

ENSO: Recent Evolution, Current Status and Predictions



Update prepared by:
Climate Prediction Center / NCEP
4 May 2026

Outline

Summary

Recent Evolution and Current Conditions

Relative Oceanic Niño Index (RONI)

Pacific SST Outlook

U.S. Seasonal Precipitation and Temperature Outlooks

Summary

2/2/26: Tropical Pacific sea surface temperatures (SST) anomalies and Niño indices now reflect relative SST anomalies:

https://www.weather.gov/media/notification/pdf_2026/pns26-05_Relative_ONI.pdf

Summary

ENSO Alert System Status: **Final La Niña Advisory** / **El Niño Watch**

ENSO-neutral conditions are present.*

Equatorial sea surface temperatures (SSTs) are near-to-above-average in the central and eastern Pacific Ocean.

ENSO-neutral conditions favored through April-June 2026 (80% chance). In May-July 2026, El Niño is likely to emerge (61% chance) and persist through at least the end of 2026.*

* Note: These statements are updated once a month (2nd Thursday of each month) in association with the ENSO Diagnostics Discussion, which can be found by clicking [here](#).

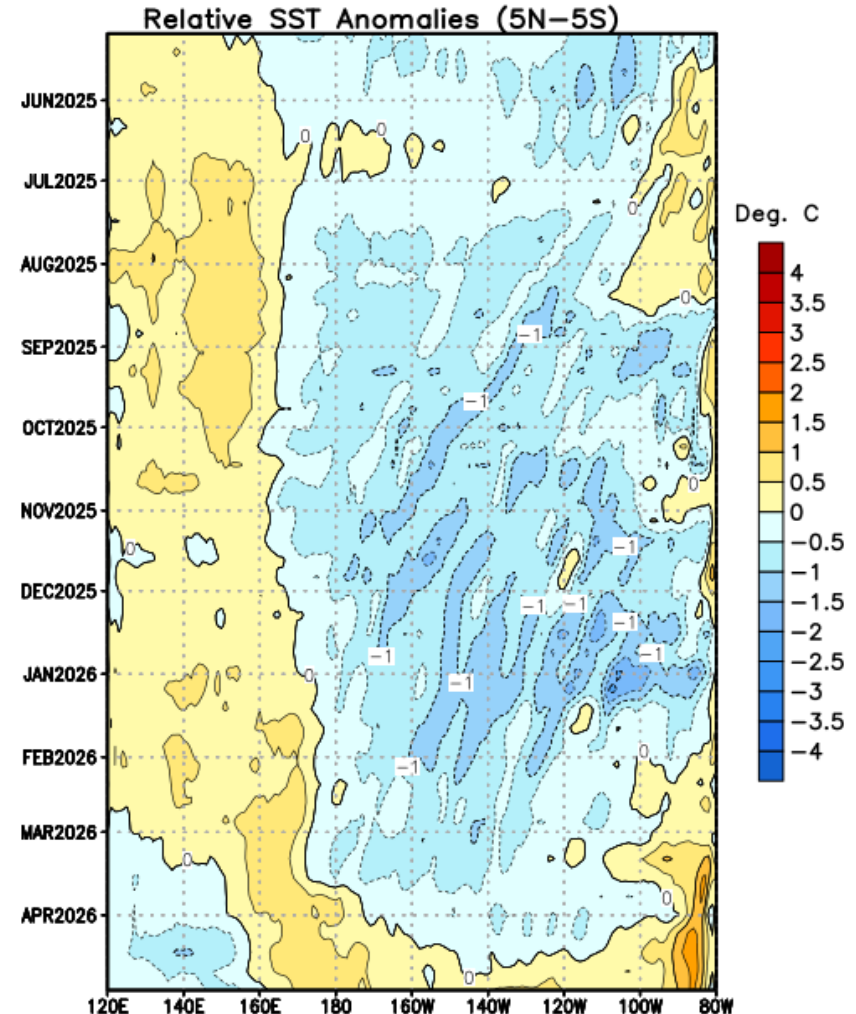
Recent Evolution of Equatorial Pacific SST Departures (°C)

From August 2025 through early January 2026, below-average SSTs strengthened in parts of the equatorial Pacific Ocean.

Since early January 2026, below-average SSTs have gradually weakened across most of the equatorial Pacific.

Beginning in early February 2026, above-average SSTs emerged in the far eastern equatorial Pacific.

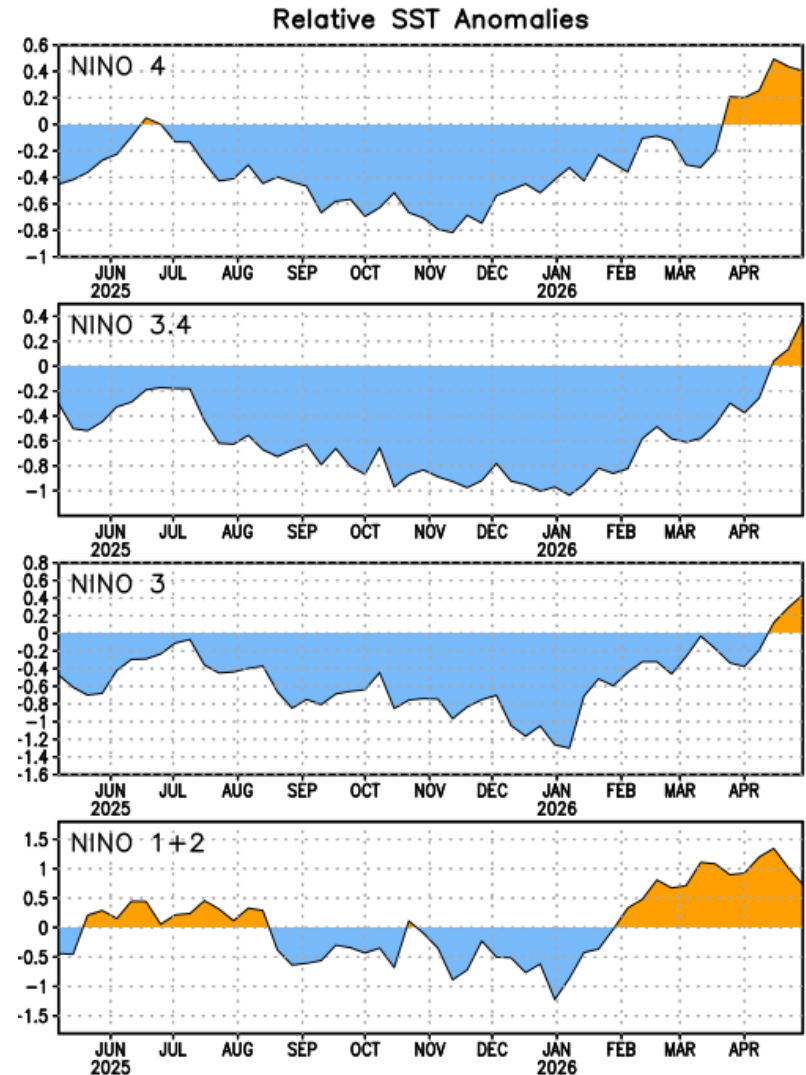
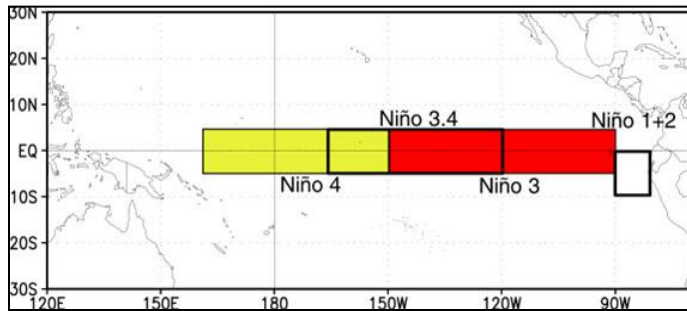
Since mid-April 2026, near-to-above average SSTs expanded across most of the equatorial Pacific Ocean.



Niño Region SST Departures (°C) Recent Evolution

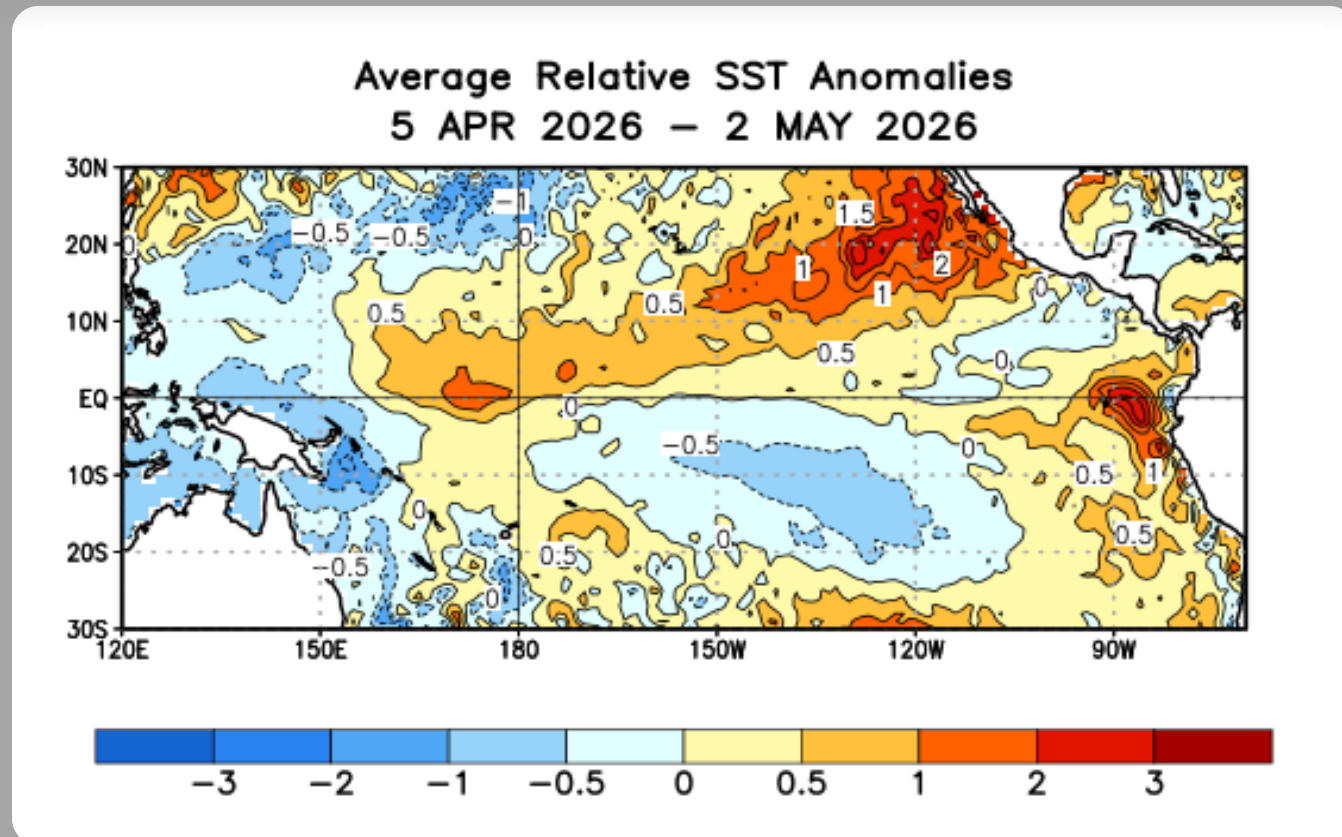
The latest weekly SST departures are:

