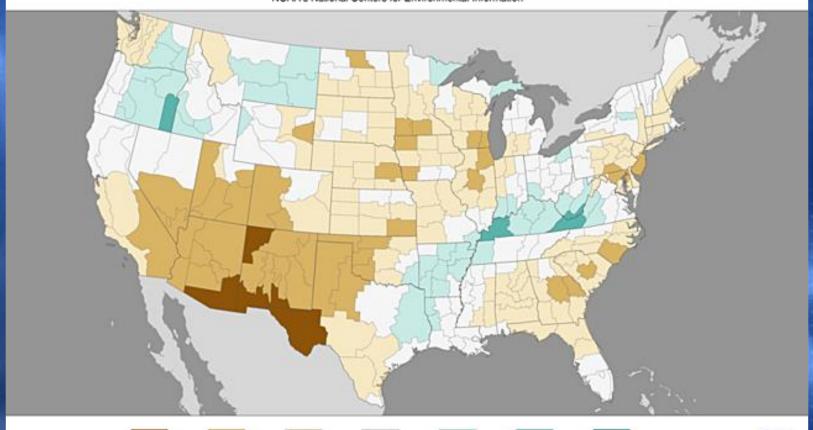
Winter Precip Anomaly

Divisional Precipitation Ranks

December 2024-February 2025

Ranking Period: 1895-2025

NOAA's National Centers for Environmental Information



Record Driest Much Below Average

Below Average Near Average

Above Average Much Above Average

ch Record ve Wettest

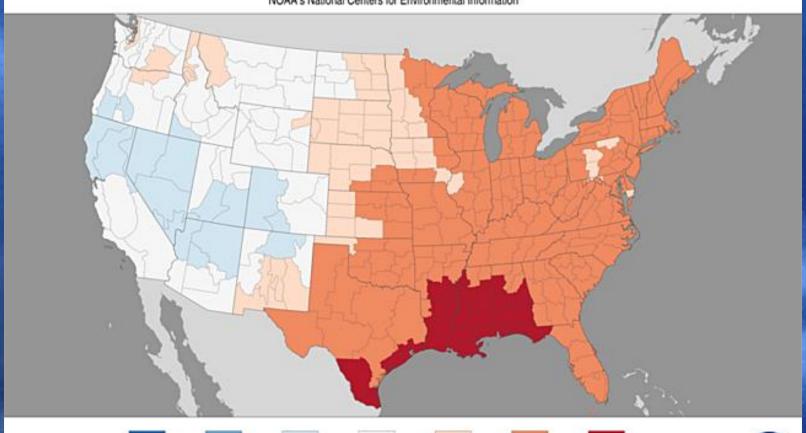


Monthly view

Divisional Average Temperature Ranks November 2024

Ranking Period: 1895-2024

NOAA's National Centers for Environmental Information



eated: Thu Dec 5 2024 e: nClimGrid - Monthly

Record Coldest

Much Below

Below Average

Near Average

Above Average Much Above

Record Warmest

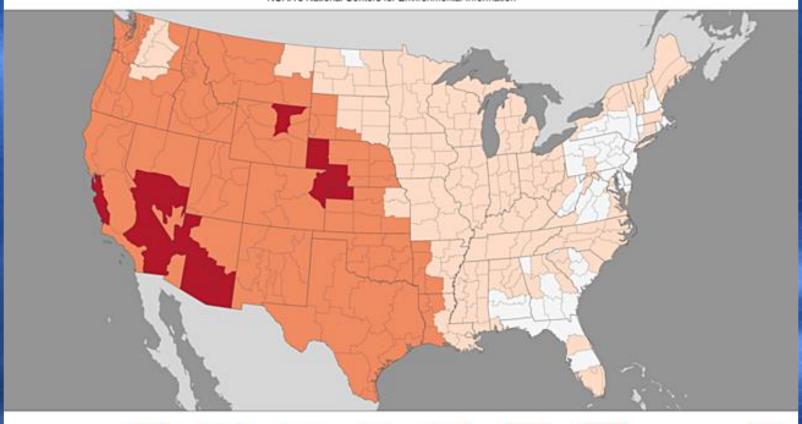


THE USA VIEW

Divisional Average Temperature Ranks December 2024

Ranking Period: 1895-2024

NOAA's National Centers for Environmental Information



Record Coldest

Much Below Average

Below Average

Near Average

Above Average

Much Above Average Record

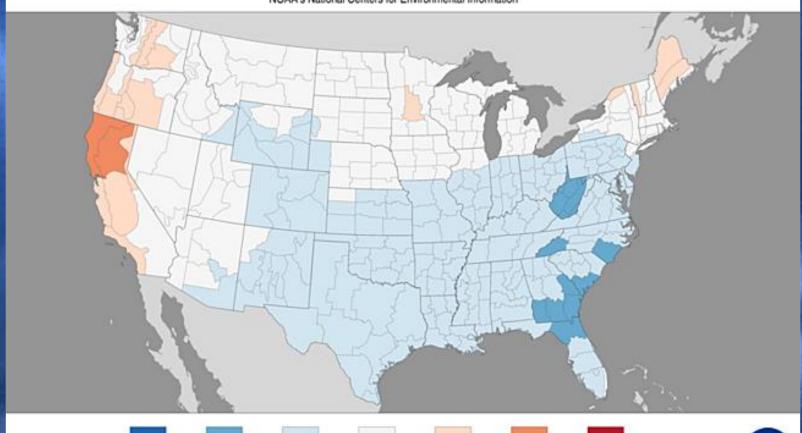


THE USA VIEW

Divisional Average Temperature Ranks January 2025

Ranking Period: 1895-2025

NOAA's National Centers for Environmental Information



eated: Thu Feb 6 2025 : nClimGrid - Monthly Record Coldest

Much Below Average

Below Average

Near Average

Above Average

Much Above Average

Record

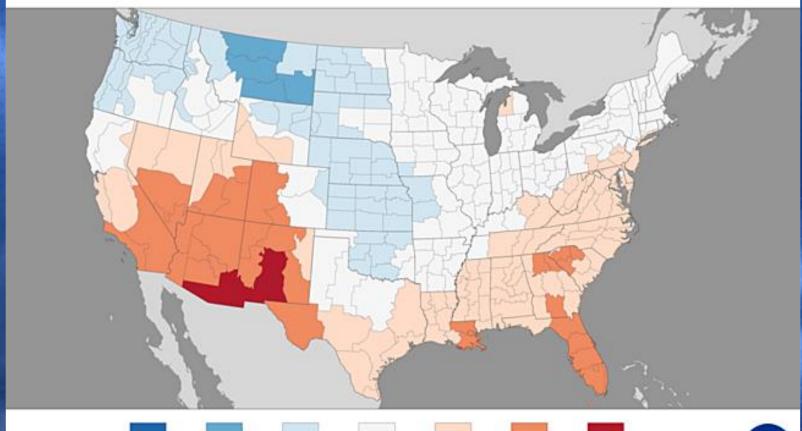


THE USA VIEW

Divisional Average Temperature Ranks February 2025

Ranking Period: 1895-2025

NOAA's National Centers for Environmental Information



Record Coldest

Much Below Average

Below Average

Near Average

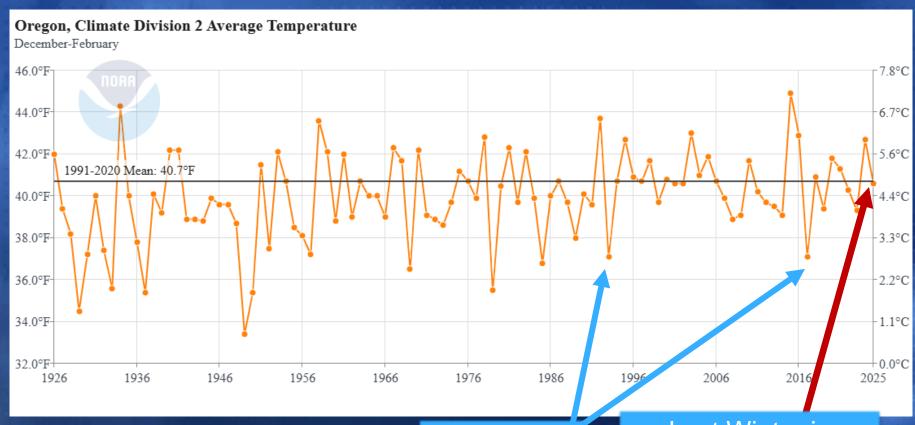
Above Average

Much Above Average Record



OR Western Valleys Winter Temperature

(the past 100 years)
Near average. Last "very cold" winter was 2016-17



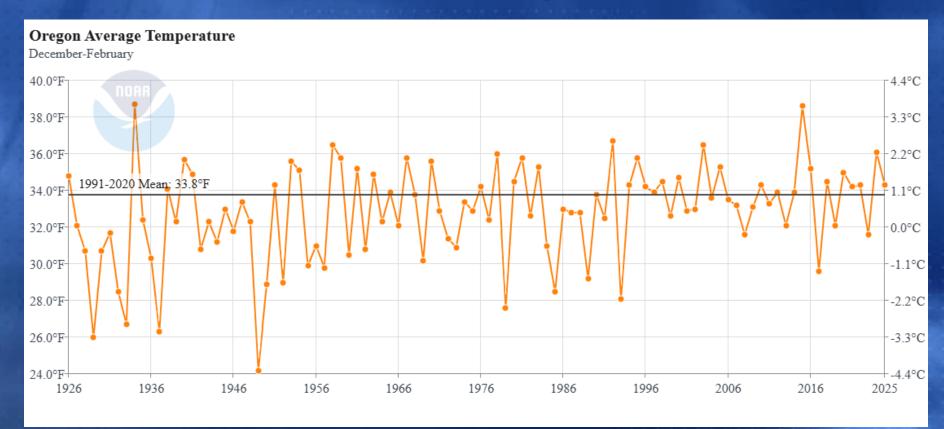
The last two cold winters (92-93 & 16-17)

Last Winter in Oregon Zone 2 (Willamette Valley)

Oregon Winter Temps

(the last 100 years)

