
World Meteorological Organization



EL NIÑO UPDATE

El Niño Update

Current Situation and Outlook

The development of El Niño or La Niña is not likely in the next several months. That is, the Pacific basin-wide state is currently neutral and expected to stay that way into early 2004.

After the ending of the 2002-2003 El Niño event early this year, the tropical Pacific did show some signs of progress toward a basin-wide La Niña, and sea surface temperatures in the eastern Equatorial Pacific became about 1 degree Celsius below normal during May and June. However, no basin-wide event developed and current temperatures across much of the central and eastern Equatorial Pacific show no strong departures from normal.

Models that predict the evolution of the tropical Pacific are in good consensus that there is currently no indication of development in the next several months toward El Niño or La Niña. Expert interpretation supports this conclusion, especially noting the lack of any coherent strong temperature departures from normal in the monitored 300m beneath the surface of the Equatorial Pacific.

Therefore, based solely on information about El Niño/La Niña, it is not necessary to prepare for any increased likelihood of the unusual climate patterns that typically accompany such events. It is however observed that there are currently some substantial departures from normal in the tropical oceans that can still lead climate forecasters to information about the climate patterns to expect in the coming several months. These include below normal sea surface temperatures in the easternmost Equatorial Pacific that could lead to expectations of localized unusual climate patterns in this region, and above normal temperatures in the central Equatorial Indian Ocean and continued above normal conditions in the central/western Equatorial Pacific, which could lead to unusual conditions in surrounding continental regions and beyond.

Therefore, when considering response strategies, it will be important to consult National Meteorological Services for detailed interpretations of possible regional consequences of the current climate system's state. These interpretations will take

into account that local and regional seasonal climate fluctuations may have many additional causes, involving patterns of sea surface temperature (SST) both within and beyond the Pacific, and factors other than SST. To elaborate, regional climate fluctuations can be driven by SST patterns in the tropical Atlantic and tropical Indian Oceans. However, it must be emphasized that forecasts of SST patterns in the Atlantic and Indian ocean basins currently have very limited skill. This is largely due to inadequate observations of conditions beneath the ocean surface, and the lack of understanding of the mechanisms of systematic SST changes in these ocean basins.

In summary:

- The basin-wide Pacific state is currently neutral – that is, neither El Niño nor La Niña.
- Forecast models and expert opinion are in good consensus that these neutral conditions are likely to prevail for the next several months into early 2004.
- Especially in such neutral situations, it is important to recognize that unusual climate patterns are still possible, because they have many causes, not just El Niño and La Niña events.

The situation in the tropical Pacific will continue to be carefully monitored since the nature of the problem means that unexpected developments can never be completely ruled out. 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 Services.

Climate Patterns in the Pacific

Research conducted over the past few decades had 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. During La Niña events, the sea surface temperatures in these regions become lower than normal. These temperature changes can drive 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 just completed 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 events 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. In addition, WMO has recently initiated the establishment of an international centre on El Niño in South America. The WMO Secretary-General, Prof. G.O.P. Obasi, inaugurated the International Research Centre on El Niño Phenomenon (CIIFEN) at Guayaquil, Ecuador, on January 17, 2003. The Centre was established with a responsibility of putting together information on El Niño/Southern Oscillation (ENSO) and its impacts, in collaboration with regional and national partners in climate data processing, applications and predictions.

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