Niño 4	0.5°C
Niño 3.4	0.4°C
Niño 3	0.5°C
Niño 1+2	0.7°C



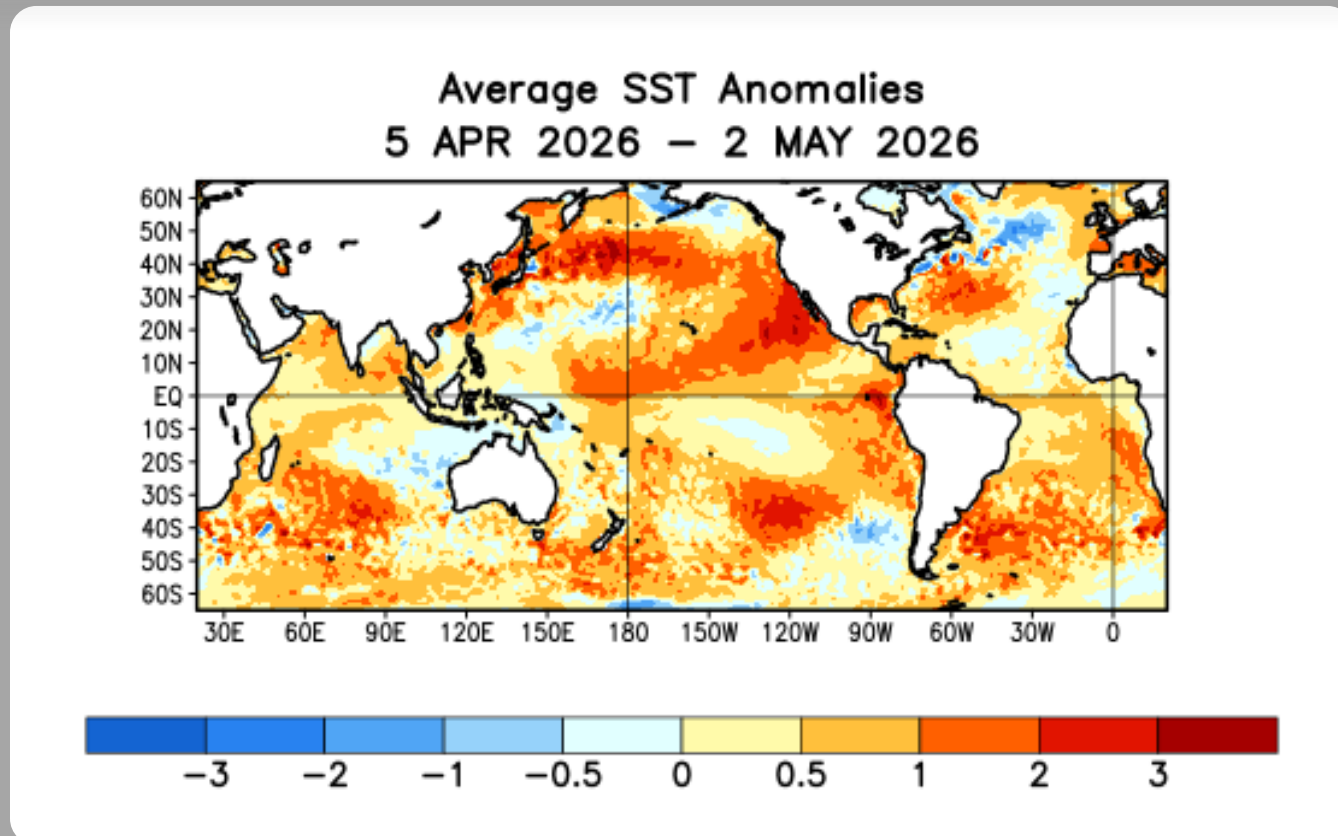
SST Departures (°C) in the Tropical Pacific During the Last Four Weeks

In the last four weeks, equatorial SSTs were near-average in the east-central Pacific Ocean, above average just west of the Date Line and in the far eastern Pacific, and below-average in the far western Pacific Ocean.



Global SST Departures (°C) During the Last Four Weeks (Traditional SST Anomalies)

During the last four weeks, above-average SSTs were prevalent over most of the global oceans. Equatorial SSTs were mostly above average in the Atlantic Ocean. SSTs were near-to-below-average north of Australia. Equatorial SST anomalies were warmer near the Date Line and far eastern Pacific compared to the east-central Pacific.



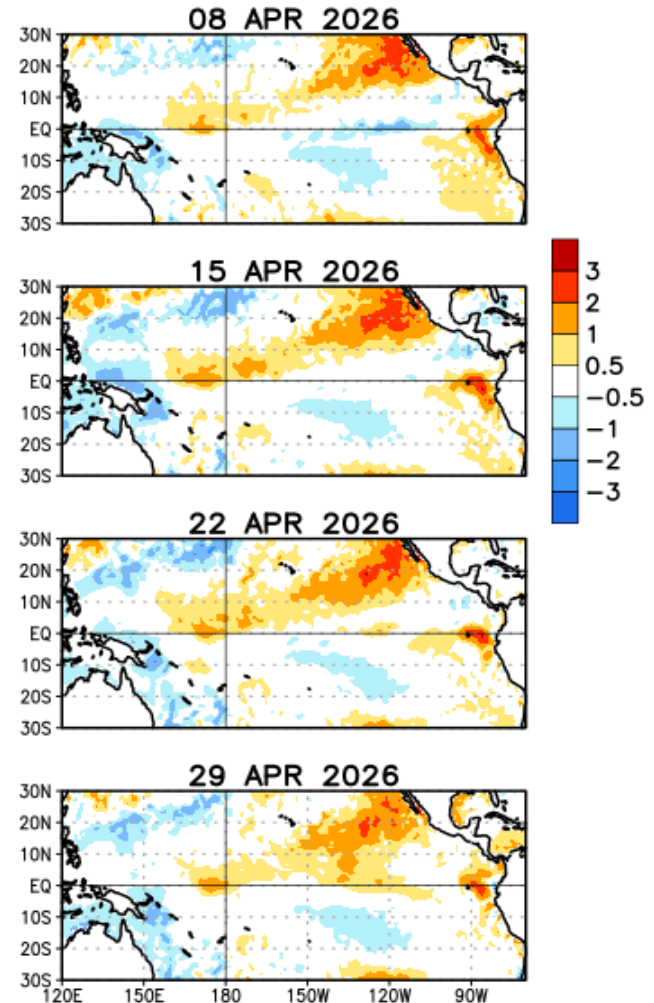
Weekly SST Departures during the Last Four Weeks

During the last 4 weeks, below-average equatorial SSTs weakened in the east-central Pacific Ocean.

Above-average SSTs stretched from Baja to near the Date Line in the tropical Pacific Ocean.

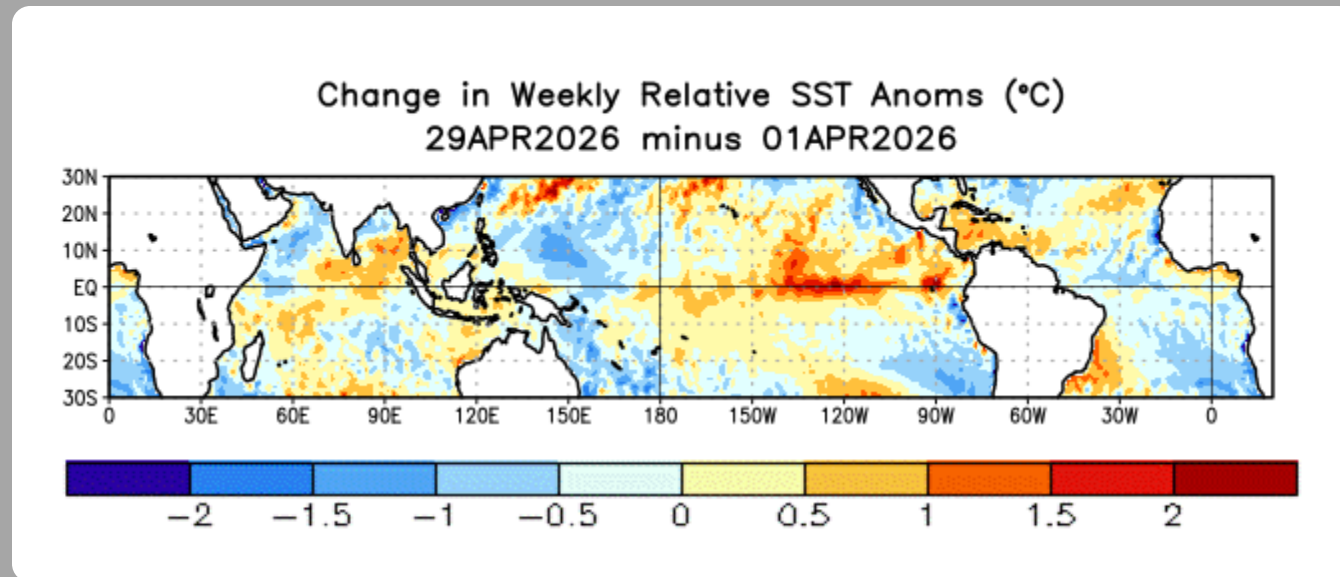
Above-average SSTs persisted in the far eastern equatorial Pacific Ocean.

