

7 February, 2014

Global Monitoring Division Hot Items**Dry conditions in Amazonia reduce uptake of carbon dioxide****Global Monitoring Division - ESRL-GMD**

This story entered on 7th Feb, 2014 11:43:26 AM PST

As climates change, the lush tropical ecosystems of the Amazon Basin may release more of the greenhouse gas carbon dioxide into the atmosphere than they absorb, according to a new study published Feb. 6 in Nature that included ESRL GMD authorship.

An international team of scientists found that the amount of yearly rainfall was the driving factor behind the amount of carbon dioxide (CO₂) taken up and released from Amazonia in 2010 and 2011. During a wet year, the Amazon forests were roughly carbon-neutral: Forests "inhaled" more carbon dioxide than they "exhaled," but biomass burning, which releases carbon dioxide, compensated for the difference. In contrast, during a very dry year forest growth and carbon uptake stalled and biomass burning increased, resulting in the region "exhaling" substantial amounts of carbon dioxide to the atmosphere.

Background: Previous estimates of Amazon Basin carbon uptake and release have been based on either numerical models or small time- and space-scale measurements. The measurements in this study are from light aircraft that are representative of most of the Amazon Basin and span two full years.

Significance: The relationships, and feedbacks, between the carbon cycle and climate are a first-order uncertainty in climate projection. The Amazon Basin, at nearly the size of the lower 48 states and containing a large fraction of Earth's living biomass, is a critically important region for understanding these feedbacks.

Links:

Nature paper: <http://www.nature.com/nature/journal/v506/n7486/full/nature12957.html>

Full press release:

<http://cires.colorado.edu/news/press/2014/amazoniandrought.html>**More information:** <http://www.nature.com/nature/journal/v506/n7486/full/nature12957.html>**Contact information****Name:** John Miller**Tel:** (303) 497-7739**John.B.Miller@noaa.gov**

National Oceanic and Atmospheric Administration
U.S. Department of Commerce
[Admin login](#) | [Privacy Policy](#) | [DISCLAIMER](#)

Contact Us

<http://www.oar.noaa.gov>