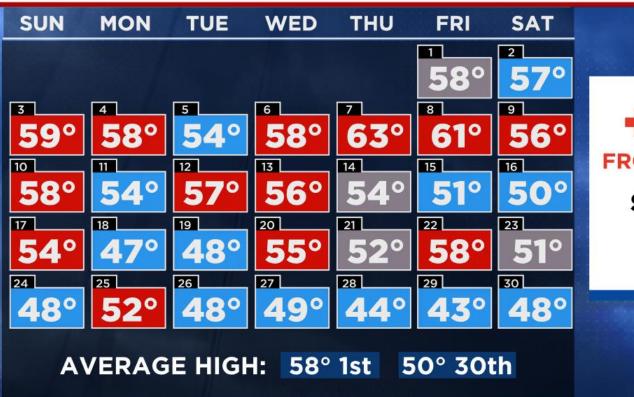
Near average



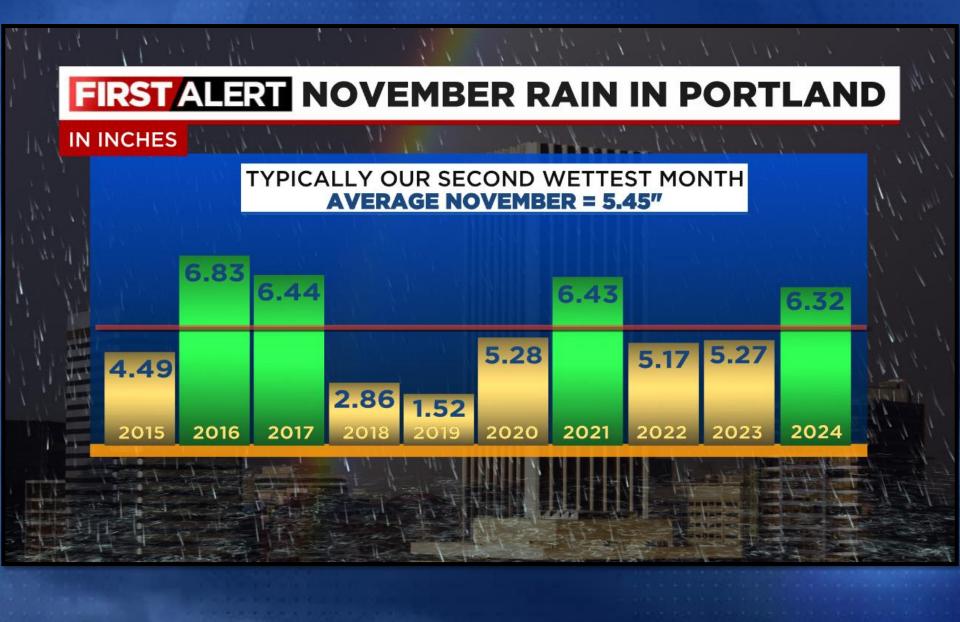
NOVEMBER 2024

Temps near normal...no extremes of warm/cold

FIRST ALERT NOVEMBER 2024 IN PORTLAND

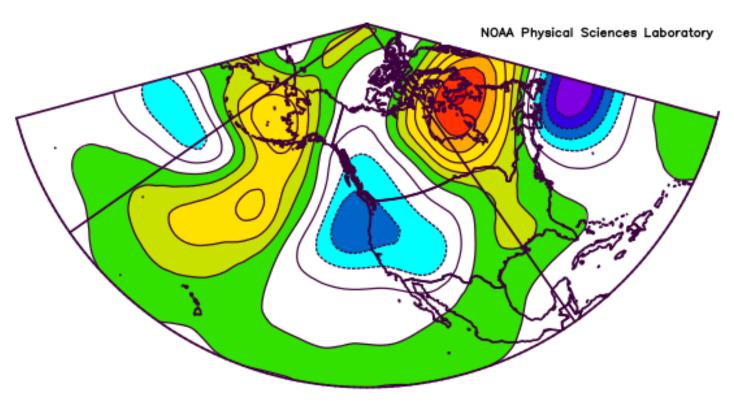


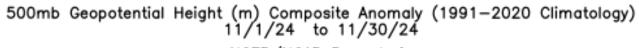
+1.4°
FROM NORMAL
SLIGHTLY
ABOVE
NORMAL



NOVEMBER 500MB

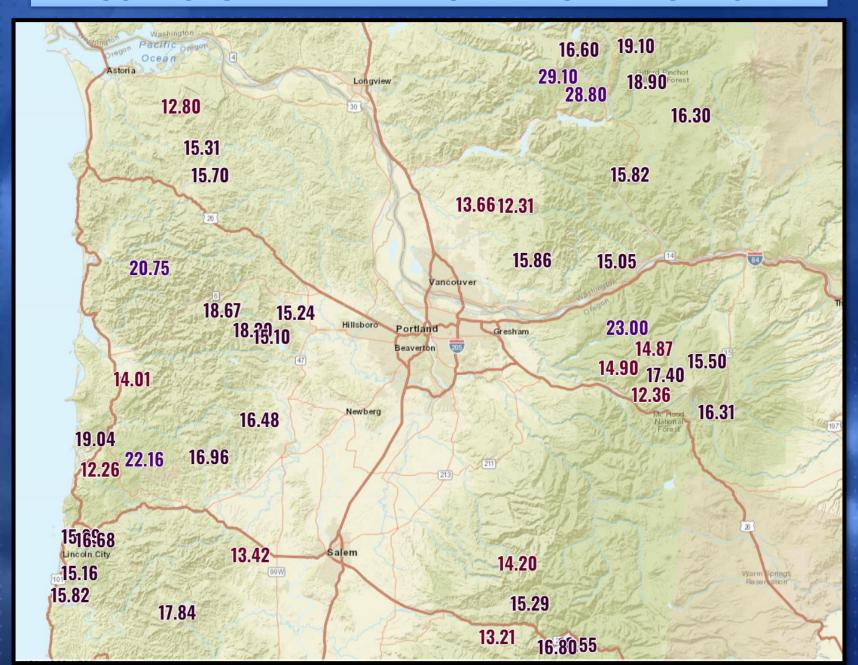
Troughing along West Coast







LOCATIONS WITH 12"+ PRECIPITATION IN NOV. 2024



WATERSPOUT MOVES ONSHORE - MONDAY NOV 11TH

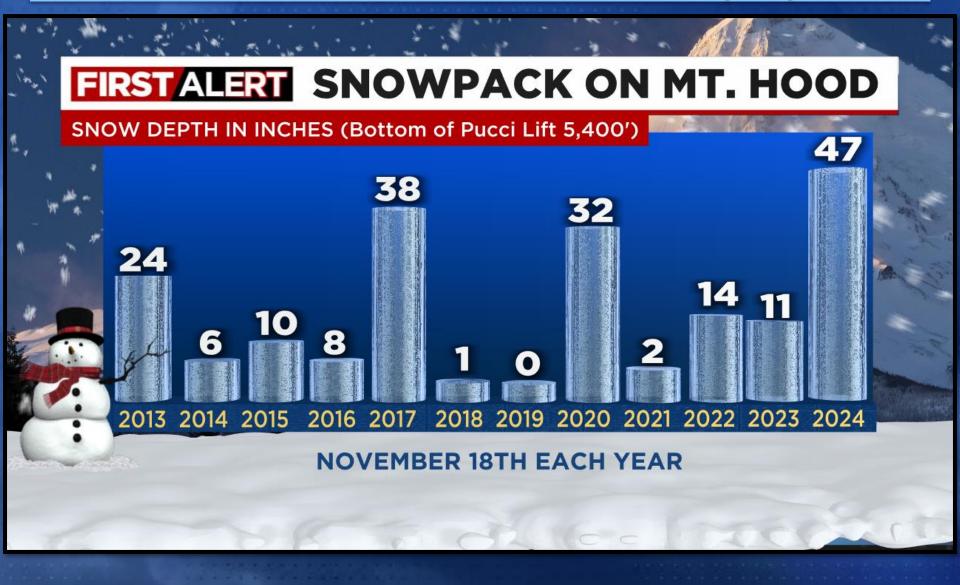




Rockaway Beach Tornado	
Date	11/11/24
Time (Local)	9:24 PM
EF Rating	EF-0
Est. Peak Winds	85 mph
Path Length	0.25 miles
Max Width	150 yards
Injuries	1 injury



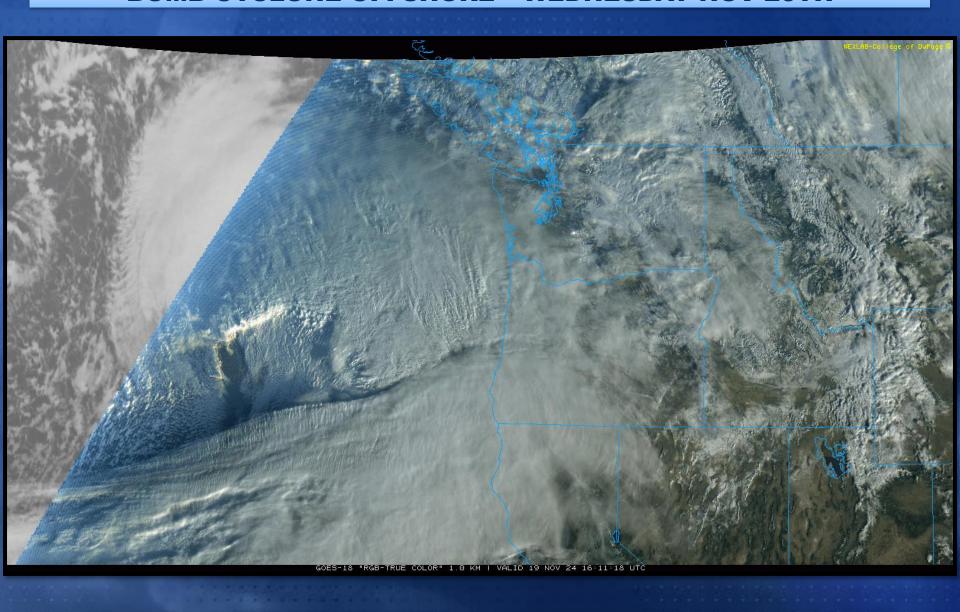
Most ski areas open before/around Thanksgiving



BOMB CYCLONE OFFSHORE – WEDNESDAY NOV 20TH



BOMB CYCLONE OFFSHORE – WEDNESDAY NOV 20TH



MILD & WET MONTH...EL NIÑO-ISH

FIRST ALERT DECEMBER 2024 IN PORTLAND



FROM NORMAL

3RD WARMEST DECEMBER ON RECORD

SO MANY MILD NIGHTS!

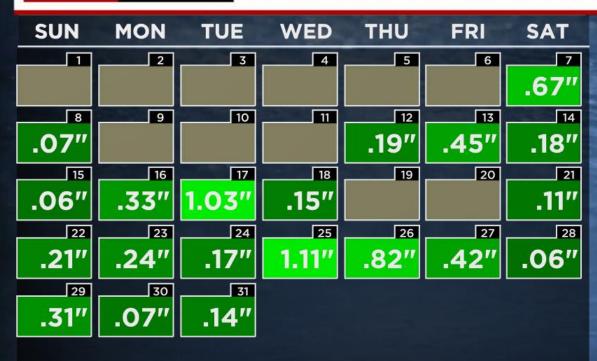
After brief sunny/cool spell early



WETTER THAN AVERAGE

Although not excessively wet or stormy

FIRST ALERT DECEMBER 2024 IN PORTLAND



RAIN

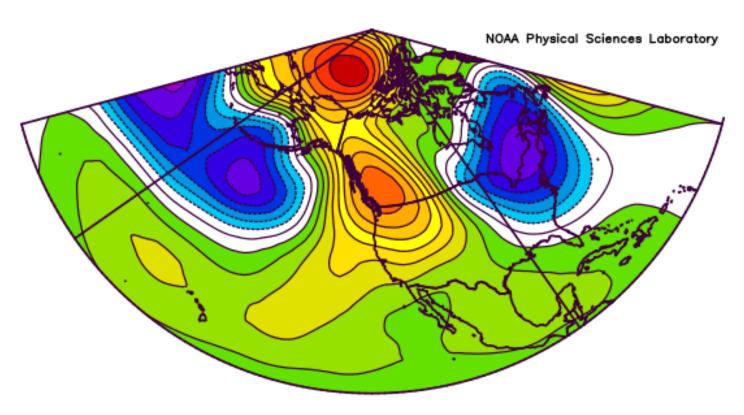
6.79"

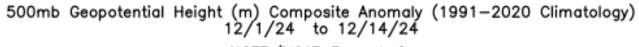
A TYPICAL DECEMBER

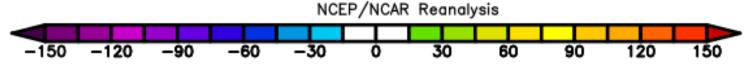
5.77"

DECEMBER 500MB

Ridging over western USA first half of month

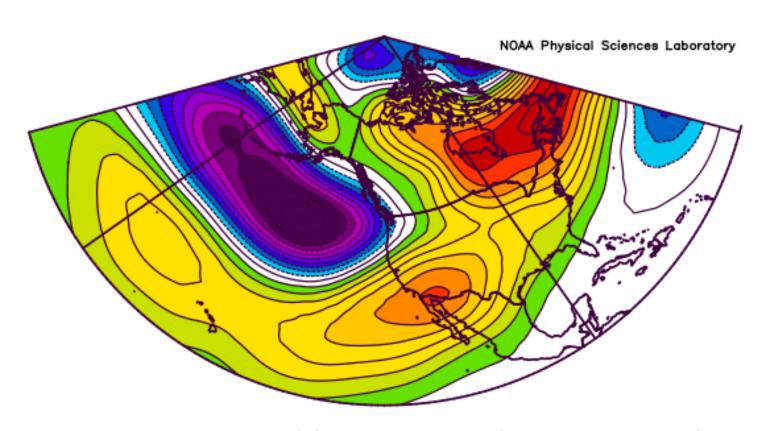


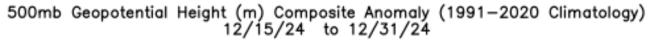


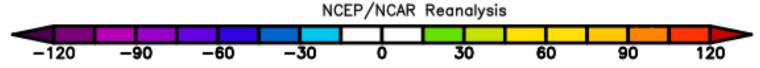


DECEMBER 500MB

Troughing in Eastern Pacific 2nd half of month

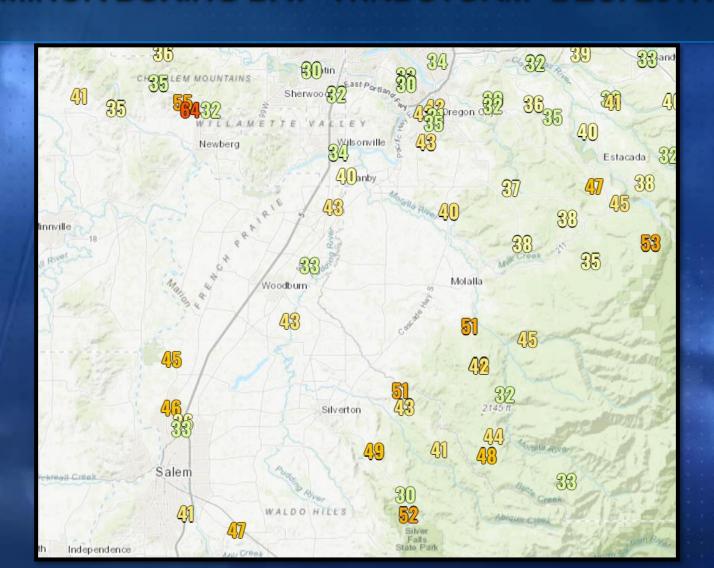




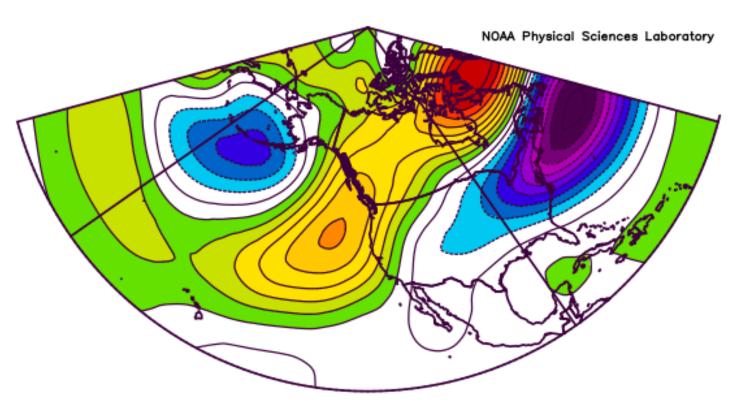


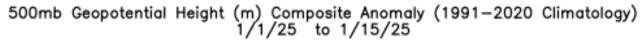


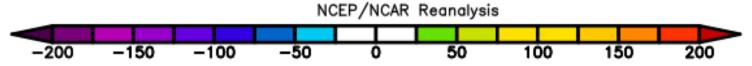
MINOR BOXING DAY "WINDSTORM" DEC. 26TH



JANUARY 2025: Upper-level ridging over West Coast 1st half of month = mild and wet at times