Weekly Relative SST Anomalies (DEG C)



Change in Weekly SST Departures over the Last Four Weeks

During the last four weeks, positive equatorial SST anomaly changes were observed across most of the Pacific Ocean and eastern Indian Ocean. Negative changes were evident in the western Pacific Ocean, western Indian Ocean, and western Atlantic Ocean.



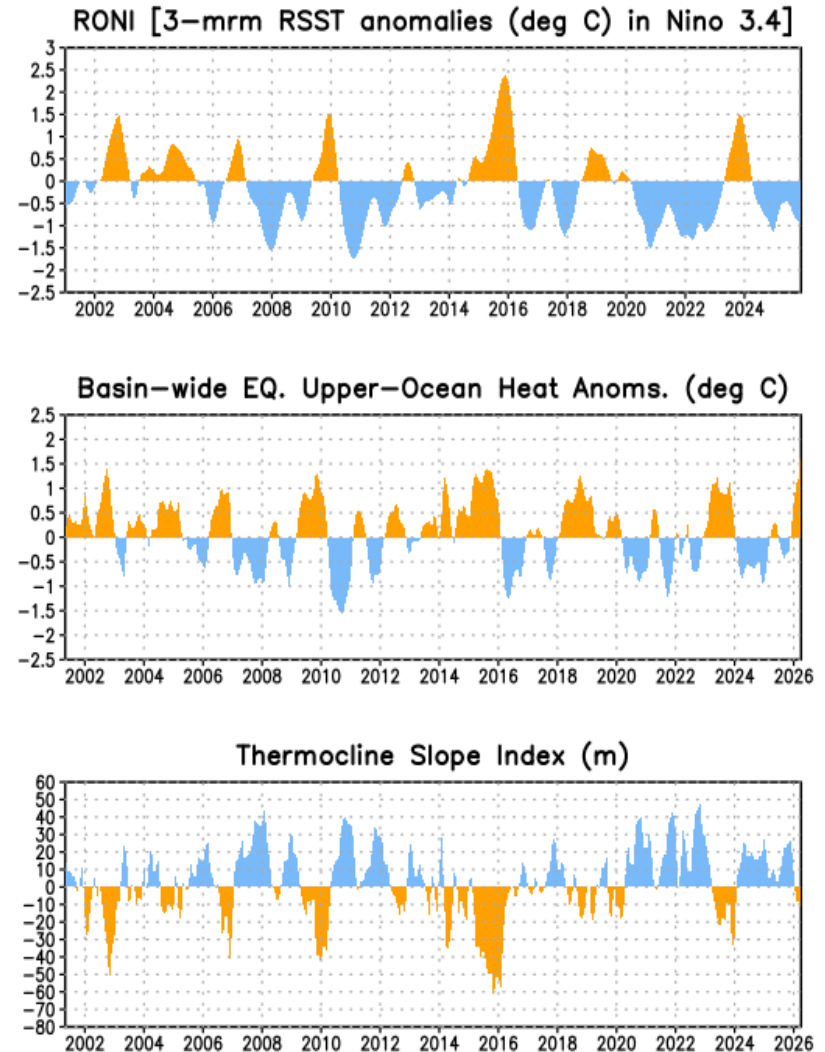
Upper-Ocean Conditions in the Equatorial Pacific

The basin-wide equatorial upper ocean (0-300 m) heat content is greatest prior to and during the early stages of a Pacific warm (El Niño) episode (compare top 2 panels), and least prior to and during the early stages of a cold (La Niña) episode.

The slope of the oceanic thermocline is least (greatest) during warm (cold) episodes.

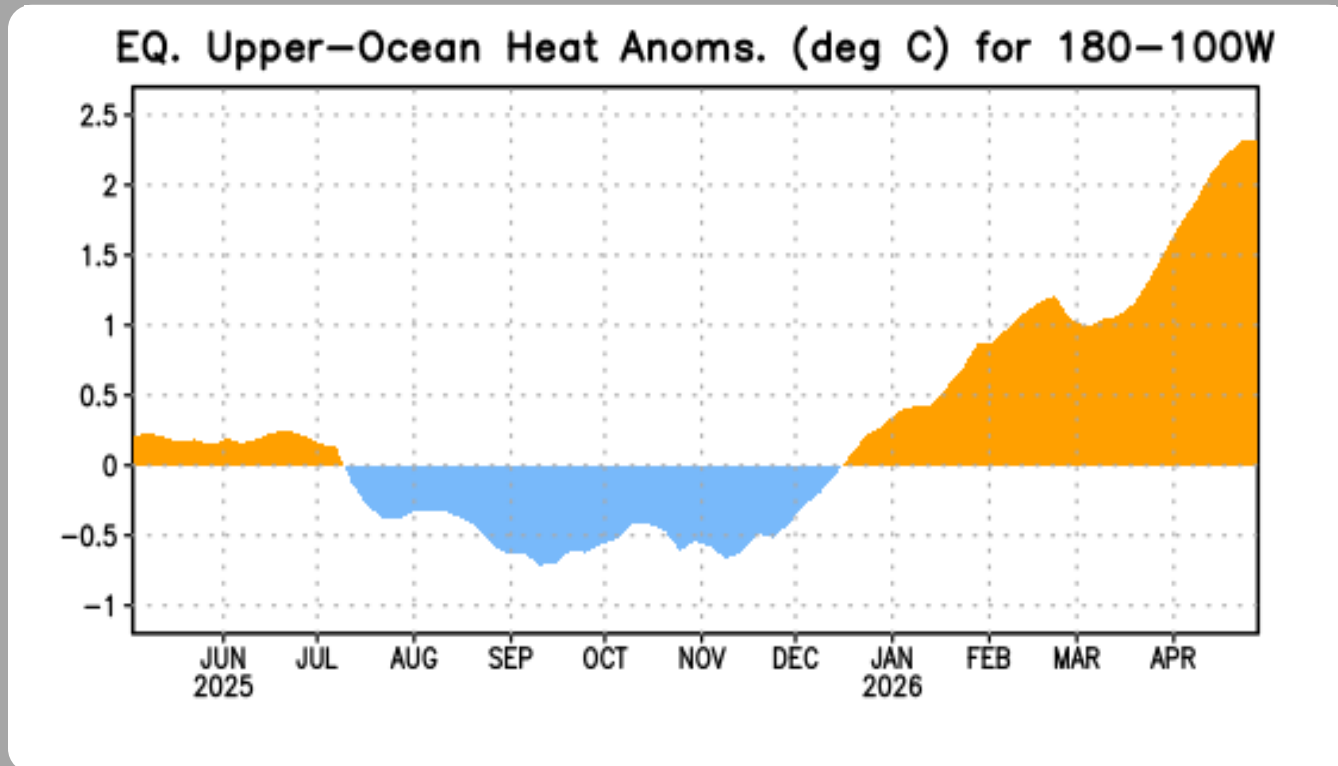
Recent values of the upper-ocean heat anomalies are above-average and the thermocline slope index is below-average.

The monthly thermocline slope index represents the difference in anomalous depth of the 20°C isotherm between the western Pacific (160°E-150°W) and the eastern Pacific (90°-140°W).



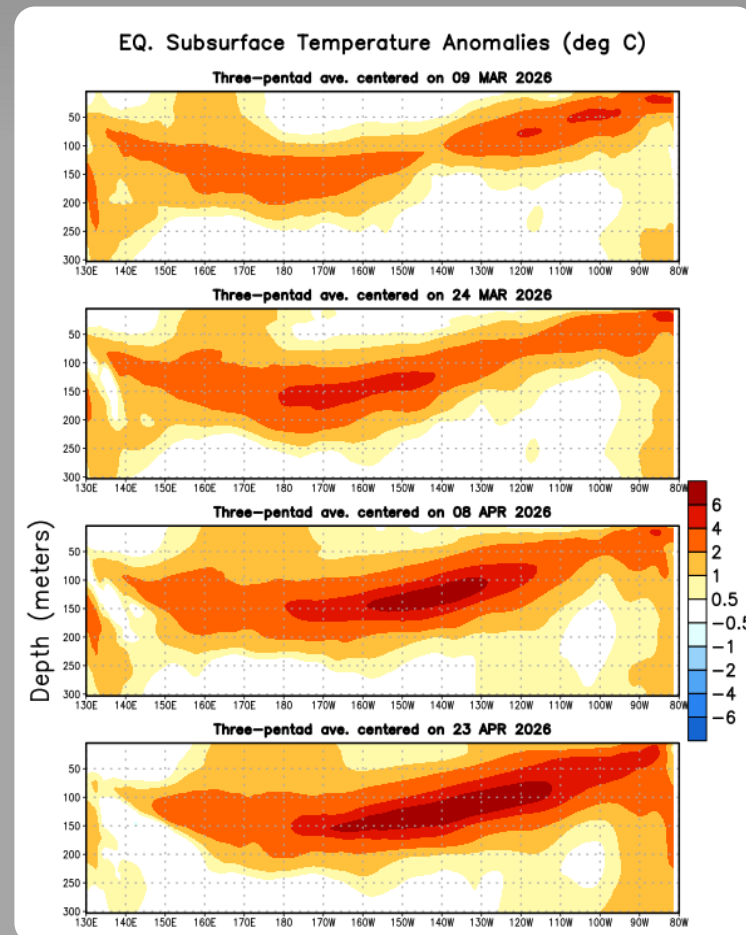
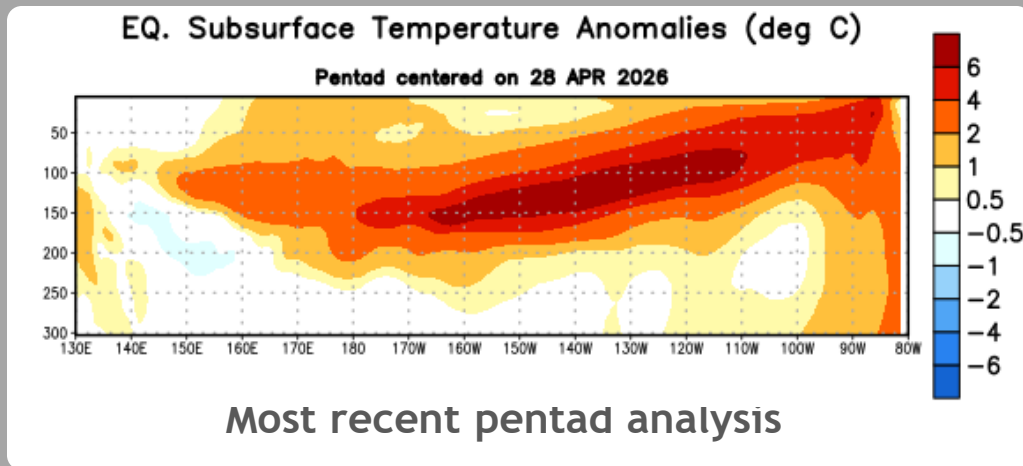
Central and Eastern Pacific Upper-Ocean (0-300 m) Weekly Average Temperature Anomalies

Weak positive subsurface temperature anomalies were present from mid-April through early July 2025. Negative anomalies emerged in mid-July 2025 and persisted through mid-December 2025. From mid-December 2025 through late February 2026, positive anomalies developed and increased. After a slight decrease, positive anomalies have increased again since early March 2026.



