



El Niño-Southern Oscillation (ENSO) Update + What Might We Expect This Winter?

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Eastern Region Climate Services Webinar
20 November 2025



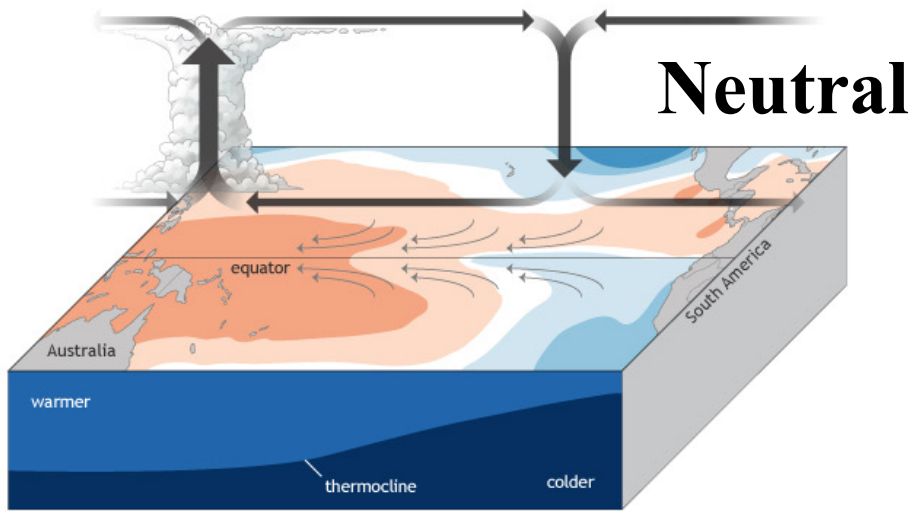
La Niña Advisory

13 November 2025 Update:

La Niña is favored to continue into Northern Hemisphere winter, with a transition to ENSO-neutral most likely in January-March 2026 (61% chance).

https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.shtml

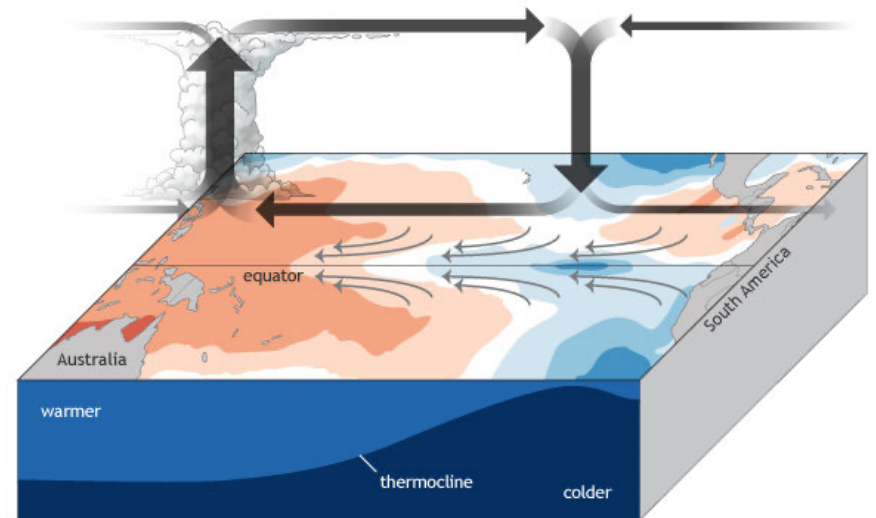
Atmosphere-ocean feedbacks during El Niño-Southern Oscillation
Neutral