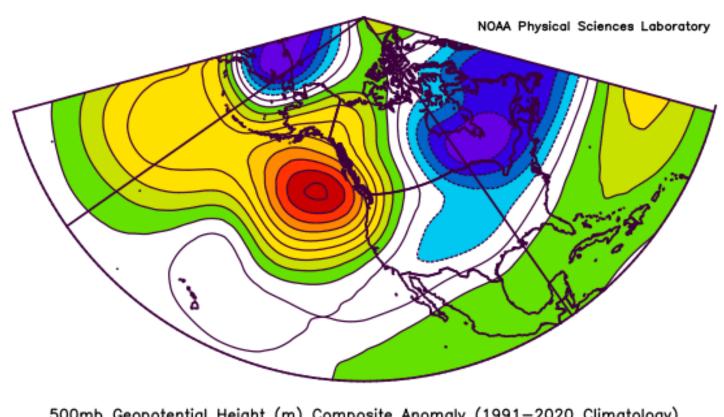


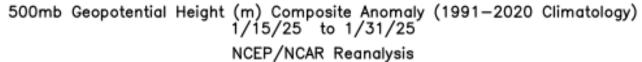


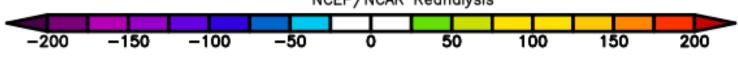


JANUARY 15-31st 2025 Upper-level ridging shifts slightly westward 2nd half

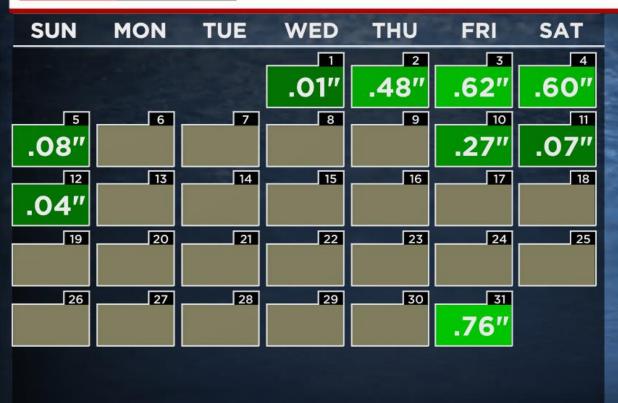
Dry, colder nights but mild/sunny days







FIRST ALERT JANUARY 2025 IN PORTLAND



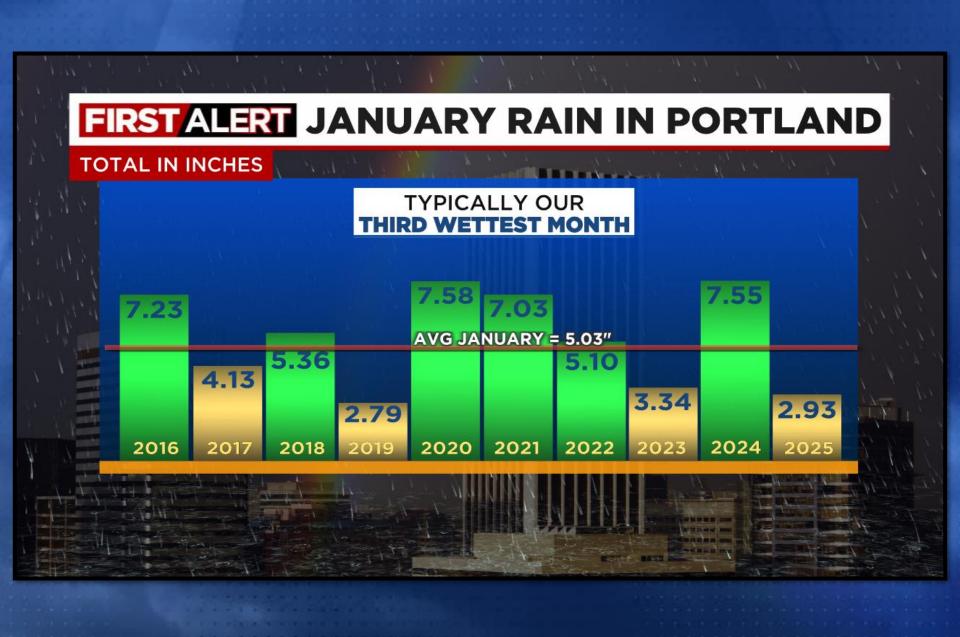
RAIN

A TYPICAL JANUARY 5.03"

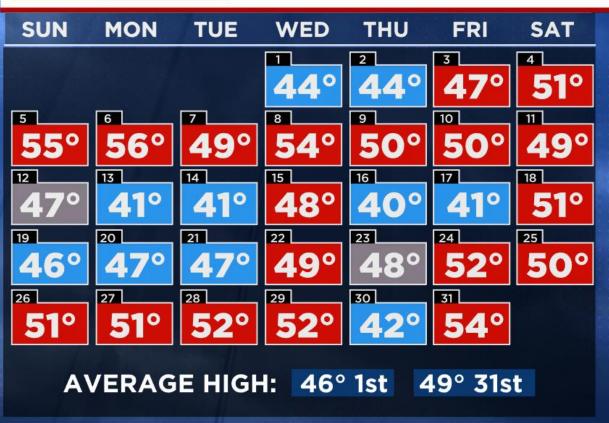
FIRST ALERT JANUARY DRY SPELLS

CONSECUTIVE DAYS WITH NO MEASURABLE RAIN AT PDX





FIRST ALERT JANUARY 2025 IN PORTLAND

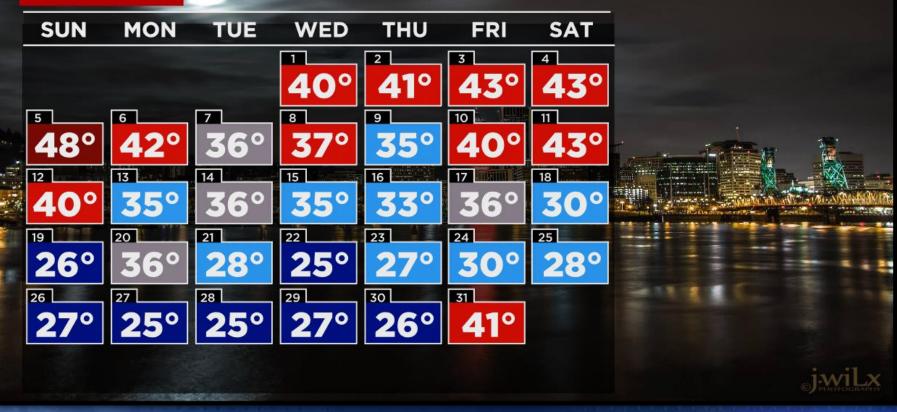


-0.4°

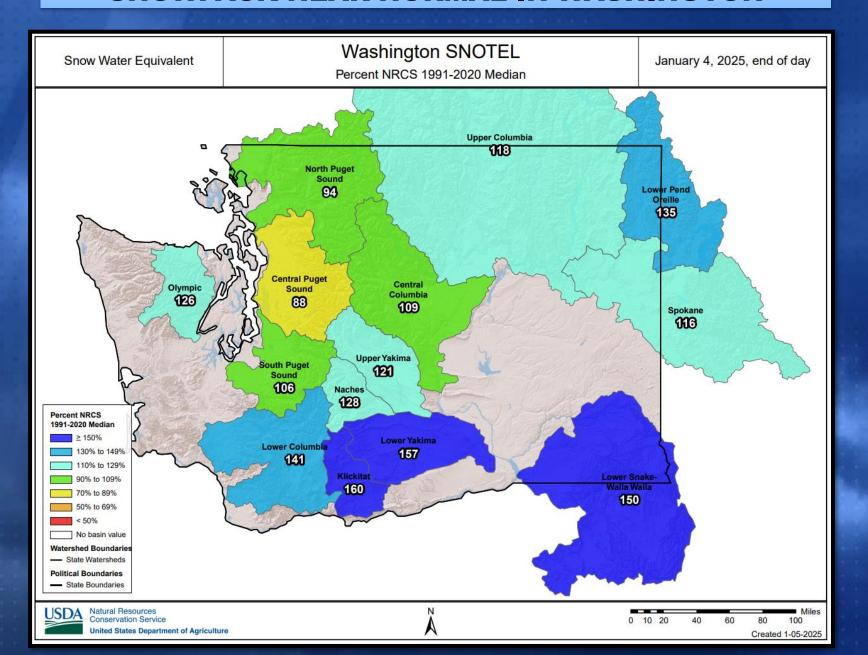
NEAR NORMAL FOR JANUARY

FIRST ALERT JANUARY 2025 LOWS

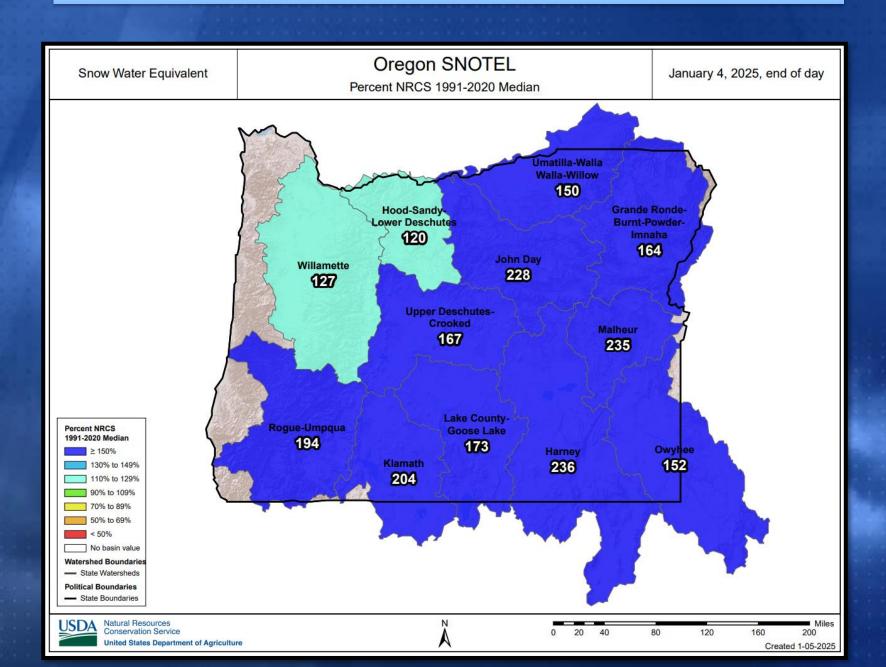




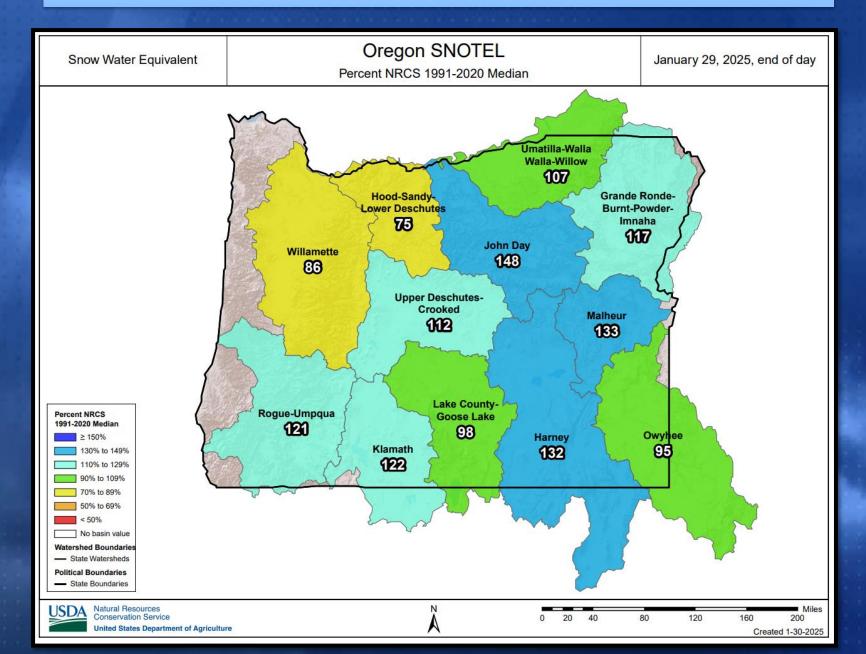
EARLY JANUARY... SNOWPACK NEAR NORMAL IN WASHINGTON



EARLY JANUARY...EXCELLENT OR SNOWPACK!

