Geophysical Research Abstracts
Vol. 13, EGU2011-1455, 2011
EGU General Assembly 2011

Assessment of the Risk of Amazon Dieback

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The Amazon basin is a key component of the global carbon cycle, which is itself a determining factor for global climate. The rainforests in the basin store about 120 billion metric tons of carbon in their biomass. Current climate trends may be unbalancing this well-regulated system and, in association with land use changes, may be shifting the region from a carbon sink to a carbon source. Changing forest structure and behavior would have significant implications for the local, regional and global carbon and water cycles. Amazon forest dieback would be a massive event, affecting all life-forms that rely on this diverse ecosystem, including humans, and producing ramifications for the entire planet. Clearly, with changes at a global scale at stake, there is a need to better understand the risk, and dynamics of Amazon dieback. To this end, the probability of Amazon dieback has been assessed. The role of CO2 fertilization in the response is a critical factor in the estimate of the probability of dieback.