NOAA Climate.gov

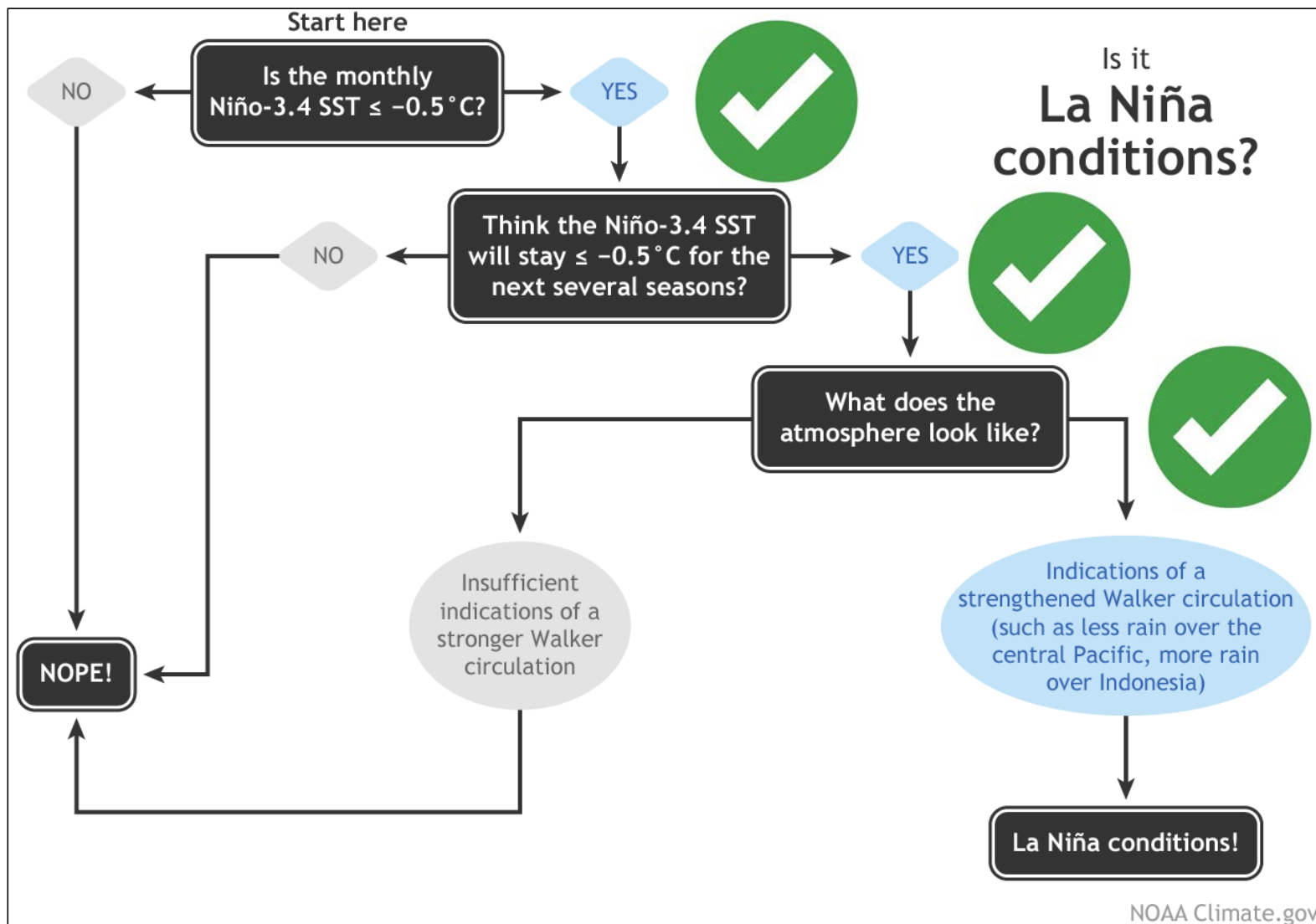
La Niña

Atmosphere-ocean feedbacks during El Niño-Southern Oscillation
La Niña

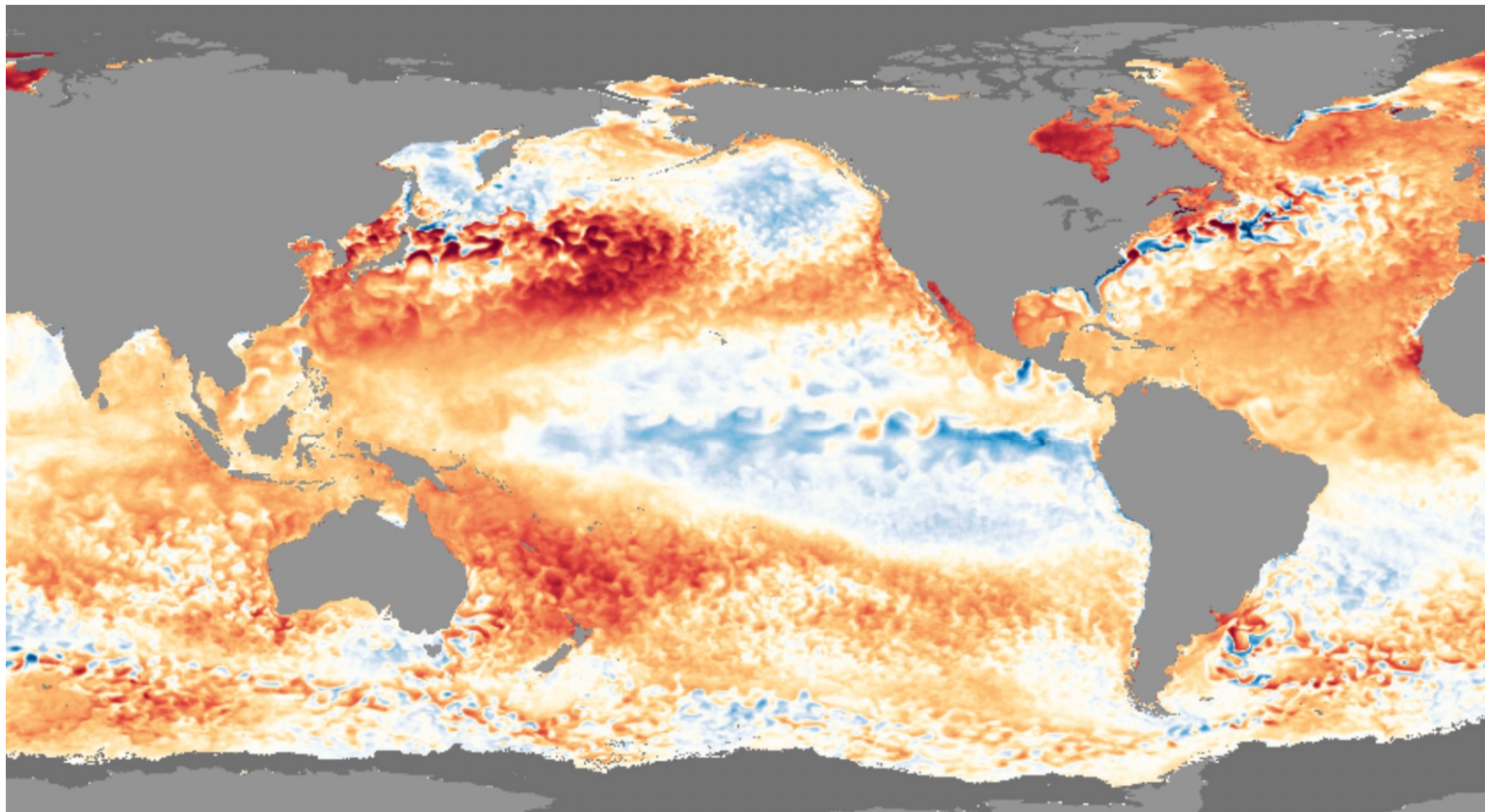


NOAA Climate.gov

<https://www.climate.gov/news-features/blogs/enso/rise-el-niño-and-la-niña>

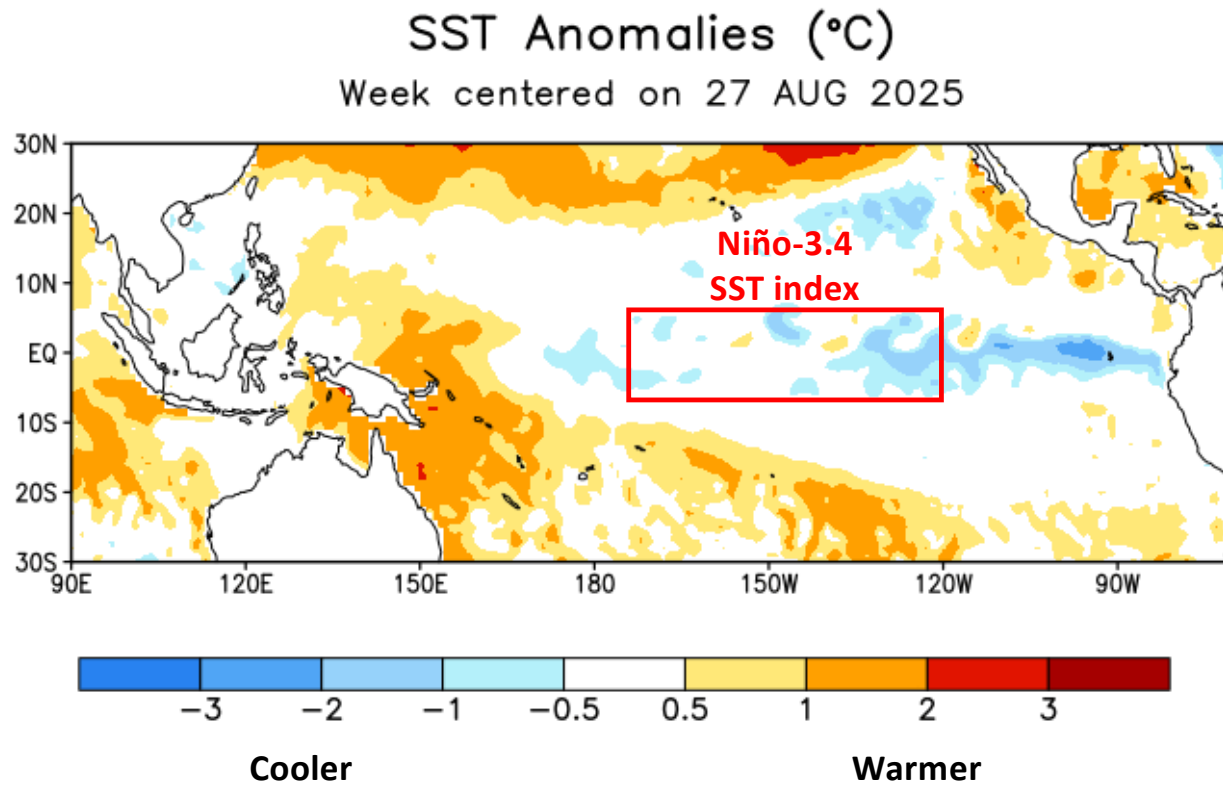


Sea Surface Temperature (SST) Anomalies in mid-November 2025

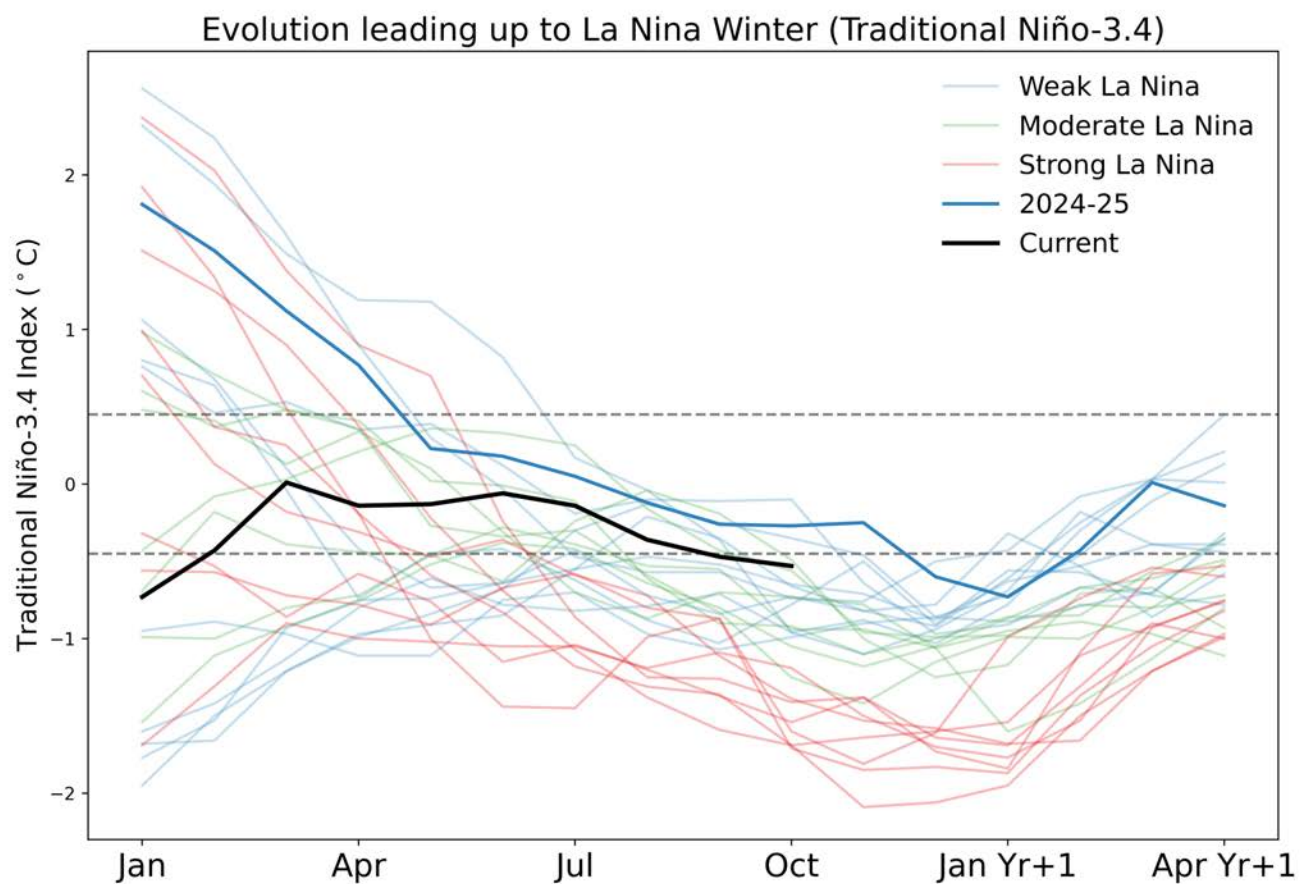


<https://www.nnvl.noaa.gov/view/globaldata.html#SSTA>

Weekly Average Sea Surface Temperatures during late August through mid November 2024