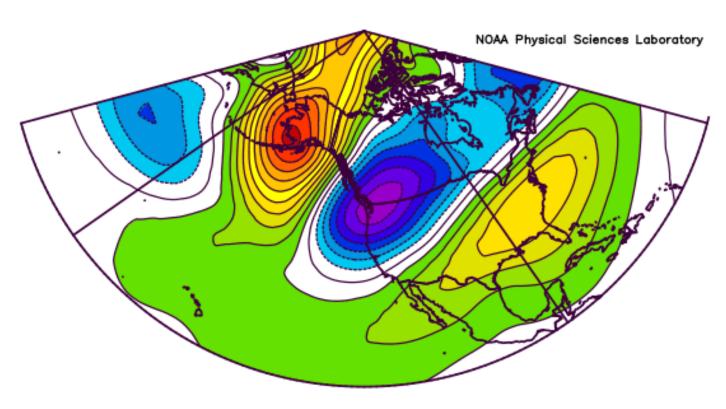


LATE JANUARY... BELOW NORMAL SNOWPACK N.W. OREGON

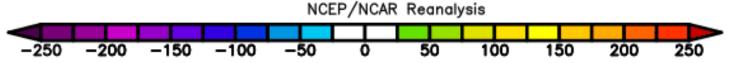


FEBRUARY

Upper-level high shifts farther north & west Allows cold troughing over PACNW

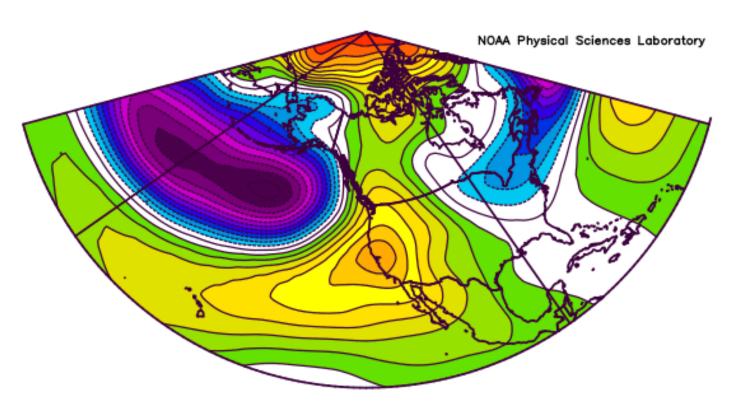


500mb Geopotential Height (m) Composite Anomaly (1991-2020 Climatology) 2/1/25 to 2/14/25



FEBRUARY

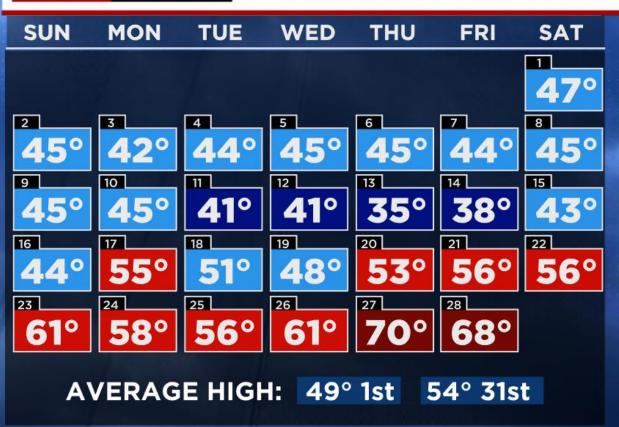
Mild winter returns 2nd half of month Ridging along West Coast = early spring temps!



500mb Geopotential Height (m) Composite Anomaly (1991-2020 Climatology) 2/15/25 to 2/28/25



FIRST ALERT FEBRUARY 2025 IN PORTLAND



-1.2° FROM NORMAL

COLD START, WARM FINISH

FIRST ALERT FEBRUARY 2025 IN PORTLAND



RAIN 4.34"

A TYPICAL FEBRUARY 3.68"

Several days of cool/onshore flow showers But (most?) snow was along coast

SNOWFALL REPORTS									
Location	Amount	Time/Date							
Tillamook County Coast									
Netarts	3.0 in	0858 AM 02/04							
Tillamook 6.9 SSE	2.0 in	0930 AM 02/04							
Tillamook 5.1 SSE	1.6 in	0700 AM 02/04							
South Washington Coast									
Naselle	6.0 in	0830 AM 02/04							
Ilwaco	6.0 in	1000 AM 02/04							
2 ENE Ilwaco	5.5 in	0100 PM 02/04							
2 SSE Oceanside	5.0 in	1200 PM 02/04							
2.1 S Raymond	2.0 in	0600 AM 02/04							
-									
Clatsop County Coast									
Astoria	2.0 in	1200 PM 02/04							
Cannon Beach 0.7 SE	1.8 in	0700 AM 02/04							
Astoria 3.5 SSW	1.3 in	0700 AM 02/04							
Warrenton	1.0 in	0700 AM 02/04							



Several days of cool/onshore flow showers Best (most?) snow was along coast







Coldest 850mb temp of winter over Salem...February 11th

Date:1200Z 11 FEB 25

Station: KSLE

WMO ident: 72694 Latitude: 44.92 Longitude: -123.00 Elevation: 61.00

LEV	PRES	HGHT	TEMP	DEWP	RH	DD	WETB	DIR	SPD	THETA	THE-V	THE-W	THE-E	W
	mb	m	С	C	%	C	C	deg	knt	K	K	K	K	g/kg
SFC	1019	61	-2.1	-8.1	63	6.0	-4.0	355	4	269.6	269.9	268.1	275.2	2.03
1	1000	213	-2.9	-7.9	68	5.0	-4.5	20	13	270.2	270.6	268.7	276.0	2.10
2	993	269	-3.3	-8.3	68	5.0	-4.8	29	15	270.4	270.7	268.7	276.0	2.05
3	982	357	-2.9	-9.9	58	7.0	-5.0	38	15	271.7	272.0	269.1	276.7	1.83
4	965	495	-3.3	-11.3	54	8.0	-5.7	44	11	272.6	272.9	269.5	277.3	1.67
5	943	676	-4.3	-11.3	58	7.0	-6.4	55	8	273.4	273.7	270.0	278.2	1.71
6	932	769	-4.3	-11.3	58	7.0	-6.4	61	8	274.3	274.6	270.7	279.2	1.73
7	925	828	-4.9	-11.9	58	7.0	-6.9	65	8	274.3	274.6	270.5	279.0	1.66
8	916	905	-5.5	-11.5	63	6.0	-7.2	69	8	274.5	274.7	270.7	279.3	1.73
9	901	1034	-5.7	-13.7	53	8.0	-7.9	70	8	275.5	275.8	271.0	279.7	1.47
10	850	1488	-8.7	-14.7	62	6.0	-10.3	50	1 5	277.0	277.3	271.8	281.2	1.44
11	832	1653	-9.9	-14.9	67	5.0	-11.2	45	15	277.5	277.7	272.1	281.6	1.44

Deep snow cover + cold airmass = record cold east of Cascades

Minimum 1-Day Mean Min Temperature for Klamath Falls Area, OR (ThreadEx)

Click column heading to sort ascending, click again to sort descending

Rank	Value	Ending Date			
1	-14.0	2025-02-12			
2	-10.0	2025-02-11			
-	-10.0	1989-02-06			
-	-10.0	1950-02-02			
-	-10.0	1933-02-09			
6	-9.0	2025-02-10			
-	-9.0	1933-02-10			
-	-9.0	1917-02-01			
9	-8.0	1989-02-07			
-	-8.0	1950-02-03			
Last value also occurred in one or more previous years.					
Period of record: 1897-12-02 to 2025-03-13					

Minimum 1-Day Mean Min Temperature for BURNS MUNICIPAL AIRPORT, OR

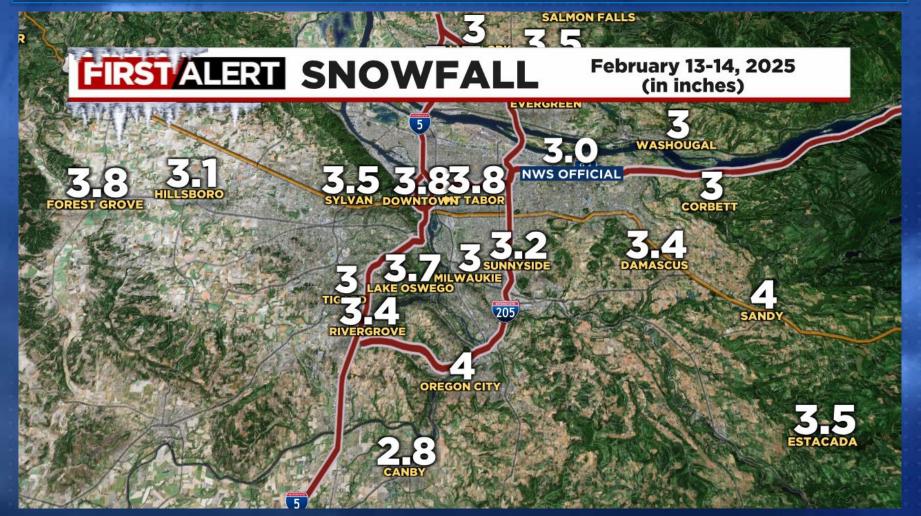
Click column heading to sort ascending, click again to sort descending.

Rank	Value	Ending Date			
1	-30.0	2013-12-08			
2	-28.0	1990-12-22			
_	-28.0	1985-02-04			
4	-27.0	2025-02-12			
-	-27.0	1982-01-06			
6	-25.0	2010-12-31			
-	-25.0	1989-02-06			
8	- 24.0	1990-12-21			
-	-24.0	1989-02-05			
10	-23.0	2025-02-11			
Last value also occurred in one or more previous years.					

