

Very Strong El Nino 2026-27 Winter



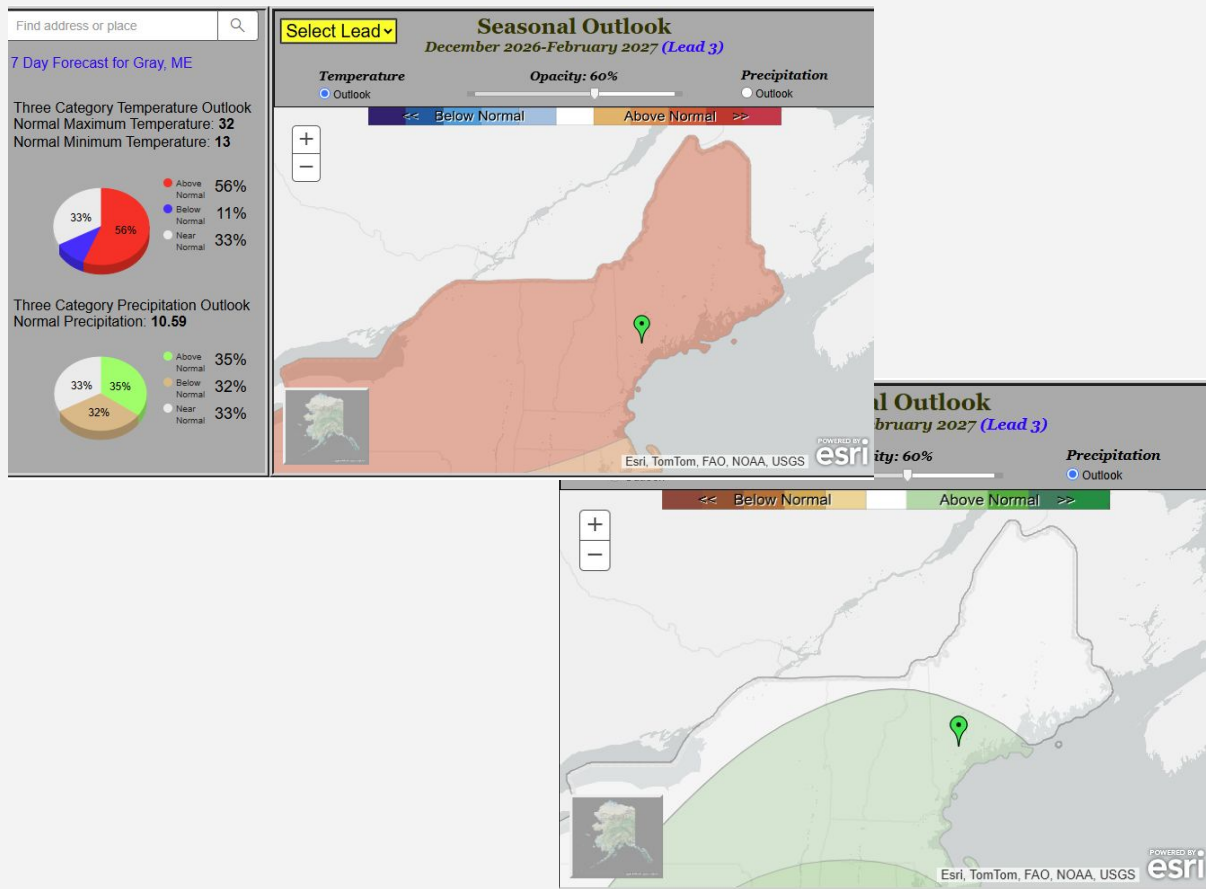
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Climate Prediction Center Outlooks

CPC's 3-month outlook show odds are favored for above normal temperatures.

A weaker signal exists for above normal precipitation.

Above normal temperatures does not mean that there will not be impactful cold and snowy patterns at some point this winter.