Evolution in the Niño-3.4 SST index for all La Niña episodes since 1950



Data: NOAA ERSSTv5 (with 30-year moving climatologies)

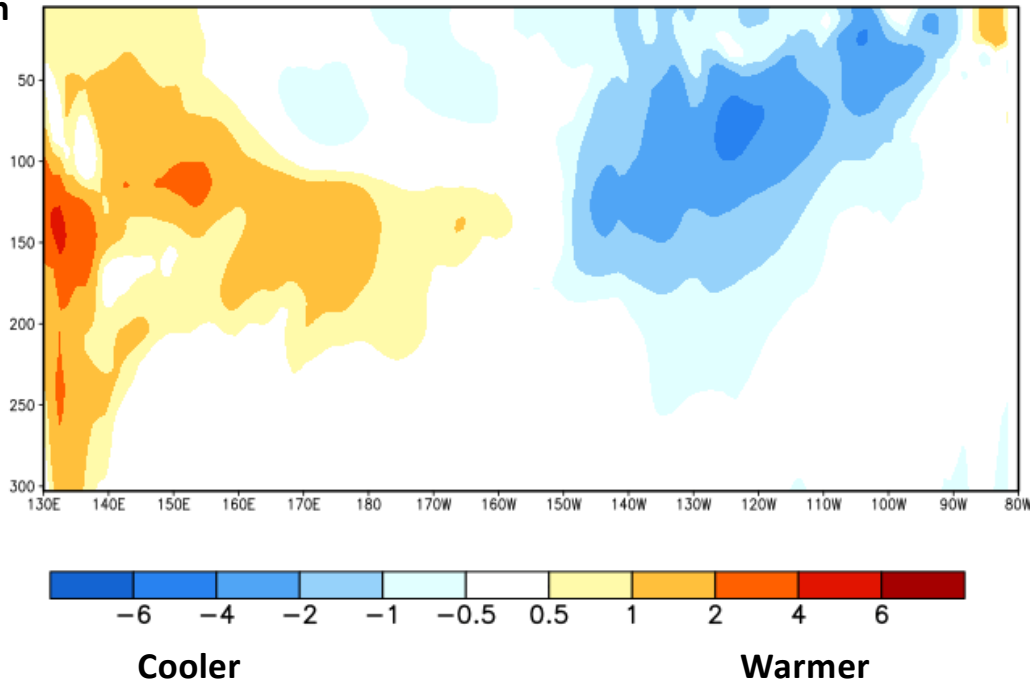
Subsurface Temperature Departures during mid-September through early November 2025

EQ. Subsurface Temperature Anomalies (deg C)

Pentad centered on 15 SEP 2025

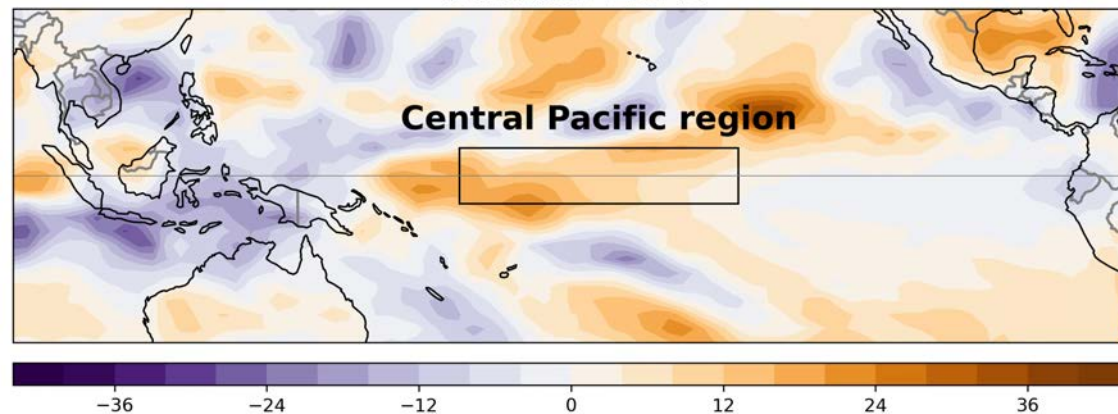
Surface of Ocean

300 meters
below surface



Outgoing Longwave Radiation (OLR) Anomalies (proxy for Rainfall/Cloudiness)

