

The Drought of Amazonia in 2005

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1. Introduction

In 2005, large sections of the western part of the Amazon Basin have been enduring the worst drought for 40 years and also one of the most intense during the entire XX century and beginning of the XXI century.

The international section of the December 11 2005 issue of the New York Times reported that the drought has evaporated whole lagoons, and kindled forest fires, killed off fish and crops, stranded boats and the villagers who travel by them, brought disease and wreaked economic havoc. Local newspapers in the Brazilian and Peruvian Amazonia reported that navigation along the Madeira River has to be suspended when the water levels fell to barely one-tenth of its rainy season level. The water levels at the Purus River were about two fingers high only, and several Brazilian states in the Amazon region and the Amazon regions in neighboring countries have declared state of emergency or public calamity since September 2005.

The present study focuses on the characteristics of the drought of 2005 in Amazonia, directed to an identifying of the major climatic and hydrological features. An investigation is made on changes in SST and circulation anomalies in the tropical Pacific and Atlantic Oceans to see the possible impacts of large scale forcing associated with the drought.

Comparisons are made with other historical drought events as in 1925-26, 1963-64, 1979-81, 1982-83 and 1997-98, being some of them El Niño years.

The 1963-64 drought is worth to study since the Rio Negro in Manaus showed the lowest minimum stages (13.7 m), as compared to record low values of 14.2 m in 1926, 14.6 m in 1998 and 13.7 m in September 2005. The prediction and predictability on seasonal time scales is also discussed for the drought of 2005, considering the seasonal climate forecasts issued by CPTEC and other global producer data centers around the world.