Sub-Surface Temperature Departures in the Equatorial Pacific

In the last two months, above-average subsurface temperatures have strengthened in the east-central and eastern equatorial Pacific Ocean.

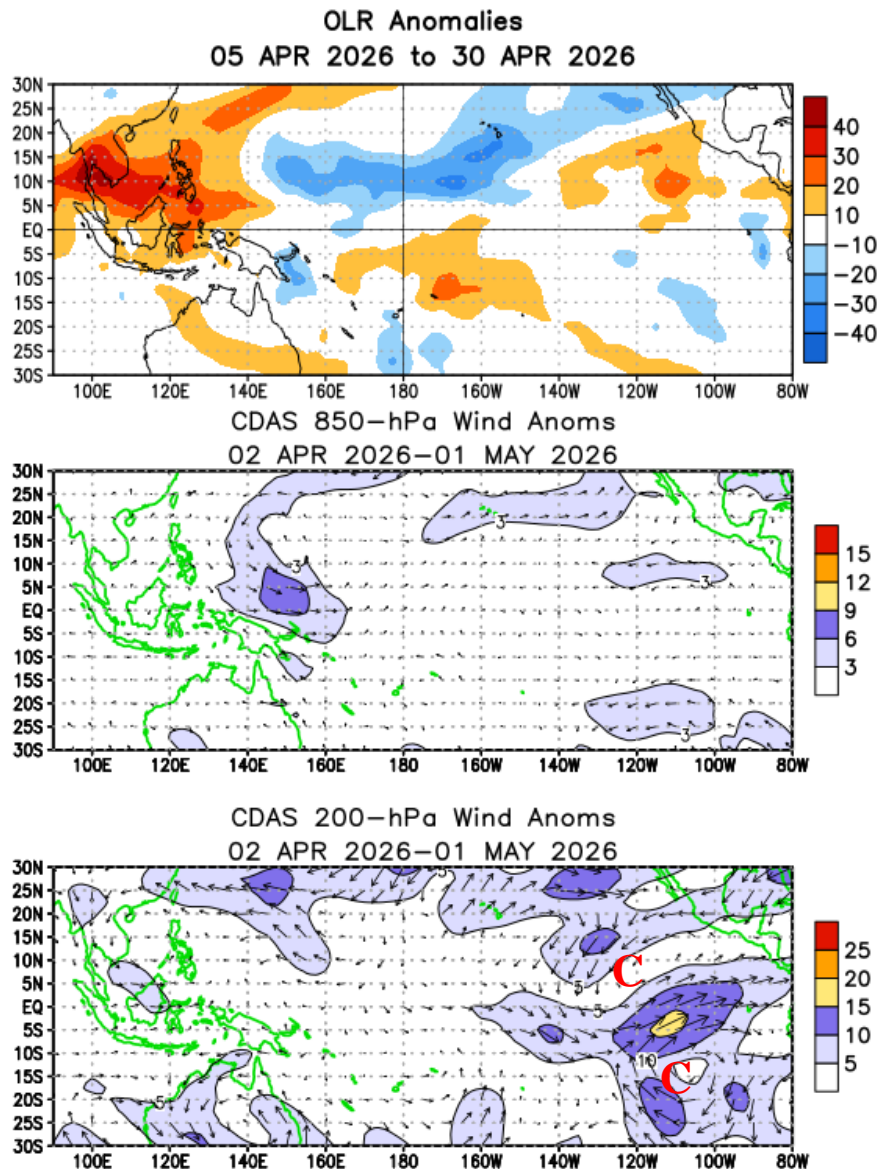


Tropical OLR and Wind Anomalies During the Last 30 Days

Below-average OLR (enhanced convection and precipitation) was evident north of the equator near the Date Line. Above-average OLR (suppressed convection and precipitation) was observed over Indonesia, southeast Asia, the Philippines, and south of the equator near the Date Line.

Low-level (850-hPa) wind anomalies were westerly over the western equatorial Pacific Ocean.

Upper-level (200-hPa) wind anomalies were westerly over the east-central and eastern Pacific. An anomalous cyclonic couplet straddled the equator over the eastern Pacific Ocean.



Intraseasonal Variability

Intraseasonal variability in the atmosphere (wind and pressure), which is often related to the Madden-Julian Oscillation (MJO), can significantly impact surface and subsurface conditions across the Pacific Ocean.

Related to this activity:

Significant weakening of the low-level easterly winds usually initiates an eastward-propagating oceanic Kelvin wave.

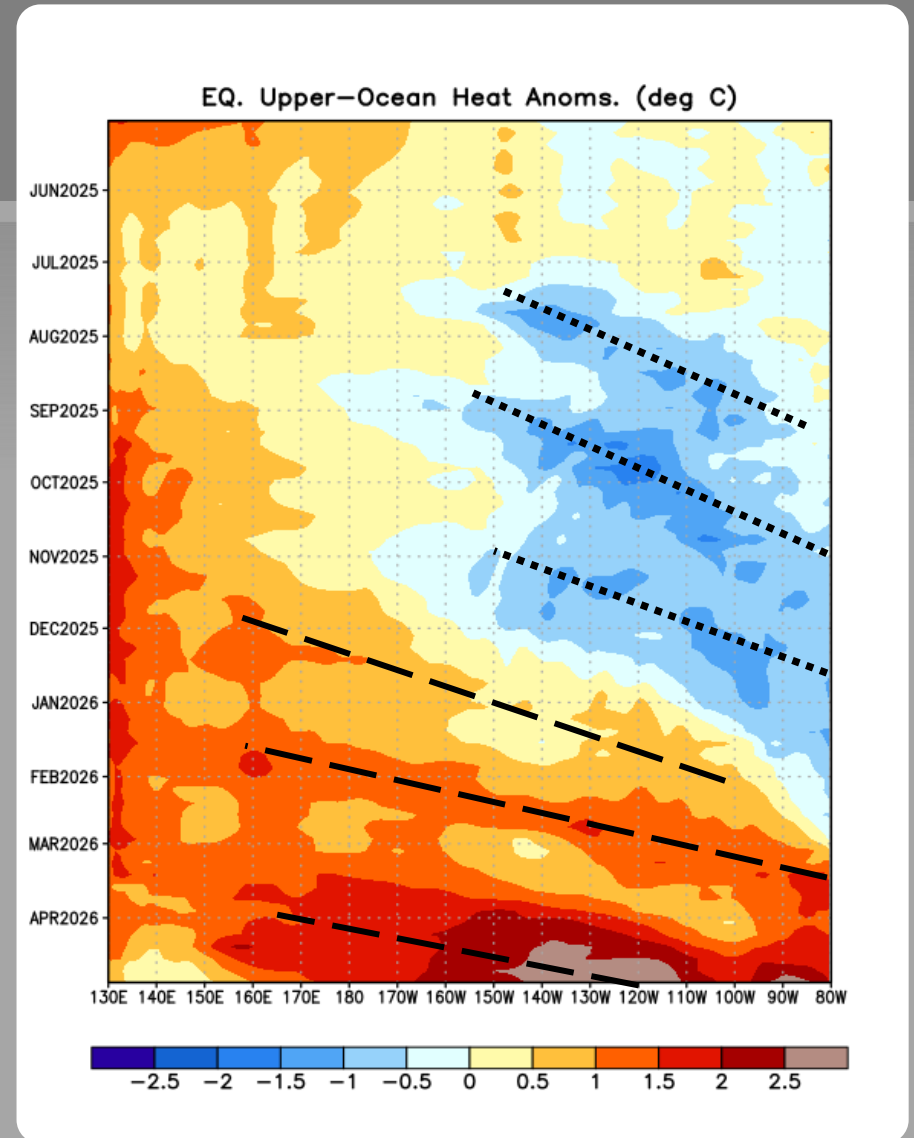
Weekly Heat Content Evolution in the Equatorial Pacific

Equatorial oceanic Kelvin wave activity (dashed and dotted lines) has been present at times throughout the period shown. Upwelling Kelvin waves were initiated during July, August, and October 2025. Downwelling Kelvin waves were initiated in December 2025, January 2026, and March 2026.

Below-average subsurface temperatures persisted in the east-central and eastern Pacific from July 2025 to December 2025.

Since late December 2025, above-average subsurface temperatures have gradually strengthened across most of the equatorial Pacific.

Equatorial oceanic Kelvin waves have alternating warm and cold phases. The warm phase is indicated by dashed lines. Down-welling and warming occur in the leading portion of a Kelvin wave, and up-welling and cooling occur in the trailing portion.



Low-level (850-hPa) Zonal (east-west) Wind Anomalies (m s^{-1})

During December 2025 and January 2026, periodic westerly wind anomalies extended across the equatorial Pacific Ocean.

