WEATHER CLIMATE WATER

WORLD METEOROLOGICAL ORGANIZATION

El Niño/La Niña Update

Current Situation and Outlook

As of mid-May 2025, both oceanic and atmospheric indicators reflect ENSO-neutral conditions, with sea surface temperatures remaining close to average across the equatorial Pacific. The latest forecasts from the WMO Global Producing Centres for Seasonal Prediction indicate that sea surface temperatures in the equatorial Pacific are expected to remain close to average, with a 70% chance of ENSO-neutral conditions continuing and a 30% chance of La Niña conditions developing during the period June–August 2025. Forecasts for the period July-September 2025 suggest about 65% chance of continued ENSO-neutral conditions, with the chances of La Niña conditions slightly increasing to about 35%. The chance of El Niño developing is negligible during the forecast period (June to September). Considering the well-known 'spring predictability barrier', however, we note that the ENSO forecasts made at this time of the year have lower skill than those made during other periods. National Meteorological and Hydrological Services (NMHSs) will closely monitor changes in the state of ENSO over the coming months and provide updated outlooks, as needed.

As of mid-May 2025, ENSO-neutral conditions are prevailing over the equatorial Pacific. Sea surface temperatures remain within the ENSO-neutral range, with slightly below-average temperatures across much of the central and eastern equatorial Pacific, while slightly warmer temperatures are observed in the far eastern Pacific near the Peruvian coast. Since April 2025, subsurface temperatures have remained at nearly average levels from the International Date Line to 80°W (spanning the central to eastern Pacific), while warmer temperatures are observed at depth from the western Pacific to the International Date Line. This pattern indicates the absence of a clear subsurface signal in the central-eastern Pacific, consistent with the current ENSO-neutral conditions. During April and continuing into mid-May 2025, trade winds across the central and eastern equatorial Pacific Ocean were either near normal or weaker than usual. Outgoing longwave radiation data for April indicated typical cloudiness levels, while the Southern Oscillation Index (SOI) - calculated as the standardized sea-level pressure difference between Tahiti and Darwin - remained within the ENSO-neutral range. Collectively, these indicators confirm that the coupled ocean-atmosphere system in the equatorial Pacific is consistent with ENSO-neutral conditions.

WMO Global Producing Centres for Seasonal Prediction routinely issue global-scale climate forecasts for the coming months, using dynamical models initialized by recent observations. The latest forecasts and expert assessments indicate an approximately 70% chance for ENSO-neutral conditions to continue in the central to eastern equatorial Pacific from June to August 2025, while the chances of La Niña conditions are estimated at around 30% for the same period. Looking further ahead, the chance of ENSO-neutral conditions decreases to approximately 65% in July-September, while the probability of La Niña conditions increases to around 35%. The probability of El Niño developing is negligible for the next four months. However, due to the so-called boreal 'spring predictability barrier', forecasts made at this time of the year tend to have lower skill in predicting the ENSO phase transitions.

It is important to note that El Niño and La Niña are not the only factors that drive global and regional climate patterns, and further that the magnitudes of ENSO indicators do not directly correspond to the magnitudes of their effects. At the regional level, seasonal outlooks need to assess the relative effects of both the ENSO state and other locally relevant climate drivers. Regionally and locally applicable information is made available via regional and national seasonal climate outlooks, such as those produced by WMO Regional Climate Centres (RCCs), Regional Climate Outlook Forums (RCOFs) and National Meteorological and Hydrological Services (NMHSs).

In summary:

- As of mid-May, the tropical Pacific has been experiencing ENSO-Neutral conditions.
- Model predictions and expert assessments indicate a continuation of ENSO-neutral conditions in the coming months, with 70% probability during June–August 2025 and 65% probability during July–September 2025.
- The chances of a return to La Niña conditions are estimated at 30% for June–August, slightly increasing to 35% for July–September 2025.
- The likelihood of El Niño conditions emerging during the forecast period (June to September 2025) is negligible.