Period of record: 1973-01-19 to 2025-03-16

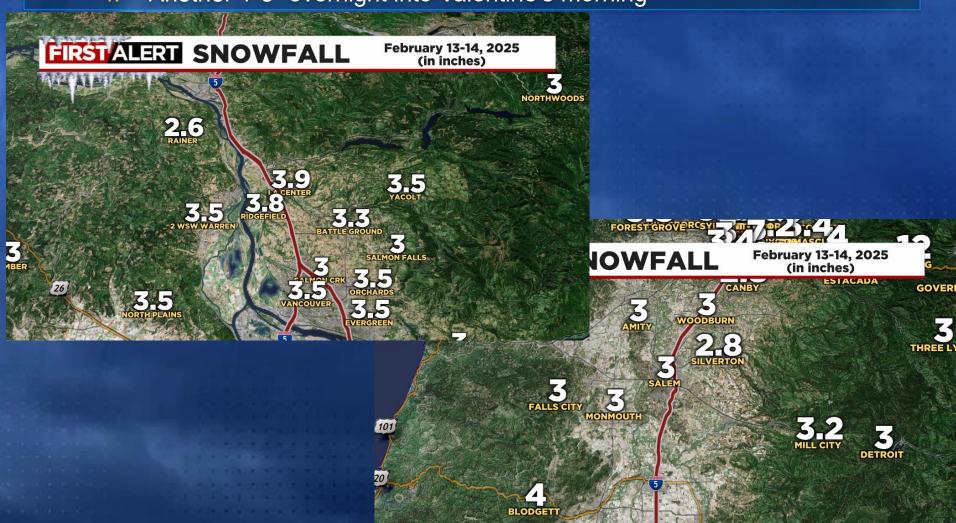
February 13th-14th snowfall

- 1. Surprisingly uniform snow totals in NW OR and SW WA lowlands!
- 2. One wave of snow Thursday morning 13th
- 3. Light freezing rain/pellets Thursday evening
- 4. Another 1-3" overnight into Valentine's morning



February 13th-14th snowfall

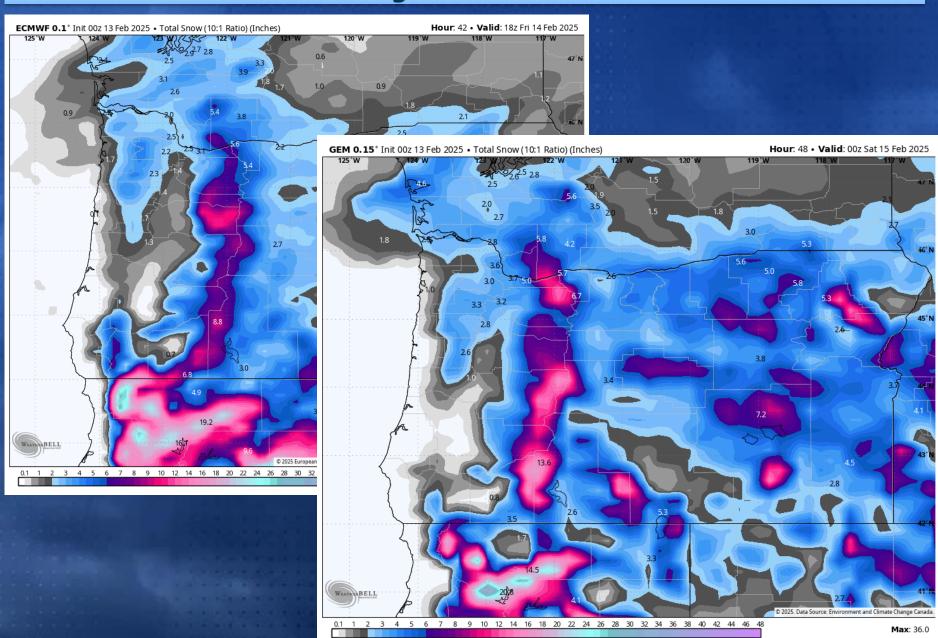
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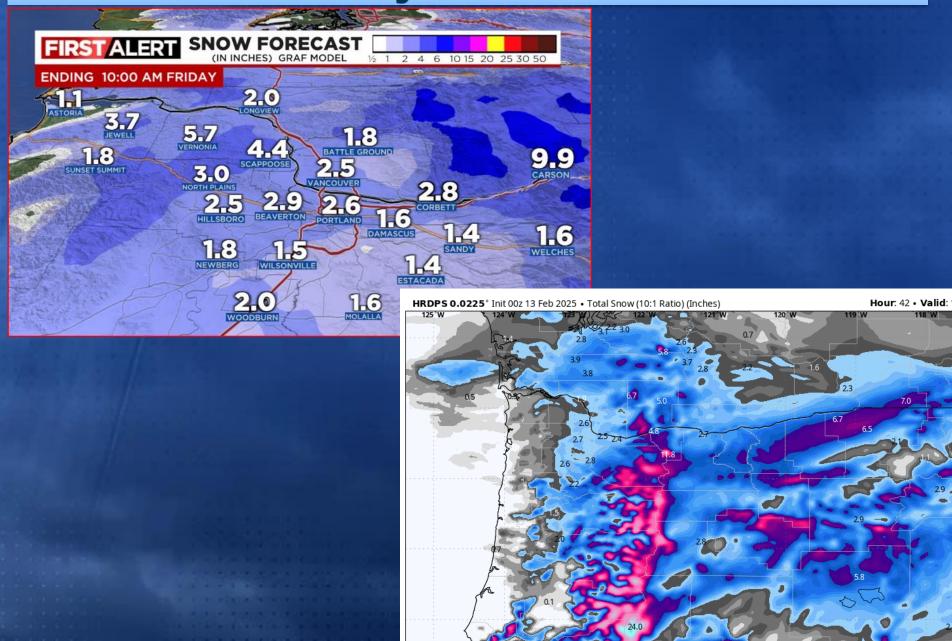
Forecast from night before...

OOZ	GR	AΕ	(T	WC)	F	ORTLA	ND	Ima	ge Create	ed: 6	26 P	M 2/1	2/2025
		T	Td	VIS		SFC WND/GST	850 WND	SLP	PRECIP	SNOW	ICE	CAPE	% CLE
WEDNESDAY	8:00 PM	29	14		51%	E 24 39	SE 11	1008	0	.0	.0	0	68
WEDNESDAY	9:00 PM	28	13		52%	E 23 38	E 15 E 19	1007	0	.0	.0	0	79
WEDNESDAY	10:00 PM	28	13		52%	E 25 41	E 19	1006	0	.0	.0	0	27
WEDNESDAY	11:00 PM	28	12		50%	E 25 41	E 19	1005	0	.0	.0	0	42
THURSDAY	12:00 AM	28	12		50%	E 24 40	SE 19	1004	0	.0	.0	0	54
THURSDAY	1:00 AM	28	13		51%	NE 25 41	E 21 E 27 E 25 E 31 E 39 E 35	1003	0	.0	.0	0	60
THURSDAY	2:00 AM	29	13		50%	E 24 40	E 27	1002	0	.0	.0	0	83
THURSDAY	3:00 AM	29	12		48%	E 25 41	E 25	1000	0	0,0,0,0,0	0,0,0,0	0	100
THURSDAY	4:00 AM	29	11		47%	E 25 41	E 31	999	0	.0	٥.	0	100
THURSDAY	5:00 AM	29	11		45%	E 23 39	E 39	998	0	.0	.0	0	100
THURSDAY	6:00 AM	29	12		46%	E 23 38	E 39	997	0	.0	.0	0	100
THURSDAY	7:00 AM	30	13		48%	E 19 33	E 35	997	0	.0	O.	0	100
THURSDAY	8:00 AM	31	16	1.9 mi	54%	E 16 27	- 41	997	.01	.0	.0	0	100
THURSDAY	9:00 AM	29	21	0.5 mi	70%	E 16 27	E 39 SE 31	997	.04	.5	0.0.0.0.0.0	0	100
THURSDAY	10:00 AM	30	22	0.9 mi	73%	E 15 26	SE 31	997	.09	1.0	.0	0	100
THURSDAY	11:00 AM	28	21	1.3 mi	76%	NE 18 29	S 21 S 21	997	.12	1.4	.0	0	100
THURSDAY	12:00 PM	27	19		70%	E 22 37	S 21	997	.12	1.6	.0	0	100
THURSDAY	1:00 PM	27	18		67%	NE 22 38	S 27	997	.18	1.8	.0	0	93
THURSDAY	2:00 PM	29	19		63%	E 23 38	S 23	997	.18	1.8	.0	0	75
THURSDAY	3:00 PM	30	20		62%	E 23 38	S 21 S 17	996	.18	1.8	.0	0	100
THURSDAY	4:00 PM	29	19		64%	NE 22 37	S 17	996	.18	1.8	0.000	0	98
THURSDAY	6:00 PM	29	19		64%	E 22 36	S 9	997	.18	1.8	.O	0	100
THURSDAY	8:00 PM	30	20		65%	NE 22 36	E 13	998	.18	1.8	.0	O	100
THURSDAY	10:00 PM	30	22		71%	E 19 32	SE 7	1000	.18	1.8	.0	0	100
FRIDAY	12:00 AM	30	21	1.9 mi	71%	NE 17 29	S 7	1001	.22	1.8	.0	0	100
FRIDAY	2:00 AM	28	23	1.3 mi	79%	NE 15 26	SW 13	1004	.28	2.1	.1	0	100
FRIDAY	4:00 AM	29	24	2.2 mi	83%	NE 12 22	SW 17	1007	.38	2.9	- 3	0	100
FRIDAY	6:00 AM	30	25	3.9 mi	82%	NE 8 16	W 11	1009	.38	3.0	.1	0	100
FRIDAY	8:00 AM	30	26	2.5 mi	83%	NE 5 10	NW 11	1012	.38	3.0	- 3	0	100
FRIDAY	10:00 AM	32	27	3.6 mi	84%	E 3	NW 11	1015	.38	3.2	.1	0	100
FRIDAY	12:00 PM	33	30	1.4 mi	89%	SE	NW 11	1018	.42	3.5	- 0	0	100
FRIDAY	2:00 PM	37	32		83%	5 4	NW 23	1021	.42	3.5	1	0	0
FRIDAY	4:00 PM	37	36		92%	S 3	W 23	1023	.42	3.5	.1	0	100
FRIDAY	6:00 PM	34	34		100%	SE 2	W 19	1025	.42	3.5	.1	0	100
FRIDAY	8:00 PM	33	33		100%	SW	W 13	1026	.42	3.5	.1	0	77
FRIDAY	10:00 PM	34	34		100%	SW 2	W 15	1028	.42	3.5		0	100
SATURDAY	12:00 AM	33	33		100%	S	W 11	1030	.42	3.5	.1	0	100
SATURDAY	2:00 AM	33	33		100%	SW	SW 9	1030	.42	3.5	.1	0	100
SATURDAY	4:00 AM	33	33		100%	SE	SW 5	1030	.42	3.5	.1	0	89
SATURDAY	6:00 AM	32	32		100%	NW	S Calm		.42	3.5	.1	0	100
SATURDAY	8:00 AM	33	33	0.2 mi	98%	N	S 5	1030	.42	3.5	.1	0	93
SATURDAY	10:00 AM	35	34	0.2 mi	98%	N 2	S 7	1028	.42	3.5	.1	O	100
SATURDAY	12:00 PM	37	37	0.2 mi	97%	N 3	S 11	1028	.42	3.5	.1	O	100
SATURDAY	2:00 PM	42	39		85%	NE 4 9	S 13	1026	.42	3.5	.i	ŏ	100
SATURDAY	3:00 PM	45	37		74%	E 8 13	S 17	1026	.42	3.5	ä	ŏ	100