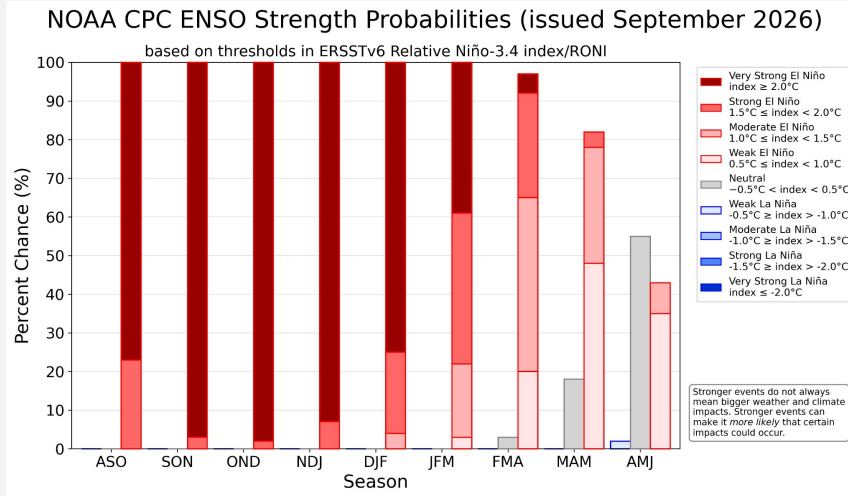


ENSO Winter of 26-27 Key Points

El Niño is strengthening, with a >90% chance of a very strong event in fall/winter 2026–27, and a 75% chance of being historic (surpassing all events since 1950).

For Northern New England, this historically brings:

- Well above-normal temperatures and above normal precipitation.
- More rain, sleet, or freezing rain instead of dry snow, especially in coastal Maine and southern New Hampshire.
- Frequent mild spells causing repeated snowpack melting, resulting in below-normal seasonal snowpack.
- Robust surface water replenishment and shallow or absent deep ground frost, allowing high mid-winter groundwater recharge (could help the drought).



El Niño Strength & Historical Winter Comparison

Defining Strength Thresholds

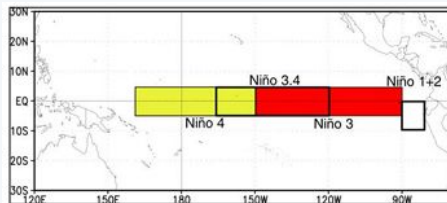
El Niño intensity is determined by seasonal Sea Surface Temperature (SST) anomalies in the equatorial Pacific (Niño 3.4 region):

Strong Event

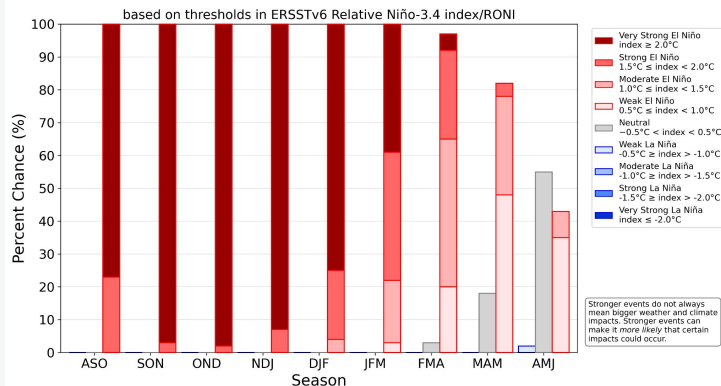
$\geq +1.5^{\circ}\text{C}$

Very Strong

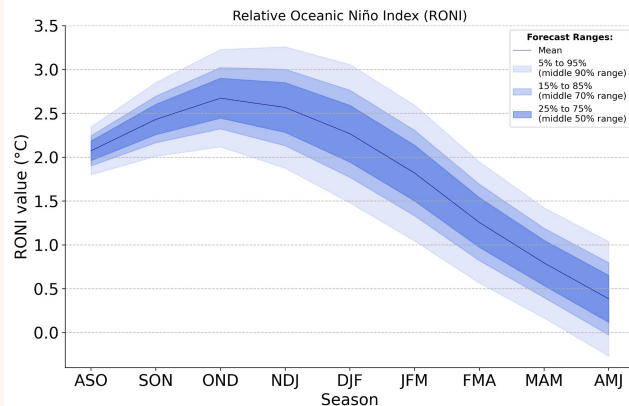
$\geq +2.0^{\circ}\text{C}$



NOAA CPC ENSO Strength Probabilities (issued September 2026)



NOAA CPC Official ENSO Outlook (issued September 2026)