The state of ENSO will continue to be carefully monitored by WMO Members, global and regional centres and other partner institutions. More detailed interpretations of the implications for regional climate variability will be carried out routinely by the climate forecasting community over the coming months and will be made available through the National Meteorological and Hydrological Services.

For web links of the National Meteorological Hydrological Services, please visit:

https://public.wmo.int/en/about-us/members

For the latest Global Seasonal Climate Update (GSCU) based on WMO Global Producing Centres of Seasonal Prediction, please visit:

https://www.wmolc.org/gscuBoard/list

An archive of all WMO El Niño/La Niña Updates issued so far, including this one, is available at:

https://wmo.int/el-ninola-nina-updates

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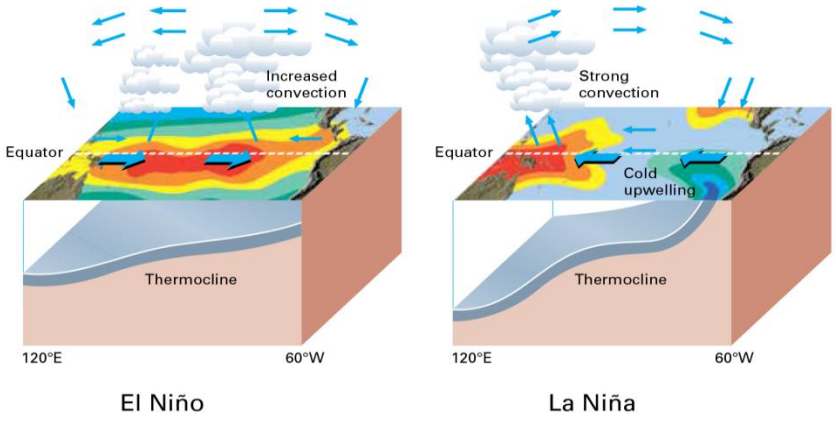
El Niño/La Niña Background



Typical circulation patterns during El Niño/La Niña (Source: WMO, 2003, "Climate into the 21st Century").

Climate Patterns in the Pacific

Research conducted over recent decades has shed considerable light on the important role played by interactions between the atmosphere and ocean in the tropical belt of the Pacific Ocean in altering global weather and climate patterns. During El Niño events, sea surface temperatures in the central and eastern tropical Pacific Ocean become substantially warmer than normal. In contrast, during La Niña events, the sea surface temperatures in these regions become colder than normal. These temperature changes are strongly linked to major climate fluctuations around the globe and, once initiated, such events can last for 12 months or more. The strong El Niño event of 1997–1998 was followed by a prolonged La Niña phase that extended from mid-1998 to early 2001. El Niño/La Niña events change the likelihood of particular climate patterns around the globe, but the outcomes of each event are never exactly the same. Furthermore, while there is generally a relationship between the global impacts of an El Niño/La Niña event and its intensity, there is always potential for an event to generate serious impacts in some regions irrespective of its intensity.

Forecasting and Monitoring the El Niño/La Niña Phenomenon

The forecasting of Pacific Ocean developments is undertaken in a number of ways. Complex dynamical models project the evolution of the tropical Pacific Ocean from its currently observed state. Statistical forecast models can also capture some of the precursors of such developments. Expert analysis of the current situation adds further value, especially in interpreting the implications of the evolving situation below the ocean surface. All forecast methods try to incorporate the effects of ocean-atmosphere interactions within the climate system. The meteorological and oceanographic data that allow El Niño and La Niña episodes to be monitored and forecast are drawn from national and international observing systems. The exchange and processing of the data are carried out under programmes coordinated by the WMO.

WMO El Niño/La Niña Update

The WMO El Niño/La Niña Update is prepared on a quasi-regular basis (approximately every three months) through a collaborative effort between WMO and the International Research Institute for Climate and Society (IRI) as a contribution to the United Nations Inter-Agency Task Force on Natural Disaster Reduction. It is based on contributions from the leading centres around the world monitoring and predicting this phenomenon and expert consensus facilitated by WMO and IRI.

For more information on the Update and related aspects, please visit:
https://public.wmo.int/en/our-mandate/climate/el-niñola-niña-update