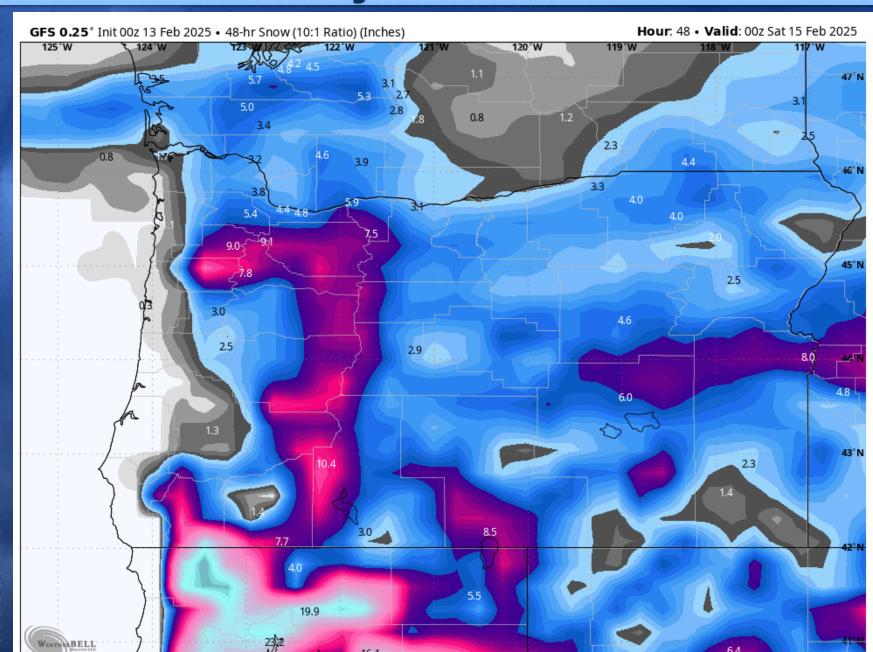
The "snowy" model forecasts



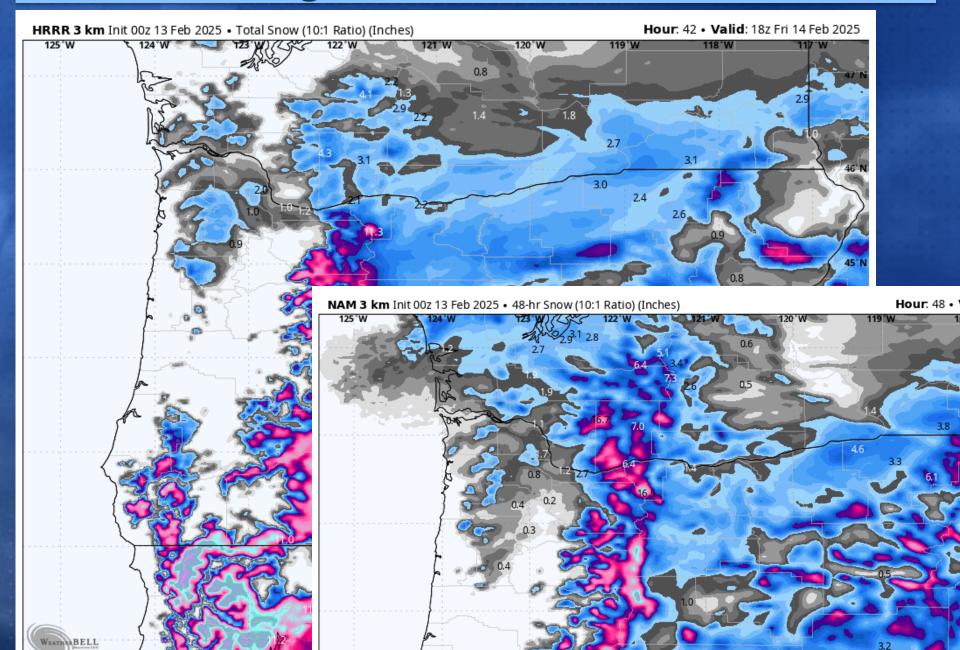
The "snowy" model forecasts



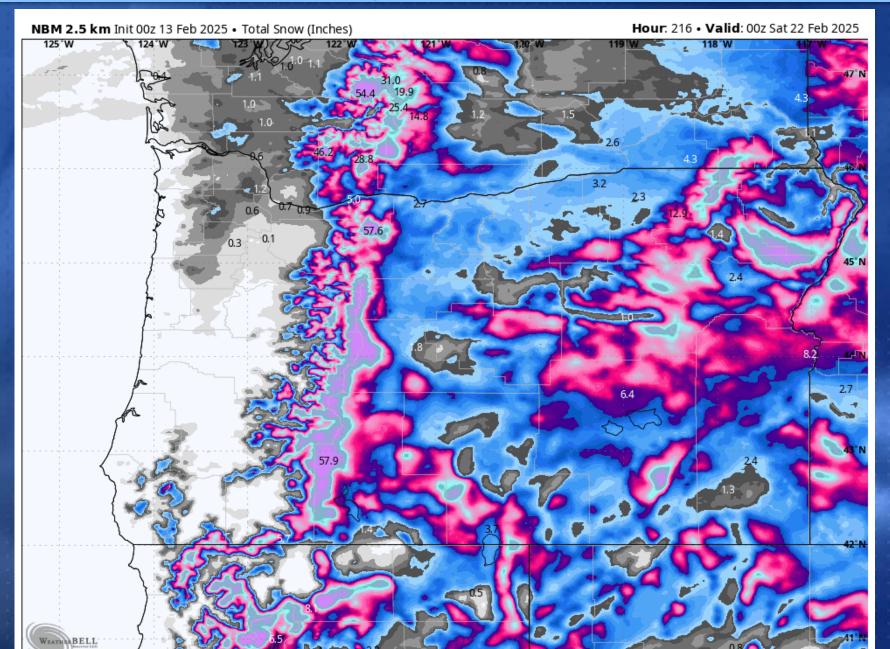
The "snowy" model forecasts



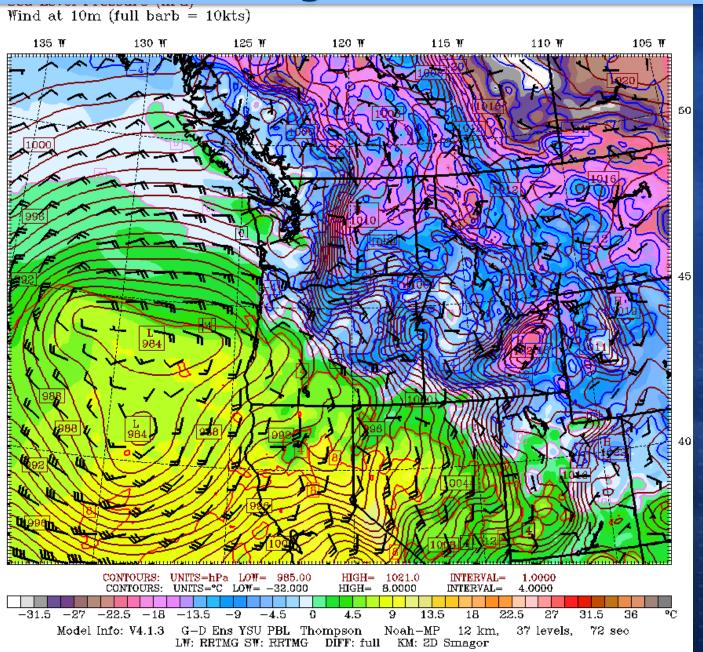
The "light snow" model forecasts



NBM snow forecast; well below other forecasts



February 13th-14th snowfall

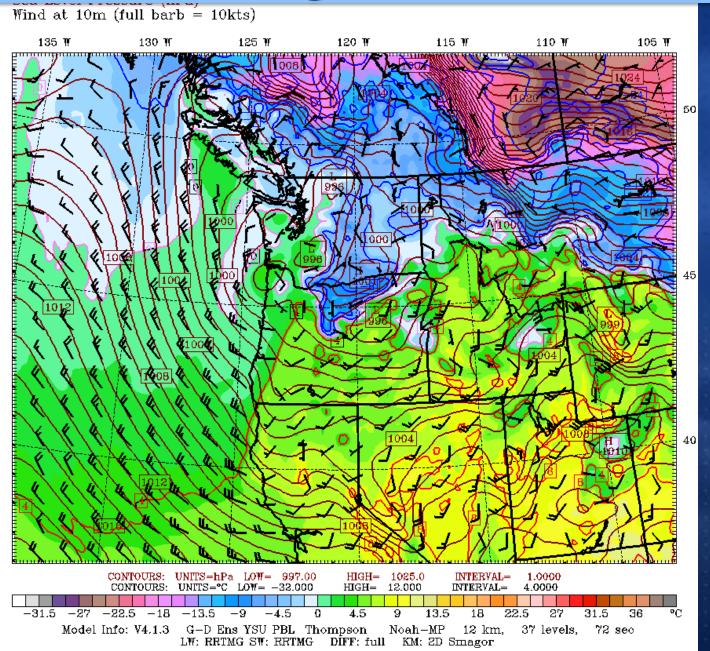


7 AM THURS 13TH

Surface low approaches Oregon coast

Strong easterly wind = cold/dry air at surface

February 13th-14th snowfall



18 hours later

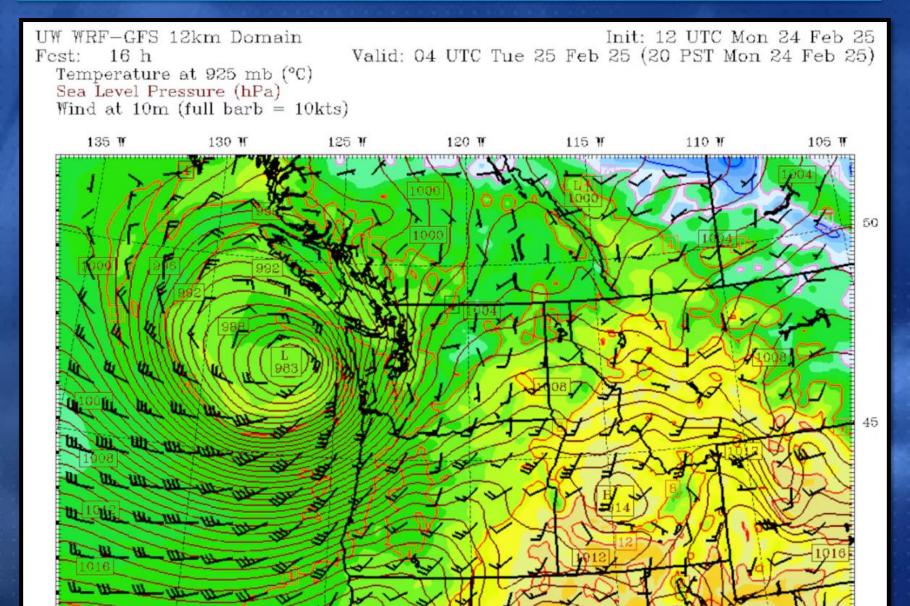
1 AM FRI 14TH

Surface low falling apart

Cold easterlies dying quickly

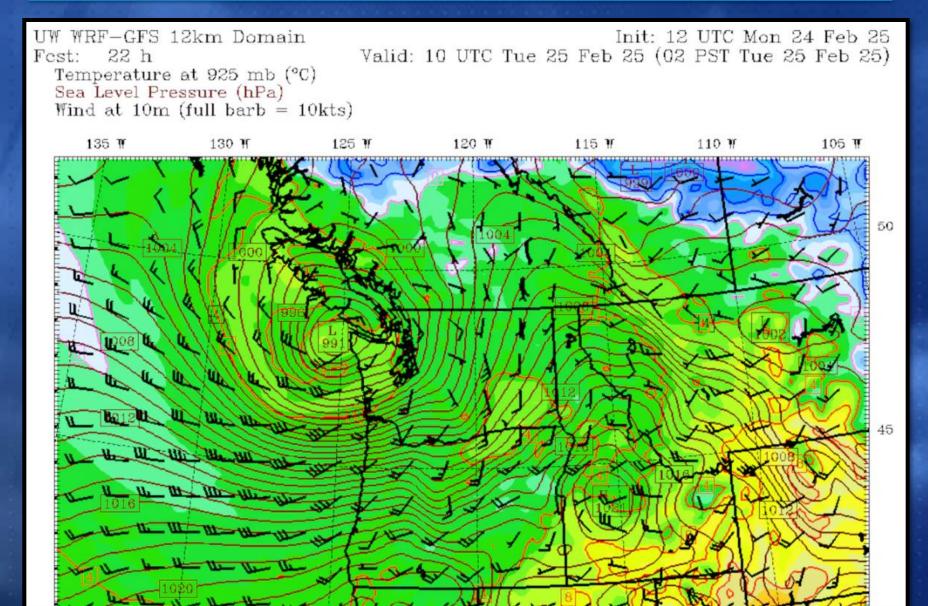
Minor "windstorm" February 24th

983 mb low tracks to NW tip of Washington



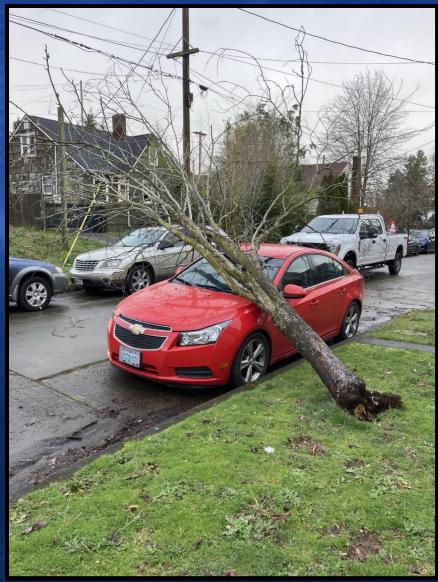
Minor "windstorm" February 24th

983 mb low tracks to NW tip of Washington



Over 80,000 outages for PGE





FIRST ALERT PEAK WIND GUSTS

METRO AND VALLEYS

52 мрн
54 MPH
52 MPH
49 MPH
52 MPH
45 MPH

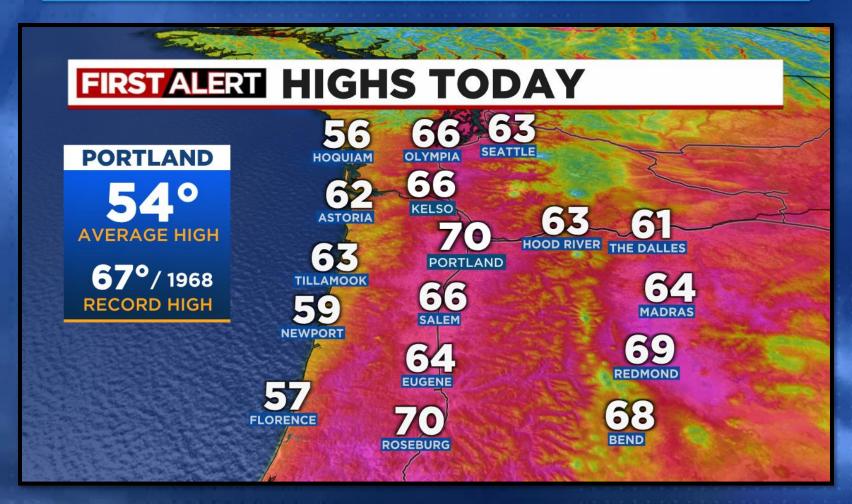
FIRST ALERT PEAK WIND GUSTS

ALONG THE OREGON COAST

CAPE DISAPPOINTMENT	88 мрн
ASTORIA BRIDGE	68 мрн
TILLAMOOK	62 MPH
PACIFIC CITY	63 мрн
NEWPORT BRIDGE	74 MPH
CLATSOP SPIT	88 мрн

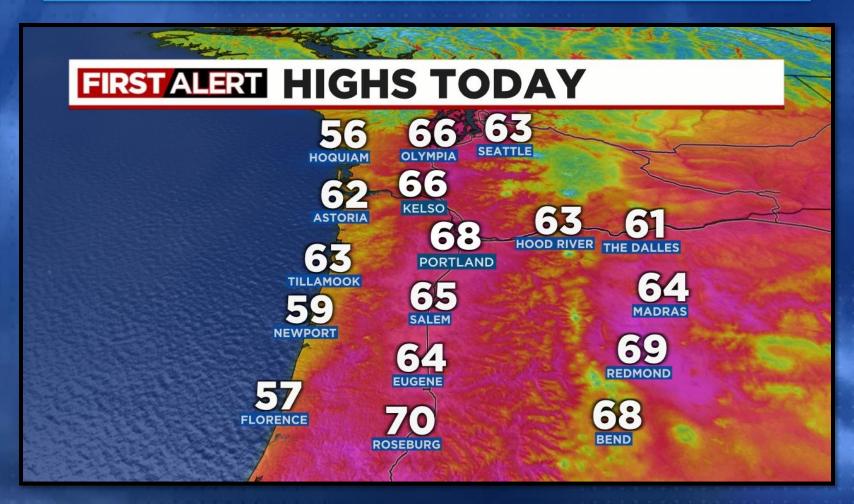
Was it "false" or "early" spring?