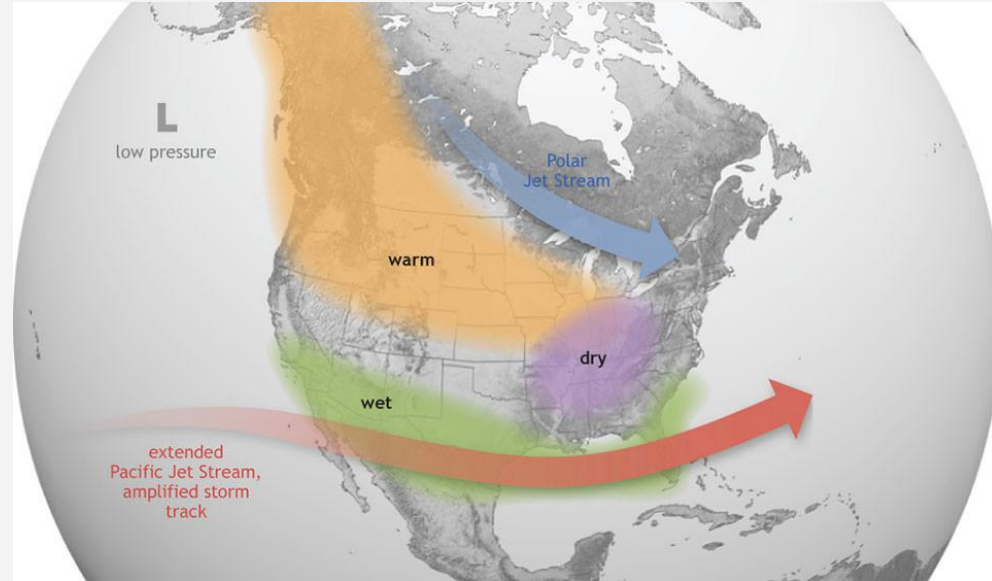
This Winter's Peak Outlook

Latest CPC modeling reveals extremely high probabilities for extreme warming trends through late winter:

- **>99% Chance** of a Strong El Niño
- **>90% Chance** of a Very Strong event peaking early winter
- **75% Chance** of a historic, record-breaking strength event

What Does the Relative Strength of El Nino Mean?

- **IMPORTANT:** The very strong El Nino event does NOT directly translate to more extreme weather (**El Nino is not a storm!**). The strength of this El Nino event means that confidence is higher that the typical winter time patterns associated with El Nino will occur.



Strong El Niño Events Since 1980

Historical Context & ONI Thresholds

An El Niño event is classified as "Very Strong" when the Oceanic Niño Index ([index.html](#)) reaches or exceeds a threshold of **+2.0°C** in the Niño 3.4 region.

Since 1980, meteorological records highlight four highly significant events that shaped global winter climate anomalies.

Key Observations:

- The 1982-83, 1991-92, 1997-98 and 2015-16 events achieved "Very Strong" status, exceeding **+2.0°C**.

1982-83

Very Strong Event ($\geq 2.4^{\circ}\text{C}$)

One of the most intense meteorological events of the 20th century.

1991-92

Very Strong Event (2.1°C)

Event was greatly influenced by the Mount Pinatubo eruption

1997-98

Very Strong Event ($\geq 2.3^{\circ}\text{C}$)

Historic intensity; major Northeast economic damages and mild winter.

2015-16

Very Strong Event ($\geq 2.3^{\circ}\text{C}$)

Recent extreme warming peak matching historically strong baselines.



The History of the 1982-83 Winter

Winter Profile: Extreme Warmth & Volatility

The 1982-83 "Very Strong" El Niño event triggered highly anomalous atmospheric setups across northern New England:

- **Unprecedented Warmth:** Dominated by record-breaking warm stretches, leading to very low seasonal snow totals in coastal areas.
- **Major Storm Anomalies:** While snow was sparse, powerful coastal storms delivered heavy rainfall, severe ice, and interior high-elevation blizzards.

+5.0°F

Temp Anomaly

One of the warmest winters on record for Maine and New Hampshire.

~50%

Snow Deficit

Coastal zones experienced major snow droughts, replaced by heavy rain.