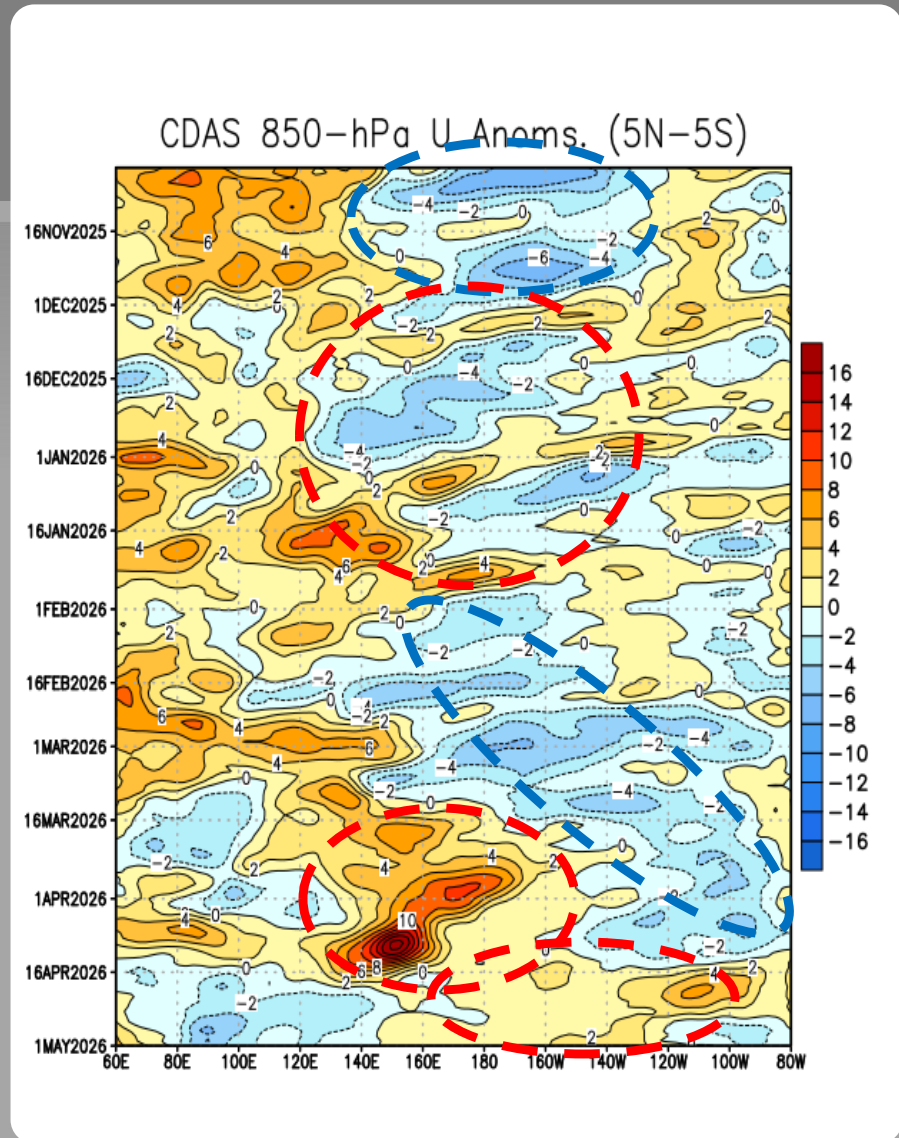
From February through mid-April 2026, easterly wind anomalies shifted from the central to the eastern equatorial Pacific.

In March and early April 2026, westerly wind anomalies strengthened in the western Pacific and near the Date Line.

In mid-to-late April, westerly wind anomalies emerged in the eastern and east-central Pacific Ocean.

Westerly Wind Anomalies (orange/red shading)

Easterly Wind Anomalies (blue shading)



Upper-level (200-hPa) Velocity Potential Anomalies

At times, regions of anomalous divergence (green shading) and convergence (brown shading) shifted eastward.

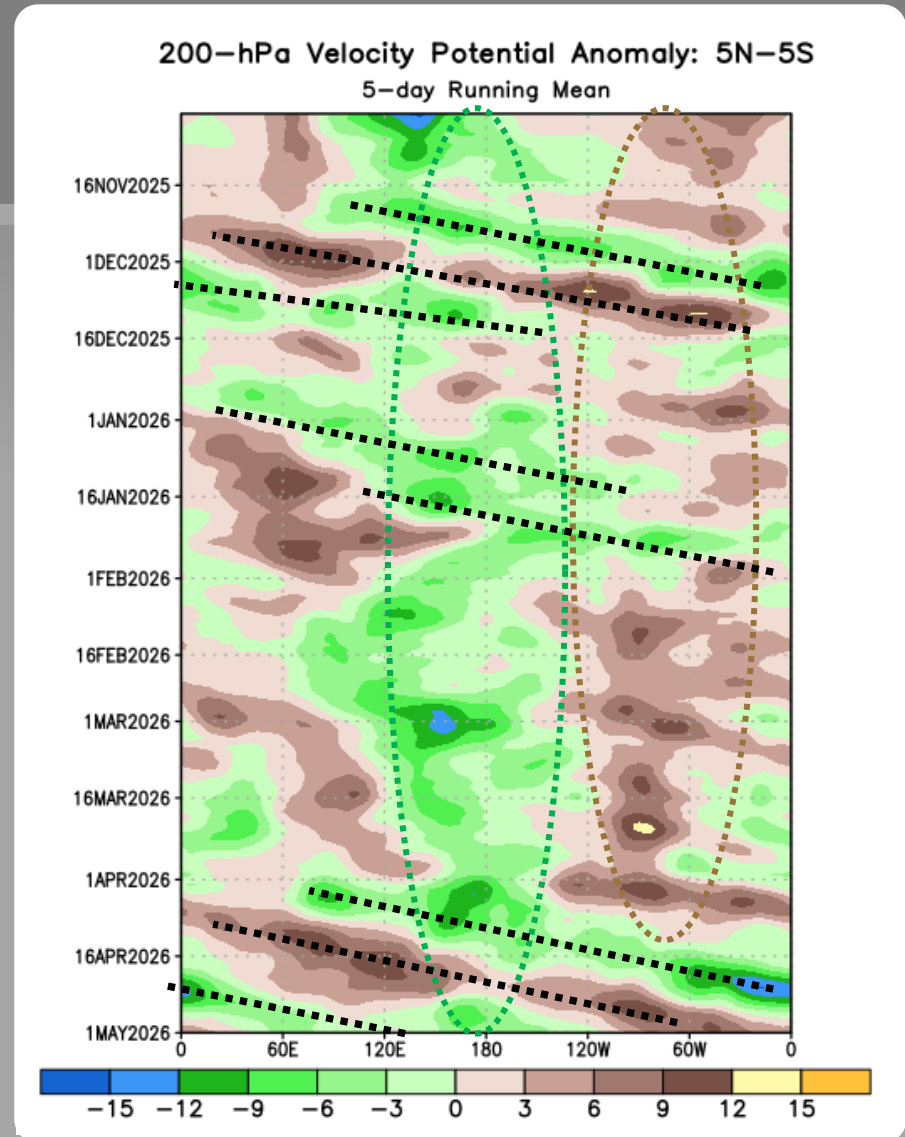
Since the beginning of the period, anomalous divergence persisted over the western and central equatorial Pacific Ocean.

During April, mostly eastward propagation was observed in the anomalies.

Unfavorable for precipitation (brown shading)

Favorable for precipitation (green shading)

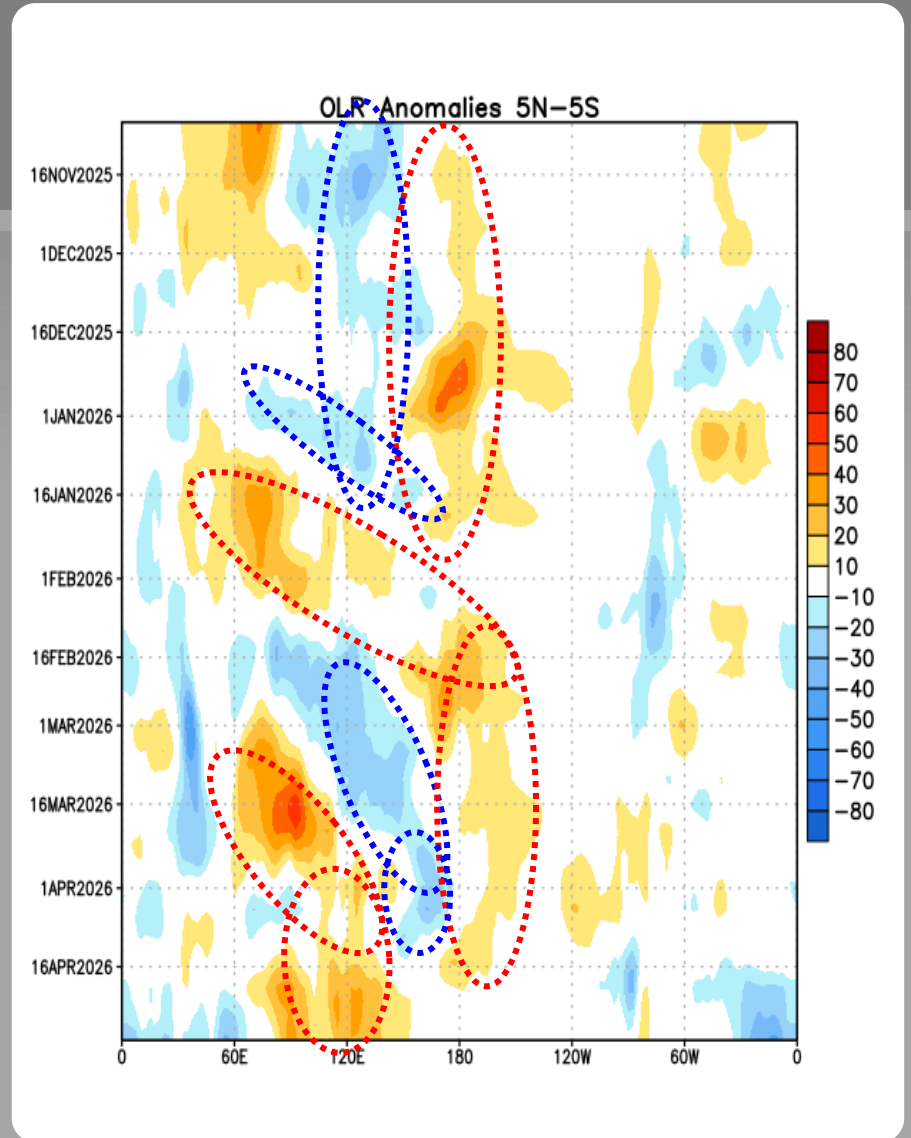
Note: Eastward propagation is not necessarily indicative of the Madden-Julian Oscillation (MJO).