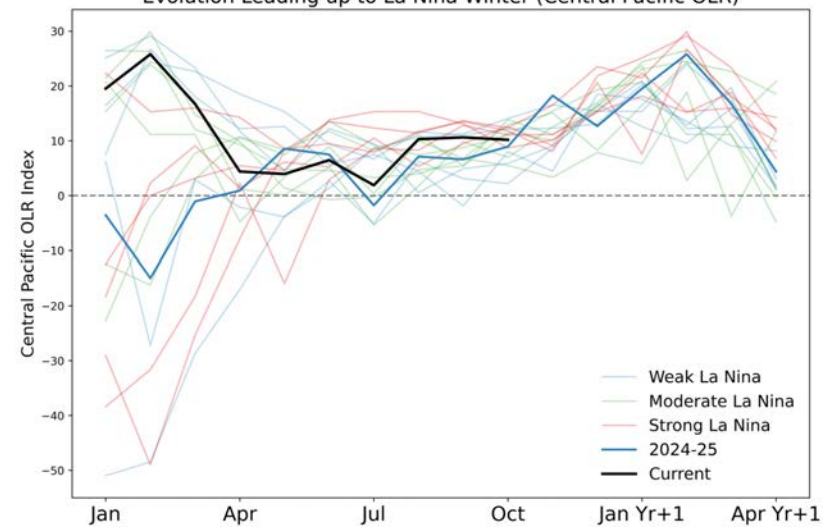
October 2025



More Rainy/Cloudy

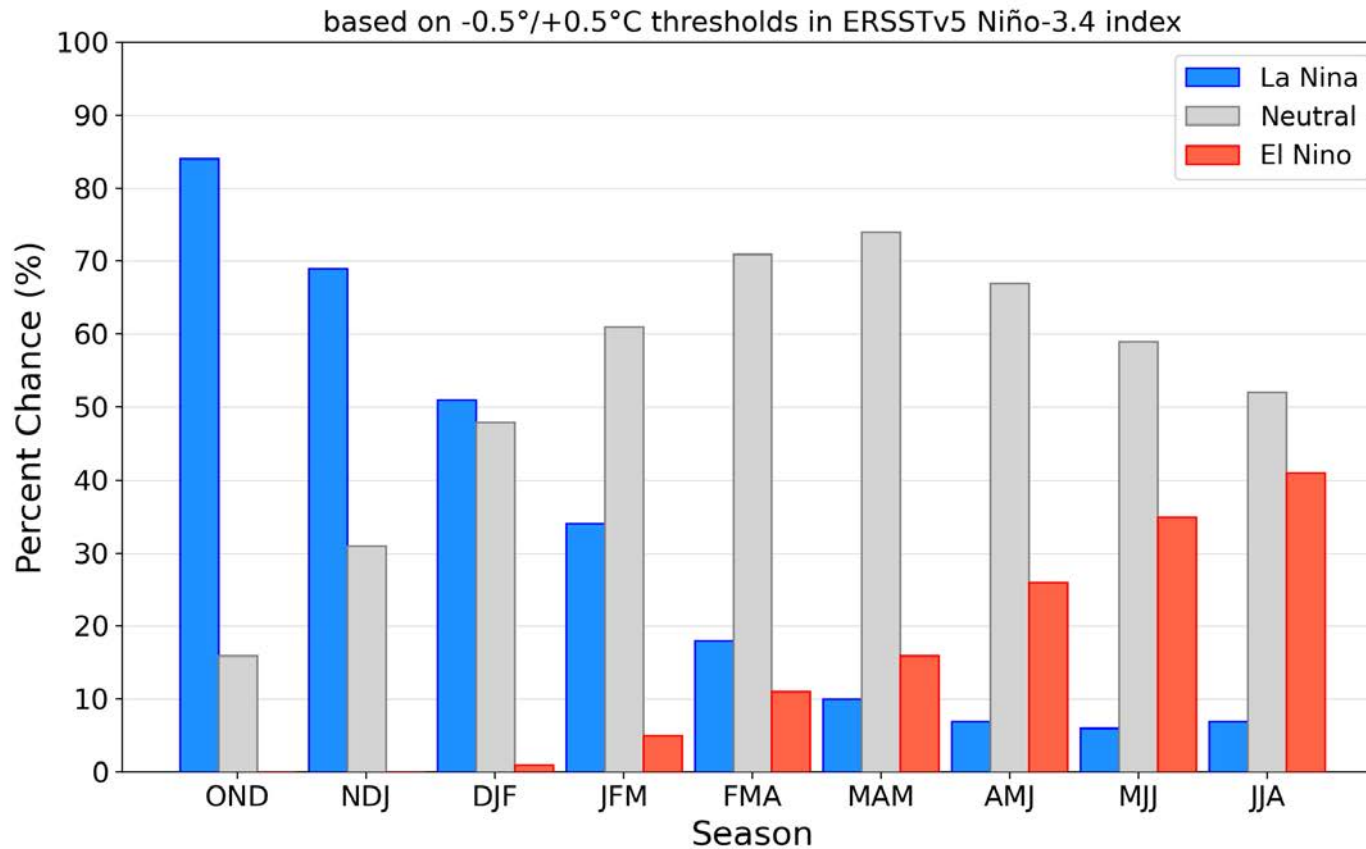
Less Rainy/Cloudy

Evolution Leading up to La Nina Winter (Central Pacific OLR)



ENSO Outlook (updated 13 November)

Official NOAA CPC ENSO Probabilities (issued November 2025)



https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.shtml

Niño3.4 Index Strength Outlook (updated 13 November)

This table shows the forecast probability (%) of Niño-3.4 index exceeding a certain threshold (in degrees Celsius).

For negative thresholds, the table shows the probability (%) of a Niño-3.4 index value that is less than (more negative) that value.

For positive thresholds, the table shows the probability (%) of a Niño-3.4 index value that is greater than (more positive) that value.

This tool supports the official ENSO Diagnostic discussion updated on the 2nd Thursday of each month.

Target	≤ -2.0°C	≤ -1.5°C	≤ -1.0°C	≤ -0.5°C	≥ 0.5°C	≥ 1.0°C	≥ 1.5°C	≥ 2.0°C
OND	~0	~0	9	84	~0	~0	~0	~0
NDJ	~0	1	16	69	~0	~0	~0	~0
DJF	~0	1	12	51	1	~0	~0	~0
JFM	~0	~0	6	34	5	~0	~0	~0
FMA	~0	~0	2	18	11	1	~0	~0
MAM	~0	~0	1	10	16	1	~0	~0
AMJ	~0	~0	~0	7	26	3	~0	~0
MJJ	~0	~0	~0	6	35	7	1	~0
JJA	~0	~0	1	7	41	12	2	~0
	≤ -2.0°C	≤ -1.5°C	≤ -1.0°C	≤ -0.5°C	≥ 0.5°C	≥ 1.0°C	≥ 1.5°C	≥ 2.0°C