Dec 1982–Mar 1983 4-Month	23.1°F (-4.9°C)	18.2°F (-7.7°C)	4.9°F (2.7°C)	122nd Coldest
				10th Warmest

Dec 1982–Mar 1983 4-Month	13.80in (350.52mm)	12.90in (327.66mm)	0.90in (22.86mm)	84th Driest
				48th Wettest

Climatological Data for WATERVILLE TREATMENT PLT, ME - March 1983
[Click column heading to sort ascending, click again to sort descending.](#)

Date	Max Temperature	Min Temperature	Avg Temperature	Avg Temperature Departure	HDD	CDD	Precipitation	Snowfall	Snow Depth
1983-03-01	47	24	35.5	10.6	29	0	0.00	0.0	2
1983-03-02	45	32	38.5	13.2	26	0	1.38	0.0	1
1983-03-03	44	31	37.5	11.9	27	0	0.50	0.0	0
1983-03-04	45	24	34.5	8.6	30	0	0.00	0.0	0
1983-03-05	44	19	31.5	5.2	33	0	0.00	0.0	0
1983-03-06	56	12	33.5	6.9	31	0	0.00	0.0	0
1983-03-07	53	16	34.5	7.5	30	0	0.00	0.0	0
1983-03-08	42	29	35.5	8.1	29	0	0.00	0.0	0
1983-03-09	40	30	35.0	7.3	30	0	0.00	0.0	0
1983-03-10	39	30	34.5	6.4	30	0	0.43	0.0	0
1983-03-11	39	31	35.0	6.6	30	0	0.40	0.0	0
1983-03-12	38	33	35.5	6.7	29	0	0.85	0.0	0
1983-03-13	46	33	39.5	10.3	25	0	0.08	0.0	0
1983-03-14	48	30	39.0	9.4	26	0	0.00	0.0	0
1983-03-15	48	25	36.5	6.6	28	0	0.00	0.0	0
1983-03-16	47	31	39.0	8.7	26	0	0.23	0.0	0
1983-03-17	46	31	38.5	7.8	26	0	0.00	0.0	0
1983-03-18	44	26	35.0	3.9	30	0	0.00	0.0	0
1983-03-19	47	30	38.5	7.1	26	0	0.48	0.0	0
1983-03-20	52	42	47.0	15.2	18	0	0.53	0.0	0
1983-03-21	52	28	40.0	7.8	25	0	0.00	0.0	0
1983-03-22	47	36	41.5	8.9	23	0	1.20	0.0	0
1983-03-23	39	26	32.5	-0.5	32	0	T	0.0	0
1983-03-24	34	12	23.0	-10.4	42	0	0.00	0.0	0
1983-03-25	35	17	26.0	-7.8	39	0	0.00	0.0	0
1983-03-26	38	12	25.0	-9.2	40	0	0.00	0.0	0
1983-03-27	43	15	29.0	-5.6	36	0	0.00	0.0	0
1983-03-28	46	15	30.5	-4.5	34	0	0.75	2.0	0
1983-03-29	46	28	37.0	1.6	28	0	T	0.0	0
1983-03-30	41	19	30.0	-5.8	35	0	0.00	0.0	0
1983-03-31	50	19	34.5	-1.7	30	0	0.00	0.0	0
Sum	1380	786	-	-	923	0	6.80	2.0	-
Average	44.5	25.4	34.9	4.5	-	-	-	-	0.1
Normal	40.3	20.5	30.4	-	1073	0	3.27	M	-



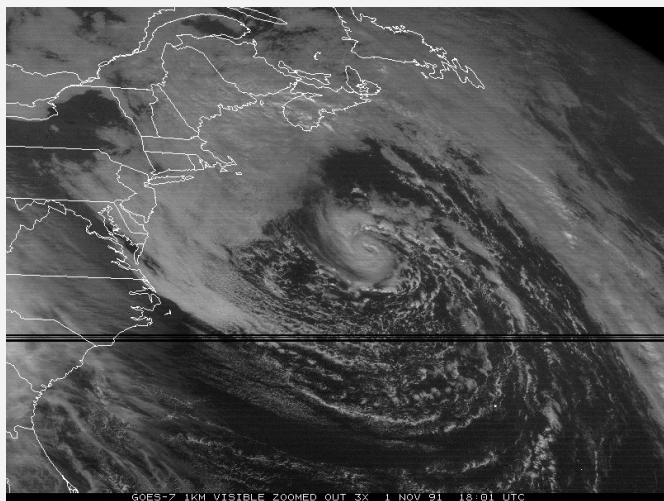
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Department of Commerce // National Oceanic and Atmospheric Administration // 7

