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OBSERVATORY

## **Katrina's Damage to Trees May Alter Carbon Balance**

By [HENRY FOUNTAIN](#)

The world knows the kind of destruction that [Hurricane Katrina](#) brought to New Orleans and other cities and towns on the Gulf Coast.

But destruction of a different sort is the subject of a [study](#) in the journal *Science* by Jeffrey Q. Chambers of [Tulane University](#) and colleagues. They report that the storm uprooted or severely damaged roughly 320 million trees, making an impact on the carbon balance in the region.

The researchers analyzed satellite imagery from before and after the hurricane to determine the net change in “nonphotosynthesizing vegetation” — in other words, the increase in dead wood and ground litter. Then they went to sample plots in the region's forests, corresponding to data points from the images, and counted downed or damaged trees. “A lot of material moved from being a living tree to being litter,” Dr. Chambers said.

The findings have implications for the carbon footprint of the region's forests. Through photosynthesis, living trees store carbon, but when they die they begin to decompose, and the action of those decomposing organisms releases carbon.

While trees eventually grow back in a heavily damaged forest, Dr. Chambers said, “it takes a lot longer to recover the biomass than it does to lose it.” In some cases, he added, it is possible for a forest to go from being a net storer of carbon to a net source.

That may happen more in the future, he said, because one expected result of global [climate change](#) is more severe storms. That means more damaged forests, with fewer living trees and more decomposing ones. “You could see terrestrial ecosystems becoming closer to sources of carbon than to carbon sinks,” he said.

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