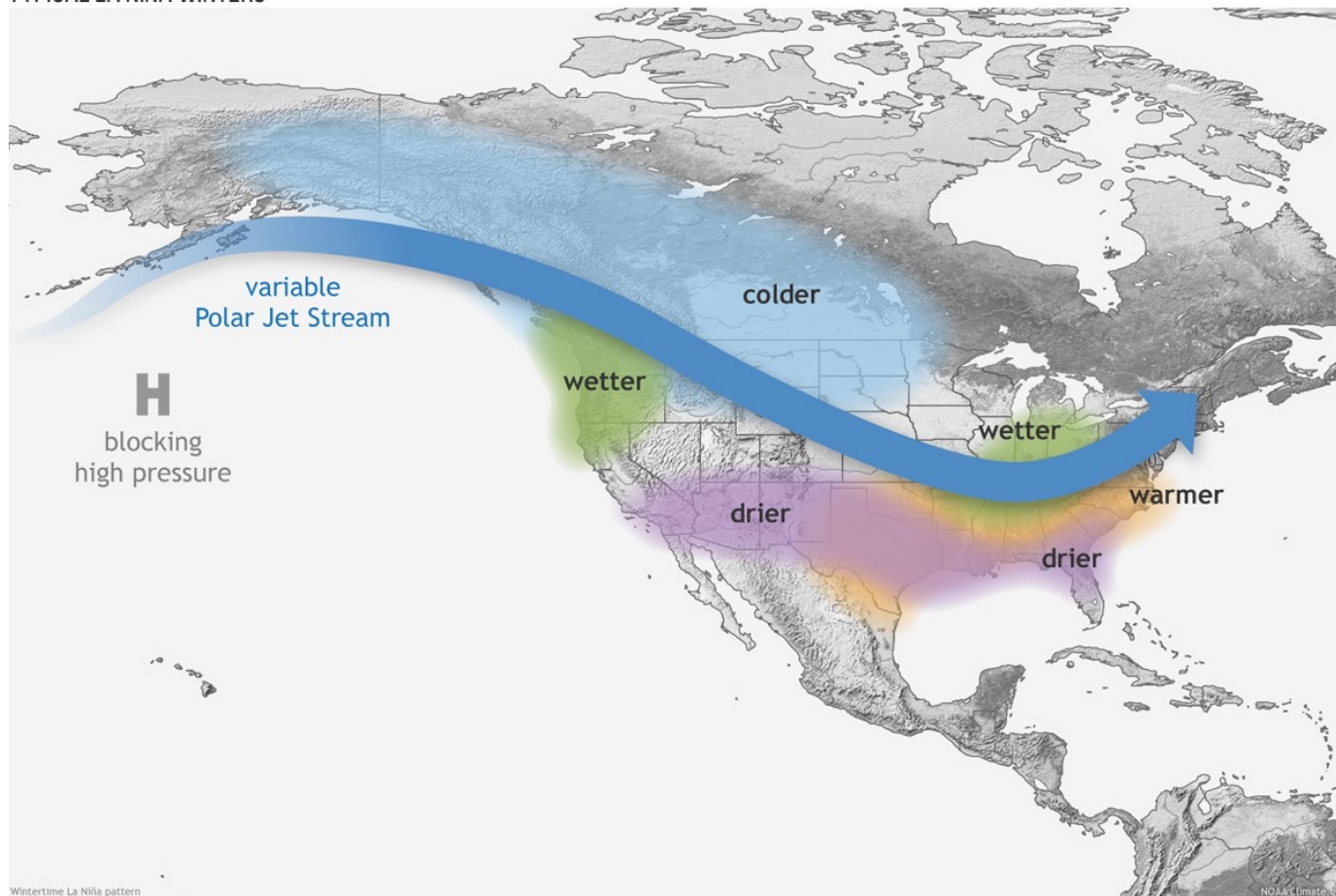
A weak La Niña is most likely. There is a 12-16% chance it would peak at at least moderate strength.

https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/strengths/index.php

**What Might We Expect Over the Eastern Region
This Winter?**

Schematic Version of La Niña Impacts

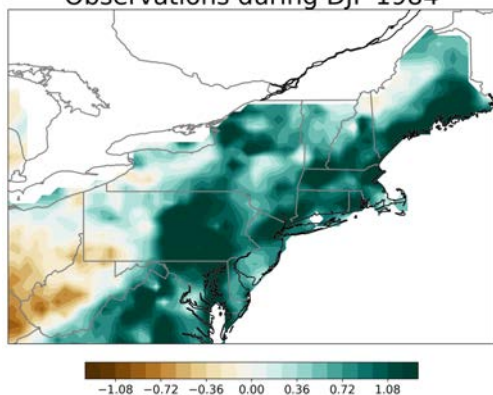
TYPICAL LA NIÑA WINTERS



<https://www.climate.gov/news-features/featured-images/how-el-niño-and-la-niña-affect-winter-jet-stream-and-us-climate>

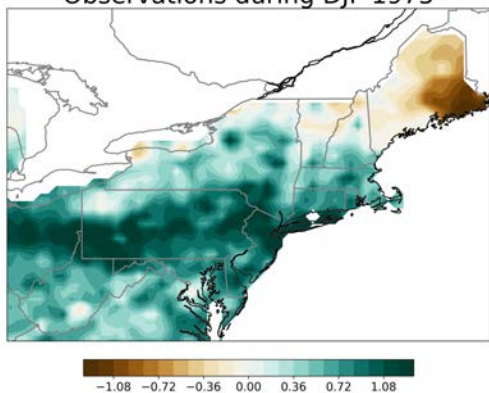
Opposite Pattern Match
With Typical Weak La Niña

Observations during DJF 1984



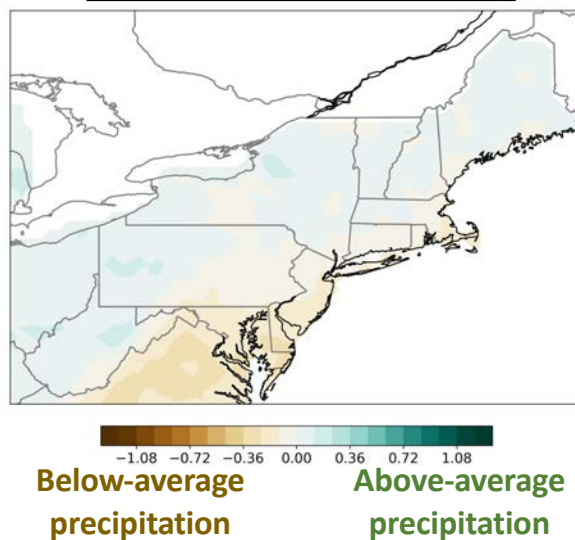
Little Match With
Typical Weak La Niña

Observations during DJF 1975



What Do Precipitation Anomalies look like for previous Weak La Niñas?