The History of the 1991-92 Winter*

Dec 1991-Mar 1992 4-Month	17.8°F (-7.9°C)	18.2°F (-7.7°C)	-0.4°F (-0.2°C)	48th Coldest*
	Ties: 1936 , 1956			84th Warmest*

Dec 1991-Mar 1992 4-Month	13.12in (333.25mm)	12.90in (327.66mm)	0.22in (5.59mm)	73rd Driest	Driest since: 1990	1989
				59th Wettest	Wettest since: 1991	1900



Winter Profile: Blockbuster fall storm, followed by mid winter warmth and no snow

1991-92 winter was characterized by a historic late-autumn coastal Nor'easter, unseasonably mild mid-winter temperatures, and an extended snow drought that was only partially offset by late-season storms.

- **Midwinter Drought:** December, January, and February yielded very light snow accumulation, leaving much of southern Maine and central/southern New Hampshire relatively snow-starved for most of the traditional winter months.
- **Subdued Arctic Air:** Sustained arctic outbreaks were scarce from December through February, leading to frequent thawing cycles and minimal deep freezing in coastal and lowland areas.
- *Mount Pinatubo eruption (possible impact on El Nino circulations)

-0.4°F

Temp Anomaly

Near normal temperatures

~75%

Snow Deficit

Snow drought during the heart of winter season



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The History of the 1997-98 Winter

Winter Profile: Historic Ice & Mild Anomalies

The 1997-98 "Very Strong" El Niño event brought extreme precipitation patterns and unseasonable warmth to Maine and New Hampshire:

- **The Great Ice Storm of 1998:** A catastrophic ice storm in January coated northern New England with up to 3 inches of ice, causing widespread, weeks-long power outages and massive forestry damage.
- **Unprecedented Warmth:** Sustained mild temperatures led to below-normal seasonal snowfall in southern valleys, while high elevations received heavy mixed precipitation.

≥ +2.3°C

RONI Anomaly

One of the strongest El Niño events ever recorded, bringing major global oceanic warmth.

Millions

In Economic Damage

The catastrophic January ice storm collapsed infrastructure, shutting down power for over a million residents.

Dec 1997–Mar 1998 4-Month	23.1°F (-4.9°C)	18.2°F (-7.7°C)	4.9°F (2.7°C)	122nd Coldest*
				10th Warmest*
	Ties: 1983			

Dec 1997–Mar 1998 4-Month	15.73in (399.54mm)	12.90in (327.66mm)	2.83in (71.88mm)	110th Driest
				22nd Wettest



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The History of the 2015-16 Winter

Winter Profile: Extreme Warmth & High-End Volatility

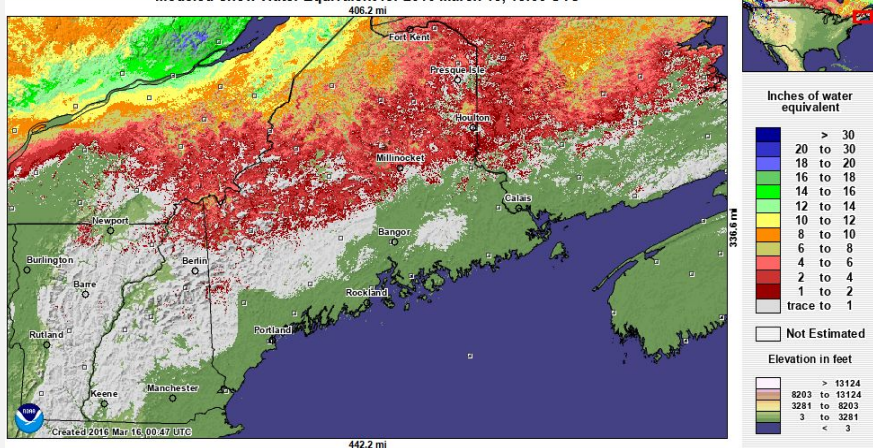
The 2015-16 "Very Strong" El Niño event drove unprecedented temperature departures and active storm systems across northern New England:

- **Record-Breaking Mildness:** Persistent subtropical ridging led to the warmest winter on record at the time for much of NH and ME, severely limiting early and mid-season snow.
- **Late-Season Volatility:** Despite a generalized snow drought, powerful late-winter coastal storms brought intense mixed precipitation, heavy rain, and localized blizzards.