Outgoing Longwave Radiation (OLR) Anomalies

In March and early April 2026, negative OLR anomalies (enhanced convection/rainfall) shifted into the western Pacific, and positive OLR anomalies (suppressed convection/rainfall) persisted near and east of the Date Line. Since April 2026, positive OLR anomalies were observed over Indonesia.

Drier-than-average Conditions (orange/red shading)
Wetter-than-average Conditions (blue shading)



Relative Oceanic Niño Index (RONI)

The RONI is a principal measure for monitoring, assessing, and predicting ENSO. The RONI helps to place current events into a historical perspective.

RONI is the SST departures from average in the Niño 3.4 region (5°N-5°S, 120°-170°W) with the tropical mean (20°S-20°N) SST departures subtracted out. The variance is adjusted to match the variance of the original Niño 3.4 index. A three-month running-mean is applied to the index.

The SST data are based on a set of improved homogeneous historical SST analyses (Extended Reconstructed SST - ERSST.v5). The SST reconstruction methodology is described in Huang et al., 2017)

Note: a different SST dataset is used for weekly SST monitoring (slides #4-9) and is using OISSTv2.1 (Huang et al., 2021).

https://www.weather.gov/media/notification/pdf_2026/pns26-05_Relative_ONI.pdf

NOAA Operational Definitions for El Niño and La Niña

El Niño: characterized by a positive RONI greater than or equal to $+0.5^{\circ}\text{C}$.

La Niña: characterized by a negative RONI less than or equal to -0.5°C .

By historical standards, to be classified as a full-fledged El Niño or La Niña episode, these thresholds must be exceeded for a period of at least 5 consecutive overlapping 3-month seasons.

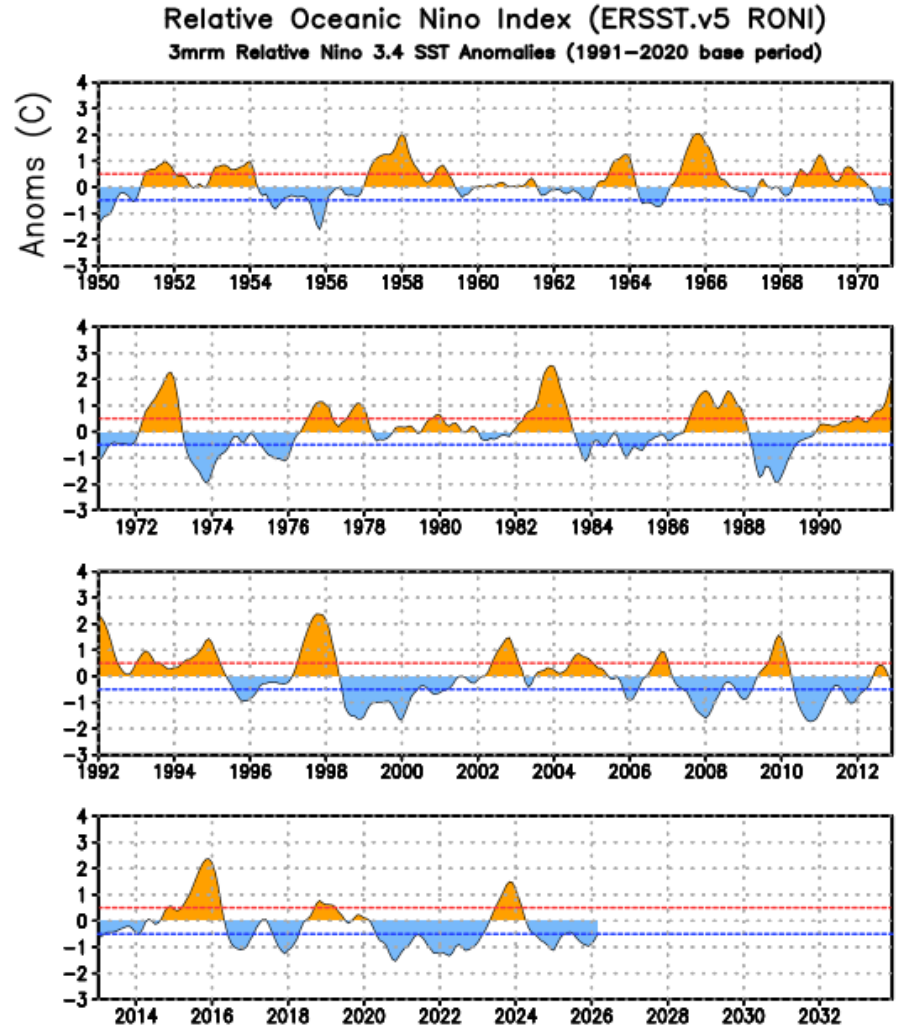
CPC considers El Niño or La Niña conditions to occur when the monthly relative Niño3.4 departures meet or exceed $\pm 0.5^{\circ}\text{C}$ along with consistent atmospheric features. These anomalies must also be forecasted to persist for 3 consecutive months.

https://www.weather.gov/media/notification/pdf_2026/pns26-05_Relative_ONI.pdf

RONI (°C): Evolution since 1950

The most recent RONI value (February - April 2026) is -0.5°C .

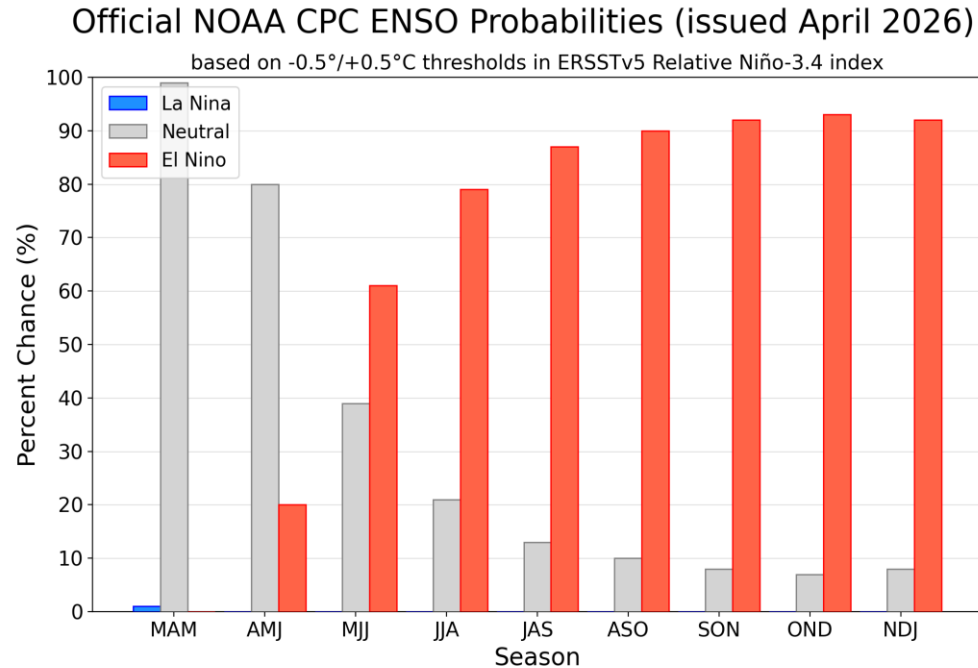
El Niño ↑
Neutral
La Niña ↓



CPC Probabilistic ENSO Outlook

Updated: 9 April 2026

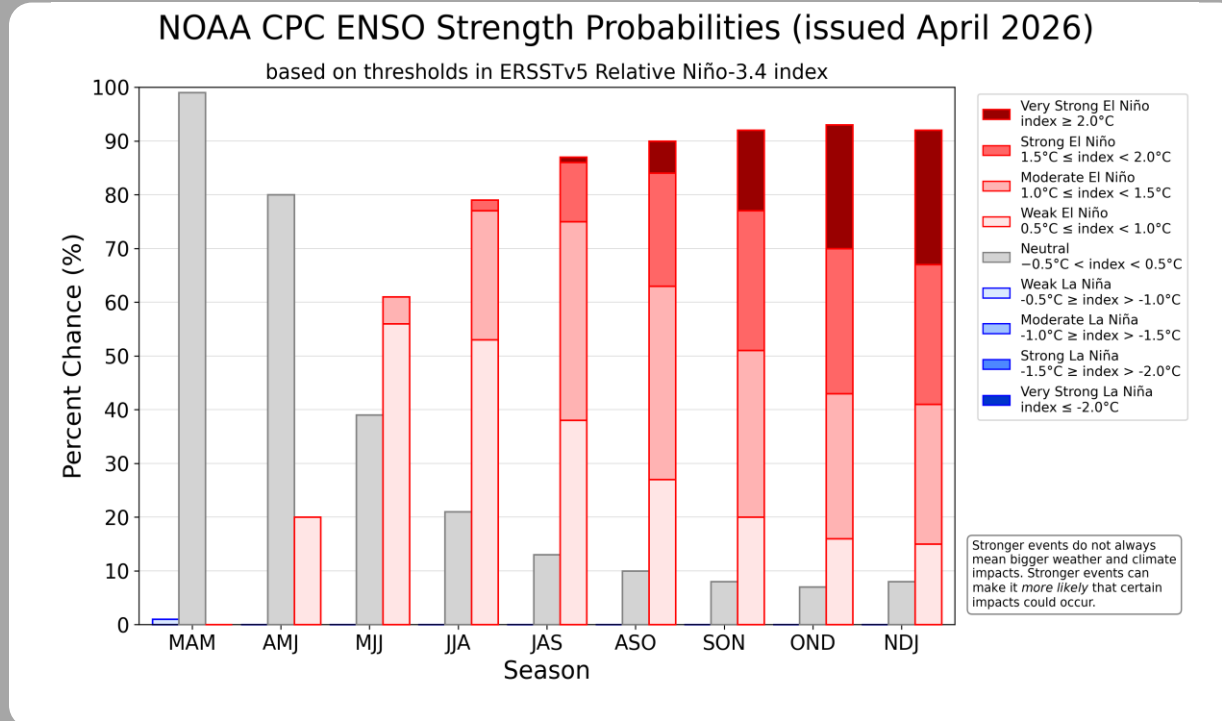
A transition from La Niña to ENSO-neutral is expected in the next month, with ENSO-neutral favored through May-July 2026 (55% chance). In June-August 2026, El Niño is likely to emerge (62% chance) and persist through at least the end of 2026.