Expected or Typical
La Niña precipitation pattern
during December-February

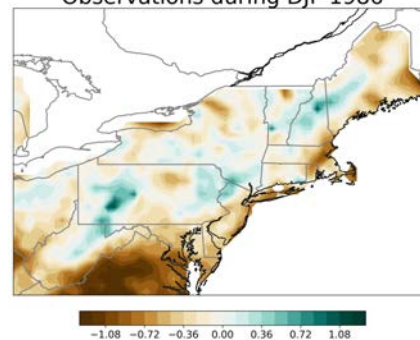


Below-average
precipitation

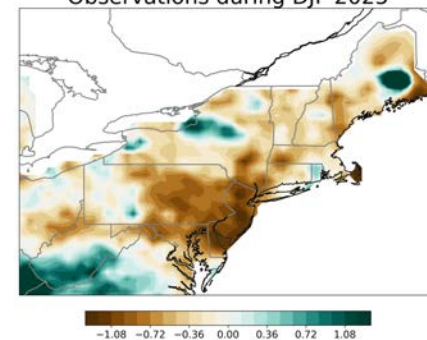
Above-average
precipitation

Better Pattern Matches With
Typical Weak La Niña

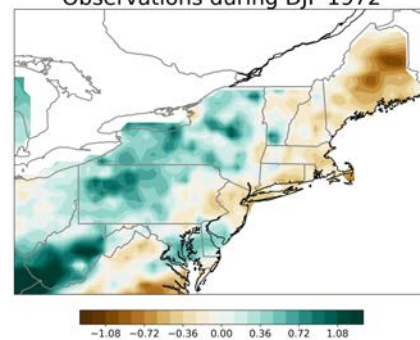
Observations during DJF 1986



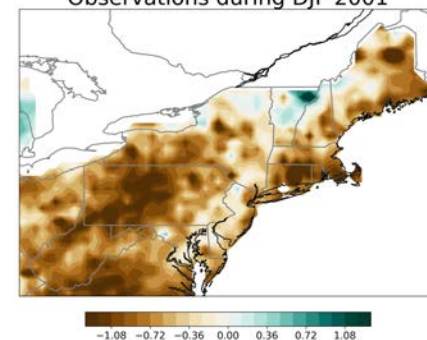
Observations during DJF 2025



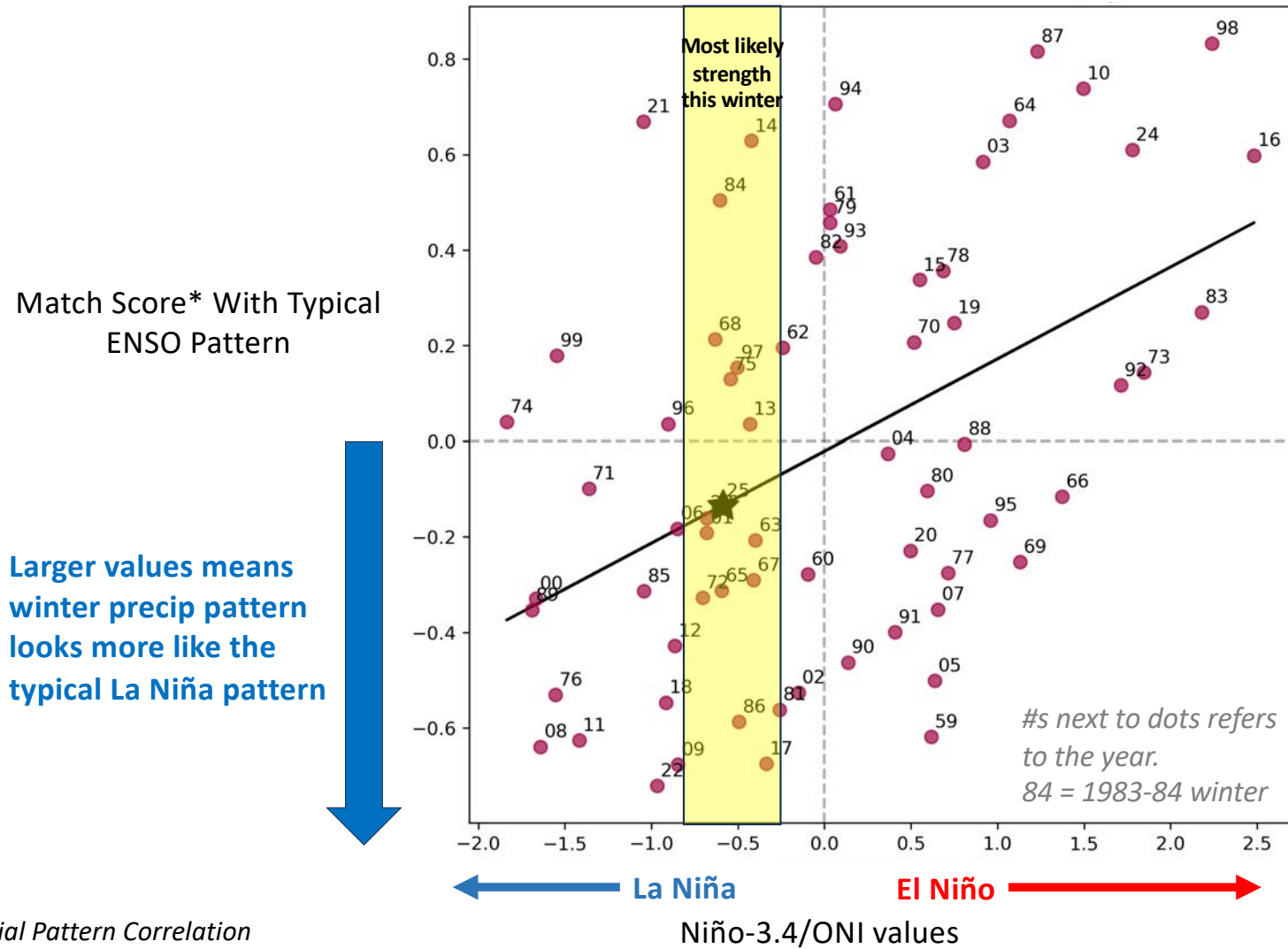
Observations during DJF 1972



Observations during DJF 2001



How well do Eastern Region precipitation anomalies relate to ENSO? (December-February)

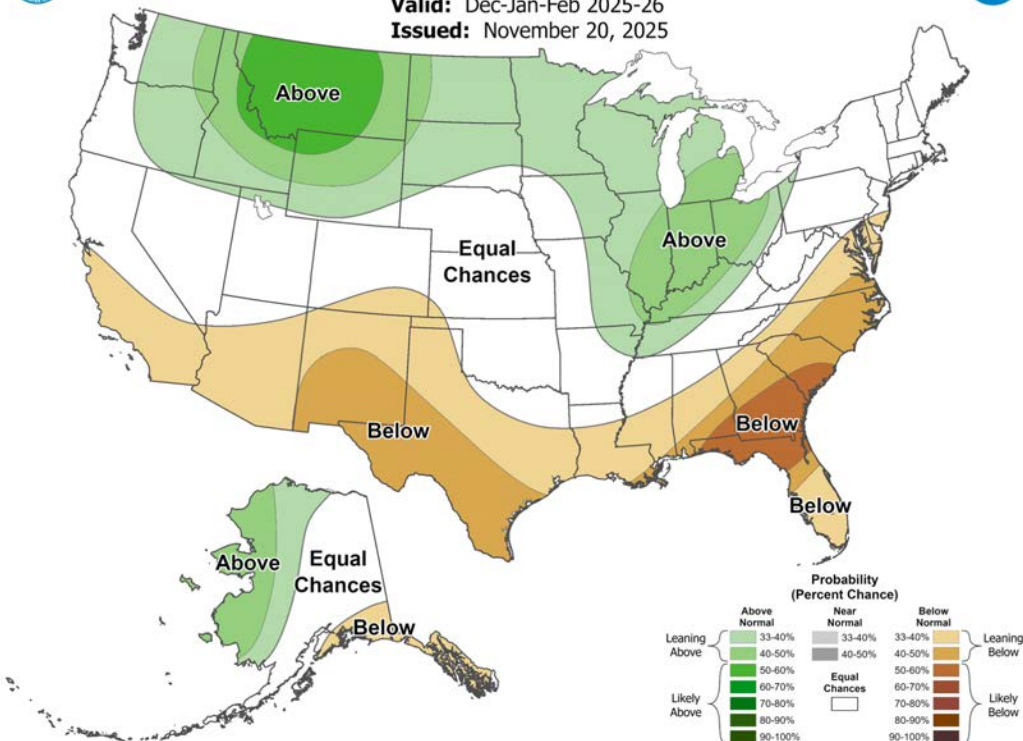


December 2025 – January 2026 CPC Outlook (updated 20 Nov.)



