

Savannas are vital but overlooked carbon sinks

On the second day of the 2021 United Nations Climate Change Conference (COP26), 130 nations announced a decision to halt global deforestation by 2030 (1). This is a welcome move and a political success, but ecologically it falls short. The plan needs to be expanded to include savannas, which cover an area of 20 million km²—more than the 17 million km² covered by tropical forests (2)—and are potentially more important carbon sinks than forests.

In the course of a year, each hectare of the Serengeti plains in Tanzania removes between 5000 and 20,000 kg of carbon dioxide (3) from the atmosphere, enough in total to offset every airline flight to East Africa and all the emissions produced in the region (4,5). The repeated grazing of wildebeests, zebras, and a variety of insects (6) stimulates vegetative growth multiple times within a year (7,8), which considerably increases the volume of carbon dioxide absorbed from the atmosphere. Wildlife feces and carcasses enrich the store of carbon and nitrogen in the soil.

The Serengeti and other tropical and temperate savannas, which store carbon in the soil rather than in the biomass of trees (4), can capture at least as much carbon as tropical forests if managed correctly (9,10). They are as threatened as tropical forests by agriculture expansion and land clearing. Like tropical forests, they are crucially in need of protection (11,12); excessive grazing and fires are diminishing the abundance of wild herbivores and thus their potential to store carbon (8,10). Substantial amounts of biodiversity, as well as many pastoralist peoples, depend on savannas. They also generate employment and foreign currency through tourism (5).

The parties to United Nations Framework Convention on Climate Change must be bolder in their approach to climate change. Declared goals must include both forests and savannas. Moreover, target dates should be set as soon as possible. Even 2025 may be too late to save the vulnerable forest and savanna ecosystems that provide the only fully scalable natural solution to remove carbon dioxide from the atmosphere.

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