Thursday February 27th

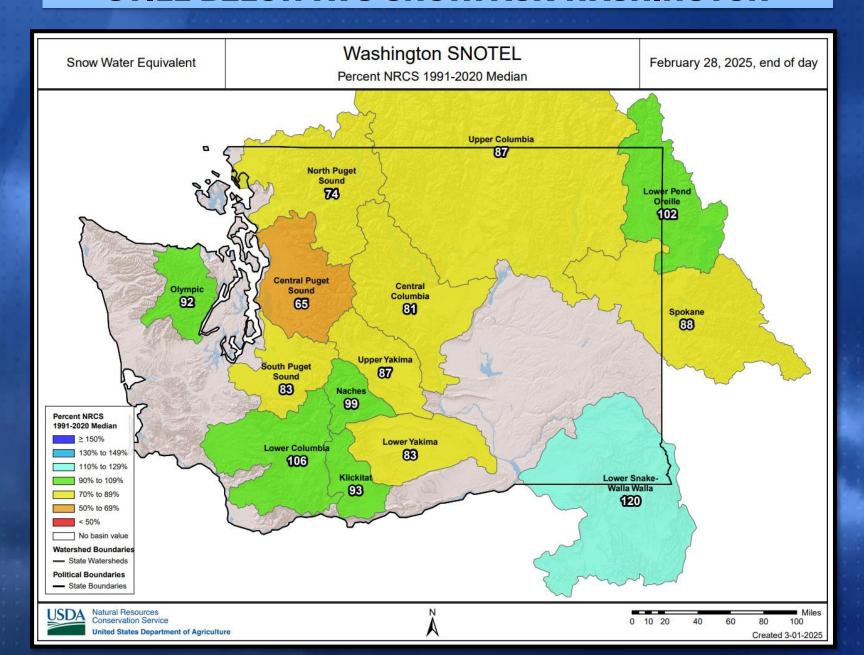


Was it "false" or "early" spring?

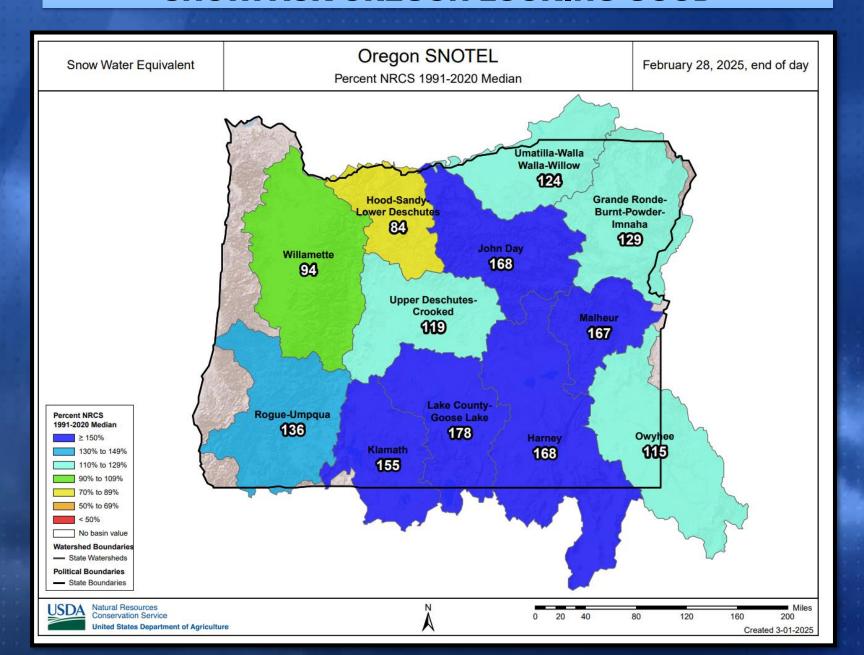
Friday February 28th



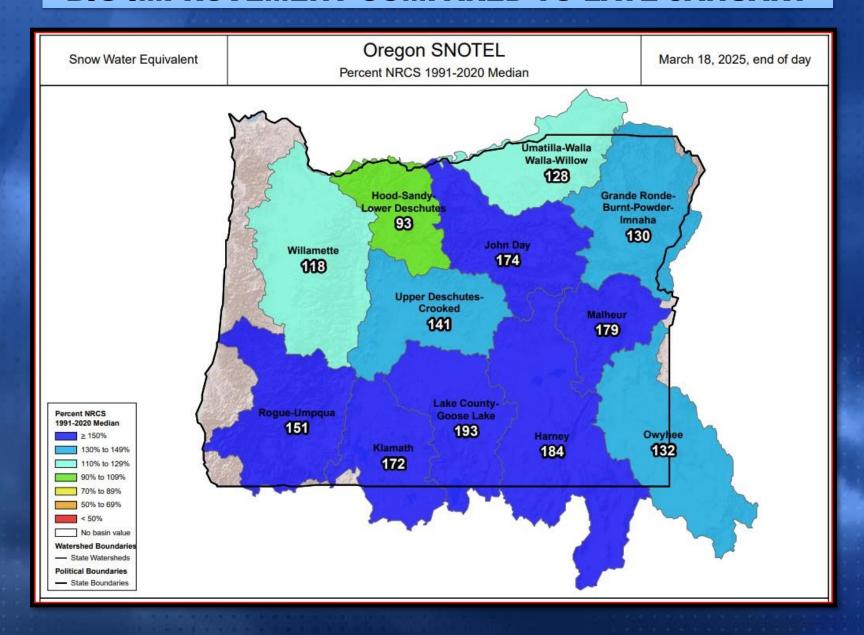
LATE FEBRUARY... STILL BELOW-AVG SNOWPACK WASHINGTON



LATE FEBRUARY... SNOWPACK OREGON LOOKING GOOD

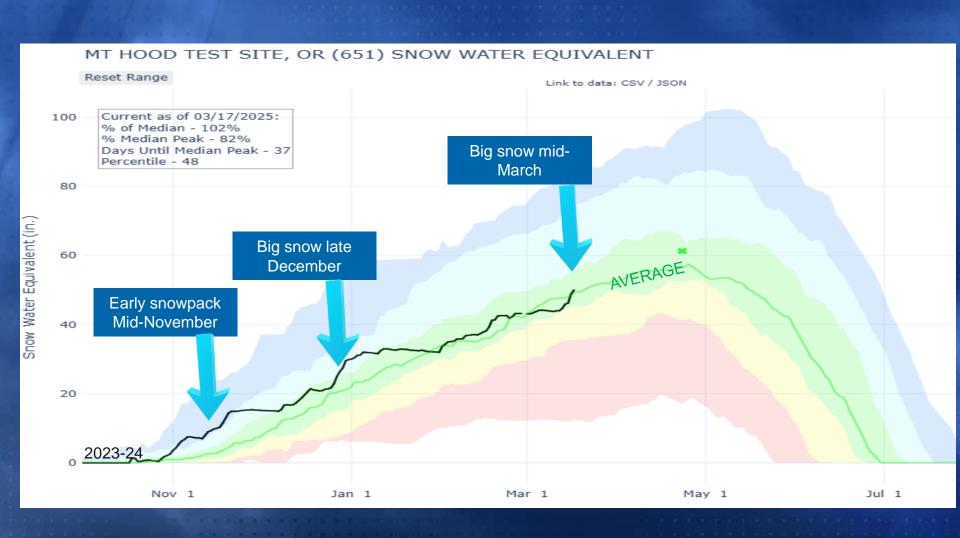


MID-MARCH BIG IMPROVEMENT COMPARED TO LATE JANUARY

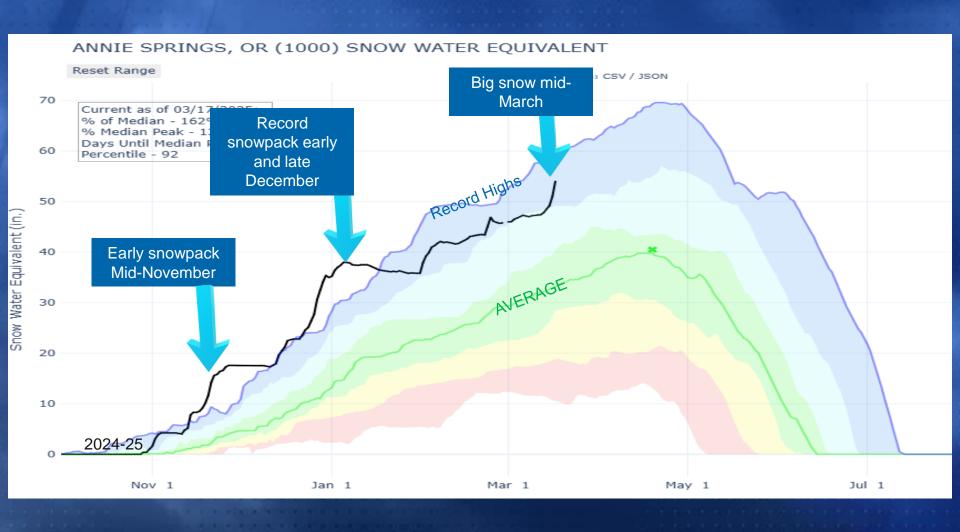


Mountain Snowpack @ 5,400'

Bottom of Pucci Lift @Timberline

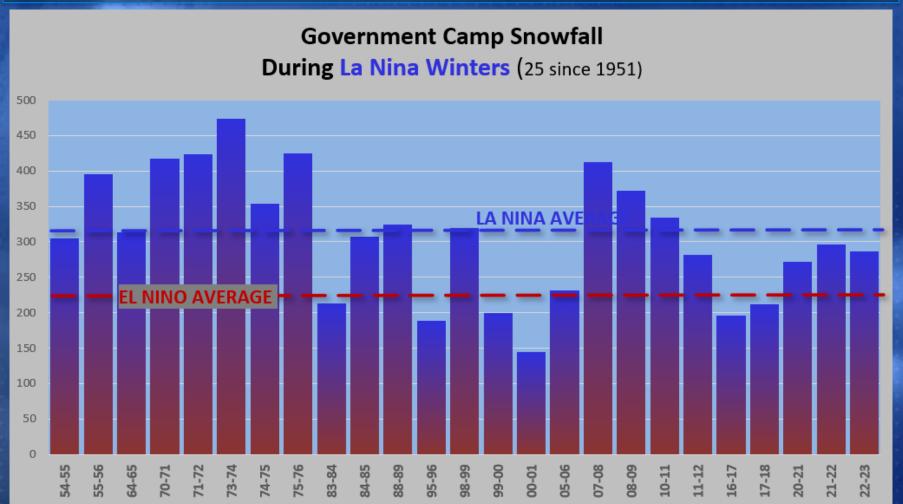


Crater Lake Snowpack @ 6,000'



Cascade Snowfall

- 1. Big storm mid-November gets ski areas operating
- 2. Not much snow below 2,500' NW OR, low snowpack low elevations
- 3. Long dry/sunny period in late January = getting concerned!
- 4. All good rest of season, HUGE snowpack in S/SE Oregon