CPC Probabilistic ENSO Strength Outlook

Updated: 9 April 2026

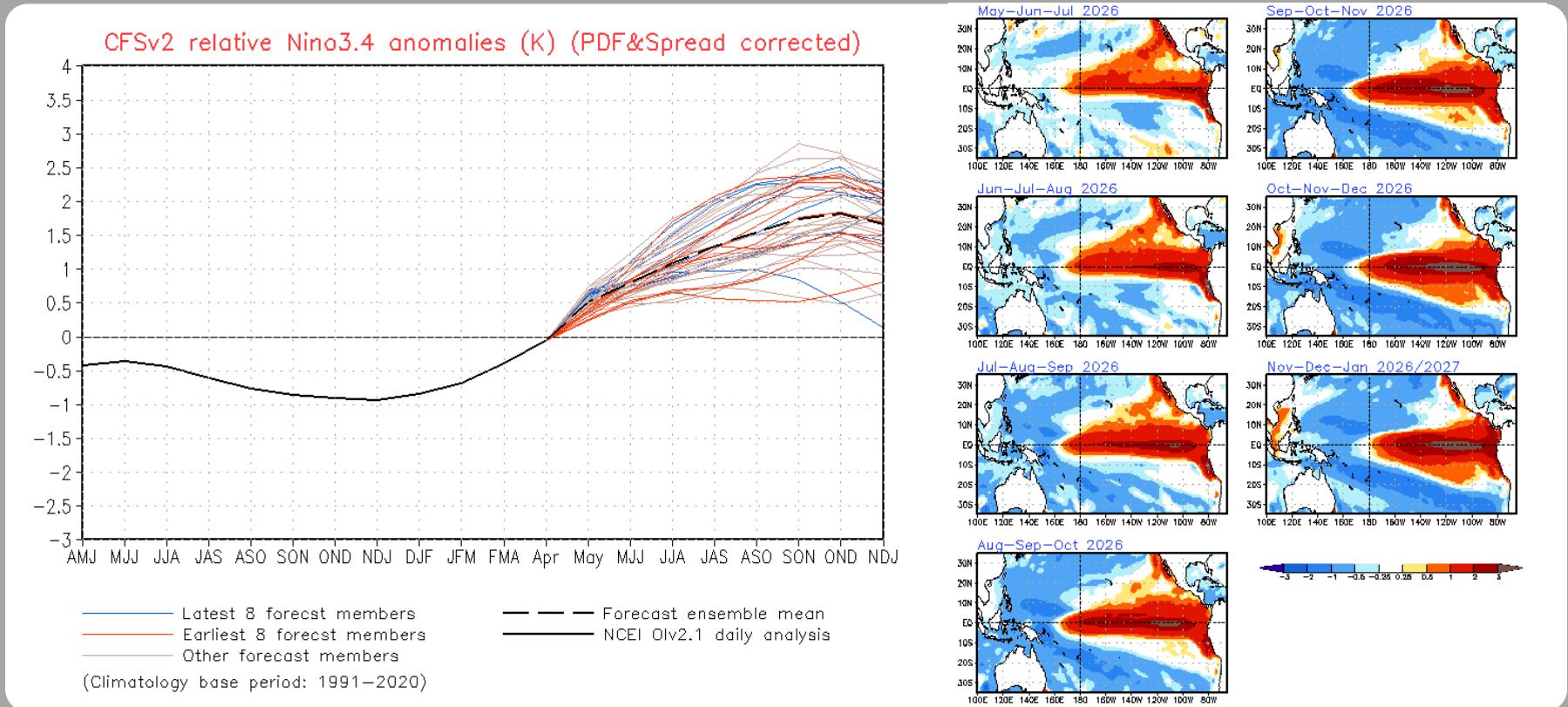
In November 2026- January 2027, there are nearly equal chances (25%) of a very strong, strong, or moderate strength El Niño. There is nearly a 1-in-10 chance of ENSO-neutral.



SST Outlook: NCEP CFS.v2 Forecast (PDF & Spread Corrected)

Issued: 3 May 2026

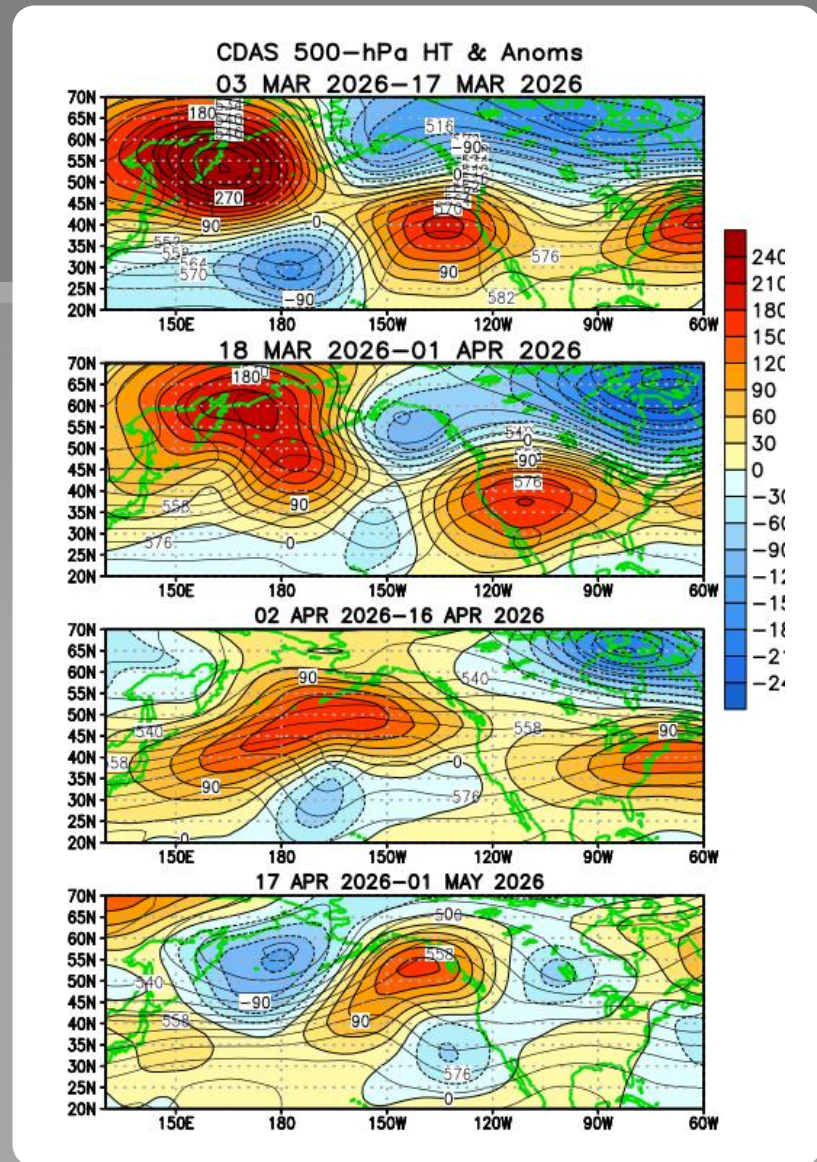
The CFS.v2 ensemble mean (black dashed line) favors the continuation of ENSO-neutral for the next month or two, with a transition to El Niño during May-July 2026.



Atmospheric anomalies over the North Pacific and North America During the Last 60 Days

During March through mid April, above-average heights and temperatures dominated most of the contiguous U.S., while below-average heights and temperature were evident over Alaska and/or Canada.

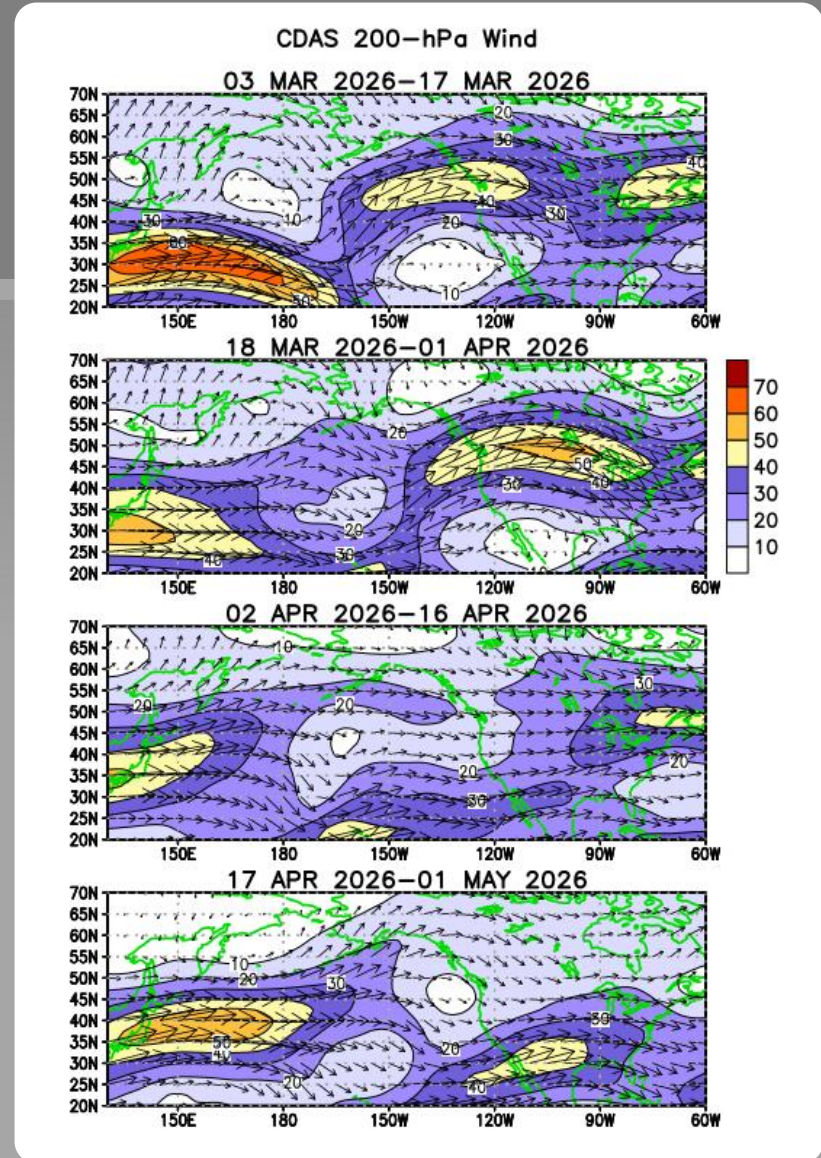
The pattern shifted in the last half of April, with below-average heights and temperatures across the northern tier of the contiguous US and over parts of the southwestern US.