Dec 2015–Mar 2016 4-Month	25.6°F (-3.6°C)	18.2°F (-7.7°C)	7.4°F (4.1°C)	130th Coldest
				2nd Warmest

Dec 2015–Mar 2016 4-Month	16.29in (413.77mm)	12.90in (327.66mm)	3.39in (86.11mm)	116th Driest
				16th Wettest

Modeled Snow Water Equivalent for 2016 March 15, 18:00 UTC



$\geq +2.3^{\circ}\text{C}$

RONI Peak Anomaly

Tied with 1997-98 as one of the most intense equatorial Pacific warming events in recorded history.

Record

Warmest Winter

Unprecedented seasonal warmth decimated historical snow baselines, turning typical winter snow to rain.

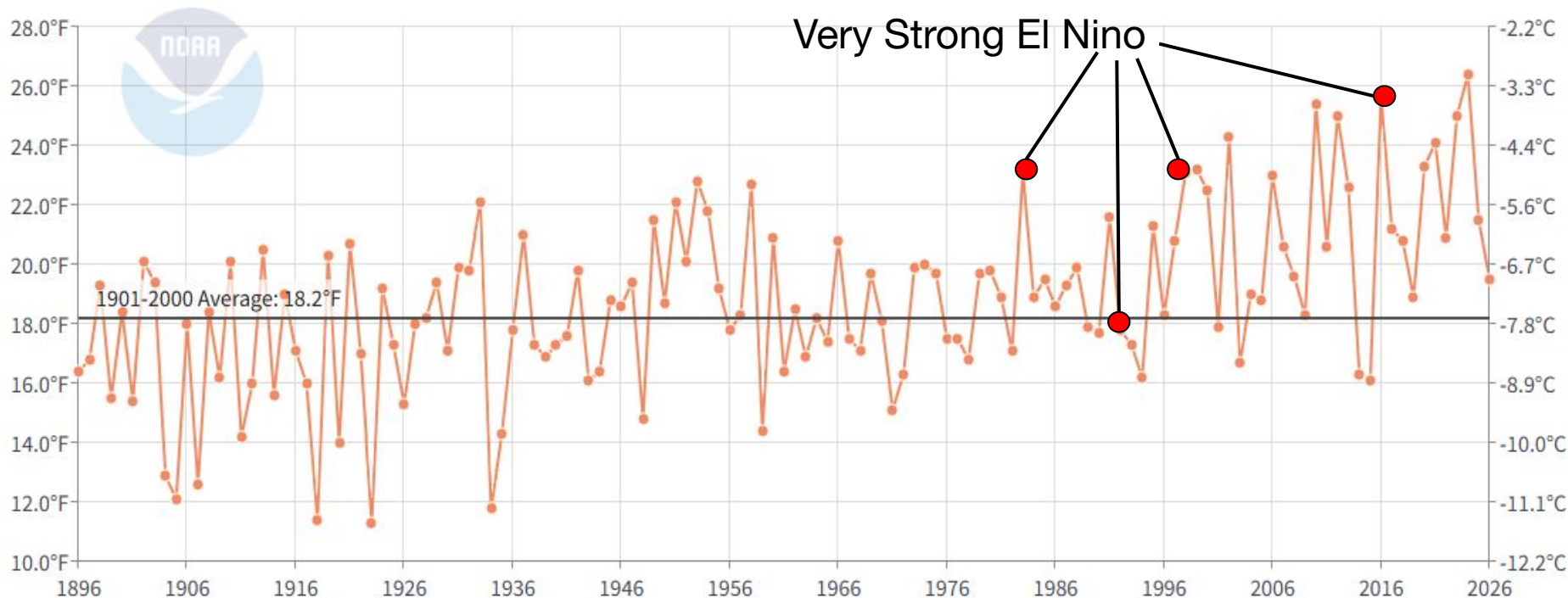


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Temperature in Very Strong El Nino

