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Nitrogen in the Tapaj?s National forest: What?s Happening?

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Nitrogen (N) is of fundamental importance to forest nutrient cycling. In many places its excess brings serious consequences to the environment, especially to the vegetation and water. At Tapajos National Forest ? (TNF), located along the northern end of the Tapajos River, we have been measuring nutrient deposition since 2003, when rice and soybean were being cultivated using intensive, fertilizer-based methods. Recently, corn has begun to be planted in place of rice and soy due to more favorable market conditions. Weekly collections of rainfall (4) and throughfall (25) samples inside the forest have shown that high inputs of N are entering the forest through wet-deposition, and that N input amount is correlated with site preparation and crop planting, and also with the size of the area planted. We speculate that the application of fertilizers to the agricultural areas to the East of the TNF is responsible for the high values of N entering the forest, principally through the mechanism of hydrolysis of urea. Sampling work has recently been expanded to forest areas situated far from intensive agriculture, and it is expected that forthcoming results will show reduced rates of N deposition in comparison to that measured in the TNF.

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