World Meteorological Organization

EL NIÑO/LA NIÑA UPDATE

Current Situation and Outlook

The 2011-2012 La Niña has ended. La Niña conditions in the tropical Pacific transitioned to neutral (neither El Niño nor La Niña) conditions in early April 2012. Model forecasts and expert opinion suggest that neutral conditions are likely to continue into the Northern Hemisphere summer (austral winter). For the second half of 2012 a return of La Niña is unlikely, while neutral or El Niño conditions are currently considered to have equal chances of occurring. 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.

The weak to moderate strength La Niña of 2011-2012 ended in early April 2012, as tropical Pacific sea surface temperatures, sea level pressure and trade winds returned to neutral levels of El Niño/Southern Oscillation (ENSO), with neither El Niño nor La Niña prevailing. The latest results from forecast models and expert opinion suggest that sea surface temperature anomalies will likely oscillate around neutral conditions into the northern summer (austral winter) of 2012. Beyond July 2012, however, some forecast uncertainty exists. Based largely on a recent build-up of heat in the deeper tropical Pacific Ocean, at least half of the dynamical climate models surveyed predict development of El Niño conditions during the July to September period. However, some dynamical models and more than half of the statistical models indicate neutral ENSO conditions will remain through 2012. Currently, practically none of the models suggests a return to La Niña conditions. Expert interpretation of these models and conditions suggests that while La Niña is unlikely to redevelop later this year, there is a greater than normal chance both for neutral conditions to continue and for the development of El Niño during the second half of the year.

Uncertainty regarding neutral or El Niño conditions for later in 2012 is due to questions over whether the 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. Hence, at this stage, the outlook is for approximately equal chances of neutral conditions or development of El Niño during the third quarter of 2012. Climatologists will be monitoring conditions and outlooks closely over the coming months, and expect that there will be greater certainty in the longer range outlook by mid-(northern) summer.

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:

- La Niña conditions dissipated around early April 2012;
- Neutral (i.e., neither El Niño nor La Niña) conditions have since prevailed;
- Neutral conditions are expected to persist into the northern summer (June to August) 2012;
- Beyond July 2012, outlooks are less certain. A redevelopment of La Niña currently appears unlikely, while the chances for persistence of neutral conditions or the development of El Niño are enhanced and at this point in time are of approximately equal likelihood.

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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