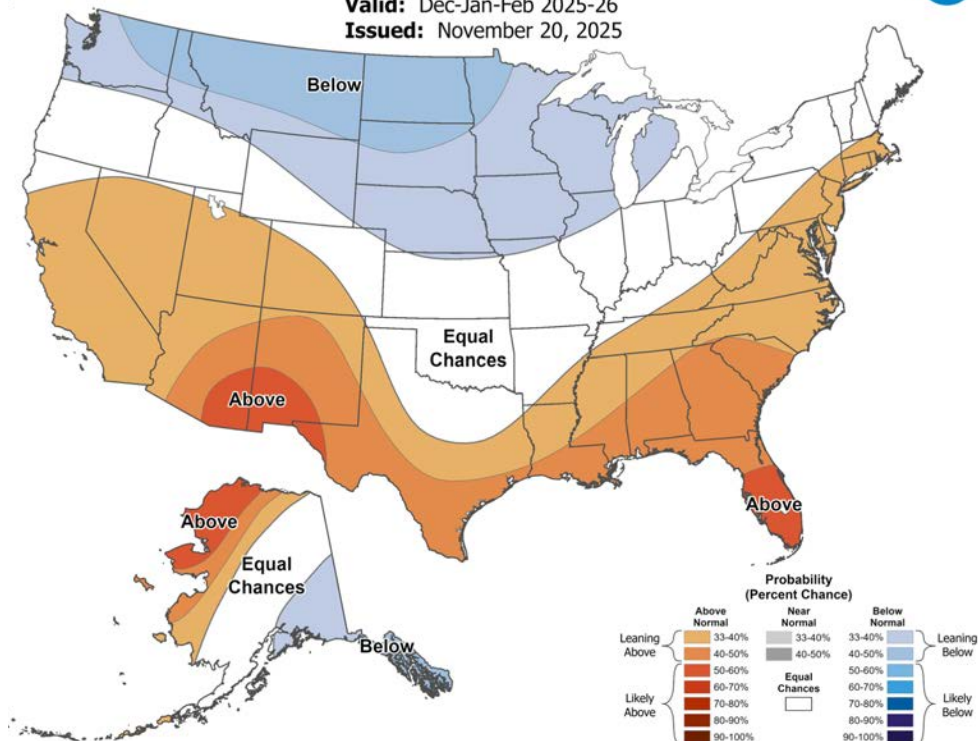
Seasonal Precipitation Outlook

Valid: Dec-Jan-Feb 2025-26
Issued: November 20, 2025



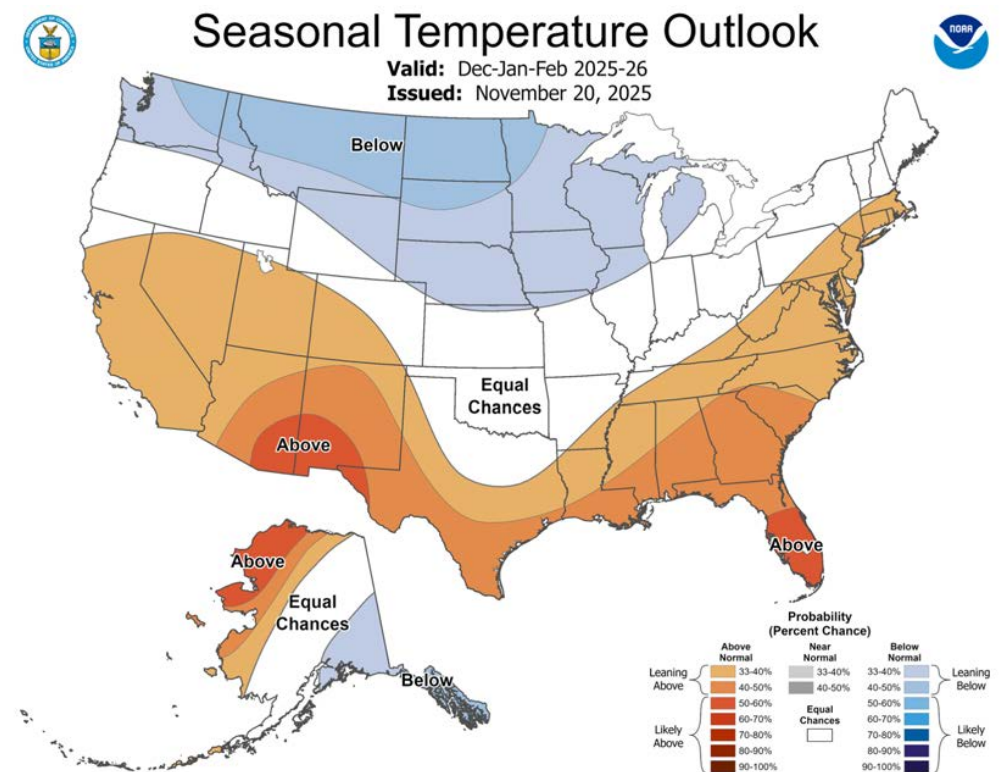
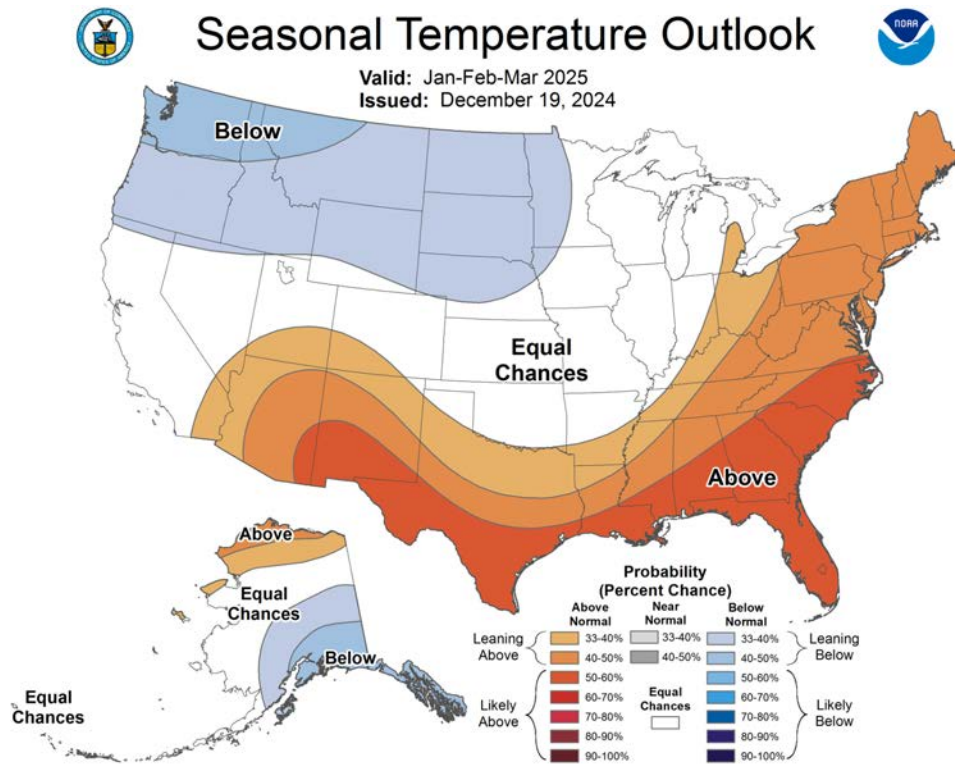
Seasonal Temperature Outlook

Valid: Dec-Jan-Feb 2025-26
Issued: November 20, 2025



View CPC Seasonal Outlooks for all upcoming seasons:
https://www.cpc.ncep.noaa.gov/products/predictions/long_range/