Maine Average Temperature

December-March

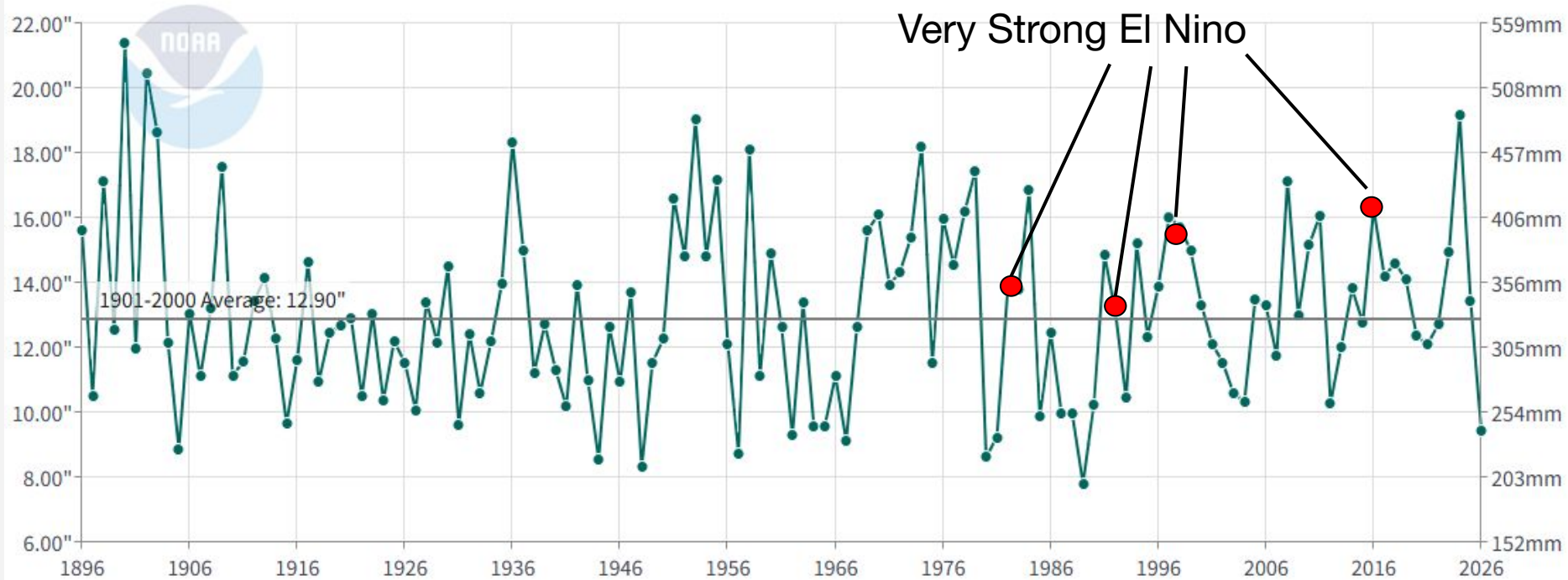


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Precipitation in Very Strong El Nino

