



World Meteorological Organization

EL NIÑO/LA NIÑA UPDATE

Current Situation and Outlook

Neutral conditions (neither El Niño nor La Niña) have prevailed since the 2011-12 La Niña ended in April 2012. Model forecasts and expert opinion suggest that neutral conditions are likely to continue for at least the first half of boreal summer (austral winter). Beyond boreal mid-summer, a return of La Niña is considered unlikely, while the potential of El Niño conditions is slightly higher than neutral conditions. It remains too early to determine the strength of the potential El Niño conditions. National Meteorological and Hydrological Services and other agencies will continue to monitor Pacific Basin conditions and outlooks to assess the most likely state of the climate during 2012.

Since the ending of the weak to moderate strength 2011-2012 La Niña in early April 2012, tropical Pacific sea surface temperatures, sea level pressure and trade winds have been neutral (indicative of neither El Niño nor La Niña). The latest results from forecast models and expert opinion suggest that sea surface temperature anomalies will likely continue to be neutral into the middle of the boreal summer (austral winter) of 2012. However, beyond boreal mid-summer, a number of model outlooks suggest that the state of the El Niño/Southern Oscillation (ENSO) could change. Based largely on a build-up of heat in the deeper tropical Pacific Ocean since early May, most climate models surveyed predict development of El Niño conditions sometime during the July to September period, continuing through the rest of 2012. However, some dynamical models and at least half of the statistical models indicate neutral ENSO conditions to remain through 2012. Practically none of the models suggests a return to La Niña conditions. Expert interpretation of these models and current conditions suggests a strong likelihood for either neutral or El Niño conditions in the second half of 2012, with odds slightly favouring El Niño over neutral conditions. Although many of the models that predict the development of El Niño currently indicate a weak strength, predictions of strength are known to have poor accuracy at this early stage of evolution. Therefore, if El Niño does develop, the likely strength is considered uncertain at this time.

Uncertainty regarding the prospect for neutral or El Niño conditions for the second half of 2012 is due to questions about whether the expected warming of the Pacific Ocean will be large enough to cause changes in the atmosphere, which is a necessary condition to sustain an El Niño event. This level of uncertainty is expected to diminish in the coming two months as the development of the ENSO state becomes better defined. Climatologists will be monitoring conditions and outlooks closely over this critical period, and expect greater certainty in the longer-term outlook by August.

Importantly, several other factors influence seasonal climatic patterns apart from El Niño and La Niña. At the regional level, seasonal outlooks need to assess the relative impacts of both the current neutral ENSO state and other relevant factors. Such other factors may include, for example, conditions in the tropical Indian and Atlantic oceans, as these can influence surrounding continental climate patterns. Locally applicable information should therefore be consulted in detailed regional/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:

- Since the end of the La Niña in April 2012, neutral conditions have prevailed, i.e., neither El Niño nor La Niña;
- Neutral conditions are expected to persist for at least the first half of the boreal summer (June to August) 2012;
- Beyond July 2012, a redevelopment of La Niña appears very unlikely, while the chances for persistence of neutral conditions or the development of El Niño are enhanced, with the potential of El Niño conditions slightly greater than for neutral;
- If El Niño does in fact develop in the second half of 2012, its likely strength is currently uncertain.

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

http://www.wmo.int/pages/members/members_en.html

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 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 World Meteorological Organization (WMO).

WMO El Niño/La Niña Update

WMO El Niño/La Niña Update is prepared on a quasi-regular basis (approximately once in 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:

http://www.wmo.int/pages/prog/wcp/wcasp/wcasp_home_en.html

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