



World Meteorological Organization

EL NIÑO/LA NIÑA UPDATE

Current Situation and Outlook

Neutral conditions (neither El Niño nor La Niña) have continued in the tropical Pacific through recent months. Between July and September 2012, the tropical Pacific sea surface temperature increased to weak El Niño levels, but because the overlying atmosphere failed to respond (i.e., sea level pressure, wind and cloud patterns were near normal), overall conditions remained neutral. Model forecasts and expert opinion suggest that the likelihood of El Niño conditions developing during the remainder of 2012 is now low, and that neutral conditions are likely to persist into the first quarter of 2013. National Meteorological and Hydrological Services and other agencies will continue to monitor Pacific Basin conditions and provide outlooks to assess the most likely state of the climate through the last part of 2012 and into early 2013.

From April 2012 until June 2012, tropical Pacific sea surface temperatures, sea level pressure, cloudiness and trade winds were all at neutral levels (i.e., indicative of neither El Niño nor La Niña). However from July 2012, sea surface temperatures increased to weak El Niño levels. Despite the central Pacific sea surface temperatures being warmer than average through August and early September, the atmospheric conditions characteristic of El Niño (e.g., in patterns of sea level pressure, winds and cloudiness) failed to develop and hence the ocean-atmosphere system (which defines mature El Niño and La Niña events) remained in a neutral state and El Niño conditions were never formally declared. Without the ocean and atmosphere reinforcing each other (which is required for wider global impacts and for an event to persist for several months' duration), by early October the Pacific sea surface temperatures then returned to neutral levels.

The dissipation of El Niño-like sea surface temperatures during the Northern Hemisphere autumn is considered highly unusual, with no clear analogue in the historical record. The latest outlooks from climate models and expert opinion suggest that sea surface temperature and atmospheric anomalies are likely to now remain neutral for the remainder of 2012 and at least through the Northern Hemisphere spring of 2013. A small number of models continue to predict that the Pacific may show some limited warming but it is unlikely to see El Niño conditions now establish.

It is important to note that El Niño and La Niña are not the only factors that drive global climate patterns. At the regional level, seasonal outlooks need to assess the relative impacts of both the El Niño/La Niña 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 April 2012, ocean-atmosphere conditions have remained neutral (neither El Niño nor La Niña);
- Tropical Pacific sea surface temperatures attained weak El Niño levels between July and September 2012, but El Niño was not reflected in the overlying atmosphere;
- As of November 2012, outlooks that indicate neutral conditions are likely to continue, while a small risk of El Niño remains. Least likely is the development of La Niña;
- If El Niño develops between November 2012 and January 2013, its strength would be weak.

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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