Last year's outlook (left panel) compared to this year (right panel) (both were expecting weak La Niña)



View CPC Seasonal Outlooks for all upcoming seasons:
https://www.cpc.ncep.noaa.gov/products/predictions/long_range/

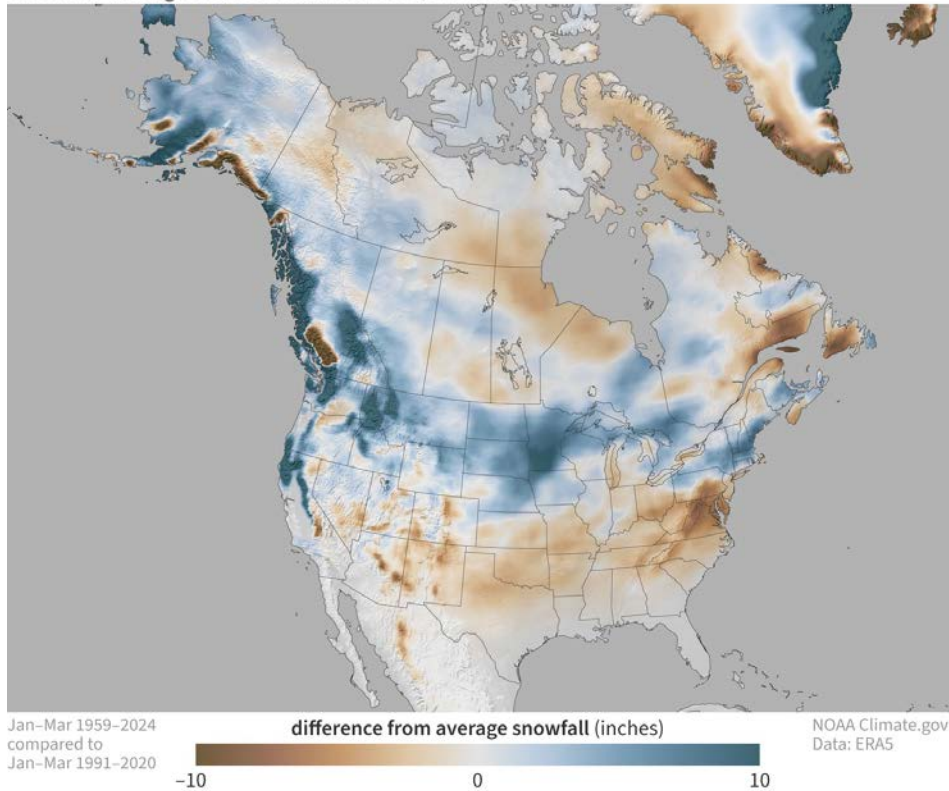
Brad Pugh, CPC Seasonal Forecaster (Nov. 20th):

strengthen and propagate east over the west Pacific (phase 7). This MJO evolution can lead to an amplifying mid-level ridge over Alaska and an outbreak of anomalously cold temperatures shifting southeast from the north-central to eastern CONUS. Due to a persistent negative AO and an expected MJO influence, early December is likely to be colder-than-normal across the Midwest and the December outlook depicts elevated below-normal temperature probabilities for this region. This favored colder-than-normal forecast for December was a factor in expanding the slight lean towards below southeastward compared to the DJF outlook released in October. In addition to the negative AO and MJO influences, the stratospheric polar vortex is forecast to become stretched and displaced off the North Pole. Although a major sudden stratospheric warming (SSW) is not forecast by the CFS, the ECMWF ensemble mean from November 18 depicts a slight

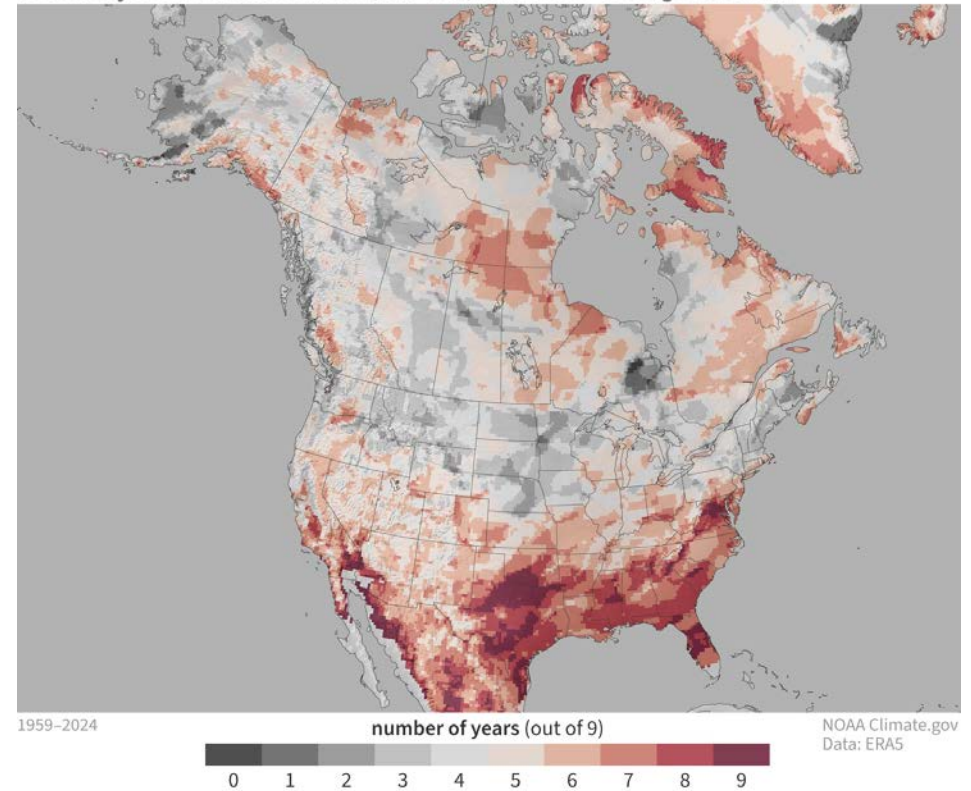
For Eastern region, the westernmost areas are “equal chances” for temperature which means the extent and amplitude of any below-average temperatures remains very uncertain. Odds of below-average temperatures are higher for the northern Rockies, northern Plains, Upper Midwest, and Upper Great lakes regions.

How about Snow?

Snowfall during weak La Niña winters (Jan-Mar)



How many weak La Niña winters (Jan-Mar) had below-average snowfall?



<https://www.climate.gov/news-features/blogs/enso/revisiting-la-nina-and-winter-snowfall>



Key Takeaways

- La Niña has formed and is likely to remain weak. A weaker event means weaker “pushing” onto the atmosphere which can lead to somewhat higher chances of ‘busts’ or unexpected outcomes.
- The event is currently expected to quickly decay in early 2026 (ENSO-neutral favored by January-March 2026). Impacts over the United States could lag into the late winter/early spring (February-April 2026) even as below-average Pacific SSTs weaken.
- For the easternmost parts of Eastern region, odds lean toward above-average temperature. For the western/interior parts of the region, above-average precipitation (rain + snow) is also favored (“equal chances” along coastal areas).
- Expected seasonal impacts are always probabilistic (“% chance of”) and never guaranteed. This is an important message to convey to users of these products.



ENSO Diagnostics Discussion (updated on the 2nd Thursday of each month)

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.html

CPC Seasonal Outlook (updated on the 3rd Thursday of each month)

https://www.cpc.ncep.noaa.gov/products/predictions/long_range/