



World Meteorological Organization

EL NIÑO/LA NIÑA UPDATE

Current Situation and Outlook

Current conditions are neutral in the central and eastern equatorial Pacific, with no rapid changes toward El Niño or La Niña expected over the next few months. There is a small risk of El Niño development in the latter part of the year, and an even smaller risk of La Niña, but neutral remains the most likely outcome through to the end of the year.

Sea-surface temperatures (SSTs) in the central and eastern equatorial Pacific transitioned from around 1°C below normal in January to mostly near normal in April. There have been few signs of basin-wide change since that time. While the conditions in the equatorial Pacific from December 2005 through the first quarter of 2006 showed some patterns typically associated with La Niña events, the timing of the development was most unusual. These conditions have not led to a basin-wide La Niña of a typical duration, being much shorter in length than the more usual several-season life cycle. Nonetheless, these cool conditions, combined with warmer than normal waters in the western equatorial Pacific, likely played a role in unusual climate patterns across the western Pacific, Indian Ocean and surrounding continental regions, up to around April this year.

Currently, most climate models suggest a continuation of the prevailing neutral conditions in the equatorial Pacific over the next few months, and this is also supported by expert interpretations of current equatorial Pacific oceanic and atmospheric patterns. The sub-surface of the central and eastern equatorial Pacific is slightly warmer than normal, but this is not expected to lead to any major rapid changes at the surface. Current cooling of equatorial surface waters very close to the South American coast is considered part of more local processes, which will lead to decay of this surface pattern in a timeframe of weeks, though some slightly colder than normal surface waters may persist locally in this region.

In short, across the basin as a whole, neutral conditions are considered most likely to the end of the year. There is, however, a small likelihood of El Niño development in the latter part of the year, and an even lesser likelihood that a La Niña may develop. The uncertainty on these projections for the latter part of the year will become less over the next months, as we move into a time of year when El Niño/La Niña predictions are known to have greater accuracy.

Despite the neutral conditions in the equatorial Pacific, it is important to bear in mind that changes in prevailing El Niño or La Niña conditions are not the only source of major regional climate anomalies. Indeed, other aspects of the tropical SSTs can substantially alter the likelihood of unusual regional climate patterns. For example, the prevailing warmer than normal conditions in the tropical North Atlantic can be expected to alter the likelihood of climate patterns in many surrounding continental regions. The southwestern tropical Pacific also currently displays a large area of warmer than normal SSTs. These and other potential sources of unusual climate conditions for the next several months illustrate the importance of considering regionally and locally specific seasonal climate forecasts, as provided by NMHSs. Information on expected conditions should not rely solely on the presence of El Niño or La Niña.

In summary:

- The prevailing neutral conditions in the equatorial Pacific are expected to continue for at least the next three to four months.
- Predictions are less certain for the latter part of the year: there is a small risk of El Niño development and an even smaller risk of La Niña development, but based on current forecasts, neutral conditions remain the most likely outcome through to the end of 2006.
- The current small area of surface cooling close to the South American coast is expected to quickly decay, and without heralding any basin-wide developments.
- The current basin-wide neutral conditions have evolved from colder than normal conditions that prevailed across much of the central and eastern Equatorial Pacific from around December last year through the first quarter of 2006. The timing of such a cooling was highly unusual and its duration shorter than that more typically associated with basin-wide La Niña events. Impacts were felt in immediate surrounding continental regions, but most of the more widespread impacts typically associated with La Niña did not materialize, as conditions did not develop through the year into a basin-wide event.
- Greater certainty in the outlook for the latter part of the year is expected in the next couple of months, as the time of year is reached when forecasts of El Niño and La Niña usually have greatest accuracy.

The situation in the tropical Pacific will continue to be carefully monitored. More detailed interpretations of regional climate fluctuations will be generated routinely by the climate forecasting community over the coming months and will be made available through National Meteorological and Hydrological Services.

El Niño/La Niña Background

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, for example, sea temperatures at the surface in the central and eastern tropical Pacific Ocean become substantially higher than normal. In contrast, during La Niña events, the sea surface temperatures in these regions become lower 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. The El Niño phase of 2002-2003 was not as strong as that in 1997-1998. El Niño 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 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 computer 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 World Meteorological Organization.

Acknowledgements

This El Niño/La Niña Update has been prepared as a collaborative effort between WMO and the International Research Institute for Climate and Society (IRI) as a contribution to the United Nations Interagency Task Force on Natural Disaster Reduction. It has been prepared based on contributions from the Australian Bureau of Meteorology (BOM), Centro Internacional para la Investigación del Fenómeno El Niño (CIIFEN), China Meteorological Administration (CMA), European Centre for Medium Range Weather Forecasts (ECMWF), International Research Institute for Climate and Society (IRI), Japan Meteorological Agency (JMA), Korean Meteorological Administration (KMA), Met Office United Kingdom, Météo-France, National Institute of Water and Atmospheric Research (NIWA) in New Zealand, and United States Climate Prediction Center (CPC).