

Wetlands the primary source of Amazon Basin methane

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The Amazon basin is an important sink of carbon dioxide, but it is also a substantial source of atmospheric methane. Tropical wetlands, including those in the Amazon, are one of the largest sources of biogenic methane and globally represent roughly 13 percent of annual emissions of the greenhouse gas. Other sources of methane include fossil fuel or biomass burning. Through two intensive atmospheric methane sampling campaigns, Beck et al. determine the sources of Amazonian methane.

During 27 flights split between November 2008 and May 2009 the authors measured 150 vertical profiles of the [atmospheric methane](#) concentration, spanning 500 to 4,000 meters (roughly 1,600 to 13,000 feet) altitude. During both sets of flights they collected atmospheric samples, and during the 2009 flights they also produced the first continuous measurement of Amazon basin methane, accurate to within 2 parts per billion and sampled at three-second intervals. Using isotopic analyses of the collected gas samples, the authors find that [Amazon basin](#) methane is predominantly biogenic. Based on carbon monoxide measurements made concurrently with the methane observations, they calculate that biomass burning was not a major contributor to [methane emissions](#).

They find that wetlands were the primary source of methane. However, they note that other biogenic sources, such as waste decomposition or sewage and cattle operations, could easily be confused with wetland emissions. The authors note that their two airborne campaigns are not enough on which to base an assessment of the Amazon's annual methane

emissions.

More information: Methane airborne measurements and comparison to global models during BARCA, *Journal of Geophysical Research - Atmospheres*, [doi:10.1029/2011JD017345](https://doi.org/10.1029/2011JD017345) , 2012

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