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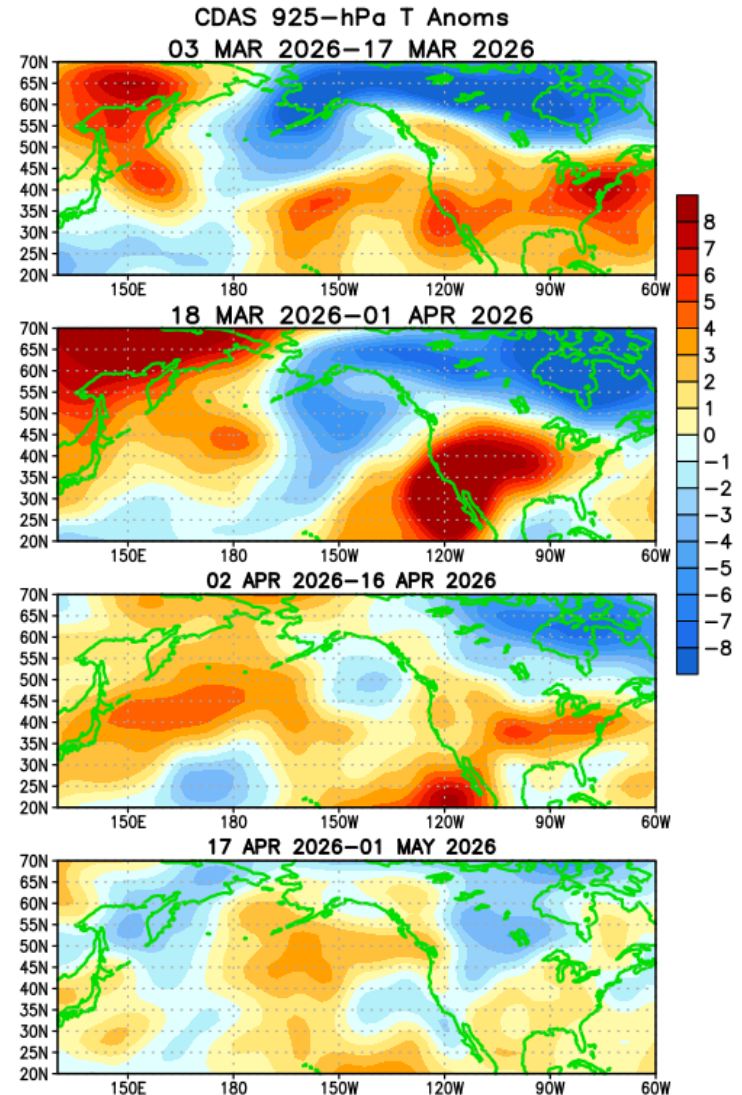
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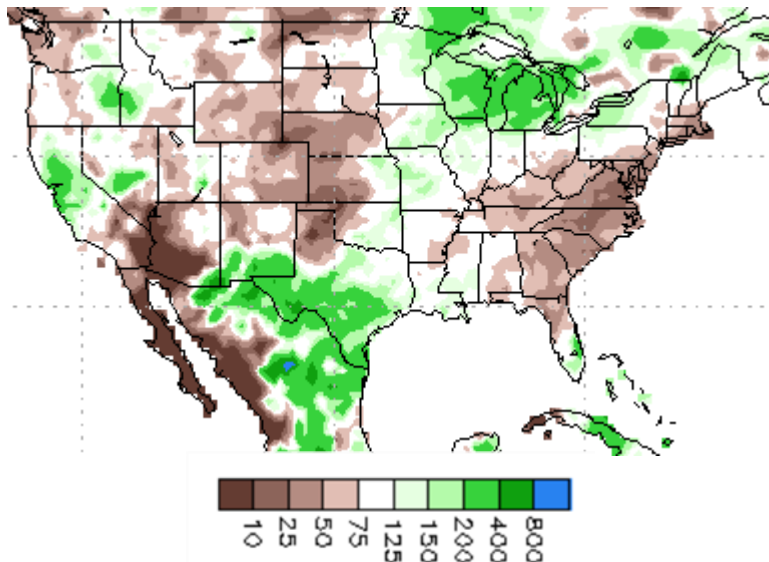
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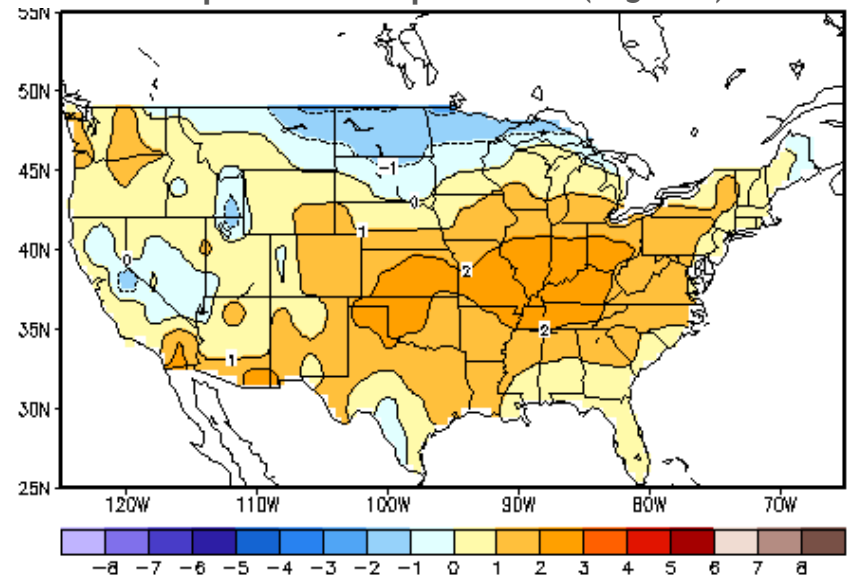
U.S. Temperature and Precipitation Departures During the Last 30 Days

End Date: 2 May 2026

Percent of Average Precipitation



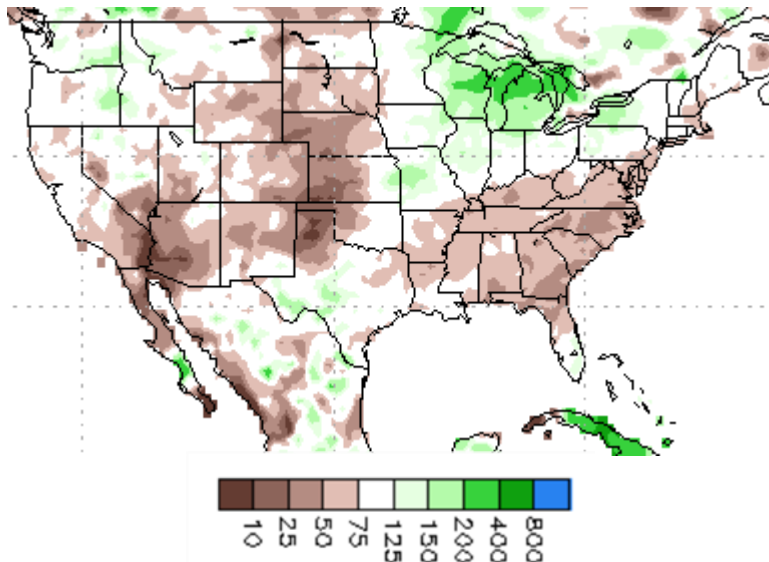
Temperature Departures (degree C)



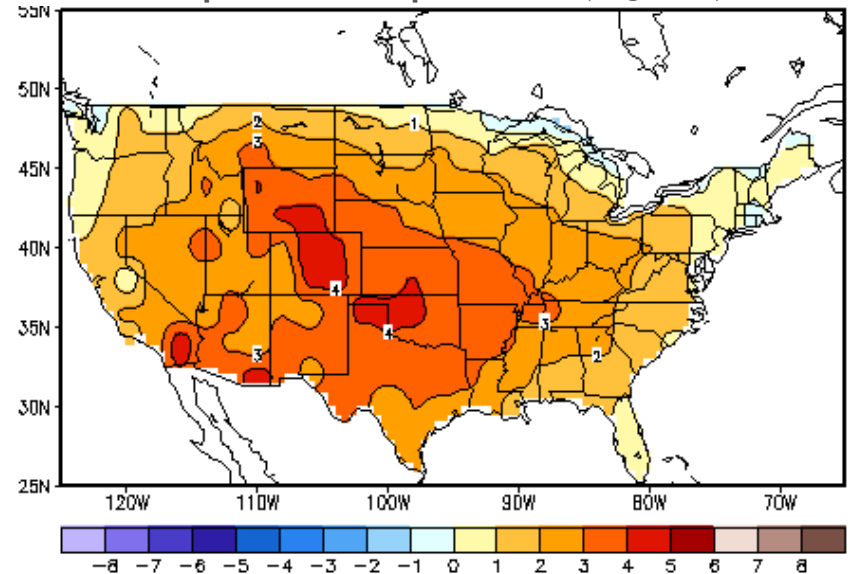
U.S. Temperature and Precipitation Departures During the Last 90 Days

End Date: 2 May 2026

Percent of Average Precipitation



Temperature Departures (degree C)



Summary

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