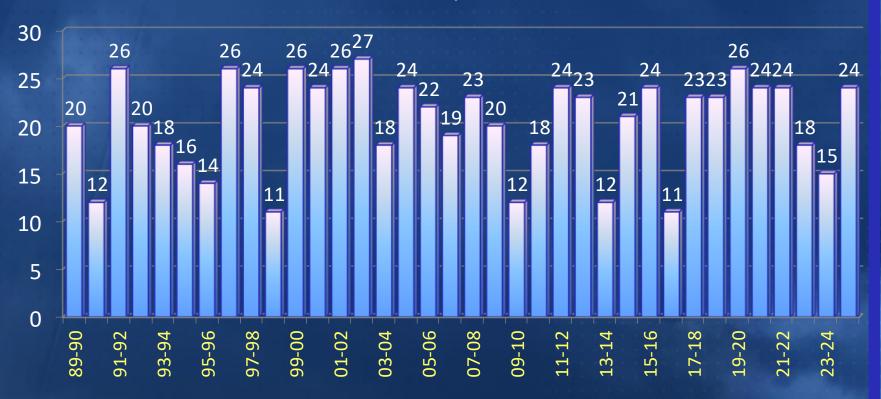
FIRST ALERT COLDEST WINTER TEMPERATURE

IN PORTLAND

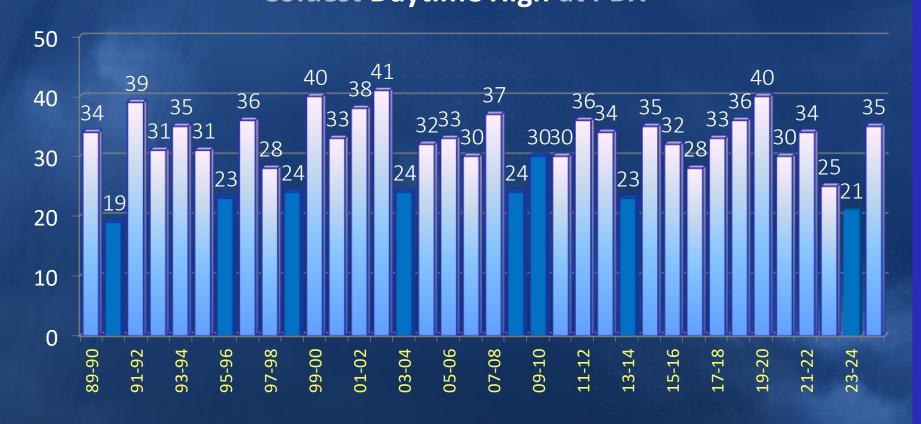


Easy winter for our gardens!

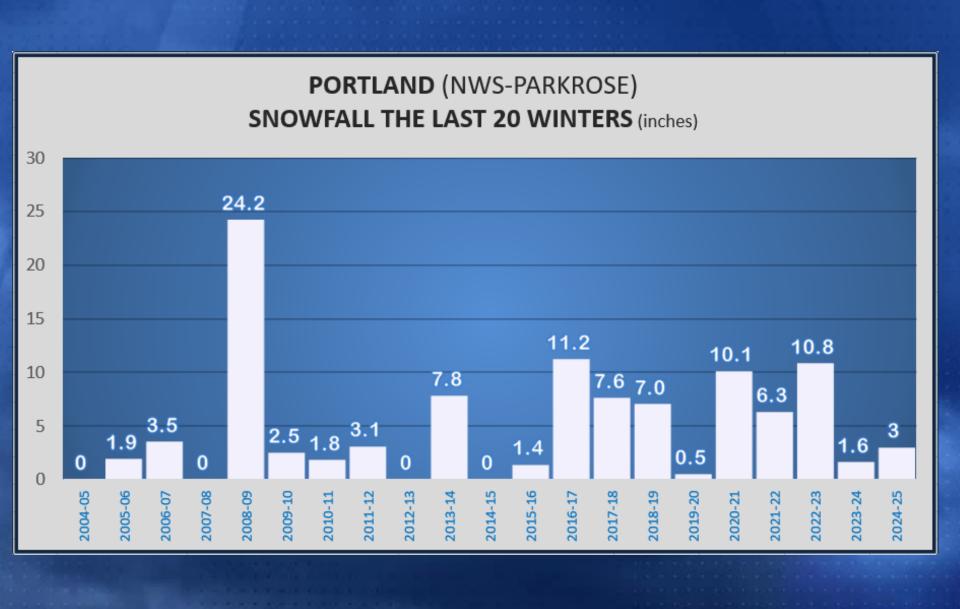
Winter Minimum Temperature @PDX

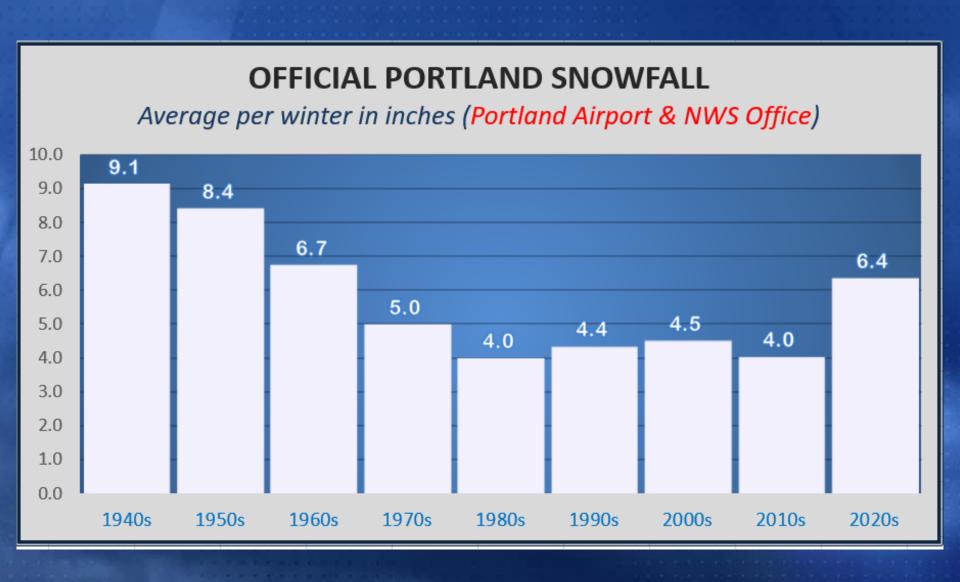


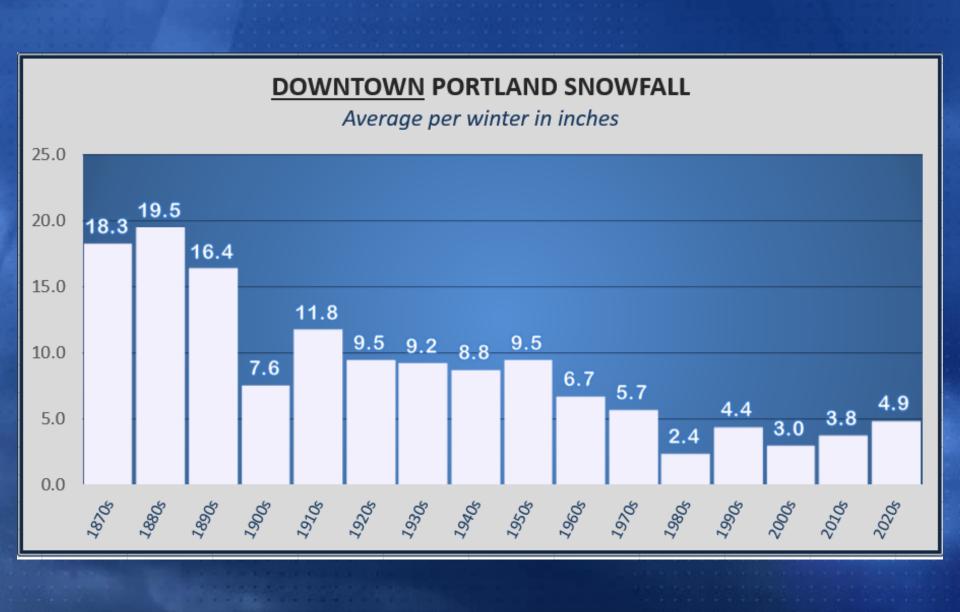
A Better Measure of an Arctic Blast Coldest Daytime High at PDX



Blue = Widespread PACNW Arctic Air Outbreak

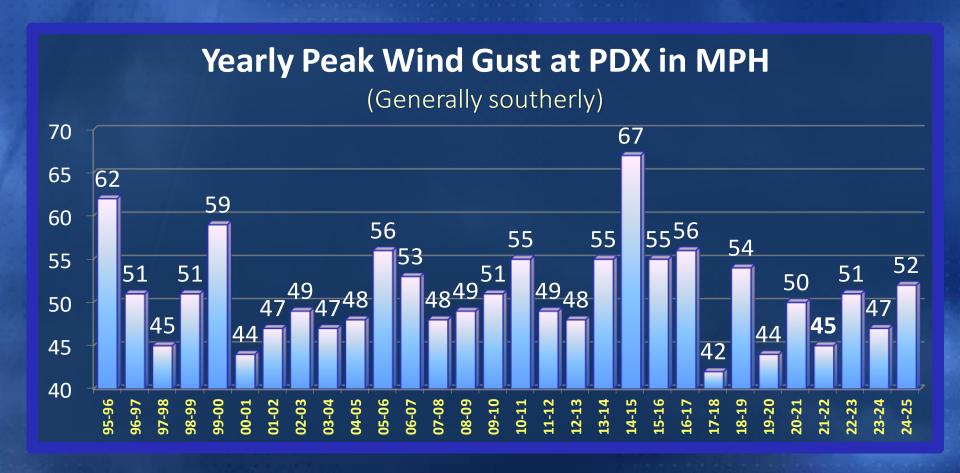






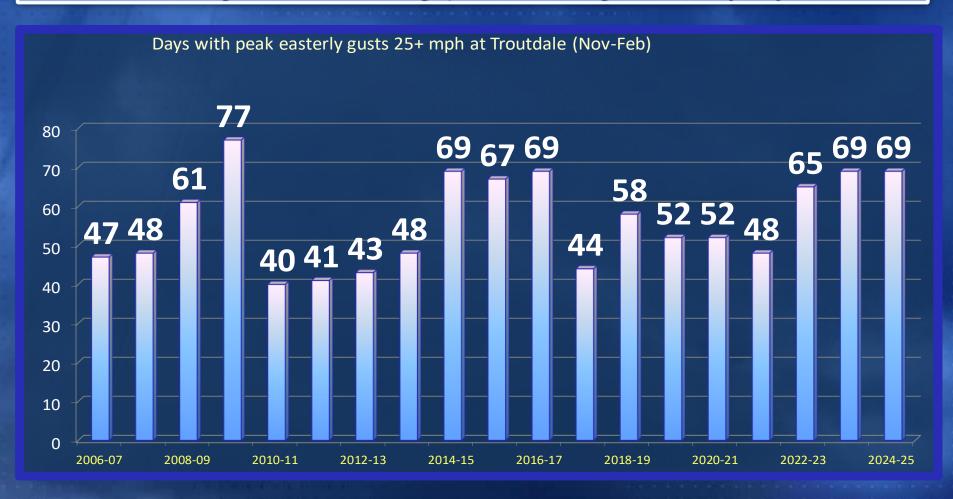
NO INLAND WIND STORMS

30 winters without a major REGIONAL storm



LOTS OF EAST WIND

Plenty of east wind days, but not many extreme (50+)



TANIS LEACH SCORECARD

O O O O O O C

20	024-25 Scorecard		
Predictions	Actual/Projected	0ct	Dec
Water Year Rain: PDX" 39.9"+ (Dec: 39.7"+) EUG: 44.2"+	Trendcast PDX (March 14 th): 38.83" Trendcast EUG (March 14 th): 45.35"	Too close to call	Too close to call
Average Temperature Departure: At least 0.6°F below average	0.56°F Above Average (PDX) -0.18°F Below Average (EUG)	×	×
Lowest Winter Temperature: <20°F	24°F (PDX), 20°F? (EUG) Teens recorded in HIO, CVO, SPB	1/2	1/2
Peak Wind Gust: 53 mph+ (equivalent for EUG is 50 mph+) Alt: Big event that misses PDX but hits PNW	52 MPH twice (PDX) 51 MPH (EUG) N. Coast big storms (70 mph+) Dec 26 th , Feb 24 th plus Puget Sound Bomb Cyclone		
Most Active Time: Jan 1 st to Feb 15 th (October) or Feb 29 th (December)	Feb 2 nd to Feb 14th		
April 1st Snow Depth: 115%+ of normal	March 14th: 76% Basin, 96% test site, with 2-5 feet of snow on the way.	TBD	TBD
Valley Snowfall: 6" or more	Portland: 3 in. Eugene: 1 in. All Valley Average (Population Weighted): 3.06"	×	×

FINAL WINTER THOUGHTS

A sort of MEH winter; mild and somewhat dull

In the future when we look back? Nothing that interesting...

We are "due" for a snowless winter, major windstorm, and widespread flood