



CLIMATE ALERT BULLETIN (BAC)

CPPS

SUMMARIZED VERSION

DECEMBER 2009

BAC 231

During December the Sea Surface Temperature in the equatorial Pacific basin stayed with positive anomalies included between 1, 0 and 2, 0°C as a result of the presence of “El Niño”. The western coast of South America as of the first days of the month felt the arrival of a wave Kelvin, which caused a slight increase of the Sea Surface Temperature and increase of the mean sea level. These anomalies were not of great magnitude ($< 1^{\circ}\text{C}$), and may be that the intensification of the subtropical anticyclone of the South Pacific has slowed down the increase of the temperatures in surface. Also, this anticyclone has slowed down the reduction of the Convergence zone of the South, so the rain deficit in the region prevailed.

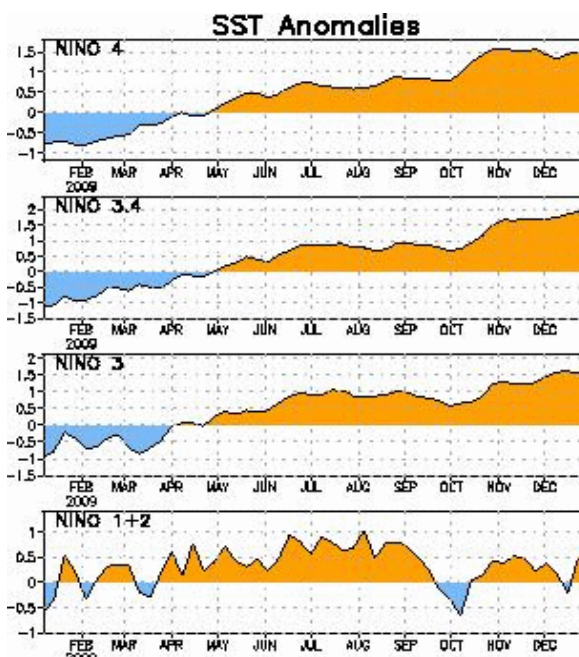
The anomaly of the Sea Surface Temperature corresponding to the four areas of monitoring of “El Niño” were: at the Western Pacific (“El Niño” Region 4) of 1, 4°C; in the Central Pacific (“El Niño 3.4” and “El Niño” 3 Regions) of 1, 8 and 1, 4° C respectively, and in the Eastern Pacific (“El Niño” Region 1+2) of 0, 7°C.

At subsurface level, the positive anomalies of the temperature of the sea continued present, the warm nucleus stayed in the sector of the Central – Eastern Pacific (150°W-90°W), with positive values of until 5, 0°C, located between 50 and 150 ms of depth. Next to the western coast of South America positive anomalies were observed (between 0° and 4° of South latitude) and neutral conditions towards the north and the south of this strip.

The mean sea level in the South east Pacific maintained the tendency observed in previous

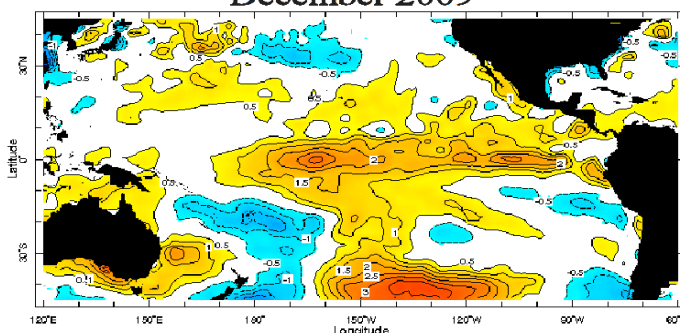
months and showed values above its normal patterns in front of the Ecuadorian coasts (around 15, 0 cm) and of Peru (between 12, 0 and 29, 0 cm). The Index of the Southern oscillation for the month continued in the negative phase with a value of -1, 0.

The intertropical convergence zone appeared like a thin band on the Central Pacific until the Eastern Pacific. Cells of weak convective activity were observed with its average central axis located in 5° N.



**SEA SURFACE TEMPERATURE ANOMALIES
FOR EL NIÑO REGIONS**

**Sea Surface Temperature Anomaly (°C)
December 2009**



27 Dec 2009 - 2 Jan 2010

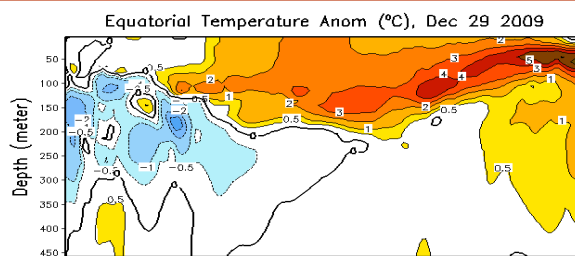
**SEA SURFACE TEMPERATURE
ANOMALIES, DECEMBER 2009**



In the region of the South east Pacific the surface winds had a South and South-east direction; with respect to the speed, the anomalies were positive between 0, 5 and 2.0 m/s.

Taking into account the present thermal behavior of the Equatorial Pacific, as well as some numerical models, likely in January the present heating of the Tropical Pacific Ocean persists and that in the Eastern side of the Pacific Ocean the Sea Surface Temperature (SST), tends to increase.

The models of numerical simulation indicate the presence of “El Niño” of moderate intensity in the central sector of the Equatorial Pacific, which will continue its advance towards the Eastern of the Pacific during the next months. The present condition, in the region of the South east Pacific, are associate with the occurrence of “El Niño”. In Colombia and Chile the SST presented values of neutrality, whereas in Ecuador and Peru the positive anomalies of SST persist. In relation to Sea Level in Ecuador and Peru the anomalies of Sea Level were increased and in Chile it stayed in its normal values.



SUBSURFICIAL TEMPERATURE ANOMALIES
DECEMBER 2009

Perspective for the next weeks

GLOBAL

Taking into account the predictions from several numerical and statistical models, as well as the behavior of the main oceanic and atmospheric indicators, it is anticipated that the conditions ocean-atmospheric of the development of an event “El Niño” continue. This event “El Niño” would reach their maximum development during the first trimester of the present year. Consequently the positive anomalies of the SST will be present and of equal way at subsurface level the heating of the sea will persist, mainly in the region of the Central Equatorial Pacific; being highly recommendable to maintain a careful pursuit of the evolution as well as its future repercussions on the climate of the region of the South East Pacific.

REGIONAL

In agreement with the pursuit of the ocean-atmospheric conditions in the South East Pacific Ocean, executed by Program ERFEN (integrated by National Committees ERFEN of Colombia, Chile, Ecuador and Peru) and coordinated by the CPPS it is anticipated that during the next months, in the sector of the Pacific South East, the values as much of the Sea Surface Temperature as the Air Surface Temperature increased slightly over the normal one.

Institutions that collaborate in this bulletin:



COLOMBIA

IDEAM

CCCP



ECUADOR

INOCAR



PERU

DHN



CHILE

SHOA

DMCh

EDITED IN THE OCEANOGRAPHIC INSTITUTE OF THE NAVY OF ECUADOR

Av. 25 de julio Base Naval Sur. Guayaquil, Ecuador. P.O.BOX 5940. Fax (593)4-2485166. Phone: (593)4-2481300.