

NOAA Climate Testbed Seminar Series

Amazon Deforestation in CFS

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ABSTRACT

Many simulations of the potential effects of tropical deforestation on climate have been made using atmospheric general circulation models (AGCMs) coupled to land models and *forced by specified SST*. We extend these results by examining the effects of Amazon deforestation on the *coupled ocean-atmosphere-land climate system* using the NCEP CFS. This CGCM has a good simulation of current Amazon climate compared to many other CGCMs.

Century length control and deforestation simulations are carried out with CFS. The model suggests that the impact of Amazon deforestation would be a warmer and drier Amazon, and warmer tropical Pacific and tropical North Atlantic. However, these changes are small. ENSO is not noticeably affected. Sensitivities to changes in the land surface processes are diagnosed using GFS simulations, which suggest that albedo changes are the controlling influence.

An unexpected change occurs in the North Atlantic region in the deforestation simulation. We examine the Meridional Overturning Circulation in the simulations in an attempt to understand the origin of this change, which appears to be related to the treatment of sea ice.

When: 2:00 p.m., April 22, 2009

Where: Room 209, NWS/NCEP
World Weather Building
5200 Auth Road
Camp Springs, MD 20746