The Role of Amazon Indigenous Territories and Protected Natural Areas in Region-Wide Gains and Losses of Aboveground Carbon (2003-2016)

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Maintaining the abundance of carbon stored aboveground in Amazon forests is central to any comprehensive strategy for stabilizing global climate. Growing evidence points to the contribution that Indigenous Peoples and Local Communities (IPLCs) have made to buffering Amazon forests against large-scale carbon emissions across a nine-nation network of Indigenous Territories (ITs) and Protected Natural Areas (PNAs). Previous research has demonstrated the links between indigenous land management and avoided deforestation; however, little attention has been paid to the impacts of forest degradation and natural disturbance - processes that occur in the absence of land use change but are increasingly significant drivers of biomass loss. Here we provide a comprehensive accounting of the role that Amazon ITs and PNAs have played in the aboveground carbon dynamics of the region relative to other lands. Using published data on changes in pantropical aboveground woody carbon density and global forest cover, we track gains and losses in carbon storage associated with forest conversion as well as degradation and disturbance. We find that ITs and PNAs stored well over half (58%; 41,991 MtC) of the region's carbon in 2016, yet were responsible for just 10% of the net change (-130 MtC) from 2003-2016, with 86% of losses (-956 MtC) offset by gains (+826 MtC). Nevertheless, total losses in both ITs and PNAs approached a half billion tons (-434 MtC and -423 MtC, respectively), with degradation and disturbance accounting for more than 75% of losses in 7 of the 9 countries examined. With deforestation on the rise across much of the region, and degradation and disturbance a neglected yet significant source of region-wide emissions (47%), the success of Amazon Basin countries in achieving their commitments under the Paris Climate Agreement depends in part on continued support for IPLC stewardship of Amazon forests, a global environmental service that merits increases in both political protection and financial support.

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