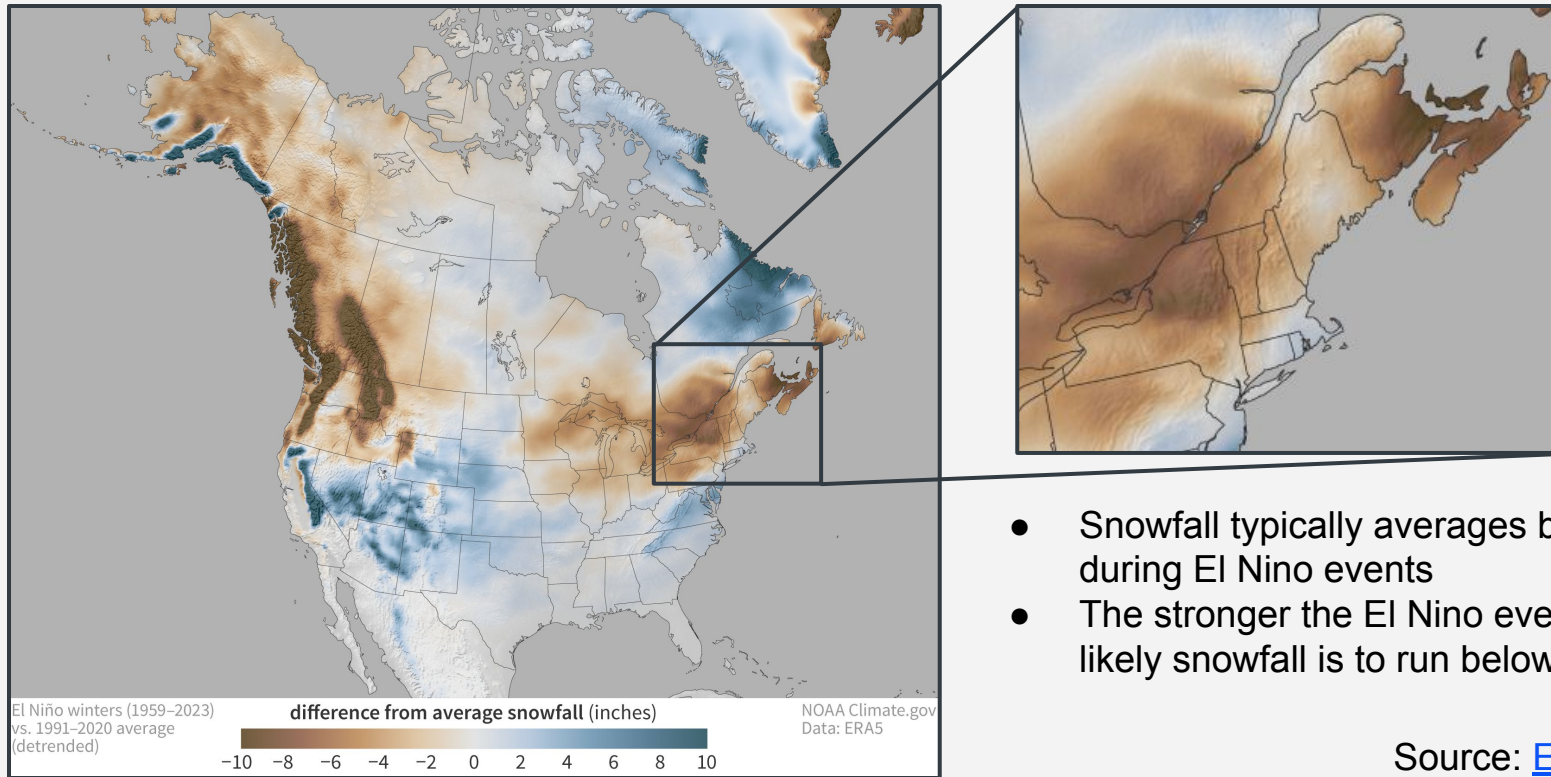
Maine Precipitation

December-March



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Snowfall during all El Nino Winters (Jan-Mar)



- Snowfall typically averages below normal during El Nino events
- The stronger the El Nino event, the more likely snowfall is to run below normal

Source: [ENSO Blog](#)



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El Nino Football Analogy

Football Analogy: Just as each football game unfolds uniquely, no two New England winters are identical. El Niño acts like the team's Quarterback—a key player shaping the overall winter weather pattern. However, other factors on the field also impact the storm track across the Northeast, much like key teammates influencing the outcome of a game. For instance, the North Atlantic Oscillation can only be predicted 1 to 2 weeks ahead, making the precise storm track uncertain.



AI Generated Image for
Illustration Purposes Only

During a strong El Niño winter like 2026–27, our quarterback prefers calling warmth and rain plays, though our running back still sees action on the field with cold and snow plays.

Summary

- A very strong El Nino event is likely to persist into winter.
- The significance of a very strong event is that confidence is high a El Nino pattern weather pattern will occur and does **NOT** directly translate to more extreme weather in Maine.
- Odds are favored for above normal temperatures and, to a lesser extent, above normal precipitation.
- Snowfall typically averages below normal during El Nino winters.
- More mixed weather storms inland.
- Snow depth and days with snow on the ground will most likely run well below normal.
- Increased storminess along the East Coast could still bring weather impacts to the region this winter.

